USSR   UDC 51.621.391

YAKOBSON, G. E.

"General Decomposition of Finite Automata"

Tr. Tallin. Politekhn. In-ta [Works of Tallin Polytechnical Institute], A,
No 304, 1971, pp 43-51, (Translated from Referativnyy Zhurnal, Kibernetika,
No 10, 1971, Abstract No 10 V606 by A. Muchnik).

Translation: The concept of the SP-lattice of an automaton as a lattice of
factor divisions which are SP divisions is introduced (Hartmanis, J., Stearns,
R. E., Algebraic Theory of Sequential Machines. Prentice Hall Inc., N. Y.,
1966). The following theorem is proven: A necessary and sufficient condition
for the existence of a general decomposition of an automaton (decomposition of
the automaton into a net constructed of automata with lower numbers of states
connected in parallel and/or series) is the presence in the set of states of
SP lattice L_0, and the graph of the decomposition D is isomorphic to the SP lat-
tice L_0. The theorem contains a method for construction of decomposition D
using the SP lattice L_0.

1/1

UDC 547.539:547.241

USSR

YAKOBSON, G. G., FURIN, G. G., TERENT'EVA, T. V., Novosibirsk Institute of Organic Chemistry of the USSR Academy of Sciences, Siberian Branch, and the Novosibirsk State University

"Aromatic Fluorine Derivatives. LI. Preparation and Reactions of Polyfluoro Aromatic Difluorophosphines and Tetrafluorophosphoranes"

Abstract: A method was developed for making polyfluorodichlorophosphines by the reaction of polyfluoro aromatic compounds with PCl_3 in the presence of $AlCl_3$. Pentafluorophenyltetrafluorophosphorane was formed in the reaction of pentafluorophenylmagnesium bromide with PCl_5. Study of the action of nucleophilic agents on pentafluorophenyltetrafluorophosphoranes showed that nucleophilic displacement occurs at the P atom and the corresponding phosphinic salt is formed. Experimental data on the preparations and the properties of the compounds formed are listed.

1/1

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UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--ACTION OF ELECTROPHILIC AGENTS ON POLYFLUORO AROMATIC COMPOUNDS.
III. SUBSTITUTION AND ADDITION REACTIONS DURING THE ACTION OF
AUTHOR-(04)-SHTEYNGARTS, V.D., OSINA, O.I., KOSTINA, N.G., YAKOBSON, G.G.

CCUNTRY OF INFO--USSR

SOURCE--ZH.-ORG. KHIM. 1970, 6(4), 833-40

DATE PUBLISHED------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--FLUORINATED ORGANIC COMPOUND, NAPHTHALENE, NITRATION, EXCHANGE
REACTION, ORGANIC NITRO COMPOUND, NAPHTHOQUINONE

CENTRCL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2089   STEP NO--UR/0366/70/006/004/0833/0840

CIRC ACCESSICN NO--AP0125676
                              UNCLASSIFIED

2/2   019
CIRC ACCESSION NO--AP0125676   ABSTRACT. THE REACTION OF
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF (CLCH SUB2) SUB2
2H,HEPTAFLUORONAPHTHALENE (I) WITH OLEUM, HSO SUB3 CL, (CLCH SUB2) SUB2
O IN HSO SUB3 CL SOLN., OR C SUB6 F SUB5 CH SUB2 CL IN HSO SUB3 CL SOLN.
GAVE SOLELY 2,(R SUBSTITUTED) I DERIVS. (II) (R EQUALS SO SUB3 H, SO
SUB2 CL, CH SUB2 CL, OR CH SUB2,C SUB6 F SUB5). THE REDN. OF II (R
EQUALS CH SUB2 CL) WITH ZN-HCL GAVE II (R EQUALS ME). HOWEVER, THE
NITRATION OF I GAVE
4,NITRO,3,4,5,6,7,8,HEXAFLUORO,1,OXO,1,4,DIHYDRONAPHTHALENE (III).   THE
REDN. OF III WITH ZN-HCL GAVE
3,4,5,6,7,8,HEXAFLUORO,1,HYDROXYNAPHTHALENE WHICH WAS CONVERTED WITH CH
SUB2 N SUB2 TO ITS ME ETHER. HEATING III AT 80DEGREES GAVE
2,5,6,7,8,PENTAFLUORO,1,4,NAPHTHOQUINONE.   FACILITY:
NOVOSIBIRSK. INST. ORG. KHIM., NOVOSIBIRSK, USSR.

UNCLASSIFIED

PROCESSING DATE--13NOV70

1/2   017
TITLE--AROMATIC FLUORO DERIVATIVES. XL. EFFECT OF A PENTAFLUOROPHENYL RING ON THE STRENGTH OF CH ACIDS -U-
AUTHOR-(03)-VLASOV, V.M., KRIVOUSOVA, YE.D., YAKOBSON, G.G.

COUNTRY OF INFO--USSR

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

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

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

CONTROL MARKING--NO RESTRICTIONS

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

CIRC ACCESSION NO--AP0125546
UNCLASSIFIED

2/2   017
CIRC ACCESSION NO--AP0125546
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE ACTION OF NAH ON C SUB6 F SUB5
CH SUB2 CN IN MEOCH SUB2 CH SUB2 OME (I) SOLN. GIVES P,NCCH SUB2 C SUB6
F SUB4 CH (CN) C SUB6 F SUB5 (II) WHICH AT MINUS 10DEGREES TO 25DEGREES
FORMS WITH THE EXCESS NAH COLORED CARBANION P,NCCH SUB2 C SUB6 F SUB4 C
PRIME NEGATIVE (NA PRIME POSITIVE)(CN)C SUB6 F SUB5 (III).   THE
EXISTENCE OF III WAS ESTABLISHED BY IR AND NMR SPECTROSCOPY.   THE
HYDROLYSIS OF II GAVE THE CORRESPONDING DICARBOXYLIC ACID.   SIMILARLY,
C SUB6 F SUB5 CH (CO SUB2 ET) SUB2 IN I SOLN. GAVE STABLE C SUB6 F SUB5
C PRIME NEGATIVE (NA PRIME POSITIVE), (CO SUB2 ET) SUB2 (IV). THE
COMPARISON OF IV NMR SPECTRA IN I AND PO(NME SUB2) SUB3 (HIGHLY POLAR
SOLVENT) WITH THE SPECTRA OF RC PRIME NEGATIVE (NA PRIME POSITIVE), (CO
SUB2 ET) SUB2 (V) (R IS P,HC SUB6 F SUB4, 2,4,(O SUB2 N) SUB2 C SUB6 H
SUB3, OMICRON, O SUB2 NC SUB6 H SUB4, P,O SUB2 H, C SUB6 H SUB4, OR PH)
SHOWS THAT THE IONIZATION OF IV IS OF THE SAME ORDER AS THAT OF V (R
EQUALS OMICRON, O SUB2 NC SUB6 H SUB4 OR P,O SUB2 NC SUB6 H SUB4). THE
POSITION OF EQUIL. WAS ESTABLISHED IN RCH(CO SUB2 ET) SUB2 PLUS IV IN
EQUILIBRIUM V PLUS C SUB6 F SUB5 CH, (CO SUB2 ET) SUB2 SYSTEMS. THE
RELATIVE REACTIVITY OF IV AND V TOWARD N,CHLOROMETHYLPHTHALIMIDE WAS
DETD.   FACILITY: NOVOSIBIRSK, INST. ORG. KHIM., NOVOSIBIRSK,
USSR.

1/2   015
TITLE--REACTION OF OCTAFLUORONAPHTHALENE WITH SULFUR TRIOXIDE -U-.

AUTHOR-(03)-AKHMETOVA, N.E., SHTEYNGARTS, V.D., YAKOBSON, G.G.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 705-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--FLUORINATED ORGANIC COMPOUND, NAPHTHALENE, SULFUR OXIDE,
COMPLEX COMPOUND, NAPHTHOL, QUINONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1779   STEP NO--UR/0062/70/000/003/0705/0707

CIRC ACCESSION NO--AP0123576

2/2   015   UNCLASSIFIED   PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0123576
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS
  GRAPHIC INFORMATION. HEATING 5 G OCTAFLUORONAPHTHALENE (I) WITH 14.5 G
  SO SUB3 STABILIZED BY 1.45 G ME SUB2 SO SUB4 IN A SEALED TUBE 1 DAY AT
  50DEGREES GAVE AFTER QUENCHING IN ICE AND EXTN. WITH CH SUB2 CL SUB2 1.4
  G PURE II, B SUB0.02 73-4DEGREES. I AND DRY HF IN 40 HR AT 20DEGREES
  GAVE AFTER AN AQ. TREATMENT 73PERCENT
  1,OXO,PERFLUORO,1,4,DIHYDRONAPHTHALENE, 15PERCENT HEPTAFLUORO,1,NAPHTHOL
  (III) AND 12PERCENT UNIDENTIFIED PRODUCTS. SIMILARLY, I AND 48PERCENT
  HBR IN ET SUB2 O GAVE IN 4 DAYS A SMALL AMT.
  HEXAFLUORO,1,4,NAPHTHOQUINONE, ALONG WITH 82PERCENT III. I AND CONCD.
  HCL GAVE IN 4 DAYS 80PERCENT
  1,OXO,4,CHLOROHEPTAFLUORO,1,4,DIHYDRONAPHTHALENE, THE RESULTS SUGGEST
  THAT THE REACTION OF SO SUB3 WITH C SUB10 F SUB8 PROCEEDS THROUGH A
  COMPLEX OF THE POLYFLUORO SIGMA BONDED TYPE.   FACILITY:
  NOVOSIBIRSK, INST. ORG. KHIM., NOVOSIBIRSK, USSR.

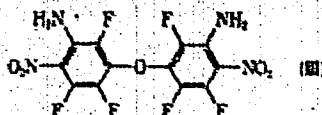   UNCLASSIFIED

Acc. Nr:
AP0053773

Abstracting Service:
CHEMICAL ABST.

Ref. Code:
URO366

110946g Aromatic fluoro derivatives. XXXVIII. Derivatives of polyfluorodiphenyl ether. Kobrina, L. S.; Furin, G. G.; Yakobson, G. G. (Novosibirsk. Inst. Org. Khim., Novosibirsk, USSR). Zh. Org. Khim. 1970, 6(2), 340–5 (Russ). The reaction of $(C_6Cl_5)_2O$ with KF in an autoclave did not give the expected $(C_6F_5)_2O$; only C_6F_6, C_6F_5Cl, $C_6F_4Cl_2$, $C_6F_3Cl_3$, and $C_6F_2Cl_4$ were obtained. The same products were obtained from C_6Cl_6. The reaction of $C_6F_5NO_2$ with 2,3,5,6,4-F_5XC_6OK (X is Me, H, Br, CF_3, NO_2) gave 46–80% 2,3,5,6,4-$F_5XC_6OC_6(NO_2)$-F_5-4,2,3,5,6 which were reduced to the corresponding amino-derivs. The amino derivs. were aminated to diamino ethers. The oxidn. of 4,4'-diaminooctafluoridiphenyl ether (I) with CF_3-CO_2H gave 4,4'-dinitrooctafluorodiphenyl ether (II), which was reacted with $NH_3(g)$ to the 3,3'-diamino analog (III) of II. The redn. of III gave 3,3',4,4'-tetraaminohexafluorodiphenyl ether.

4-Bromononafluorodiphenyl ether or 4,4'-dibromooctafluorodiphenyl ether were also prepd. from 4-aminononafluorodiphenyl or, I, resp., via the Sandmeyer reaction.   CPJR

REEL/FRAME
19830836

7

1/2   032   UNCLASSIFIED   PROCESSING DATE—30OCT70
TITLE—ACCELERATED TESTING METHODS FOR SAFETY AND FATIGUE DURABILITY OF
   AIRCRAFT STRUCTURES -U-
AUTHOR—YAKOBSON, I.V.

COUNTRY OF INFO—USSR

SOURCE—PROBLEMY PROCHNOSTI, VOL. 2, APR. 1970, P. 30-35

DATE PUBLISHED———APR70

SUBJECT AREAS—AERONAUTICS, METHODS AND EQUIPMENT

TOPIC TAGS—FATIGUE TEST, AIRCRAFT MAINTENANCE, STRUCTURE STABILITY,
   AVIATION INSTITUTE

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAME—2000/0262   STEP NO—UR/3663/70/002/001/0030/0035

CIRC ACCESSION NO—AP0124024
                        UNCLASSIFIED

CIRC ACCESSION NO—AP0124024

ABSTRACT/EXTRACT—(U) GP-0- ABSTRACT. EXAMINATION OF THE PRINCIPLES UNDERLYING METHODS FOR PLANNING, REALIZATION, AND EVALUATION OF ACCELERATED TESTS OF PASSENGER AIRCRAFT UNDER OPERATIONAL CONDITIONS. TOPICS DISCUSSED INCLUDE (1) SELECTION OF THE NUMBER OF AIRCRAFT SUBJECTED TO TESTING UNDER OPERATIONAL CONDITIONS, (2) EVALUATION OF DATA OBTAINED BY MEANS OF APPROXIMATE FORMULAS, (3) DETERMINATION OF DAMAGE ACCUMULATION IN THE TESTED AIRCRAFT, AND (4) SELECTION OF THE OVERHAUL TIME FOR AIRCRAFT UNDER CURRENT OPERATION ON THE BASIS OF FAILURES OBSERVED IN SELECTED AIRCRAFT. FACILITY: GOSUDARSTVENNYI NAUCHNO-ISSLEDOVATEL'SKII INSTITUT GRAZHDANSKOI AVIATSII, MOSCOW, USSR.

UNCLASSIFIED

USSR   UDC 629.735.33.02.018.4.620.169.2

YAKOBSON, I. V.

"Methods of Accelerated Tests of Reliability and Fatigue Limit of Aircraft Structures"

Problemy Prochnosti, No 4, April, 1970, pp 30-35

Abstract: Accelerated tests of aircraft structures under operating conditions are directed at the solution of a number of problems. The present article deals with some methodological approaches, developed with account taken of special features of design and operation, as well as of demands upon passenger aircraft with respect to reliability and fatigue limit. Accelerated tests under operating conditions are called leader tests. The objects of such tests are known as leaders, and units in normal operation are known as regular flight objects. A basic task of leader tests is to obtain advance information concerning structural defects. Leading is effective if the defect is detected in the leader earlier than in a regular aircraft or if the probability of the defect being initially detected on a regular aircraft is sufficiently low. Appropriate formulas are developed, on the basis of probability theory, for the number of leaders and the defect-accretion lead; methods for assuring a defect-accretion lead are discussed, as well as the evaluation of susceptibility to fatigue damage, and selection of the time moment of the repair or regular craft in case of leader breakdown.
1/1

1/2   032   UNCLASSIFIED   PROCESSING DATE--09OCT70
TITLE--ACTIVE METABOLITES IN PERSONS TREATED WITH BENZYLPENICILLIN -U-

AUTHOR-(03)-YAKOBSON, L.M., ASTANINA, L.N., SNEZHNOVA, L.P.

COUNTRY OF INFO--USSR

SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 5, PP 455-457

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PENICILLIN, ANTIBIOTIC DRUG EFFECT, URINE, CHROMATOGRAPHY, UV
  SPECTROPHOTOMETER, METABOLISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1133   STEP NO--UR/0297/70/015/005/0455/0457

CIRC ACCESSION NO--AP0115152
                          UNCLASSIFIED

2/2   032   UNCLASSIFIED   PROCESSING DATE---09OCT70
CIRC ACCESSION NO--AP0115152
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DATA PRESENTED INDICATE THAT
URING OF PERSONS TREATED WITH THERAPEUTIC DOSES OF SODIUM
BENZYLPENICILLIN CONTAINS BESIDES THE ANTIBIOTIC ADMINISTERED ITS
METABOLITES, I. E. 6 AMINOPENICILLANIC ACID, PARA OXYBENZYLPENICILLIN
AND A NON IDENTIFIED BIOLOGICALLY ACTIVE METABOLITE. THE PRESENCE OF
PARA OXYBENZYLPENICILLIN IN THE URINE WAS SHOWN BY PAPER CHROMATOGRAPHY
AND CONFIRMED BY ULTRAVIOLET SPECTROPHOTOMETRY OF ELUATED FROM THE
CORRESPONDING AREAS OF THE URINE CHROMATOGRAMS. THE NUMBER OF THE
METABOLITES AND THEIR AMOUNTS ACCORDING TO THE GROWTH INHIBITION ZONES
OF THE TEST MICROBES WERE DIRECTLY PROPORTIONAL TO THE DOSE OF THE
ANTIBIOTIC ADMINISTERED. INACTIVATION BY PENICILLINASE OF THE
METABOLITES FOUND IN THE URINE OF PERSONS TREATED WITH BENZYLPENICILLIN
ONCE MORE CONFIRMED THEIR ORIGIN FROM BENZYLPENICILLIN.
FACILITY: CONTROL INSTITUTE FOR MEDICAL BIOLOGICAL PREPARATIONS,
MOSCOW.

                            UNCLASSIFIED

TITLE--EXPERIENCE WITH INTERNATIONAL STANDARDIZATION OF BIOLOGICAL
    ACTIVITY OF CHLORTETRACYCLINE -U-

AUTHOR-(04)-YAKOBSON, L.M., SHIRYAYEVA, V.L., SNEZHNOVA, L.P., YERMOLOVA,
    O.B.

COUNTRY OF INFO--USSR, UNITED KINGDOM, WORLD WIDE

SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 3, PP 232-235

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TETRACYCLINE, TECHNICAL STANDARD, BIOLOGIC SCIENTIFIC SOCIETY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/0465   STEP NO--UR/0297/70/015/003/0232/0235

CIRC ACCESSION NO--AP0100943
                    UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100943
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE 2ND PROPOSED SERIES OF THE
INTERNATIONAL ACTIVITY STANDARD OF CHLORTETRACYCLINE WAS STUDIED WITH
THE THREE DOSE AGAR DIFFUSION METHOD. THE CAVES WITH THE WORKING
CONCENTRATIONS OF THE TEST SOLUTION AND THE STANDARD WERE SITUATED
ACCORDING TO THE LATIN SQUARE. AT P-95 ACTIVITY OF THE PREPARATION IN
13 TESTS WAS 1038 TO 1060 MUG-MG. THE DATA FROM 9 LABORATORIES IN 6
COUNTRIES WERE STATISTICALLY TREATED IN THE CENTER FOR ANTIBIOTIC
STANDARDIZATION OF THE WORLD HEALTH ORGANIZATION IN LONDON. THE AVERAGE
ACTIVITY OF THE PROPOSED STANDARD OF CHLORTETRACYCLINE WAS FOUND TO BE
1004 MU G-MG. THE WHO EXPERT COMMITTEE APPROVED THE NEW INTERNATIONAL
STANDARD OF CHLORTETRACYCLINE AND ASSUMED ITS SUPPOSED ACTIVITY TO BE
1000 MU G-MG. THE UNIT OF ACTIVITY WAS EQUAL TO 1 MU G.

UNCLASSIFIED

USSR

YAKOBSON, N. N.

UDC: 621.317.089.68:621.3.029(088.8)

"Passive Frequency Standard Based on Atomic Hyperfine Structure"

USSR Author's Certificate No 277135, filed 4 Nov 68, published 29 Oct 70 (from RZh-Radiotekhnika, № 6, Jun 71, Abstract No 6A286 P)

Translation: This Author's Certificate introduces a passive frequency standard based on the hyperfine structure of atoms. The standard contains a master oscillator, frequency conversion devices, a radio spectroscope, an AFC system, and a system for magnetic field stabilization. As a distinguishing feature of the patent, the standard is designed for continuous stabilization of the magnetic field to improve precision. Connected between the master oscillator and the radio spectroscope is a circuit for exciting the high-frequency Zeeman δ-transitions of the ground state of the material ($\Delta F = \pm 1$, $\Delta m_F = 0$, $m_F \neq 0$), and between the system of frequency stabilization and the control winding of the electromagnet is a magnetic field stabilizing circuit.

1/1

USSR   UDC 621.357.7.035.4;669.587(088.8)

YAKOBSON, S. S., SHARMAYTIS, R. R., MATULIS, YU. YU.

"Bright Zinc Coating Electrolyte"

USSR Author's Certificate No 306189, filed 20 Oct 69, published 21 Jul 71 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 6L294P)

Translation: A zincate electrolyte for bright zinc coating containing ZnO, NaOH, the product of condensation of monoethanolamine with aromatic aldehyde (I) is introduced. It is distinguished by the fact that in order to obtain bright coatings and to increase the stability of the electrolyte, polyglycol is introduced in it with the following component ratio (in grams/liter): 12-24 ZnO; 80-140 NaOH; 1-25 I; 0.2-06 polyglycol. It is indicated that the following can be used as the polyglycol: polyethyleneglycol, polypropyleneglycol, polyethylene-polypropyleneglycol or polyethyleneglycol + polypropyleneglycol. Example. An electrolyte of the following composition was prepared (in grams/liter): 25-30 ZnO, 80-100 NaOH, 12-15 I, 0.4-0.6 polyethyleneglycol. The Zn coating was deposited with D_c 2-4 a/dm^2 at room temperature. The precipitates obtained with a thickness of 2 μ were nonporous, and the degree of luster with respect to an Ag-mirror was 75-80%. The electrolyte remained stable for 25-30 hours of operation. The electrolyte was adjusted by the addition of polyethylenepolyglycol after passage of 18-20 a-hr/liter of electrolytes.
1/1

Recorders and Sensors

UDC 621.323

USSR

TILO, R. A., YAKOBSON, V. S.

"Four-Channel Device for Tape Recording and for Introducing Low-Frequency Signals into a Digital Computer"

Moscow, Pribory i tekhnika eksperimenta, No 4, Jul-Aug 70, pp 106-109

Abstract: This laboratory device not only records information on magnetic tape but transforms the recorded signals into a digital code applied directly to a digital computer. It simultaneously records four processes and is superior in many other ways to single-channel systems of similar type, requiring no elaborate switching mechanism or analog-digital converter. For recording, it uses two GU-4 universal heads. The four-channel modulator consists of a transistorized sawtooth oscillator and a diode regenerative comparator circuit which compares the sawtooth voltage with the input signal voltage. A schematic of the modulator and the recorder current forming circuit is given and the operation of the arrangement explained. An eleven-digit binary code consisting of two numbers is used between the recording device and the BESM-3M digital computer: the first showing the state of the counter, the second giving the numbers of the channels over which the signal came. A curve of the digital codes as a function of the input voltage shows the variation to be substantially linear. It is asserted that the general accuracy of the

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USSR

TILO, R. A., et al., Pribory i tekhnika eksperimenta. No 4, Jul-Aug 70, pp
106-109

device is completely satisfactory and that the device itself, which has been
used for processing electroencephalographic data, has proved to be reliable
and simple in operation.

2/2

USSR   UDC 621.771.23.01

VYDRIN, V. N., LARIN, A. N., and YAKOBSON, V. Z., Zlatoust Metallurgical Plant;
Chelyabinsk Polytechnical Institute

"Improving the Rolling Technology of High-Chromium Steels"

Moscow, Metallurg, No 8, Aug 70, pp 36-38

Abstract: The Zlatoust Metallurgical Plant in collaboration with the Chelyabinsk
Polytechnical Institute conducted a study on improving the rolling technology of
high-chromium steels. The study concerned the effect of various factors on in-
creasing the tendency of high-chromium steels to coiling upon blooming and box
pass rolling on heavy section mills. Use was made of mathematical statistics to
investigate the effect of heating conditions and departures from the chemical
composition of the steel within GOST specifications on coiling. The study also
factored the plasticity of Kh25T steel at high temperatures and the temperature
of the beginning of recrystallization at various stages of plastic deformation,
and the setting of the working mill. The results served as a basis for a new
technology of rolling 2.7-ton ingots of high-chromium steels. The study dis-
closed a distinctive feature of the process, namely the tendency of the metal to
sticking to the roll's surface, which is one of the causes leading to coiling.
The new technology, which has been used at the Zlatoust Metallurgical Plant,
1/2

USSR

VYDRIN, V. N., et al, Metallurg, No 8, Aug 76, pp 36-38

reduced the amount of rejects due to coiling and unfinished rolling on the
950-mill from 4.8% to 0.92%, and on the 750-mill from 1.32 to 0.36%. The
yearly savings on the 750-mill amounted to 42,700 rubles.

2/2

YAKOBSON, Yu. O.

Biochemistry

SECTION VI

Institute of Biochemistry and Physiology of Microorganisms, Pushchino

Description:

(U) During this quarterly reporting period, five new articles were located from the Institute of Biochemistry and Physiology of Microorganisms at Pushchino. On the basis of these articles, it was possible to identify 13 new personalities with the Institute. The personalities, the subjects of the articles, and the dates are given below:

Baker, M. Yu.	a-oxoglutaric acid	1969 (65)
Poronin, A. M.	antibiotic production	1973 (55)
Divina, Yu.	candida lipolytica	1971 (67)
	a-oxoglutaric acid	1969 (65)
Kirkin, M. Ya.	a-oxoglutaric acid	1969 (65)
Lysenko, C. V.	a-oxoglutaric acid	1969 (65)
Minkin, C. I.	a-oxoglutaric acid	1970 (65)
Petrosyan, I. Zh.	antibiotic production	1970 (65)
Rozenfeld, S. N.	a-oxoglutaric acid	1970 (65)
Slava, V. A.	candida lipolytica	1971 (67)
Takhonariya, S.	a-oxoglutaric acid	1971 (65)
	a-oxoglutaric acid	1971 (65)
Zaitseva, D. B.	a-oxoglutaric acid	1971 (65)
	a-oxoglutaric acid	1971 (65)

Two of the five new articles were authored by personalities already identified with the Institute of Biochemistry and Physiology of Microorganisms. One of these articles dealt with penicillium brevi compactum (68) and the other with methane oxidizing bacteria (69). Reference 65 was jointly issued from the above Institute and the Institute of Microbiology imeni A. Kirkhenshteyn Riga, possibly indicating some joint work between the two facilities.

UNCLASSIFIED

USSR   UDC 577.4

FRITSNOVICH, G. F., YAKOBZON, M. I.

"Minimizing the Method of States of a Finite Automaton"

V sb. Vopr. sinteza konechn. avtomatov (Problems of Synthesizing Finite Auto-
mata -- collection of works), Riga, Zinatne Press, 1972, pp 27-32 (from RZh-
Kibernetika, No 9, Sep 72, Abstract No 9V407)

No abstract

1/1

Stress Analysis and Stability Studies

UKRAINIAN SSR

UDC   539.67

MATVEYEV, V. V., YAKOLEV, A. P., of the Institute on Problems of Strength,
Academy of Sciences of the Ukrainian SSR, Kiev

"On the Application of the Phase Method for Determining the Decrease in
Oscillation of Nonlinear Systems of the Hysteresis Type"

Kiev, Prikladnaya Mekhanika, Volume 6, No 3, March 70, pp 105-108

Abstract: The nonlinear system taken as an example in this article is a rod
of constant cross section and rigidity, making transverse oscillations under
the action of a smoothly distributed exciting force, which is a function of
position along the length of the rod. Using Pisarenko's method of approxima-
tion to the differential equations describing this system, it is possible to
determine the energy dissipated in the system in one cycle of oscillation and
the elastic energy corresponding to a given amplitude of the deflection of the
rod. These values can then be used to determine the decrement in oscillation
which corresponds to a given angle of deflection and, finally, a relationship
between the decrement and the phase shift angle between the exciting force and
the oscillation of the rod. However, the equation obtained contains an
integral expression which makes a direct derivation of the decrement extremely
difficult, except in the case of viscous friction, in which the principle
1/2

UKRAINIAN SSR

MATVEYEV, V. V., et al, Kiev, Prikladnaya Mekhanika, Vol 6, No 3, March 70 pp 105-108

function under the integral is proportional to the first degree of velocity, causing the integral to vanish.

Substituting values determined for the resonant case in the expression for the exciting force, an expression is obtained which gives the coefficient in the computed equation for oscillation decrement as a function of the width of the resonance curve in terms of the phase shift angle.

The final expression obtained is relatively simple, and it is stated that the use of Soviet phasometers with a measurement accuracy of 0.0087 radians makes it possible to determine the decrement in oscillation with adequate accuracy from the phase angle.

There are five references, all to Soviet sources.

2/2

USSR

YAKOV, K.

"Long, Drawn-Out Proceedings"

Kiev, Pravda Ukrainy, 30 Mar 73, p 4

Abstract: The author relays a letter from Viktor Ivanovich Kondratenko, director of the neurosurgery department of the Donets Medical Institute, reporting a new scriograph, designed to show the blood flow in the vessels of the brain. This apparatus was invented by the workers of the Zuyevskiy Foundry-Mechanical Works. Kondratenko's character is briefly discussed, and a demonstration of the seriograph for the author is described. The device is considered very useful for diagnosis of brain tumors, as demonstrated by one case reported. Other physicians are said to praise the seriograph, and well-known scholar-neurosurgeons have recommended that 20 be produced. However red-tape has so far prevented manufacture. The author has recently intervened with the chief of Ukraine Central Medical Technology, Ye. G. Korzh, who promised that the necessary order would be issued immediately.

1/1

USSR

UDC 547.26'118

YAKOVA, Ye. G., DURANSHIN, I. Ya., MURATOVA, A. A., and PUDOVIK, A. N.,
Kazan State University imeni V. I. Ul'yanov-Lenin

"Infrared Spectral Study of the Reaction of Dialkylphosphoric Acids with Tin
Tetrahalides"

Abstract: In examining the IR spectra of dimethyl- and diethylphosphonate
complexes as formed with chlorinated and brominated tin, it was established
that the reaction occurs at the position of the oxygen in the phosphoryl group.
The structures were confirmed by spectrum analysis. It was also shown, that
in this reaction chelated compounds are formed with the liberation of hydro-
chloric acid.

1/1

UDC: 621.382.3

USSR

ALFEROV, Zh. I., KOROL'KOV, V. I., NIKITIN, V. G., and YAKOVENKO, A. A., A. F. Ioffe Physico-Technical Institute, Leningrad

"Investigating Electroluminescent p-n-p-n Structures Using GaAs-Al$_x$Ga$_{1-x}$As Heterojunctions"

Leningrad, Fizika i tekhnika poluprovodnikov, No 7, 1972, pp 1300-1305

Abstract: This is an experimental paper designed to determine the electrical, electroluminescent, and junction characteristics of four-layer structures using heterojunctions of the following types: p-Al$_x$Ga$_{1-x}$As--n-Al$_x$Ga$_{1-x}$As--p-GaAs--n-Al$_x$Ga$_{1-x}$As, and n-Al$_x$Ga$_{1-x}$As--p-Al$_x$Ga$_{1-x}$As--n-GaAs--p-Al$_x$Ga$_{1-x}$As, p-n-p-n structures in which one of the basic regions is of a narrow-zone material. The methods of growing such structures are discussed and a description of the preparation of the specimens is given together with a table of characteristics of the structure types. With regard to the volt-ampere characteristics, the authors discuss two types of mechanism for the increase in α with increasing current, and curves are plotted for the switching voltages and currents as functions of the temperature. For the electroluminescent characteristics of
1/2

USSR

the structures, curves are plotted for the radiation recombination spectra for various current densities and for the radiation inten- sity as a function of the current. Appreciation is expressed to to V. M. Tuchkevich for his interest in the work, and to G. A. Andreyev, N. A. Nikitina, and V. P. Dvortsova for their assistance in preparing the specimens and making the measurements.

2/2

YAKOVENKO, A.A.

SPRS 59903
c. 73

El-16.   METHODS OF OBTAINING AND SOME ELECTRICAL PROPERTIES OF $ZnGeP_2$ SEMICON-
DUCTOR

[Article by V. S. Grigor'yev, V. D. Prochukhan, A. A. Yakovenko, Leningrad;
Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh
Kristallov; Plenck, Russian, 12-17 June 1972, p 162]

A study was made of the effect of the growth conditions by the bridge-
man and gas transport reaction method on the quality and habit of crystals of
the semiconductor compound $ZnGeP_2$.

A procedure was developed for the manufacture of ohmic contacts with
$ZnGeP_2$.   Some electrophysical properties of single crystals were defined. The
orientation of the single crystals obtained by the bridgeman method was car-
ried out for the optical studies.

A study was made of the effect of thermal annealing in Zn and P vapor
and also the introduction of admixtures of the I, III and VI group elements
on the electrical properties of $ZnGeP_2$.   It was demonstrated that depending on
the chemical nature of the volatile component, the annealing conditions or the
introduction of alloying elements, the specific resistance and concentration
of the charge carriers can be varied within broad limits.

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USSR

ALFEROV, ZH. I., ANDREYEV, V.M., KOROL'KOV, V.I., NIKITIN, V.G., PORTNOY, YE.L., YAKOVENKO, A.A. [Physico-Technical Institute imeni A.F. Ioffe, Academy Of Sciences, USSR, Leningrad]

"Recombination Radiation In Four-Layer Structures On The Base Of GaAs-AlAs Heterojunctions"

Abstract: In a previous paper by the authors (less Ye. L. Portnoy) [Fizika i tekhnika poluprovodnikov, 4, 578 (1970)] it is shown that p-n-p-n structures based on the wide-band compounds AlAsP with direct optical transitions make it possible to obtain a light source with an S-shaped voltampere characteristic. The radiative and electrical characteristics of such structures can be significantly improved by the use of heterojunctions because, owing to the increase of effectiveness of the emitter junctions and the favorable conditions for derivation of radiation, the possibility is revealed of obtaining low-threshold coherent radiation. The present paper considers p-n-p-n structures based on heterojunctions in the system GaAs--AlAs, in which one of the base regions is narrow-band. The four-layer structures were obtained by epitaxial building-up from the fluid phase. Use of wide-band emitters realizes unilateral injection in the base regions and a
1/2

- 189 -

reduction of the current density necessary for creation of population inversion
in the narrow-band base region is achieved, both by a decrease of the recombinat-
ion losses in the wide-band base and by a decrease in thickness of the most
active layer, the narrow-band base. Typical radiation spectra are presented of a
four-layer heterostructure with a narrow-band base of p-type conductivity at 77
and 300° K. The authors thank S.G. Konnikov for conducting microroentgenspectro-
scopic analysis and V. M. Tuchkevich for interest and attention to the work.
3 fig. 3 ref. Received by editors, 20 July 1971.

2/2

UNCLASSIFIED

TITLE--P-N-P-N STRUCTURE IN GALLIUM ARSENIDE AND AL $SUB X$ GA $SUB 1$ NEGATIVE X AS SOLID SOLUTIONS -U-

AUTHOR-(05)-ALFEROV, ZH.I., ANDREYEV, V.M., KOROLKOV, V.I., NIKITIN, V.G., YAKOVENKO, A.A.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. PRLUPROV. 1970, 4(3), 578-81

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SOLID SOLUTION, GALLIUM ARSENIDE, ALUMINUM ARSENIDE, RADIATION SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1713   STEP NO--UR/0449/70/004/003/0578/0481

CIRC ACCESSION NO--AP0120425

UNCLASSIFIED

CIRC ACCESSION NO--AP0120425
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE P-N-P-N LAYERED SWITCHING
STRUCTURES IN GAAS AND GAAS-ALAS SOLID SOLNS. WERE STUDIED. LIQ.
EPITAXY IN OPEN SYSTEM AT 900-1000DEGREES AND IN H SUB2 FLOW WAS USED
FOR PREPG. THE STRUCTURES ON N-GAAS SUBSTRATES, DOPED WITH ZN (P EQUALS
4 TIMES 10 PRIME19 CM PRIME NEGATIVE3). ON THE SUBSTRATE, 2 BASE LAYERS
AND 1 N TYPE EMITTER LAYER (N EQUALS (6-9) TIMES 10 PRIME16 CM PRIME
NEGATIVE3) WERE GROWN, THE MIDDLE P AND N LAYERS BEING ZN DOPED AND
NONDOPED, RESP. CONCN. AT THE JUNCTIONS WERE CHECKED BY VOLTAGE
CAPACITANCE EXPTS., AND THEN V-I CHARACTERISTICS WERE EXAMD. AT VARIOUS
TEMPS. SWITCHING ON VOLTAGE AT ROOM TEMP. WAS 20-150 V AND INCREASED
WITH THE TEMP. RISE AS WELL AS THE SWITCHING ON CURRENT. THERMAL
GENERATION IN THE SPACE CHARGE LAYER CONTROLLED THE CURRENT. THE
SWITCHED ON GAAS SAMPLES EMITTED IR RADIATION OF 1.37 EV ENERGY (MAX.)
AT ROOM TEMP. INTENSITY OF THE RECOMBINATION RADIATION INCREASED
LINEARLY WITH THE CURRENT. THE RADIATION SPECTRA OF THE AL SUBX GA SUB1
NEGATIVE X AS STRUCTURES AT 300DEGREESK SHOWED 2 LONG WAVE BANDS WITH
MAX. AT 1.37 AND 1.42 EV AND 1 SHORT WAVE BAND AT 1.8 EV. NATURE AND
ORIGIN OF THE BANDS ARE DISCUSSED. SWITCHING TIMES DID NOT EXCEED 20-30
NSEC AS FOUND FROM PULSED MEASUREMENTS.   FACILITY: FIZ.-TEKH.
INST. IM. IOFFE, LENINGRAD.

USSR   UDC: 621.318.435.3

GORYACHEV, N. P., KOBLENTS, Ya. G., MORSHAKOV, V. A., RABKIN, L. I.,
EPSHTEYN, B. Sh., YAKOVENKO, D. A.

"A Noncontact, Magnetically Controlled Diode"

V sb. Novyye beskontaktn. elektron. ustroystva. Ch. 1 (New Noncontact Elec-
tronic Devices--collection of works., Part 1), Moscow, 1970, pp 26-31 (from
RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 70,
Abstract No 11A26)

Translation: The authors present the characteristics and describe some
designs of ferrods whose principle of operation is analogous to that of a
transformer with magnetization. A closed ferrod on a frame core made up of
two L-shaped plates with a nonferromagnetic gap has low scatter of the output
characteristics and high sensitivity. A ferrod designed on the basis of
using a permanent magnet has inverse characteristics. A device with similar
characteristics is a magnetically controlled diode designed around a standard
ferrite head with rectangular hysteresis loop located in the opening of a
metallic magnetic circuit. Six illustrations, bibliography of four titles.
Yu. Kh.

1/1

TITLE--COMPRESSION AND DISTRACTION IN RECONSTRUCTIVE SURGERY OF THE
TUBERCULOUS COXITIS AND GONITIS SEQUELAE -U-
AUTHOR--VERESHCHAGIN, A.P., KHMELEVSKAYA, S.L., YAKOVENKO, E.I., TUMAROVA,
V.I., SADOVOY, M.YA.
COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 3, PP
56-60
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ORTHOPEDIC SURGERY, TUBERCULOSIS, BONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0634   STEP NO--UR/0589/70/104/003/0056/0060

CIRC ACCESSION NO--AP0102620
                      UNCLASSIFIED

CIRC ACCESSION NO--AP0102620

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE PAPER AN EXPERIENCE WITH
THE USE OF THE APPARATUS COMPRESSION AND DISTRACTION IN SURGICAL
TREATMENT OF TUBERCULOUS COXITIS AND GONITIS SEQUELAE IS DESCRIBED.
WITHIN THE RECENT 5 YEARS 115 PATIENTS HAVE BEEN OPERATED UPON. THE
PECULIARITIES OF TECHNIC OF CORRECTIVE OSTEOTOMY WITH ELONGATION OF THE
FEMUR ARE REPORTED. MAXIMUM ELONGATION OF ONE OF SEGMENTS DID NOT
EXCEED 8-10 CM. THE MOST FREQUENT COMPLICATIONS WERE AS FOLLOWS:
SUPPURATION AND CUTTING THROUGH OF NEEDLES INSERTED VIA THE ALIFORM
PROCESS OF THE ILIAC BONE (13), PARESIS OF THE FIBULAR NERVE (5),
DELAYED CONSOLIDATION IN 3 PATIENTS.

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--11SEP70

1/2   015
TITLE--CHANGES IN THE PHOTOCHEMICAL ACTIVITY OF CHLOROPLASTS AND THEIR
FRAGMENTS PRODUCED BY ENZYMIC HYDROLYSIS -U-
AUTHOR--OSTROVSKAYA, L., MANUILSKAYA, S., YAKOVENKO, G.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(2), 468-71

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PLANT PHYSIOLOGY, ENZYME, PHOTOCHEMISTRY, CHLOROPLAST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1799   STEP NO--UR/0020/70/190/002/0468/0471

CIRC ACCESSION NO--AT0101846
                  UNCLASSIFIED

CIRC ACCESSION NO--AT0101846

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ISOLATED CHLOROPLASTS AND DIGITONIN FRAGMENTS OF 12-14 DAY SEEDLINGS OF PEAS WERE EXAMD. FOR PHOTOCHEM. ACTIVITY IN REDN. OF NADP IN THE PRESENCE OF ELECTRON DONORS AND FERRICYANIDE. RESULTS OF TREATMENT WITH PAPAIN, TRYPSIN, AND GALACTOLIPASE WERE ALSO EXAMD. THE REDN. OF NADP WAS MOST SENSITIVE TO THE ACTION OF GALACTOLIPASE; TRYPSIN AFFECTED IT MUCH LESS, AND PAPAIN INSIGNIFICANTLY. AS TO FERRICYANIDE REDN., GALACTOLIPASE TREATMENT HAD ALMOST NO EFFECT, PAPAIN AND ESP. TRYPSIN REDUCED THIS ACTIVITY CONSIDERABLY. THE EXPOSURE OF THE ACTIVE CENTERS IN THE 2 PARTS OF THE PHOTOSYSTEM IS VERY DIFFERENT FOR THE 2 KINDS OF ACTIVITY CITED. EVIDENTLY THE BONDING OF LEUCINE AND GLYCINE IS UNIMPORTANT FOR THE NAD ACTIVE SYSTEM AND RELATIVELY MORE IMPORTANT FOR THE FERRICYANIDE ACTIVE SYSTEM.

USSR   UDC 576.312.342

BOCHKOV, N. P., KULESHOV, N. P., SERGEYEV, A. S., and YAKOVENKO, K. N., Institute
of Medical Genetics, Academy of Sciences USSR, Moscow

"Identification of Human Chromosomes Forming Dicentrics After Irradiation"

Moscow, Genetika, Vol 6, No 4, 1970, pp 179-185

Abstract: Peripheral-blood leukocytes of three adult men were irradiated with x-rays in a dose of 92 rad. The culture time was 54 hours, so that metaphases of the first postirradiation mitosis were investigated. A karyotype analysis of cells with dicentrics was conducted. The experimental frequency of involvement of chromosomes in the formation of dicentrics differs from the theoretically expected one, both in respect to the length of chromosomes, and their numbers. The involvement of chromosomes in dicentrics is not random. Chromosomes of the D and E' groups are involved more frequently, while the G group is involved less frequently than expected due to the length of chromosomes. Also, the dicentrics consisting of C and E, D and D, E' and E, F and G chromosomes occur more frequently, while those of I and I, C and G occur less frequently than theoretically expected. These differences are explained on the basis of different distribution of chromosomes in the nucleus.

1/2   020   UNCLASSIFIED
TITLE--INFLUENCE OF ALUMINUM, CADMIUM, AND COPPER IMPURITIES ON THE   PROCESSING DATE--23OCT70
   BAUSCHINGER EFFECT IN THE TWINNING OF ZINC SINGLE CRYSTALS -U-
AUTHOR-(02)-BASHMAKOV, V.I., YAKOVENKO, N.G.

COUNTRY OF INFO--USSR

SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(2), 231-6 (RUSS)

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ALUMINUM CONTAINING ALLOY, CADMIUM CONTAINING ALLOY, COPPER
   CONTAINING ALLO, BAUSCHINGER EFFECT, ZINC, METAL SINGLE CRYSTAL,
   TWINNING, METAL IMPURITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1930
                                       STEP NO--UR/0185/70/015/002/0231/0236
CIRC ACCESSION NO--AP0118892
                          UNCLASSIFIED

UNCLASSIFIED

CIRC ACCESSION NO--AP0118892   PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INFLUENCE OF AL, CD, AND CU IMPURITIES ON THE BAUSCHINGER EFFECT IN THE TWINNING OF ZN SINGLE CRYSTALS WAS STUDIED. THESE IMPURITIES CAUSE CHANGES IN THE QUANT. CHARACTERISTICS OF THE EFFECT: BBETA BAUSCHINGER DISPLACEMENT OF THE TWIN BOUNDARIES AND RELATION SIGMA SUB1-SIGMA SUB0, WHERE SIGMA SUB0 IS THE STRESS AT WHICH TWINNING IS INTERRUPTED AND SIGMA SUB1 IS STRESS OF OPPOSITE SIGN AT WHICH DE TWINNING BEGINS. THE IRRESISTIVE BARRIERS WERE FORMED FOR THE TWINNING DISLOCATIONS BY THE AL AND CD IMPURITIES. THE DIFFERENT INFLUENCE THAT THESE IMPURITIES EXERT IS ASSOCD. WITH THEIR STACKING FAULT ENERGIES. EXPOSING THE TWINNED SINGLE CRYSTALS OF THE ZN PLUS CU ALLOY TO PB SUPPRESSES THE BAUSCHINGER EFFECT. FACILITY: KHAR'KOV. INST. OBSHCHEST. PITAN., KHARKOV, USSR

UNCLASSIFIED

UNCLASSIFIED

TITLE--EXPERIENCE WITH CLINICAL USE OF VIBRAMYCIN -U-

AUTHOR-(05)-MIKHNEV, A.L., PTUKHA, R.M., TYDELSKAYA, I.L., KRYLOVA, N.M.,
  YAKOVENKO, S.N.
COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 2, PP 12-16

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BLOOD SERUM, PROTEIN, TETRACYCLINE, INFECTIOUS DISEASE,
  SELECTIVE DRUG EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/0454   STEP NO--UR/0475/70/000/002/0012/0016

CIRC ACCESSION NO--AP0100932
                              UNCLASSIFIED

CIRC ACCESSION NO—AP0100932

ABSTRACT/EXTRACT—(U) GP-0- ABSTRACT. VIBRAMYCIN (DOXICYCLIN) EXERTS A
CHARACTERISTIC OF TETRACYCLINS ACTION SPECTRUM BUT IT PROVED MORE
EFFICIENT THAN ITS STRUCTURAL HOMOLOGUES. TOLERANCE OF THE DRUG WAS
GOOD AND ONLY TWO PATIENTS DEVELOPED VOMITING. VIBRAMYCIN PROVED HIGHLY
EFFICIENT IN THE TREATMENT OF ACUTE INFECTIOUS DISEASES. THE
CONCENTRATION OF DOXICYCLIN REACHES 2.55-1.72 GAMMA-ML OF BLOOD SERUM
FOLLOWING INTAKE OF 200 MG. WHICH IS SIGNIFICANTLY HIGHER THAN WITH
OTHER TETRACYCLINS.   FURTHER INTAKE PER 100 MG KEEPS ANTIBACTERIAL
CONCENTRATION ON A HIGH LEVEL.   DATA ON THE BINDING OF DOXICYCLINE BY
BLOOD SERUM PROTEINS ARE ONLY PRELIMINARY AND CONTROVERSIAL AND NEED
FURTHER STUDY.

UNCLASSIFIED

USSR

UDC: 53.083.5

KAZACHKOVSKIY, V. V., POSIN, V. P., PUZIKOV, V. A., YAKOVENKO, V. A.,
YANUSHEVSKIY, V. A.

"A Device for Determining the Optical Difference of a Path by the St.
Harmon Method"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 36, Dec 71, Author's Certificate No 322747, Division G, filed 3 Jul 69,
published 30 Nov 71, p 155

Translation: This Author's Certificate introduces a device for determining
the optical difference of a path by the St. Harmon method. The device con-
tains a light source, an analyzer, a polarizer, a $\frac{1}{4}$-wave plate with a photo-
electric angle-of-turn pickup and display, a photoreceiver with module for
marking the extremum value of the photocurrent connected to the registra-
tion unit. As a distinguishing feature of the patent, errors are elimi-
nated in automatic determination of a whole number of orders of optical
difference in a path and in finding the direction of the algebraically
larger permittivity tensor by using a wedge compensator with photoelectric
displacement pickup, display and registration unit which is equipped with
a logical correction unit whose output is connected to the display.

1/1

1/2   029   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--FLUOROMETRIC ANALYSIS OF VIBRATORY ENERGY TRANSFER DURING MOLECULAR
   IMPACTS -U-
AUTHOR-(04)-PIKULIK, L.G., SEVCHENKO, A.N., YAKOVENO, V.A., KOSTKO, M.YA.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKLAD. SPEKTROSK (USSR), VOL. 12, NO. 4, P. 682-90, APRIL
   1970
DATE PUBLISHED----APR70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--FLUORESCENCE, ABSORPTION SPECTRUM, GAS STATE, MOLECULAR
   PHYSICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1114   STEP NO--UR/0358/70/012/004/0682/0690

CIRC ACCESSION NO--AP0136534
                        UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0136534
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE INTRODUCTION OF GASES INTO
   FLUORESCENT VAPORS AMPLIFIES THE RADIATION DUE TO LOWER PROBABILITY OF
   NONRADIATIVE TRANSITIONS.   THE PHENOMENON IS EXPLAINED BY VIBRATORY
   ENERGY TRANSFER FROM EXCITED MOLECULES TO THE INTRODUCED GAS PARTICLES.
   THE INFLUENCE OF THE OUTSIDE GASES UPON THE LIFE OF PHTHALIMIDE VAPOR
   EXCITED STATE, SPECTRA AND QUANTUM IS DESCRIBED.   THE CHARACTERISTICS
   PERMIT THE EVALUATION OF ENERGY TRANSFER BY DIRECT FLUOROMETRIC
   MEASUREMENTS TO BE MADE.   CONSTANCY OF OUTPUT AND OF DURATION OF
   FLUORESCENCE WITHIN A BROAD ABSORPTION SPECTRUM POINT TO ESTABLISHMENT
   OF THERMODYNAMIC BALANCE OF MOLECULE IN THE MEDIUM.   STABILIZATION OF
   FLUORESCENT MOLECULES IS QUITE EFFECTIVE IN BOTH STOKES' AND ANTI STOKES
   REGIONS OF THE EXCITATION SPECTRUM.

UNCLASSIFIED

1/2   013

TITLE--AMINO ACID COMPOSITION OF CORN IN CONNECTION WITH ITS HEAT TREATMENT -U-

PROCESSING DATE--27NOV70

AUTHOR-(02)-YAKOVENKO, V.A., ISAROVA, L.YU.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., PISHCH. TEKHNOL. 1970, (2), 137-7

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CEREAL CROP, AMINO ACID, HEATING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0722

STEP NO--UR/0322/70/000/002/0134/0137

CIRC ACCESSION NO--AT0137797

2/2   013   UNCLASSIFIED   PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AT0137797
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AMINO ACID COMPN. OF CORN
RIPENED BY HEATING DID NOT SIGNIFICANTLY DIFFER FROM THAT OF COMPLETELY
RIPE CORN. HEATING OF COMPLETELY RIPE CORN AT 40DEGREES DOES NOT EFFECT
ITS AMINO ACID COMPN.   FACILITY: ODESS. TEKHNOL. INST. IM.
LOMONOSOVA, ODESSA, USSR.

UNCLASSIFIED

USSR

YUNUSOV, Z. R., Candidate of Medical Sciences, BRUSILOV, G. I. and YAKOVENKO, V. I., Chair of Normal Physiology, and Electrophysiology Division, Central Scientific Research Laboratory, Tashkent Medical Institute

"Venous Tone of the Lower Extremities and Methods of Determining It"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 8, Aug 70, pp 18-20

Abstract: A method is described for determining venous tone from orthostatic distensibility of the veins. The results obtained using this method are very close of those obtained on the basis of changes in the Mr and Mh indices of arterial pressure in Hellong's orthostatic test. A special cuff is applied to the thigh of the recumbent subject. The cuff is connected through a tee to a manometer and tank with compressed air. When the cock is opened, air is quickly forced into the cuff, creating a pressure of 300 to 350 mm Hg. The subject then assumes a vertical position and lowers one leg into a special vessel filled with water, up to the top third of the leg. The initial volume of the leg to the top third is determined from the amount of water flowing out into a measuring cylinder. The pressure in the cuff is then reduced to zero. The increase in the hydrostatic pressure of the column of blood causes the 1/2

USSR

YUNUSOV, Z. R., et al., Meditsinskiy Zhurnal Uzbekistana, No 8, Aug 70, pp 18-20

veins to dilate, increasing the volume of the extremity. The ratio of the displaced volume of water to the initial amount (%) is equivalent to the orthostatic distensibility of the veins and serves as an inverse indicator of their tone.

2/2

1/2   030
UNCLASSIFIED   PROCESSING DATE--20NOV70
TITLE--INTERACTION OF AN ELECTRON FLOW WITH SURFACE WAVES IN A
SEMICONDUCTOR PLASMA -U-
AUTHOR-(04)-BORODKIN, A.I., YAKOVENKO, V.M., LEVIN, G.YA., MAYSTRENKO,
YU.V.
COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1515-20

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SEMICONDUCTOR PLASMA, SURFACE WAVE, ELECTRON FLOW, ELECTRON
INTERACTION, SPACE CHARGE, DIELECTRIC CONSTANT, PLASMA RESONANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0877   STEP NO--UR/0181/70/012/005/1515/1520

CIRC ACCESSION NO--AP0131464
UNCLASSIFIED

2/2   030
CIRC ACCESSION NO--AP0131464   UNCLASSIFIED   PROCESSING DATE--20NOV70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTL. OBSERVATION WAS MADE OF THE
INTERACTION OF AN ELECTRON FLUX MOVING IN VACUUM WITH THE SURFACE WAVES
IN A SOLID STATE PLASMA IN THE MM RANGE. FROM THE EXPTL. DATA AND THE
DISPERSION EQUATION, IT WAS ESTABLISHED THAT THE INTERACTION HAS THE
CHARACTER OF AMPLIFICATION OF THE WAVES OF SPACE CHARGE IN THE BEAM
MOVING CLOSE TO THE SURFACE OF THE MEDIUM WITH A COMPLEX DIELEC. CONST.
THIS INTERACTION IS MOST EFFECTIVE CLOSE TO THE PLASMA RESONANCE
FREQUENCY IN THE SEMICONDUCTOR (8 TIMES 10 PRIME11-SEC).
FACILITY: INST. RADIOFIZ. ELEKTRON., KHARKOV, USSR.

UNCLASSIFIED

Acc. Nr: AP0043793

WEAK TURBULENCE SPECTRUM AND SECOND SOUND IN A PLASMA

E. A. Kaner, V. M. Yakovenko

Langmuir turbulence spectra and the possibility of propagation of low frequency
oscillations of the second sound type in a turbulent plasma are considered. If collisions
between plasmons and ions are not taken into account there should be two stationary
nonequilibrium distributions which correspond to stationary fluxes of kinetic energy
and number of plasma waves. Two branches of second sound should correspondingly
exist. An exact power law solution of the form k^{-7} is found for that region in phase
space in which along with four-plasmon interaction nonlinear scattering of plasmons
by ions is also important. It is proven that this distribution is stable with respect to
low frequency disturbances. The stability is of a diffusion nature.

1/1·

REEL/FRAME
19770202

21 DI

USSR

BORODKIN, A. I.; YAKOVENKO, V. M.; et al (Institute of Radio Physics and Electronics, Ukrainian Academy of Sciences, Khar'kov)

"Interaction of an Electron Flow with Surface Waves in a Semiconductor Plasma"

Leningrad, Solid State Physics; May, 1970; pp 1515-20

ABSTRACT: The interaction of a flow of electrons in a vacuum with surface waves in the plasma of a solid in the millimeter range was determined experimentally. As a result of the analysis of the experimental data and the dispersion equation it was established that this interaction has the effect of amplifying the waves of the space charge in a beam in the vicinity of the surface of a medium with a complex dielectric constant. This interaction is the strongest near the frequency of plasma resonance in a semiconductor ($\omega \approx 8 \cdot 10^{11}$ sec^{-1}).

The article includes 9 equations and 6 figures. There are 4 references.

1/1

Aeronautical and Space

USSR

UDC 532.525.2.001.5

BUSHMARIN, O. N., SUKACHEV, A. M., YAKOVENKO, V. V.

"Experimental Study of a Twisted Jet Emanating from an Annular Slot at the Base of a Semiinfinite Cylinder"

Trudy Leningradskogo Politekhnicheskogo Instituta, Aerotermodinam- ika (Works of the Leningrad Polytechnical Institute, Aerothermody- namics), No 313, 1970, pp 143-148

Translation: This article contains a study of the effects of spreading out of a twisted annular jet emanating from a circular nozzle located in the plane at the base of a circular cylinder. The velocity and pressure fields are measured. The conditions under which spreading out of the jet takes place for various twisting devices are analyzed. There are 2 tables and 4 illus- trations.

1/1

UDC: 51

USSR

MODIN, A. A., YAKOVENKO, Ye. G.

"Organization and Management of the Production Process in an
Industrial Enterprise"

Organizatsiya i upravleniye proizvodstvennym protsessom na
promyshlennom predpriyatii (cf. English above), Moscow,
"Nauka", 1972, 296 pp, ill. 96 k. (from RZh-Kibernetika,
No 8, Aug 72, Abstract No 8V583 K)

[No abstract]

1/1

USSR

KASHCHENEVSKIY, L. Ya., YAKOVER, I. M., Vil'nyus State University imeni
V. Kapsukas

"Fluctuations of Hot Photoelectrons in Semiconductors"

Abstract: The authors investigate fluctuations in the electric current
of a semiconductor in which strongly nonequilibrium distribution of cur-
rent carriers is created by external monochromatic radiation. The dif-
ferential frequency conductivity of such a semiconductor is calculated,
and it is shown that there is no universal relation between the spectral
density of fluctuations in electric current and differential frequency
conductivity analogous to the fluctuation-dissociation theorem.

1/1

1/2   021   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--DETERMINATION OF THE PASSBAND OF THE IONOSPHERE AT THE OPTIMAL
   FREQUENCY -U-
AUTHOR--YAKOVEST, A.F.

COUNTRY OF INFO--USSR

SOURCE--GEOMAGNETIZM I AERONOMIIA, VOL. 10, NO. 2, 1970, P. 364, 365

DATE PUBLISHED-------70

SUBJECT AREAS--NAVIGATION, ATMOSPHERIC SCIENCES

TOPIC TAGS--IONOSPHERE, IONOSPHERIC SCATTER COMMUNICATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0158   STEP NO--UR/0203/70/010/002/0364/0365

CIRC ACCESSION NO--AP0119154
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0119154
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL COMPARISON OF THE
PASSBAND OF A FREQUENCY DIVERSITY SYSTEM OF IONOSPHERIC SCATTER
COMMUNICATIONS OPERATING AT AN OPTIMAL FREQUENCY WITH THE PASSBAND OF A
SYSTEM OPERATING AT A FIXED FREQUENCY. MEASUREMENTS WERE TAKEN DURING
NIGHTTIME HOURS AT A FREQUENCY OF 18.7 MHZ AND A PATH LENGTH OF 1400 KM.
THE FREQUENCY BANDWIDTH WITHIN WHICH THE OPTIMAL FREQUENCY WAS SELECTED
WAS 6 KHZ.   FACILITY: AKADEMIIA NAUK KAZAKHSKOI SSR. SEKTOR
IONOSFERY, ALMA-ATA, KAZAKH SSR.

UNCLASSIFIED

1/3 - 023   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--METHODS FOR STUDYING MULTIPLE RAYS FROM A METEOR TRAIL -U-

AUTHOR--YAKOVETS, A.F.

COUNTRY OF INFO--USSR

SOURCE--GEOMAGNETIZM I AERONOMIYA, VOL X, NO 3, 1970, PP 473-477

DATE PUBLISHED-------70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS, ELECTRONICS AND ELECTRICAL ENGR,

TOPIC TAGS--METEOR TRAIL, PHASE MEASUREMENT, REFLECTED SIGNAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605017/005 STEP NO--UR/0203/70/010/003/0473/0477
CIRC ACCESSION NO--AP0140738
                     UNCLASSIFIED

CIRC ACCESSION NO--AP0140738

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SIGNAL REFLECTED FROM AN
OVERDENSE METEOR TRAIL IS SUBJECT TO FADING. FADING IS CAUSED BY THE
FORMATION OF TWO OR MORE REFLECTING CENTERS IN A TRAIL. STUDY OF THE
TIME LAG BETWEEN THE RAYS REFLECTED FROM DIFFERENT CENTERS IS AN
IMPORTANT PROBLEM IN METEOR RADIO COMMUNICATION. THE DISTANCE BETWEEN
PULSES ARRIVING AT DIFFERENT PATHS IS MEASURED IN THE ORDINARY METHOD
FOR DETERMINING LAGS. THIS PAPER DESCRIBES IN DETAIL TWO METHODS FOR
DETERMINING LAGS IN WHICH PULSED METHODS ARE NOT USED. IN THE PHASE
INVARIANT METHOD, PROPOSED FOR STUDYING THE DISPERSION OF ULTRASONIC
WAVES, THE METEOR TRAIL IS IRRADIATED BY A TRIHARMONIC WAVE. PHASE
MEASUREMENTS BETWEEN COMBINATIONS OF SPECTRAL COMPONENTS OF THE WAVE,
TOGETHER WITH AMPLITUDE MEASUREMENTS AT ONE OF THE SPECTRAL FREQUENCIES,
MAKE IT POSSIBLE TO OBTAIN INFORMATION ON THE RELATIVE LAG BETWEEN THE
RAYS. IN THE SECOND METHOD A SIGNAL WITH AN OSCILLATION FREQUENCY IS
USED. WHEN THERE ARE TWO REFLECTING CENTERS ON THE TRAIL THE DEPENDENCE
OF THE AMPLITUDE OF THE RECEIVED SIGNAL ON FREQUENCY IS A PERIODIC
FUNCTION, THE DISTANCE BETWEEN WHOSE MINIMA DETERMINES THE LAG TIME.
THE RATE OF MOVEMENT OF THE MINIMA OF THE FUNCTION ALONG THE FREQUENCY
AXIS IS USED IN DETERMINING THE RATE OF CHANGE IN THE DIFFERENCE IN
SIGNAL PROPAGATION PATHS. DESPITE THEIR SEEMING DIFFERENCE, THE METHODS
HAVE A COMMON BASIS. BOTH METHODS MAKE USE OF THE PHASE RELATIONS
BETWEEN RAYS. WHEREAS IN THE FIRST METHOD THE PHASE IS MEASURED
INDIRECTLY, IN THE SECOND THE PHASE RELATIONS LEAD TO AN INTERFERENCE
PATTERN WHOSE PARAMETERS CARRY USEFUL INFORMATION.

UNCLASSIFIED

3/3   023
CIRC ACCESSION NO--AP0140738   UNCLASSIFIED   PROCESSING DATE--04DEC70
ABSTRACT/EXTRACT--THE FIRST METHOD IS APPLICABLE IN A CASE WHEN THERE IS
CHANGE IN THE DIFFERENCE OF SIGNAL PROPAGATION PATHS. THE MINIMUM
OBSERVATION TIME NECESSARY FOR MEASURING DELTA S IS IS THE DIFFERENCE IN
DISTANCE BETWEEN THE SIGNAL AND TRANSMITTER) IS DETERMINED BY THE TIME
DURING WHICH DELTA S CHANGES BY A WAVELENGTH. WHEN MEASURING DELTA S BY
THE SECOND METHOD NO RESTRICTIONS ARE PLACED ON THE BEHAVIOR OF DELTA S.
THE MINIMUM OBSERVATION TIME IS DETERMINED BY THE RATE OF FREQUENCY
SCANNING.   FACILITY: IONOSPHERE SECTION, ACADEMY OF SCIENCES
KAZAKH SSR; MOSCOW.

UNCLASSIFIED

USSR

UDC 621.318.435.3

ANKHIMYUK, V. L., YAKOVITSKIY, E. F.

"Reversing Magnetic Semiconductor Amplifier"

USSR Author's Certificate No 291311, Filed 2/06/69, Published 22/04/71,
(Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychis-
litel'naya Tekhnika, No 11, 1971, Abstract No 11 A128 P).

Translation: Two-cycle magnetic semiconductor amplifiers [MA] with dc output are
known. Their efficiency is significantly less than that of nonreversing
magnetic amplifiers. The purpose of the invention is to increase the effi-
ciency of a reversing magnetic semiconductor amplifier and decrease the
power consumed by the controlled transistor. This is achieved by connecting
the base-emitter junctions of the controlled transistors to the output wind-
ings of a magnetic oscillator and by connecting the bases through stabili-
trons to output voltage dividers of the corresponding memory units. The re-
versing magnetic semiconductor amplifier consists of a nonreversing magnetic
amplifier with self-saturation, connected through a transistor to the load.
The amplifier is controlled by a dc voltage fed to the counter-series con-
nected control windings through a resistor, used to provide a forced magne-
tization mode. The transistors are controlled by the magnetic oscillator,
the output windings of which are connected to the inputs of the transistors.
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USSR

UDC 621.318.435.3

ANKHIMYUK, V. L., YAKOVITSKIY, E. F., USSR Author's Certificate No 291311,
Filed 2/06/69, Published 22/04/71.

At the output of the magnetic amplifier are high-impedence voltage dividers,
the variable resistors of which are connected through stabilitrons to the
bases of the transistors. The condensors and diodes are used to remove over-
voltages arising across the transistors at the moment of switching due to the
inductance of the load and the amplifier. Low-capacitance condensors are
used to smooth the voltage across the stabilitrons. The bias windings are
used to set a voltage near the minimum voltage across the outputs of both
MA when the control voltage $U_y = 0$. The variable resistors of the voltage
dividers are set in a position such that the breakdown voltage of the stabili-
trons is reached at the boundary of the linear sector of the MA control char-
acteristic. The generator commutates the transistor such that the voltage
pulses of the two MA reach the load one after the other. When $U_y = 0$, these
voltages are equal, as the resulting voltage across the load is equal to zero.
When U_y is increased, the output voltage of one MA increases and the amplifier
operates in the area of positive internal feedback. During this time, the
other MA enters the area of negative feedback and the minimum voltage appears
at its output. The resulting mean voltage across the load increases in
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USSR

ANKHIMYUK, V. L., YAKOVITSKIY, E. F., USSR Author's Certificate No 291311,
Filed 2/06/69, Published 22/04/71.

UDC 621.318.435.3

porportion to U_y (the nonlinearities in the lower zone of the control charac-
teristics are mutually compensated). At a certain U_y, the output voltage of
the MA reaches the voltage at which the stabilitron breaks down and, with a
further increase in U_y, holds the transistor in the open state. Generation
is interrupted. The first MA operates with the load, and the second MA is dis-
connected from the load and operates at the idle with negative feedback. The
circuit allows reversing of operation with an efficiency practically equal to
the efficiency of a nonreversing MA. The control characteristic passes
through zero. The semiconductor valves (transistors) operate in the switch-
ing mode at low voltage and create practically no power losses. The opera-
tion in the upper portion of the characteristic (high powers) occurs as in a
nonreversing circuit through the saturated transistor, which in this case can
transmit many times more power. 4 Figures.

3/3

USSR

BOGDANOV, S. V., YAKOVKIN, I. B., Institute of Semiconductor Physics of the Siberian Department of the USSR Academy of Sciences, Novosibirsk

"Optical Properties of an Isotropic Solid Halfspace with a Surface Wave"

Abstract: A series of papers have appeared previously on the interaction of surface waves in a solid state with coherent light, and the possibility of measuring such characteristics of the surface wave as the amplitude and propagation rate was demonstrated. The distribution of the dynamic deformations in the surface layer of the solid state are now investigated for a more complete characterization of the acoustic properties of the surface. The results of a theoretical and experimental investigation are presented. The presence and nature of deformations in the surface wave were checked experimentally using the volumetric diffraction in the wave. The polarization properties of the irised and unirised light beams were also investigated. The ratio of the light intensities in the irised beam I_1 and the intensity in the zero beam I_0 were measured moving the light beam from the surface into the substrate. The fluctuations of I_1/I_0 at great depth indicates that in the volume of the substrate there are either volumetric waves or "tails" of deformations of the surface wave

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USSR

BOGDANOV, S. V., et al., Akusticheskiy Zhurnal, Vol XVIII, No 1, 1972, pp 130-133

(the fluctuation amplitude of I_1/I_0 is on the order of $10^{-5}-10^{-6}$). The polarization of the basic beam is colinear with the polarization of the incident beam, and that of the irised beam is orthogonal to the polarization of the incident beam which indicates that in the region of the first order of diffraction, the interacting light beams are π out of phase. For small excitation voltages with respect to the angle of diffraction the surface wave velocity was measured. It was $3.29 \cdot 10^5$ cm/sec, and this value coincides with the calculated value.

2/2

YAKOVKIN, I. B

YAKOVKIN, I. B.

electromagnetic wave

INTERFERENCE EFFECTS IN OPPOSING-ROD (ELECTRODE) CONVERTERS OF ULTRASONIC SURFACE WAVES

UDC 534.232-8

The most effective means of converting electromagnetic energy into ultrasonic surface waves (USW) is the counter-rod type converter [figure 1]. Theoretical examination of the operating principle of this device is presented in [1, 2]. Experiments aimed at determining the characteristics of various forms are described in [3]. The unidirectional emitter was examined in [4].

Contacts for external connection
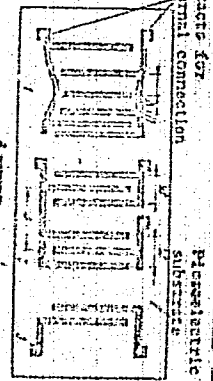
Piezoelectric substrate

Figure 1. 1 -- converter with arbitrary spacing between electrode and variable electrode length; 2 -- unidirectional converter; 3 -- elementary converter.

Presented in this report is a theoretical assessment of the frequency characteristics of the examined instrument as a function of electrode configuration, and caused by the interference effect. The following considerations are employed. The resulting USW field is the sum of fields from the elementary emitters comprising the converter. It is assumed that the emitted surface wave is recorded by the converter with a band exceeding that of the

- 1 -

[I - USSR - E]

USSR .   UDC 534.232-8

KOVALEV, A. V., YAKOVKIN, I. B.

"Interference Effects in Interdigital Ultrasonic Surface-Wave Converters"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 8, Aug 71, pp 1521-1523

Abstract: The frequency properties of an interdigital ultrasonic surface-wave converter are evaluated as a function of the configuration of the electrodes and induced by the interference effect. The resultant ultrasonic surface-wave field is assumed to be the sum of the fields of the elementary radiators which comprise the converter. It is further assumed that the emitted surface wave is registered by a converter with a band which exceeds that of the radiator, the transverse dimension of this converter being sufficient to capture all the acoustic flux. It is shown that accounting for interference effects in interdigital ultrasonic surface-wave converters enables determination of the frequency band and the shape of the frequency response, as well as the configuration of electrode arrangement and the length of the electrodes as a function of a predetermined frequency response.

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USSR

UDC 621.378.385

GUDZENKO, L. I., NEZLIN, M. V., and YAKOVLENKO, S. I.

"Recombination Laser Using a Supercooled Plasma Generated in Stationary Form by an Electron Beam"

Abstract: A supercooled plasma is here defined as a plasma whose free electron temperature is less than the thermodynamically balanced one. The upper operating level must then be filled by the electron recombination flow "draining" through atomic or ionic coupled states. This paper considers the possibility of practically creating an intensive recombination quasi-stationary or stationary plasma by introducing a strong electron beam into a dense gas with an atomic concentration of $10^{19}/cm^3$, the electron energy being 100 kev in a current density of 10-100 amp/cm^2, and thereby designing a continuous plasma laser system with a stationary state of electron supercooling. The nature of the formation of the free electron energy distribution in a stationary dense gas by the electron beam is discussed from a qualitative standpoint. It is noted that a detailed theory taking into account kinetic leveling cannot be constructed until reliable and complete information of the probabilities of collision transitions is available.

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GUDZENKO, L. I., YAKOVLENKO, S.;.I., Physics Institute imeni P. N. Lebedev,
Academy of Sciences of the USSR, Moscow

"A Plasma Laser Based on Molecular Electron Transitions"

Abstract: The authors investigate the possibilities of amplifying stimulated
emission in a dense recombining plasma on transitions from thermally stable
electron-excited states of the molecules to lower lying dispersion or unstable
states. The amplification factor is determined for such a plasma laser based
on molecules such as He_2, Ne_2, Hg_2, NeXe, etc., assuming that the ground state
of the molecule is a dispersion state. Formulas are derived for the ampli-
fication factor when the lower oscillatory levels of the electron term of the
excited molecule are projected on steep and flat segments of the dispersion
term. These expressions do not involve the probability of radiation tran-
sition between laser levels, in as much as it is assumed that the population
of the upper level is proportional to this probability. It is found that
amplification sufficient for realizing feedback can be attained. The ampli-
fication factor can be increased by using an active medium in which the
molecules have a thermally unstable ground state.
1/1

USSR

UDC: 621.373:530.145.6

GUDZENKO, L. I., YAKOVLENKO, S. I.

"A Vacuum-Ultraviolet Laser"

Translation: A theoretically simple example is given of amplification by
Be II ions on the transition $3S \rightarrow 2P$ ($\lambda = 1776$ Å). Transitions to levels
$n = 3$ and $2P$ from lower levels may be disregarded, and it may be assumed
that the density of cold electrons is high. A. K.

1/1

1/2   038   UNCLASSIFIED   PROCESSING DATE---30OCT70
TITLE--EXPERIMENTAL STUDY OF OXIDATIVE PROCESSES IN THE CRYSTALLINE LENS
 -U-
AUTHOR-(02)-YAKOVLEV, A.A., MOROZOV, V.I.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK OFTAL'MOLOGII, 1970, NR 3, PP 68-73

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--OXIDATION, OPTIC LENS, PLATINUM ELECTRODE, RABBIT, ALKALOID,
  DRUG EFFECT, METABOLISM, ADENOSINE TRIPHOSPHATE, EYE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0119   STEP NO--UR/0357/70/000/003/0068/0073

CIRC ACCESSION NO--AP0129375
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0129375   UNCLASSIFIED   PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS DEVISED A METHOD OF
IMPLANTING A THIN PLATINUM ELECTRODE INTO THE EYE LENS OF THE RABBIT
WITH ITS TRANSPARENCY PRESERVED FOR A LONG TIME. THE PROCEDURE ENABLES
OXIDATIVE PROCESSES IN THE CRYSTALLINE LENS TO BE STUDIED
POLAROGRAPHICALLY IN A CHRONIC EXPERIMENT. A TOTAL OF 20 TESTS ON 3
RABBITS WERE CARRIED OUT. IN THE LENS THE OXIDATIVE PROCESSES PROCEED
AT A MUCH SLOWER RATE THAN IN OTHER EYE TISSUES (THE IRIS, CILIARY
BODY). THE INTENSITY OF THE OXYGEN EXCHANGE IN THE LENS APPROACHES THE
RATE AT THWICH THE PROCESS PROCEEDS IN THE HUMOR OF THE ANTERIOR
CHAMBER. PILOCARPINE AND PHOSPHACOL INHIBIT THE PROCESS OF OXYGEN
UTILIZATION IN THE LENS. UNDER THE EFFECT OF MYOTICS THE COEFFICIENT OF
OXYGEN UTILIZATION DECREASED ON THE AVERAGE BY 40PERCENT IN THE CASE OF
PHOSPHACOL AND BY 100PERCENT, IN THAT OF PILOCARPINE. BY ACTIVATING
METABOLIC PROCESSES IN THE LENS ATP RAISES THE COEFFICIENT OF OXYGEN
UTILIZATION BY AN AVERAGE OF 33PERCENT. TO NORMALIZE METABOLIC
PROCESSES IN THE LENS DISRUPTED BY MYOTICS IT IS EXPEDIENT THAT AN ATP
SOLUTION BE INSTILLED TOGETHER WITH THE LATTER.   FACILITY: OTDEL
EKSPERIMENTAL'NOGO IZUCHENIYA GLAUKOMY MOSKOVSKOGO NAUCHNO-ISSLED.
INSTITUTA GLAZNKH BOLEZNEY IM. GEL'MGOL'TSA.

UNCLASSIFIED

1/2   008   UNCLASSIFIED   PROCESSING DATE--11SEP70
TITLE--THE ROLE OF STREPTOCOCCAL CARRIER STATE IN THE DEVELOPMENT OF
   RHEUMATISM AND ITS RELAPSES AMONG THE INHABITANTS OF RURAL LOCALITIES
AUTHOR--BOBYLEV, V., KURMAYEVA, M., YAKOVLEV, A.

COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 2, PP 55-58

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--STREPTOCOCCUS, RHEUMATIC DISEASE, RESPIRATORY SYSTEM DISEASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/1781   STEP NO--UR/0504/70/042/002/0055/0058

CIRC ACCESSION NO--AP0101828
--------------------------------UNCLASSIFIED

CIRC ACCESSION NO--AP0101828

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESULTS ARE GIVEN OF   -
EXAMINATION OF 382 INHABITANTS OF RURAL LOCALITIES FOR STREPTOCOCCAL
CARRIER STATE. OF THIS NUMBER 121 HAD RHEUMATISM, 37 CHRONIC
TONSILLITIS, 10 INFECTIOUS NONSPECIFIC POLYARTHRITIS AND 214 PERSONS
WERE PRACTICALLY HEALTHY. THE DATA OBTAINED SHOWS THAT THE
STREPTOCOCCAL CARRIER STATE IN THE PHARYNX OF HEALTHY INDIVIDUALS
REACHED 22.9 PLUS OR MINUS 9.08PERCENT, IN PATIENTS WITH RHEUMATISM 40.5
PLUS OR MINUS 14.11PERCENT, WITH CHRONIC TONSILLITIS 37.8 PLUS OR MINUS
PLUS OR MINUS 25.21PERCENT. HEMOLYTIC STREPTOCOCCUS OF GROUP A WAS
DETECTED MOST COMMONLY ESPECIALLY IN PATIENTS WITH RHEUMATISM. THE
HEMOLYTIC STREPTOCOCCUS WAS MORE FREQUENTLY DETECTED IN MEMBERS OF A
RHEUMATIC FAMILY (53.5 PLUS OR MINUS 18.75PERCENT) THAN IN HEALTHY
INDIVIDUALS (20.0 PLUS OR MINUS 5.97PERCENT). A HIGH PROPAGATION OF
HEMOLYTIC STREPTOCOCCUS IN PATIENTS WITH RHEUMATISM AND INTENSIVE
STREPTOCOCCAL SURROUNDING IN RHEUMATIC FAMILIES REQUIRE A MORE PROLONGED
AND PERSISTENT BICILLIN PROPHYLAXIS, EVEN TO BE CONDUCTED ALL YEAR
ROUND.

USSR

YEGOROV, L. R., ZORIN, V. M., KON'KOV, Yu. A., YAKOVLEV, A. B.

"A Pneumatic Analog Signal Converter"

Translation: This Author's Certificate introduces a pneumatic analog signal converter which contains a "nozzle-baffle" unit with free baffle in a stable suspended state above the nozzle, which is connected to the input channel. As a distinguishing feature of the patent, the functional possibilities of the device are extended by equipping it with additional nozzles which are connected to a signal source and by locating the openings of the additional nozzles between the input nozzle and the edge of the throttling surface of the "nozzle-baffle" unit.

1/1

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USSR

ADAMENKO, A. I., ROLIK, A. I., PAVLOV, L. V., SHKIL'KO, G. YA., YAKOVLEV, A. I.

"Procedure for Manufacturing Stators for AC Electric Motors"

USSR Author's Certificate No 370697 (from Otkrytiya, Izobreteniya, Promyshlen-nyye obraztsy, Tovarnyye znaki (Discoveries, Inventions, Industrial Models, Trademarks, No 11, 1973, page 171)

Translation: This method of manufacturing stators for AC electric motors by which the winding is placed in the gap of a nonmagnetic electrically conducting mount, the mount is inserted into a hollow in the stator setting it by the grooves opposite the stator grooves, an electric pulse is fed to the winding to create a magnetic field pulling the winding into the stator grooves is distinguished by the fact that in order to decrease the forces required to throw the winding from the mount into the stator and increase the productivity of labor, the grooves of the stator and the mount are made open and arranged in parallel for each pair of poles of the planes, and the conductors of the winding are shaped in advance into a coil group with calibrated grooved parts and with soft frontal parts.

1/1

ELECTRICAL ENGINEERING
Equipment

USSR

UDC 621.318.1(049)

ADAMENKO, A. I., Doctor of Technical Sciences, TROITSKIY, V. A., Candidate of
Technical Sciences, YAKOVLEV, A. I., Candidate of Technical Sciences

"Application of Magnetodielectrics in Electric Machines"

Moscow, Elektrotekhnika, No 3, 1971, pp 59-60

Abstract: This article contains abstracts of reports given at the plenary
session of the electric machine section of the Ukrainian NTO i EP on the prob-
lems of using magnetodielectrics in electric machines held in November 1970
at the Institute of the Electrodynamics of the Ukrainian SSR Academy of Sciences
in Kiev. The following topics were discussed in the reports: the state of the
art and prospects for development of magnetodielectrics in the USSR and ex-
perience in applying these materials in electric machines, the possibility of
obtaining magnetodielectrics with high magnetic and dielectric indexes, the
study of magnetodielectric materials and their industrial application for
magnetic wedges, several types of free-phase and single-phase salient pole
asynchronous electric motors with open slots magnetically encapsulated with
FMDM [ferromagnetic dielectric mass based on furane-epoxy resin and powdered
iron with different technological additives] and interchangeable coils with

1/2

USSR

ADAMENKO, A. I., et al., Elektrotekhnika, No 3, 1971, pp 59-60

ordered stacking of conductors, industrial introduction of a developed proc-
ess for manufacturing magnetic wedges from FMDM, applications of these wedges,
industrial testing of experimental models of different motors with magnetic
wedges, and practical utilization of integrally molded magnetic circuits made
of magnetodielectrics in direct and alternating current micromachines. In
the resolutions of the session, it was recommended that magnetodielectrics,
especially for the manufacture of FMDM magnetic wedges, be introduced broadly.

2/2

USSR

UDC: 551.596+534-143

YAKOVLEV, A. N.

"Results of an Experimental Investigation into the Statistical Characteristics of Signal Reverberation in a River Storage Tank"

Moscow, V sb. Tezisy dokl. 3-y Vses. shkoly--seminara po stat. gidroakustike, 1971 (Theses of Reports, Third All-Union School--Seminar on Statistical Hydro-acoustics, 1971--collection of works) 1972, pp 61-68 (from RZh--Fizika, No 4, 1973, Abstract No 4Zh647)

Translation: The results of the statistical processing of river reverberation oscillations (R) are analyzed. Information is given regarding its statistical and energy characteristics, and expressions are found for the inverse disper-sion coefficient as a function of several factors, with the specific character-istics of river storage tanks taken into account. The investigations were con-ducted on the Ob River during the summer-autumn navigation period in the course of tests of an experimental river sonar trawl. The complex of control-measurement equipment and the method of experimentation and processing of the R-signal envelopes obtained to determine the characteristics of the stationary component are described. Results of the correlation analysis are given. Pro-cessing of the numerous oscillograms permitted analysis of the R level as a

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YAKOVLEV, A. N., Tezisy dokl. 3-y Vses. shkoly--seminara po stat. gidroakustike, 1971 (from RZh--Fizika, No 4, 1973, Abstract No 4Zh647)

function of the time (distance), the radiated power, and the pulse duration. The values of the various types of inverse dispersion coefficients of R were determined. The results obtained for the Ob River are apparently of a general nature, since, for many plains rivers in the USSR, the variation in hydrologi-cal characteristics is qualitatively the same. Information regarding the statistical and energy characteristics of river R is of practical interest because of the specific peculiarities of river tanks and in connection with the wide introduction of hydroacoustical systems into river transportation. L. V. Tikhomirova

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USSR

.UDC 534.1

PISARENKO, G. S., LI, V., and YAKOVLEV, A. P., Kiev,
Institute of the Problems of Strength, Academy of Sciences
UkrSSR

"To the Problem on the Investigation of the Influence of
Correlations of Geometric Dimensions of a Cantilever Plate
on the Plate-Like Forms of Vibrations"

Abstract: An experimental investigation was made of the influence
of the length to width ratio of a cantilever plate of constant
thickness and rectangular cross-section on the ordinal number
of the natural frequency at which the lowest plate-like form of
vibrations develops. The installation, the method, and the re-
sults of the experimental determination of natural frequencies
and plate-like vibrations are described. On the basis of expe-
rimental data, the dependence was established of the ordinal
number of natural frequency of the lowest plate-like form of vi-
brations on the length to width ration of the plate. In depen-
dence from this ratio, the position of the lowest plate-like
form in the total spectrum of natural vibration forms of a can-
tilever plate can be determined from a suggested empirical for-
mula. Two figures, one table, six bibliographic references.

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USSR

UDC 539.67:620.178.311.6

YAKOVLEV, A. P., Institute of Strength Problems, Ukrainian SSR Academy of Sciences (Kiev)

"Investigation of the Damping Properties of Prismatic Rods With a Regularly In-homogeneous Macrostructure. Memorandum I"

Kiev, Problemy Prochnosti, No 11, Nov 73, pp 26-30

Abstract: Results are presented of an experimental investigation of the energy dissipation during the flexural oscillations of prismatic rods with round openings filled with a material possessing high damping capability. Such a construction may be regarded as a material with a regular homogeneous macrostructure or as a form of combined material. It is found that the level of the damping capability of such a combined material is much greater (sometimes by an entire order of magnitude) than the damping capacity of an integral material.

An analysis is conducted of the factors that affect the value of the energy dissipation during the oscillation of rods of this kind with a regularly inhomogeneous macrostructure.

6 figures. 2 tables. 4 references.

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USSR

UDC 539.67:620.178.311.6

YAKOVLEV, A. P., Institute of Strength Problems, Ukrainian SSR Academy of Sciences (Kiev)

"Investigation of the Damping Properties of Prismatic Rods With a Regularly Inhomogeneous Macrostructure. Memorandum II"

Abstract: A description is given of experimental study of the influence of the volumetric content of a filler possessing a high damping capability, namely bismuth, upon the energy dissipation during the flexural oscillation of prismatic specimens of steel 45 with round through openings. It is shown that in relation to the volumetric content of the filler, the oscillation decrement for such specimens changes not only due to the number of the openings, but also to their diameter.

The calculated values of the oscillation decrement, obtained in accordance with the rule of mixtures, turned out to be as much as three times smaller than the experimental value; this is an indication of the necessity for dealing with additional factors that affect the energy dissipation in such combined materials.
The obtained results can be useful in the study of the damping properties
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YAKOVLEV, A. P., Problemy Prochnosti, No 11, Nov 73, pp 31-34

of other materials with a regularly inhomogeneous macrostructure, for example
high-strength iron with spherical graphite.
      5 figures.

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USSR

UDC 669.725:621.77

SMIRNOV, V. S., YAKOVLEV, V. P., and ALEKSANDROV, A. A.

"Rolling of Beryllium in Vacuum"

Moscow, Tsvetnyye Metally, No 3, 1973, pp 56-57

Abstract: Commercially pure (1.2-1.4% BeO) beryllium samples heated to 550-
950°C were rolled in vacuum (2-5·10⁻⁵ mm Hg) on a reversing rolling mill with
a rolling rate of 0.1-0.76 m/sec. First cracks appeared on samples when the
reduction in area reaches 3-5% and a complete rupture was followed when the
reduction in area was higher. Individual samples heated to 850°C sustained the
reduction in area up to 30% without rupturing when rolled with 0.76 m/sec.
However, the majority of samples were badly deformed when rolled with 0.76 m/sec.
Cracks appeared on both the contact and side surfaces of samples during roll-
ing. When a preliminary heating temperature was low, cracks appeared at first
on side surfaces, but samples heated to 900°C developed cracks on contact sur-
faces with rolls. This was attributed to a very rapid cooling of the surface
layer of metal contacted with cold rolls. In order to eliminate it, molybdenum
lining 2 mm thick was used on both sides of the samples; the lining was heated
together with the samples. Rolling of samples in molybdenum lining did not
produce any cracks on the contact surfaces. Cracks and ruptures in this case
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USSR

SMIRNOV, V. S., et al, Tsvetnyye Metally, No 3, 1973, pp 56-57

appeared on the side surfaces at any rolling temperature. The plasticity
maximum of beryllium rolled in molybdenum lining was shifted toward lower
temperatures compared with rolling without linings. The average metal pressure
on rolls decreased from 28 to 10 kg/mm^2 when samples were heated from 650 to
950°C. The average deformation rate of beryllium during rolling amounted to
10 sec^{-1}. The friction coefficient of beryllium rolled in vacuum increased
with temperature and reached 0.5 at 950°C.

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USSR

UDC 534.282:621.002.3

YAKOVLEV, A. P., Institute of Strength Problems, Academy of Sciences
Ukrainian SSR

"Damping Properties of a Composite With Unidirectional Continuous Fibers"

Kiev, Problemy Prochnosti, No 3, Feb 73, pp 60-64

Abstract: The author considers the damping capability of a composite material,
consisting of continuous unidirectional fibers and a solid matrix, under the
action of repeated-variable tension-compression along the fibers. Two assump-
tions were made: 1) bonding of the fiber with the matrix is ideal (slipping
is absent); and 2) the fiber and matrix are elastically deformed. Nomograms
were plotted making it possible to prognosticate the values of the charac-
teristics of energy dissipation of the composite material according to the
characteristics and volume percentages of the constituents. 5 figures, 7
bibliographic references.

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USSR

LIVSHITS, B. G., NIKOLAYEVA, V. N., TSVILING, M. Ya. and YAKOVLEV, A. P.,
Moscow Institute of Steels and Alloys

"Structure of YuNDK35T5BA Alloy Following Hot Forming and Heat Treating"

Abstract: The purpose of this study was to find a way of hot forming
YuNDK35T5BA alloy without disrupting its initial grain orientation $< 100 >$.
The experiment involved specimens (with columnar crystals) of alloys of two
compositions.

No. of Alloy	Method of Melting	Co	Ni	Al	Cu	Ti	Nb	S	Ce	Fe
1	In vacuum	35.0	14.5	7.2	3.5	4.5	1.0	0.15	0.1	Remainder
2	In air	35.0	14.5	7.2	3.5	5.0	1.0	0.2	-	"

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LIVSHITS, B. G., et al., Izvestiya vysshikh uchebnykh zave ciny, Chernaya metallurgiya, No 3, 1972, pp 132-134

The microstructure of the specimens was examined following hot forming and heat treating at 810, 650, and 550°C. Both temperature and time specifications have been determined for the YuND35T5BA alloy to effect a single-phase state. The initial orientation $\langle 100 \rangle$ appears to be adequately retained after complete treatment for high coercivity. (3 illustrations)

USSR

UDC 539.67

KRIVONOGOV, G. S., MATVEYEV, V. V., ALEKSEYENKO, M. F., LIVSHITS, B. G., and YAKOVLEV, A. P.

"Certain Regularities of Magnetic Hysteresis in Stainless Martensite Class Steels"

Sb. "Vnutrenneye treniye v metallicheskikh materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 170-175

Abstract: The effect of temperature and static stresses on the magnitude of hysteresis losses in stainless steels of the martensite class, related mainly to the process of irreversible displacements of 90° domain walls, is studied. Expressions are derived for the dependence of damping decrement on temperature, static stresses, and magnetomechanical hysteresis constants. The effect of various heat treatment conditions on magnetomechanical hysteresis is discussed. Good agreement was obtained between experimental and theoretical data. 4 figures, 5 references.

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Acc. Nr: Abstracting Service: 5/70   Ref. Code:
AP0045061   INTERNAT. AEROSPACE ABST.   UR0198

A70-23295 ±   Determination of the vibration decrement of
nonlinear systems of hysteresis type from the resonance curve (K
opredeleniiu dekrementa kolebanii nelineinykh sistem gisterezisnogo
tipa po rezonansnoi krivoi). V. V. Matveev, A. P. Iakovlev, and I. M.
Vasiniuk (Akademiia Nauk Ukrainskoi SSR, Institut Problem
Prochnosti, Kiev, Ukrainian SSR). Prikladnaia Mekhanika, vol. 6,
Jan. 1970, p. 108-112. 6 refs. In Russian.

Study of the possibilities of a method of determining the
vibration decrement of an elastic system from the width of the
resonance peak of the amplitude curve of the displacement. It is
shown that, in addition to the possibility of determining the
vibration decrement when the displacement amplitude of the
investigated specimen is commensurate with the gap between the
electromagnet and the specimen, the proposed method also has the
advantage that the formula for calculating the decrement is
independent of the nonlinearity of the dissipative forces, owing to
the fact that all points of the amplitude curve of the perturbing force
correspond to one and the same displacement amplitude and,
consequently, to one and the same decrement value for any
dependence of the decrement on the amplitude.

A.B.K.

REEL/FRAME
19771974

USSR

UDC 69.057.5

YAKOVLEV, A. S., Engineer

"The Use of Pneumatic Falsework For Forming Channels in Reinforced Concrete
Structure"

Abstract: At the Nal'chik Homebuilding Combine a pneumatic falsework was used
in the form of rubber hoses with an external diameter of 46 mm, and an internal
diameter of 16 mm. This pneumatic sheathing from rubber hoses was used for
the formation of small-diameter channels in electric panels. The basic param-
eters and characteristics providing for reliable operation of the hoses are
presented. A description is given of the falsework device, the process of
channel formation, establishment of the position, and periods for extraction
of the hoses. The technical and economic advantages of the pneumatic false-
work are presented. 3 figures.

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USSR

UDC: 621.396.6-181.5

KRESIN, O. M., STAROS, F. G., YAKOVLEV, A. S.

"A Method of Determining the Temperature Fields of Planar Systems"

Translation: Methods are developed for calculating and analyzing the temperature fields of fuel elements and groups of elements of arbitrary topology. The proposed method is applicable to calculations in thin-film and integrated microcircuits and mosaic circuit assemblies, as well as in designs which utilize ferrite films. Resumé.

1/1

AN0 026668

UR 9003

TITLE-- ANNOUNCEMENT OF THE COMMITTEE ON THE LENIN AND STATE PRIZES

NEWSPAPER-- IZVESTIYA, FEBRUARY 18, 1970, P 3, COLS 1-5

ABSTRACT-- THE COMMITTEE ON THE LENIN AND STATE PRIZES HAS ANNOUNCED THE NAMES OF RESEARCHERS ADMITTED TO THE 1970 LENIN PRIZE COMPETITIONS. THE LIST INCLUDES G. V. NOVOZHILOV, YA. A. KUTEPOV, V. I. SMIRNOV, D. V. LESHCHINER, V. M. SHEYNIN, AND A. A. OVCHAROV FOR THEIR "DEVELOPMENT OF THE INTERCONTINENTAL PASSENGER AIRLINER IL-62", AND A. S. YAKOVLEV, YE. G. ADLER, M. G. BENDERSKIY, K. M. VALIK, AND K. S. KIL'DISHEVA FOR "JET PASSENGER AIRLINER YAK-40 POWERED BY THREE AI-25 ENGINES".

BOTH CANDIDATES WERE NOMINATED BY THE MINISTRY OF AVIATION INDUSTRY.

30

19661717

USSR

UDC: 621.438-226.3

RUDYKO, V. I., YAKOVLEV, A. T.

"A Method of Determining the Frequency Characteristics of the rpm Regulator of a Turbojet Engine"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 5, Feb 73, Author's Certificate No 364856, Division F, filed 5 Apr 71, published 28 Dec 72, p 125

Translation: This Author's Certificate introduces a method of determining the frequency responses of the rpm regulator of a turbojet engine by letting part of the fuel fed to the engine by the regulator bypass to waste in accordance with a periodic law, and recording the rpm and the flowrate of the fuel metered by the regulator. As a distinguishing feature of the patent, accuracy is improved and the range of determination of characteristics is extended by feeding additional fuel to the engine in parallel with the regulator to adjust the latter to a given amplification factor.

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1/2   039
TITLE--EQUATION OF STATE FOR LIQUID MERCURY OBTAINED FROM DIVERSE
    EXPERIMENTAL DATA. II -U-
AUTHOR--YAKOVLEV, A.T.

UNCLASSIFIED   PROCESSING DATE--20NOV70

COUNTRY OF INFO--USSR

SOURCE--TEPLOFIZ. VYS. TEMP. 1970, 8(2), 300-8

DATE PUBLISHED--------70

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