UDC: 621.381.41

USSR

ANTSIFEROV, V. V., et al, Avtometriya, No 5, 1972, pp 94-97

duration of the giant pulse by changing the parameters of the first laser's resonator may be useful in several applications.

2/2

UDC: 621.387.41

USSR

ANTSIFEROV, V. V., PIVTSOV, V. S., UGOZHAYEV, V. D., and FOLIN, K. G.

"Some Problems in the Dynamics of Solid-State Laser Oscillation"

Novosibirsk, Avtometriya, No 5, 1972, pp 98-105

Abstract: An explanation is given of the uncontrolled, unattenuated pulsations of a solid-state laser, and an expression is obtained for the coefficient of amplification as a function of the mode number. This is followed by a discussion of the thermal and mechanical perturbations in the active solid-state rod for which a resonator with plane mirrors is much more critical than one with spherical mirrors. The authors present the results of experiments they performed with a ruby laser having plane mirrors, in which oscillation in TEM_{00q} modes was obtained with the use of two diaphragms 1.4 mm in diameter on both sides of an active rod measuring 7 mm in diameter by 120 mm long with sapphire terminals, in a resonator more than 150 cm long. Oscillograms of the kinetics of the laser radiation are shown together with the radiation spectra. The results obtained in these experiments are compared

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USSR

UDC: 621.387.41

ANTSIFEROV, V. V., et al, Avtometriya, No 5, 1972, pp 98-105

with those of other experimenters. Authors of the present article express their gratitude to A. S. Kuch'yanov and A. V. Gayner for their assistance.

2/2

Optics & Spectroscopy

USSR

UDC 621.373 : 535] : 548.0

ANTSIFEROV, V. V., PIVTSOV, V. S., UGOZHAYEV, V. D., and FOLIN, K. G.

"Nonspiking Generation of Ruby Laser With Frequency Selection and Tuning"

Leningrad, Optika i Spektroskopiya, Vol 32, No 6, Jun 72, pp 1159-1162

Abstract: The authors report that they are the first to obtain a partially regular mode, stable over a wide pumping range and close to single-frequency, for the generation of a ruby laser with a frequency which is practically constant throughout the lasing time ($\sim 10^{-3}$ sec.) and with frequency tuning. The stable and reproducible mode is obtained by the compensated phase modulation method, with the use of series-produced ruby rods 120 mm long and 7 mm in diameter and a geometric cavity length of $L \geq 150$ cm. To smooth transient spiking, a KS-14 filter is placed in the cavity to provide weak negative, passive feedback. The Fabry-Perot etalon is used for frequency selection and tuning. The half-intensity width of the integral spectrum does not exceed 0.003 Å, and the tuning is in the 5-Å range. The generation mode is stably reproduced over a wide pumping range (up to four times above the

USSR

ANTSIFEROV, V. V., et al., Optika i Spektroskopiya, Vol 32, No 6, Jun 72, pp 1159-1162

threshold). Half-intensity divergence does not exceed 3.5' (diffraction divergence 1.8'). Thus, the authors obtained a nonspiking ruby laser with close-to-diffraction divergence and a spectral width which is comparable to a He-Ne laser but considerably exceeds it in the tuning range and the possible spectral radiation density value.

The authors thank G. V. KRIVOSHCHEKOV for his interest in the work and A. S. KUCH'YANOV and N. M. DERZHI for their assistance in the experiment.

1/2 035 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--TRANSIENT PROCESS AND STATISTICAL PHENOMENA IN AN HE-NE LASER NEAR THE EXCITATION THRESHOLD -U-

AUTHOR-(03)-TELEGIN, G.G., UGOZHAYEV, V.D., FOLIN, K.G.

COUNTRY OF INFO--USSR

SOURCE--OPTIKA I SPEKTROSKOPIIA, VOL. 28, FEB. 1970, P. 353-356

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HELIUM NEON LASER, LASER EXCITATION, LASER OSCILLATION, SINGLE MODE LASER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1479 STEP NO--UR/0051/70/028/000/0353/0356

CIRC ACCESSION NO--AP0112473

UNCLASSIFIED

2/2 035 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0112473

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL INVESTIGATION OF THE STATISTICAL CHARACTERISTICS OF THE TRANSIENT PROCESS IN A HELIUM-NEON LASER OPERATING AT A WAVELENGTH OF 6328 A NEAR THE EXCITATION THRESHOLD, UNDER CONDITIONS WHERE THE RISE TIME OF THE LIGHT WAVE FIELD IN THE RESONATOR EXPERIENCES PRONOUNCED OSCILLATIONS. BLOCKING PULSES OF A DURATION OF 30 MICROSECONDS WITH A STEEP TRAILING EDGE WERE APPLIED TO AN ELECTROOPTICAL SWITCH. OSCILLOGRAMS OF THE TRANSIENT LASING PROCESS WERE OBTAINED FOR SINGLE MODE AND MULTIMODE OPERATION. THE STATISTICAL CHARACTERISTICS OF THE TRANSIENT PROCESS ARE COMPARED WITH VALUES CALCULATED FROM FORMULAS FOR THE MEAN RISETIME AND MEAN SQUARE DEVIATION PROPOSED BY BAKLANOV ET AL. (1969).

UNCLASSIFIED

USSR

UDC 621.311.21.001.1:551.48.003.13

UGRENINOV, G. N.

"Savings from Using Water Content Forecasts when Planning the Generation of Electric Power at Hydroelectric Power Plants"

Sb. rabot Leningr. i Petrozavodsk. gidrometeorol. observ. (Collected Works of the Leningrad and Petrozavodsk Hydrometeorological Observatories), No 7, 1970, pp 226-243 (from RZh-Elektrotekhnika i Energetika, No 2, Feb 71, Abstract No 2 D56)

Translation: This article contains a discussion of a method of determining the savings from forecasting water content. An example of specific calculation of usefulness of planning forecasts of the Navra River runoff -- the Navra Hydroelectric Power Plant -- is presented. The theory of statistical solutions is adopted as the basic method of investigation.

1/1

UGRYUMOV, A.I.

Source: JPRS #59588 23 Jul 73

LARGE-SCALE FLUCTUATIONS OF THE WATER SURFACE TEMPERATURE IN THE NORTH ATLANTIC

UDC 551.463.6(261)

[Article by Candidate of Geographic Sciences A. I. Ugryumov, USSR Hydrometeorological Scientific Research Center; Moscow, Meteorologiya i Gidrologiya, No 5, 1973, submitted 20 November 1972, pp 12-22]

On the basis of analyzing the data of nine weather ships in the Atlantic Ocean, integral characteristics were proposed for the water surface temperature anomaly field. A statistical analysis was made of these characteristics, and some conclusions were drawn with respect to the mechanism of formation of large-scale thermal anomalies in the ocean.

At this time a great deal of attention has been given to the investigation of the interaction of the ocean and atmosphere as well as the possible factors in the formation of prolonged weather anomalies. When studying the thermal effect of the ocean on the atmosphere as well as the possible methods of time one of the possible methods of investigation for prolonged periods of atmospheric circulation is the statistical analysis of the temperature field in the ocean and pressure in the atmosphere.

The specific nature of the statistical studies on this area requires the description of the analyzed fields by a small set of integral characteristics. The time series compiled from them are used to obtain the correlations between the fluctuations of the thermal state of the ocean and the atmospheric circulation.

The basic forms of integral characteristics of the atmospheric circulation introduced into research practice in the last 10-20 years have received wide recognition. These are the different indexes, systems of circulation types, expansion coefficients of the pressure fields with respect to orthogonal functions, and so on. The justification for using them has not only found practical confirmation, but it is also theoretically well founded. It must be emphasized that the listed characteristics evaluate the intensity and the form of atmospheric circulation over great expanses, and therefore they reflect the large-scale characteristics of the processes.

The calculation of the integral characteristics of the temperature field of the ocean's surface encounters certain difficulties caused by the specific nature of the ocean circulation.

USSR UDC 632.954:547

DENISENKOVA, R. N., BABIN, V. V., and UGRYUMOV, YE. P. Northern Caucasus Scientific Research Institute of Phytopathology

"Phytotoxicity of the Derivatives of Aryloxyalkylcarboxylic Acids"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 9 (119), 1973, pp 54-58

Abstract: Herbicidal activity of a series of substituted isopropyl, β-thiocyanoethyl esters of aryloxyalkylcarboxylic acids, tin containing aryloxyacylates and bis-(aryloxyacetyl)-propyleneglycols-1,3 has been investigated on leaf mustard and on the winter crop wheat. From the data on leaf mustard no clearcut structure-activity relationship could be established, although the phenoxyisopropyl radical appeared to have some effect. Among the thiocyanogens only the β-thiocyanoethyl ester of 2,4-D was more active than the standard control. Tin containing derivatives of 2,4,5-T and 2,4,5-TP were less active than the butyl esters. Among the propylene glycol derivatives, substitution of 2,4-D and 2M-4Kh gave stronger agents, but 2,4,5-T -- a weaker one. Since most of the herbicides studied on wheat did not lower the yield of grain, it is suggestible that they could be used as selective herbicides.

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UDC 621.374.324:621.382.32

USSR

MURSAYEV, A. Kh., and Ugryumov, Ye. P.

"Analogue Store Using MIS Transistors"

V sb. Elektronnaya tekhnika v avtomatike (Electronics Techniques In Automation--Collection Of Works), Moscow, Izd-vo "Sovetskoye Radio," No 2, 1971, pp 27-34

Abstract: An analogue store is described in which an increase of the precision and the storage time of voltage in the capacity is attained by the use of metal-insulator-semiconductor (MIS) transistors. The processes of recording and storage of the voltage are analyzed, with the form of the current-voltage characteristics of MIS transistors and their parameters taken into account. The results are presented of an experimental check of an analogue store using MIS transistors. Functional and detailed circuits are shown of a closed store. Almost all the indices of the circuit described exceed data known from the literature. All the elements of the circuit with the exception of the store capacity can be fulfilled in an integrated version.

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USSR

UDC 681.325.65

MURSAYEV, A.Kh., UGRYUMOV, Ye.P.

"A Transistor Switch"

USSR Author's Certificate No. 271570, Field 28/04/69, Published 15/09/70 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No. 4, 1971, Abstract No. 4B180P).

Translation: Transistor switch dynamic control circuits in which the source of the control signal contains a transformer are known. However, circuits with transformers cannot be made as integrated circuits. The purpose of this suggestion is to eliminate this shortcoming. The transistor switch suggested differs from known switches in that the dynamic control unit contains a periodic HF voltage generator controlled by an internal signal with a paraphase output, to which the control electrodes of the switch transistors are connected through a rectifier and filter. 3 figs.

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USSR

UDC 632.95

BABIN, V. V., DENISENKOVA, R. N., UGRYUMOV, YE. P., SHCHEGLOV, YU. V., BLIZNYUK, N. K., STREL'TSOV, R. V., and KOLOMIYETS, A. F., Northern Caucasus Scientific Research Institute of Phytopathology; All-Union Scientific Research Institute of Phytopathology, Moscow, Ministry of Agriculture USSR

"Herbicide"

USSR Authors' Certificate No 250603, filed 14 Jun 68, published 26 Jan 70, (from RZh-Khimiya, No 20 (II), 25 Oct 70, Abstract No 20 N601P by N, B. VSEVOLOZHSKAYA)

Translation: Compounds of the general formula $\overline{4}$-Cl-2R$C_6H_3OCH_2C(O)O\overline{]}_2$ $SnBu_2$ (I) (R = Cl or Me) are not inferior in herbicidal activity to butyl esters of the corresponding aryloxyalkylcarboxylic acids. For example, mustard plants in the six-leaf phase were sprayed with aqueous solutions of I in a does of 50, 100, 250 and 500 g/ha (calculated in acid equivalent). The dose at which the weight of aboveground portions of the plant declines 50% was 53 g/ha for I (R = Cl), whereas that for the butyl ester of 2,4-D was 61 g/ha.

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1/2 028 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--A DEVICE FOR MULTIPLYING AND DIVIDING WIDTH MODULATED SIGNALS -U-

AUTHOR-(02)-SMOLOV, V.B., UGRYUMOV, YE.P.

COUNTRY OF INFO--USSR

SOURCE--PATENT NO 260290, FILED 8 DEC 68
REFERENCE--MOSCOW, OTKRYTIYA, IZOBRETENIYA, PROMYSHLENNYYE OBRAZTSY,
DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--PATENT, PULSE WIDTH MODULATION, SIGNAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0733 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126442
UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AA0126442
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS AUTHOR'S CERTIFICATE INTRODUCES A DEVICE FOR MULTIPLYING AND DIVIDING WIDTH MODULATED SIGNALS. THE UNIT CONTAINS A BALANCED BRIDGE WITH AUTOMATIC PROCESSING OF THE RESULT. AS A DISTINGUISHING FEATURE OF THE PATENT, THE WORKING RANGE OF THE DEVICE IS EXTENDED BY MAKING EACH ARM OF THE BRIDGE IN THE FORM OF A SWITCH AND RESISTOR CONNECTED IN SERIES, AND CONNECTING A PULSE WIDTH MODULATOR INTO THE CIRCUIT FOR PROCESSING THE RESULT THROUGH A DIFFERENTIAL AMPLIFIER. THE OUTPUT OF THE MODULATOR IS CONNECTED TO THE SWITCH IN ONE OF THE ARMS OF THE BRIDGE. FACILITY: LENINGRADSKIY ELEKTROTEKHNICHESKIY INSTITUT IM. V. I. UL'YANOVA LENINA.

UNCLASSIFIED

USSR UDC 681.333.5

SMOLOV, V. B., UGRYUMOV, YE. P., Leningrad Electrical Engineering Institute imeni V. I. Ul'yanov (Lenin)

"A Device for Multiplying and Dividing Width-Modulated Signals"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 3, 1970, p 130, patent No 260290, filed 8 Dec 68

Abstract: This Author's Certificate introduces a device for multiplying and dividing width-modulated signals. The unit contains a balanced bridge with automatic processing of the result. As a distinguishing feature of the patent, the working range of the device is extended by making each arm of the bridge in the form of a switch and resistor connected in series, and connecting a pulse width modulator into the circuit for processing the result through a differential amplifier. The output of the modulator is connected to the switch in one of the arms of the bridge.

1/2 007 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--1,2,DIHALOACROLEINS -U-

AUTHOR-(02)-ANNENKOVA, V.Z., UGRYUMOVA, G.S.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,391

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI, 1970

DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ACROLEIN, HALOGENATED ORGANIC COMPOUND, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0857 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0136291

UNCLASSIFIED

2/2 007 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0136291

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 1,2,DIHALOACROLEINS PREPD. BY HALOGENATING 2,HALOACROLEIN AND TREATING THE PRODUCT WITH ET SUB2 NH AT MINUS 20 TO PLUS 50EGREES. FACILITY: IRKUTSKIY INSTITUT ORGANICHESKOY KHIMII SIBIRSKOGO OTDELENIYA AN SSSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--DETERMINATION OF THE CONSTANTS OF A BROMOACROLEIN COPOLIMERIZATION WITH VINYLBUTYL ETHER AND ACROLEIN -U-

AUTHOR--SHOSTAKOVSKIY, M.F., ANNENKOVA, V.A., UGRYUMOVA, G.S.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA SIBIRSKOGO OTDELENIYA AKADEMII NAUK SSSR, NO 2, SERIYA KHIMICHESKIKH NAUK, 1970, NR 1, PP 166-168

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COPOLYMERIZATION, BROMINATED ORGANIC COMPOUND, ALDEHYDE, ETHER, REDOX REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1764 STEP NO--UR/0289/70/000/000/0166/0168

CIRC ACCESSION NO--AP0100344

UNCLASSIFIED

CIRC ACCESSION NO--AP0100344

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COPOLYMERIZATION OF A BROMOACROLEIN IN THE REDUCTION OXIDATION SYSTEM AG NO SUB3 ..K SUB2 S SUB2 O SUB8 WITH VINYLBUTYL ETHER AND ACROLEIN WAS INVESTIGATED AND THE CONSTANTS OF COPOLYMERIZATION DETERMINED.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420002-6"

Acc. Nr: AP0053455 Abstracting Service: CHEMICAL ABST. Ref. Code: UR0366

110712c Synthesis of vic-dihaloacroleins. Annenkova, V. Z.; Ugryumova, G. S. (Irkutsk. Inst. Org. Khim., Irkutsk, USSR). *Zh. Org. Khim.* 1970, 6(2), 232–3 (Russ). The halogenation of $H_2C:CXCHO$ (X is Br or Cl) without solvent, followed by dehalogenation of the H_2XCCX_2CHO with Et_2NH at 0–5° gave 43–5% XCH_2CXCHO. CPJR

REEL/FRAME
19830480

USSR UDC: 621.396.6.019.3

POPOV, N. F., CHUKALIN, V. N., UGRYUMOVA, I. A.

"Algorithm for Designing Radio Engineering Devices With Regard to Meeting Reliability Requirements"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 3 (Reports of the All-Union Scientific and Technical Conference on Radio engineering Measurements. Vol. 3), Novosibirsk, 1970, pp 161-162 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V267)

Translation: Existing systems of requirements which guarantee high quality of production output (the Saratov system, the flawless yield system, the Gor'kiy KANARSPI system, etc.) include special jobs to assure reliability which are performed in the development or manufacturing stages, but do not account for the developmental process itself. This drawback is eliminated in the proposed system. The paper tells of an algorithm worked out for development of equipment with regard to reliability requirements. This algorithm was used in developing equipment with a large number of elements and excellent reliability indices. N. S.

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USSR

UGRYUMOVA, M.A., ANAN'YEVA, A.A.

UDC 534.232.46-8

"Ferroelectric"

USSR Author's Certificate No 263709, filed 22 Nov 68, published 4 June 70 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1A340P)

Translation: A ferroelectric is proposed for electroacoustical transducers, with improved dielectric and piezoelectric properties, in the composition of which is introduced a solid solution on the basis of niobate of lead barium with supplementary use of zirconate of lead barium. The initial ingredients of the mixture are taken in the following proportions (percent by weight): lead oxide, 26-32; barium carbonate, 21.3--14; niobium pentoxide, 48.2-54; zirconium dioxide, 5-0.5. The ceramic obtained has practically zero open porosity and differs from the two component composition of the system $(Pb_xBa_{1-x})Nb_2O_6$ by the increased values of the piezoelectric modulus $d_{31} \simeq 3.8 \times 10^{-6}$ unit CGSE and the dielectric constant ($\epsilon > 3500$). L.K.

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USSR

UDC 546.26'11

GIGAURI, R. D., CHACHAVA, G. N., CHERNOKAL'SKIY, B. D., and UGULAVA, M. M.,
Tbilisi State University and Kazan' Chemical Technological Institute Imeni S. M. Kirov

"Synthesis of Diphenylmethylalkylarsonium Perchlorates"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 4, Apr 73, pp 835-836

Abstract: To a solution of 2.0 g of diphenylmethylamylarsonium iodide in a 1:1 mixture of acetone and distilled water, aqueous solution of 2.2 g of magnesium perchlorate was added. The reaction mixture was left standing for 24 hrs at room temperature precipitating diphenylamylarsonium perchlorate which after washing, drying and recrystallization from ethanol melted at 59-60°. A series of homologous compounds was synthesized by this reaction.

USSR

UDC 547.26.119

KAMAY, G. KH., UGULAVA, M. M., GIGAURI, R. D., INDZHIYA, M. A., CHACHAVA, G. N., Tbilisi State University

"Some Esters of Arsenous Acid"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 61, No 1, Jan 71, pp 61-64

Abstract: The authors studied the reaction of some secondary alcohols and arsenic trioxide, as well as properties of the resultant esters. Heating of an arsenic trioxide suspension in an alcohol-octane mixture gives tri-sec.-alkyl arsenites. The latter react with acetic anhydride to give dialkoxyarsino-acetates and two esters of acetic acid. Tri-sec.-alkyl arsenites react with acetyl chloride to give acid chlorides of di-sec.-alkylarsenous acid. The article lists properties of the resultant compounds.

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USSR

UDC 547.26.119

KAMAY, G. Kh., UGULAVA, M. M., GIGAURI, R. D., INDZHIYA, M. A., CHACHARA, G. N., Tbilisi State University

"Concerning Some Esters of Arsenous Acid"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 61, No 1, 1971, pp 61-64

Abstract: The tri-sec-alkyl esters of arsenous acid, as prepared from arsenous acid anhydride and secondary alcohols, were investigated. A suspension of a arsenous acid anhydride in a mixture of the secondary alcohol in n-octane was heated. The resulting tri-sec-alkylarsenites then react with acetic acid anhydride to form dialkoxyarsinoacetates. Tri-sec-alkylarsenites also react with acetyl chloride. Di-sec-alkoxy-arsinoacetates and especially di-sec-alkylarsinous acid chloride are vesicants. The physical constants of eight compounds are presented.

USSR

UDC: 547.26.119

GIGAURI, R. D., and UGULAVA, M. M.

"The Problem of the Synthesis of Arsenous Acid Esters"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 60, No 3, Dec 70, p 587

Abstract: To determine optimal conditions for the synthesis of arsenous acid esters the azeotropic rectification method was applied using n-octane and n-decane. An approximately 90% gain in the yield was obtained. For the first time the following esters were synthesized: tri-(3-methyl-2-butyl)-, tri-(2-amyl)-, tri-(n-heptyl)-, and tri-(2-heptyl)-arsenates.

USSR

UDC 547.26'119

GIGAURI, R. D., KAMAY, G. Kh. (deceased), and UGULAVA, M. M., Kazan' Chemical Technological Institute imeni S. M. Kirov and Tbilisi State University

"Synthesis of Tri-sec-Alkyl Arsenites and Their Reactions With Acetic Anhydride"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 2, Feb 71, pp 336-337

Abstract: Tri-sec-alkyl arsenites are formed in good yields in the reaction of arsenic trioxide with corresponding alcohols, the water formed being removed azeotropically. A mixture of 25.4 g of arsenic trioxide, 100 g 4-octanol and 30 ml of octane was heated for 6-7 hrs in a flask equipped with a Dean-Stark trap yielding tri 4-octyl arsenite (I) after 6.2 g of water had been collected in the trap. Reaction of (I) with acetic anhydride gave dialkoxyarsinyl acetate.

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USSR UDC 632.95.024.4

UGULAVA, N. A., and KHUBUTIYA, R. A., Georgian Scientific Research Institute of Plant Protection

"Phytotoxic Reactions of Perennial Plants Caused by Diurone and Atrazine"

Moscow, Agrokhimiya, No 1, 1972, pp 114-117

Abstract: Application of 8, 10, 13.5 kg/ha of diurone or atrazine around tea bushes, grape vines, tangerine, apple, and peach trees caused chlorosis in these plants by reducing sharply the amount of chlorophyll a in leaves two months after application. Atrazine was more toxic in doses of 10-13 kg/ha, while the effect of diurone was cumulative in smaller doses and lasted much longer. Among plants tested, tangerine trees were the most resistant, and two-year old apple trees were the most sensitive to both compounds. Analysis of the carbohydrate content showed that it was only slightly influenced by large doses of these herbicides (13-16 kg/ha). Sensitiveness of perennial plants to these herbicides depends on their age, variety, and type.

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USSR

UDC 547.26'119

GIGAURI, R. D., CHACHAVA, G. N., CHERNOKAL'SKIY, B. D., [illegible]
Tbilisi State University; Kazan' Institute of Chemical Technology imeni S. M. Kirov

"Synthesis of Diphenylalkylarsines"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 7, Jul 72, pp 1537-1540

Abstract: The effect of Grignard's reagent on diphenylarsine oxide was studied. It was found that this reaction produces diphenylalkylarsines in low yields. Phenylmagnesium bromide reacted with arsenous acid anhydride to give diphenylchloroarsine in high yield after dissociation with excess hydrochloric acid. Grignard's reagent acted on diphenylchloroarsine to give the corresponding diphenylalkylarsines. The mean atomic refraction of arsenic in diphenylalkylarsines was calculated. It was found that in these compounds $AR_DAs = 12.10$.

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1/2 021 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--POSSIBLE ORBITAL MAGNETISM -U-

AUTHOR-(02)-POKROVSKIY, V.L., UIMIN, G.V.

COUNTRY OF INFO--USSR

SOURCE--PIS'MAZH. EKSP. TEOR. FIZ. 1970, 11(3), 206-9

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HAMILTONIAN, ORBIT MOMENTUM, MAGNETIC MOMENT, ANTIFERROMAGNETISM, PARAMAGNETISM, MAGNETIC TRANSFORMATION, SPIN SYSTEM, CONDUCTION BAND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0148 STEP NO--UR/0386/70/011/003/0206/0209

CIRC ACCESSION NO--AP0103827

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0103827

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EQUATION FOR THE EFFECTIVE HAMILTONIAN, H SUBEFF, WAS DEVELOPED ON THE BASIS OF THE HAMILTONIAN SUGGESTED BY HUBBARD (1963). IN THE SYSTEM DESCRIBED BY H SUBEFF, THE COMPLETE ORBITAL MOMENT, SPIN, AND PROJECTION ARE CONSERVED. SINCE SPIN ORDERING IS DESTROYED AT LOWER TEMP. THAN ORBITAL ORDERING, THE DESCRIBED SYSTEM PASSES 1ST INTO THE ANTIFERROMAGNETIC STATE AND THEN INTO THE PARAMAGNETIC. EXPTL. CONFIRMATION OF ORBITAL MAGNETISM SHOULD BE FOUND IN METALS WITH A NARROW CONDUCTION BAND OR IN A FERRODIELEC. COMPD. WITH A HIGH TRANSITION TEMP. FACILITY: INST. TEOR. FIZ. IM. LANDAU, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 550.42

UKHANOV, A. V., and PCHELINTSEVA, N. F., Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy, USSR Academy of Sciences, Moscow, Moscow State University

"Gold Content of Peridotite and Eclogite Inclusions in the Obnazhennaya Kimberlite Pipe of Northern Yakutia"

Moscow, Geokhimiya, Akad. Nauk SSSR, No 2, Feb 72, p 247

Abstract: Mantle xenolites of kimberlite pipes are of great interest in connection with the inert behavior of gold during magmatic differentiation, but very little information has been collected on this subject.

The authors analyzed spectrochemically 25 ultrabasic inclusions from the Obnazhennaya pipe. Only insignificant secondary alterations, and unexpectedly low gold content, were found in the samples. The lowest Au content was that of the lowest-lying, high-magnesium rocks, the granitic pyroxenites (av. $1.2 \cdot 10^{-7}$ %) and granitic pyroxenites (av. $1.55 \cdot 10^{-7}$ %); the eclogites showed relatively high (but strongly variable) content (max. $4.5 \cdot 10^{-7}$ %). There was an evident positive correlation between gold content and vanadium content.

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USSR

UDC 532.53:535-14

UKHANOV, YE. V. and FILIPPOV, O. K.

"The Optical Properties of a Xenon Arc in the Far-IR Region of the Spectrum"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 2, Feb 73, pp 27-29

Abstract: Experiments on a xenon arc in a lamp with a metal housing and a window outlet for long-wave IR radiation are presented. All spectral measurements were made with a DIKS-3 long-wave IR spectrophotometer. Measurements on the plasma brightness temperature by comparison with the PRK-4 and globular lamps previously calibrated showed that from 50 to 120 microm the temperature increases sharply with increasing wavelength, but above 120 microm it changes very little. Measurements of plasma transmission using an image of the globar lamp projected on the xenon arc lamp showed that the transmission decreased with an increase in current strength or wavelength. The data made possible the calculation of the true mean plasma temperature, found to be 5100, 5500 and 5300°K for 60, 70 and 90 microm respectively.

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USSR

UDC 535.891:621.327

UKHANOV, YE. V., TAGANOV, O. K., FILIPPOV, O. K., Candidate of Sciences

"Gas Discharge Source of Long-Wave IR-Radiation"

Leningrad, Optiko-mekhanicheskaya promyshlennost', No. 7, Jul 71, pp 31-33

Abstract: The design of an arc lamp with a metal shell, the internal surface of which is in the form of an ellipsoid of rotation, is described and results of spectral experiments are given. It is shown that the brightness of the long-wave IR-radiation of this tube is three times higher than that of a globar. The brightness of the radiation in the spectral region 50-200 μ of the gas discharge tube with the metallic shell exceeded the PRK-4 tube and a globar. The increased brightness of this tube is explained by the fact that its design makes it possible to apply windows for the release of radiation that have good transmission in the working region of the spectrum. In this case the window is made of low-pressure polyethylene with a thickness of 2.5 mm. The experiment showed that a window of polymer material can be used for tens of hours and is easily replaced. The fabrication of the tube does not require complex electro-vacuum operations, such as welding electrodes to quartz or glass and it can be

UKHANOV, YE. V., et al, Optiko-mekhanicheskaya promyshlennost', No. 7, Jul 71, pp 31-33

produced in a laboratory shop. It is hoped that with its improved characteristics the tube will find application in long-wave infrared spectral devices and as a weakly selective source for other studies in the far-infrared region.

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1/2 018 UNCLASSIFIED

TITLE--DOUBLE REFRACTION IN COSNAS SUB2 -U- PROCESSING DATE--23OCT70

AUTHOR-(03)-KARYMSHAKOV, R.K., UKHANOV, YU.I., SHMARTSEV, YU.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(2), 362-5

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SINGLE CRYSTAL PROPERTY, ARSENIDE, TIN COMPOUND, CADMIUM COMPOUND, LIGHT REFRACTION, REFRACTIVE INDEX, TEMPERATURE DEPENDENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0087 STEP NO--UR/0449/70/004/002/0362/0365

CIRC ACCESSION NO--AP0105173

UNCLASSIFIED

2/2 018 UNCLASSIFIED

CIRC ACCESSION NO--AP0105173 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIFFERENCE BETWEEN THE REFRACTION COEFFS. OF ORDINARY AND EXTRAORDINARY RAYS, DELTA N, IN A NON ORIENTATED SINGLE CRYSTAL OF CDSNAS SUB2 CAN BE OBTAINED FROM THE STUDY OF DOUBLE REFRACTION. THE RELATIONS FOR CALCN. OF DELTA N ARE GIVEN. DOUBLE REFRACTION IS STUDIED ON PAIRS OF CDSNAS SUB2 PLATES AT 10-300DEGREESK. DELTA N IS CALCD. FROM EXPTL. DATA ON TRANSPARENCY OF THE PLATES IN LINEARLY POLARIZED LIGHT IN THE WAVE LENGTH REGION 4-14 MU. WITH DECREASING TEMP. DELTA N DECREASES; HOWEVER, THE DISPERSION DEPENDENCE IS PERSERVED. THE METHOD IS APPLICABLE FOR ALL CRYSTALS BELONGING TO THE BAR 42M POINT GROUP. FACILITY: LENINGRAD. POLITEKH. INST. IM. KALININA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UKHANOVA, L. N.

UDC 532.517.4

"Study of Three-Dimensional Satellite Flow Behind a Cylinder of Finite Length"

Uch. zap. Tsentr. aero-gidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamic Institute), 1971, Vol. 2, No. 6, pp 93-97 (from RZh-Mekhanika, No 6, Jun 72, Abstract No 6B951)

Translation: The experimental characteristics of three-dimensional turbulent tracks behind cylinders of elongation 5-22 in a transverse flow in the Reynolds number range $(6.3-42)\cdot10^3$ are presented. The average and pulsation characteristics of the flow are examined in detail in a number of transverse cross sections: isotachs, lines of equal values of the three components of the pulsation velocity and also of equal values of the coefficients for the three-dimensional correlation between longitudinal velocity pulsations. It is shown that at a certain distance from the cylinder, depending upon its elongation, there occurs a flattening of the turbulent track, i.e., if the isotachs are elongated close to the cylinder along its axis in the transverse cross sections of the track, after flattening the isotachs are elongated in a direction perpendicular to the initial direction. Deformation of the lines of

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USSR

UKHANOVA, L. N., Uch. zap. Tsentr. aero-gidrodinam. in-ta, 1971, Vol. 2, No. 6, pp 93-97

equal values of the velocity pulsations and the isocorrelates similarly occurs. It is pointed out that a similar phenomenon is observed in an experimental study of submerged turbulent jets coming from rectangular openings. A. S. Ginevskiy.

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2/2 028 UNCLASSIFIED

CIRC ACCESSION NO--AT0054601 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AVERAGE MONTHLY FALLOUT DENSITIES OF RADIOCATIVE FISSION PRODUCTS WERE ANALYZED AND RESULTS ARE TABULATED. STUDIES WERE CONDUCTED ON DIRECT CONTAMINATION OF PLANTS BY RADIOACTIVE FALLOUT AND ASSIMILATION BY THE ROOT SYSTEM OF RADIOISOTOPES IN THE SOIL. TABLES ARE PRESENTED TO SHOW RADIOACTIVITY OF PRIME144 CE, PRIME137 CS, PRIME106 RU, PRIME90 SR, AND PRIME95 ZR IN HERBACEOUS PLANTS, GREEN WHEAT, WHEAT GRAIN, SUGAR BEETS, AND ROOT VEGETABLES. IT WAS CONCLUDED THAT DIRECT CONTAMINATION OF VARIOUS TYPES OF AGRICULTURAL PLANTS BY RADIOACTIVE FALLOUT ARISES FROM THE INITIAL HOLDING AND ITS SUBSEQUENT REMOVAL UNDER THE EFFECT OF ENVIRONMENTAL FACTORS.

FACILITY: GOSUDARSTVENNYI KOMITET PO ISPOL'ZOVANIYU ATOMNOI ENERGII SSSR, MOSCOW.

UNCLASSIFIED

USSR

UDC 535.242.2

LAZAREV, V. P., UKHANOVA, Z. I.

"The FM-99 Photometer Attachment"

Leningrad, Optiko Mekhanicheskaya Promyshlennost', No 3, 1972, pp 21-23.

Abstract: The new FM-99 photometer attachment is described. This device has greater sensitivity in the ultraviolet area of the specturm than the older FM-59 photometer attachment, and allows measurement of integral reflection factors by the absolute method (without comparison standards). A photograph, diagram of the optical system of the photometer and curves of the spectral sensitivity of the device are presented. Tests have shown that the reproducibility of measurements is ±1% (abs.). The device weighs 4.5 kg and is 0.5 m long, making it easily portable.

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CSO: 1861-W

- END -

1/2 015 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--PRIMARY STAGES OF VISCOSE FIBER FORMATION -U-

AUTHOR-(04)-UKHANOVA, Z.V., PROZOROVA, G.YE., ANTIPOVA, R.V., PAPKOV, S.P.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VOLOKNA 1970, (1), 32-4

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--RAYON, ELONGATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1824 STEP NO--UR/0183/70/000/001/0032/0034

CIRC ACCESSION NO--AP0100398

UNCLASSIFIED

CIRC ACCESSION NO--AP0100398 UNCLASSIFIED PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FORCED SYNERESIS OF RAYON (I) FIBERS (U., ET. AL., 1968) FORMED IN PPTN. BATHS CONTG. H SUB2 SO SUB4 80, NA SUB2 SO SUB4 120, AND ZNSO SUB4 0-150 G-L. WAS STUDIED. MAX. FORCED SYNERESIS RATE WAS REACHED WHEN THE STRETCHING RATIO WAS 1.25-1.6 (DEPENDING ON BATH COMPN.). THE TOTAL AMT. OF H SUB2 O SEPD. FROM THE FIBERS DUE TO NATURAL SYNERSIS WAS CONST. THE STRENGTH OF THE I YARN FORMED DURING ORIENTATIONAL ELONGATION WAS ESSENTIALLY INDEPENDENT OF THE COMPN. OF THE BATH. THUS, THE PRIMARY STAGES OF FORMATION OF I YARN PREVIOUSLY DISCUSSED WERE IN AGREEMENT WITH THE EXPTL. DATA.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420002-6"

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--LOW TEMPERATURE IRRADIATION OF GERMANIUM BY 28-MEV ELECTRONS -U-

AUTHOR-(02)-ABIYEV, A.K., UKHIN, N.A.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 484-7

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GERMANIUM, IRRADIATION, ELECTRON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1726

STEP NO--UR/0449/70/004/003/0484/0487

CIRC ACCESSION NO--AP0120438

UNCLASSIFIED

2/2 020 UNCLASSIFIED

CIRC ACCESSION NO--AP0120438 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HALL EMF. AND THE COND. OF N TYPE GE (RESISTIVITY 0.1-14.0 OHM CM) DURING THE IRRADN. BY 38-MEV ELECTRONS, WERE MEASURED AT 88DEGREESK. THE EXPTL. RESULTS ARE EXPLAINED BY THE FORMATION OF DISORDERED REGIONS; TO CALC. PARAMETERS OF THESE REGIONS, THE GOSSICK MODEL (1959) WAS USED. THE MOST PROBABLY MEAN VALUES ARE GIVEN: THE RADIUS OF THE REGION 135-900 ANGSTROM, THE CONCN. OF ACCEPTORS 10 PRIME 17-3 TIMES 10 PRIME19-CM PRIME3, AND THE THRESHOLD ENERGY OF THE FORMATION OF REGIONS 15-19.7 KEV.

FACILITY: INST. FIZ., BAKU, USSR.

UNCLASSIFIED

USSR

UDC 621.382.2

DOMANEVSKIY, D.S., LIBOV, L.D., LITVINOV, V.L., LOMAKO, V.M., NOVOSELOV, A.M., RAVICH, V.N., TKACHEV, V.D., UKHIN, N.A.

"Effect Of Radiation On Gallium Phosphide P-N Junctions"

V sb. Radiats. fiz. nemet. kristallov. T.3. Ch.2. (Radiation Physics Of Non-metallic Crystals. Vol. 3, Part 2--Collection Of Works), Kiev, "Nauk.dumka," 1971, pp 50-53 (from RZh--Elektronika i yeye primeneniye, No 12, Dec 1971, Abstract No 12B534)

Translation: The p-n junctions were obtained by the method of liquid epitaxy with n-GaP. The epitaxial p-region was doped with O_2 and Zn. Irradiation was done with reactor neutrons and also electrons with 28 Mev energy at temperatures above 50° C. The current-voltage characteristics and the electroluminescent spectra were investigated at room and nitrogen temperatures. After irradiation, the forward branch of the current-voltage characteristics is shifted to the region of smaller voltages (the lifetime of minority carriers is decreased) and subsequently with an increase of the flux -- to the side of the larger voltages (increase of the resistivity of the initial material). After irradiation the intensity of all the spectral bands of electroluminescence are decreased. The

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USSR

DOMANEVSKIY, D. S., et al., Radiats. fiz. nemet. kristallov, T.3. Ch.2. (Radiation Physics Of Nonmetallic Crystals. Vol. 3, Part 2--Collection Of Works), Kiev, "Nauk. dumka," 1971, pp 50-53 (from RZh--Elektronika i yeye primeneniye, No 12, Dec 1971, Abstract No 12B534)

intensity of the red band with a flux decreased approximately 1.5 times more slowly that the green. The spectral composition of the radiation changed after irradiation. The results presented indicate that the change of the electrical and optical characteristics of GaP p-n junctions after irradiation have the same character as in the case of GaAs p-n junctions. 3 ill. 1 tab. 4 ref. I.M.

2/2

USSR

UDC 621.382.2.002:535.376

VIL'KOTSKIY, V.A., DOMANEVSKIY, D.S., LITVINOV, V.L., LOMAKO, V.M., NOVOSELOV, A.M., ZHACHEV, V.D., UKHIN, N.A.

"Optical And Electrical Properties Of Irradiated GaAs Diodes (Annealing)"

V sb. Radiats. fiz. nemet. kristallov (Radiation Physics Of Nonmetallic Crystals--Collection Of Works), Vol 3, Part 2, Kiev, "Nauk.dumka," 1971, pp 44-49 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B205)

Translation: The effect was investigated of isochronous annealing on the spectra of radiative recombination of n-GaAs p-n junctions irradiated by fast reactor neutrons. An analysis of the results obtained makes it possible to conclude that during neutron irradiation, the decrease of lifetime is determined by the regions of disorder which are effective centers of nonradiative recombination. 3 ill. 6 ref. N.S.

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USSR

UDC 621.382.2

DOMANEVSKIY, D. S., LITVINOV, V. L., LOMAKO, V. M., SMILGA, V. P., TKACHEV, V. D., UKHIN, N. A., Belorussian State University imeni V. I. Lenin, Minsk

"Radiation Changes in the Voltage-Current Characteristics of Heavily Doped Gallium Arsenide PN Junctions"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 8, Aug 70, pp 1425-1431

Abstract: An investigation is made into the change in electrical characteristics of heavily doped gallium arsenide PN junctions under the effect of irradiation in a mixed (neutron-gamma) field of a reactor and fast electrons with an energy of 28 MeV. In many specimens tunnel transitions are detected in the initial state with the participation of defect levels in the forbidden band. Emission brings about an increase in excess current due to the introduction of radiation defects which produce closely situated levels throughout the entire forbidden band. An increase was observed in the density of states in the tails of the bands due to activation of the electrically inactive part of the dopants under the effect of radiation. In the case of high radiation intensities, there is an increase in excess current in narrow PN junctions due to the disordered regions which appear in the junction.

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USSR

UDC: 621.382.2

LITVINOV, V. L., LOMAKO, V. M., TKACHEV, V. D., and UKHIN, N. A.

"Recombination Radiation Mechanism in Strongly Alloyed GaAs p-n Junctions"

Leningrad, Fizika i tekhnika poluprovodnikov, Vol 4, No 12, 1970, pp 2236-2240

Abstract: There are two explanations of the nature of the movable band observed in strongly alloyed p-n junctions under the application of small bias voltages: one is the model of diagonal tunneling; the other the model of filled zones. The authors investigate these two possible mechanisms by estimating their contribution through the use of their different dependence on the life time of the current carriers. In the experiments described, two types of p-n junction were investigated. The first was developed by the diffusion of zinc in n-type GaAs alloyed with Te; the second by melting tin into p-type GaAs alloyed with Zn. Volt-ampere characteristics and recombination radiation spectra of the two types were measured and plotted at 80 and 300° K before and after irradiation by high-speed neutrons. Immovable bands sometimes observed simultaneously were also studied. The authors express their gratitude to V. P. Smilg for his useful comments.

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USSR

UDC 621.382.016.35

ZARUDSKIY, V. F., LEVITSKIY, K. B., NAUMENKO, V. G., UKHIN, N. A.

"Comparative Results of Neutron Irradiation of Medium-Power High-Frequency Diffusion and Diffusion-Ion NPN Silicon Transistors"

Moscow, Poluprovodnikovyye Pribory i ikh Primeneniye, No 24, Izd-vo "Sovetskoye Radio", 1970, pp 27-30

Abstract: The authors study neutron irradiation of NPN silicon transistors made by double diffusion of dopants into an epitaxial layer, and by single diffusion of boron with subsequent ion injection of phosphorus to produce the emitter junction. It is shown that the radiation resistance of both types of transistors is determined by the radiation properties of the material of the base layer and is independent of the technological procedure used to make the emitter junction. The results also show that ion doping has considerable promise as a technological procedure for making transistors with optimum radiation resistance. One figure, one table, bibliography of four titles.

1/1

UKHIN, Yu. Yu.

G. Information Services

1. General

60. USSR

UKHIN, Yu. Yu. UDC 002.5.001.57

"A Method of Designing Information Systems Based on the Analysis of Structural Models"

Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 1, No 2, 1971, pp 8-10

Abstract: The method of morphological analysis is examined for the purpose of improving the scientific information activity which greatly affects the operation of automated control systems. The information system is examined as a complex system consisting of a set of blocks which execute individual operation of scientific information activity. The various combinations of these blocks are examined, with the consideration of the limitations in their interconnection. It is thus possible to obtain numerous systems of specific sequence of operations and to select the most effective one. A priori data obtained from information workers and users are used in the development of these systems. The three main blocks which make it possible to construct various information models are based on two concepts: (1) "operation," one of the elements of purposeful activity which is related to obtaining,

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USSR

UKHIN, Yu. Yu., Nauchno-Tekhnicheskaya Informatsiya, Seriya 1, No 2, 1971, pp 8-10

converting, transmitting, or creating information; and (2) "document." In the diagram, "operation" is indicated by a rectangle and the "document" by a circle; their combinations constitute the structural block of an information model. If an arrow is directed from the rectangle to the circle, the "operation-document, representing the results of the operation" block is obtained (type A). If the arrow is directed from the circle to the rectangle, the "document, regulating operation-operation" block is obtained (type B). Type C is a block with many inputs and outputs. The morphological analysis of information systems includes the selection of operations, logical ordering of the selected operations, selection of documents, construction of "operation-document" matrix, construction of a matrix of interconnection of operations, presentation of various possible models, and selection of the optimal information system model. Several possible systems of models and their practical applications are discussed. The suggested method of investigating information systems is most effective for further improvement of the operation of these systems.

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USSR UDC: 669.765'75:548.5

VIGDOROVICH, V. N., UKHLINOV, G. A., DOLINSKAYA, N. Yu., MARYCHEV, V. V., Moscow

"Study of Conditions of Production of Single Crystals of bismuth and bismuth-antimony alloys"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 6, 1973, pp 57-63.

Abstract: The process of growth of single crystals of bismuth and bismuth-antimony alloys has a number of peculiarities which make it difficult to produce them reliably and to achieve structural perfection. It is particularly difficult to prevent curvature of the crystal relative to the growth direction, the appearance of parasitic blocks on one side of the single crystal and the formation of structural defects such as twins, dislocations, etc. Changing of external conditions does not eliminate these difficulties, indicating that they result from the crystallochemical nature of bismuth and antimony. The authors recommend use of the most favorable orientations of seeds to assure reproducible growth of single crystals. Optimal growth directions are recommended to provide the best structure during growth of single crystals. The optimal directions are those for which the shear planes (111) and (11$\bar{1}$)

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Vigdorovich, V. N., Ukhlinov, G. A., Dolinskaya, N. Yu., Marychev, V. V., Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 6, 1973, pp 57-63.

are perpendicular to the crystallization front, while the directions [101] and [10$\bar{1}$] coincide with the direction of growth.

Acc. Nr: AP0034405 U Ref. Code: UR 0297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 2, pp 99-102

A NEW [redacted] OF MICROMONOSPORA PRODUCING MANNOSIDOSTREPTOMYCIN

Gauze, G. F.; Brazhnikova, M. G.; Sveshnikova, M. A.
Ukholina, R. S.; Nechayeva, N. P.

Institute for New Antibiotics, Academy of Medical Sciences of the USSR, Moscow

Two cultures (1570 and 1575) of Micromonospora were isolated from a sample of tropical soil. The stains are described as a new species designated as Micromonospora pallida sp. nov. M. pallida differs from other species by the absence of the mycelium coloration and an ability to form well developed non-sporulating aerial mycelium on certain media. Antibiotic mannosidostreptomycin was isolated from the culture fluid of strain 1575.

D.2.

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REEL/FRAME
19711065

SPKS 5908
6-75

UKHORSKAYA, T.A.

X-6b. APPLICATION OF ELECTRON SOUNDING MICROANALYSIS TO INVESTIGATE SEMICONDUCTOR SOLID SOLUTIONS OBTAINED BY THE METHOD OF CAPACITIVE EPITAXY

[Article by T. A. Ukhorskaya, E. A. Gimel'farb, L. M. Dolginov, V. Ya. Platul', Moscow; Novosibirsk, III Simpozium po Fotoemissan Hosiel Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 114]

The method of electron sounding microanalysis was used to study the peculiarities of the distribution of the basic components with respect to thickness of layers of semiconducting solid solutions of $A^{III}B^{V}$ and $A^{II}B^{VI}$ obtained by the method of liquid epitaxy (GaAs-AlAs, InP-GaP, GaSb-ZnSe, and so on). The procedural possibilities of the local x-ray spectral and microcathode luminescence analyses for studying the growth process of semiconductor crystals and films were demonstrated. The temperature functions on the variation of the distribution coefficients of the components between the solid phase and liquid phase obtained by the results of x-ray spectral and cathode luminescence measurements agree well with the theoretical curves. The simultaneous recording of the x-ray and optical spectra in microvolumes on the order of several microns permitted investigation of the laws of variation of the physical parameters, in particular, the width of the forbidden zone along with the distribution laws of the components in the epitaxial layers.

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USSR

Mechanical Properties

UDC: 669.7.016

AFANAS'YEV, V. K., UKHOV, V. L., Krasnoyarsk Institute of Nonferrous Metals

"Influence of Tensile Strain Rate and Temperature on Some Properties of Binary Alloys in the Al-Mg System"

Kiev, Problemy Prochnosti, No 4, Apr 73, pp 105-109

Abstract: An investigation is made of the effect of strain rate and temperature factors on the mechanical properties, microstructure and type of fracture in aluminum alloys containing 1.12-11.5% magnesium. The tests were done at temperatures of 20-350°C and tensile strain rates of 10^{-3}-10^{2} mm/min. The results reveal intervals of strain rates and temperatures where the investigated alloys have low ductility. The drop in ductility corresponds to the development of porosity in the microstructure. In this case, fracture is mixed, and chiefly transcrystallite. Increasing the magnesium content and reducing the tensile strain rate broaden the temperature range of low ductility, and reduce the absolute values of ductility characteristics in this interval. At high test temperatures, the nature of fracture changes from mixed (at points of accumulation of decay products and "microporosity", and partly along grain boundaries) to intergranular. The

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USSR

AFANAS'YEV, V. K., UKHOV, V. L., Problemy Prochnosti, No 4, Apr 73, pp 105-109

temperature of transition to intergranular fracture increases with a decrease in magnesium concentration in the alloy and an increase in tensile strain rate. Strength properties decrease with increasing temperature regardless of the strain rate and the magnesium content in the alloys, and at 350°C these characteristics practically coincide for all alloys.

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UDC 621.314.58 (088.8)

USSR

AKODIS, M.M., DROBININA, T.YA., UKHOV, V.S., SHIPITSIN, V.V. [Ural'sk politekhn. in-t--Ural Polytechnical Institute]

"Frequency Converter Using Controlled Rectifiers"

USSR Author's Certificate No 267763, filed 16 Jan 68, published 9 July 70 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2B565P)

Translation: In order to increase the effectiveness and reliability of thyristor frequency converters which contain saturable reactors, it is proposed in shunting thyristorized networks to connect a semiconductor diode and a resistor in parallel and to include a capacitor in series with them. 1 ill. I.R.

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USSR

UDC 615.217.4.015

KUZ'MITSKIY, B. B., AKHREM, A. A., UKHOVA, L. I., MAROCHKIN, A. P., and BLUDOVA, G. V., Minsk Medical Institute and Institute of Physical and Organic Chemistry, Academy of Sciences, Belorussian SSR

"Pharmacological Properties of Stereoisomeric 4-Vinylethynyl- and 4-Butyl-Substituted Decahydro-4-quinololes"

Moscow, Farmakologiya i Toksikologiya, No 6, 1972, pp 665-668

Abstract: The spectrum of neurotropic activity of several new decahydroquinoline derivatives (2-methyl- and 1,2-dimethyl-4-vinylethynyldecahydroquinololes-4 and 2-methyl- and 1,2--dimethyl-4-butyldecahydroquinololes-4) was studied in experiments on mice, rats, and cats. The compounds were found to have ganglion-blocking and antinicotinic activity. They inhibited the transmission of excitation mainly in the parasympathetic ganglia of the heart, had little effect on the superior cervical ganglion, and did not significantly alter the sensitivity of the M-cholinoreceptors or noncholinergic neurons. The ganglion-blocking and antinicotinic activity of the compounds varies with their chemical and spatial structure. Large doses intensify the central action of amphetamine sulfate, prolonging stereotypic movements in the rat. The 2a4e isomer, a tertiary amino alcohol, is the most active. There is no correlation between N-choline-blocking activity and toxicity when the configuration of the compounds is changed.

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USSR

UDC 541.69 + 547.594.5

KUZ'MITSKIY, B. B., AKHREM, A. A., UKHOVA, L. I., and USKOVA, N. F., Minsk State Medical Institute, Institute of Physico-Organic Chemistry, Academy of Sciences BSSR, and Institute of Organic Chemistry Imeni N. D. Zelinskiy, Academy of Sciences USSR

"Conformational Effects of 1,2,4-Substituted Decahydroquinolol-4 Derivatives on Their Biological Activity"

Moscow, Izvestiya Akademii Nauk, Seriya Khimicheskaya, No 7, Jul 70, pp 1678-1679

Abstract: Cholinolytic activity depends principally on the hydrocarbon substituent in position 4. The most active are compounds with an ethynyl substituent, less so with a vinyl, and least active are those with an ethyl or acetyl substituent. As far as the effect of spacial orientation is concerned, compounds with the methyl and alkyl groups in 2-axial, 4-equatorial conformation are most active, those 2e4a-oriented are less active, and 2e4e substituted ones are least active. Toxicity of this type of compounds relates in the opposite direction: the least toxic are those of the 2a4e series, followed by 2e4a and 2e4e compounds in increasing order of toxicity.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420002-6"

1/2 011 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--STEREOCHEMISTRY OF THE ETHYNYLATION OF 1,2,DIMETHYL,DECAHYDRO,4,QUINOLONES ISOMERIC AT C 2 -U-

AUTHOR-(03)-AKHREM, A.A., UKHOVA, L.I., USKOVA, N.F.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSR, SER. KHIM. 1970, (4), 900-3

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--STEREOCHEMISTRY, QUINOLINE, KETONE, ISOMER, PICRIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0941 STEP NO--UR/0062/70/000/004/0900/0903

CIRC ACCESSION NO--AP0134665

UNCLASSIFIED

2/2 011 UNCLASSIFIED

CIRC ACCESSION NO--AP0134665 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PASSING HCL INTO MIXED ISOMERS OF 1,2,DIMETHYLDECAHYDRO,4,QUINOLONES (I) IN ET SUB2 O GAVE A MIXT. OF HCL SALTS, WHICH WERE SEPD. INTO A SALT (II) M. 168-9DEGREES AND A SALT (III) M. 146-7DEGREES; TREATMENT OF THE FILTRATE FROM THIS WITH PICRIC ACID GAVE A PICRATE (IV) M. 193-4DEGREES AND A PICRATE (V) M. 173-4DEGREES. II TREATED WITH K SUB2 CO SUB3 GAVE AN ISOMER (VI) OF I, B SUB1 TIMES 5 85-7DEGREES, N PRIME20 SUBD 1.4956; ALSO FORMED FROM V. III GAVE AN ISOMER (VII) OF B SUB1 TIMES 5 87-8DEGREES, M. 52-3DEGREES, WHICH WAS FORMED IN PART BY IV, ALONG WITH VI. C SUB2 H SUB2 PASSED INTO NA IN LIQ. NH SUB3 3 HR, THEN TREATED WITH VI GAVE 58PERCENT 1,2,DIMETHYL,4,ETHYNYLDECAHYDRO,4,QUINOLOL, M. 134-5DEGREES, WHILE THE MOTHER LIQUOR GAVE 29PERCENT ISOMER, M. 115-16DEGREES. SIMILAR REACTION WITH VII GAVE 56PERCENT 4,QUINOLOL ISOMER, M. 133-3.5DEGREES IN 56PERCENT YIELD. THE PIPERIDONE WHICH FORMS VI PROBABLY HAS CIS RING JUNCTURE. VII EVIDENTLY IS CAPABLE OF REACTING WITH NAC TRIPLE BOND CH VERY STEREO SELECTIVELY AND TO FORM ONLY THE ONE ISOMER OF THE QUINOLOL WITH AN EQUATORIAL ETHYNYL GROUP. FACILITY: INST. FIZ. ORG. KHIM., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 617.781-009.24-073.96-092.9

UKHYTIL, B., NOVOTNY, M., and POLAKH, I., Clinic of Ear, Nose and Throat Diseases, and Chair of Social Medicine, Purkinje University, Brno

"Objective Recording of Postrotation Nystagmus in Experimental Animals"

Moscow, Vestnik Otorinolaringologii, No 6, 1972, pp 55-58

Abstract: Thirty guinea pigs were rotated in a specially designed chair at different speeds from 8 to 100°/sec to determine the threshold of excitability of the vestibular apparatus and establish the relationship between individual values of the electronystagmogram and the speed of rotation. None of the animals reacted to 8°/sec, the lowest rate of rotation; 1 did so to 10°/sec, 5 to 12°/sec, 16 to 14°/sec, and 24 to 16° sec. Thus, in most of the animals the threshold of excitability of the vestibular apparatus was in the 14 to 16°/sec range. The relationship between the individual values of the electronystagmogram and rate of rotation expressed in logarithms was found to be a linear one starting at 14°/sec.

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USSR UDC 616.136.4+616.149.21]-001.29-092.9-085.276-059:615.355:577.156.014

UKLONSKAYA, L. I., KUDRYAVTSEV, V. D., SUSHKEVICH, L. N., and CHERKASOV, V. F., Department of Radiation Pathophysiology (Chief, Prof. V. P. Baluda), Scientific Research Institute of Medical Radiology, Academy of Medical Sciences USSR, Obninsk

"The Effect of Antiphlogistic and Antiproteolytic Preparations on Vascular Disturbances of the Intestines of Animals Irradiated by Superlethal Doses"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 76, No 8, Aug 73, pp 37-39

Abstract: In experiments conducted on rats irradiated with superlethal doses of Co^{60} gamma-rays (900 and 1000 r), antiphlogistic (butadion -- 5 mg/kg, paracetamol -- 15 mg/kg, and rheopyrene -- 3 mg/kg) and antiproteolytic (trasylol -- 7.5 CIU/kg in combination with E-aminocapronic acid -- 200 mg/kg) preparations were injected intraperitoneally. The functional condition of the vascular wall of the small and large intestines of rats was assessed 72 hours after irradiation by the appearance of Evans blue in the intestinal tissues.

Butadion, which considerably diminished the amount of stain in the tissue, proved to be the most effective. It also increased the survival period

USSR

UKLONSKAYA, L. I., et al., Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 76, No 8, Aug 73, pp 37-39

of the irradiated animals; this permitted the supposition to be made that vascular disturbances played a definite role in the pathogenesis of the intestinal form of radiation sickness. 2 figures. 13 references.

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UKLONSKAYA, R. A.

JPRS 55570
29 May 72

UDC: 616-053.2-082:362.11:005

ORGANIZATIONAL AND METHODOLOGICAL WORK AT DONETSKAYA OBLAST HOSPITALS WITH REFERENCE TO MEDICAL CARE FOR CHILDREN

[Article by N.A. Uklonskaya, candidate of medical sciences, M.P. Yukhno, L.P. Gol'dshteyn, All-Union Scientific Research Institute of Social Hygiene and Public Health Organization imeni N.A. Semashko, Moscow; Donetskaya Oblast Children's Hospital; Donetskaya Oblast Central Clinical Hospital; Moscow, Sovetskaya Zdravookhraneniye, Russian, No 2, 1972, submitted 28 September 1971, pp 12-16]

There are three oblast hospitals with distinct functions in Donetskaya Oblast. Oblast Hospital imeni M.I. Kalinina is the center for therapeutic and consultative as well as organizational and methodological work related to medical care for the adult population; the Oblast Children's Hospital takes care of the urban child population, and the Oblast Central Clinical Hospital takes care of the rural population, including children.

Donetskaya Oblast is an industrial area. The urban population is larger than the rural (76 and 24%, respectively). There are 257 therapeutic and prophylactic institutions with 1,579 pediatricians taking care of the children. Specialized care in polyclinics is rendered by 39 ophthalmological, 32 otorhinolaryngological, 12 surgical, 36 neurological and psychiatric, 31 dermatological, and 13 endocrinological offices. The oblast hospitals have 9,950 beds for children, including 2,543 in 19 children's therapeutic hospitals.

The Oblast Children's Hospital has a capacity of 500 beds and a polyclinic that can see 500 patients per day; the latter services six pediatric districts of the city and, at the same time, offers consultations; the structure of the Oblast Children's Hospital includes an organizational and methodological office, laboratories with departments for clinical, biochemical, and bacteriological examinations, X-ray laboratory, functional diagnostic office, three physiotherapy departments and three offices for therapeutic physical culture, a pathoanatomical department with a pathohistological laboratory.

There are ten specialized departments in the hospital: three therapeutic (160 beds), two infectious (120), two surgical (120) including a department

USSR

UDC: 621.396.6.017.72

SEVERNYY, V. V., UKLONSKIY, D. A., VARLAMOVA, N. V., MINSKER, Ye. I.

"Heat Conducting Organosilicon Materials"

Obmen opytom v radiopром-sti (Experience Pooling in the Radio Industry), Vyp. 10, Moscow, 1970, pp 39-40 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2V320)

Translation: The overall thermal conductivity of a given device may drop appreciably as a result of an increase in contact thermal resistance when there are air gaps between contacting surfaces. These resistances are reduced by using heat conducting pastes, those with an organosilicon base in particular. Among these are thixotropic pastes designed merely for filling gaps and not for cementing, and pastes of the "Elastosil" type which harden after application and may also act as cements or sealants. Data on these pastes are given. Three tables. N. S.

1/1

USSR UDC 681.327.2.022

RICCARDI, Giuseppe, UKMAR, Boris, Ing. S. Olivetti and Co., Ltd., Italy

"A Memory Device"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 23, Aug 71, Patent No 310462, Division G, filed 24 Jun 67, published 26 Jul 71, p 208

Translation: This Patent introduces a memory device which contains storage modules whose memory elements are arranged in a circle and are connected to recording and readout mechanisms. The device also includes a drive and a control unit. As a distinguishing feature of the patent, the operational reliability of the device is improved by adding a tracking screw couple. The screw of this tracking mechanism is connected to a worm shaft in the readout mechanism, while the nut is connected to a worm shaft in the recording mechanism. Also added for operational reliability are mechanisms for keyboard interlock and readout delay. Follow-up levers in these mechanisms are coupled to one of the tapered surfaces of the nut in the tracking screw couple and also to the follow-up lever of the mechanism for actuating the clutch for the worm shaft

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USSR

RICCARDI, G., and UKMAR, B., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 23, Aug 71, Patent No 310462, Division G, filed 24 Jun 67, published 26 Jul 71, p 208

drive in the readout mechanism. This latter follow-up lever is coupled to the other tapered surface of the nut and through a three-arm lever to the follow-up lever of the keyboard interlock mechanism. Conventional priority from 26 Jun 66.

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USSR

UDC 629.76/.78.015:533.6

PETROV, B. N., VLASOV, A. G., MITROSHIN, E. I., UKOLOV, I. S.

"Stochastic Optimal Control System Under Entry Into the Atmosphere With Second Cosmic Velocity"

V sb. Upravleniye v kosmose. T. 1 (Control in Space. Vol 1 -- Collection of Works), Moscow, "Nauka", 1972, pp 32-40 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B345)

Translation: The problem of the optimal control of the perturbed motion of a descending space ship is discussed in the stochastic approximation. 6 ref. Authors' abstract.

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USSR

UDC 620.78.062.2

UKOLOV I. S.

"Processes of Adaptation in Aircraft Control Systems"

Inform. Materialy. Nauch. Sovet po Kompleks. Probl. (Information Materials of the Scientific Council on Complex Problems). "Kibernetika." AN SSSR, No 6 (53), 1972, pp 5-19 (from Referativnyy Zhurnal, Raketostroyeniye, No 5, 1972, Abstract No 5.41.210 by T. A. Ye.)

Translation: The principal particularity of adaptive (self-adjusting) systems consists in the fact that evaluating and analyzing the dynamic characteristics of the aircraft directly in the process of flight, the system reorganizes the parameters of the control circuit in the necessary direction for providing the optimal reserves of stability and quality of the control processes. It has been shown by research, as well as by operating experience that the use of self-adjusting and automatic pilots provides: simplification of the control systems due to the elimination of data units and systems, previously necessary for routine change of the transmission ratios; an increase of operating reliability and flight safety; contraction of the scope of stand and flight tests by one or two orders of magnitude; a decrease of the requirements for allowances for replacement components; improvement of

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USSR

UKOLOV, I. S., Inform. Materialy. Nauch. Sovet po Kompleks. Probl. "Kibernetika." AN SSSR, No 6 (53), 1972, pp 5-19 (from Referativnyy Zhurnal, Raketostroyeniye, No 5, 1972, Abstract No 5.41.210 by T. A. Ye.)

the technical characteristics (controlability and stability) under critical flight conditions, etc. The present article deals with problems of adaptation of the dynamic conditions of an aircraft, the indicators of quality evaluation and identification in self-adjusting systems, the algorithmic approach to the investigation and realization of adaptive systems, the effectiveness of adaptive systems, and the basic functional problems. 10 references.

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USSR

UDC 629.78.015.076.8

VIKTOROV, B. V., OLEYNICHENKO, L. G., and UKOLOV, I. S.

"Investigation of a System of Variable Structure for Controlling Descent in an Atmosphere With Account Taken of Time Lag in Processing the Control Command"

Inform. Materialy. Nauch. Sovet po Kompleks. Probl. (Information Materials of the Scientific Council on Complex Problems). "Kibernetika." AN SSSR, No 6 (53), 1972, pp 47054 (from Referativnyy Zhurnal, Raketostroyeniye, No 5, 1972, Abstract No 5.41.136 by T. A. Ye.)

Translation: In a preliminary investigation of descent control systems, the ordinary trajectory motion of the descending craft is studied separately from the motion of the descending craft in relation to the center of mass. However, a lag in processing the control command exerts a substantial influence upon the quality of the control process. There is pointed out the necessity for simultaneous consideration of the total motion of the descending craft, and for determining the influence of comparatively rapid oscillations of the craft in relation to the center of mass upon the character of control of the parameters of trajectory motion. 5 figures. 5 references.

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1/2 051 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--STOCHASTIC OPTIMAL CONTROL SYSTEM OF REENTRY AT SUPERCIRCULAR VELOCITY -U-

AUTHOR-(04)-PETROV, B.N., VLASOV, A.G., MITROSHIN, E.I., UKOLOV, I.S.

COUNTRY OF INFO--USSR, FRANCE

SOURCE--INTERNATIONAL FEDERATION OF AUTOMATIC CONTROL, SYMPOSIUM ON AUTOMATIC CONTROL, 3RD, TOULOUSE, FRANCE, MAR. 2-6, 1970, PAPER. 17

DATE PUBLISHED-------70

SUBJECT AREAS--SPACE TECHNOLOGY, NAVIGATION

TOPIC TAGS--REENTRY TRAJECTORY, SPACECRAFT REENTRY, SPACECRAFT CONTROL, TRAJECTORY OPTIMIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0002 STEP NO--FR/0000/70/000/000/0017/0017

CIRC ACCESSION NO--AT0117302

UNCLASSIFIED

2/2 051 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0117302

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL ANALYSIS OF SPACECRAFT REENTRY TRAJECTORY CONTROL WITH THE AID OF ACCELERATORS MOUNTED ON A GYROSTABILIZED PLATFORM AS FLIGHT INFORMATION SOURCES. REENTRY TRAJECTORIES WITH LATERAL VELOCITIES BEING ONLY SMALL FRACTIONS OF LINEAR VELOCITIES ARE CONSIDERED. EQUATIONS ARE DERIVED TO DESCRIBE A STOCHASTIC OPTIMAL REENTRY CONTROL SYSTEM. ALSO ESTIMATED IS THE ACCURACY AND COMPLETENESS OF REENTRY TRAJECTORY DATA OBTAINED WITH THE AID OF A KALMAN FILTER. A COMPUTER ALGORITHM IS DEVELOPED FOR SPACECRAFT REENTRY TRAJECTORY OPTIMIZATION.

UNCLASSIFIED

Oncology

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UDC 616-006-092.9-02:615.847.8

USSR

UKOLOVA, M. A., and KVAKINA, Ye. B., Rostov Scientific Research Oncology Institute, Ministry of Public Health RSFSR

"The Effect of Magnetic Fields on Tumor Growth"

Leningrad, Voprosy Onkologii, Vol 16, No 2, 1970, pp 88-91

Abstract: A study was made of the effect of a weak magnetic field on tumors induced with 3,4-benzpyrene (sarcomas) and on first generations of transplanted sarcomas obtained from the induced ones. Experiments were conducted on 204 rats exposed to the action of a magnetic field after the tumors reached an average size of 0.41 ± 0.06 cubic centimeters (the induced ones -- 3.5-4 months after the first injection of carcinogen and the transplanted ones -- 7-10 days after transplantation). Some of the rats received an adrenalin injection in addition to the magnetic field exposure. Experiments on rats with transplanted "benzpyrene" sarcoma showed that the magnetic field caused an inhibition of tumor growth down to complete resorption, both in direct action on the tumor and in action only on the head of the animal. The antineoplastic effect of the magnetic field was intensified in animals receiving adrenalin. The intensifying influence of adrenalin

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USSR

UKOLOVA, M. A., et al, Voprosy Onkologii, Vol 16, No 2, 1970, pp 88-91

was also noted in experiments with animals where a constant magnetic field (not a rotatory one) with an intensity of 2500 gauss was used, which by itself was not very effective. Two series of experiments were conducted on rats with induced tumors. In the first series, the magnetic field was applied on alternate days over the head and over the tumor. After one month, the average size of the tumor in experimental animals was 12 times smaller than in controls. Then, regardless of the continued exposure, all the tumors except one began to grow at a fast rate. However, the experimental animals lived 39-49 days, while controls lived 25-32 days. In the second series of experiments, the magnetic field was applied daily to two groups of rats, one group receiving the exposure on their heads and the other group on their tumors. While the tumors of all the control animals were distinguished by rapid growth, tumor development in experimental animals was inhibited. The tumors of five of the 12 experimental animals were completely resorbed, four after magnetic field action on the head and one after action on the tumor. As a result of the experiments conducted, it was determined that under the action of a magnetic field, inhibition of growth down to complete resorption can be obtained both in transplanted and in induced tumors.

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USSR

UDC 632.95

MEL'NIKOV, N. N., SOKOLOVA, YE. M., TRUNOV, P. P., VOLODKOVICH, S. D., DYUSHAKOVA, G. M., GOLYSHIN, N. M., ABELENTSEV, V. I., UKANI YE. N. S., FEDOSEYENKO, L. G., ZAIKIN, B. A., DYUMISHEVSTOV, M. G., VISHEVSKAYA, A. M., ORLOV, S. I., ZAVIZION, A. P., and TALASH, A. I.

"Polycarbazin"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works), vyp 1, Moscow, 1970, pp 95-104 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N503 by T. A. Belyayeva)

Translation: The effectiveness of polycarbazin (I) on apple scab and grape-vine mildew equals that of zineb (II) and polyram-combi, while on cherry-fruit gray rot it equals Bordeaux liquid (III) (1 percent), but is ahead of II. I equals II and III for Clasterosporium infection of the cherry plum and tomato macrosporiosis. The decisive factor which determine the length of action of I is precipitation, which washes thepreparation off plants.

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USSR

UDC 632.95

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PYATHOVA, YU. B., GOLUBEVA, V. A., GOLYSHIN, N. M., UKRAINETS, N. S., ABELENTSEV, V. I., FEDOSENKO, L. G., VISHNEVSKAYA, A. N., PUSTOVOYTOVA, V. I., and DVUKHSHERSTOV, M. G.

"Editone"

Khim. sredstva zashchity rast. (Chemical Means of Protecting Plants -- collection of works), Issue 1-M, 1970, pp 129-134 (Referativnyy Zhurnal -- Khimiya, No 10, (II), 1972, Abstract No 10H550 by T. A. Belyayeva)

Translation: Investigation of editone -- 3,3'ethylene-bis-4,6-dimethylte-trahydro- 1,3,5-thiadiazinth-2-one (I) -- in laboratory conditions in vitor showed that I is equivalent in fungicidal property to Phygon and offers no threat to green plants. The effectiveness of I in countering apple scab, grapevine mildew, cherry-plum Clasterosporium, monilial blight, grey mold of cherry trees, and Macrosporium in tomatoes is equal to or exceeds the effectiveness of zineb and copper oxychloride (concentration 0.25-0.125%) and of Bordeaux mixture in 1% concentration. I is not effective in combatting powdery mildew.

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USSR

UDC 632.95

GOLYSHIN, N. M., FEDOSEYENKO, L. G., UKRAINETS, N. S., ABELENTSEV, V. I., and SOLOV'YEVA, G. V.

"Use of a Combined Preparation of Copper Oxychloride and Zineb"

V sb. Khim. sredstva zashchity rast. (Chemical Agents for Plant Protection -- collection of works), vyp 1, Moscow, 1970, pp 110-115 (from RZh-Khimiya, No 11, Jun 72, Abstract No 11N428)

Translation: Mixtures of copper oxychloride and zineb in ratios of 1:1.5, 1:6 and 4:1 freshly prepared immediately before spraying had greater effectiveness in controlling apple tree mange and grape mildew than did the components applied separately. The most effective was a mixture with a ratio of 1:1.5. A mixture prepared with the same ratio of components as in Cuprosan Super D was just as effective in field tests as the latter.

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USSR

UDC 535.211:539.216.2

URAZALIYEV, U. S., UKRAINSKIY, YU. M., GOMAN'KOV, L. M., and GALKIN, B. D., Moscow

"Crystal Structure and Chemical Composition of Thin Permalloy Films Produced by Laser Radiation Pulses in a Free Generation Mode"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 4, Jul-Aug 73, pp 151-152

Abstract: The crystal structure and chemical composition of thin permalloy films, produced by laser pulse radiation in the mode of free generation, were investigated for films made in a vacuum of 10^{-4} torr using a ruby laser with a pulse energy of approximately 4 joule and pulse time of approximately 450 microseconds. The exceptionally high rate of deposition of the film from laser radiation was noted and the crystal structure of the film resulted from the high kinetic energy of the vaporized atoms and heating of the substrate in the deposition process. It was found that the vacuum efficiency was 1-2 orders higher in laser radiation than in vacuum thermal vaporization and cathode spraying. Two bibliographic references.

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USSR

UDC 621.923.04

ORLOV, P. N., UKRAINSKIY, YU. M., GALKIN, B. D. and SKVORTSOV, K. F.

"The Character of the Surface Layer of Gallium Arsenide After Abrasive Grinding"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Mashinstroyeniye, No 4, 1973, pp 158-161

Abstract: The influence of the process dynamics of the grinding used in preparing layers of gallium arsenide on the depth of the disturbed layer is considered. Using electron diffraction it was concluded that in order to increase productivity it is necessary to use high speeds and acceleration of the grinder on the foundation. On the other hand, in order to obtain a minimal disturbed layer for final polishing low speeds and minimal acceleration are required. These effects are due to the influence of plastic deformation on the process.

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Thin Films

UDC 537.523.5:621.79

USSR

IVANOV, R. D., TIKHONOV, A. A., UKRAINSKIY, YU. M., and URAZALIYEV, U. S., Moscow

"Microstructure, Phase, and Chemical Composition of Thin Permalloy Films As Affected by Cathode-Plasma Sputtering Conditions and Negative Space Charge on Substrate Surface"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70, pp 61-68

Abstract: The authors obtained films on both flat and cylindrical substrates using an apparatus based on the three-electrode system principle, employing either a glow-discharge cathode or a cathode-plasma sputtering regime. Permalloy 79NM was used as the target, ultrapure xenon as the process gas. The structural properties and chemical composition of the films were studied by electron microscopy (size of the crystallites on the film surface), electron diffraction (phase composition of a film on the surface), x-ray diffraction analysis (phase composition and lattice spacing of phase components according to the film volume)

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USSR

IVANOV, R. D., et al., Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70, pp 61-68

and x-ray fluorescence analysis (overall content of alloy components in a multicomponent target and film).

An increase in the target potential results in a sharp increase in the average crystallite size, as well as partially oriented crystallization of the films. Gamma-phase crystallites with {110} planes are parallel to the substrate surface. In addition to the gamma phase, a constant impurity in the films under all cathode-plasma sputtering conditions is antiferromagnetic NiO with a polycrystalline structure and a more highly dispersed microstructure than ferromagnetic gamma-phase crystals. There is a quantitative increase in NiO with increased target potential. There is a clearly pronounced tendency towards increased iron content with increased target potential. Iron enrichment of the ferromagnetic gamma phase takes place, the enrichment being more pronounced the more intensive the cathode-plasma sputtering regime. The pressure during the sput-

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USSR

IVANOV, R. D., et al., Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70, pp 61-68

tering process has a marked effect on the film dispersity, viz. the lower the pressure of the process gas and of the residual gases before letting in the process gas, the larger the crystallites. In cathode sputtering an inevitable result of the sputtering is a space charge on the surface of the isolated substrate. The charge potential was measured. It is shown that this charge reduces the rate of film deposition, affects the microstructure, and possibly promotes iron enrichment of the Permalloy films. The presence of oxide inclusions and the increased overall iron content of the film, especially the ferromagnetic gamma phase, cause increased coercive force and anisotropy field values and a positive magnetostriction sign.

3/3

USSR

UDC 621.52:539.23

MALYUKOV, B.A., UKRAINSKIY, YU. M., KOROLEV, V.YE.

"Nonstandard Method For Determining The Thickness Of Coatings With The Aid Of An X-Ray Fluorescent Spectrometer"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Technology. Scientific Technical Collection. Materials), 1970, Issue 3, pp 120-121 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1A54)

Translation: Formulas are derived for computation of the thickness of coatings, by the intensity of fluorescence under the effect of x-ray radiation. These formulas can be used during x-ray spectroscopic analysis of one-component film without use of standards. The precision of the proposed nonstandard x-ray spectroscopic method was equal to ~ 1.7% during analysis of thin films of tin deposited in a vacuum on pyroceramic substrates with respect to line SnK_{α} and ~ 4% during analysis with respect to line SnL_{α}. G.B.

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UNCLASSIFIED PROCESSING DATE--03JUL7

TITLE--IMPACT STRENGTHENING OF HARD ALLOY TOOLS -U-

AUTHOR--KHAYET, G.L., UKRAINTSEV, G.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, VESTNIK MASHINOSTROYENIYA, NO 1, 1970, PP 32-35

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MACHINE TOOL, METAL HARDENING, SHOT BLASTING, COBALT CONTAINING ALLOY, TUNGSTEN CONTAINING ALLOY, TOOL STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1979/0190 STEP NO--UR/0122/70/000/001/0032/0035

CIRC ACCESSION NO--APOO46869

UNCLASSIFIED

Acc. Nr.: AP0046869

Ref. Code: UR0122

USSR

UDC 621.9.025.13:669.018.257:621.787.6

KHAET, G. L., Candidate of Technical Sciences and UKRAINTSEV, G. A., Engineer

"Impact Strengthening of Hard Alloy Tools"

Moscow, Vestnik Mashinostroyeniya, No 1, 1970, pp 32-35

Abstract: The results of tests conducted for tool strengthening by a blast of metal spheres of 0.1 mm in diameter and by hydro-abrasion, are described. The tests were conducted with 76.2 x 19 x 1.27 mm plates of different alloys, clamped in a special jaw, with a blast directed normally to the plates. It was observed that the plate deflection under blast increased rapidly with time, but after 1-2 minutes slowed down and after 3-5 m. ceased completely. Diagrams of residual stress, calculated from plates deflection, presented in a graph show that residual compression stresses are up to 60-80 kg/mm^2 with 0.1 mm thickness of hardened layer. It was established that substantial residual stresses

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may be obtained by blast method on hard alloys with various cobalt contents. The single and double tungsten alloys are less susceptible to strengthening. In order to check the efficiency of surface strengthening of hard alloy tools and to establish the rational domain of application of this method to industry, extensive performance tests were conducted by different tool plants. Their results presented in a table show, that the strengthening of the entire tool is recommended for rough and semi-finish jobs. It is stated that the blast process for strengthening is used simultaneously for cleaning the tools from scales and solder. The economy obtained by the application of this method to current production is emphasized. Original article has 3 figures and 2 tables.

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19790191

USSR

UKRAINTSEV, G. V., FROLOV, V. M. UDC 629.78.015.4

"Method for Optimizing the Force Design of a Wing for Rigidity Under Variation by Distribution of the Relative Thickness of the Wing"

Uch. zap. Tsentr. aerogidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamic Institute), 1972, Vol. 3, No. 4, pp 65-76 (from RZh-41. Raketostroyeniye, No 11, Nov 72, Abstract No 11.41.126)

Translation: A method is proposed for optimizing the force design of a wing which produces a structure having the greatest bending rigidity by variation of the relative thickness of the wing and the greatest distribution function for thicknesses of the strengthening material under the condition of constant weight and satisfaction of certain aerodynamic limitations. 9 ill., Resume.

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1/2 010 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--HIGH TEMPERATURE MODIFICATIONS OF GERMANIUM MONOSULFIDE AND MONOSELENIDE -U-

AUTHOR-(03)-KARBANOV, S.G., ZLOMANOV, V.P., UKRAYNSKIY, YU.M.

COUNTRY OF INFO--USSR

SOURCE--IZV AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1), 125-6

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--X RAY DIFFRACTION ANALYSIS, QUARTZ, HIGH TEMPERATURE, GERMANIUM SULFIDE, SELENIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0072 STEP NO--UR/0363/70/006/000/0125/0126

CIRC ACCESSION NO--AP0054869

UNCLASSIFIED

2/2 010 UNCLASSIFIED

CIRC ACCESSION NO--AP0054869 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRESENT WORK WAS UNDERTAKEN TO STUDY THE PHASE COMPN. OF GES AND GESE AT 25-600DEGREES. SAMPLES OF STOICHOMETRIC COMPN. WERE PREPD. FROM THE ELEMENTS BY MELTING IN EVACUATED QUARTZ AMPULS AT 1000DEGREES BY USING VIBRATION AGITATION. THE LATTICE PARAMETERS WERE DETD. BY X RAY DIFFRACTION. UPON HEATING TO 590DEGREES THERMAL EXPANSION OF THE CRYSTAL LATTICE OCCURS. HEXAGONAL PHASES OF GES AND GESE ARE STABLE AT TEMPS. GREATER THAN 590DEGREES. THESE HIGH TEMP. PHASES OF THE 2 COMPDS. BELONG TO SPACE GROUP, D PRIME6 SUB6- C6 SUB3 2.

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TITLE--IMPEDANCE OF THE CHLORINE ELECTRODE IN FUSED SALTS -U-

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS OF THE ELECTROCHEM. OXIDN. ON GRAPHITE ELECTRODES OF CL DISSOLVED IN MOLTEN SALTS WAS INVESTIGATED. THE IMPEDANCE OF A GRAPHITE ELECTRODE IN CL SATD. MELTS OF NACL, KCL, RBCL, AND CSCL AND IN AN EQUIMOLAR NACL-KCL MIXT. WAS MEASURED AT TEMPS. FROM THE SALT M.P. TO 900DEGREES. FREQUENCIES OF 500 HZ TO 50-90 KHZ WERE USED. EXPTL. RESULTS AND CALCD. DATA WERE IN GOOD AGREEMENT. THE CONCENTRATIONAL IMPEDANCE DEPENDS EXCLUSIVELY ON THE DISSOLVED MOL. CL DIFFUSION. THE RESULTS OBTAINED DO NOT CONTRADICT, IN PRINCIPLE, THE CONCEPT RELATIVE TO THE INHIBITION OF ADSORBED CL ATOM RECOMBINATION; HOWEVER, THEY CANNOT PROVIDE POS. EVIDENCE OF SUCH A COURSE OF THE PROCESS MECHANISM. FACILITY: INST. NOVYKH KHIM. PROBL., MOSCOW, USSR.

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"Influence of Low-Temperature Aging Before High-Temperature Aging on the Mechanical Properties and the Structure of 40Kh4G18F Steel"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 4, Oct 73, pp 735-741

Abstract: The mechanical properties and the structure of 40Kh4G18F steel were experimentally investigated after different methods of heat treatment. The results are discussed by reference to diagrams showing the dependences of ultimate strength, yield limit, relative elongation, and relative narrowing at 650° and 700° at different aging conditions, and on the basis of isochronal hardness curves, hardness curves by isothermal aging at 700°, and electron microphotograph after aging. The processing according to the scheme hardening - low-temperature aging - high-temperature aging was found to give rise to a substantial increase in strength of 40Kh4G18F steel and, in certain cases, also in plasticity, if compared with only one high-temperature aging; the dispersion of separations was also increasing. A preliminary low-temperature aging before high-temperature aging influences effectively the increase of mechanical properties of steel, in which in aging the primary nuclei of the

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UVAROV, A. I., et al., Fizika Metallov i Metallovedeniye, Vol 36, No 4, Oct 73, pp 735-741

hardening phase possess an equiaxial form and are capable of growing in aging. The results make possible a selection of more optimum processing methods of 40Kh4G18F steel. Six figures, five bibliographic references.

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EFFECT OF VARIOUS COMBINATIONS OF AGING AND DEFORMATION ON THE STRUCTURE AND MECHANICAL PROPERTIES OF EI437B ALLOY

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The effect of deformation performed after low-temperature aging before high-temperature aging on the structure and mechanical properties of alloy EI437B was studied. Experimental data confirming the possibility of decreasing or preventing recovery in this alloy by means of moderate deformation between low-temperature and high-temperature aging were obtained. It was established that the use of low-temperature aging--deformation (straining)--high-temperature aging leads to an essential increase of the mechanical properties in comparison with aging without deformation.

In reference [1] the conclusion made earlier [2] that preliminary low-temperature aging before high-temperature aging must be effective in increasing the mechanical properties of alloys of the nimonic type was experimentally confirmed. In these alloys the initial nuclei of the precipitation phase have an equiaxial form and are capable of a noticeable growth at low-temperature aging. Also, prolonged aging at low temperatures increases the stability of the nuclei (or the Guinet-Preston zones) and their larger quantity is preserved in subsequent high-temperature aging. Such double aging provides a large dispersivity of the precipitations and high strength properties in comparison with the dispersivity and strength of the alloy aged at an increased temperature. However, the minimum on isothermic curves of hardness in high-temperature aging testifies that a