"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

UDC 621.643.001.24

KURANOV, B.A., STEPANOV, G.A., Scientific Research Institute of Cryogenic Machinery

"Calculation of Pipeline Flange Connections for Low-Temperature Liquids"

Moscow, Stroitel'stvo Truboprovodov, No 5, May 1971, pp 24-25

Abstract: Flange connections of pipelines intended for the transportation of low-temperature liquids must possess high strength and must be leak proof. When the parameters of flange connections are calculated, account is usually taken only of the internal pressure and of the axial forces in the pipeline. Research has shown, however, that temperature deformations must also be taken into account. If these deformations are not taken into account, the service life of the pipeline facility cannot be calculated correctly. 4 figures, 5 bibliographic entries.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

1/2 021 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--POSSIBLE SUBSTITUTION OF DICUMYL PEROXIDE DURING THE VULCANIZATION OF URETHANE RUBBERS WITH SOME ORGANIC PEROXIDES -U-

AUTHOR-(03)-VARNAVITSKAYA, L.A., ORLENKO, G.P., KURANOVA, G.F.

COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA 1970, 29(2), 13-15

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--ORGANIC PEROXIDE, VULCANIZATION, FILLER, ELONGATION, HARDNESS, ETHYL CARBAMATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0460 STEP NO--UR/0138/70/029/002/0013/0015

CIRC ACCESSION NO--AP0119396

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

2/2 021 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119396

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SKU-I RUBERS (I), FILLED WITH 50 PARTS LAMP BLACK, WAS VULCANIZED IN THE PRESENCE OF 2-8 PARTS 2,2,BIS(4,4,BIS(TERT-BUTYLEPEROXY)CYCLOHEXYL)PROPANE (II) OR 1,4,BIS(TERT-BUTYLPEROXYISOPROPYL)BENZENE (III) AT 100-800EGREES FOR 20-60 MIN. OPTIMUM CONTENTS OF II AND III WERE 5 AND 4 PARTS, RESP.; OPTIMUM VULCANIZATION TEMPS. WERE 130 AND 1430EGREES, RESP. INCREASED FILLER CONTENT AND VULCANIZATION TEMP. GAVE INCREASED HARDNESS AND 100 AND 300PERCENT ELONGATION. I VULCANIZATES HAD SUPERIOR MECH. PROPERTEIS AND THE PECULIAR ODOR OF PHAC WAS ELIMINATED. FACILITY: VSES. NAUCH.-ISSLED. INST. SIN. KAUCH. IM. LEBEDEVA, LENINGRAD, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

1/2 010 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--OXIDES OF HIGHER UNSATURATED ACIDS. STEREOCHEMISTRY OF THE REACTION OF OXIDES OF METHYL CIS AND TRANS OCTADECENOATES WITH TRICHLOROACETIC

AUTHOR-(02)-KURANOVA, I.L., LYUBOTIROVA, V.L.

COUNTRY OF INFO--USSR

K

SOURCE--ZH. ORG. KHIM. 1970, 6(5), 942-7.

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--STEREOCHEMISTRY, ORGANIC OXIDE, CHLORINATED ORGANIC COMPOUND, ACETIC ACID, ISOMERIZATION, HYDROLYSIS, METHOXY COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1327 STEP NO--UR/0366/70/006/005/0942/0947

CIRC ACCESSION NO--AP0135001

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

2/2 010 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0136061

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE REACTION IS STEREOSPECIFIC. THUS, THE CIS,OCTADEC,6,ENOATE DMILC (CIS I) GAVE THE THREOISOMER AND TRANS I GAVE ERYTHRO, ISOMER OF ME (CH SUB2) SUB10 CH(CF)CH(C SUB2 CCCL SUB3)(CH SUB2) SUB4 CO SUB2 ME (II). THE HYDROLYSIS OF II GAVE THE CORRESPONDING THREO AND ERYTHRO ACIDS. THREO II ISOMER REACTED WITH MEOH IN THE PRESENCE OF HCL(G) TO GIVE 70PERCENT 2,METHOXY,2(TRICHLOROMETHYL), 5, UNDECYL, 4, (4,CARBOMETHOXYBUTYL),1,3,DIOXOLANE (III). THE ALK. HYDROLYSIS OF III GAVE ITS 4,CARBOXYBUTYL ANALOG. THE ACID HYDROLYSIS OF III GAVE THE THREO ISOMER OF ME(CH SUB2(SUB10 CH(OH)CH(CF)(CH SUB2) SUB4 CO SUB2 H (IV). THE ALK. METHANOLYSIS OF THREO,II ISOMER GAVE 4,(4,CARBOMETHOXYBUTHL) 5,UNDECYCL,1,3,DIOXOLAN,2,ONE WHICH UNDER SEVERE HYDROLYSIS CONDITIONS GAVE IV. FACILITY: LENINGRAD. GOS. UNIV., LENINGRAD, USSR.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

1/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--X RAY DIFFRACTION STUDY OF DERIVATIVES OF TRYPSIN INHIBITED BY DIISOPROPYL FLUOROPHOSPHATE -U-

AUTHOR-(05)-VAYNSHTEYN, B.K., ARUTYUNYAN, E.G., ZAYTSEV, V.N., KURANOVA, I.P., GREBENKO, A.I.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(1), 167-8

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TRYPSIN, PLATINUM COMPOUND, MERCURY COMPOUND, ENZYME ACTIVITY, INHIBITION, FLUORINATED ORGANIC COMPOUND, ORGANIC PHOSPHORUS COMPOUND, X RAY DIFFRACTION ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0223 STEP NO--UR/0070/70/015/001/0167/0168

CIRC ACCESSION NO--AP0119219

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

2/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119219

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PT AND HG DERIVS. OF TRYPSIN WERE PREPD. BY THE DIFFUSION METHOD, AND THE COORDINATES OF THE PT AND HG ATOMS IN THE CRYSTALS WERE DETD. BY X RAY DIFFRACTION. THE UNIT CELL PARAMETERS ARE A 58.65 PLUS OR MINUS 0.01, B 67.05 PLUS OR MINUS 0.01, AND C EQUALS 54.75 PLUS OR MINUS 0.02 ANGSTROM FOR THE PT DERIV. AND A 58.58 PLUS OR MINUS 0.02, B 67.42 PLUS OR MINUS 0.02, AND C 54.75 PLUS OR MINUS 0.02 ANGSTROM FOR THE HG DERIV. THE MAX. DEVIATIONS FROM THE PARAMETERS OF THE INITIAL TRYPSIN UNIT ALL WERE 0.34 AND 0.06 ANGSTROM FOR THE PT AND HG DERIVS., RESP. THE COORDINATES OF THE HG ATOM WERE DETD. TO BE X EQUALS 0.962, Y EQUALS 0.035, AND Z EQUALS 0.195. FOR PT, HOWEVER, CALCNS. YIELDED 2 VARIATIONS OF THE COORDINATES.

FACILITY: INST. KRISTALLOGR., MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

1/2 017 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--EFFECT OF OXYGEN BLOWING OF AN OPEN HEARTH BATH ON THE QUALITY OF LOW ALLOY STEEL -U-

AUTHOR--LASHCHEV, B.YA., DVORYANINOV, V.A., MEDZHIBOZHSKIY, M.YA., KURAPIN, B.S., KOVALENKO, V.S.

COUNTRY OF INFO--USSR

K

SOURCE--STAL' 1970, 30(1), 20-5

DATE PUBLISHED--------70

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

TOPIC TAGS--OPEN HEARTH FURNACE, OXYGEN, LOW ALLOY STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0160 STEP NO--UR/0133/70/030/001/0020/0025

CIRC ACCESSION NO--AP0103839

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

2/2 017 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103839

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPARISON HEATS WERE MADE IN A 300 TON GAS FIRED OPEN HEARTH FURNACE BY BLOWING THE BATH WITH O, OR BY ADDING THE LATTER TO THE FLAME, BY VARYING BLOWING RATE AND THE TIME BETWEEN THE END OF BLOWING AND DEOXION. INCREASING BLOWING RATE 6.7-11.7 M PRIME3-TON-HR AND SHORTENING TIME BEFORE DEOXION. FROM 55 TO 7-15 MIN LOWERED H CONTENT, AND THAT OF N FROM 0.0043 TO 0.0038, PURITY OF O HAVING NO EFFECT ON THIS REDN. EXCESS O IN THE METAL OVER THE EQUIL. IS NOT AFFECTED BY THE MANNER OF O INTRODUCTION WHEN ITS C IS GREATER THAN 0.4PERCENT, BUT IT INCREASES PROPORTIONALLY TO THE BLOWING RATE WHEN C DROPS TO 0.15-0.20PERCENT. NONMETALLIC CONTENT AND MECH. PROPERTIES ARE UNAFFECTED BY THE WAY IN WHICH O IS INTRODUCED IN THE METAL.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR UDC: 621.397.61

IVANOV, V. P., BORISOV, B. K., KURAPOV, Ye. E., ANTONOV, V. F.

"A Device for Automatic Iris Control"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 12, Apr 71, Author's Certificate No 299987, Division H, filed 21 Jun 69, published 26 Mar 71, p 218

Translation: This Author's Certificate introduces a device for automatic control of the irises in television transmitting cameras. The device contains a comparison stage, an actuating mechanism and a reference voltage source. As a distinguishing feature of the patent, the reliability of iris control with sharp changes in illumination is improved by connecting the input of the actuating mechanism to the comparison stage through the normally open contacts of a selector switch, and to a storage capacitor through the normally closed contacts of the switch. The storage capacitor is connected through the normally open contacts of the switch to the reference voltage source.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

UDC 536.2:536.421

KURAPOV, YU. A., and MISHCHENKO, V. P., Kiev

"Temperature Conditions of the Liquid Metal Bath Surface in Electron-Beam Smelting"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 1, Jan-Feb 72, pp 15-18

Abstract: The effect of scanning electron-beams and the drop metal transfer on the surface temperature of the melt in the crystallizer was experimentally investigated on the U-143 electron-beam unit equipped with a ten-gun heater making it possible to produce a fairly uniform heating surface of the metal bath. The metal bath surface temperature was investigated by resmelting Armco iron and steel 9Kh18. The results are discussed by reference to diagrams showing the effect of the power input and the billet supply rate on the temperature of the metal bath surface. It was found that the drop flowing off from the end of the billet by its fall into the liquid metal bath produces a short-time temperature decrease of the metal bath surface by 80-100 degrees on the average. Three illustrations, four bibliographic references.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

Foundry

USSR

UDC 669.14.621.74.35

KURAPOV, Yu. A., and MOVCHAN, B. A., Kiev

"Mechanism of Copper Removal in the Electron Beam Melting of Steel"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 4, Jul-Aug 70, pp 37-42

Abstract: The mechanism of copper removal in the electron beam melting of steel is studied. Armco-iron and grade-9Kh18 steel were melted. Variation in the surface area (S) and volume (V) of the molten pool of metal, evaporation of the base alloy (P), and copper content were plotted as functions of "warmer" exposure time (τ). Three processes participate simultaneously in the removal of impurities from the liquid pool: surfacing of the impurities to the reaction surface characterized by the coefficient of mass transfer (β), evaporation of the impurities from the melt surface characterized by the theoretical constant of the rate of evaporation (K_T), and mass transfer to the space over the melt, which in vacuum melting is usually not a factor determining the rate of impurity removal. It was found that copper removal in the electron beam melting of steel is a first-order reaction, occurring in the transitory region. Also established was the fact that above 1550°C copper removal is limited by copper diffusion to the reaction surface, and below this temperature by the kinetics of copper evaporation from the melt surface.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

UDC 547.313

PETRUSHANSKAYA, N. V., KURAPOVA, A. I., FEL'DBLYUM, V. Sh., Scientific Research Institute of Monomers for Synthetic Rubber, Yaroslavl'

"Dimerization of Olefins Under the Effect of Bis-(ethylene)-triisopropylphosphine Nickel-(0) and Ethylene-bis-(triisopropylphosphine)-nickel-(0) in Combination With Lewis Acids"

Moscow, Doklady Akademii Nauk SSSR, Vol 211, No 3, 27 Jul 73, pp 606-607

Abstract: Compounds of nickel in conjunction with Lewis acids and tertiary phosphines form active catalytic systems for dimerization of olefins. The data in the literature relate to π-allyl complexes of nickel or to complex systems of the Ziegler type. It has been hypothesized that in any system catalysis takes place through an olefin coordination stage with the formation of intermediate π-complexes of nickel. The research described in this paper is an attempt to confirm this hypothesis. It was found that individual complexes of nickel(0) containing ethylene and triisopropylphosphine as ligands are not active in dimerization, but with the addition of a Lewis acid oligomerization of the coordinated ethylene occurs and an active catalytic system of olefin dimerization is formed. The results of the research give direct confirmation of the importance of π-complexes of nickel in reactions of catalytic dimerization of olefins.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

1/2 033

UNCLASSIFIED

TITLE--TS DIAGRAM FOR AIR IN A RANGE OF TEMPERATURES FROM 20 TO 2400DEGREESK AND PRESSURES FROM 10 PRIME NEGATIVE8 ATM TO 40 ATM --U--

PROCESSING DATE--16OCT70

AUTHOR-(04)-VORONIN, G.I., ARKHAROV, A.M., ALENTYEVA, O.A., KURAPOVA, L.N.

COUNTRY OF INFO--USSR

K

SOURCE--MOSCOW, IZVESTIYA VYSSHIKH UCHEBNYKH ZAVENDENIY, MASHINOSTROYENIYE, NO. 1, 1970, PP 86-91

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--THERMODYNAMIC PROPERTY, AIR, GRAPHIC TECHNIQUE, TEMPERATURE DEPENDENCE, ENTROPY, PRESSURE GRADIENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/0487

STEP NO--UR/0145/70/000/001/0086/0091

CIRC ACCESSION NO--AT0100963

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

2/2 033 UNCLASSIFIED

CIRC ACCESSION NO--AT0100963 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DATA ON THE THERMODYNAMIC PROPERTIES OF AIR IN THE 20-2400DEGREESK TEMPERATURE RANGE AND 10 PRIME NEGATIVE8-40 ATM PRESSURE RANGE ARE SYSTEMATIZED AND PRESENTED IN THREE CHARTS. THE AUTHORS 1-AN RATHER HEAVILY ON PREVIOUS WORK BY OTHERS (FOR SPECIFIC RANGES) AND THEY NOTE THAT AVAILABLE EXPERIMENTAL DATA FOR AIR SHOW A GREAT DEAL OF DISPERSION WHEN COMPARED WITH DATA FOR PURE COMPONENTS. FOUR POSTULATES GOVERNING THE DERIVATION OF THE VALUES FOR THOSE RANGES DEALT WITH BY THE AUTHORS ARE GIVEN AND DISCUSSED BRIEFLY. THE AUTHORS CONCLUDE THAT THE TS DIAGRAMS PRESENTED CAN BE USED FOR ENGINEERING COMPUTATIONS. THEY NOTE, HOWEVER, THAT THE LIMITED SCOPE OF THE INITIAL DATA CAN LEAD TO ERRORS WHEN WORKING BEYOND AREAS OF TEMPERATURE AND PRESSURE COVERED BY EXPERIMENTALLY VERIFIED DATA.

FACILITY: MOSCOW HIGHER TECHNICAL SCHOOL.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

1/2 025 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--ANIONIC POLYMERIZATION OF EPSILON CAPROLACTAM IN THE PRESENCE OF ACTIVATORS WITH UNSATURATED GROUPS -U-

AUTHOR-(05)-KORSHAK, V.V., FRUNZE, T.M., ZAITSEV, V.I., KURASHEV, V.V., BASCHINITSER, T.M.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(2) 416-23

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLYMERIZATION, CAPROLACTAM, SODIUM, POLYMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0324 STEP NO--UR/0459/70/012/002/0416/0423

CIRC ACCESSION NO--AP0111518

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

2/2 025 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111518

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POLYMN. OF EPSILON CAPROLACTAM (I) IN THE PRESENCE OF NA IS ACCELERATED BY N,METHACRYLOYL, EPSILON,CAPROLACTAM (II) AND H SUB2 C:CHCONPH SUB2 (III). THE PROPERTIES OF POLY,EPSILON,CAPROLACTAM DEPEND ON THE AMT. OF II OR III USED. VERY SATISFACTORY POLYMER BLOCKS WERE OBTAINED WHEN 0.35-1.00 MOLE PERCENT II OR 0.50-2.00 MOLE PERCENT III WERE ADDED TO I TOGETHER WITH 1 EQUIV. (WITH RESPECT TO II OR III) NA. LARGER OR SMALLER AMTS. OF II OR III GAVE BLOCKS WITH SURFACE CRACKS. THE INCREASE IN THE AMT. OF II OR III INCREASES THE INSOLY. OF THE POLYMER IN HCONME SUB2. THIS IS DUE TO THE PARTIAL COPOLYMN. OF I WITH II OR III. THE MECHANISM OF ACCELERATION OF POLYMN. BY II OR III INVOLVES FORMATION OF POLYMERIC ACTIVATOR MOLS., SUCH AS IV.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

1/2 027 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--COPOLYMERIZATION OF STYRENE WITH DIKETENE -U-

AUTHOR-(04)-FRUNZE, T.M., SURIKOVA, M.A., KURASHEV, V.V., KOMAROVA, L.I.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(2) 460-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COPOLYMERIZATION, STYRENE, KETONE, BENZOYL PEROXIDE, NITRILE, IR SPECTRUM, HETEROCYCLIC OXYGEN COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0325 STEP NO--UR/0459/70/012/002/0460/0466

CIRC ACCESSION NO--AP0111519

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

2/2 027 UNCLASSIFIED

CIRC ACCESSION NO--AP0111519 PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STYRENE (I) WAS POLYMD WITH DIKETENE (II) IN THE PRESENCE OF BZ SUB2 O SUB2 OR AZOBISISOBUTYRONITRILE. IR SPECTROSCOPY OF THE COPOLYMERS, PRODUCED IN YIELDS OF SMALLER THAN OR EQUAL TO 89PERCENT, SHOWED THAT UNITS OF STRUCTURE -CH SUB2 CHPH-, -CME:CHCO SUB2-, -C(:CH SUB2)CH SUB2 CO SUB2-, AND III ARE PRESENT. THE REACTIVITY RATIOS R SUB1 FOR I AND R SUB2 FOR II ARE 100 AND 0.008, RESP.

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USSR UDC: 621.373+621.397.331.222+621.386.2/7

BAYKOV, A. P., BELAGO, V. A., BUDARNYKH, V. I., [illegible], V. I., KURASHOV, E. M., LYUBIN, V. M., MALINYAKO, V. I., [illegible], Ye. I., TSUKERMAN, V. G., and SHUSTAK, A. F.

"Methods of Recording X-Ray Images in a Science Research Automation System"

Novosibirsk, Avtometriya, No 6, 1971, pp 67-80

Abstract: A description is given of a complex of pulsed x-ray sources with memory elements for recording fast processes, along with highly sensitive systems for visualizing two-dimensional x-ray images of threshold intensity. The radiation required has a duration of 10^{-9} to 10^{-7} sec with a hardness of several hundred kev. For the recording equipment, photographic film and television systems were used, in which the memory cells were the semi-conducting targets of sensor tubes. In such a system, the image is impressed directly on the target of the x-ray vidicon with a controllable memory, or is fixed by re-recording the video signal on a vidicon with optical memory, thus allowing [illegible] of the recorded [illegible] input of an electronic computer. The [illegible]

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UDC: 621,373+621.397.331.222+621.386.2/7

BAYKOV, A. P., et al, Avtometriya, No 6, 1971, pp 67-80

of the x-ray and recording equipment as well as sample oscillograms of various equipment items. The authors express their gratitude to Yu. Ye. Nesterikhin and A. M. Iskol'skiy for their delineation of the problem and their supervision of the work. For his assistance with the experiments made using this equipment, the authors thank E. V. Yanshin.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

UDC: 538.56:519.25

DERYUGIN, I. A., KURASHOV, V. N., and MASHCHENKO, A. I.

"Optimizing Detection Systems of Quasiclassical Optical Signals"

Kiev, Izvestiya VUZ SSSR--Radioelektronika, No 9, 1972, pp 1154-1159

Abstract: The authors offer a simple method for optimizing binary quantum communications systems with direct use of the method of characteristic functions and the quasiclassical representation of optical fields. With the latter, a limited transition can be made into the classical region, based on the Glauber P-form in which the statistical operator of the radiation field can be written

$$\rho = \int P(\alpha)|\alpha\rangle\langle\alpha| d^2\alpha,$$

where $P(\alpha)$ is a nonnegative function defined over the entire comp plane of α. A simple binary system consisting of a photodetector and a threshold device is examined for the analysis. The optimal operating conditions for such a system are found by determining the threshold number of photoelectrons for a signal and noise of specified power and statistics. Some particular examples of the

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

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UDC: 538.56:519.25

DERYUGIN, I. A., et al, Izvestiya VUZ SSSR--Radioelektronika, No 9, 1972, pp 1154-1159

optimization of binary systems for various signal and noise statistics are given. The authors find that the use of lasers in multimode operation degrades the characteristics of optical communications systems.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

UDC: 621.373.029.7.001.5

DERYUGIN, I. A., ABDULLAYEV, R. A., KURASHOV, V. N., MIRZAYEV, A. T., and NASTICH, V. N.

"Investigating the Radiation Statistical Characteristics of a Laser Generating Several Axial Oscillations by the Photon Count Method"

Moscow, Radiotekhnika i elektronika, No 8, 1972, 1622-1627

Abstract: On the basis of the quasi-classical approximation, an analysis is made of experiments to determine the radiation statistics of a high-threshold laser, and the results are given of the measurements of photon-count statistics of several lasers operating in one transverse and several axial modes. A block diagram of the apparatus used for the photon-counting, in which an He-Ne laser operating at a wavelength of 6328 Å is the radiation source, is given together with curves for the probability distribution of the photon counts for each type of oscillation. On the same axes for each of these curves, both the Poisson and negative binomial distribution curves are plotted for the sake of comparison and show close agreement. Results of the experiments demonstrate the effectiveness of the photon count for studying the

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USSR

UDC: 621.373.029.7.001.5

DERYUGIN, I. A., et al, Radiotekhnika i elektronika, No 8, 1972, pp 1622-1627

statistical characteristics of multiple frequency laser radiation.

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Communications

USSR

UDC: 621.391.2.029.7

DERYUGIN, I. A., KURASHOV, V. N., and MASHCHENKO, A. I.

"Optical Amplification of Binary Signals in Communication Systems"

Moscow, Radiotekhnika i elektronika, No 8, 1972, pp 1618-1621

Abstract: Optimization of a system of binary signal communication, in which preamplification of the signal is obtained through a two-mode optical parametric amplifier to yield simple analytic solutions, is considered. The Bayes criterion of optimalness is used, and it is assumed that the correct solution corresponds to the situation of zero losses. In this optimized system, separation of the signal+noise and noise events is, as usual, made by an energy-sensitive receiver and a threshold device. The system characteristics then depend on the value of the threshold and the probability distribution of the appearance of photoelectrons at the detector output; this probability is determined by the statistical characteristics of the amplified signal. An expression for the threshold is obtained, and it is shown that the gain of the ideal noiseless amplifier for each pair of input signal power and noise values cannot exceed the difference between the initial

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UDC: 621.391.2.029.7

DERYUGIN, I. A., et al, Radiotekhnika i elektronika, No 8, 1972, pp 1618-1621

and asymptotic values of the error probability with fixed signal/noise ratio. It is noted that investigations of the effect of a parametric optical amplifier on detection characteristics can similarly be made for other signal and noise statistics.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

KURASHOV, V. N.

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TECHNICAL TRANSLATION

FSTC HT-23-0019-72

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

FOREIGN TITLE: PROBLEMY PEREDACHI INFORMATSII LAZERNYM IZLUCHENIYEM

AUTHOR: I. A. DERYUGIN, ET AL.

SOURCE: KIEV ORDER OF LENIN STATE UNIVERSITY
IMENI T.G. SCHEVCHENKO

Translated for FSTC by ACSI

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USSR

UDC 621.375.029.7:621.376

DERYUGIN, I. A., KURASHOV, V. N., MAR'YENKO, V. V.

"Signal Detection in a Maser"

Moscow, Radiotekhnika i elektronika, Vol XVII, No 2, 1972, pp 351-353

Abstract: A study was made of signal detection in a ruby maser operating at 77° K. As a result of nonlinear interactions in the working medium of the maser, variable magnetization appears at the modulation frequency which induces a signal of corresponding frequency in the inductance coil encompassing the resonator. The voltage on the coil was measured as a function of the modulation coefficient, power of the AM signal and the pumping power of the maser. Increasing the pumping power leads to equalization of the signal level population as a result of which the signal induced in the coil drops to zero. A further increase in pumping power inverts the spin system. The signal taken from the coil at this time is amplified significantly until the maximum inversion in the spin system is reached. The paramagnetic amplification coefficient in the experiment was about 10 decibels.

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USSR

UDC 617.761-009.24-02:616.282.3

KURASHVILI, A. Ye., BABIYAK, V. I., VERICH, G. F., and PLATONOVA, T. G., Academy of Military Medicine imeni S. M. Kirov, Leningrad

"Parametric Description of Vestibular Nystagmus"

Moscow, Vestnik Otorinolaringologii, No 3, 1973, pp 31-35

Abstract: Based on a mathematical analysis of nystagmograms obtained from 50 subjects, the authors constructed empirical and theoretical curves showing the dynamics of the primary parameters of the nystagmic cycle. Using the methods of differential equations theory, they found the secondary parameters that determine the general patterns of nystagmus as a "stimulus -- reaction" process. Determination of the secondary parameters of vestibular nystagmus is of value in tracing the dynamics of the nystagmic reaction in relation to vestibular function and in diagnosing vestibular disorders. Nystagmus can also be modeled on a computer. By introducing perturbations into the secondary parameters, one can obtain nystagmic reactions with preassigned properties, i.e., artifically create pathological situations and subject them to structural analysis.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

UDC 612.886

USSR

KURASHVILI, A. Ye., Professor and RABIYAK, V. I., Candidate of Medical Sciences, Chair of Otolaryngology, Military Medical Academy imeni S. M. Kirov

"Some Problems in the Physiology of the Vestibular Apparatus"

Moscow, Vestnik Otorinolaringologii, No 2, Mar/Apr 73, pp 3-10

Abstract: The complete vestibular apparatus is presented as a complex control system operating on active and passive feedback mechanisms and comprising a number of components -- inertial and gravitational sensors (cupula, endolymph, and otoliths), receptors and transformers (spatially polarized hair cells in cristae and maculae), central stations of information selection and distribution (the vestibular nucleus complex), mechanisms of direct and associated control (cerebellum, reticular formation, and thalamus), a system of specific and non-specific efferent functions (motor nuclei of extrinsic eye muscles, spinal cord, and hypothalamus), and the sensory (cortical) system with transmission to the subjective analysor and the second signal system -- which are grouped into five subsystems: peripheral sensor, specific center, implementing organs, active control mechanisms, and the autonomic nervous system. Biomechanical aspects of the otolithic apparatus and of the semicircular canals are discussed, and the biophysical significance of the polarization of kinocilia is pointed out. According to the theory of frequency analysis, the semicircular canals are ideal sensors of the angular velocity of the rotation of the head.

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USSR

UDC 616.282.3-085.2

KURASHVILI, A. Ye., Professor, VASIL'YEV, A. I., Docent, and LI, M., Otolaryngological Clinic, Military Medical Academy imeni S. M. Kirov, Leningrad

"The Effectiveness of Treating Some Vestibular Disorders With a Complex of Pharmacological Agents"

Moscow, Vestnik Otorino-Laringologii, No 3, May/Jun 71, pp 44-48

Abstract: Two groups of clinical patients -- 15 persons with Meniere's disease and five persons with vestibular pathology of unknown etiology -- were treated with a compound drug containing 0.25 g of spasmolytin, 0.025 g of suprastine, 0.01 g of thiamine bromide, 0.5 g of analgin, and 0.005 g of phenamine. This compound was administered three times per day for 10 days; in some cases, the treatment was repeated after a 10-day interval. As a result of this chemotherapy, the general condition of the patients improved, vertigo disappeared, the duration of experimental nystagmus and sensory reactions decreased in most cases, and vestibular asymmetry disappeared. The electroencephalogram became normal in a number of patients. Because of its effectiveness and absence of side effects, the compound is recommended for clinical use.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

UDC: 669.017--12:539.53

GLEBOVA, E. D., KURASOV, A. N., and KARPOV, N. A., Dnepropetrovsk Metallurgical Institute

"Structural Changes in Hyperplastic Cr-Ni-Fe Alloys With High-Temperature Stretching"

Moscow, Izvestiya VUZ--Chernaya Metallurgiya, No. 8, 1971, pp 133-136

Abstract: Although little attention has been given to the structural changes occurring in the stretching of two-phase (A+Ø) high-chromium Cr-Ni-Fe alloys, their study is important for determining the hyperplasticity mechanism and choosing the conditions of heat deformation. The alloys investigated had the following composition: 42% Cr, 30-40% Ni, 1% Ti, 0.02% C, and 0.06% N. The width of the sheet specimens was 40 microns, with a grain dimension of 5-10 microns. Specimens measuring 15 mm in length and 3 mm in diameter were stretched at a rate of 1.5 mm/min at a temperature of 600-1250° C after a 15-minute preparatory maintenance at these temperatures. In this preliminary heating, the development of phase shifts was observed and confirmed through observation on a television microscope, and changes in the concentration of Cr and

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USSR

GLEBOVA, E.D., et al, Moscow, Izvestiya VUZ--Chernaya Metallurgiya, No 8, 1971, pp 133-136

Ni in specimens heated from 900-1250° C were observed with the MAR-1 x-ray microspectral device. Photomicrographs of Zh42N40T alloy specimens heated at 1100° C after various percentages of deformation are shown.

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1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--LIGHTWEIGHT CONCRETE MIXTURE FOR STRUCTURAL COMPONENTS -U-

AUTHOR-(03)-BUZHEVICH, G.A., KURASOVA, G.P., FIGAROV, R.G.

COUNTRY OF INFO--USSR

K

SOURCE--U.S.S.R. 267,426

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

DATE PUBLISHED--01APR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CONCRETE, PATENT, MECHANICAL STRENGTH, GRAVEL, CEMENT, LIMESTONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1416 STEP NO--UR/0432/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128815

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UNCLASSIFIED

CIRC ACCESSION NO--AA0128815 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LIGHTWT. CONCRETE MIXT. OF DECREASED BULK D. AND INCREASED STRENGHT CONSISTED OF: PORTLAND CEMENT 20-5, 5-20 MM FRACTION OF KERAMZIT GRAVEL 40-5, WATER 10-15, AND 0-2.5 MM FRACTION OF LIMESTONE SAND 25-30 WT. PERCENT. FACILITY: SCIENTIFIC RESEARCH INSTITUTE OF CONCRETE AND REINFORCED CONCRETE.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

UDC 539.4

LEVIN, YE.YE., KAZENINA, A.D., KURATOV, P.S., GUREVICH, G.I., GENERSON, I.G., LUBMAN, P.M., Central Scientific Research, Planning, and Design Boiler and Turbine Institute imeni I.I. Polzunov

"Some Results of Acceleration Tests of Disk Models Made of Steel EP 631"

Kiev, Problemy Prochnosti, No 2, 1972, pp 113-116

Abstract: The experience of preparing and testing disks with a diameter of 355 x 46 mm, made of ingots weighing 0.8 t, is set forth for the first time. Steel EP631 was melted in a 5-ton electric arc furnace with subsequent vacuum-arc remelting. The heat-treatment regime of the disks is presented, as well as their mechanical properties in various directions. The results of acceleration tests of two models of the disks of one of the turbo machines are presented. Tests were carried out on disks without incisions, as well as on disks with "effective" incisions on the internal diameter, 10 mm deep and with a curvature radius of 0.18 mm. The obtained results testified to the actual possibilities of preparing and using disks of the indicated size from steel EP631. 3 figures, 3 tables, 9 bibliographic entries.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

UDC 62-525

TSYRUL'NIKOV, I. M., and KURATTSEV, L. YE.

"An Experimental Design of Pneumatic Instrument Circuits for Active Monitoring in Machine Building. Using Membrane Elements of Pneumatic Automation"

V sb. 12-E Vses. soveshch. po pnevmoavtomatike, 1973, Ref. dokl. Ch. 1 (12th All-Union Conference on Pneumoautomatics, 1973. Reference Reports, part 1 -- collection of works), Moscow, 1973, pp 29-32 (from RZh-Avtomatika Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 73, Abstract No 11 A468)

Translation: This is a report on activities in improving the speed and extending the functional capabilities of pneumatic membrance elements as applied to systems of active dimension monitoring in machine building. It is noted that the low speed of the Universal System of Elements of Industrial Pneumo-automation elements prevent their application in monitoring systems.

The chambers between the throttle valves of the new elements are smaller, and they have additional power amplification stages, which feature improves their speed to a level close to that of electronic dimension monitoring instruments (the time constant of the measurement circuit is about 0.1 seconds).

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

TSYRUL'NIKOV, I. M., et al., V sb. 12-E Vses. soveshch. po pnevmoavtomatike, 1973, Ref. dokl. Ch. 1, Moscow, 1973, pp 29-32

Active dimension monitoring circuits for uncentered polishing and holding machines made completely of pneumoelements are given. The linear error of the circuit does not exceed 1 micron. Tests of the circuit for reliability showed 2.5×10^6 operations in comparison with 3×10^5 operations for a circuit with electric elements. Two illustrations.

Abstract by V. V.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

UDC 531.717.082.32.068.001.24

KURATTSEV, L. YE.

"Calculation of the Parameters of Differential Pneumatic Devices From the Condition of Minimum Error of Measurement From the Instability of the Input Air Pressure"

V sb. Avtomatiz. nauch. issled. v mashinostr. i priborostr. (Automation of Scientific Research in Machine and Instrument Building -- Collection of Works), Moscow, "Nauka", 1971, pp 154-165 (from Referativnyy Zhurnal, Metrologiya i izmeritel'naya tekhnika, No 11, Nov 71, Abstract No 11.32.319)

Translation: The results of an analytical and experimental study of the error of measurement caused by instability of the input air pressure as a function of the parameters of the branching of the back-pressure of pneumatic devices are presented. Conditions for the optimal tuning of a device which corresponds to a minimum indicated error are discussed. It is shown that the optimum values of the parameters of the branching of the back-pressure are determined by the parameters of the measured branch and have little dependence on the magnitude of the instability of the input pressure. Approximate relationships are obtained for determining the parameters of the branching of the back-pressure that correspond to optimal tuning of the pneumatic devices. 9 ill., 3 tables, 10 ref.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

UDC 621.385.632:6

KOVALEV, I. S., Corresponding Member of the Belorussian SSR Academy of Sciences, KURAYEV, A. A., DEMIDOVICH, Ye. M., SHEVCHENKO, F. G., Minsk Radio Engineering Institute

"On Calculation of a Gyroamplifier With Takeoff by Coupled Cavities"

Minsk, Doklady Akademii Nauk BSSR, Vol 17, No 11, Nov 73, pp 1007-1010

Abstract: The paper presents optimized versions of energy taps based on coupled resonators in a stability region where self-excitation of the tap is impossible for any electron beam currents and optimized versions of regenerative energy taps where the working current is a given amount lower than the starting current for a given Q of the resonator system of the tap.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

UDC 621.385.632:621.372

KOVALEV, I. S., Corresponding Member of the Academy of Sciences BSSR,
KURAYEV, A. A., DEMIDOVICH, YE. M., SHEVCHENKO, F. G., Minsk Radio Engineering Institute

"Efficiency-Optimized Section Gyroamplifiers of the Resonator Type"

Minsk, Doklady Akademii nauk BSSR, No. 12, Dec 71, pp 1082-1084

Abstract: Cascade groupings of electrons in sectioned gyroresonance amplifiers is used to achieve high electron efficiency and ensure at the same time high stability of the amplifier. It is noted that in ordinary two-resonator designs of gyroamplifiers consisting of a modulator, a grouping region and an energy selector, the conditions for achieving high efficiencies and the conditions for ensuring a high stability reserve are incompatible. Effective grouping of electrons in the selector is required to achieve high efficiencies in two-resonator designs but it is achieved only for a large length or a high Q of the resonator of the selector; calculations have shown that efficiency-optimal regimes of a two-resonator design are in the generation region and therefore it is necessary to introduce into the amplifier circuit an additional resonator to provide additional grouping of the electron flow. The Rosenbrock method of

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USSR

KOVALEV, I. S., et al, Doklady Akademii nauk BSSR, No. 12, Dec 71, pp 1082-1086

seeking the extremum of a multidimensional function was used to optimize the circuit of the sectioned resonator-type gyroamplifier, since it is most suitable for this class of problems. The results show that efficiencies of 80% are achieved with a doubled stability reserve in the optimized circuit of the gyroamplifier with autonomous pregrouping.

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UDC 621.385.2

KOVALEV, I. S., Corresponding Member of the Academy of Sciences of the BSSR, KURAYEV, A. A., DEMIDOVICH, Ye. M., SHEVCHENKO, F. G., Minsk Radio Engineering Institute

"Efficiency Optimized Gyro Amplifier Circuits With Waveguide Energy Tap"

Minsk, Doklady Akademii Nauk BSSR, Vol 16, No 1, pp 24-27

Abstract: Gyroresonance amplifiers with waveguide energy tap have much higher self-excitation currents than amplifiers with a cavity (resonator) tap, and can be used at high power levels. In order to reach a high efficiency in circuits with a short waveguide tap, electron oscillators must be efficiently pregrouped, and therefore the authors consider autonomous and nonautonomous resonator pregroupers having fairly broad detuning of the resonance frequency relative to the working frequency, in addition to considering conventional circuits. The Rosenbock method was used in efficiency optimization of the gyro amplifier circuits, and in solving the boundary value problem for a waveguide tap. The resultant data indicate that introducing a pregrouper appreciably improves the efficiency of a gyro amplifier with waveguide tap, the efficiency of optimized waveguide circuits approaching that of optimized resonator circuits (η_i = 0.85). Four tables, bibliography of one title.

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USSR

UDC 621.385.632:621.372

KOVALEV, I.S., KURAYEV, A.A., DEMIDOVICH, YE.M., SHEVCHENKO, F.G.

"Gyro-Resonant Devices With A Nonuniform Magnetostatic Field In An Interaction Space"

Dokl. AN BSSR (Reports Of The Academy Of Sciences, Bellorussian SSR), 1971, 15, No 10, pp 896-899 (from RZh:Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2A152)

Translation: Gyro-resonant devices (GRD) have promise as a source of microwave oscillations of great power, and consequently the problems of increasing their electronic efficiency deserve detailed study. One of the methods of increasing the efficiency of GRD is the choice of the optimum distribution of the magnetostatic field in an interaction space. On the basis of a special form of the method of averages, nonlinear equations are derived and thoroughly analyzed for a GRD with an adiabatic nonuniformity of the magnetostatic field of arbitrary form and amplitude in an interaction space. Computed data are presented for the simplest model of a gyromonotron with a nonuniformity of the specified form. The high value of the electronic efficiency shows that from the energy point of view, GRD have a significant advantage in comparison with classical microwave devices. 5 ref. Summary.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

Waveguides

USSR

BOOK

UDC: 621.385.6

KURAYEV, Aleksandr Aleksandrovich

SVERKHVYSOKOCHASTOTNYYE PRIBORY S PERIODICHESKIMI ELEKTRONNYMI POTOKAMI (Microwave Devices With Periodic Electron Flows), Minsk, "Nauka i Tekhn.", 1971, 312 pp, illus, biblio, 1 300 copies printed

The monograph presents the theory, elements of computation, and mathematical methods of optimizing microwave devices with periodic non-rectilinear electron flows and nonretarded waves.

A theory is developed for excitation of electrodynamic systems by periodic flows of electrons. Linear modes of operation of devices are analyzed, and the physical processes lying at the basis of the mechanism of interaction between electrons and the electromagnetic field in such devices are discussed. The author considers peculiarities associated with the possibility of electrons interacting simultaneously with the incidental and counter waves in waveguide type devices. A nonlinear theory is developed for instruments with periodic electron flows of various types, and an explanation is given for methods of the theory of nonlinear oscillations which are applicable to nonlinear analysis of such devices. Methods are developed for optimizing microwave devices

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

KURAYEV, A. A., SVERKHVYSOKOCHASTOTNYYE PRIBORY S PERIODICHESKIMI ELEKTRONNYMI POTOKAMI, Minsk, "Nauka i tekhn.", 1971

with distributed interaction by a predetermined quality criterion. Approximate methods are considered for solving problems of optimization. These methods are based on using search procedures to find stationary points of multidimensional functions.

Written for radio engineers and scientific workers doing research in the field of microwave electronics, as well as for graduate students and college upperclassmen majoring in this field.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

KURAYEV, A. A., SVERKHVYSOKOCHASTOTNYYE PRIBORY S PERIODICHESKIMI ELEKTRONNYMI POTOKAMI, Minsk, "Nauka i Tekhn.", 1971

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USSR

KURAYEV, A. A., SVERKHVYSOKOCHASTOTNYYE PRIBORY S PERIODICHESKIMI ELEKTRONNYMI POTOKAMI, Minsk, "Nauka i Tekhn.", 1971

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USSR

KURAYEV, A. A., SVERKHVYSOKOCHASTOTNYYE PRIBORY S PERIODICHESKIMI ELEKTRONNYMI POTOKAMI, Minsk, "Nauka i Tekhn.", 1971

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KURAYEV, A. A., SVERKHVYSOKOCHASTOTNYYE PRIBORY S PERIODICHESKIMI ELEKTRONNYMI POTOKAMI, Minsk, "Nauka i Tekhn.", 1971

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USSR

KURAYEV, A. A., SVERKHVYSOKOCHASTOTNYYE PRIBORY S PERIODICHESKIMI ELEK-TRONNYMI POTOKAMI, Minsk, "Nauka i Tekhn.", 1971

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR UDC 612.014.3

KOGAN, A. B., KURAYEV, G. A., and CHORAYAN, O. G., Rostov State University

"Some Characteristics of Information Processes in the Visual Analysor"

Moscow, Doklady akademii Nauk SSSR, No 4, 1971, pp 951-953

Abstract: In acute experiments on frogs, impulse activity of the ganglion cells of the retina was recorded simultaneously with that of neurons in the tectum of the mesencephalon, the central portion of the frog's visual analysor, following stimulation with light flashes. A close relationship was observed between the capacity of the system and excess impulses from the cells of the tectum: the capacity was high when there was an excess of impulses, especially from the ganglion cells of the retina. A similar relationship obtained between the reliability of the system and excess impulses. In some cases the marked excess of impulses from the cells of the tectum compensated for the insufficient excess of impulses from the ganglion cells of the retina needed to maintain a high capacity. These findings show that the high capacity and reliability of the "ganglion cells of the retina - cells of the tectum of mesencephalon" system are largely due to the excess communications sent by the ganglion cells. The connection between the excess at the output of the

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR"

KOGAN, A. B., et al., Doklady Akademii Nauk SSSR, No 4, 1971, pp 951-953

system (tectum cells) and reliability, on the one hand, and capacity of the system, on the other, is regarded as evidence of the existence of feedback.

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1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--FLOW THROUGH CUVETTES FOR THE REFRACTOMETER IRF,23 AND THE INTERFEROMETER ITR,2 -U-

AUTHOR-(03)-KURBANBEKOV, E., LARIONOV, O.G., CHMUTOV, K.V.

COUNTRY OF INFO--USSR

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SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 286-7

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--INTERFEROMETER, REFRACTOMETER, TEMPERATURE CHAMBER, TEST CHAMBER/(U)IRF23 REFRACTOMETER, (U)ITR2 INTERFEROMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

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CIRC ACCESSION NO--AP0111582

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2/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0111582

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STANDARD CUVETTE WAS DISMANTLED INTO ITS COMPONENTS, BY HEATING IN A MUFFLE FURNACE AT 300DEGREES OVER CONCN. HNO SUB3. THE RECONSTRUCTED REFRACTOMETER CUVETTE WAS CEMENTED DIRECTLY TO THE PRISM, ITS HERMETICALLY SEALED COVER WAS DRILLED TO ALLOW FOR THE INLET (ALMOST TOUCHING THE PRISM), AND OUTLET (1-1.5 MM SHORTER) CAPILLARIES. THE VOL. OF THE NEW CVETTE WAS 0.2-0.3 ML. SIMILARLY, A NEW INTERFEROMETER CUVETTE WAS CONSTRUCTED, ITS VOL. REDUCED BY AN INSERT, TO 0.3-0.4 ML AND HAVING CAPILLARIES OF 0.5-1 MM DIAM., THE OUTLET ONE BEING 4-5 MM FROM THE BOTTOM OF CUVETTE.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

UDC 662.215.1+662.217.7

KURBANGALINA, R. Kh., TIMOKHIN, N. N., Moscow

"Influence of Water on Critical Diameter of Fused Hydrazine Mononitrate (Hydrazonium)"

Novosibirsk, Fizika Goreniya i Vzryva, No. 4, Dec. 70, p. 515-519.

Abstract: The critical diameter, at which detonation can be sustained, is studied in hydrazine mononitrate as a function of water content of melted hydrazine mononitrate in aqueous solutions at 75°C. It is discovered that critical diameter increases sharply with increasing water content.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

Nickel

USSR

UDC 669-403:537+
535

AKMURADOV, B., and KURBANMYRADOV, N.

"Dependence of the Hall Effect and Electrical Resistance of Nickel-Cobalt Alloys on Temperature"

Izv. AN Turkmenskoy SSR, Ser. Fiziko-Tekhnicheskikh, Khimicheskikh i Geologicheskikh Nauk, No 2, 1971, pp 96-98

Abstract: The dependence of the Hall electromotive force and electric resistance of nickel-cobalt alloys on temperature was studied in order to test the conclusions of the theory presented in earlier works. The results of the measurements were used to determine the values of the anomalous Hall constant R_s at various temperatures. The Hall parameters presented in formulas in the earlier works (not presented in this work) were found to be strongly dependent on composition in the nickel-cobalt system. They even change their sign upon transition to nickel-cobalt alloys with cobalt concentration between 70 and 80%. The [illegible] results agree well with the conclusions of the earlier work.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

Nickel

UDC 669-405:537+535

USSR

AKMURADOV, B., and KURBANNIYAZOV, N.

"Dependence of the Hall Effect and Electrical Resistance of Nickel-Cobalt Alloys on Temperature"

Izv. AN Turkmenskoy SSR, Ser. Fiziko-Tekhnicheskikh, Khimicheskikh i Geologicheskikh Nauk, No 2, 1971, pp 96-98

Abstract: The dependence of the Hall electromotive force and electric resistance of nickel-cobalt alloys on temperature was studied in order to test the conclusions of the theory presented in earlier works. The results of the measurements were used to determine the values of the anomalous Hall constant R_s^I at various temperatures. The Hall parameters presented in formulas in the earlier works (not presented in this work) were found to be strongly dependent on composition in the nickel-cobalt system. They even change their sign upon transition to nickel-cobalt alloys with cobalt concentration between 20 and 30%. These results agree well with the basic conclusions of the earlier works.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT7

TITLE--EFFECT OF WATER VAPOR AND ETHYL ALCOHOL ON THETHORIUM 228 EMANATIO DIFFUSION RATE IN CELLULOSE TRIACETATE -U-

AUTHOR-(04)-NITZOLD, D., ZABORENKO, K.B., KURBANOV, KH.T., KOZLOV, P.V.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(3), 182-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--SORPTION, WATER, ETHANOL, CELLULOSE RESIN, ACETATE, THORIUM ISOTOPE, SCINTILLATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0670 STEP NO--UR/0460/70/012/003/0182/0184

CIRC ACCESSION NO--AP0124342

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CIRC ACCESSION NO--AP0124342

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SORPTION OF H SUB2 O OR ETOH BY CELLULOSE TRIACETATE (I) INCREASES THE DIFFUSION OF THORON (EMANATIO FROM PRIME228 TH) FROM THE INSIDE OF THE I FILM TO ITS OUTSIDE. THE FILMS CONTG. ADSORBED THORON WERE KEPT IN STREAMS OF DRY AIR OR AIR SATD. WITH H SUB2 O OR ETOH VAPOR AND THE RATES OF THORON EMANATION WER DETD. BY SCINTILLCMETRY. FROM THE KINETIC CURVES THUS OBTAINED, THE DIFFUSION COEFFS. OF H SUB2 O AND ETOH INTO I WERE FOUND TO BE 2.7 TIME 10 PRIME NEGATIVE 6 AND 8.2 TIMES 10 PRIME NEGATIVE 6 CM PRIME2-MIN, RESP. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

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USSR UDC 536.413:620.181.428.4.05.082

ALIYEV, N. G., KERIMOV, I. G., KURBANOV, M. M., and MAMEDOV, T. A.

"A Dilatometer With Photoelectric Registration"

Moscow, Teplofiz. svoystva veshchestv pri nizk. temperaturakh -- sb. (Thermophysical Properties of Substances at Low Temperatures -- Collection of Works), 1972, pp 163-167 (from Referativnyy Zhurnal -- Metrologiya i Izmeritel'naya Tekhnika, No 2, 1973, Abstract No 2.32.962 by V. S. K.)

Translation: The authors describe the design of a highly sensitive dilatometer with photoelectric registration that is used to measure the thermal expansion of solids in the 4.2-400 K range, in addition to explaining the measurement procedure. The dilatometer includes a system for registering and transmitting the amount of elongation. The main part of the elongation registraion system is a differential photoresistor that is part of a bridge network. A coiled constantan wire is used to heat the sample throughout its entire length. Its temperature is measured with an angular resistance thermometer in the 4.2-100 K range, and with a copper-constantan thermocouple in the 100-400 K range. The instrument is calibrated over the 4.2-400 K range by using a piece of copper 50 mm long and 5 mm in diameter as a standard. The instrument was checked by measuring the thermal expansion of aluminum; this showed that the measurement

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

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ALIYEV, N. G., et al., Teplofiz. svoystva veshchestv pri nizk. temperaturakh — sb., 1972, pp 163-167

accuracy was 0.5 percent with respect to the calibration data. The dilatometer's sensitivity was found to be $1 \cdot 10^{-9}$. This measurement method makes it possible to eliminate the introduction of a correction factor for the expansion of quartz. (3 illustrations; 13 bibliog. ref.)

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR UDC: 550.83:551:24(476/477)

KURBANOV, M., IYKOV, V. I., Institute of Physics of the Earth and Atmosphere, Academy of Sciences, Turkmen SSR

"Association of the Contemporary Tectonic Movements and Seismicity in the South of Turkmenia With Particularities in the Structure of the Earth's Crust"

Ashkhabad, Izvestiya Akademii Nauk Turkmenskoy SSR, Seriya Fiziko-Tekhnicheskikh, Fizicheskikh Nauk, No 1, 1972, pp 32-37

Abstract: The results of an integrated analysis of geophysical, geologic, and seismological data provide a basis for indicating the combining formation of first-order structures on the territory of the Turkmen SSR. An active ring-shaped zone of the Transk type is noted; this zone separates the South-Caspian intrageosynclinal megadepression with a suboceanic profile of the earth's crust from regions with a continental crust. Contours of zones of extension, formed at the intersection of systems of regional destruction with great discontinuity as a result of non-unidirectional horizontal shifts, are characterized by a high level of seismic activity. Contemporary vertical movements of the earth surface in the territory of the south of Turkmenia are a result of the tectonic life of an enormous region of Southwest Asia. For studying the

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USSR

KURBANOV, M., LYKOV, V. I., Izvestiya Akademii Nauk Turkmenskoy SSR. Seriya Fiziko-Tekhnicheskikh, Fizicheskikh Nauk, No 1, 1972, pp 32-37

seismic regime and for ascertaining the causes of contemporary tectonic activity, it is necessary to conduct stationery complex geophysical and geodetic observations, not only in the seismically active regions of Ashkhabad and Neybitdag, but also in the zones of jointing of Kopetdag with the folded system of Aladag-Binalud and the West-Turkmen depression. 2 figures. 13 references.

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1/3 013

TITLE--STUDIES OF PHYSICS OF THE EARTH IN TURKMENISTAN -U-

AUTHOR-(03)-KURBANOV, M., ODEKOV, O., NEPESOV, R.

COUNTRY OF INFO--USSR

SOURCE--ASHKHABAD, IZVESTIYA AKADEMII NAUK TURKMENSKOY SSR, SERIYA FIZIKO-TEKHNICHESKIKH, KHIMICHESKIKH I GEOLOGICHESKIKH NAUK, NO 2, 1970,

DATE PUBLISHED----------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--SEISMICITY, STRUCTURAL GEOLOGY, CENOZOIC ERA, MESOZOIC ERA, MAP, CRETACEOUS PERIOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0098 STEP NO--UR/0202/70/000/002/0026/0032

CIRC ACCESSION NO--AP0125923

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2/3 013 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125923

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS ARTICLE DESCRIBES THE STATUS AND PROSPECTS FOR DEVELOPMENT OF STUDIES OF THE DEEP STRUCTURE AND SEISMICITY OF TURKMENIA AND OTHER GEOPHYSICAL WORK. AT PRESENT THE ENTIRE AREA OF TURKMENISTAN HAS BEEN STUDIED BY GEOPHYSICAL METHODS, ALTHOUGH TO DIFFERENT DEGREES. A RELATIVELY THOROUGH STUDY HAS BEEN MADE OF THE SEDIMENTARY COVER OF THE CENTRAL, EASTERN AND SOUTHEASTERN REGIONS OF THE PLATFORM AREA AND THE OROGENIC STRUCTURAL STAGE OF THE WEST TURKMEN DEPRESSION. STRUCTURAL MAPS AND DIAGRAMS HAVE BEEN CONSTRUCTED OF DIFFERENT STAGES OF THE MESOZOID-CENOZOIC STRATUM. DATA FROM COMBINED GEOLOGICAL GEOPHYSICAL INVESTIGATIONS AND THE RESULTS OF DRILLING IN THE PLATFORM PART OF TURKMENISTAN OBTAINED PRIOR TO 1965 HAVE BEEN SYSTMEATIZED IN SEVERAL MONOGRAPHS AND NUMEROUS ARTICLES. THEY INCLUDE STRUCTURAL MAPS FOR THE BOTTOM OF THE NEOGENE, ALONG THE SURFACES OF CRETACEOUS AND JURASSIC DEPOSITS AND THE BASEMENT SURFACE. MAPS OF THE MOHO HAVE BEEN CONSTRUCTED FOR THE WHOLE OF TURKMENIA AND FOR INDIVIDUAL REGIONS WITHIN IT. TURKMENIA IS ONE OF THE MOST SEISMICALLY ACTIVE REGIONS IN CENTRAL ASIA, BUT PRIOR TO 1947 HAD NOT A SINGLE SEISMIC STATION; NOT ONLY ARE NO INSTRUMENTAL DATA AVAILABLE FOR THE PERIOD PRIOR TO THAT DATE, BUT ARCHIVAL DATA ARE VIRTUALLY NONEXISTENT. IN 1953 AN EARTH CURRENTS STATION WAS ESTABLISHED AND IN 1957 A GEOMAGNETIC OBSERVATORY. SYSTEMATIC TILTMETER OBSERVATIONS HAVE BEEN MADE SINCE 1956. THE INSTITUTE OF PHYSICS OF THE EARTH AND ATMOSPHERE ACADEMY OF SCIENCES TURKMEN SSR WAS ESTABLISHED IN 1965.

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CIRC ACCESSION NO--AP0125923

ABSTRACT/EXTRACT--ONE OF ITS MISSIONS IS A STUDY OF THE DEEP STRUCTURE OF THE EARTH'S CRUST, THE SEISMIC REGIME AND EARTHQUAKE PREDICTION. IN 1964 THE ASKHABAD GEOPHYSICAL POLYGON WAS ESTABLISHED IN THE ASHKHABAD SEISMIC ZONE; IN 1968 THE NEBITDAG GEOPHYSICAL POLYGON WAS ESTABLISHED IN THE KRASNOVODSK SEISMIC ZONE. EACH YEAR A SERIES OF TOPOGEODETIC, TILTMETER AND GEOMORPHOLOGICAL INVESTIGATIONS IS CARRIED OUT AT THESE POLYGONS. TILTMETER OBSERVATIONS OF 1956-1966 REVEALED A NORTHERLY TILT OF THE EARTH'S SURFACE. THESE RESULTS AGREE WELL WITH GEOLOGICAL AND GEOPHYSICAL DATA. SINCE 1968 TILTMETER INVESTIGATIONS HAVE BEEN MADE CONTINUOUSLY AT ASHKHABAD USING AN OSTRUVSKIY TILTMETER. RECENTLY MUCH WORK HAS BEEN DONE ON REFINING A MAP OF SEISMIC REGIONALIZATION OF THE REPUBLIC. DURING 1966-1969 NEW SEISMIC STATIONS WERE OPENED AT KRASNOVODSK, NEBIT-DAG AND KIZYL-ATREK. THE INSTITUTE OF PHYSICS OF THE EARTH AND ATMOSPHERE IS WORKING ON THE AUTOMATION OF SEISMIC OBSERVATIONS.

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Electricity & Magnetism

USSR UDC 537.529

BAZIROV, H. A., KURBANOV, M. A., SHKILEV, A. V., and NURALIYEV, N. E.

"Investigation of an Electrical Discharge in the Air Between Electrodes Covered With Dielectrics"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol XLI, No 6, Jun 71, pp 1287-1291

Abstract: There is very little experimental data on the basic nature and parameters of the occurrence of an electrical discharge in the air between electrodes covered with dielectrics. The present article describes a method of investigating a discharge of this type. With the aid of an electric-optical converter and an oscillograph, optical and electrical images of the discharge were recorded simultaneously at various moments of sinusoidal voltage applied to the electrodes. It was established that the electrical discharge is discrete and is generated in the form of a series of spark channels. The geometric dimensions and number of the spark channels in a particular series depend on the type of dielectric used and on the width of the air space between the electrodes. It was also established that the voltage of the extinguishing of the discharge was not constant; it depends on the number of spark channels in each series of the discharge. Finally, the magnitude and polarity of the voltage had almost no effect on the optical image of the development of the discharge.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

UDC 513.71

KOVANTSOV, N. I., KURBANOV, N., Kiev State University imeni T. G. Shevchenko

"Canonical Transversal System of Complexes"

Ashkabad, Izvestiya Akademii Nauk Turkmenskoy SSR, Seriya Fiziko-Tekhnicheskikh, Khimicheskikh i Geologicheskikh Nauk, No. 1, 1971, pp 3-10

Abstract: A canonical system of congruences is defined as follows: a set of four congruences K_1, K_2, K_3, K_4 is taken between the rays of which there is a one-to-one correspondence. Let l_1, l_2, l_3, l_4 denote the corresponding rays. It is required that the foci of the congruences lie on two lines or transversals. The points of intersection of the rays of the congruences with the transversals i.e., the foci of the congruences form two complex relationships W and W'. By taking the transversals as the directrices of the linear congruences, one obtains a two-parameter family of congruences: a transversal system. If a set of four pairs of lines intersects a certain quadric of lines L_1, L_2, L_3, L_4, it indicates that all pairs of transversals are generatrices of one family of a certain quadric and that the lines L_1, L_2, L_3, L_4 necessarily belong to another family. This family is called a transversal. The points of contact of each set of four corresponding

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[illegible], N. I., KURBANOV, N., [illegible]
Fiziko-tekhnicheskikh, khimicheskikh i geologicheskikh nauk, No. 1, 1971, pp 3-10

linear surfaces of complexes determine the complex relationship W on the corresponding transversals. If one set of three rays L_1, L_2, L_3 is fixed and the ray L_4 is moved along the transversal quadric, the complex relationship W changes. In the general case it changes when one goes from one set of four rays to another in a given set of four complexes. Discussed here is the case in which the complex relationship in the last transition remains constant. A one-parameter system of complexes obtained, which is called a canonical transversal system of complexes.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

1/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--ALKYLATION OF TOLUENE BY EPICHLOROHYDRIN IN THE PRESENCE OF ALUMINUM CHLORIDE -U-

AUTHOR-(03)-SADYKHZADE, S.I., KURBANOV, S.B., MUSTAFAYEV, R.'.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(5), 989-91

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALKYLATION, TOLUENE, EPICHLOROHYDRIN, ALUMINUM CHLORIDE, ISOMER, IR SPECTRUM, DICARBOXYLIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1341 STEP NO--UR/0366/70/006/005/0989/0991

CIRC ACCESSION NO--AP0135015

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UNCLASSIFIED

CIRC ACCESSION NO--AP0135015 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE REACTION GIVES 60-5:20-5:15-20 MIXT. OF O-MEC SUB6 H SUB4 CH SUB2 CH(OH)CH SUB2 OH (I), M-I ISOMER, AND P-I ISOMER. THE DISTRIBUTION OF THE ISOMERS WAS ESTABLISHED BY THE OXION. OF THE ISOMER MIXT. TO THE CORRESPONDING DICARBOXYLIC ACIDS, WHICH WERE SEPD. AND IDENTIFIED. THE RESULTS WERE CONFIRMED BY IR SPECTROSCOPY. FACILITY: SUMGAIT, FIZ. INST. NEFTEKHIM. PROTSESSOV, SUMGAIT, USSR.

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USSR

UDC 591.513:636.8

KURBANOV, Sh., Institute of Physiology imeni I. P. Pavlov, Academy of Sciences USSR

"Analysis of Acoustic Signals of Decreasing Duration from EEG Indices and Behavior of Cats"

Tashkent, Uzbekskiy Biologicheskiy Zhurnal, No 4, 1970, pp 29-33

Abstract: Four cats with chronically implanted electrodes in the acoustic and sensorimotor regions of the cortex and in some deeper portions of the brain were exposed to sounds initially lasting 3.0 sec and then progressively reduced to 0.1 sec. The duration of the signals determined the nature of the brain function involved in their analysis. The EEG revealed that difficulties arose in discriminating sounds lasting 0.5 to 1.0 sec. Decreasing the duration to 0.5 sec increased the activity of the EEG rhythms and altered the electrical responses of the brain to the signals. After signals of 0.1 to 0.2 sec, activation rhythms predominated. Desynchronization to delicate differentiations and positive signals became sharper and more prolonged, and persisted even when a switch was made to roughly differentiated stimuli. The behavior of the animals changed accordingly. At the beginning of analysis of short-duration sounds, erroneous effector reactions, a lengthening of the latent periods of

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USSR

KURBANOV, Sh., Uzbekskiy Biologicheskiy Zhurnal, No 4, 1970, pp 29-33

the reflexes, and development of progressively deeper inhibition after delicate differentiations were observed. The results indicate that the analysor system operates at different tonic levels.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

UDC 612.822.3+612.85

ANDREYEVA, V. N., KRATIN, Yu. G., and KURBANOV, Sh., Group of the Neurophysiology of Central Analysis of Signals, Institute of Physiology imeni I. P. Pavlov, Academy of Sciences USSR, Leningrad

"Effect of the Duration of Sound Stimuli on the Analyzing Activity of the Brain"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova, Vol 56, No 9, Sep 70, pp 1,193-1,207

Abstract: The effect of the duration of sound signals on EEG and behavioral responses in conditioned reflex activity was studied in cats. The sound signals were gradually shortened from 3 to 0.015 sec. Upon reduction of the signals to 0.5-1.0 sec, behavioral reactions remained unchanged but the general level of activation of the brain rhythm was raised, and the bioelectric reactions of the brain to positive stimuli and stimuli involving fine differentiation because of a moderate variation in the sound frequency were lengthened. In the 0.1-0.2 sec signal range, activation of the brain rhythm increased to a still greater extent and conditioned reflex activity was considerably disturbed. Prolonged successive inhibition and failures in fine

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USSR

ANDREYEVA, V. N., et al, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova, Vol 56, No 9, Sep 70, pp 1,193-1,207

differentiation were observed, but could be eliminated by training. The signal duration of 0.015-0.030 sec proved to be critical. Within that range the background EEG activity increased sharply, desynchronization reactions to all stimuli became protracted, conditioned reflex activity in most of the animals became disorganized, and manifestations of neurosis appeared. Normal reactions could be restored by raising the signal duration to the initial level, but training was ineffective at this stage.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

UDC: 681.327

BURDONSKIY, I. N., GRISHIN, M. P., KURBANOV, Sh. N., MARKELOV, V. P., SERGEYEV, V. V., SIDORENKO, V. R., TSEREVITINOV, S. S., SHABUROVA, L. M.,
Moscow

"Computer Processing of Optical Interference Patterns"

Novosibirsk, Avtometriya, No 4, Jul/Aug 71, pp 21-26

Abstract: The paper is a report of initial experiments in using a photometric scanning system in conjunction with a general-purpose computer for analyzing halftone images (optical interference patterns). Line-scanning of the pattern was used for computer input through an analog-digital converter with 64 levels of quantization. A flowchart of the processing program is given. The results of computer processing on the Minsk-22 computer are compared with manual analysis for plasma interference patterns. Excellent agreement is observed with a time reduction of more than two orders of magnitude for machine processing. The authors thank V. S. Vaynshteyn and M. I. Pergament for taking part in the initial phase of the work. Three figures, bibliography of five titles.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

UDC: 621.374.32

KURBASOV, V. V. and LYPEAK', N. N.

"Transistorized 100-MHz Decade With Switch"

Moscow, Pribory i tekhnika eksperimenta, No 6, 1973, pp 86-88

Abstract: This article describes a binary, transistorized decade for the production of pulses from singles up to repetition rates of 120 MHz. Although transistorized switching circuits are not as fast as tunnel diode circuits, they are more reliable and have other advantages that make them better choices for instruments of this type. Input to the decade is a sinusoidal 100 MHz signal, and the bias to the input circuit is furnished through a switch. The circuit of the device is made up primarily of high-frequency transistors, type GT313M, and no rigid requirements have to be satisfied. Schematics of the decade itself, the switch block, and the coder at the decade output for connection to a digital printing device, are shown. The decade and the switch block were designed to measure time intervals with a timing resolution of 10[illegible] seconds. It is noted that this apparatus has been installed in the equipment for laser measurements of the moon, and has operated [illegible] years without the need of repair.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

KURBATOV, B.

So: DAILY SNAP
SOV NEWS ABSTRACTS PUB
IFTA - 11 JAN 23

TITLE: [illegible]

PRIMARY SOURCE: SOTSIALISTICHESKAYA INDUSTRIYA, [illegible] 4, 1973, NO. 3 (10072), P. 3, COL. 1-3

ABSTRACT: THE MOSCOW INSTITUTE OF RADIO ENGINEERING, ELECTRONICS AND AUTOMATION HAS DEVELOPED A LASER RANGEFINDER WHICH USES AN INCLINE METHOD OF MEASURING DISTANCE. THE DEVICE USES THE EMISSION OF A GAS PULSED LASER. THE METHOD CONSISTS OF DETERMINING THE TIME OF EMISSION OF THE LIGHT SIGNAL TO AN OBJECT AND BACK, WHERE IT IS PICKED UP BY THE OPTICAL ANTENNA OF A RECEIVER. THE MAIN ADVANTAGE OF THIS LATER TECHNIQUE IS ITS VERY HIGH RATE OF CALCULATION, WHICH IS ACHIEVED BY A NUMBER OF STRUCTURAL FEATURES OF THE RECEIVER, AND ITS HIGH PRECISION IN MEASURING DISTANCES; ITS ERROR OF ERROR IS LESS THAN 50 CENTIMETERS PER MEASURED KILOMETER.

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TITLE: HYPNOSIS DEVICE

PRIMARY SOURCE: SOTSIALISTICHESKAYA INDUSTRIYA, JANUARY 4, 1973, NO. 3 (10072), P. 4, COL. 2-3

ABSTRACT: THE MOLDAVIAN SSR ACADEMY OF SCIENCES' INSTITUTE OF APPLIED PHYSICS HAS DEVELOPED AN ELECTROHYPNOSIS APPARATUS WHICH DOES NOT REQUIRE THE ATTACHMENT OF ELECTRODES TO THE SUBJECT. CALLED THE "LIDA-4", THE APPARATUS PRODUCES HYPNOSIS FOR MEDICAL PURPOSES THROUGH THE EFFECT OF FOUR FACTORS -- TEMPERATURE, SOUND, VISUAL AND ULTRA HIGH-FREQUENCY -- ON THE SUBJECT.

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TITLE: RESEARCH ON RADIATION DETECTORS (CARD 1)

PRIMARY SOURCE: PRAVDA VOSTOKA, JANUARY 3, 1973, NO. 2 (17061), P. 3, COL. 2-3

ABSTRACT: ASSOCIATES OF THE LABORATORY OF MULTI-LAYERED STRUCTURES OF THE PHYSICAL-TECHNICAL INSTITUTE OF THE UZBEK SSR ACADEMY OF SCIENCES ARE STUDYING NUCLEAR RADIATION DETECTORS.

A PHOTOGRAPH SHOWS JUNIOR RESEARCH ASSOCIATE ALIMDZHAN NIGMANOV SETTING INSTRUMENTS IN THE LABORATORY.

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TITLE: [illegible]

PRIMARY SOURCE: SOVETSKAYA BELORUSSIYA, DECEMBER 30, 1972, NO. [illegible] ([illegible]), P. [illegible], COL. 1-2

ABSTRACT: CONFERRAL OF HONORARY TITLES OF THE BELORUSSIAN SSR TO MEMBERS OF THE BELORUSSIAN ACADEMY OF SCIENCES IS ANNOUNCED. TEVEMIY G. [illegible]OVALOV, A MEMBER OF THE BELORUSSIAN ACADEMY OF SCIENCES AND ACTING ACADEMIC SECRETARY OF THE ACADEMY'S DEPARTMENT OF PHYSICAL-TECHNICAL SCIENCES, HAS BEEN NAMED A MERITORIOUS SCIENTIST AND ENGINEER OF THE BELORUSSIAN SSR.

AMONG THOSE NAMED MERITORIOUS SCIENTISTS AND ENGINEERS OF THE BELORUSSIAN SSR ARE GAVRIIL I. [illegible], A MEMBER OF THE ACADEMY AND HEAD OF A DEPARTMENT OF THE INSTITUTE OF BIOCHEMISTRY AND BIOPHYSICS, AND MIKHAIL M. PAVLYUCHENKO, A MEMBER OF THE ACADEMY AND HEAD OF A LABORATORY OF THE INSTITUTE OF GENERAL AND INORGANIC CHEMISTRY.

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AUTHOR: [illegible], YU. S. - DOCTOR OF BIOLOGICAL SCIENCES; [redacted] - JUNIOR RESEARCH ASSOCIATE; [redacted], YU. - CANDIDATE OF BIOLOGICAL SCIENCES

TITLE: STUDY OF HYDRODYNAMICS OF FISH

PRIMARY SOURCE: VODNY TRANSPORT, JANUARY 4, 1973, NO. 2, (6158), P. 4, COL. 1-3

ABSTRACT: THE HYDRODYNAMICS OF THE MOVEMENT OF FAST-SWIMMING FISH SUCH AS SWORDFISH AND DOLPHINS IS DISCUSSED. THE UKRAINIAN SSR ACADEMY OF SCIENCES' INSTITUTE OF THE BIOLOGY OF THE SOUTHERN SEAS HAS CONDUCTED BIOHYDRODYNAMIC RESEARCH ON THE MOVEMENT OF SWORDFISH IN WATER FOR SEVERAL YEARS. IT WAS ESTABLISHED THAT THE "SWORD" OF SWORDFISH SERVES TO REDUCE THE HYDRODYNAMIC RESISTANCE BY SETTING IN MOTION THE CURRENT WHICH WILL FLOW AROUND THE BODY OF THE FISH.

IT IS MENTIONED THAT THE STUDY OF THE HYDRODYNAMICS OF ANIMALS OFFERS MUCH VALUABLE INFORMATION FOR SHIP BUILDERS AND AVIATION DESIGNERS.

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TITLE: A. S. SOVITSKIY (OBITUARY)

PRIMARY SOURCE: MOSKOVSKAYA PRAVDA, DEC. 23, 1972, NO. 298 (16092), P. 4, COL. 7

ABSTRACT: ALEKSANDR S. SOVITSKIY, A DEPUTY CHIEF DESIGNER OF AN AVIATION PLANT AND A

(CONTINUED ON NEXT PAGE)

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Nuclear Science and Technology

USSR

K

UDC: 669.822.476

KURBATOV, D. I., KORTEVA, Z. P.

"Determination of the number of electrons in the Reduction of U (VI) on a Dropping Mercury Cathode in Phosphoric Acid Solutions of Various Concentrations"

Tr. in-ta khimii. Ural'skiy fil. AN SSSR (Works of the Institute of Chemistry, Ural Affiliate of the Academy of Sciences of the USSR), 1970, vyp. 17, pp 190-194 (from RZh-Metallurgiya, No 10, Oct 70, Abstract No 10 G193)

Translation: The process of reducing hexavalent uranium in phosphoric acid solutions of various concentrations is irreversible. The method of polarographic coulometry as well as an investigation of the relationship log k-E shows that hexavalent uranium in phosphoric acid solutions with acid:water ratios of 8:2-2:9 (by volume) is reduced in a single stage with participation of a single electron yielding pentavalent uranium. Bibliography of nine titles. G. SVODTSEVA.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

UDC: 681.327.11

BESKOV, B. A., KURBATOV, G. M., Moscow Institute of Railway Transportation Engineers

"A Device for Registering Information"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 29, 1970, Soviet Patent No 281893, Class 42, filed 20 Jun 69, p 130

Abstract: This Author's Certificate introduces a device for data registration which contains a cathode ray tube, digital-analog converters, logic circuits, reversible coordinate counters, diodes, a cadence pulse oscillator, and reception register which includes a modulation flip-flop, a sign flip-flop, diodes, and increment counters. As a distinguishing feature of the patent, the operational reliability of the device is improved by connecting the output of the cadence pulse oscillator through diodes to the inputs of the reversible coordinate counters and the increment counters respectively, the increment counter outputs being connected to the second inputs of the diodes.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

UDC 621.373.039.7

KURBATOV, L.N., KOZINA, G.S., FAVORIN, V.N., BATALINA, N.A., BIBIKOV, Ye.V., VLASOV, A.N., DEMIDOV, S.S.

"Some Characteristics Of Small-Sized Pulsed Laser With Electron Excitation"

Radiotekhnika i elektronika, Vol XVII, No 6, June 1972, pp 1240-1245

Abstract: The principal characteristics are presented of a small-sized electron-beam pulsed laser with a high radiated power. Feasible types of laser targets are discussed. The construction is shown of a complex multielement target with passive regions. Graphs are shown of 1) The dependence of the radiated power of a single-layer target on the power of the exciting electron beam; 2) The dependence of the radiated power of a multilayer target ("cake") on the power of the electron beam; and 3) The dependence of the radiated power on the pulse recurrence frequency of the exciting electrons for a "cake" target. A graph is also shown of the angular distribution of the emission of single-layer and multilayer targets in a vertical plane coincident from the direction of the electrons and in a horizontal plane coincident from the bombarded surface of the crystal. The authors thank N.A.Iofis, Ye.D. Naumenko, A.I.Bolorepshik, I.Ya. Gol'dshteyn, and S.S. Shakhidzhanov for valuable consultations and aid in the work. 8 fig. 9 ref. Received by editors, 30 May 1971.

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USSR

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UDC 621.315.592

AVER'YANOVA, T. V., BAKUMENKO, V. L., ZARGAR'YANTS, M. M., KURBATOV, L. N., MEZIN, YU. S.

"Photoluminescence of the GaAs:Zn, Ge-GaAs:Ge p-n-Junction"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 376-380

Abstract: Results are presented from spectral microphotoluminescent investigations of p-n-junctions obtained by diffusion of zinc in n-type GaAs alloyed with germanium. Inasmuch as the results of investigating the long wave component of the photoluminescence of these p-n-junctions was discussed earlier [T. V. Aver'yanova, et al., FTP, No 5, 331, 1971], only the shortwave part of the emission (8,100-8,500 Å) is ivestigated in the present paper. All the studies were performed at a temperature of 77° K. The photoluminescence was observed from the shearing side with respect to the cleavage planes perpendicular to the p-n-junction plane. A He-Ne laser with λ = 6,328 Å was used as the excitation source. Curves are presented showing the spectral composition of the photoluminescence of n-type GaAs alloyed with Ge for $n = (2.7-4)\cdot 10^{20}$ cm^{-3} and T = 77° K, the photoluminescence and photoresponse characteristics for the structure obtained by diffusion of Zn in n-type GaAs:Ge and the photoluminescence characteristic of the structure obtained by diffusion of zinc in

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

AVER'YANOVA, T. V., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 376-380

n-GaAs: Te. The proposed model for explaining the results of the spectral microphotoluminescent measurements appears plausible but requires direct proof.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

UDC: 621.382.2

KURBATOV, L. N., SHAKHIDZHANOV, S. S., BYSTROVA, L. V., KRAPUKHIN, V. V., and KOLONENKOVA, S. I.

"Investigating Superluminescence of a GaAs Diode"

Leningrad, Fizika i tekhnika poluprovodnikov, Vol 4, No 11, 1970, pp 2025-2031

Abstract: To investigate possible means of increasing the power in the point glow of the GaAs diode junction, the authors used an injection diode operating in the nonlinear mode of a traveling wave amplifier. This diode, termed a superluminescence diode by the authors, has no external radiation sources; its illumination power is the result of amplification of its spontaneous, characteristic radiation. Details of the construction of the diode together with a diagram of its cross section are given. The diodes investigated by the authors were obtained by the diffusion of zinc in an n-type substrate alloyed with tellurium. Also discussed are the measurement techniques, which were conducted at the temperature of liquid nitrogen, the mapping of the near and far fields, the radiation polarization, the radiation power as a function of the injection current, and the radiation spectra. The authors express their gratitude to Ye. Susov, M. Zargar'yants, et al.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

UDC 621.373.029.67

KOZINA, G. S., KOSTINSKAYA, T. A., KURBATOV, L. N., TSEKHANOVICH, M. V., ALEKSEYEVA, L. A.

"New Electron-Beam Tube-Optical Laser Based on Electron Excitation"

Moscow, Radiotekhnika i Elektronika, Vol 15, No 2, 1970, pp 365-367

Abstract: The construction and characteristics of a sealed-off semiconductor laser with electron excitation produced by a gallium-arsenide crystal are described. Its basic characteristics are:

peak power	- 13 w.
average power	- 100 mw.
pulse duration	- 1 microsec.
pulse frequency	- up to 10kHz.

Samples of gallium-arsenide as n- and p- type with (1-4) x 10^{18} cm-3 concentration of impurities, cooled to liquid nitrogen temperature, are used as the radiative elements. The dependence of peak, P_{pulse}, and average, P_r, radiation powers on pulse

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

KOZINA, G. S., et al, Radiotekhnika i Elektronika, Vol 15, No 2, 1970, pp 365-367

Abstract: frequency is plotted in a graph which shows that P_{pulse} decreases with increasing frequency above 200 Hz and that at f = 10kHz is only 17 percent of the maximum value. The graph also shows that the average power increases to a maximum at 5-6kHz. An efficient way for increasing the peak power is to increase the beam current density. An increase in current density up to 30-40 A/cm^2 without changing the spot dimension, makes it possible to substantially increase the radiation power of the tube. It is concluded that the optimization of tube characteristics should proceed along the lines of radiative material and electron optic system improvement. A schematic diagram of the tube is presented. Orig. art has: 4 figures.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

1/2 039 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--NEW ELECTRON BEAM TUBE OPTICAL LASER BASED ON ELECTRON EXCITATION -U-

AUTHOR-(05)-KOZINA, G.S., KOSTINSKAYA, T.A., KURBATOV, L.N., TSEKHANOVICH, M.V., ALEKSEYEVA, L.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, VOL 15, NO 2, 1970, PP 365-367

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--OPTIC PROPERTY, SEMICONDUCTOR LASER, GALLIUM ARSENIDE, ELECTRON BEAM EXCITATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1151 STEP NO--UR/0109/70/015/002/0365/0367

CIRC ACCESSION NO--AP0112254

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

2/2 039 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0112254

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONSTRUCTION AND CHARACTERISTICS OF A SEALED OFF SEMICONDUCTOR LASER WITH ELECTRON EXCITATION PRODUCED BY A GALLIUM ARSENIDE CRYSTAL ARE DESCRIBED. ITS BASIC CHARACTERISTICS ARE: PEAK POWER, 13 W. AVERAGE POWER, 100 MW. PULSE DURATION, 1 MICROSEC. PULSE FREQUENCY, UP TO 10KHZ. SAMPLES OF GALLIUM ARSENIDE AS N AND P TYPE WITH (1-4) TIMES 10 PRIME18 CM-3 CONCENTRATION OF IMPURITIES, COOLED TO LIQUID NITROGEN TEMPERATURE, ARE USED AS THE RADIATIVE ELEMENTS. THE DEPENDENCE OF PEAK, P SUBPULSE, AND AVERAGE, P SUB4, RADIATION POWERS ON PULSE ABSTRACT: FREQUENCY IS PLOTTED IN A GRAPH WHICH SHOWS THAT P SUBPULSE DECREASES WITH INCREASING FREQUENCY ABOVE 200 HZ AND THAT AT F EQUALS 10KHZ IS ONLY 17 PERCENT OF THE MAXIMUM VALUE. THE GRAPH ALSO SHOWS THAT THE AVERAGE POWER INCREASES TO A MAXIMUM AT 5-6KHZ. AN EFFICIENT WAY FOR INCREASING THE PEAK POWER IS TO INCREASE THE BEAM CURRENT DENSITY. AN INCREASE IN CURRENT DENSITY UP TO 30-40 A-CM PRIME2 WITHOUT CHANGING THE SPOT DIMENSION, MAKES IT POSSIBLE TO SUBSTANTIALLY INCREASE THE RADIATION POWER OF THE TUBE. IT IS CONCLUDED THAT THE OPTIMIZATION OF TUBE CHARACTERISTICS SHOULD PROCEED ALONG THE LINES OF RADIATIVE MATERIAL AND ELECTRON OPTIC SYSTEM IMPROVEMENT. A SCHEMATIC DIAGRAM OF THE TUBE IS PRESENTED.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--APPARATUS FOR MEASURING THE LIFETIMES OF MINORITY CARRIERS IN SEMICONDUCTORS -U-

AUTHOR-(05)-VLASOV, A.N., KABANOV, A.N., KURBATOV, L.N., PETROVA, I.YU., SOROKONOVITSKIY, N.V.

COUNTRY OF INFO--USSR

K

SOURCE--PRIB. TEKH. EKSP. 1970, 1, 222-3

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CADMIUM SULFIDE, ZINC TELLURIDE, MINORITY CARRIER, SEMICONDUCTOR MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1008 STEP NO--UR/0120/70/001/000/0222/0223

CIRC ACCESSION NO--AP0115029

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

2/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0115029

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN APP. IS DESCRIBED FOR MEASURING THE LIFETIMES OF MINORITY CARRIERS ACCORDING TO THE DROP IN CATHODOLUMINESCENCE OF SEMICONDUCTORS IN THE VISIBLE AND NEAR IR REGIONS. VALUES ARE GIVEN FOR CDS AND ZNTE.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201630006-1

USSR

UDC 621.394/395.73.019.3

GUREVICH, A. S., KURBATOV, N. D.

"On Some Quantitative Characteristics and Possibilities for an Increase of the Reliability of Long-Distance Cable Communication Lines"

V sb. Materialy nauchno-tekhn. konferentsii. Leningr. elektrotekhn. in-t svyazi, 1970 g. Vyp. 1 (Materials of a Scientific-Technical Conference. Leningrad Electrical Engineering Institute of Communication, 1970. No 1 -- Collection of Works), Leningrad, 1970, pp 137-141 (from RZh--Elektrosvyaz', No 9, Sep 70, Abstract No 9.64.260)

Translation: The paper presents statistical data collected from separate cable main lines on failures of symmetrical communication cables during several years of operation. The rate of failures (λ) is determined by those data for armored cables laid outside of inhabited points ($\lambda = 2.02 \cdot 10^{-5}$ 1/hour) and in a zone of inhabited points ($\lambda = 14.84 \cdot 10^{-5}$ 1/hour), and also for nonarmored cable laid in a zone of inhabited points ($\lambda = 8.71 \cdot 10^{-5}$ 1/hour). The principal reasons for failures of cables which are operated in a zone of inhabited points are for cables laid in the ground (85 percent failures) -- mechanical damages, and for cables laid in channelings (46 percent failures) -- unexplained causes. Concepts of permissible and and coefficient of decrease of the rate of failures are introduced. A

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GUREVICH, A. S., et al., V sb. Materialy nauchno-tekhn. konferentsii. Leningr. elektrotekhn. in-t svyazi, 1970 g. Vyp. 1 (Materials of a Scientific-Technical Conference. Leningrad Electrical Engineering Institute of Communication, 1970. No 1 -- Collection of Works), Leningrad, 1970, pp 137-141 (from RZh--Elektrosvyaz', No 9, Sep 70, Abstract No 9.64.260)

calculation is given of the permissible λ for a 100-km section of cable and for the permissible λ for the cable of a main line. Three tables and three references. K. A.

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UDC 541.123.2

USSR

DESYATNIK, V. N., KURBATOV, N. I., RASPONIK, S. P., and CHERVINSKIY, YU. F.,
Ural Polytechnical Institute, Sverdlovsk

"Phase Diagrams of Binary Systems Containing Uranium Tetrachloride and Alkali Metal Chlorides""

Moscow, Zhurnal Fizicheskoy Khimii, Vol 46, Vyp 8, 1972, p 2159

Translation: The phase diagrams of uranium tetrachloride and alkali metal chlorides were studied by differential thermal analysis. It was demonstrated that uranium tetrachloride forms the following compounds with alkali metal chlorides: $2MeCl \cdot UCl_4$ (where Me = Li, Na, K, Rb, Cs), $MeCl \cdot UCl_4$, and $3MeCl \cdot UCl_4$ (where Me = Rb, Cs). Two eutectic points were found for the $LiCl-UCl_4$ system, corresponding to 31 and 43 mol % UCl_4 content at 415 ± 2 and 400 ± 2°C. In the $NaCl-UCl_4$ system the eutectic mixture melts at 368 ± 2°C and corresponds to a 50 mol % UCl_4 content. The eutectic points of the $KCl-UCl_4$ system correspond to 26 and 51 mol % UCl_4 concentrations at 562 ± 2 and 335 ± 2°C respectively. In the $RbCl-UCl_4$ system, two eutectic points were determined for 22 and 36 mol % UCl_4 concentrations at melting points 535 ± 2 and

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USSR UDC: 512.7

KURBATOV, V. A.

"A Peculiarity of the Roots of Prime Degree Polynomials"

Uch. zap. Sverdl. gos. ped. in-t (Science Notes of the Sverdlovsk Pedagogical Institute--collection of works) 1971, coll. 125, pp 44-49 (from RZh--Matematika, No 4, 1972, Abstract No 4A379)

Translation: We present the basic results of the work, keeping the author's formulation.

Theorem 1. If a polynomial f(x) of prime degree p is irreducible in the real field P, mutually prime with the field of division of a circle into p parts, the imaginary parts of its roots differ.

Theorem 2. If an equation of prime degree p, solvable in radicals, is irreducible in the real field P, mutually prime with the field of division of a circle into p parts, the ratio of the imaginary parts of any pair of its non-real roots cannot be a number in the field P other than -1. M. Shur.

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USSR UDC 541.127:541.515:547'1'118

POBEDIMSKIY, D. G., BUCHACHENKO, A.L., KURBATOV, V. A.

"Kinetic Application of Stable Nitroxyl Radicals in Phosphite Reactions. 3. Phosphoranylperoxide Radical"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 11, 1973, pp 2454-2458

Abstract: The phenomenon of competition of two acceptors of the primary radicals O_2 and the stable nitroxyl radicals is analyzed, and the kinetic laws of destruction of the stable nitroxyl radicals in the system made up of tertiary butyl hydroperoxide and triethyl phosphite in the presence of O_2 and without it. The radical acceptor (stable nitroxyl radicals) method demonstrated that the phosphoranyl radicals formed in the reaction of the tertiary butyl hydroperoxide with triethyl phosphite in the presence of oxygen are converted into phosphoranylperoxide radicals. The rate constant found for the formation of phosphoranylperoxide radicals at 20° is 250 times less than the rate constant of disproportionation of the primary phosphoranyl radicals by the reaction with a stable radical.

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USSR UDC 612.83

KURBATOV, V. I., and OVSYANNIKOV, A. V., All Union Scientific Research Institute of Physical Culture, Moscow

"Spinal Reflex Effects in Man During Static Loads"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti, Vol 20, No 6, 1970, pp 1,310-1,312

Abstract: Eight human subjects were required to hold as long as they could a weight on the right leg raised slightly from the floor. While doing so the monosynaptic H reflex was elicited every 10 sec in the resting left leg by electrical stimulation. The reflex was substantially increased as long as the weight was held. In another series of experiments, the blood flow to the right leg was cut off by a tourniquet applied to the thigh. One minute after the afferent block, the subject was again required to lift and hold the weight as long as possible while the H reflex was elicited in the other leg. And once again the reflex increased. Thus, a static load on one extremity intensified the excitability of the motoneurons in the gastrocnemius and soleus in the other extremity, as shown by the increased H reflex. Facilitation of the reflex was apparently due to afferent impulses reaching the spinal cord from the active muscles rather than to supraspinal influences.

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KURBATOV, V. L.

JPRS 53370
7 Mar 72

UDC 669.2/8-982:541.18

VAPOR PRESSURE AND THERMODYNAMIC FUNCTIONS OF MAGNESIUM CHLORIDE AND POTASSIUM CHLORIDE IN THE TITANIUM SPONGE (GRAPHITE)-CHLORIDE SYSTEM

[Article by V. L. Kurbatov, I. Ye. Lukashenko, Krasnoyarsk Nonferrous Metals Institute, Department of Physical Chemistry and Theory of Metallurgical Processes; Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, Russian, No 5, 1971, submitted 19 January 1971, pp 71-75]

The thermodynamics of a system made up of a capillary-porous body and a liquid was studied in detail in the example of carbon (graphite, silicagel) and water as applied to a chemical technological process such as drying colloidal and capillary-porous bodies [1-3, and so on].

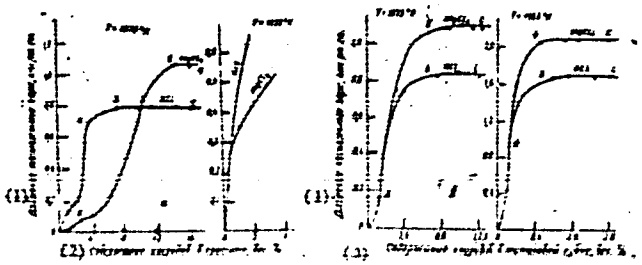

Figure 1. Desorption isotherms in the systems: graphite-chloride (a) and titanium sponge-chloride (b).

Key: 1. saturation vapor pressure, mm Hg
2. chloride content in the graphite, % by weight
3. chloride content in the titanium sponge, % by weight

In this paper, a study is made of the thermodynamic characteristics of magnesium chloride and potassium chloride individually in the systems: graphite-chloride and titanium sponge-chloride, which are of practical and

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