"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

2/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123663

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPN. OF CE NITRILOTRIACETATE PEROXIDE COMPLEXES IS CONSIDERED BY USING THE RESULTS OF ISOMOLAR SERIES AND MOLAR RATIO STUDIES OF THE SYSTEM CE(III) NITRILOTRIACETATE H SUB2 O SUB2. THE FOLLOWING EQUATIONS ARE PROPOSED: 2CER SUBM PLUS H SUB2 O SUB2 YIELDS X SUBM CEOOCCX SUBM PLUS H SUB2 WHERE X IS NITRILOTRIACETIC ACID. THE CE NITRILOTRIACETATE PEROXIDE REACTS WITH H SUB2 O SUB2: O SUB2 CE SUB2 X SUB2 SUBM PLUS H SUB2 O SUB2 PLUS OH PRIME NEGATIVE YIELDS O SUB2 CE SUB2 X SUB2M.NHO SUB2 PRIME NEGATIVE PLUS H SUB2 O. WITH M EQUALS 1, N EQUALS 1 AND 2; WITH M EQUALS 5, N EQUALS 2 AND 4. CONSEQUENTLY, WITH AND INCREASE IN THE CONTENT OF NITRILOTRIACETATE IN THE COMPLEX, THE CAPACITY OF THE COMPLEX INCREASES. THE INTENSITY OF THE ABSORPTION BANDS OF THE COMPLEX ALSO INCREASES. FACILITY: INST. FIZ. TVERD. TELA POLUPROV., MINSK, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--PHASE DIAGRAM OF A CERIUM NITRILOTRIACETIC ACID HYDROGEN PEROXIDE SYSTEM BASED ON SPECTROGRAPHIC ABSORPTION PROPERTIES -U-

AUTHOR-(03)-KRIVONOZHNIKOVA, L.G., GANOPOLSKIY, V.I., YERMOLENKO, I.N.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK BELORUSS. SSR 1970, 14(3), 230-2

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ABSORPTION SPECTRUM, CERIUM COMPOUND, ACETATE, COMPLEX COMPOUND, PHASE DIAGRAM, HYDROGEN PEROXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2006/1162 STEP NO--UR/0250/70/014/003/0230/0232

CIRC ACCESSION NO--AT0134844

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

2/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0134844

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ABSORPTION SPECTRUM OF THE PEROXYNITRILOTRIACETATE COMPLEX OF CE(III) WAS STUDIED AS A FUNCTION OF COMPN. OF THE TITLE SYSTEM. A TERNARY EQUIL. DIAGRAM WITH CONTOUR LINES OF EQUAL ABSORPTIVITIES INDICATES THE SOLN. COMPN. NEEDED FOR FORMATION OF A MAX. AMT. OF COMPLEX. THE MAX. ABSORPTION PROPERTIES OF THIS SYSTEM WERE NEAR THE COMPONENT RATIO OF 1:5:4 OF CE:NITRILOTRIACETIC ACID (H SUB3 N):H SUB2 O SUB2. THIS IS NOT THE COMPN. OF THE COMPLEX, BUT ONLY THE CONDITIONS FOR MAX. ABSORPTION. ALONG WITH CEX.NH SUB2 O SUB2 COMPLEXES, CEX SUB2 NH SUB2 O SUB2 COMPLEXES WERE PRESENT.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

1/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--ANNULAR POLARIMETER FOR MEASUREMENTS OF NUCLEON POLARIZATION IN NUCLEAR REACTIONS -U-

AUTHOR-(05)-OEHLER, H., KRIVOPUSTOV, M., SCHIRMER, G., SISOV, I.W., ASFOUR, F.

COUNTRY OF INFO--USSR

SOURCE--NUCL. INSTRUM. METHODS; 77: 292-9(1970)

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NEUTRON POLARIZATION, PROTON POLARIZATION, POLAR METER, MONTE CARLO METHOD, ELASTIC SCATTERING, ANGULAR DISTRIBUTION, NUCLEON INTERACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1816 STEP NO--NE/0000/70/077/000/0292/0299

CIRC ACCESSION NO--AP0054650

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

2/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0054650

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD OF THE ANNULAR POLARIMETER FOR MEASURING THE NUCLEON POLARIZATION IN NUCLEAR REACTIONS IS DESCRIBED IN DETAIL AND ITS ADVANTAGES AGAINST THE USUAL LEFT RIGHT ASYMMETRY METHOD ARE SHOWN. THE CALCULATIONS OF THE GEOMETRICAL FACTOR AND THE AVERAGED ANALYZING POWER WERE CARRIED OUT USING THE MONTE CARLO METHOD. FOR AN EXAMPLE THE POLARIZATION OF PROTONS FROM THE REACTION PRIME12 C(PRIME3 HE, P SUBO) PRIME14 N(G.S.) AT E(PRIME3 HE) EQUALS 2.87 MEV WAS MEASURED AS A FUNCTION OF THE SCATTERING ANGLE USING THE ELASTIC SCATTERING PRIME12 C(P,P) PRIME12 C AS AN ANALYZER. FACILITY: JOINT INST, FOR NUCLEAR RESEARCH, DUBNA, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

JPRS 59208
6-73

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XVI-7. GROWTH MECHANISMS AND THE FORMATION OF DEFECTS IN THIN HOMOEPITAXIAL SILICON FILMS IN THE ION DEPOSITION METHOD

[Article by O. P. Pchelyakov, N. N. Lovyagin, A. I. Toropov, Ye. A. Krivorotov, L. N. Alexandrov, S. I. Stenin, Novosibirsk; Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 22-23 June 1972, p 226]

The methods of highly resolving replicas and electron microscopy as transillumination were used to study the surface structure of silicon in the presence of thermal etching of it in an ultra high vacuum and the growth mechanisms of the epitaxial film. It is demonstrated that after etching, macro and microstages are formed on the substrate surface. During the film growth process, shifting of these stages is observed.

A study was made of the types of defects and their distribution in the film with respect to thickness. The interrelation was established between the configuration of the developed growth surface and the location of the defects formed. On the growth surface reactions take place which lead to the appearance of coherent interstitial separations with increased carbon concentration and subsequent conversion of them into epitaxial layers of silicon carbide.

Theoretical estimates were made of the epitaxial growth parameters and the elastic stresses arising during transformation of the coherent separations into carbide particles.

KRIVOROTOV, Ye. A.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

JPRS 590 08

6-73

XVI-11. HETEROEPITAXY OF GERMANIUM ON GALLIUM ARSENIDE WITH VACUUM CONDENSATION

[Article by A. L. Asevev, O. I. Vasin, Yu. N. Golobokov, Ye. A. Krivorotov, S. I. Stenin, V. N. Shumskiy, Novosibirsk; Novosibirsk, III Simposium po Protsessam Rosta i Sintezu Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 230]

Germanium films on gallium arsenide substrates were manufactured by condensation in a vacuum of 10^{-7}-10^{-8} torr. The deposition rate was 10-20 Å/min, the substrate temperature varied in the range of 320-600° C and the substrate orientation was (110). The surface structure of the films and the substrates was estimated by the method of electron diffraction on reflection, and the defectiveness of the germanium layers directly adjacent to the film-substrate junction was studied by a transmission electron microscope.

With an increase in the substrate temperature (T_s), the structure is transformed from polycrystalline (T_s = 320-460° C) to monocrystalline (T_s > 460° C). The basic type of defect in the heteroepitaxial germanium films was the packing defects located in the inclined (111) planes and the microtwins both with inclined and normal twinning planes (111). The most perfect heteroepitaxy was obtained in the temperature range of T_s = 540-560° C where the indicated defects are absent. The electron diffraction and electrophysical method demonstrated that up to a temperature of 600° C, no noticeable disassociation of the gallium arsenide takes place. The variations in the defectiveness of the boundary layers of Ge (intense twinning and the formation of packing defects at T_s = 460-520 and 580-600° C) agree with the variations in the electrophysical properties of the heterojunctions.

The mechanisms of the formation of the structure of the heterojunctions of germanium and gallium arsenide during vacuum deposition are analyzed in this paper.

KRIVOROTOV, YE. A.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

1/2 027 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--EPITAXY OF SILICON DURING CATHODIC SPUTTERING -U-

AUTHOR-(04)-ALEKSANDROV, L.N., LOVYAGIN, R.N., KRIVOROTOV, YE.A., DOZHDIKOVA, N.YE.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, (1), 203-4

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--CATHODE SPUTTERING, SILICON, EPITAXIAL GROWTH, SINGLE CRYSTAL FIRM, MAGNETIC FIELD PLASMA EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0133 STEP NO--UR/0070/70/015/001/0203/0204

CIRC ACCESSION NO--AP0054929

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

2/2 027 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054929

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PREPN. OF EPITAXIAL THIN FILM LAYERS OF SI ON THE SINGLE CRYST. SI BEARING PLATE (18 TIMES 5 TIMES 1 MM) WITH SURFACE ORIENTATION (111) BY THE METHOD OF CATHODIC SPUTTERING (USING A LOW VOLTAGE ARC WITH MAGNETICAL PLASMA FOCUSING) IN AR AT 1-2 TIMES 10 NEGATIVE PRIME3 TORR WAS STUDIED. THE RELATION BETWEEN FLOW STRENGTH OF SPUTTERING, TEMP. OF THE BEARING PLATE, AND STRUCTURE OF SI FILMS DETD. BY ELECTRON DIFFRACTION IS PRESENTED. FOR 1800 V AND C.D.1.2 MA-CM PRIME2, THE LAYERS OBTAINED AT ROOM TEMP. ON BEARING PLATE ARE AMORPHOUS, AT 250DEGREES (GRAIN 60-80 ANGSTROM) THEY ARE POLYCRYST., AT 450DEGREES THERE IS A MAIN ORIENTATION. AT 750DEGREES A SYSTEM OF SPOTS CONSIDERABLY DOUBLED WAS OBSD. ON THE ELECTRON PATTERNS, EPITAXIAL LAYERS ORIENTED ALONG (111) FORMED AT 800DEGREES. AT 850DEGREES AN ENTIRE SINGLE CRYSTAL FILM FORMS. ANALOGOUS DEPENDENCE WAS OBSD. AT THE HIGHER C.D. (TO 2.4), BUT THERE ARE SOME DIFFERENCES. DEFECT SINGLE CRYSTAL FILMS ARE FORMED AT 800DEGREES UNDER THESE CONDITIONS. THIS DEFECT OF EPITAXIAL FILMS DECREASES WHEN THE TEMP. INCREASES TO 850DEGREES. A PERFECT SINGLE CRYSTAL STRUCTURE WAS OBSERVED AT 900DEGREES. THE VALUE OF OUT OF FLATNESS IS MAX. 150 ANGSTROM.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR

ALEKSANDROV, [illegible], [illegible], [illegible], and [illegible], [illegible], [illegible] conductor Physics, Siberian Department of the Academy of Sciences [illegible]

"Etching of Germanium With Tetraiodo-Germanium at Low Pressures"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiya Materialy, [illegible], Jun 70, pp 1056-1060

Abstract: Gravimetric and electron-[illegible] investigations [illegible] Ge with GeI_4 at low pressures were carried out according [illegible] quartz reactor connected to a vacuum system making it possible [illegible] residual pressure of $\sim 10^{-5}$ [illegible]. The etching rate was [illegible] flow rate of surface processes. [illegible] of etching [illegible] different orientation varies with changing temperature. [illegible] (111) etching rate reaches a minimum at $\leq$ [illegible] K. The variation of [illegible] rate with time is combined with special features of the development [illegible] holes. An expression is derived which characterizes the kinetics of [illegible] with GeI_4.

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UDC 542.91+541.69:547.1'118

USSR

ABDUVAKHABOV, A. A., GODOVIKOV, N. N., KABACHNIK, M. I., [redacted] MIKHAYLOV, S. S., and ROZENGART, V. I., Institute of Heteroorganic Compounds, Academy of Sciences USSR, and First Leningrad Medical Institute imeni I. P. Pavlov

"Reaction of O-n-Alkyl S-(β-ethylmercaptoethyl) Methylthiophosphonates and Their Methylsulfomethylates With Acetylcoholinesterase"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 5, May 72, pp 1169-1172

Abstract: The authors studied the reaction of acetylcholinesterase with O-n-alkyl S-(β-ethylmercaptoethyl) methylthiophosphonates and their methylsulfomethylates to determine whether there is a hydrophobic site in the region of the esterase center of this enzyme. It was found that there is one hydrophobic site in the immediate vicinity of the esterase center of AChE, with alkyl radicals of the alkoxyl group sorbed at this site. The overall extent of this site corresponds to the n-butyl radical. The ability of these compounds to react with AChE depends to a considerable extent on their sorbability on the enzyme active surface, both through hydrophobic interactions and through ionic sorption.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--EFFECT OF CONDITIONS FOR FERRIC OXIDE AND HYDROXIDE PREPARATION ON THEIR PROPERTIES AND CATALYTIC ACTIVITY DURING THE LOW TEMPERATURE

AUTHOR-(02)-KRIVORUCHKO, O.P., BUYANOV, R.A.

K

COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL. 1970, 11(2), 524-30

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PROPULSION AND FUELS

TOPIC TAGS--FERRIC OXIDE, HYDROXIDE, CHEMICAL SYNTHESIS, LOW TEMPERATURE EFFECT, POROSITY, HYDROGEN, MOLECULAR STRUCTURE, HYDROGEN LIQUEFACTION PROCESS, CATALYST ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0970 STEP NO--UR/0195/70/011/002/0524/0530

CIRC ACCESSION NO--AP0131555

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

Hematology

USSR

UDC 615.382.015.2 615.356:577.161.53].014.41

KRIVORUCHKO, R. A., and STASYUK, N. S., L'vov Scientific Research Institute of Hematology and Blood Transfusion

"Study of Dry Plasma With Vikasol After Long-Term Storage"

Moscow, Problemy Gematologii i Perelivaniya Krovi, No 6, pp 16-17

Abstract: The protein content and residual moisture in lyophilized vikasol and ordinary dry plasma after 4-1/2 years of storage was studied. Shifts in protein content were approximately the same in both plasmas (before storage M=6.74 and m=±0.104 in vikasol plasma and 6.85 and ±0.024 in ordinary plasma; after 4-1/2 years' storage M=5.88 and m=±0.225 and M=5.85 and m=±0.204, respectively). Residual moisture was also approximately the same in both plasmas (the amount increased with length of storage). The rate of solubility of both preparations increased proportionately, requiring 12 to 16 min after 4-1/2 years. The amount of vikasol in the lyophilized preparation decreased insignificantly after 4-1/2 years (before storage M=15.0, 4-1/2 years later M=13.8).

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2/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0131555

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EFFECT OF FE OXIDE AND HYDROXIDE PREPN. WAS STUDIED ON SP. SURFACE AREA, POROSITY, NATURE OF THERMAL CONVERSIONS, AND CATALYTIC ACTIVITY IN LOW TEMP. ORTHO PARA H CONVERSION. THE STUDY REVEALS THAT CATALYTIC ACTIVITY OF THESE CATALYSTS DEPENDS PRIMARILY ON THEIR COMPN. AND IS INDEPENDENT OF THEIR MORPHOLOGY, STRUCTURE AND THE DEGREE OF CRYSTALLINITY. FACILITY: INST. KATAL., NOVOSIBIRSK, USSR.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

UNCLASSIFIED

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR

UDC 533.916

KRIVORUCHKO, S. M., KORNILOV, Ye. A.

"Excitation and Interaction of Low-Frequency Oscillations Under Beam Instability"

Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb. (Plasma Physics and Problems of the Controlled Thermonuclear Fusion. Republic Interdepartmental Collection), 1972, No. 3, pp 208-213 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G247)

Translation: The mechanism for the excitation of low-frequency oscillations was investigated. It was established with the aid of multifrequency modulation of an electron beam that low-frequency oscillations are a direct consequence of beam instability. They arise due to nonlinear interactions of high-frequency oscillations or due to inhomogeneity and nonequilibrium of the plasma produced by the high-frequency field. The use of multifrequency modulation of the electron beam opens up possibilities for controlling the spectra of oscillations of the beam instability and also solves the problem of the effective transfer of energy from the electron beam to plasma electrons and ions.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR UDC: 533.951.07

BAKAY, A. S., KONOVALOV, Ye. A., [redacted]

"On the Use of External Modulation to Control the Emission Spectrum in a Beam-and-Plasma System"

Moscow, Radiotekhnika i Elektronika, Vol 26, No 9, Sep 71, pp 1681-1682

Abstract: A mechanism for controlling the emission spectrum of a beam--plasma interaction system by using a high-frequency external modulation signal is theoretically and experimentally studied. This mechanism owes its existence to the nonlinearity of the wave increment in the system. It is found that the effective attenuation of waves in channel and the spectrum of high-frequency oscillations is narrowed by nonlinear interaction between the beam-excited waves. The authors thank Ya. B. Faynberg for discussing the results of the work.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR

BAKAY, A. S., KORNILOV, Ye. A., KRIVORUCHKO, S. M.

"Excitation of Ionic-Acoustic Waves by Langmuir Waves and Stationary Modes in a Beam Plasma System"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki (Letters to the Journal of Experimental and Theoretical Physics), Vol 12, No 2, 20 July 1970, p 69-72

Abstract: Two problems are studied experimentally: 1) the threshold excitation and amplitude of ionic-acoustic waves by Langmuir waves in a beam plasma and 2) near-threshold stationary modes of interacting waves, which show the possibility of plasma heating. Electron and ion oscillations interact strongly producing many nonlinearities. Excited by strong Langmuir waves, a weak ionic-acoustic wave grows exponentially to exceed a critical threshold. In time, a constant frequency and amplitude state is reached. Electron-ion interaction increases the electron and ion temperatures and affects the excitation of the plasma. Plasma density was $\sim 10^{11} cm^{-3}$; current ~ 100 ma, energy 5 kev, and longitudinal magnetic field strength 1 kgauss. A high frequency external signal close to the plasma frequency was used to excite the ionic-acoustic waves. Increasing the amplitude of the external signal diffuses the plasma to the

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR

BAKAY, A. S., et al, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 12, No 2, 20 July 1970, p 69-72

container walls and produces variations in plasma density and temperature. Results indicate that ionic-acoustic waves are excited at some threshold level by Langmuir waves, and the strength of these waves is proportional to the external signal strength. Beyond the threshold the strength of the Langmuir waves grows at the rate $P^{1/2}$. Amplitudes are limited by the excitation of relaxational oscillations. The authors thank Ya. B. Fainberg and V. P. Silin for discussions and L. I. Bolotin for assistance. Orig. art. has 3 figs. and 1 ref.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR UDC 542.91:547.833.547.752:547.94

AKHREM, A. A., MOISEYENKOV, A. M., KRIVORUCHKO, V. A., CHERKOV, YU. G., and MALISHEVSKII, V. S., Institute of Organic Chemistry Imeni N. D. Zelinskii Acad. Sc. USSR, and Institute of Physical Organic Chemistry Acad. Sc. USSR

"Synthesis of Benzo [a]-and Indolo[a]quinolizines: a new Approach to the Total Synthesis of Some Isoquinoline and Indole Alkaloids"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 10, Oct 72, p 2376

Abstract: Isomethines (I,II) react with acetyl-δ-lactone (IV) to yield a series of lactams (V-VII) which can be converted to corresponding pyranolactams (VIII-X), and dehydrated to pyridones (XI-XII). Compound (V) was converted in 5 steps to tetrahydroprotoberberine (XIII).

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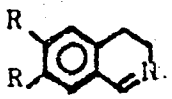
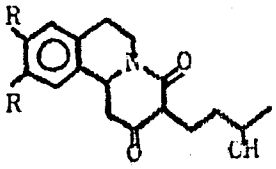
"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR

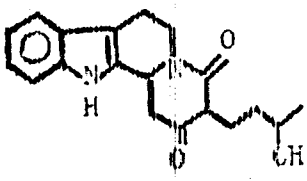
AKHREM, A. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 10, Oct 72, p 2376



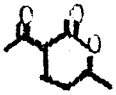
A(I) R=H
(II) R=OMe



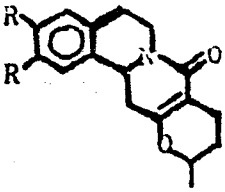
(V) R=H, m.p. 178-180°
(VI) R=OMe, m.p.183-185°



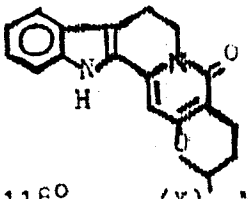
(VII) ·MeOH
m.p. 196-198°



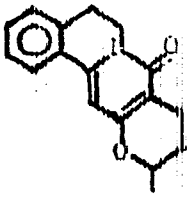
(IV)



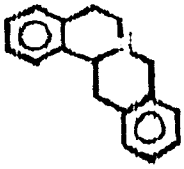
(VIII) R=H, m.p.117-118°
(IX) R=OMe, m.p. 143-144.5°



(X), M.p. 263-265°



(XI), m.p. 154-156°



(XIII)

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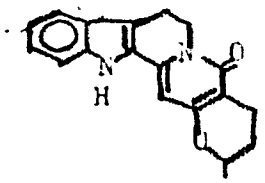
USSR

AKHREM, A. A., et al, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 10, Oct 72, p 2376



(XII), m.p. 341-344°

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

KRIVORUTSKIY, U.

Automatics & Telemechanics

Inst. (Inst. for Automation, Denver) 13-6 Apr 61 - DCS

NCC

THE DETERMINATION OF THE DEMAGNETIZATION AUTOMATICALLY AND THE DOMAIN STRUCTURE OF FERROMAGNETIC MATERIALS

FERROMAGNETIC MATERIALS

Yu. Ushenko

U. Krivorutsky

Institute of control sciences (Automatics and Telemechanics) Moscow USSR

It follows from the theory of Neel-Goodenough [1, 2] that

$$R_c = C\frac{\sigma_w}{M_s^2} \qquad (1)$$

where R_c is critical radius of grains or nonmagnetic inclusions wherein appear of reverse magnetization, M_s - represents the saturation magnetization, σ_w - the domain wall energy per cm^2, C - a constant, derivated by the conditions of reverse domain nucleation. Thus, from (1) the value of R_c depends on the anisotropy constant K only through the value of σ_w.

On the other hand it is known from the μ^*-correction theory [3] that the dimension of the reverse domain depends on the ratio of M_s/K. Therefore we may regard R_c to be directly related to K. (Goldenough also used the μ^*-correction theory for definition of the critical radius R_c of the grain, however, under the assumption that the ratio of the domain wall δ is very small. Hence, he was able formally to derivate from the expression for the reverse domain energy terms containing M_s^2/K).

In [3] the μ^*- correction has been used in case of a flat specimen with the uniaxial anisotropy. In the present paper the μ^*- corrections are obtained for the cylindrical and spherical specimens with the uniaxial anisotropy. There μ^*- corrections are used to express the reverse domain energy.

Its minima provides the reverse domain state equilibrium. The solution of the mentioned equation is to express

$$R_c = \frac{\delta(K + 2\pi M_s^2)}{3\pi M_s^2 (K + 4\pi M_s^2)} \qquad (2)$$

At $K \gg 4\pi M_s^2$ the equation (2) coincides with (1). As $M_s^2 \gg K$ (that occurs very often) the expression (2) reduces to

$$R_c = \frac{\delta(K + 2\pi M_s^2)}{M_s^2} \qquad (3)$$

The latter expression (3) does not hold for small values of K, when the domain wall with its curves and the reverse domain degenerates.

Further, the physical meaning of (1), (2), (3) and the dependence of long equations on value of K are discussed.

References:

1. L. Neel, Cahiers de Phys., No.24, 1-7 (1944).
2. J. Goodenough Phys. Rev., v.95, 917 (1954).
3. H.J. Williams, R.M. Bozorth and W. Shockley, Phys. Rev., v.75, 155 (1949).

Paper presented by Ushenko
The problem has been with [illegible]
Thin film
Does not appear [illegible]
[illegible] may [illegible]
No experimental results were
[illegible] in theory theory.

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UNCLASSIFIED PROCESSING DATE--17JUL70

TITLE--PECULIARITIES IN THE COURSE OF GASTRIC CARCINOMA UNDER THE CONDITIONS OF THE YAKUT ASSR -U-

AUTHOR--KRIVOSHAPKIN, V.G.

COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 1 PP 54-57

DATE PUBLISHED--------70

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TOPIC TAGS--DIGESTIVE SYSTEM, CARCINOMA, SECRETION, BIOPSY, HISTAMINE, STOMACH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

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CIRC ACCESSION NO--AP0047203

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

Acc. Nr: AP0047203 Ref. Code: UR0564

PRIMARY SOURCE: Terapevticheskiy Arkhiv, 1970, Vol 42, Nr 1, pp 54-57

PECULIARITIES IN THE COURSE OF GASTRIC CARCINOMA UNDER THE CONDITIONS OF THE YAKUT ASSR

V. G. Krivoshapkin

The author investigated the secretory function of the stomach studying the acid formation and fermentative function thereof. The latter was studied by determination of pepsin concentration at different stages of its excretion from the site of its accumulation — in the gastric juice on fasting stomach and following test stimulus, in the parietal juice and that found directly on the surface of the mucous membrane and, finally, in homogenate of the mucous membrane treated by the method of aspiration biopsy, outside the tumour localization. Except for one patient in whom in the mucous membrane there was seen a picture of superficial gastritis, in most of the patients histamine refractory achylia and corre-spondingly severe forms of atrophic gastritis were observed. In the majority of patients with atrophic gastritis without phenomena of structural cellular rearrangement of the mucous membrane outside the tumour localization in gastric juice on the surface of mucous membrane and the «parietal» juice there was found a normal content of pepsin that, in the author's opinion, is one of the causes of long-term preservation of digestion in patients with gastric carcinoma and a considerably great percentage of cases of «latent» course of gastric carcinoma in the Yakut ACCR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

Acc. Nr. AP0021999

Abstracting Service: CHEMICAL ABST. 2-PC

Ref. Code UR0079

31488f Synthesis of 5,6-difluoroacenaphthene and its reactions. Karishin, A. P.; Samusenko, Yu. V.; Krivoshapko, N. G. (Poltav. Gos. Pedagog. Inst. im. Korolenko, Poltava, USSR). *Zh. Obshch. Khim.* 1969, 39(9), 2098-101 (Russ). To 0.1 mole 5-fluoroacenaphthene was added 30 ml AcOH, and, with cooling, 0.2 mole HNO_3 (d. 1.5) and 15 ml AcOH at 15-20°, and the mixt. stirred 10-15 min to give 55-72% 5-fluoro-6-nitroacenaphthene, m. 133-4°, which was reduced by refluxing with $SnCl_2$ in EtOH-conced. HCl 0.5 hr to 90-2% 5-fluoro-6-aminoacenaphthene, m. 121°. Its HCl salt diazotized with $NaNO_2$ in HCl and treated with HBF_4 at −5° gave green-brown diazonium fluoborate, decompd. 149°, which heated in undecane gave 7-10% 5,6-difluoroacenaphthene, m. 123-4°. This with $Na_2Cr_2O_7$ in AcOH gave 4,5-difluoronaphthalic acid, m. 194-5°, along with 5,6-difluoroacenaphthenequinone, m. 211-12° (17-20%), isolated

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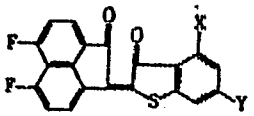
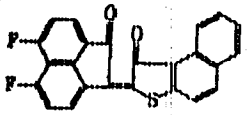
AP0021999

via its $NaHSO_3$ adduct, by heating it with concd. HCl. The above naphthalic acid was converted into the anhydride, which with NH_4OH on a steam bath gave 95–7% 4,5-difluoronaphthalimide, m. 317°. Heating an equimolar mixt. of 5,6-difluoroacenaphthenequinone and a deriv. of 3-hydroxythianaphthene in AcOH in the presence of concd. HCl gave the following I:



(I)



(II)

X = Y = H, m. 297–8°; X = H, Y = EtO, m. 281°; X = H, Y = Cl, m. 351°; X = Me, Y = Cl, m. 338°; and II m. 322°. Absorption spectral curves of these were shown; all had strong bands at 302–6 mμ in PhCl soln. In the visible region all had two wide bands (shown). G. M. Kosolapoff

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

Optical

USSR UDC: 621.378.8

KRIVOSHCHEKOV, G. V. and SMIRNOV, V. A.

"Excitation of Ultrashort Light Pulses With Stable Parameters in a Laser With Active Modulation"

Moscow, Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, No 2, 1973, pp 163-164

Abstract: Although the formation of ultrashort light pulses by mode synchronization in a laser with clear filters is a widely used method, it impedes the reproduction of the pulse parameters. The authors analyze the process of mode synchronization by external resonance modulation of the laser Q, and show that this method is better able to form ultrashort light pulses with stable parameters. A ruby laser system in ring formation capable of realizing this process is shown in schematic form; it involves an electrooptical gate with an $LiNbO_3$ crystal to which a sinusoidal voltage whose half-period is equal to the bypass time of the resonator pulse is applied. The dependence of the pulse parameters on the linear generation time of the pulse is investigated. The authors thank N. G. Nikulin and V. M. Semibalamut for their assistance.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR UDC 621.373.826

KRIVOSHCHEKOV, G. V., NIKULIN, N. G., and SOKOLOVSKIY, R. I.

"Transient Processes During Excitation of Optical Harmonics"

V sb. Nelineyn. protsessy v optike (Nonlinear Processes in Optics — collection of works), Vyp.2, Novosibirsk, 1972, pp 35-60 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 D145)

Translation: None.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR UDC 621.373.826:535

GAYNER, A. V., KRIVOSHCHEKOV, G. V., KRUGLOV, S. V., LEBEDEV, V. V., and MARENNIKOV, S. I.

"Studying the Characteristics of a Wide-Angle System for Converting Images From Infrared to Visible Region"

V sb. Nelineyn. protsessy v optike (Nonlinear Processes in Optics -- collection of works), Vyp.2, Novosibirsk, 1972, pp 360-366 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 D144)

Translation: None.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

UDC: 621.373.018.756

USSR

KRIVOSHCHEKOV, G. V., NIKULIN, N. G., SMIRNOV, V. A., and SOKOLOVSKIY, R. I.

"Transient Process in a Laser With Active Modulation"

Novosibirsk, Avtometriya, No 5, 1972, pp 113-119

Abstract: An analysis is made of the transient process in lasers with active modulation of the losses involved in the excitation of ultrashort light pulses. The traveling wave laser, in which the ensemble of two-level atoms with uniformly expanded amplification lines is used as the model for the active medium, is examined. With the dispersion assumed to be negligible, the pulse variation occurs in the active medium and the modulator. The transmission of the light pulse through the medium at carrier frequency resonance is then described by a system of three equations. These are solved and an expression for the radiation intensity is derived. The computations show that linear compression is basically responsible for shortening the pulse duration. Experiments to check the effect of the linear oscillation development time on the pulse duration were conducted, and a diagram of the apparatus plus an

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UDC: 621.373.018.756

USSR

KRIVOSHCHEKOV, G. V., et al, Avtometriya, No 5, 1972, pp 113-119

explanation of the procedure is given. Oscillograms of the oscillation pulses and an ultrashort pulse with a width of $6 \cdot 10^{-10}$ s are reproduced.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR UDC 621.375.8

KRIVOSHCHEKOV, G. V., SAMARIN, V. I., STROGANOV, V. I., and TARASOV, V. M.

"Cascaded Frequency Transformation of Laser Radiation in Nonlinear Crystals"

Novosibirsk, Avtometriya, No 5, 1972, pp 106-112

Abstract: An important problem in laser physics is finding means of increasing the range of the radiation. The purpose of this paper is to indicate the possibilities in cascaded frequency transformation of laser devices for setting up powerful sources of coherent ultraviolet radiation. The authors begin their analysis of laser spectral conversion with a system of heterogeneous differential equations describing the radiation in nonlinear crystals with the approximation of slow amplitudes for plane waves in a quasi-stationary process. Recognizing that the process of successive frequency conversions is the same as in excitation of the second harmonic and the composite frequencies, the authors derive expressions for the amplitudes of those waves, assuming that the synchronism condition has been satisfied. A table is given of various

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KRIVOSHCHEKOV, G. V., et al, Avtometriya, No 5, 1972, pp 106-112

crystals and their parameters, together with bibliography refer-
ences. Cascaded frequency conversion yields a wavelength of 0.353
microns, representing the third harmonic, in a laser with neodymi-
um glass, at a power of more than 30 MW and with a conversion factor
of 4%, as well as fourth and fifth harmonics of 0.265 and 0.212
microns in wavelength respectively. The author notes that many
questions of the optimization of pumping source parameters and the
process itself still must be resolved before the advantages of
cascaded frequency transformation can be realized.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

UDC 621.375.82

USSR

KIDYAROV, B. I., KRIVOSHCHEKOV, G. V., MITNITSKIY, P. L., SAMARIN, V. I., STROGANOV, V. I., TARASOV, V. M.

"Dispersion of Wave Synchrony in a $LiIO_3$ Crystal"

V sb. Nelineyn. protsessy v optike (Nonlinear Processes in Optics—collection of works), Vyp. 2, Novosibirsk, 1972, pp 399-407 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D858)

Translation: A study is made of the dependence of the nonlinear characteristics of $LiIO_3$ on the frequency in order to discover new possibilities of applying this crystal for cascade laser emission frequency multipliers. The $LiIO_3$ crystals in the hexagonal version were grown from an aqueous solution containing 10% HIO_3 with respect to $LiIO_3$. The nonlinear characteristics of the crystal were investigated by means of a glass Nd-laser with a broad generation spectrum of 0.008 Å. An experimental check was made of the intensity of the excited second harmonic as a function of the wavelength of the radiation propagated along the direction of synchrony. A study was also made of the dependence of the intensity of the second harmonic on the pumping beam deflection from the direction of synchrony. When determining the magnitude of $d\theta_c/d\lambda$, additional possibilities for a nonlinear frequency discriminator were discovered. The bibliography has 7 entries.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR UDC 621.375.82

BONDARENKO, A. N., KRIVOSHCHEKOV, G. V., SMIRNOV, V. A.

"Pulsed Sources of Coherent Pumping for Nonlinear Optical Systems"

V sb. Nelineyn. protsessy v optike (Nonlinear Processes in Optics--collection of works), vyp. 2, Novosibirsk, 1972, pp 377-391 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D896)

Translation: A survey was made of the methods of stabilizing and tuning the radiation frequency of solid state lasers used as pumping sources in nonlinear optical systems. A comparative analysis was made of the advantages of using Fabry-Perot interferometers, anisotropic plates, and prism selectors in lasers operating in the free oscillation mode. The complexity of selecting modes in lasers operating in the modulated Q-factor mode as a result of the high magnitude of the amplification was noted. A great deal of attention has been given to the operation of lasers in the modulated Q-factor mode under the effect of a narrow-band, external signal. The bibliography has 26 entries.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR UDC 621.375.82

KRIVOSHCHEKOV, G. V., NIKULIN, N. G., SOKOLOVSKIY, R. I.

"Nonstationary Processes on Excitation of Optical Harmonics"

V sb. Nelineyn. protsessy v optike. (Nonlinear Processes in Optics--collection of works), vyp. 2, Novosibirsk, 1972, pp 35-60 (from RZh-Fizika, No 12, Dec 72, Abstract No 12D880)

Translation: In the approximation of a given field, the time-space characteristics of the transition process are analyzed for excitation of the second harmonic by ultrashort pulses and series of ultrashort pulses of laser radiation for colinear and noncolinear interaction. It is demonstrated that in the first case for defined relations between the oscillation period as a result of inexact synchrony of the second harmonic amplitude and the repetition rate of the ultrashort pulses, an increase in the second harmonic amplitude with an increase in the path length in the nonlinear crystal (train synchrony) is possible. The shape of the second harmonic pulses as a function of the shape of the ultrashort pulses is discussed. The applicability of the approximate solutions obtained by the second harmonic excitation method was analyzed in the case of $\ell_k \gg \ell_\gamma$ and in the approximation of the given field in the case $\ell_k \ll \ell_\gamma$, where ℓ_k is the quasistatic length, and ℓ_γ is the length of the nonlinear interaction. It is demonstrated that the experimental measurement of

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KRIVOSHCHEKOV, G. V., et al., Nelineyn. protsessy v optike., vyp. 2, Novosibirsk, 1972, pp 35-60

the transverse distribution of the second harmonic field in the case of noncolinear interaction can be used to measure the duration of the ultrashort pulses. The bibliography has 21 entries.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR

UDC 548.004.12:621.319.1

KRIVOSHCHEKOV, G. V., KRUGLOV, S. B., MARENNIKOV, S. I., and POLIVANOV, Yu. V.

"A Method for Measuring the Temperature Dependence of the Electro-Optical Coefficients of Ferroelectric Crystals"

Moscow, Metrologiya, No 7, 1972, pp 50-55

Abstract: When using optically transparent ferroelectric crystals for controlling laser emission, their electro-optical constants must be known within a wide temperature range. A simple method is proposed for determining the temperature dependence of the linear r_{ijk} and the quadratic R_{ijkl} electro-optical coefficients within the temperature range from 27° C to -195° C, which includes the Curie points (T_c) of KDR and ADR crystals, as well as their deuterated isomorphs. The method consists in measuring the transmission value of the light beam of an He-Ne laser, passed through an optical system containing a polarizer, a crystal, and an analyzer, at a constantly changing temperature and a fixed electrical field. This method avoids the possibility of transmitting the temperature properties of the electro-optical constants near the points of phase transition. 4 figures. 6 references.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR

UDC 621.378:535

KRIVOSHCHEKOV, G.V., NIKULIN, N.G., SOKOLOVSKIY, R.I. [Institute Of Semiconductor Physics, Siberian Branch, AS, USSR]

"Concerning One Synchronism During Excitation Of Harmonics By Supershort Light Pulse"

Izv.VUZ: Radiofizika, Vol XV, No 5, May 72, pp 795-796

Abstract: Interest in nonstationary phenomena during excitation of the second harmonic results from the advent of lasers which generate supershort light pulses. A number of detailed studies of the dynamics of excitation of the second harmonic by a single ultrashort pulse appear in the literature. In the present paper the excitation is studied of the second harmonic by a periodic sequence of supershort light pulses. The authors thank G. A. Akhmanov for helpful critical remarks. 9 ref. Received by editors, 2 April 1971.

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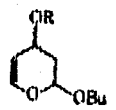
"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

Acc. Nr. AP0048798 Abstracting Service: CHEMICAL ABS K 4/70 Ref. Code: 21R0366

90198j Synthesis of ethers based on 2-alkoxy-Δ^4-dihydropyrans. Likhosherstov, V. M.; Kopytova, L. P.; Krivosheya, A. N. (USSR). *Zh. Org. Khim.* 1970, 6(1), 180-2 (Russ). The bromination of 2-butoxy-2,3-dihydropyran (I) with N-bromosuccinimide in benzene gave a rather unstable 4-bromo deriv. (II) of I, which formed tars in the presence of peroxides, amines, Mg, or during heating. However, II reacted with ROH (R =



(III)

Et, Pr, or iso-Pr) contg. KOH to give 4-alkoxy-substituted derivs. (III) of I. CPJR

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

Acc. Nr: AP0048342 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR0314

K

103237y Formation of hot cracks in nickel welds. Stepanov, V. V.; Kriyosheya, V. E. (USSR). *Khim. Neft. Mashinostr.* 1970, (1), 22-3 (Russ). The 40 X 40 X 4 mm plates of N. (NP-2) were welded to alloys of Ni with Ti, Al, Mn, Si, Zr and with NP-2 Ni, in Ar, by using a nonconsumable W electrode. The weld joints were tensile tested at deformation rates of 1-18 mm/min. The deformation rate v, at which the hot cracks were formed, was a measure of the resistance of alloys to hot cracking. The addns. of Mn, Al, and Ti (up to 4.9%, 1.24, and 1.9%, resp.) improved resistance of Ni (v = 12.5, 9.7, and 10.0 mm/min, resp.), owing to the combining of S by these elements. Alloying of Ni with Si (up to 3.19%) caused a rapid drop of the mech. properties of welds (v = 1.8 mm/min), which was attributed to a formation of fusible Si compds. distributed at the crystal boundaries. The v value in the case of Ni-Ni joints was 4.8 mm/min.

J. Piotkiewicz

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

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UDC 911.3:616.9(477)

KRIVOSHEVA, Yu. S., VASILYEVA, V. I., LOZINSKAYA, T. M., RYBAKOVA, I. I., BAKULINA, E. V., and BORSHCHOVA, G. N.

"Complement-Fixing Antibodies in Healthy Human Serum to Mycoplasma -- Pneumonia and Acute Respiratory Infections"

Sb. tr. Krym. med. in-t (Works of the Crimean Medical Institute -- collection of works), 1970, 41, pp 122-125 (from R2h-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.196)

Translation: Serological investigation of 868 healthy humans in various rayons of Krymskaya Oblast showed that the agent of mycoplasma pneumonia infected 13.3% of the city dwellers studied, 39.2% of country dwellers in the northern part of the Crimea, and 19.7% in the southern part. The influenza virus Hong Kong A_2 more frequently infected city dwellers, and influenza virus B -- rural inhabitants. In the partially isolated collective, formed a year prior to the study, the prevailing mycoplasma agents were pneumonia, Singapore A_2 influenza, type II adenovirus, and respiratory-syncytial virus. Two years prior to the research, Hong Kong A_2 influenza virus and type III parainfluenza predominated. Adults had significantly higher numbers of infections from mycoplasma -- pneumonia, Hong Kong A_2

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USSR

KRIVOSHEVN, Yu. S., et al., Sb. tr. Krym. med. in-t (Works of the Crimean Medical Institute -- collection of works), 1970, 41, pp 122-125 (from RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.196)

influenza type and B influenza; and children -- more infection with para-influenza viruses type I and II.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR UDC: 621.396.6.002(088.8)

ZAKHAREVICH, Yu. I., ABUSHENKO, V. S., KRIVOSHEY, G. A.

"A Measuring Device"

USSR Author's Certificate No 266942, filed 28 Oct 68, published 14 Jul 70 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V316 P)

Translation: This Author's Certificate introduces a measurement device for an automatic quality control machine for radio components. The device contains a converter which changes the parameter being measured to an electric signal, a commutator which is connected to the converter input, and a converter control element connected to the commutator. To improve operational reliability, the converter output is connected to a stationary element in the commutator made in the form of a pulse light source and equipped with a photocell array connected to the output terminals of the device, while the moving element of the commutator, which is mechanically connected to the control element of the converter, is made in the form of a disc with slits located around the edge.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR UDC 620.172.251.2

BURNOS, V. A., TSVIKEVICH, S. I., YANKOVSKIY, V. M., and KRIVOSHEYEVA, A. A. (All-Union Scientific Research Institute of Pipe Industry)

"On the Determination of Mechanical Properties at High Temperatures"

Moscow, Zavodskaya Laboratoriya, Vol 36, No 11, pp 1401-1402

Abstract: A description is given of a system of high rate heating and loading of samples with deformation speed close to that used in tube rolling in cases when mechanical tests are being made. A schematic diagram of the experimental setup is presented. An automatic control circuit for loading of samples was developed. The dimensions of samples after deformation were taken as initial dimensions for calculating the strength and plasticity characteristics. The stress variation was accomplished by a dynamometer provided with strain gages and recorded on an N-700 oscillograph. The obtained oscillograms make it possible to calculate the yield point and instantaneous

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BURNOS, V. A., et al., Zavodskaya Laboratoriya, Vol 36, No 11, pp 1401-1402

strength with sufficient accuracy. It is stated that his method was used for the study of the effect of heating and deformation rate on properties of pipe construction steel.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR UDC 621.791.793.004.64.669 = 419.4

KRIVOSHEYA, V. S., Engineer, Institute of Electric Welding imeni YE. O. Paton

"Formation of 'Whiskers' Resulting in Joint Fatigue in the Electroslag Welding of (St3 + 08Kh12, St3 + 1Kh18N9T) Two-Ply Steel"

Moscow, Svarochnoye Proizvodstvo, No 4, Apr 71, pp 21-22

Abstract: Results are presented of an investigation of welded joints obtained in electroslag welding of 20 -- 30-mm-thick two-ply steels. It is shown that in one-pass welding, sections called "whiskers" develop which reduce the mechanical properties of welded joints. Fracture of the welded samples begins at the "whisker" section adjacent to the facing layer. Electroslag welding of bimetal structures made of these steels without preliminary removal of the facing layer is not recommended since the nature of the formation of sections which weaken the strength of welded joints is not known.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR

UDC: 621.791:546.74

KRIVOSHEYA, V. YE.

"Welding Nickel and its Alloys With Copper and Steels"

Kiev, Avtomaticheskaya svarka, Sept 71, no 9, p 70

Abstract: Experience of many years has shown the potentialities of non-consumable electrode argon-arc welding in the field of construction of critical equipment. This study conducted at Uralmashzavod (Ural Heavy Machinery Plant imeni Sergo Ordzhonikidze) discusses a new welding technology for nickel involving the use of NMtsAT-1-1-2.5 and NMtsAT-1-3-0.6 filler materials. The technology has been adopted by the industry as basic and is presently listed in the sectorial standards. Argon-arc welding is effective in structures of nickel with $\delta \leq 10$ mm; automatic submerged welding is advisable for rectilinear welds on nickel with $\delta > 5$ mm. Combined with 48-OF-10 flux, the above filler materials will produce high-quality welds. The said filler wire may also be used for argon-arc welding of nickel with low-carbon and stainless steels. EA-1F2 electrodes are specified for cases involving NP2 nickel with VMSt.3 and Kh18N10T steels. Based on weldability

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USSR

KRIVOSHEYA, V. YE., Svarochnoye proizvodstvo, Sept 71, no 9, p 70

tests of nickel with copper it has been possible to formulate a weld metal with a close-to-optimum chemical composition and the requisite conductivity to assure high mechanical properties of the weld. MNZHKT-5-L-0.2-0.2 copper-nickel filler wire has also been specified for argon-arc welding.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

1/2 043 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--CORROSION RESISTANCE OF BINARY NICKEL ALLOYS IN ALKALI -U-

AUTHOR-(03)-KRIVOSHEYA, V.YE., STEPANOV, V.V., VOCHKANOV, A.P.

COUNTRY OF INFO--USSR

SOURCE--ZASHCH. METAL. 1970, 6(1), 29-30

DATE PUBLISHED--------70

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

TOPIC TAGS--NICKEL ALLOY, METAL CORROSION RESISTANCE, METAL DEOXIDA TION, WELDING, WELDING ELECTRODE, TUNGSTEN, TITANIUM, ALUMINUM, ZIRCONIUM, MANGANESE, SILICON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1980/1179 STEP NO--UR/0365/70/006/001/0029/0030

CIRC ACCESSION NO--AP0049385

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

2/2 043 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0049385

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CORROSION RESISTANCE OF WELD JOINTS CONSTITUTING BINARY NI ALLOYS WITH DEOXIDIZING ELEMENTS TI, AL, ZR, MN, AND SI WAS INVESTIGATED IN AQ. NAOH (65PERCENT) AT 180-200DEGREES OVER 900 HR BY THE WT. AND METALLOGRAPHIC METHODS. THE FOLLOWING ADDITIVES WERE USED: TI 0.23-1.9, AL 0.24-3.88, ZR 0.4-1.5, MN 1.34-8.15, AND SI 0.36-3.19PERCENT. WELDING WAS CARRIED OUT IN AN AR ATM. WITH A NONFUSIBLE W ELECTRODE BY USING D.C. WITH INCREASE OF THE ALLOY ELEMENTS CONTENT, ONLY A SLIGHT CORROSION INCREASE WAS NOTED. NO INTERCRYST. CORROSION WAS OBSD.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

1/2 015 UNCLASSIFIED

TITLE--DEFECTS IN SEMICONTINUOUSLY CAST PIPE -U- PROCESSING DATE--11SEP70

AUTHOR--~~KRIVOSHEYEV,~~ A.YE., OZIMIN, YU.S., KHAKHALIN, B.O., DAVYDOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--LITEINOE PROIZVOD. 1970, (1) 7-9

DATE PUBLISHED--------70

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

TOPIC TAGS--METAL CRACKING, METAL CASTING, CONTINUOUS CASTING, METAL PIPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1319 STEP NO--UR/0128/70/000/001/0007/0009

CIRC ACCESSION NO--AP0106096

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

2/2 015 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106096

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WITH THE PURPOSE TO ELUCIDATE THE CRACK FORMATION IN TITLE CASTING THE STUDY WAS CARRIED OUT ON THE TEMP. FIELD ACROSS THE SECTION OF THE TITLE PIPE DURING ITS SOLIDIFICATION. THE TEMP. OF CAST IRON (C 3.5-3.7, SI 2.0-2.3, MN 0.6-0.8, P 0.2-0.3, AND S SMALLER THAN OR EQUAL TO 0.1 WT. PERCENT) BEFORE CASTING WAS 1280-1300DEGREES, AND THE WITHDRAWAL RATE WAS 1.0-1.1 AND 0.7-0.8 M-MIN. DIAM. OF PIPES WAS 500 AND 700 MM. THREE ZONES OF SOLIDIFICATION WERE DISTINGUISHED: (1) PERIOD OF EXPANSION PRIOR TO SHRINKAGE, (PES), (ZONE OF TIGHT CONTACT OF THE CASTING ALONG 40PERCENT OF MOLD HEIGHT), (2) PERIOD OF FOUNDING PREPEARLITE SHRINKAGE (ZONE OF THE GAP BETWEEN THE CASTING AND MOLD (PFPS), AND (3) FINISHING PERIOD OF FULL SHRINKAGE, (FPCS) (ZONE OF COOLING OUTSIDE OF THE MOLD). EXPERIENCE AT FOUNDRIES HAS SHOWN THAT CAST IRONS WITH HIGH VALUES FOR PES AND LOW VALUES FOR PFPS HAVE PRACTICALLY NO CRACK FORMATION. BEST RESULTS WERE PRODUCED WITH EUTECTOIDAL AND TRANSEUTECTOIDAL CAST IRON IN PARTICULAR (C 3.7-3.8, AND SI 2.2-2.3 WT. PERCENT). ONE OF THE CAUSES OF CRACK FORMATION IS THE FORMATION OF A TOO THIN PRIMARY CRUST ON CRYSTD. METAL WITH NONUNIFORM FORMATION OF A GAP BETWEEN THE PIPE SURFACE AND THE MOLD. THE SUPERHEATING OF THE CAST IRON MAY HAVE COUNTERACTING EFFECTS BOTH FAVORING AND INHIBITING THE CRACK FORMATION.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

1/2 .015 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--JET TYPE ELEMENTS OF THE VOLGA SYSTEM AND THEIR APPLICATION -U-

AUTHOR-(05)-KSIVISHEVEV, G.YA., CHERNYSHEVA, M.A., TROSHKIN, A.K., SHMELEV, L.F., TIKEDZHE, B.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, PRIBORY I SISTEMY UPRAVLENIYA, NO 5, 1970, PP 19-21

DATE PUBLISHED--------70

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

TOPIC TAGS--AUTOMATIC CONTROL SYSTEM, FLUIDIC LOGIC DEVICE, FLUIDIC CONTROL DEVICE, FLUIDIC AMPLIFIER, PLASTIC/(U)VOLGA FLUIDIC CONTROL SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/005040/F06 STEP NO--UR/0445/70/000/005/0019/0021

CIRC ACCESSION NO--AP0142709

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

2/2 015 UNCLASSIFIED PROCESSING DATE--11JUN70

CIRC ACCESSION NO--AP0142709

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DEALS WITH THE DEVELOPMENT OF JET TYPE ELEMENTS AND THE INTRODUCTION OF PNEUMATIC CONTROL SYSTEMS IN INDUSTRY. THE PNEUMATIC AND HYDRAULIC AUTOMATION LABORATORY OF THE VOLGA BRANCH, ALL UNION SCIENTIFIC RESEARCH INSTITUTE OF ABRASIVES AND GRINDING, HAS DEVELOPED AND IS ENGAGED IN THE SERIES PRODUCTION OF TWO TYPES OF JET TYPE ELEMENTS: A TRIGGER WITH SEPARATE INPUTS AND A OR-NOT-OR ELEMENT FOR TWO INPUTS WITH INHIBITION. THE TRIGGER IS A BISTABLE FLUIDIC AMPLIFIER WITH TWO INPUTS, TWO OUTPUTS, A SUPPLY CHANNEL AND A MIXING CHAMBER. THE TECHNICAL SPECIFICATIONS OF THE TRIGGER ARE GIVEN. THE OR-NOT-OR ELEMENT IS A MONOSTABLE FLUIDIC AMPLIFIER WITH THREE INPUTS, TWO OF THEM CONTROLLING AND ONE INHIBITING. THE OPERATING PRINCIPLE IS THE SAME AS FOR THE TRIGGER. THE TECHNICAL SPECIFICATIONS ARE GIVEN. THE FLUIDIC ELEMENTS DISCUSSED HERE HAVE BEEN PRODUCED FROM PLASTIC BY MEANS OF PRESSURE CASTING ACCORDING TO A SPECIFIED SEQUENCE OF TECHNOLOGICAL OPERATIONS. A FLUIDIC CONTROL SYSTEM IS BASED UPON A LOGICAL UNIT, CONSISTING OF LOGICAL ELEMENTS PLUGGED INTO A BASE ACCORDING TO THE TYPE OF UNIT DESIRED.

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Television

USSR

UDC: 681.14.523.8

BRAUDE, G. V., BONCH-BRUYEVICH, A. M., GEL'FANDBEYN, Ya. A., GULIN, I. [illegible], KRIVOSHEYEV, M. I., MIRSKIY, G. Ya., TISHCHENKO, I. M., TEL'NYEN, O. A., KHESIN, A. Ya.

"A Television Device for Determining the Coordinates of Point Objects"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 26, Sep 71, Author's Certificate No 313210, p 165

Translation: This Author's Certificate introduces a television device for determining the coordinates of point objects. The device contains a television transmitting tube with memory, an output scanning unit, a video signal processing unit, an erasure unit, a synchronizing unit, a cadence pulse generator, an optical shutter, and a data input module. As a distinguishing feature of the patent, the accuracy of coordinate determination is improved by tying series-connected horizontal and vertical interrogation counters to the output of the cadence pulse generator. The counter outputs are connected through shaping matrixes for horizontal and vertical deflection to the input of the output scanning unit. At the same time, a second output of the vertical interrogation counter is connected through a decoder to the data input module.

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USSR

KRIVOSHEYEV, MARK IOSIFOVICH [Honored Inventor Of the RSFSR, Dr. Of Technical Sciences, Professor]

"Prospects For Television Development"

Perspektivy razvitiya televideniya (of English above), New In Life, Science, Technology: Radio Electronics And Communications Series, 6/1972, Moscow, Znaniye, 1972, 80 pp, ill., 15 kop.

Abstract: In the brochure problems are considered of further perfection of the technical means of television broadcasting. Information is presented on the state of the transmitting television network and the principal directions of its growth. Problems are covered on the automation of television centers and networks for distribution and relaying of television programs, television measuring-information systems, and the principles of construction of a monitoring and control system. The paths of growth of a receiving television network are discussed as well as the means of domestic video recording, prospects for cable television, and a future multipurpose communication system. The brochure is intended for readers acquainted with television and interested in its prospects.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR

KRIVOSHEYEV, MARK IOSIFOVICH, Perspektivy razvitiya televideniya, 6/1972, 80 pp, ill., 15 kop.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR UDC: 621.317:621.397.132(088.8)

KRIVOSHEYEV, M. I., DVORKOVICH, V. P., PLAKSYUK, S. G., BOLOVINTSEV, Yu. N.

"A Device for Measuring the Parameters of Color Television Test Signals"

USSR Author's Certificate No 263699, filed 5 Aug 68, published 15 Jun 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6G164 P)

Translation: This Author's Certificate introduces a device for measuring the parameters of color TV test signals. The device contains a control module, a subcarrier frequency reference signal oscillator, upper and lower frequency filters, and an analog-digital converter. For purposes of large-scale automation of measurements of the parameters of test signals coded in the SECAM, NTSC or PAL systems with simultaneous output of the results of measurements on different chromatic bands or in adjacent lines in digital form, the analog-digital converter is connected to the lower frequency filter through a module for analog processing of the brightness signal, and to the upper frequency filter through the module for analog processing of chrominance signal levels which is connected in parallel with a module for FM or PM conversion of the chrominance signal. The conversion module is controlled by a recognition circuit of the coding type.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR UDC: 621.397:535.67

KRIVOSHEYEV, M. I., DVORKOVICH, V. P., KRYLOV, L. N.

"A Device for Automatically Measuring Linear Distortions of the Characteristics of Color Television Channels"

USSR Author's Certificate No 269225, filed 25 Jul 68, published 12 Aug 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6G126 P)

Translation: This Author's Certificate introduces a device for automatically measuring linear distortions of the characteristics of color television channels. The device contains an amplifier with automatic peak-to-peak gain control of the brightness signal. This amplifier is connected through a low-frequency filter and delay line to one of the inputs of a subtractor, and through a high-frequency filter and color signal envelope detector to the second input of the subtractor. The device also contains a digital registration device which consists of a digital display, a digital printout device, a sign indicator with peak detector, and an analog-digital converter. To improve accuracy of measurements of the difference in gain and divergence in time of brightness and chrominance signals, a second subtractor is connected to the output of the first subtractor through

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

KRIVOSHEYEV, M. I. et al., USSR Author's Certificate No 269225

commutated peak detectors. The signal from this second subtractor is sent to the above-mentioned sign indicator, and the outputs of the commutated peak detectors are simultaneously connected to the input of an adder whose output is connected through an arcsine amplifier to the input of the analog--digital converter of the digital registration device. As a distinguishing feature of the patent, the total amplitudes of signals at the outputs of the lower and upper frequency filters are balanced out by connecting an amplifier with automatic gain control by the voltage from the output of the second subtractor between the chrominance signal envelope detector and the subtractor input. V. M.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR UDC: 621.397

KRIVOSHEYEV, M. I.

"Measurements and Inspection in Television"

V sb. Televizion. tekhnika (Television Technology--collection of works), Moscow, "Svyaz'", 1971, pp 394-435 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6G120)

Translation: Methods of measuring the parameters of TV equipment including video tape recorders are surveyed. Developments in the field of measurement automation are considered as well as automation of monitoring and control. The creation of TV-measurement information systems is discussed -- automated systems of monitoring and control in television with the use of digital methods and logic devices. Twenty-five illustrations, bibliography of thirty-four titles. N. S.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR UDC: 621.397

KRIVOSHEYEV, M. I., PLAKSYUK, S. G., SHLAYN, A. I.

"A Device for Measuring Distortions of Television Test Signals"

USSR Author's Certificate No 263039, filed 2 Dec 68, published 1 Jun 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6G109 P)

Translation: A device is proposed for measuring distortions of TV test signals (see RZh-Radiotekhnika, 1969, 10G1). To improve precision and provide for automatic measurement of both the total background noise and its additive and modulation components, a subtraction voltage module and four-input commutator are connected to the control module, and a signal divider is connected between the circuit for restoring the DC component and the control module.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR UDC: 621.397.61

KRIVOSHEYEV, M. I., GRUZDEV, Yu. B.

"Development of Technical Facilities for Television Broadcasting"

V sb. Televizion. tekhnika (Television Technology--collection of works), Moscow, "Svyaz'", 1971, pp 5-37 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6G176)

Translation: Data are given on development of the TV broadcasting network in the Soviet Union. A brief description is given of the Soviet-wide radio and television transmitting station at Ostankino. A detailed description is given of the Soviet-wide TV center, which includes, in addition to the Ostankino station, a studio and equipment complex on Shabolovka, a television theater, a portable equipment base, etc. An outline is given of the development of color television broadcasting. The use of artificial earth satellites is discussed. The technical facilities of sound studios are considered as well as broadcasting outside the studio, the use of video recording and a number of other problems. Fourteen illustrations, bibliography of forty-one titles. N. S.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR UDC 621.181.5:669.15.293-196

KALINIKA, L. T., KRIVOSHEYEV, V. A., and RUDNITSKAYA, V. I., Dnepropetrovsk Metallurgical Institute

"Phase Transformations in Additionally Alloyed Chrome-Nickel Roll Cast Iron in Isothermal Holdings"

Kiev, Metallofizika, No 32, 1970, pp 98-100

Translation: Curves of an isothermal decomposition of austenite in chrome-nickel roll cast iron alloyed with niobium (2.9% C, 0.4% Si, 0.8% Mn, 0.15% P, 0.02% S, 0.8% Cr, 3.9% Ni) were obtained. The mechanism of formation of anomalous structures in cast iron during high supercooling was examined.

It was established that during low supercooling (600-450°C) niobium lowers the stability of austenite, and during high supercooling (350-200°C), increases it.

The study made reveals a picture of the phase transformations in chilled cast iron alloyed with 0.3% niobium under isothermal conditions, which is important to know for the selection of the optimum conditions for cooling rolls in molds.

Bibliography: 7 entries, 2 illustrations

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR

UDC 621.396.62

KRIVOSHEYEV, V. I.

"Synthesis of the Structure of an Optimal Single-Sideband Receiver"

Kiev, Izvestiya vysshikh uchebnykh zavedeniy--Radioelektronika, Vol XIV, No 8, 1971, pp 902-905

Abstract: The synthesis of optimal radio communications signals receivers with different types of continuous modulation (amplitude, frequency, and so on) has been discussed by Tikhonov [Elektrosvyz', No 9, 1968; Statisticheskiye metody v proyektirovanii nelineynykh sistem avtomaticheskogo upravleniya, Edited by B. G. Dostupov, Mashinostroyeniye Press, 1970]. The optimal algorithms were synthesized using the theory of optimal nonlinear filtration of Markov information messages. This theory has deficiencies connected with execution of the optimal algorithm for weak signals, complexity of the receiver structure for Markov messages of different size, and so on. The possibility of using variation principles to solve these problems is demonstrated in the present paper in the example of synthesizing the structure of an optimal single-sideband receiver. The block diagram of the receiver is presented. It comprises an ideal band filter with a pulse transfer characteristic which relieves the input signal of the spectral noise component outside the range of localization of the

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USSR

KRIVOSHEYEV, V. I., Izvestiya vysshikh uchebnykh zavedeniy--Radioelektronika, Vol XIV, No 8, 1971, pp 902-905

signal spectrum and subsequent elements of the synchronous detector with a low frequency filter. The same structure was obtained earlier [Vozenkraft and Jacobs, Teoreticheskiye osnovy tekhniki svyazi, Mir Press, 1969], but using less efficient means. For the case of random phase of the carrier oscillations, the receiver is supplemented with a circuit for optimal estimation of it with corresponding phase tuning of the synchronous voltage generator.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR UDC:538.56:519.25

SOKOLOVA, L. L., KRIVOSHEYEV, V. I.

"Optimal Radio Reception of AM Signal Against Noise Background"

Uch. Zap. Gor'kovsk. Un-t, Ser. Radiofiz [Scientific Writings of Gor'kiy University, Radio Physics Series], No. 105, 1970, pp. 43-49 (Translated from Referativnyy Zhurnal Fizika, No. 11, 1970, Abstract No. 11 Zh108 by I. Troitskiy)

Abstract: Optimal radio reception of a signal is studied for the case in which the output signal consists of an additive mixture of an AM signal and AM noise. It is assumed in this case that the AM both of the useful signal and of the noise is performed by speech signals which are stable random processes with known energy spectra. Based on experimental data on the characteristics of the spectral density of the power of Russian speech, a model of AM speech signal and AM noise is suggested. The structure of a linear receiver with variable parameters performing optimal reception in the sense of the minimum mean square error of input

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR UDC:538.56:519.25

SOKOLOVA, L. L., KRIVOSHEYEV, V. I., Uch. Zap. Gor'kovsk. Un-t, Ser. Radiofiz [Scientific Writings of Gor'kiy University, Radio Physics Series], No. 105, 1970, pp. 43-49 (Translated from Referativnyy Zhurnal Fizika, No. 11, 1970, Abstract No. 11 Zh108 by I. Troitskiy)

and useful signals is determined for this model of the input radio signal.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

1/2 036 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--OPTIMAL DETECTION OF USEFUL INFORMATION FROM AN AM SIGNAL AND BACKGROUND MIXTURE WITH FLUCTUATING NOISE -U-

AUTHOR--KRIVOSHEYEV, V.I.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, NO 5, 1970, PP 943-949

DATE PUBLISHED--------70

SUBJECT AREAS--NAVIGATION

TOPIC TAGS--ALGORITHM, RADIO RECEIVER, SIGNAL MODULATION, AMPLITUDE MODULATION, PROBABILITY, WHITE NOISE, SIGNAL DISTORTION, ENERGY SPECTRUM, MATHEMATIC ANALYSIS, NOISE REDUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0575 STEP NO--UR/0109/70/000/005/0943/0949

CIRC ACCESSION NO--AP0132747

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

2/2 036 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132747

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER PROPOSES A METHOD FOR FINDING THE ALGORITHM OF AN OPTIMAL RECEIVER OPERATING ON A SIGNAL OF THE TYPE DESCRIBED IN THE TITLE. THE ALGORITHM IS SET UP WITH THE MAXIMUM OF THE PROBABILITY FUNCTIONAL AS CRITERION. THE AUTHOR FIRST DEVELOPS THE ALGORITHM FOR AN INPUT SIGNAL EQUAL TO THE USEFUL SIGNAL PLUS A FLUCTUATING GAUSSIAN WHITE NOISE. HE USES VARIATION PRINCIPLES TO ESTIMATE THE NOISE AND SIGNAL DISTORTION IN OPTIMAL SYSTEMS, AND ASSUMES THAT THE USEFUL SIGNAL FUNCTION HAS A LIMITED SPECTRUM. THE NEXT STEP INVOLVES THE INTRODUCTION OF THE AM FLUCTUATING BACKGROUND NOISE, IN WHICH IT IS AGAIN ASSUMED THAT THE NEW NOISE COMPONENT HAS A LIMITED SPECTRUM. ON THIS BASIS, A SYSTEM OF EQUATIONS DETERMINING THE OPTIMAL RECEIVER IS DERIVED. THE BLOCK DIAGRAM OF THE RECEIVER THUS CONSTRUCTED IS GIVEN. IN HIS CONCLUSION, THE AUTHOR ASSERTS THAT THIS METHOD FOR FINDING AN ALGORITHM FOR THE OPTIMAL RECEIVER CAN BE USED IN SITUATIONS WHERE THE NOISE IS EVEN MORE COMPLEX.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR K UDC: 621.391.2

KRIVOSHEYEV, V. I.

"Optimal Detection of Useful Information from an AM Signal and Background Mixture with Fluctuating Noise"

Moscow, Radiotekhnika i Elektronika, No 5, 1970, pp 943-949

Abstract: This paper proposes a method for finding the algorithm of an optimal receiver operating on a signal of the type described in the title. The algorithm is set up with the maximum of the probability functional as criterion. The author first develops the algorithm for an input signal equal to the useful signal plus a fluctuating Gaussian white noise. He uses variation principles to estimate the noise and signal distortion in optimal systems, and assumes that the useful signal function has a limited spectrum. The next step involves the introduction of the AM fluctuating background noise, in which it is again assumed that the new noise component has a limited spectrum. On this basis, a system of

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

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KRIVOSHEYEV, V. I., Radiotekhnika i Elektronika, No 5, 1970, pp 943-949

equations determining the optimal receiver is derived. The block diagram of the receiver thus constructed is given. In his conclusion, the author asserts that this method for finding an algorithm for the optimal receiver can be used in situations where the noise is even more complex.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

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UDC 621.391.1:519.2:621.372.54

SOKOLOVA, L. L., KRIVOSHEYEV, V. I.

"Optimal Radio Reception of AM Signals Against a Background of AM Noise"

Uch. zap. Gorkovsk. un-t (Scientific Notes of Gorkiy University), 1970, vyp. 105, pp 43-49 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9A28)

Translation: This article contains an investigation of the problem of separating useful AM signals from an additive mixture with AM noise not distinguished from it with respect to structural characteristics. It is proposed that the modulating signals are voice signals of the stationary random process type with known energy spectra. A model of the system which forms the useful message is constructed in the form of a linear dynamic 4th-order system excited by white noise. The noise model is constructed in the form of a linear dynamic second-order system with variable parameters. The structure of the linear receiver with variable parameters evaluating the useful message with minimum mean square error is defined. There are three illustrations and a four-entry bibliography.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR UDC: 621.372.2

BUTORIN, V. M., DMITRIYEV, V. M., KRIVOSHEYEV, Ye. F., PAVLYUK, V. A., TRET'YAKOV, O. A.

"Impedance Matching Between a System of Superconducting Thin-Film Tunnel Contacts and Free Space"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 9, Sep 72, pp 1885-1892

Abstract: The paper deals with the problem of plane electromagnetic wave excitation of a periodic system of strip lines (see figure) consisting of superconducting metal strips separated by a thin layer of a homogeneous isotropic dielectric material with thickness $2l \sim 10^{-7}$ cm. Conditions are found for matching between the impedance of this system and that of free space, and the passband and amplitude of the field within the contact at resonance are determined. The results may be treated as part of the solution of the general problem for synthesis of tunnel contacts in which the effect of weak superconductivity is observed. In reality, in the small-signal approximation the Josephson effect is described by a system of linear equations which in this instance must be solved simultaneously with the Maxwell equations and the equation for the normal and superconducting current components

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

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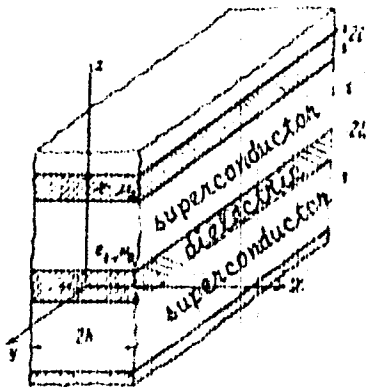
BUTORIN, V. M. et al., Radiotekhnika i Elektronika, Vol 17, No 9, Sep 72, pp 1885-1892

as functions of the electric field intensity. The results of the work would seem to imply that the tunnel effect will introduce certain corrections into the condition found for impedance matching, but will not change it in any essential way, and that matching of a system of Josephson contacts with free space will be possible.



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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR

UDC 621.396.677

KOMISSAROV, YA. S., PAVLYUK, V. A., KRIVOSHEYEV, YE. F., OSTROVSKAYA, L. S.

"Experimental Study of a Diffraction Problem"

Radiotekhnika. Resp. mezhved. nauchno-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 14, pp 106-109 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4B31)

Translation: The diffraction properties of periodic antenna arrays are investigated. There are 3 illustrations and a 3-entry bibliography.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

USSR UDC 547.26'118

RAZUMOV, A. I., KRIVOSHEYEVA, I. A., LIORBER, B. G., TARZIVOLOVA, T. A., and PAVLOV, V. A., Kazan' Institute of Chemical Technology imeni S. M. Kirov

"Investigation in the Series of Phosphinic and Phosphinous Acid Derivatives. LXXXII. Kinetics of Hydrolysis of Diallylphosphinic Acid Esters"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 3, Mar 72, pp 496-498

Abstract: Biologically active compounds have been found among the diallylphosphinic acid esters. The authors investigate the kinetics of uncatalyzed hydrolysis of these esters in an effort to determine the effect of the structure of the alkoxy radicals on their reactivity. Compounds of the $(CH_2{=}CHCH_2)_2$-P(O)OR type containing saturated radicals of normal and branched structure as well as unsaturated radicals with double and triple bonds in the ester group (R = CH_3, C_2H_5, n.-C_3H_7, iso-C_3H_7, C_4H_9, iso-C_4H_9, sec.-C_4H_9, $CH_2{=}CH$, $CH_2{=}CHCH_2$, $CH_3CH{=}CHCH_2$, $CH{\equiv}CCH_2$) were selected for study. The kinetics of hydrolysis were checked by titration. Preliminary experiments showed that diallylphosphinic acid and the corresponding alcohol formed during the reaction have no effect on the course of hydrolysis. Diallylphosphinic acid needed for the experiments was synthesized by treating diallylphosphinic

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RAZUMOV, A. I., et al., Zhurnal Obshchey Khimii, Vol 42(104), No 3, Mar 72, pp 496-498

acid chloride with equivalent quantities of water. The experimental data indicate that the hydrolysis of these esters takes place with splitting of the C-O bond. The monomolecular reaction is apparently the rate determining step for the reaction of the esters studied. The results of the work may be useful in studying the alkylating capacity of diallylphosphinic acid esters.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

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UDC 576.858.5.083.35.095.5

ADZHIGITOV, F. I., and KRIVOSHEIN, Yu. S., Institute of Experimental Pathology and Therapy, Academy of Medical Sciences, USSR, Sukhumi

"Transformation of Kidney Cell Cultures of Newborn Green Monkey Induced by Adenovirus Type 12"

Moscow, Voprosy Virusologii, No 2, Mar/Apr 70, pp 221-225

Abstract: Kidney cell cultures from one-day-old green monkeys were infected with adenovirus type 1w. Thirty to forty days after the appearance of the adenovirus cytopathic effect in the majority of cultures, growing cell elements began to appear. Regular changes in the nutrient medium had been conducted for a long time, preserving 50% of the old culture fluid. A different line of continuous cultures was subsequently derived from the cell elements, differing in morphological properties. This phenomenon of the repopulation of cells surviving after adenovirus cytopathic effect was regularly reproduced in different experiments. Some culture cells contained persistent adenovirus type 1w, which was demonstrated by production of specific cytopathic effect in HeLa cells inoculated with these cells, and by production of tumors in newborn hamsters inoculated with these cultures. The morphology of these tumors was typical of neoplasms induced by adenovirus type 12. Sera from animals bearing these tumors contained antibodies reacting with the T-antigen of hamster tumor induced by adenovirus type 12.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

1/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--TRANSFORMATION OF NEWBORN GREEN MONKEY KIDNEY CELL CULTURES INDUCED BY ADENOVIRUS TYPE 12 -U-

AUTHOR-(02)-ADZHIGITOV, F.I., KRIVOSHEIN, YU.S.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 2, 221-225

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TISSUE CULTURE, ADENOVIRUS, MONKEY, CONTINUOUS CULTURE, ANTIGEN, TUMOR, ANTIBODY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0738 STEP NO--UR/0402/70/000/002/0221/0225

CIRC ACCESSION NO--AP0103944

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

2/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0108944

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KIDNEY CELL CULTURES FROM ONE DAY OLD GREEN MONKEY WERE INFECTED WITH ADENOVIRUS TYPE 12. AFTER THE APPEARANCE OF ADENOVIRUS CYTOPATHIC EFFECT IN THE MAJORITY OF CULTURES IN WHICH REGULAR CHANGES OF THE NUTRIENT MEDIUM WERE CARRIED OUT FOR A LONG TIME WITH PRESERVATION OF 50PERCENT OF THE OLD CULTURE FLUID, AT 30-40 DAYS GROWING OUT CELL ELEMENTS BEGAN TO APPEAR. SUBSEQUENTLY FROM THEM DIFFERENT LINES OF CONTINUOUS CULTURES WERE DERIVED DIFFERING IN MORPHOLOGICAL AND OTHER PROPERTIES. THIS PHENOMENON OF REPOPULATION OF CELLS SURVIVING AFTER ADENOVIRUS CYTOPATHIC EFFECT WAS REGULARLY REPRODUCED IN DIFFERENT EXPERIMENTS. SOME CELLS OF THE CULTURE CONTAINED PERSISTING ADENOVIRUS TYPE 12 WHICH WAS DEMONSTRATED BY PODDUCTION OF SPECIFIC CYTOPATHIC EFFECT IN HELA CELLS INOCULATED WITH THESE CELLS AND BY PRODUCTION OF TUMORS IN NEWBORN HAMSTERS INOCULATED WITH THESE CULTURES. MORPHOLOGY OF THESE TUMORS WAS TYPICAL FOR NEOPLASMS INDUCED BY ADENOVIRUS TYPE 12. SERA FROM ANIMALS BEARING THESE TUMORS CONTAINED ANTIBODY REACTING WITH THE T.ANTIGEN OF HAMSTER TUMOR INDUCED BY ADENOVIRUS TYPE 12.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

1/2 025 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--HARDNESS OF STEEL G13 AFTER MECHANICOTHERMAL TREATMENT -U-

AUTHOR-(04)-KRIVOSPITSKIY, V.M., NIKONENKO, A.S., KHARITONOVA, V.F., KIBETS, V.L.

COUNTRY OF INFO--USSR

SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (3), 47-8

DATE PUBLISHED-------70

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

TOPIC TAGS--THERMOMECHANICAL TREATMENT, HIGH MANGANESE STEEL, METAL HARDNESS, ALLOY DESIGNATION, ALLOY COMPOSITION, METAL DEFORMATION, MATERIAL FRACTURE/(U)G13 HIGH MANAGANESE STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1704 STEP NO--UR/0129/70/000/003/0047/0048

CIRC ACCESSION NO--AP0118682

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

2/2 025 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118682

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPECIMENS FROM STEEL G13 (C 1.18, MN 13.5, SI 0.62, P 0.083, AND S 0.06 WT. PRECENT), SIZE 8 TIMES 8 TIMES 10 MM WERE HEATED IN ACTIVIATED CARBON AT 1050DEGREES FOR 20 MIN AND THEN COOLED IN WATER. DEFORMATION BY COMPRESSION FOLLOWED AT THE RATE 1 MM-MIN AND ANNEALING IN A SALT BATH AT 100-800DEGREES. AFTERWARDS SPECIMENS WERE POLISHED MECH. AND ELECTROCHEM. AND HARDNESS WAS DETD. WITH INCREASED DEFORMATION DEGREE UP TO 50PERCENT, THE HARDNESS STARTED TO DECREASE AT 300DEGREES AND THE DECREASE WAS COMPLETED AT 800DEGREES. THE COMPRESSION DEFORMATION INCREASED HARDNESS. HARDNESS OF QUENCHED SPECIMENS INCREASED NEARLY IN LINEAR FASHION WITH INCREASED DEFORMATION DEGREE, WHILE THAT OF HEAT TREATED SPECIMENS INCREASED INTENSELY ONLY AT SMALL DEFORMATION DEGREES. INCREASED TEMP. AND TIME OF ANNEALING CAUSED AN INCREASED BRITTLENESS OF QUENCHED AND TEMPERED STEEL. E.G. AFTER ANNEALING FOR 2 HR AT 450DEGREES THE FRACTURE OCCURRED AT 40PERCENT REDN. DEGREE, WHILE AFTER ANNEALING AT 550DEGREES THIS BREAKDOWN OCCURED AT 20PERCENT REDN. DEGREE. FACILITY: KRIVOROZH. GORNORUD. INST., KRIVOI ROG, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

Thermomechanical Treatment

USSR

UDC 620.178:669.15'74.1-4

KRIVOSPITSKIY, V. M., NIKONENKO, A. S., KHARITONOVA, V. F., and KIBETS, V. L.
(Krivoy Rog Mining Institute)

"Strength of G13 Steel After Mechanical-Heat Treatment"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 3, 1970, pp 47-48

Abstract: Results are presented of the investigation on the effect of mechanical and heat treatment on the hardness and compression strength of G13 steel. The experimental procedure and technique for production of samples are described. The results show that the nature of hardness variation of samples after heat or mechanical heat treatment is the same. The strength increases as the result of compression. A microscopic nature of plastic deformation was observed at austenite steel compression. At small deformations, straight lines passing through the whole grain were observed, while the grain number with lines increases with deformation. At high degrees of deformation, the deformation lines become undulating, then lines appear along which the destruction develops. Upon deformation of steel, annealed at 500-600°C, lines of deformation were observed at short annealing holding times, while at prolonged annealing times and high degrees of deformation lines were absent. 2 figures, 13 references.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--REACTION OF OMEGA BROMOACETOPHENONE AND OMEGA BROMOPENTAFLUOROACETOPHENONE WITH SOME NUCLEOPHILIC REAGENTS -U-

AUTHOR-(05)-ANDREYEVSKAYA, O.I., BARKHASH, V.A., KOROBEYNICHEVA, I.K., KRIVOUSOVA, YE.D., SOKOLENKO, V.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 711-17

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BROMINATED ORGANIC COMPOUND, ACETOPHENONE, FLUORINATED ORGANIC COMPOUND, ORGANIC OXIDE, CHEMICAL REACTION MECHANISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1961 STEP NO--UR/0566/70/005/004/0711/0717

CIRC ACCESSION NO--AP0125550

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

2/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125550

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF BZCH SUB2 BR (I) WITH NEONA IN MEOH AT 350DEGREES GAVE ONLY BZCH SUB2 OME (II) AND BZCH SUB2 OH (III) (CONSIDERED FORMED THROUGH THE INTERMEDIATE 1,METHOXY,1,PHENYLETHYLENE OXIDE, WHICH WAS NOT ISOLATED). AT 0-50DEGREES THIS REACTION GAVE THE ABOVE PRODUCTS AND ALSO 2 ISOMERS OF 1,BENZOYL,2,BROMOMETHYL,2,PHENYLETHYLENE OXIDE (IV). THE REACTION OF I WITH KF IN REFLUXING MEOH GAVE II, III, BZCH SUB2 F, AND 2 ISOMERS OF IV. THE REACTIONS OF C SUB6 F SUB5 COCH SUB2 BR (V) WITH NEONA IN MEOH GAVE COMPLEX MIXTS. CONTG. IN SOME CASES C SUB6 F SUB5 H, 1,BROMOMETHYL,1,2,BIS(PENTAFLUOROPHENYL)ETHYLENE OXIDE (VII), AND 1,BROMOMETHYL,1,PENTAFLUOROPHENYL2,(P,METHOXYETRAFLUOROPHENYL)ETHYLENE OXIDE. THE REACTION OF V WITH KF-MEOH GAVE ALSO VI, C SUB6 F SUB5 H, AND TRANS,1,2,3,TRIS(PENTAFLUOROPHENYL) CYCLOPROPANE (VIII). HEATING VII WITH HI-ACOH ISOMERIZED IT TO 2,5,BIS(PENTAFLUOROPHENYL),3,PENTAFLUOROBENZOYLMETHYLFURAN. THE MECHANISMS OF THE ABOVE REACTIONS ARE DISCUSSED. FACILITY: NOVOSIBIRSK. INST. ORG. KHIM., NOVOSIBIRSK, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

1/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--AROMATIC FLUORO DERIVATIVES. XL. EFFECT OF A PENTAFLUOROPHENYL RING ON THE STRENGTH OF CH ACIDS -U-

AUTHOR-(03)-VLASOV, V.M., KRIVOUSOVA, YE.D., YAKOBSON, G.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 758-67

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--FLUORINATED ORGANIC COMPOUND, DICARBOXYLIC ACID, SODIUM COMPOUND, NITRILE, NMR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1957 STEP NO--UR/0366/70/006/004/0758/0767

CIRC ACCESSION NO--AP0125546

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

2/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125546

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ACTION OF NAH ON C SUB6 F SUB5 CH SUB2 CN IN MEOCH SUB2 CH SUB2 OME (I) SOLN. GIVES P,NCCH SUB2 C SUB6 F SUB4 CH (CN) C SUB6 F SUB5 (II) WHICH AT MINUS 100DEGREES TO 250DEGREES FORMS WITH THE EXCESS NAH COLORED CARBANION P,NCCH SUB2 C SUB6 F SUB4 C PRIME NEGATIVE (NA PRIME POSITIVE)(CN)C SUB6 F SUB5 (III). THE EXISTENCE OF III WAS ESTABLISHED BY IR AND NMR SPECTROSCOPY. THE HYDROLYSIS OF II GAVE THE CORRESPONDING DICARBOXYLIC ACID. SIMILARLY, C SUB6 F SUB5 CH (CO SUB2 ET) SUB2 IN I SOLN. GAVE STABLE C SUB6 F SUB5 C PRIME NEGATIVE (NA PRIME POSITIVE), (CO SUB2 ET) SUB2 (IV). THE COMPARISON OF IV NMR SPECTRA IN I AND PD(NME SUB2) SUB3 (HIGHLY POLAR SOLVENT) WITH THE SPECTRA OF RC PRIME NEGATIVE (NA PRIME POSITIVE), (CO SUB2 ET) SUB2 (V) (R IS P,HC SUB6 F SUB4, 2,4,(O SUB2 N) SUB2 C SUB6 H SUB3, OMICRON. O SUB2 NC SUB6 H SUB4, P,O SUB2 H, C SUB6 H SUB4, OR PH) SHOWS THAT THE IONIZATION OF IV IS OF THE SAME ORDER AS THAT OF V (R EQUALS OMICRON, O SUB2 NC SUB6 H SUB4 OR P,O SUB2 NC SUB6 H SUB4). THE POSITION OF EQUIL. WAS ESTABLISHED IN RCH(CO SUB2 ET) SUB2 PLUS IV IN EQULIBRIUM V PLUS C SUB6 F SUB5 CH, (CO SUB2 ET) SUB2 SYSTEMS. THE RELATIVE REACTIVITY OF IV AND V TOWARD N,CHLOROMETHYLPHTHALIMIDE WAS DETD. FACILITY: NOVOSIBIRSK, INST. ORG. KHIM., NOVOSIBIRSK, USSR.

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USSR UDC: 621.315.592

BRAILOVSKIY, Ye. Yu., BRUDNYY, V. N., KRIVOV, M. A., and [illegible], V. B.

"Optical Absorption Spectra of n-GaAs Irradiated by Large Integral Electron Beams"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 2075-2077

Abstract: A description is given of experiments in which the optical absorption spectra of n-GaAs in the region of 0.9-1.5 ev, bombarded by electrons of energy 1.6-1.8 mev at temperatures of [illegible]-100° C, were measured. The original specimens were alloyed with tellurium and had electron concentrations of 1-[illegible]·10[illegible]/cm³ at T = 300° K. Transmission spectra were obtained at temperatures of [illegible] and 300° K, and the absorption spectra were calculated from [illegible] with the reflection coefficient taken at 0.3. As a result of the irradiation, the electron concentration in the specimens dropped, and the Fermi level tended toward the middle of the forbidden band. Curves are plotted for the specific electron conductivity of the specimens and for the characteristic absorption spectra of the n-GaAs irradiated with electrons at a dosage of 3.8·10[illegible] electrons per cm².

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USSR

UDC 537.311.33:546.19'681

KRIVOV, M.A., BRUDNYY, V.N., MALYANOV, S.V., MELEV, V.L., RAMAZANOV, P.YE., RED'KO, V.P.

"Effect Of Electron (1.5 Mev) And Proton (5 Mev) Irradiation On Electrical, Optical, And Photoelectric Characteristics Of Gallium Arsenide"

V sb. Radiats. fiz.nomet. kristallov (Radiation Physics Of Nonmetallic Crystals-Collection Of Works), Vol 3, Part 2, Kiev, "Nauk.dumka," 1971, pp 16-21 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10849)

Translation: The paper studies the spectra of radiation defects created by electrons (1.5 Mev) and protons (5 Mev) at temperatures close to 300° K, their resistance to annealing, and also the effect of Cu impurity on the spectra of the levels originating after irradiation. GaAs of n- and p-type was used with carrier concentrations of $5 \cdot 10^{15} - 10^{18}$ cm^{-3}. The mobilities for n- and p-type specimens at a temperature of 300° K were 2200--4500 cm^2v^{-1} and 140-330 $cm^2v^{-1}sec^{-1}$, respectively. The GaAs was doped with Te and Zn and part of the material was specially not doped. 3 ill. 7 ref. I.V.

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1/3 025 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--EFFECT OF ELECTRON IRRADIATION ON PARAMETERS OF GALLIUM ARSENIDE PULSED DIODES -U-

AUTHOR-(05)-BRUDNYY, V.N., VILISOV, A.A., VYATKIN, A.P., KRIVOV, M.A., MALYANOV, S.V.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ, 1970, 13(4), 109-13

DATE PUBLISHED-------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS

TOPIC TAGS--GALLIUM ARSENIDE SEMICONDUCTOR, DIODE CIRCUIT, VOLT AMPERE CHARACTERISTIC, ELECTRON BOMBARDMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1473 STEP NO--UR/0139/70/013/004/0109/0113

CIRC ACCESSION NO--AT0130405

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2/3 025 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0136693

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF ELECTRON IRRADN. ON VOLTAGE CURRENT (V-A), VOLTAGE CAPACITANCE, AND PULSE CHARACTERISTICS OF POINT CONTACT PULSED GAAS DIODES WAS STUDIED. THE DIODES WERE PREPD. FROM N TYPE GAAS WITH RESISTIVITES OF 0.06 AND 0.9 OHM-CM, CARRIER CONCNS. OF (3-5) TIMES 10 PRIME15 AND (1-2) TIMES 10 PRIME15 CM PRIME3, AND MOBILITIES OF 4500 AND 5500 CM PRIME2 V SEC, RESP. AFTER ASSEMBLY COMPLETION, ELEC. FORMING WAS CARRIED OUT BY HALF PERIOD CURRENT PULSES IN THE FORWARD DIRECTION. THE DIODES WERE IRRADIATED BY 1.5-MEV ELECTRONS, AND CAPACITANCE MEASUREMENTS WERE MADE AT 30 MHZ. FROM THE V-A CURVES, IT CAN BE SEEN THAT BREAKDOWN VOLTAGE AND FORWARD RESISTANCE INCREASE, AND RECTIFICATION COEFF. DECREASES UNDER IRRADN. THE CHANGES ARE ATTRIBUTED TO AN INCREASE IN THE RESISTIVITY AT THE EXPENSE OF A DECREASE IN THE CONCN. OF CHARGER CARRIERS. CAPACITANCE DECREASES UNDER IRRADN., AND THE DEPTH OF THE CAPACITANCE MODULATION DECREASES AT THE COST OF CHANGES IN IMPURITY DISTRIBUTION IN THE SPACE CHARGE REGION (HIGHLY FORMED DIODES). THIS BEHAVIOR CAN BE EXPLAINED IN THE LIGHT OF THE THEORY DEVELOPED FOR P-N PLANE JUNCTIONS AND SCHOTTKY TYPE BARRIERS. FROM THE PULSE EXPTS., THE RECOVERY TIME (T SUBRECOV) UNDER IRRADN. INCREASES FOR SCHOTTKY BARRIERS (SLIGHTLY FORMED) AT THE EXPENSE OF INCREASING RC (R AND BAR C ARE MEAN VALUES OF RESISTANCE AND CAPACITANCE, RESP., IN THE SWITCHING PROCESS). FOR HIGHLY FORMED DIODES, BEHAVIOR OF T SUBRECOV UNDER IRRADN. IS GOVERNED BY A RELATION BETWEEN LIFETIME OF MINORITY CARRIERS (T) AND BAR RC.

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3/3 025 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NR--AT0130903

ABSTRACT/EXTRACT--AT LOW RADIATION DOSES, A DECREASE OF T SUBRECOV CAN BE OBSD. AT THE EXPENSE OF T DECREASE, WHILE AT HIGH DOSES (SIMILAR TO 10 PRIMEIG ELECTRONS-CM PRIMEZ) T SUBRECOV ALWAYS INCREASES.

FACILITY: STB. FIZ.-TEXH. INST. IM. KUZNETSOVA, TOMSK, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610014-4

KRIVOV, M.A., MALISOVA, Ye.V., MEL'CHENKO, E.N.

"Study of the Behavior of Gold in Gallium Arsenide"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 3, 1970, pp 317-321

Abstract: This article discusses the method of measuring the temperature dependence of the photoconductivity of gallium arsenide doped with gold when growing from a melt to determine the shallow acceptor level E_v + 0.04 electron volts which is the hole capture level and is related to the presence of gold in the given material. On the basis of a study of the temperature dependence of the Hall effect in samples doped with copper and gold, the proposition is stated that the given acceptor level arises from the interaction of copper and gold.

The temperature dependencies of the magnitude of the photosignal of gallium arsenide doped with gold and not doped with gold are presented in graphical form for two light intensities J_1 and J_2 ($J_1 > J_2$). On the basis of analysis of the experimental curves, the energy spectrum and type of deficiency levels are determined in the initial gallium arsenide samples and those doped with gold. The activation energy and ratio of the capture cross sections for the levels in the initial gallium arsenide and the doped gallium arsenide are presented in tabular form. The characteristics of samples doped with copper and gold are compared in a table and figure.

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USSR

[illegible], [illegible], et al., Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, [illegible], pp 817-821

It is concluded that the introduction of gold into the samples of gallium arsenide leads to the occurrence of the E_v + 0.04 electron volt level which is observed in doped samples if the 0.02 electron volt level is present in the initial crystals. 2. The given level is the hole [illegible] level in gallium arsenide. 3. Investigation of samples doped with copper and gold supports that the E_v + 0.04 electron volt level is formed as a result of interaction of gold and defects arising from the presence of copper. 4. The presence of gold complicates the formation of the thermal stemplers in gallium arsenide.

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UNCLASSIFIED PROCESSING DATE--13NOV70

2/2 019

CIRC ACCESSION NO--AP0125550

ABSTRACT/EXTRACT--(U) SP-0- ABSTRACT. THE REACTION OF BZCH SUB2 BR (I) WITH NEONA IN MEOH AT 350DEGREES GAVE ONLY BZCH SUB2 OME (II) AND BZCH SUB2 OH (III) (CONSIDERED FORMED THROUGH THE INTERMEDIATE 1,METHOXY,1,PHENYLETHYLENE OXIDE, WHICH WAS NOT ISOLATED). AT 0-50DEGREES THIS REACTION GAVE THE ABOVE PRODUCTS AND ALSO 2 ISOMERS OF 1,BENZOYL,2,BROMOMETHYL,2,PHENYLETHYLENE OXIDE (IV). THE REACTION OF I WITH KF IN REFLUXING MEOH GAVE II, III, BZCH SUB2 F, AND 2 ISOMERS OF IV. THE REACTIONS OF C SUB6 F SUB5 COCH SUB2 BR (V) WITH NEONA IN MEOH GAVE COMPLEX MIXTS. CONTG. IN SOME CASES C SUB6 F SUB5 N, 1,BROMOMETHYL,1,2,BIS(PENTAFLUOROPHENYL)ETHYLENE OXIDE (VI), AND 1,BROMOMETHYL,1,PENTAFLUOROPHENYL2,(P,METHOXYTETRAFLUOROPHENYL)ETHYLENE OXIDE. THE REACTION OF V WITH KF-MEOH GAVE ALSO VI, C SUB6 F SUB5 H, AND TRANS,1,2,3,TRIS(PENTAFLUOROPHENYL) CYCLOPROPANE (VII). HEATING VII WITH HI-ACOH ISOMERIZED IT TO 2,5,BIS(PENTAFLUOROPHENYL),3,PENTAFLUOROBENZOYLMETHYLFURAN. THE MECHANISMS OF THE ABOVE REACTIONS ARE DISCUSSED. FACILITY: NOVOSIBIRSK. INST. ORG. KHIM., NOVOSIBIRSK, USSR.

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1/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--AROMATIC FLUORO DERIVATIVES. XL. EFFECT OF A PENTAFLUOROPHENYL RING ON THE STRENGTH OF CH ACIDS -U-

AUTHOR-(03)-VLASOV, V.M., KRIVOUSOVA, YE.D., YAKOBSON, G.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 758-67

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--FLUORINATED ORGANIC COMPOUND, DICARBOXYLIC ACID, SODIUM COMPOUND, NITRILE, NMR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1957 STEP NO--UR/0366/70/006/004/0758/0767

CIRC ACCESSION NO--AP0125546

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CIRC ACCESSION NO--AP0125546 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ACTION OF NAH ON C SUB6 F SUB5 CH SUB2 CN IN MEOCH SUB2 CH SUB2 OME (I) SOLN. GIVES P,MCCH SUB2 C SUB6 F SUB4 CH (CN) C SUB6 F SUB5 (II) WHICH AT MINUS 100DEGREES TO 25DEGREES FORMS WITH THE EXCESS NAH COLORED CARBANION P,MCCH SUB2 C SUB6 F SUB4 C PRIME NEGATIVE (NA PRIME POSITIVE)(CN)C SUB6 F SUB5 (III). THE EXISTENCE OF III WAS ESTABLISHED BY IR AND NMR SPECTROSCOPY. THE HYDROLYSIS OF II GAVE THE CORRESPONDING DICARBOXYLIC ACID. SIMILARLY, C SUB6 F SUB5 CH (CO SUB2 ET) SUB2 IN I SOLN. GAVE STABLE C SUB6 F SUB5 C PRIME NEGATIVE (NA PRIME POSITIVE), (CO SUB2 ET) SUB2 (IV). THE COMPARISON OF IV NMR SPECTRA IN I AND PO(NME SUB2) SUB3 (HIGHLY POLAR SOLVENT) WITH THE SPECTRA OF RC PRIME NEGATIVE (NA PRIME POSITIVE), (CO SUB2 ET) SUB2 (V) (R IS P,MC SUB6 F SUB4, 2,4,(O SUB2 N) SUB2 C SUB6 H SUB3, OMICRON, O SUB2 NC SUB6 H SUB4, P,O SUB2 H, C SUB6 H SUB4, OR PH) SHOWS THAT THE IONIZATION OF IV IS OF THE SAME ORDER AS THAT OF V (R EQUALS OMICRON, O SUB2 NC SUB6 H SUB4 OR P,O SUB2 NC SUB6 H SUB4). THE POSITION OF EQUIL. WAS ESTABLISHED IN RCH(CO SUB2 ET) SUB2 PLUS IV IN EQULIBRIUM V PLUS C SUB6 F SUB5 CH, (CO SUB2 ET) SUB2 SYSTEMS. THE RELATIVE REACTIVITY OF IV AND V TOWARD N,CHLOROMETHYLPHTHALIMIDE WAS DETD. FACILITY: NOVOSIBIRSK, INST. ORG. KHIM., NOVOSIBIRSK, USSR.

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UDC: 621.315.592

USSR

BRAILOVSKIY, Ye. Yu., BRUDNYY, V. N., KRIVOV, M. A., and RUD'KO, V. B.

"Optical Absorption Spectra of n-GaAs Irradiated by Large Integral Electron Beams"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 2075-2077

Abstract: A description is given of experiments in which the optical absorption spectra of n-GaAs in the region of 0.5-1.5 ev, bombarded by electrons of energy 1.6-1.8 mev at temperatures of 80-100° C, were measured. The original specimens were alloyed with tellurium and had electron concentrations of 1-2·10[illegible]/cm³ at T = 300° K. Transmission spectra were obtained at temperatures of [illegible] and 300° K, and the absorption spectra were calculated from them with the reflection coefficient taken at 0.3. As a result of the irradiation, the electron concentration in the specimens dropped, and the Fermi level tended toward the middle of the forbidden zone. Curves are plotted for the specific electron conductivity of the n-specimens and for the characteristic absorption spectra of the n-GaAs irradiated with electrons at a dosage of 3.6·10[illegible] electrons per cm².

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USSR UDC 537.311.33:546.19'681

KRIVOV, M.A., BRUDNYY, V.N., MALYANOV, S.V., MELEV, V.G., RAMAZANOV, P.YE., RED'KO, V.P.

"Effect Of Electron (1.5 Mev) And Proton (5 Mev) Irradiation On Electrical, Optical, And Photoelectric Characteristics Of Gallium Arsenide"

V sb. Radiats. fiz.nemet. kristallov (Radiation Physics Of Nonmetallic Crystals-Collection Of Works), Vol 3, Part 2, Kiev, "Nauk.dumka," 1971, pp 16-21 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10349)

Translation: The paper studies the spectra of radiation defects created by electrons (1.5 Mev) and protons (5 Mev) at temperatures close to 300° K, their resistance to annealing, and also the effect of Cu impurity on the spectra of the levels originating after irradiation. GaAs of n- and p-type was used with carrier concentrations of $5 \cdot 10^{15} - 10^{18}$ cm^{-3}. The mobilities for n- and p-type specimens at a temperature of 300° K were 2200--4500 $cm^2 v^{-1}$ and 140-330 $cm^2 v^{-1} sec^{-1}$, respectively. The GaAs was doped with Te and Zn and part of the material was specially not doped. 3 ill. 7 ref. I.V.

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