

USSR

UDC 539.3

TATARINOV, P. I.

"Nonlinearly Elastic Problem of the Strength and Second Order Stability of Crimped and Wrinkled Plates Under Clean Bending"

Soprotivl. materialov i teoriya sooruzh. Resp. mezhved. nauch-tekhn. sh.  
(Resistance of Materials and the Theory of Structures. Republic Interde-  
partmental Scientific-Technical Collection), 1972, No. 18, pp 47-55 (from  
RZh-Mekhanika, No 3, Mar 73, Abstract No 3V197)

Translation: The author extends to crimped and wrinkled plates of periodic structure an assertion previously advanced by them that under clean bending of a band the bending moment - curvature dependence has a maximum. The elastic problem in the geometrically linear formulation is discussed. The non-linearity mentioned in the title refers to the nature of the bending moment - curvature dependence and is associated with the phenomenon of anticlastic bending. L. G. Korneychuk.

1/1

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USSR

UDC 539.3:621.165

TATARINOV, P. I., Donetsk

"Geometrically Nonlinear Problem of Pure Bending and Twisting of a Shell  
Such as a Long Turbine Blade"

Problemy Prochnosti, No 10, 1971, pp 57-61.

Abstract: The bending and twisting of a flexible turbine blade is studied in the geometrically nonlinear statement. This statement, the authors believe, is the first attempt at a truly precise calculation, reflecting the actual stress-strain state of the object. Calculation recommendations for practical application are given.

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- 87 -

USSR

UDC 539.3:629.73

TATARINOV, P. I.

"Nonlinear Problem in Pure Bending of a Caisson Construction"

Kazan', Izvestiya VUZ, Aviatsionnaya Tekhnika, No 4, 1970, pp 57-65

Abstract: Pure bending of a caisson structure with a deformable cross section contour is considered under certain assumptions. The theory of flexible plates is used for constructing the solving equation. The problem is reduced to integration of a system of two non-linear equations in partial derivatives of the fourth order, in relation to the function of normal displacement  $v(x,z)$  and to the stress function in the middle surface  $\phi(x,z)$ . It is shown that a change in the shell flexible stiffness occurs under load. Calculations of the strength and stability of a long caisson, on the basis of the non-linear Karmann equations are presented. A non-linear relation between the external bending moment and the curvature of the shell axis is established. The critical bending moment which defines the loss of the second order stability is determined. An approximate procedure for determining the transverse stresses is outlined and applied to a series of Duralumin-caisson structures of the wing type, subjected to pure bending.

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USSR

TATARINOV, P. I., Izvestiya VUZ, Aviatsionnaya Tekhnika, No 4, 1970, pp 57-65

The diagram of the transverse forces shows that the shear stresses, due to the transverse force  $Q_x$  are distributed along the plate thickness in accordance with a parabolic law and have a maximum at the thickness middle. 35 formulas, 5 figures, 2 tables, 6 references.

2/2

- 50 -

1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--UREA CHROMIUM III NITRATE WATER SYSTEM AT 25DEGREES U-  
AUTHOR--(103)-TATARINOV, V.A., LEPESHKOV, I.N., KARNAUKHOV, A.S.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 785-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--UREA, CHROMIUM COMPOUND, NITRATE, AQUEOUS SOLUTION, ELECTRICAL  
SOLUTION, ELECTRICAL CONDUCTIVITY, ISOTHERM  
CONTROL MARKING--NO RESTRICTIONS  
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CIRC ACCESSION NO--AP0132299  
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132299

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLY. OF THE CO(NH SUB2)  
SUB2,CR(ND SUB3) SUB3,H SUB2 O SYSTEM WAS DETD. AT 25DEGREES. THE  
SOLY. ISOTHERM OF THE SYSTEM AND ISOTHERMS OF D., VISCOSITY, AND ELEC.  
COND. OF THE LIQ. PHASES ARE CONSTRUCTED. CR(ND SUB3) SUB3.6CO(NH SUB2)  
SUB2.3H SUB2 O (HAVING N SUBALPHA, N SUBBETA, AND N SUBGAMMA EQUAL  
1.463, 1.573, AND 1.639, RESP.) FORMS IN THE SYSTEM.

UNCLASSIFIED

USSR

UDC 547.221+661.723-16

ALEKSEYEVA, L. V., BURDE, N. L., and TATARINOVA, G. P., Institute of Chemistry, Ural Branch of the Academy of Sciences, USSR

"Synthesis and Study of Compounds With Potential Biological Activity. VII.  $\gamma$ -Aminomethyl Derivatives of Glutamic Acid"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 7, Jul 71, pp 1396-1399

Abstract: Two synthetic methods were studied for the preparation of novel  $\gamma$ -aminomethyl derivatives of glutamic acid. Reaction of the diethyl ester of 1-acetylaminoacetonedicarboxylic acid with formaline and various amines gave diethyl esters of 1-acetylamino-3-dialkylaminomethylacetonedicarboxylic acid. Catalytic reduction of these compounds carried out concurrently with hydrolysis of the protective groups by means of Clemmensen reduction yields a mixture of partially reduced and final products, from which individual compounds could not be isolated.  $\gamma$ -Aminomethyl-D,L-glutamic acids were synthesized by reaction of tetraethylester of 1-acetylamino-3,3,3-tricarboxylic acid with paraform and various amines followed by hydrolysis and decarboxylation of the products obtained.

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USSR

UDC 539.18

MOROZOV, V. N., TATARINOVA, N. A., SHIPITSYN, S. A.

"Application of the Atomic-Absorption Method in Determining the Fields of Atoms and Ions in Spectral Light Sources"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol XV, No 6, 1971, pp 984-988

Abstract: A photographic and photoelectric method of recording atomic and ionic fields in spectral light sources based on atomic-absorption measurements was developed. The optical system of the device permits a detailed picture of the distribution of the optical densities in the source to be obtained with high spatial resolution. The electric recording circuit provides for separation of the absorption signal against a background of strong natural radiation of the source.

By the photoelectric procedure it is possible to measure the atomic and ionic concentration fields the resonance lines of which are within the operating range of the spectrograph and within the range of spectral sensitivity of the photomultiplier. The radiation intensity of a tube with a hollow cathode and the sensitivity of the recording circuit are very high and permit operation with a sounding beam with a cross section of  $0.1 \times 0.1 \text{ mm}^2$ . Results of using the techniques are presented for the atomic fields of calcium in an  
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USSR

MOROZOV, V. N., et al., Zhurnal Prikladnoy Spektroskopii, Vol XV, No 6, 1971, pp 984-988

acetylene-air flame. A diagram of the isolines of the optical density of the acetylene-air flame for the 422.6 nm atomic line of calcium is given. Graphs are also presented for the optical density of the central cross section of the electrode spacing of a direct-current electric arc for the 422.6 nm atomic line of calcium and the 328.0 nm atomic line of silver. The graphs show that calcium and silver atoms are observed at a distance of up to 10 mm from the discharge axis. In the central section of the electric arc plasma the calcium atom concentration was less than in the peripheral regions. This arose from significant ionization of the calcium atoms in the central part of the plasma.

The solution of the Abelian integral equation is required to convert from the measured optical density fields to the radial distribution of the atoms. The method of measuring atomic and ionic fields in spectral light sources can be used for experimental studies of atom transfer, the laws of formation of atomic vapor, measuring the degree of ionization of atoms, and solving of the problems.

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Vector Studies

UDC 576.851.45.095.38:576.895.775].095.18:615.285.7

USSR

ALEKSEYEV, A. N., BIBIKOVA, V. A., ~~TATARINOVA, S. G.~~ and KHRUSTSELEVSKAYA, N. M., All Union Scientific Research Institute of Disinfection and Sterilization, Ministry of Health USSR, and Central Asian Scientific Research Antiplague Institute

"Effect of the Systemic Poison Fluoroacetamide on the Viability of Infected Fleas and on the Development of the Plague Pathogen in Them"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 5, 1971, pp 571-577

Abstract: Administration of sublethal doses of the systemic organofluorine insecticide fluoroacetamide (a poison with intestinal action against rodent ectoparasites) to the great gerbil flea *Xenopsylla gerbilli minax* and the rat flea *X. cheopis* infected with a highly virulent strain of *Pasteurella pestis* quickly killed the fleas or resulted in elimination of the microorganism from the insects. Fluoroacetamide suppressed the formation of a proventriculus block in the fleas. The mechanism of action of the poison lies in its inhibiting vital functions of both the micro- and macroorganism. By inhibiting the reproduction of the pathogen in the flea intestine, fluoroacetamide is an antagonist of plague bacteria. On the other hand, by

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USSR

ALEKSEYEV, A. N., et al., Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 5, 1971, pp 571-577

intensifying the injurious effect of the toxins elaborated by the microbes, it is a synergist of the latter in that it intensifies the pathogenic effect of their toxins on the vector.

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USSR

UDC 621.79

LEVITINA, E. I., and TATARINOVA, T. S., Leningrad

"Vacuum Aluminizing of Metals. Bonding of Platings"

Moscow, Fizika i Khimiya Obrabotki Metallov, No 1, Jan-Feb 71, pp 46-49

Abstract: The effect of oxide films and the processing conditions in a glow discharge on the vacuum bonding of aluminum platings to various metals has been investigated. It is demonstrated that preheating of the metal surface in air before aluminizing favors the elimination of organic impurities and the adsorbed moisture and provides a good bonding of the plating to the base metal. The oxide films generated during preheating do not interfere with a good bonding. Principles of the heating effect and the effect of the processing conditions in a glow discharge on the bonding of aluminum platings are analyzed.

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USSR

UDC 666.113.23-31:546.212:535.34

TATARINTSEV, B. V., and YAKHKIND, A. K., Candidate of Sciences

"The Effect of Water on the Infrared Transmission of High-Refractive Tellurite Glasses and a Method of Its Qualitative Determination"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 10, Oct 72, pp 72-73

Abstract: A systematic investigation was made of infrared transmission spectra of tellurite glasses with 20 mol%  $WO_3$  and 20 mol%  $Na_2O$ , in order to determine their water absorption characteristics. The results of the qualitative determination of water are analyzed by reference to curves of infrared transmission spectra and characteristics of water absorption bands. The intensities of the bands and the meanings of their maxima are discussed. Two absorption maxima in the region of valence oscillations indicate the presence of two types of hydroxides with medium ( $3000\text{ cm}^{-1}$ ) and strong ( $2200\text{ cm}^{-1}$ ) hydrogen bands. The results are compared with differential spectra of practically waterless glasses of similar composition and thickness. One illustr., one table, three biblio. refs.

1/1

USSR

UDC 636:612

KOVALENKO, Ya. R., SIDOROV, M. A., ~~TATARINTSEV, N. T.~~, FESENKO, I. D., and  
SHEGIDEVICH, E. A., All Union Institute of Experimental Veterinary Science,  
Moscow

"The Effect of Elevated Temperature and Humidity of the Environment on Immuno-  
genesis of Swine Infected With Erysipelas"

Moscow, Sel'skokhozyaystvennaya Biologiya, Vol 6, No 4, 1971, pp 591-596

Abstract: Two series of tests were carried out on swine of various weights. One group was kept in normal pigsty conditions at 16-20°C and relative humidity of 75-80%. The other group of similar swine were kept for three days prior to vaccination and for seven days thereafter in a climatic chamber, then transferred to the pigsty. Electric heaters, operating for eight hours daily, produced a temperature of up to 30-32°C, the air was circulated by ventilators, at a velocity of 0.15 m/sec, with a relative humidity of 75-90%. At night the temperature dropped to 22-25°C with humidity of 95-100%. Eighty-three piglets were used in two tests, vaccinated with live erysipelas vaccine strain VR-2. It was demonstrated that in swine kept under conditions of elevated temperature and humidity, the synthesis of protein fractions undergoes a change, the

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USSR

KOVALENKO, Ya., R., et al, Sel'skokhozyaystvennaya Biologiya, Vol 6, No 4, 1971, pp 591-596

phagocytic activity of the blood neutrophils is markedly depressed, nucleic acid synthesis is altered, and the transformation of the blastie elements of lymph tissue into plasmatic ones is retarded. All of this affects the synthesis of specific antibodies. It was determined that elevated temperature and humidity, which produce significant hematological, cytological, and biochemical shifts in the body of swine, are factors which prevent the formation of intense postvaccinal immunity to erysipelas when live VR-2 strain vaccine is used. The surrounding medium and microclimate can have a negative effect on the condition of the swine as stress factors, or be direct causes of disease. Therefore, when measures are being carried out for eradication of swine erysipelas, the effectiveness of vaccination of piglets kept under conditions of elevated temperature and humidity may decline markedly and many of the vaccinated animals fail to acquire any stable immunity.

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USSR

UDC 636+576.8.093.2

KOVALENKO, YA. R., SIDOROV, M. A., TATARINTSEV, N. T., and YABLONSKAYA, I. YA., All-Union Institute of Experimental Veterinary Medicine

"Environmental Factors and Immunobiological Reactivity in Animals"

Moscow, Sel'Skokhozyaystvennaya Biologiya, No 2, 1970, pp 235-244

Abstract: Experiments with swine, mice and rabbits showed that sudden changes in environmental factors (exposure to cold, heat, or sun's rays without preliminary adaptation) and alteration of the diet (reduction of the normal protein content) induced a stress reaction which resulted in a lowering of general resistance and increased susceptibility to erysipelas, cholera, and typhoid. Sharp changes in temperature, maintenance conditions, or diet weakened, prevented, or delayed the development of immunity in vaccinated animals. The mechanism of action of the physical stressors differs from that of hypoproteinemia. The physical stressors stimulate the body's defensive forces, giving rise to the general adaptation syndrome. This weakens the metabolic processes and exhausts the physiological reserves, including the function of the immunocompetent

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USSR

KOVALENKO, YA. R., et al., Moscow, Sel'skokhozyaystvennaya Biologiya, No 2, 1970, pp 235-244

organs, so that the reaction to antigen is not as strong as under ordinary vaccination conditions. With a protein deficiency, the dissimilation process does not take place normally, and the latent energy of cells is not converted to the kinetic energy needed for the proliferation and transformation of lymphoid into plasmatic cells.

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TATARINTSEV, V. M.

Crystal material

NEW METHOD OF OBTAINING REFRACTORY SINGLE CRYSTALS AND FUSED CERAMIC MATERIALS

3143 (171)

12 24.1.74

UIC: 530.1

Article by Candidate of Technical Sciences V. I. Alkhodov, Doctor of Physical and Mathematical Sciences V. I. Alkhodov, Academician A. N. Prokhorov and Candidate of Technical Sciences G. A. Tatarintsev, Moscow, Institute of Crystal Growth, Russian, No 12, December 1973, pp 15-21

Nonmetallic refractory single crystals and fused ceramic materials are needed by many contemporary branches of science, technology and industry for their successful development. One could name a whole series of important national economic, scientific and technological tasks, the solution of which is complicated because of the absence of materials resistant to high temperatures. For example, there still are no electrical heating furnaces capable of working at temperatures of about 2000°C in an oxidizing atmosphere, since ordinary heaters of silicon carbide or molybdenum disilicide cannot assure such a temperature. Meanwhile, high-temperature heating devices working in air-oxygen are extremely necessary for various technological processes: the sintering of ceramics, the synthesis of inorganic compounds, the creation of materials simultaneously electrically conducting and resistant to the action of an oxidizing atmosphere at temperatures of about 2000°C represents an urgent technological problem. Another example is the development of heat-resistant and corrosion-resistant oxide-coated materials for the lining of electrode and electrically insulating walls of the channel, which remains a bottleneck in the problem of creating industrial magnetohydrodynamic generators with an operating cycle. Definite electrophysical properties, great heat resistance and resistance to the destructive effect of alkaline impurity in a high-velocity plasma flux must be combined in such materials. Finally, one can cite such problems as the creation of highly homogeneous heat-resistant corrosion-resistant refractories for the intensification of hydrothermal processes.

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Under copy of document may be found in  
ASSED PHYSICS MUST FIND FOLDER

USSR

UDC 621.365.82

ALEKSANDROV, V. I., MURINA, T. M., ZHEKOV, F. I., and TATARINTSEV, V. M.

"Induced Radiation of  $Tu^{3+}$ ,  $Ho^{3+}$  in Crystals of Zircon Dioxide"

Kratkiye soobshch. po fiz (Brief Communications on Physics), No 2, 1973, pp 17-21 RZh-Fizika, No 9, Sep 73, Abstract No 9D726

Translation: The absorption, luminescence and induced radiation spectra of two kinds of crystals are studied --  $ZrO_2:Tu^{3+}$  (1% by weight),  $ZrO_2:Ho^{3+}$  (1% by weight) -- both with 20%  $Er_2O_3$  by weight. The wavelength of oscillation for  $Ho^{3+}$  was 2.115 microns, for  $Tu^{3+}$  -- 1.896 microns. The lifetime of radiation levels was measured with  $T=77^{\circ}K$  and  $300^{\circ}K$ . It was found that zirconates activated by  $Ho^{3+}$  and  $Tu^{3+}$  have oscillation thresholds intermediate between YAG or  $YAlO_3$  and glasses. Eleven bibliographic citations. S.A.K.

1/1

USSR

UDC 539.89

(3)

ALEKSANDROV, V. I., KAMINSKIY, A. A., MAKSIMOVA, G. V., PROKHOROV, A. M.  
(Academician), SARKISOV, S. E., SOBOL', A. A., TATARINSEV, V. M., Physical  
Institute imeni P. N. Lebedev, and Institute of Crystallography imeni A. V.  
Shubnikov, Academy of Sciences of the USSR, Moscow

"A Study of Stimulated Emission by  $Nd^{3+}$  Ions in Crystals at the  ${}^4F_{3/2} \rightarrow {}^4I_{13/2}$   
Transition"

Moscow, Doklady Akademii Nauk SSSR, Vol 211, No 3, 21 Jul 73, pp 567 - 570

Abstract: The prevailing transition for neodymium is  ${}^4F_{3/2} \rightarrow {}^4I_{11/2}$  (about 60%),  
but the transition to  ${}^4I_{13/2}$  is of both practical and theoretical interest.

The authors studied doped crystals of  $CaF_2-YF_3$ ,  $Ca_2Y_5F_{19}$ ,  $Ca_5(PO_4)_3F$ ,  $ZrO_2-Y_2O_3$ ,  
and  $HfO_2-Y_2O_3$ . Samples were tested at 77°K and 300°K. Laser action was observed  
at three frequencies near 1.35 microns in yttriofluorite, at two points in  
tysonite, and at several locations in fluorapatite with a 90° angle between the  
optical and geometric axes. Analysis of the low-temperature spectra showed that  
in all observations their lines were insensitive to concentration.

1/2 The cubic crystals of  $ZrO_2-Y_2O_3$  and  $HfO_2-Y_2O_3$  with  $Nd^{3+}$  ions showed very

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ALEKSANDROV, V. I., et al., Moscow, Doklady Akademii Nauk SSSR, Vol 211, No 3,  
21 Jul 73, pp 567 - 570

similar properties, and a spectrum is given for only the first of these. It shows  
lasing at both the transitions.

2/2

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USSR

ALEKSANDROV, V. I., VORON'KO, YU. K., MIKHALEVICH, V. G., OSIKO, V. V.,  
PROKHOROV, A. M., Academician, TATARINTSEV, V. M., UDOVENCHIK, V. T., and  
SHIPULO, G. P., Physics Institute imeni P. N. Lebedev, USSR Academy of  
Sciences, Moscow

"Spectroscopic Properties and Generation of  $Nd^{3+}$  in Crystals of  $ZnO_2$  and  $HfO_2$ "  
Doklady Akademii Nauk SSSR, Vol 199, No 6, 1971, pp 1282-1283

Abstract: The spectroscopic properties of  $Nd^{3+}$  are known in various crystals and glasses. Materials such as crystals of  $V_3Al_5O_{12}$  and silicate glasses activated with neodymium have been widely used in lasers. The authors of this article first describe the spectroscopic properties and generation of  $Nd^{3+}$  in cubic crystals of  $ZrO_2$  and  $HfO_2$ . These materials have a fluorite type crystal lattice in which the  $Nd^{3+}$  ions replace the tetravalent ions of zirconium or hafnium. In addition to the  $Nd^{3+}$  the crystals contained impurities of  $CaO$  or  $V_2O_3$  for the purpose of stabilizing the cubic structure of the  $ZrO_2$  and  $HfO_2$ . The authors describe the experiment and give 1 figure and 1 table to illustrate the results. The figure graphically shows the optical spectra of  $HfO_2-Nd^{3+}$  crystals, including the spectrum of absorption, the

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USSR

ALEKSANDROV, V. I., et al., Doklady Akademii Nauk SSSR, Vol 199, No 6, 1971, pp 1282-1283

absorption group, and the spectrum of luminescence transition. The table gives two structural types of crystals with their properties. The article contains 1 figure, 1 table, and 9 bibliographic entries.

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1/2 009  
UNCLASSIFIED  
TITLE--CHEMICAL SCHEME AND STRUCTURE OF THE MATHEMATICAL DESCRIPTION OF  
HYDROCRACKING -U-  
AUTHOR--(05)-ZHOROV, YU.M., PANCHENKOV, G.M., TATARINTSEVA, G.M., KUZMIN,  
S.T., ZENKOVSKIY, S.M.  
COUNTRY OF INFO--USSR  
PROCESSING DATE--13NOV70  
SOURCE--NEFTEPEKERAB. NEFTEKHIM. (MOSCOW) 1970, (5), 1-3  
DATE PUBLISHED-----70  
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HYDROCRACKING  
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PROXY REEL/FRA--3005/1951  
CIRC ACCESSION NO--AP0133795  
STEP NO--UR/0318/70/000/005/0001/0003  
UNCLASSIFIED



2/2 009  
CIRC ACCESSION NO--AP0133795 UNCLASSIFIED  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SCHEME BASED ON THE MAIN CHEM.  
CONVERSIONS OF THE RAW MATERIAL WAS DEVELOPED FOR THE 1 STAGE CRACKING  
OF VACUUM DISTILLATES, BUT IS WAS CONSIDERED A 2, OR 3 STAGE PROCESS, IF  
IT TOOK PLACE UNDER MILD OR SEVERE CONDITIONS, RESP. THE WT. COEFFS. OF  
THE SCHEME WERE CONST. FOR CONST. QUALITY OF THE STOCK. A MATH.  
DESCRIPTION WAS DEVELOPED FOR AN ADIABATIC REACTOR WITH FIXED CATALYST  
BED.

PROCESSING DATE--13NOV70

UNCLASSIFIED

Acc. Nr:

AP0050147

Abstracting Service:



BIOLOGICAL ABST.

Ref. Code:

370 URO504

25325. TATARKINA, N. D. (Vladivostok Med. Inst., Vladivostok, USSR.)  
 O soderzhanii kalii i natriya v krovi i v moche u bol'nykh toksicheskim  
 zobom. [Sodium and potassium content in the blood and urine of pa-  
 tients with toxic goiter.] TER ARKH 41(7): 93-96, 1969. [Engl.  
 sum.] --K and Na were studied in erythrocytes and arterial and venous  
 plasma, and in the urine in 120 patients with toxic goiter. In response  
 to 3-day stimulation with ACTH there was a mineralsteroid action of  
 glucosteroids. Loading with K chloride showed increase reserve pos-  
 sibilities of the mineralsteroid function of the adrenal cortex in patients  
 with mild and moderate forms of thyrotoxicosis, while in severe forms  
 the cortex was exhausted. --B. H.

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BIOLOGICAL ABSTRACTS-70

4P 0502

13687. TATAROVA, N. (Vladivostok Med. Inst., Vladivostok, USSR.) O metabolitakh gidrokortizona pri toksicheskoy zeb. (Hydrocortisone metabolites in toxic goiter.) PROBL. ENDOKRINOL. 15(4): 13-14, 1969. [Engl. sum.] The content of 17-oxycorticosteroids (free and sum total) was examined in 120 patients suffering from toxic goiter. Hydrocortisone metabolites were studied in 55 of these. There was an increased 17-oxycorticosteroid content and disturbance of cortisol metabolism in the direction of cortisone and tetrahydrocortisone formation. --B. H.

19701209

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TECHNICAL TRANSLATION

1000 / ESTC-IT-24-2015-12

37 Aug 72

ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION  
PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE, KIEV,  
SEPTEMBER 1968

FOREIGN TITLE: ПРОБЛЕМЫ ПЕРЕДАЧИ ИНФОРМАЦИИ ЛАЗЕРНЫМ ИЗЛУЧЕНИЕМ

AUTHOR: I. A. DERUGIN, ET AL.

SOURCE: KIEV ORDER OF LENIN STATE UNIVERSITY  
ITEM T.C. SCHERCHENKO

Translated for ESTC by ACST

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1/11/11 Page 1

Analysis and Testing

USSR

UDC 620.179.14

GORAZDOVSKIY, T. YA., and TATARNIKOV, V. M.

"Inductive Measuring of Rheologic Voltage in Nonferromagnetic Metals"

Sverdlovsk, Defektoskopiya, No 5, Oct 73, pp 30-33

Abstract: An experimental study is made of the possible exposure and measurement of the anisotropy of rheologic voltage using the method of eddy currents. The developed method and the apparatus can be utilized for measuring voltage in nonferromagnetic metals and for contactless measuring of anisotropy of electrical conductivity as well as for the investigation of the kinetics of development of processes during longitudinal and latitudinal deformation and for the establishment of the function of the Poisson ratio. The use of a superimposed inductive eddy-current linear detecting element is proposed which produces a linearly localized electromagnetic field in the surface layer of the studied material. Two illustrations.

USSR

UDC 669.721.053.4.068

ILLYUVIYEVA, G. V., TATARSKAYA, M. G., TAKHAFUAD, A.

"Composition and Certain Properties of Magnesium Naphthenate"

Zap. Leningr. gorn. in-ta [Writings of Leningrad Mining Institute], Vol 50, No 3, 1970, pp 101-108 (Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract No 2 G183 by the authors)

Translation: A study of the influence of solvents on the extraction of Mg from aqueous solutions of naphthenic acid indicates that with sufficient solubility of the compound being extracted, its composition and the completeness of extraction are independent of the properties of the solvent. The determining factor is the pH. Acid or solvated neutral Mg naphthenates cause the formation of strong flakes of non-sulfide Ca, Ba,  $MgCO_3$  and dolomite minerals, making their flotation difficult. Basic Mg naphthenates do not have these properties and therefore practically do not change the flotation indicators. 3 figures; 2 tables; 10 biblio. refs.

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UNCLASSIFIED

PROCESSING DATE--17JUL70

TITLE--NUCLEASES OF ACTINOMYCETES BELONGING TO THE BLUE GROUP -U-

AUTHOR--VERZILCH, V.V., TATARSKAYA, R.I., KRASILNIKOV, N.A.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA BIOLOGICHESKAYA, 1970, NR 1,

PP 133-136

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ACTINOMYCETES, MICROBIOLOGY, ENZYME

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

RCXY REEL/FRA--1579/0728

STEP NC--UR/C216/70/000/001/0133/0136

IRC ACCESSION NC--APOC47226

END OF ACCESSION



Acc. Nr:

AP0047226

Ref. Code: UR 0216

PRIMARY SOURCE: Izvestiya Akademii Nauk SSSR, Seriya  
Biologicheskaya, 1970, Nr 1, pp 133-136

Verzilov, V. V.; Tatarskaya, R. I.; Krasil'nikov, N. A.

NUCLEASES OF ACTINOMYCETES BELONGING TO THE BLUE GROUP

*Institute Microbiology, Academy of Sciences USSR*

Investigations of the blue group actinomycetes has shown that the cultural fluid of the strains pertaining to this group displays nuclease activity which differs in the case of different strains. Some strains produce a thermostable nuclease which retains its activity after heating in an acid medium.

The enzyme produced by other strains is destroyed by heating and may be regarded as a phosphodiesterase. Many other strains displayed a partial activity decrease following heating suggesting that these strains produce several different nucleases.

All strains checked with respect to their DNA activity have shown their ability to split this compound.

REEL/FRAME

19790728

44 2

USSR

UDC: 538.56:519.25

KLYATSKIN, V. I. and TATARSKIY, V. I., Institute of Atmospheric Physics

"Statistical Theory of the Propagation of Light in a Turbulent Medium"

Gor'kiy, Izvestiya VUZ--Radiofizika, No 10, 1972, pp 1433-1455

Abstract: This paper is a review of the theoretical work that has been done in the field of the propagation of electromagnetic waves in a medium with random large-scale nonuniformities. It is divided into two parts: the first deals with the general view of light propagation in a turbulent medium and considers a stochastic equation describing the process of wave propagation in a random medium to yield some precise conclusions; the second considers a model in which the longitudinal correlation radius of the dielectric permeability can be neglected in comparison with all the longitudinal dimensions of the problem. This latter assumption is equivalent to replacing the real correlation function of the index of refraction by the delta function in the longitudinal direction and permits obtaining a set of closed integral equations for all moments of the wave field. Also discussed in this survey are the

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USSR

KLYATSKIN, V. I., et al, Izvestiya VUZ---Radiofizika, No 10, 1972,  
pp 1433-1455

approximation of geometrical optics, diffusion in randomly non-  
uniform media, and amplitude-phase fluctuations of the light wave.  
A bibliography of 48 titles is appended.

2/2

Electromagnetic Wave Propagation

USSR

UDC: 621.371.255

KON, A. I. and TATARSKIY, V. I., Institute of Atmospheric Physics

"Theory of the Propagation of Partially Coherent Light Beams in a Turbulent Atmosphere"

Gor'kiy, Izvestiya VUZ--Radiofizika, No 10, 1972, pp 1547-1554

Abstract: An analysis is made of the effect of turbulent fluctuations in dielectric permeability on the characteristic of a light beam describing it by a second-order coherence function. In most theoretical descriptions of light propagation in a nonuniform medium, purely coherent radiation sources are considered. However, the degree of coherence often turns out to be the decisive factor. Thus, sources of partially coherent radiation in a turbulent medium are considered in this article along with the effect of the degree of coherence on the light-beam characteristic. The analysis begins with the expression for the coherence function of a fully coherent source and a solution for that expression. The case of a partially coherent source is then discussed, and an approximation equation for the structural function of the dielectric permeability is found. An expression is also obtained for the  $1/2$

USSR

KON, A. I., et al, Izvestiya VUZ--Radiofizika, No 10, 1972, pp 1547-1554

average intensity of the radiation at the beam axis; curves for the ratio between this intensity for partially and fully coherent beams are plotted.

2/2

USSR

ZAVOROTNYI, V. U., TATARSKIY, V. I. (Institute of the Physics of the Atmosphere, USSR Academy of Sciences

"Quantum Fluctuations of a Photon Flux in Propagation Through Free Space and in the Diffraction Pattern"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, February 1973, pp 453-461

Abstract: Fluctuations in the number of photons,  $\nu_{\Sigma T}$ , traversing a surface of area  $\Sigma$  during a large time  $T$  are considered. The mean values  $\langle \nu_{\Sigma T} \rangle$ , mean square values  $\langle (\Delta \nu_{\Sigma T})^2 \rangle$ , and space correlation functions of  $\nu_{\Sigma T}$  for a coherent monochromatic source and radiation from a thermal source passing through a narrow filter are found. For light propagating in free space and  $\Sigma \gg \lambda^2$  the values obtained coincide with those for photocounts. For a plane wave the transverse correlation radius is of the order of  $\lambda$  if  $\Sigma \ll \lambda^2$  and of the order of  $\sqrt{\Sigma}$  if  $\Sigma \gg \lambda^2$ . The values of  $\langle \nu_{\Sigma T} \rangle$  and  $\langle (\Delta \nu_{\Sigma T})^2 \rangle$  are calculated in the scalar approximation for the diffraction pattern from an aperture. The transverse correlation radius for  $\nu_{\Sigma T}$  in this case is of the order of magnitude of the diffraction lobe; the  $\langle (\Delta \nu_{\Sigma T})^2 \rangle / \langle \nu_{\Sigma T} \rangle < 1$  if  $\Sigma$  is small compared to the size of the central diffraction ratio peak.

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USSR

UDC 538.566

BARABANENKOV, Yu. N., KRAVISOV, Yu. A., RYTOV, S. M., and TATARSKIY, V. I.,  
Radio Engineering Institute and Institute of Atmospheric Physics, both of the  
USSR Academy of Sciences, and the All-Union Scientific Research Institute of  
Physical-Optical Measurements

"Status of the Theory of Wave Propagation in a Randomly-Inhomogeneous Medium"

Moscow, Uspekhi Fizicheskikh Nauk, Vol 102, No 1, 1970, pp 1-42

Abstract: Existing methods of calculation in the theory of wave propagation in randomly-inhomogeneous media and the limits to their applicability, along with recently introduced methods of examining the multiple scattering of waves, such as the Markovian approximation and the parabolic equation method, or the use of procedures first developed in quantum electrodynamics and now used to sum up series in perturbation theory are surveyed in this review of 542 literature references. Due to the scope of this field of investigation, only problems of bulk scattering in continuous media for free propagation are examined. The omitted areas thus include: reflection at randomly-uneven surfaces; scattering at discrete disseminates, such as artificial scattering materials, aerosols, raindrops, and snow in the atmosphere, or bubbles and fishes in the water; and the propagation of waves in randomly-inhomogeneous feeder cables.

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Acc. Nr: **AP0043791**

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy  
Fiziki, 1970, Vol 58, Nr 2, pp 624-634

ON THE PARABOLIC EQUATION APPROXIMATION IN PROBLEMS  
ON PROPAGATION OF WAVES IN A MEDIUM WITH RANDOM  
INHOMOGENEITIES

Klyatskin, V. I.; Tatarskiy, V. I.

Propagation of monochromatic light in a medium with large scale (compared to wavelength) dielectric permeability inhomogeneities is considered for the case when depolarization is small and the scalar wave equation can be applied. The solution can be written in an operator form or as a continual integral by applying the Fadkin technique. If the distribution of the dielectric permeability probabilities is Gaussian, averaging can be carried out, and expressions can be obtained for the mean field strength, mutual coherence function etc. The approximation of the parabolic equation and of inhomogeneities delta-correlated along the direction of propagation of the wave (Markovian model) is considered in the case when the continual integrals for the mean field and the mutual coherence functions can be evaluated and explicit expressions can

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REEL/FRAME  
19770199

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AP0043791

be derived for these quantities. By writing the solution of the total scalar equation in the form of a continual integral one can find the corrections to the solution of the parabolic equation for the mean field and on their basis formulate the conditions of applicability of the parabolic approximation. Besides the well known purely geometric conditions, the condition of smallness of scattering per wave length and smallness of the radius of the first Fresnel zone compared to the extinction length arises.

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Acc. Nr:

AP0048443

Abstracting Service:

INTERNAT. AEROSPACE ABST 5-78 UR0030

Ref. Code:

A70-25126 # Certain characteristics of light propagation in different layers of the atmosphere (Nekotorye osobennosti rasprostraneniia sveta v razlichnykh sloiakh atmosfery). G. V. Rozenberg, V. I. Tatarskiy and V. I. Dianov-Klokov. *Akademiia Nauk SSSR, Vestnik*, vol. 40, Feb. 1970, p. 21-29. In Russian.

Study of physical phenomena involved in the scattering of light in atmospheric layers, turbulent disturbances of light beams, and light absorption by binary oxygen complexes. Diagrams are presented showing the vertical behavior of the ratio of the scattering coefficient of the dispersed phase to that of the gas phase (wavelength of 0.65 micron); the behavior of the scattering coefficient of atmospheric mist as a function of the relative humidity; and typical spectral relations of the scattering coefficient in the atmospheric transmittance windows for finely and coarsely dispersed atmospheric mist. Comparative graphs of theoretical and experimental mean-square values of the fluctuations of the light intensity logarithm (for a helium-neon laser) and of the mean diameter of a light beam as a function of the meteorological conditions are also given. The importance of considering the influence of binary oxygen complexes (particularly in the ultraviolet) in the construction of optical models of planetary atmospheres is noted.

V.P.

REEL/FRAME

19800151

USSR

KLYATSKIN, V. I., ~~TATARSKIY, V. I.~~ (Institute of Physics of the Atmosphere,  
USSR Academy of Sciences)

"Approximation of a Parabolic Equation in Problems of Wave Propagation in a  
Medium with Random Inhomogeneities"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, February 1970, pp  
624-634

Abstract: Propagation of monochromatic light in a medium with large-scale  
(compared to wave length) inhomogeneities in dielectric permeability is con-  
sidered for the case in which depolarization is small and the scalar wave  
equation can be applied. The solution can be written in an operator form or  
as a continuous integral by applying the Fradkin technique. If the probab-  
ility distribution of the dielectric permeability is Gaussian, averaging can be  
carried out and expressions can be obtained for the mean field strength,  
mutual coherence function, etc. The approximation of the parabolic equation  
and of inhomogeneities, delta-correlated along the direction of propagation of  
the wave (Markovian model), is considered for the case in which the continuous  
integrals for the mean field and the mutual coherence functions can be evaluated  
1/2

USSR

KLYATSKIN, V. I., TATARSKIY, V. I., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, February 1970, pp 624-634

and explicit expressions can be derived for these quantities. By writing the solution of the total scalar equation in the form of a continuous integral, one can find the corrections to the solution of the parabolic equation for the mean field and on their basis formulate the conditions of applicability of the parabolic approximation. Besides the well-known, purely "geometric" conditions, the condition of smallness of scattering per wave length and smallness of the radius of the first Fresnel zone compared with the extinction length arises.

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7433

CSO: 1862-W

- END -

TATEUSOV, G. O.

SO:JPRS 547140  
29 DEC 91

UDC: 614.355(049.3)

WITH REFERENCE TO FORMATION AND TASKS OF MILITARY SOCIAL HYGIENE

(Military Science)  
Article by G.O. Tateusov, Candidate of Medical Sciences; Moscow, Sovetskoye Zdravookhraneniye, Russian, No 11, 1971, submitted 13 May 1971, pp 45-46

The article by Professor O.K. Gavrilov\* raises some urgent problems with regard to development of social hygiene. The author writes that "war is a social phenomenon that affects the fundamental aspects of life of members of society and of society as a whole". Let us try to consider some aspects of the effect of war on human health from the standpoint of the problems set forth in that article.

Investigation of morbidity in time of war is one of the most important tasks of social hygiene. The lower living conditions, chronic undernourishing, starvation in the case of blockades, poor housing, serious mental trauma related to the loss of friends and relatives associated with war induce mass development of diseases related to profound neurosomatic changes. The appearance of a considerable number of cases of hypertensive disease, alimentary dystrophy, and hypovitaminosis is the most striking example of the effect of war on the health of the people.

In time of war specific diseases and ailments appear and develop, and they are most vividly expressed in each military situation in specific places and at specific times. A set of various factors of wartime plays a significant part in the etiology of these diseases: socioeconomic, political, and moral.

A historical approach to investigation of these issues will permit demonstration of the specificity of wartime pathology under various historical conditions and when specific military situations are repeated, and will help develop the most rational preventive and therapeutic measures. This is all the more important since the effect on human health is a long acting, continuous, and the most serious factor among the consequences of war. A study of

\*O.K. Gavrilov, "Formation and Tasks of the Social Hygiene of War," published for the purpose of discussion, Sovetskoye Zdravookhraneniye, No 2, 1971, p 10.  
\*Ibid, p 11.

Military  
Medicine

USSR

UDC 536.46:533.6

KORBEYNICHEV, O.P., SHMELEV, K. S., TATEVOSKYAN, A. V.

"A Model of Combustion Catalysis for Single-Component Fuel (As Applied to Aluminum Perchlorate)"

Fiz. gorennya i vzryva (Physics of Combustion and Explosion), 1972, Vol. 8, No. 3, pp 378-388 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B961)

Translation: According to the proposed model catalyzer particles are suspended in a gas flow and simultaneously there occurs a homogeneous reaction in the gas and a heterogeneous reaction on particles of the catalyzer. An expression is given for the supplementary flow of heat to fresh material due to catalytic reaction for the case when the latter occurs in a kinetic regime according to a first order equation. An expression is given for the effective constant of the catalytic reaction. Also considered is the case when catalyzer particles are located on the surface of a hot charge. A two-zone combustion model of aluminum perchlorate is postulated and the increase in combustion rate due to the introduction of the catalyzer is calculated numerically within the framework of this model. N. N. Bakhman.

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1/2 009

UNCLASSIFIED

PROCESSING DATE--11DEC70

TITLE--UNSATURATED LACTONES. I. SYNTHESIS OF SUBSTITUTED UNSATURATED GAMMA  
LACTONES BY CONDENSING TERTIARY ALPHA OXO ALCOHOLS WITH MALONIC ESTER  
AUTHOR--(05)-AVETISYAN, A.A., TATEVUSYAN, G.E., MANGASARYAN, T.S.A.,  
MATSOYAN, S.G., GAGYAN, M.T.  
COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(5), 962-4 (RUSS)

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ESTERIFICATION, CHEMICAL SYNTHESIS, LACTONE, ALCOHOL,  
CONDENSATION REACTION, MOLECULAR STRUCTURE, TERTIARY ALCOHOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRACTION--3006/1316

STEP NO--UR/0366/70/006/005/0962/0964

CIRC ACCESSION NO--AP0134990

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0134990

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF RR C(OH)COME WITH CH SUB2 (CO SUB2 ET) IN ABS. ETCH CNTG. NA GAVE 5,R, 5,R PRIME DISTRIBUTED 4,METHYL,DELTA ALPHA,BETA,BUTENOLIDES (R AND R PRIME ARE NE AND ME, ME AND ET OR (CH SUB2) SUB5). THE REACTION INVOLVES TRANSESTERIFICATION. THE INTERMEDIATE ESTER MECOCNE SUB2 O SUB2 CCH SUB2 CO SUB2 ET WAS ISOLATED AND ITS STRUCTURE ESTABLISHED BY SYNTHESIS. FACILITY: EREVAN. GOS. UNIV., EREVAN, USSR.

UNCLASSIFIED



Alkaloids

USSR

UDC 542.91+547.752

BOYAKHCHYAN, A. P., OGANESYAN, I. L., and ~~TATEVOSYAN, G. T.~~, Institute of Fine Organic Chemistry, Acad. Sc. Armenian SSR, Yerevan

"Indole Derivatives. XXXI. Indole Analogs of Erythrine Alkaloids With a Six-Membered D Ring"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 24, No 1, 1971, pp 64-69

Abstract: Synthesis of benz(j)indolo(2,3-h)quinolizine type compounds is described. A mixture of tryptamine,  $\beta$ -(2-ketocyclohexyl)propionic acid and xylene was refluxed in a nitrogen atmosphere, xylene was removed, the residue dissolved in chloroform, washed and dried, and the solvent removed. Crystallization from methanol gave an unsaturated lactam, m.p. 198° which could be converted to 7-oxo-1,2,3,4,4a,5,6,7,9,10-decahydrobenz(j)indolo-(2,3-h)quinolizine (I), m.p. 287° by treatment with hydrochloric acid. The enol lactone of  $\beta$ -(2-oxocyclohexyl)propionic acid reacted with tryptamine in benzene, the crystalline material formed was separated, the benzene solution was chromatographed on an alumina column to give a tryptamide of  $\beta$ -(2-oxocyclohexyl)propionic acid, m.p. 107°, which again could be converted to (I) by treatment with HCl. In a similar manner 7-oxo-9-methyl-1,2,3,4,-  
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USSR

BOYAKHCHYAN, A. P., et al., Armyanskiy Khimicheskiy Zhurnal, Vol 24, No 1, 1971, pp 64-69

4a,5,6,7,9,10-decahydrobenz(j)indolo(2,3-h)quinolizine (II), m.p. 218° was prepared. Lithium aluminum hydride reduction of (I) gave 1,2,3,4,4a,5,6,7,-9,10-decahydrobenz(j)indolo(2,3-h)quinolizine, m.p. 69-70°, and the reduction of (II) gave 9-methyl-1,2,3,4,4a,5,6,7,9,10-decahydrobenz(j)indolo(2,3-h)-quinolizine, m.p. 51-52°.

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USSR

UDC 547.752+547.759.32

AVANESOVA, N. A., and TATEVOSYAN, G. T., Institute of Fine Organic Chemistry, Yerevan, Academy of Sciences Armenian SSR

"Indole Derivatives. XXXI. Dialkylaminoethyl Esters of Isomeric 1,4-Dimethoxy-5,6-dihydro-7H-benzo(c)carbazole-carboxylic Acids"

Yerevan, Armyanskiy Khimicheskii Zhurnal, Vol 23, No 3, 1970, pp 280-284

Abstract: Amino esters of isomeric 1,4-dimethoxy-5,6-dihydro-7H-benzo(c)carbazole-carboxylic acids (I) are produced using 5,8-dimethoxy- $\beta$ -tetralone (II) as a raw material. The products of Fischer condensation of Ketone II with phenylhydrazine and isomeric carboxy-phenylhydrazines have the structure of 1,4-dimethoxy-5,6-dihydro-7H-benzo(c)-carbazole and its carbethoxy derivatives (III). As distinct from the products of condensation of ortho- and para-carboxyphenylhydrazines with ketone II, the product obtained with meta-carboxyphenylhydrazine was a mixture of two isomeric esters (III) ( $R = CO_2C_2H_5$ ) with carbethoxyl groups in positions 9 and 11. Thin-layer chromatography revealed that one of the isomers was present in trace quantities. Dehydration of compound III ( $R = H$ ) with a palladium catalyst yielded aromatic 1,4-dimethoxy-7H-benzo(c)carbazole. Alkali hydrolysis of isomeric

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USSR

AVANESOVA, D. A., et al., Armyanskiy Khimicheskiy Zhurnal, Vol 23,  
No 3, 1970, pp 280-284

esters III ( $R = CO_2C_2H_5$ ) produced the corresponding acids while ester exchange in the presence of catalytic quantities of sodium resulted in synthesis of the desired products (I). The results of an investigation of the biological properties of these amino esters will be published in a separate paper.

2/2

1/2 023 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--INDOLE DERIVATIVES. XXX. 2,2,DIMETHYL, AND 2,2,8,  
TRIMETHYL,4, HYDROXY,1,2,3,4,4A,5,8,9,OCTAHYDRO,6H,BENZ I INDOLO 2,3,G  
AUTHOR-(02)-BOYAKHCHYAN, A.P., TATEVOSYAN, G.T.  
COUNTRY OF INFO--USSR  
SOURCE--ARM. KHIM. ZH. 1970, 23(1), 65-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY  
TOPIC TAGS--INDOLE DERIVATIVE, HETEROCYCLIC NITROGEN COMPOUND, ALKALOID,  
HYDROXYL RADICAL, UV SPECTRUM, IR SPECTRUM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3007/0786 STEP NO--UR/0426/70/023/001/0065/0068  
CIRC ACCESSION NO--AP0136222  
UNCLASSIFIED



## Nitrogen Compounds

UDC: 542.91 + 547.759.4

USSR

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

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

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

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

USSR

UDC: 542.91 + 547.94

BOYAKHCHYAN, A. P., and TATEVOSYAN, G. T., Institute of Fine Organic Chemistry, Yerevan, Academy of Sciences Armenian SSR

"Indole Derivatives. XXX. 2,2-Dimethyl- and 2,2,8-Trimethyl-4-hydroxy-1,2,3,4,4a,5,8,9-octahydro-6H-benz(i)indolo-(2,3-g)-indolizines"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 23, No 1, 1970, pp 65-68

Abstract: A mixture of 2 g 2,6-diketo-4,4-dimethylcyclohexyl acetic acid and 1.6 g tryptamine was refluxed for 5 hrs in xylene under a stream of nitrogen. The solvent was then evaporated and the residue dissolved in chloroform, washed, dried and evaporated. The oily residue was recrystallized from aqueous methanol to yield 2 g of 2,2-dimethyl-4,6-diketo-1,2,3,4,4a,5,8,9-octahydro-6H-benz(i)indolo-(2,3-g)-indolizine, m.p. 246° (I). In an analogous manner the 2,2,8-trimethyl-4,6-diketo-1,2,3,4,4a,5,8,9-octahydro-6H-benz(i)indolo-(2,3-g)-indolizine (II), m.p. 208° was obtained. The above compounds were reduced to 4-hydroxy derivatives. To an ether solution of lithium aluminum hydride (I) or (II) dissolved in a mixture of dioxane, anisole and ether was added, refluxed for 10 hrs then decomposed with water. The mixture was separated, dried and the hydrochloride of

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USSR

BOYAKHCHYAN, A. P., and TATEVOSYAN, G. T., *Armyanskiy Khimicheskiy Zhurnal*, Vol 23, No 1, 1970, pp 65-68

2,2-dimethyl-4-hydroxy-1,2,3,4,4a,5,8,9-octahydro-6H-benz(i)indolo-(2,3-g)-indolizine (III), m.p.  $146^{\circ}$  was obtained from (I), while (II) gave the hydrochloride of 2,2,8-trimethyl-4-hydroxy-1,2,3,4,4a,5,8,9-octahydro-6H-benz(i)indolo-(2,3-g)-indolizine (IV), m.p.  $123^{\circ}$ . The free base of (III) melted at  $82-83^{\circ}$ , while the base of (IV) proved to be an oil.

2/2

USSR

UDC 547.752+547.785.5

KARAGEZYAN, K. S., KHAZHAKYAN, L. V., GRIGORYAN, R. T., and ~~TATUMOSYAN, G. T.~~  
Institute of Fine Organic Chemistry imeni A. L. Mndzhoyana, Academy of  
Sciences Armenian SSR (Yerevan) "Indol Derivatives. XXXVI. Derivatives of 3-  
( $\beta$ -benzimidazolyl-2') ethyl indols"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 25, No 1, 1972, pp 54-60

Abstract: The compounds 2-methyl-3-( $\beta$ -benzimidazolyl-2')- and 2-methyl-3-  
( $\beta$ -methyl- $\beta$ -benzimidazolyl-2')-ethylindol were prepared for possible use in  
the pharmaceutical industry. The synthesis of intermediates is given together  
with melting points, calculated and experimentally determined composition, and  
IR and UV spectral data.

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- 15 -

USSR

UDC 542.91+547.752

POGOSYAN, S. A., TERSYAN, A. G., VAKUNTS, O. I., TATEVOSYAN, G. T., Institute of Fine Organic Chemistry imeni A. L. Mndzhoyan, Academy of Sciences of the ArmSSR, Yerevan

"Indole Derivatives. XLIII. 2(3)-Chloro-1,4,4a,5,7,8,13b,13c-octahydro-13H-benz(g)indolo(2,3-a)indolizine and 2(3)-Chloro-1,4,4a,5,7,8,9,14,14b,14c-decahydroisoindolo(1,2-a)indolo(2,3-c)asepine"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 26, No 2, 1973, pp 153-158

Abstract: The paper describes synthesis of 2(3)-chloro-1,4,4a,5,7,8,13b,13c-octahydro-13H-benz(g)indolo(2,3-a)indolizine and 2(3)-chloro-1,4,4a,5,7,8,9,14,14b,14c-decahydroisoindolo(1,2-a)indolo(2,3-c)asepine. The biological properties of salts (hydrochlorides and methiodides) of these bases were studied. The results of these studies will be given in a future paper.

1/1

- 60 -

USSR

UDC 678.089.72

TATEVOSYAN, YE. L., FILATOV, I. S., PAVLOV, N. N., and MATVEYEV, YE. N.

"Aging of Plastics Under Tropical Conditions"

Moscow, *Plasticheskiye Massy*, No 3, 1972, pp 64-67

Abstract: Stability of plastics was investigated under conditions of a dry and a humid hot climate. Comparison of laboratory and field methods showed that a 3 month laboratory test corresponded to 2 years of field study. Phenolics were found to be stable under tropical conditions for 5 years, and on the basis of the insignificant changes which took place, the materials may be guaranteed for up to ten years. Epoxy resins and compounds made from them were stable up to two years at best, some parameters changing significantly after 4 months. The polyamides begin to deteriorate after 2.5 months, unless they are modified with fillers. The most significant changes were found to be due to the radiation; these types of materials could possibly be used in dry tropic climate, provided they were not exposed to direct sunlight. Polystyrenes maintain their properties up to six months; when copolymerized with methacrylate or methyl acrylate, their stability increases to about 2 years. Nonstabilized polyolefines maintain their properties for three months, the stabilizer acts for up to one year; the deterioration of this polymer is due to solar radiation.

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TATOCHENKO, V. K.

FOURTEENTH INTERNATIONAL PUBLIC HEALTH ASSEMBLY

[Article by Professor Yu.P. Lelitsyn, V.K. Tatochenko, doctor of medical sciences, and R.N. Filitsky, Moscow, Sovetskoye Zdravookhraneniye, Russian, No 2, 1972, submitted 9 June 1971, pp 74-77]

ENC: 614.2:061.3(100)"1971"

JPRS 55570  
89 Mar 70

In May 1971, the 14th International Public Health Assembly, the largest forum of the world's medical community, convened. As we know, the Public Health Assembly is an annual meeting of representatives of member nations of WHO. At the present time, when one more nation was accepted as a member of the WHO at a routine Assembly, this organization consists of 133 nations, and it is the largest in the system of the UN.

At the Assembly, the Soviet delegation was headed by V.B. Petrovskiy, USSR Minister of Health; it also included the Uzbek Minister of Health, Professor K.S. Zaitov, deputy USSR Minister of Health D.D. Venediktov and P.N. Burasov, the authors of the present article, and others.

The Assembly discussed about 70 issues, including the report of the director-general on the activities of WHO in 1970, adoption of its new general program for five years, consideration of the cholera pandemic, amelioration of the environment and eradication of smallpox, control over quality and distribution of drugs, training national public health personnel, the WHO program and budget, acceptance of new members, etc.

The director-general began his report about WHO activities in 1970 with a presentation of steps to control cholera which member nations and WHO and its assistance to nations, especially with respect to delivery of cholera vaccine, made it possible to prepare for the cholera pandemic. Further, describing the activities of WHO in the control of infectious disease and first of all the successful global campaign to eradicate smallpox, the director-general mentioned the importance of studying the problem of protecting the environment. He stressed the significance of controlling environmental pollution by pesticides, and first of all DDT and other chemicals. As before, concern was expressed about development of public health services and training national personnel in formerly undeveloped countries.

USSR

UDC: 612.014.427

TATOYAN, S. Kh., Laboratory of Physiology of Higher Nervous Activity, Institute of Experimental Pathology and Therapy, Academy of Medical Sciences USSR, Sukhumi

"A Miniature Single-Channel Radiotelemetric Transmitter for Recording the EKG in Animals and Man"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova, Vol 57, No 1, 1971, pp 130-132

Abstract: A miniature single-channel transistorized transmitter was designed for the radiotelemetric recording of the EKG of monkeys while they retain complete freedom of motion. A circuit diagram of the transmitter is given. Tests of the device carried out on monkeys, dogs, and man showed that satisfactory recording of the EKG could be obtained at distances up to 40 m. With one set of storage batteries weighing less than 55 g, the transmitter could operate continuously for 8 hrs.

1/1

USSR

UDC 612.172.4-019:599.824-52#

TATOYAN, S. Kh. Laboratory of the Physiology and Pathology of Higher Nervous Activity, Institute of Experimental Pathology and Therapy, Academy of Medical Sciences USSR, Sukhumi

"The Circadian Dynamics of the Electrocardiogram in Macaca rhesus, According to Telemetry Data"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 4, 1970, pp 29-32

Abstract: Experiments were conducted with 10 Macaca rhesus monkeys, aged 2 to 6 years. Radiometric registration of the electrocardiogram was done with a specially designed transmitter of small size and weight. This technique permitted recording of electrocardiograms in monkeys at complete rest, without the presence of human beings, and without fixation of the animal. From these studies, it was possible to establish the true standards of the pulse rate (125-115 per minute), as well as the circadian dynamics of the pulse rate in monkeys (during the day -- 125-115, at night -- 90-95 per minute). These values are much below those established for monkeys according to data of electrocardiograms recorded with the aid of wires.

1/2 036 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--THE CIRCADIAN DYNAMICS OF THE ELECTROCARDIOGRAM IN MACACA RHESUS  
OBTAINED DURING TELEMETRIC REGISTRATION -U-  
AUTHOR--TATOYAN, S.KH.  
COUNTRY OF INFO--USSR  
SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69,  
NR 4, PP 29-32  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--CIRCADIAN RHYTHM, MONKEY, ELECTROCARDIOGRAPHY, BIOTELEMETRY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REF/FRAME--1988/1575 STEP NO--UR/0219/70/059/004/0029/0032  
CIRC ACCESSION NO--AP0106321  
UNCLASSIFIED



2/2 036

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0106321

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

ABSTRACT.

IN 10 MACACA RHEMUS, AGED FROM 2 TO 6 YEARS, THE AUTHOR CARRIED OUT RADIOTELEMETRIC REGISTRATION OF THE ELECTROCARDIOGRAM BY MEANS OF A SPECIALLY DESIGNED TRANSMITTER OF SMALL SIZE AND WEIGHT. THIS TECHNIQUE ENABLED TO RECORD THE ELECTROCARDIOGRAM IN MONKEYS AT COMPLETE REST WITHOUT THE PRESENCE OF HUMAN BEINGS AND WITHOUT FIXATION OF THE ANIMAL. AS THE RESULT OF THIS IT WAS FEASIBLE TO ESTABLISH THE TRUE STANDARDS OF THE PULSE RATE (125-115 PER MINUTE), AS WELL AS THE CIRCADIAN DYNAMICS OF THE PULSE RATE IN THE MONKEYS (DURING THE DAY 125-115, AT NIGHT 90-95 PER MINUTE). THESE VALUES ARE MUCH BELOW THOSE WHICH WERE ESTABLISHED FOR MONKEYS ACCORDING TO DATA OF THE ELECTROCARDIOGRAM RECORDED WITH THE AID OF WIRES.

UNCLASSIFIED

USSR

UDC 591.1.15

RUDAKOV, N. P., and TATSIY, Yu. A.

"Repair Rate of Radiation Injuries in Rats and Disturbance of Certain Metabolic Processes in the Liver After Whole-Body and Local Fast-Neutron Irradiation"

V sb. Biofizika i radiobiol. (Biophysics and Radiobiology — Collection of Works), Vyp.3, Kiev, "Nauk. dumka," 1972, pp 43-61 (from RZh-Biologicheskaya Khimiya, No 10, 25 May 1972, Abstract No 10F1412 from summary)

Translation: The rate of repair processes for radiation injuries in rats pre-exposed to whole-body or local fast-neutron irradiation was found to be approximately the same as in gamma- and X-irradiation. With both methods of irradiation nonspecific changes were discovered in the animals' liver in tissue sorptive power, glycogen and lipid content, and alanine aminotransferase activity. An approximate estimate is given of the specific value of radiation injury in the total radiation reaction of the organism during neutron irradiation.

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USSR

UDC 591.1.15

TATSIY, Yu. A.

"Variation in Cholesterol Content of Rat Liver During Whole-Body and Local Fast-Neutron Irradiation"

V sb. Biofizika i radiobiol. (Biophysics and Radiology -- Collection of Works), Vyp. 3, Kiev, "Nauk. dumka," 1972, pp 61-67 (from RZh-Biologicheskaya Khimiya, No 10, 25 May 1972, Abstract No 10F1411 from summary)

Translation: Whole-body irradiation of rats in an LD<sub>50/30</sub> dose (215 rads) and local irradiation of the liver in doses of 300, 600 and 1500 rads result in an increase in the total amount of cholesterol in the liver and a delay in its esterification during the early post-irradiation periods. Local irradiation of the liver in a dose of 200 rads results in no appreciable changes in cholesterol metabolism.

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1/2 009

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--REMOVAL OF ARSENIC DURING HEAT TREATMENT AND BENEFICIATION IN AN

AQUEOUS MEDIUM OF KERCH ORES -U-

AUTHOR--TATSIYENKO, P.A., MAMICHEVA, V.P.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, METAL. 1970, (1), 12-16

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS

TOPIC TAGS--ARSENIC, ORE BENEFICATION, ROASTING FURNACE, ORE, NATURAL GAS,  
COKE, CHEMICAL SEPARATION, CEMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1989/0538

STEP NO--UR/0370/70/000/001/0012/0016

CIRC ACCESSION NO--AP0105523

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105523

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STUDY WAS CARRIED OUT OF THE VALENCE OF AS IN THE ORE, OF THE REMOVAL OF AS DURING THE ROASTING OF MINERAL PHASES OF THE ORE USING GAS, COKE, AND MAZUT AS REDUCING AGENTS, AND OF THE MIGRATION OF AS FROM OOLITE TO CEMENT. THE ORE CONTAINS AS ESP. IN TRIVALENT FORM, WHICH ENABLES ITS REMOVAL DURING ROASTING IN NEUTRAL OR SLIGHTLY REDUCING MEDIA. BY USING GAS (13PERCENT CO AND 87PERCENT CO SUB2) AS REDUCING AGENT, AS WAS MOST QUICKLY REMOVED FROM THE FE AL SILICATE PHASE OF ALUMINOUS CEMENT. THE MIGRATION OF AS FROM OOLITE TO CEMENT WAS STUDIED BY USING BALANCE TESTS, AND IT WAS DETD. THAT WITH INCREASING TEMP. THE ADSORPTION EFFICIENCY OF THE CEMENT QUICKLY DECREASES, WHICH HELPS THE REMOVAL OF AS. TESTS OF THE MAGNETIC SEPN. WERE CARRIED OUT IN DISTD., FRESH AND SEA WATER. THE COMPN. OF THE WATER DID NOT AFFECT THE SOLY. OF AS. THE AMT. OF DISSOLVED AS IS AFFECTED BY THE TIME AND THE DEGREE OF REDN. OF THE ORE, AND IS 25PERCENT FOR THE ORE WITH 17.5PERCENT REDN.

UNCLASSIFIED

USSR

UDC 577.1:615.7/9

TATSUI, N.

"Inhibition of Cholinesterase by Organophosphorous Compounds and its Clinical Effect"

Byul. Vsemirn. Organiz. Zdravookhr. (Bulletin of the International Organization for the Protection of Health), Vol 44, No 1-3, 1972, pp 304-323, discussions pp 324-327 (from Referativnyy Zhurnal -- Biologicheskaya Khimiya, Otdel'nyy Vypusk, No 19, 1972, Abstract No 19F2050 by D. M. Glukharev)

Translation: A review of the comparative toxicity of several organophosphorous compounds (POC), toxicity symptoms of POC, including POC insecticides of low toxicity, mechanism of the toxic effect of POC, inhibition of cholinesterase by POC, and treatment of severe poisoning with POC.

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USSR

TATULOV, A.

"Organ Preservation Device -- Creation of Soviet Doctors"

Moscow, Moskovskaya Pravda, 24 Aug 71, p 3

Abstract: Organ transplants have become widespread in recent times. The group headed by Academician B. V. Petrovskiy has been nominated for a State Prize for its work in developing a kidney transplant operation and introducing it into clinical practice. Hundreds of victims of kidney diseases owe their relief to this method. In organ transplants there are two primary problems: (1) immunological incompatibility, and (2) getting an appropriate organ where it is needed at the necessary time. A key to solving both of these questions lies in devices to preserve organs. To a significant degree, this problem has been solved for kidneys and certain other organs by devices created by a group of associates at the Moscow Institute of Clinical and Experimental Surgery, USSR Ministry of Health, led by Professor V. I. Shumakov and candidates of medical sciences V. A. Zubarev and Ye. Sh. Shteyngol'd. Six of these devices, named AKO's [apparat konservatsii organa] have already been successful in preserving organs up to 24 hours, and have been used in operations. The AKO's resemble a small cupboard. The organ is placed on a surface under

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USSR

TATULOV, A., Moskovskaya Pravda, 24 Aug 71, p 3

glass. It is connected to polyethylene "veins" through which a protein-salt solution is pumped. This solution is first saturated with oxygen and carbon dioxide in an oxygenator and cooled to 10°C in the cooling unit; after passing through the organ it circulates around and through these devices again. A computer is connected to monitor the parameters of the organ and maintain correct conditions. Due to an original cooling device design, the weight of the AKO is a mere 50 kg, and it is portable.

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USSR

UDC 621.374.5

TATUR, V. YE., TATUR, T. A.

"Small Delay Line with a Wide Transmission Band"

Tr. Mosk. In-ta elektron. mashinostr (Works of Moscow Institute of Electric Machine Building), 1970, vyp. 13, pp 77-81 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4G257)

Translation: The design of a 0.1 microsecond delay line with a 50 megahertz pass band is calculated and described. The delay line has concentrated inductances. The bibliography has 1 entry.

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USSR

TATUR, V. YE., TATUR, T. A.

UDC 621.374.5

"Small Delay Line with a Wide Transmission Band"

Tr. Mosk. In-ta elektron. mashinostr (Works of Moscow Institute of Electric Machine Building), 1970, vyp. 13, pp 77-81 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4G257)

Translation: The design of a 0.1 microsecond delay line with a 50 megahertz pass band is calculated and described. The delay line has concentrated inductances. The bibliography has 1 entry.

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- 136 -

USSR

KOLOD, V. YA., TATIS, V. I., RYBALKO, V. F., FOGEL, YA. M., VODOLAZHCHENKO, V. V., and YEVSEYEV, V. M., Engineering Physics Institute, Academy of Sciences Ukrainian SSR, Khar'kov

"Effect of Oxygen Pressure on the Initial Stage of Molybdenum Oxidation"  
Leningrad, Fizika, Tverdogo Tela, Vol 13, No 6, 1971, pp 1521-1524

Abstract: The effect of oxygen pressure on the initial stage of oxidation of molybdenum was investigated using the technique of secondary ion-ion emission. Molybdenum strips were heated in vacuum up to a temperature of 1900°K, which completely cleaned their surfaces for the absorbed particles and particles of surface compounds. Each experiment began with the molybdenum surface brought to atomic purity. Then the molybdenum temperature was reduced from 1900°K to a temperature at which the experiment was conducted; namely, the range 300-1900°K. The kinetics of oxide accumulation on the surfaces of molybdenum strips was studied; the current I of a beam of secondary ions driven off from the oxide molecule under study was plotted as a function of time t. The oxygen pressure was varied within the limits  $5 \cdot 10^{-8}$  -  $1 \cdot 10^{-6}$  torr. The following ion species were investigated:  $\text{MoO}_2^+$ ,  $\text{MoO}_2^{1/2}$

USSR

KOLOD, V. YA., et al., Fizika Tverdogo Tela, Vol 13, No 6, 1971, pp 1521-1524

$\text{MoO}_3^-$ ,  $\text{Mo}_2\text{O}_3^+$ ,  $\text{Mo}_2\text{O}_6^+$ , and  $\text{Mo}_2\text{O}^+$ . An increase in oxygen pressure leads to the following: 1) a shortening of the latency. (time interval between the onset of oxygen adsorption and the instant of oxide formation on molybdenum surfaces); 2) a shortening of the time interval required for an equilibrium oxide film to form on surfaces; and 3) increased oxide concentration. The condition of the surface film (composition and concentration of oxides) is reproducible and reversible with variation in temperature and oxygen pressure. This indicates that the oxide film consists of a layer of surface oxides.

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020  
UNCLASSIFIED  
PROCESSING DATE--16OCT70  
TITLE--STUDY OF THE PROCESS OF PURIFICATION OF MOLYBDENUM FROM CARBON  
IMPURITIES BY THE METHOD OF SECONDARY ION ION EMISSION -U-  
AUTHOR--(04)--KULOT, V.YA., TATUS, V.I., RIBALKO, V.F., FOGEL, YA.M.  
COUNTRY OF INFO--USSR  
SOURCE--UKRAINS'KII FIZICHNII ZHURNAL VOL. 15, FEB 1970, P. 266-268  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--MOLYBDENUM, OXIDATION, CARBON, CHEMICAL PURIFICATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FAME--1989/1394  
CIRC ACCESSION NO--AP0107867  
STEP NO--UR/0185/70/015/000/0266/0268  
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0107867

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

ABSTRACT. DESCRIPTION OF EXPERIMENTS IN WHICH A METHOD OF SECONDARY ION EMISSION DESCRIBED BY FOGEL\* (1967) WAS APPLIED IN STUDYING THE PROCESS OF REMOVAL OF CARBON IMPURITIES FROM MOLYBDENUM FOIL SAMPLES AT 1900 DEG K IN OXYGEN. DECARBONIZATION OF SAMPLES WAS CONTROLLED IN THESE EXPERIMENTS BY MEASURING THE SECONDARY CARBON ION BEAMS WITH THE AID OF A MASS SPECTROMETER. THE AMOUNTS OF CARBON RETAINED BY MOLYBDENUM SAMPLES AFTER A 6 HR HEATING WERE FOUND TO BE LOW ENOUGH TO HAVE NO EFFECT ON MOLYBDENUM OXIDATION.

FACILITY: AKADEMIIA NAUK UKRAINS'KUI RSR, PIZIKO TEKHNIHNII INSTITUT, KHARKOV, UKRAINIAN SSR.

UNCLASSIFIED

USSR

UDC 669.183.218.5

TRUVETSKOV, K. M., TARASOV, V. M., KONOVALOV, I. M., MOKRUSHIN, K. D., TAT'YANSHCHIKOV, A. G., and YAKUSHIN, V. I.

"Operation of a Dual Bath Steel Melting Furnace at the Cherepovetsk Metallurgical Plant"

Proisvodstvo Chernykh Metallov (Production of Ferrous Metals - Collection of Works), No 75 Metallurgiya Press 1970, pp 56-68

Translation: The operating indicators of a dual bath steel-making furnace for 1968 are analyzed. The productivity of the dual bath furnace was 1.024 million tons. The technology of melting of steel in the dual bath furnace has a number of specifics in the mode of carbon oxidation, steel heating, and desulfuration and dephosphoration of the metal. Over 60% high-quality structural steel is produced by the furnace. The quality of the metal is equal to that of open-hearth steel. 8 figures; 3 tables; 5 biblio. refs.

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USSR

UDC 669.046.5

YAVOYSKIY, V. I., SVYAZHIN, A. G., GRIGOR'YEV, N. S., LUZGIN, V. P.,  
KONOVALOV, I. M., ~~TATYANSHCHIKOV, A. G.~~, TRUBETSKOV, K. M., RAREVICH, S. Z.,  
and NECHAYEV, E. A.

"Metal Acidity in Intense Oxygen Bath Blowing"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISiS) (Collection of  
Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys).  
Izd-vo "Metallurgiya," No 61, 1970, pp 84-90

Translation of Abstract: Results are presented of an investigation on metal  
heterogeneity in intense blowing. Comparable data on the average metal  
acidity level in a two-bath furnace and in other steel-melting furnaces are  
given. The effect of various technological factors on metal acidity in the  
two-bath furnace is considered. 5 figures, 3 references.



USSR

UDC 669.183.218.5

TRUVETSKOV, K. M., TARASOV, V. M., KONOVALOV, I. M., MOKRUSHIN, K. D., TAT'YANSHCHIKOV, A. G., and YAKUSHIN, V. I.

"Operation of a Dual Bath Steel Melting Furnace at the Cherepovetsk Metallurgical Plant"

Proisvodstvo Chernykh Metallov (Production of Ferrous Metals - Collection of Works), No 75 Metallurgiya Press 1970, pp 56-68

Translation: The operating indicators of a dual bath steel-making furnace for 1968 are analyzed. The productivity of the dual bath furnace was 1.024 million tons. The technology of melting of steel in the dual bath furnace has a number of specifics in the mode of carbon oxidation, steel heating, and desulfuration and dephosphoration of the metal. Over 60% high-quality structural steel is produced by the furnace. The quality of the metal is equal to that of open-hearth steel. 8 figures; 3 tables; 5 biblio. refs.

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USSR

UDC 669.183.218.5

TRUBETSKOV, K. M., TARASOV, V. M., ALYMOV, A. A., MOKRUSHIN, K. D., ~~TAT'YANSHCHIKOV, A. G.~~, CHIZHOVA, V. YA., and YAKUSHIN, V.I.

"Material Balance of the Process in Dual-Bath and Open-Hearth Furnaces"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 68-73

Translation: A method of determining the yield of usable steel and consumption of metal charge is studied, as well as the methodology of experimental melts with material balance. Data are presented on the consumption of iron in dual-bath and open-hearth furnaces operating with intensive blowing of the bath with oxygen. The yield of iron in a dual-bath furnace is 93.6%, in an open-hearth furnace--93.5%. 2 tables; 3 biblio. refs.

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USSR

UDC 669.14:669.189

DUBROV, N. F., KORROL', V. V., TAT'YANCHSHIKOV, A. G., and  
SOSIPATROV, V. T., Ural Scientific Research Institute of Ferrous  
Metals

"Rimmed Steel With Reduced Content of Manganese"

Moscow, Izvestiya Vysshikh Uchbenykh Zavedeniy -- Chernaya  
Metallurgiya, No 12, 1970, pp 64-66

Abstract: The possibility is shown of reducing the manganese  
content in rimmed steel to 22% during high-speed casting  
into large ingots. Casting and rimming of steel in ingot  
molds proceed normally. After rolling, ingots GOST require-  
ments.

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USSR

UDC 621.382.2

SHAGURIN, I. I., PETROV, L. N., TAT'YANIN, V. I.

"Comparison of Modifications of TTL and DTL Elements Using Shottky Diodes"

Kiev, IVUZ Radioelektronika, Vol 14, No 11, Nov 71, pp 1365-1369

Abstract: The paper describes the results of tests of three models of logic circuit elements in which diodes and transistors with Shottky barriers are used to increase speed. The circuits studied are compared for speed and interference suppression. Two figures, one table, bibliography of six titles.

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USSR

UDC 547.26'118

TAUBE, D. O., VOVSI, B. A. (deceased), and IONIN, B. I., Leningrad Institute  
of Pharmaceutical Chemistry

"Reactions Between Amine Hypophosphites and Benzaldehyde"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 351-356

Abstract: Experiments are conducted which show that ammonium hypophosphite reacts anomalously with benzaldehyde to form N-benzyl- $\alpha$ -aminobenzylphosphonic and bis(N-benzyl- $\alpha$ -aminobenzyl)pyrophosphonic acids, whereas reactions with amine hypophosphites result in N-alkyl- $\alpha$ -aminobenzylphosphinic acids. A mechanism is suggested for the reaction. Ammonium hypophosphite with benzaldehyde in hydrochloric acid forms bis( $\alpha$ -hydroxybenzyl)phosphinic acid.

USSR

UDC 621.383.537.533.8

KORZYUK, T.G., SMIRNOV, A.N., TAUBER, A.G.

"Thermoelectric Coolers For Photocathodes"

Kholodil'n. tekhn. i tekhnol. Resp. mezhved. nauchno-tekhn. (Cooler Technics And Technology. Republic Interdepartmental Collection), 1970, No 9, pp 15-17 (from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11A165)

Translation: The paper reports on the development and manufacture of small batches of thermoelectric coolers (TC) for photomultipliers and other electrovacuum devices. With respect to the method of heat removal from the hot junctions of thermopiles, the TC developed are divided into three groups: with forced blowing for a system of fins, with liquid heat removal, and heat removal to the mass of the object. It is shown that one-stage thermopiles reduce the temperature by  $30^{\circ}\text{C}$  and the two-stage by  $50-55^{\circ}\text{C}$ . At present, use of three-stage thermopiles is structurally inexpedient. Type R-72KM coolers for devices of 50-mm diameter are related to the first group of TC. The consumable power of the d-c for supply of coolers and ventilators does not exceed 65 watt. The temperature drop is  $50^{\circ}\text{C}$ . For devices 30-mm in diameter, a two-stage TC was developed with a reduction of temperature by  $50^{\circ}\text{C}$  and a consumable power of 25 watt. A one-stage variation of such a TC reduces the temperature by  $30^{\circ}\text{C}$ .

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and the consumable power  $\sim 15$  watt. A TC developed for the FEU [photomultiplier]-13 and reducing the temperature by  $30^{\circ}$  C pertains to the second group. A TC for the FEU-31 which reduces the temperature by  $15^{\circ}$  C with a consumable power  $\sim 6$  watt may pertain to the third group. S.D.

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USSR

UDC 621.382.539.1.074

4

KORZYUK, T. G., OVECHKIN, V. V., PANSHIN, A. Z., RAU, L. F., SMIRNOV, A. N.,  
TAUBER, A. G., SHCHEBLOT, U. V., YUROVSKIY, A. V.

"Use of Thermoelectric Microrefrigerator for Cooling of Gamma-Spectrometric  
Si(Li) Detectors"

V sb. Prikl. yadern. spektroskopiya (Applied Nuclear Spectroscopy --  
Collection of Works), Issue 1, Moscow, Atomizdat, 1970, pp 223-232 (from  
RZh--Elektronika i yeye primeneniye, No 5, May 1971, Abstract No 5B257)

Translation: The construction and production technology of Si(Li) Gamma  
radiation detectors with a thickness of the sensitive region up to 10 mm  
are described. The spectrometric properties are studied of such detectors,  
which are cooled with the aid of thermoelectric microrefrigerators of  
temperatures of minus 40°C. It is found that such cooled detectors make  
it possible to realize an energy resolution of 1-1.8 percent for  $^{137}\text{Cs}$ .  
Several possible and promising uses in applied spectrometry of the de-  
tectors described are shown.

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UNCLASSIFIED  
TITLE--NEW SYNTHETIC HEAT AND SOUND INSULATING MATERIAL ISOKAPRON --U-  
PROCESSING DATE--20NOV70  
AUTHOR--(03)--TAUBIN, M.G., VAPNIK, Z.A., FAKTOVICH, L.M.  
COUNTRY OF ORIGIN--USSR  
SOURCE--STRICT. MATER. 1970, (3), 27-8  
DATE PUBLISHED--70  
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--CAPRONE, POLYAMIDE RESIN, VARNISH, ACOUSTIC INSULATION, HEAT  
INSULATION, CONSTRUCTION MATERIAL, AIRCRAFT MATERIAL/ISOKAPRON  
INSULATING MATERIAL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3002/1241  
CIRC ACCESSION NO--AP0128657  
STEP NO--UR/0228/70/000/003/0027/0028  
UNCLASSIFIED

2/2 045

CIRC ACCESSION NO--AP0128657

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. ISOKAPRON (I) (A MIXT. OF TWISTED  
AND STRAIGHT KAPRON (II) FIBERS BONDED WITH A POLYAMIDE VARNISH) WAS  
OBTAINED FROM CURLY II FIBER BY PRODUCTS. I CAN BE EXTENSIVELY USED IN  
THE CONSTRUCTION AND AIRCRAFT INDUSTRIES FOR HEAT AND SOUND INSULATION.

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USSR

Rare Metals

UDC: 669.194

SUGANEYEV, Yu. S., TAUBIN, M. L., and YAKUTOVICH, M. V., Moscow

"Thermophysical Properties of Yttrium at Temperatures Above 20°C"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, no 6, Nov-Dec 70, pp 215-217

Abstract: The rather limited data on the thermophysical properties of yttrium at elevated temperatures is fragmentary since the tests involved metal specimens with different prehistories. This study deals with the heat electric, and temperature conductance and heat capacity of yttrium at high temperatures. The experiment involved distilled yttrium remelted in an arc furnace at lowered residual argon pressure. The chemical composition of the metal was (wt.%): 99.7 Y; 0.03 Cu; 0.01 Al; 0.03 Fe; 0.02 Mo; 0.12 Cd; 0.02 N; 0.03 O; <0.01 Ta; <0.01 Ca; <0.003 Ni; 0.003 Si. Temperature dependences are cited for heat conductance, heat capacity, temperature conductivity, and electroconductivity within 20 to 400°C. The empirical temperature dependence of heat capacity is  $C_p = 294.3 + 1.59T - 3.3 \cdot 10^{-4} T^2$  [joule/kg.deg]. The evaluation of the electron and phonon com-

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SUGANEYEV, Yu. S., et al, Izvestiya Akademii Nauk SSSR, Metally, no 6,  
Nov-Dec 70, pp 215-217

ponents of the heat conductance in yttrium indicates that the increase of the phonon component with temperature is owing to the fact that atomic vibrations in the crystal lattice (on heating) become more intensive. An increase in atomic vibration amplitude and, in phonon energy leads to a rise in heat conductance due to the motion of phonons. On the other hand, with an increase in atomic vibrations there is also an increase in the effect of electron scattering on the formed defects (vacancies), the latter increasing in concentration with temperature. This might explain the rather weak dependence of the electron component on temperature.

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UNCLASSIFIED  
TITLE--ABSORPTION COEFFICIENT OF N-TYPE INDIUM ARSENIDE WITH VARIOUS  
DEGREES OF DOPING -U-  
AUTHOR-(03)-CHIZHOVA, Z.V., RADCHENKO, R.A., TAUBKIN, I.I.  
COUNTRY OF INFO--USSR  
SOURCE--FIZIKA I TEKHNIKA POLUPROVODNIKOV, VOL. 4, MAY 1970, P. 935-937  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--INDIUM ARSENIDE, ABSORPTION COEFFICIENT, SINGLE CRYSTAL,  
ELECTRON DENSITY  
CONTROL MARKING--NC RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3007/0883  
CIRC ACCESSION NO--AP0136317  
STEP NO--UR/0449/70/004/000/0935/0937  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136317  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. STUDY OF THE SPECTRAL DEPENDENCES OF THE ABSORPTION COEFFICIENT OF INDIUM ARSENIDE SINGLE CRYSTALS WITH ELECTRON CONCENTRATIONS RANGING FROM 2 TIMES 10 TO THE 16TH TO 4.6 TIMES 10 TO THE 19TH PER CU CM AT TEMPERATURES OF 107 AND 300 K. SPECIMENS WITH CONCENTRATIONS OF 2 TIMES 10 TO THE 18TH PER CU CM AND ABOVE WERE DOPED WITH TELLURIUM, WHILE THOSE WITH CONCENTRATIONS OF 2 TIMES 10 TO THE 16TH AND 1.8 TIMES 10 TO THE 17TH PER CU CM WERE NOT SPECIALLY DOPED. WITH AN INCREASE IN THE ELECTRON CONCENTRATION A SHIFT IN THE LONG WAVE EDGE OF THE INTRINSIC ABSORPTION BAND TOWARD LOWER WAVELENGTHS, DUE TO THE BURSTEIN-MOSS EFFECT, IS OBSERVED, AS WELL AS AN INCREASE IN THE ABSORPTION COEFFICIENT DURING ABSORPTION BY FREE CARRIERS. A DEPENDENCE OF THE INTRINSIC ABSORPTION EDGE ON THE ELECTRON CONCENTRATION IS NOTED FOR CONCENTRATIONS GREATER THAN 8 TIMES 10 TO THE 17TH PER CU CM AT 300 K AND GREATER THAN 5 TIMES 10 TO THE 17TH PER CU CM AT 107 K.

UNCLASSIFIED

USSR

UDC 613.165:612.843.36

ZOZ, N. I., and TAUBKINA, A. A., Institute of Labor Hygiene and Occupational Diseases, Academy of Sciences USSR, Moscow

"Effect of a Decrease in Brightness on the Functional State of the Visual Analyser"  
Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 9, Sep 70, pp 19-23

Abstract: On-the-job studies of subway motormen, together with laboratory experiments, showed distinct decreases in visibility, duration of dark adaptation, level of color discrimination, and rate of differentiation, with uneven distribution of brightness in the visual field, at the end of a work shift, even when the motormen were not actually at the controls. Their work involves frequent 20 to 30 sec stops in stations (brightness, 20 to 130 nit) and 2 to 3 min rides in tunnels (brightness, 0.05 to 0.1 nit), with as many as 250 to 300 abrupt changes in brightness during a 6-hour work shift. The rate of discrimination decreased in proportion to the magnitude of the decrease in brightness for objects of all sizes. Discrimination time increased very sharply in response to a 1,000-fold decrease in brightness. Since all of the changes in visual function became more pronounced with time, owing to the development of fatigue, the duration of a shift must be carefully regulated. Levels of brightness should not differ by more than a factor of 500, under which conditions discrimination time does not increase significantly during a shift.

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USSR

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UDC 541.6:541.12

YANOVA, L. P., BLYSKOSH, G. S., CHIGISHOVA, A. M., ~~TAUBMAN, A. B.~~, CHALYKH, A. Ye., and LUK'YANOVICH, V. M., Institute of Physical Chemistry, USSR Academy of Sciences, Moscow

"Mechanical and Chemical Grafting of Polymers on the Surface of Ionic Crystals"  
Moscow, Kolloidnyy Zhurnal, Vol XXXIII, No 1, Jan-Feb 1971, pp 171-172

Abstract: It was previously established by several of the authors that grafting of polymers on a crystal surface is not uniformly distributed, but appears at localized centers. The present study was undertaken to determine the character of this localization.

Vacuum-dried (3 hrs., elevated temperature) rock salt and calcite crystals were submerged in a monomer, then split, to secure a fresh surface. Intensity of electron emission was measured.

Electron microscope photographs confirmed the localization of polymer grafting; length of stay in the monomer had no effect on the progress of grafting. It is concluded that successful grafting is dependent not on the bond strength of the ionic crystal, but rather on the formation of radicals and on the ionization of defects and the rise of free electron emission, appearing at the time of splitting.  
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UNCLASSIFIED  
METHOD FOR EVALUATING THE RELATIVE ACTIVITY OF  
RUBBERS -U-  
BORODINA, V.N., TOLSTAYA, S.N., TAUBMAN, A.B., LEVINA, A.YU.,  
NIKIFOROVA, A.P.  
COUNTRY OF INFO--USSR  
SOURCE--KOZH. POBUV. PROM. 1970, 12(2), 37-41  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--FILLER, SILICA, KAOLIN, RUBBER, POLYSTYRENE RESIN/(U)SKS30R  
STYRENE RUBBER, (U)SKS30 STYRENE RUBBER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1989/0206  
CIRC ACCESSION NO--AP0106862  
STEP NO--UR/0498/70/012/002/0037/0041  
UNCLASSIFIED

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UNCLASSIFIED  
 PROCESSING DATE--11SEP70  
 NO--AP0106862  
 ABSTRACT. A PHYSICOCHEM. METHOD WAS DEVELOPED FOR THE STUDY OF CROSSLINKING OF CONCD. SUSPENSIONS OF FILLERS (E.G. AEROSIL A-175(I), FINE SILICA FILLERS (II) (BS-150 AND BS-50), KAOLIN (III), AND CACO SUB3) IN DIL. SOLN. OF SKMS-30R (IV) AND SKS-30 (V) RUBBERS IN PHME. THE EXPTS. WERE CONDUCTED IN SMALL BEAKERS EQUIPPED WITH GROUND GLASS STOPPERS. A PORTION OF A FILLER WAS DRIED TO CONST. WT. AT 120-400DEGREES, PLACED IN THE BEAKER AND COVERED WITH 10 ML IV OR V SOLN. IN PHME, THE MIXT. WAS CAREFULLY STIRRED, AND A GROOVED MICA PLATE (10 TIMES 10 MM) WAS PLACED IN THE PPT. AFTER THE CROSSLINKING HAS BEEN COMPLETED, THE MAX. STATIC SHEAR STRESS ( $P_{SUBM}$ ) WAS EVALUATED BY MEASURING THE TANGENTIAL DISPLACEMENT OF THE PLATE ON A FILLER REBINDER APP. A PLOT OF  $P_{SUBM}$  EQUALS  $F(A)$  (WHERE A IS THE FILLER CONTENT-100 G V) SUGGESTED THAT THE ACTIVITY OF FILLERS IN ELASTOMERS DECREASED IN THE ORDER: I LARGER THAN II LARGER THAN III LARGER THAN CACO SUB3. OPTIMUM FILLER CONTENT CAN BE DETD. FROM AN APPROPRIATE GRAPH.

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LIQUID PHASES -U- UNCLASSIFIED  
AUTHOR--(05)--KILPAKOV, L.V., NIKITINA, S.A., TAUBMAN, A.B., SPIRIDONOVA,  
V.A., CHALYKH, A.YE.  
COUNTRY OF INFO--USSR  
PROCESSING DATE--30OCT70  
METHOD FOR INVESTIGATION OF DISPERSE SYSTEMS  
SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 2, PP 229-231  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, CHEMISTRY  
TOPIC TAGS--ELECTRON MICROSCOPY, PROTECTIVE COATING, PHYSICS LABORATORY  
INSTRUMENT, EMULSION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1992/1720  
CIRC ACCESSION NO--AP0112714  
STEP NO--UR/0069/70/032/002/0229/0231  
UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002203230008-1"

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DEVICE HAS BEEN DESIGNED AND A  
TECHNIQUE DEVELOPED FOR ELECTRON MICROSCOPIC STUDY OF LIQUID SYSTEMS:  
EMULSIONS AND LATICES. BY MEANS OF THIS METHOD ELECTRON  
PHOTOMICROGRAPHS HAVE BEEN OBTAINED OF STRUCTURIZED PROTECTIVE FILMS  
FROM MICROEMULSIONS STABILIZING THE MACROEMULSIONS OF PURE LIQUEDS. IT  
HAS BEEN SHOWN THAT ELECTRON PHOTOMICROGRAPHS OF LATICES CAN BE OBTAINED  
IN THE CASE OF INCOMPLETE MONOMER CONVERSION.

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