

USSR

ZEGENTI, V. K., et al., Tbilisi, Sochshcheniya Meditsinski Nisak
Gruzinskoy, SSR, Vol 57, No 1, Jan 70, pp 229-232

stored atrophic muscle fibers is due to the failure of trophic
nervous function, which in turn is due to the absence of the pro-
prioceptors that determine the motor function of muscle fibers.

2/2

USSR

UDC 621.3.032.35

KUTUKOV, L. V., MITROFANOVA, N. V., TIMOFEEV, Yu. P., FRIDMAN,
~~S. A., and ORCHAYENKO, V. V.~~

"Using Luminophores to Investigate the Heat in Electronic Circuits"

Moscow, Pribery i Tekhnika Eksperimenta, No. 3, 1971, pp 147-149

Abstract: Although infrared radiometry has been used for investigating thermal situations in electronic circuits, its results are not reliable. The purpose of this paper is to research further the recently applied luminophores for investigating temperature fields in electronic circuitry in printed circuit and integrated circuit form, a method free from many of the deficiencies involved in the use of infrared observations. The experiments described in this paper used as luminophores 5 μ -thick coatings of ZnS, CdS + Ag, and Ni crystal phosphors, which emit visible radiation when excited by ultraviolet light. The intensity of this visible radiation drops sharply with small increases in temperature. Also used were nichrome resistance films covered with a protective layer of SiO. Among other results they obtained, the authors find that this method is convenient for direct visual tests and checks of operating integrated circuits. Curves of the ZnS, CdS + Ag, Ni luminophore sensitivity as a function of the temperature are given. The authors are in the Moscow Physical Institute, Academy of Sciences, USSR.

1/1

USSR

UDC 533.6.011

KUTUKHIN, V. P., FEDOROVA, L. D., EL'GUDINA, B. A.

"Study of the Optimal Form of Lifting Bodies in a Hypersonic Flow"

Uch. zap. Tsentr. Aerogidrodinam. In-ta. [Scientific Writings of Central Institute of Aerodynamics and Hydrodynamics], Vol 3, No 3, 1972, pp 100-106, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 B336).

Translation: A method of direct variation is suggested for determination of the shape of a body of fixed volume with fixed lift, having minimum drag (or a body with maximum aerodynamic quality): the surface of the body is represented by exponential polynomials, the coefficients of which are determined by a system of algebraic equations. The pressure of the flow is determined using Newton's law, the friction resistance -- using a mean coefficient which is independent of the shape of the body. The results are presented from calculations for conical bodies, from which it follows that the angle of attack, read from the plane of the leading edges, changes little with changing lift factor, but the shape of the cross section does change with changing lift factor. The lower surface of the body may be either concave or convex. 9 Biblio. Refs.

1/1

USSR

UDC 621.371:538.569.4 C

ABLYAZOV, V. S., BASHARINOV, A. Ye., GORBLIK, A. G., GORDON, Z. I.,
KALASHNIKOV, V. V., KUTUZA, B. G., MITNIK, L. M., PENYAZ', L. K.,
FROLOV, A. V., and FROLOV, Yu. A.

"Absorption and Radiation of the Atmosphere in the 0.5-10 cm
Range"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tезisy dokl.
(Tenth All-Union Conference on the Propagation of Radio Waves;
Report Theses--collection of works) "Nauka," 1972, pp 3-7 (from
RZh--Radiotekhnika, No 10, 1972, Abstract No 10A309)

Translation: The method and the results of measuring the absorption
and radiation of the atmosphere for waves of 0.5-10 cm and, in par-
ticular, in the absorption bands of oxygen and water vapor, are
given. The measurements were made for the purpose of investigating
the propagation of uhf waves under various meteorological condi-
tions, which were recorded simultaneously with the radio measure-
ments. Curves are given of the attenuation and radio brightness
temperature for rain clouds. Two illustrations, bibliography of
five. N. S.

1/1

5

USSR

UDC 621.317.799:538.569.4

AKVILONOVA, A. B., GORELIK, A. K., KALASHNIKOV, V. V., KRYLOVA,
M. S., KUTUZA B. G., KUKHARSKAYA, N. F., MITNIK, L. M., PUZANOV,
V. A., and FROLOV, Yu. A.

"Measuring the Full Absorption in a Cloudless Atmosphere in the
0.55-0.59 Range"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl.
(Tenth All-Union Conference on the Propagation of Radio Waves;
Report Theses--collection of works) "Nauka," 1972, pp 8-11 (from
RZh--Radiotekhnika, No 10, 1972, Abstract No 10A422)

Translation: Experimental data is given on the full absorption of
radio waves in a cloudless atmosphere in the 0.55-0.59 cm range,
with simultaneous recording of vertical profiles for temperature,
pressure, and humidity at the observation point. Resume

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- 60 -

173 051 UNCLASSIFIED PROCESSING DATE--110670

TITLE--JOINT RADICHERMAL AND RADAR MEASUREMENTS OF THE METEOROLOGICAL
 PARAMETERS OF CLOUDS AND PRECIPITATION -U-

AUTHOR--(04)--BASHARINOV, A.YE., GURELIK, A.G., KALASHNIKOV, V.V., KUTUBA,
 B.G.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA AKADEMII NAUK SSSR, FIZIKA ATMOSFERY I OKEANA, VOL VI,
 NO 5, 1970, PP 526-530

DATE PUBLISHED-----70

SUBJECT AREAS--NAVIGATION, ATMOSPHERIC SCIENCES

TOPIC TAGS--ATMOSPHERIC CLOUD, ATMOSPHERIC PRECIPITATION, RADIO METRY,
 METEOROLOGIC RADAR, DROPLET, RADIOSONDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605041/F02 STEP NO--UR/0362/70/006/005/0526/0530

CIRC ACCESSION NO--AP0142759

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--11DEC70

2/3 031

CIRC ACCESSION NO--AP0142759

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SIMULTANEOUS RADIOMETRIC AND RADAR OBSERVATIONS, COMBINED WITH OTHER METEOROLOGICAL MEASUREMENTS, AS DEMONSTRATED IN THIS ARTICLE, MAKE IT POSSIBLE TO DETERMINE THE MEAN LIQUID WATER CONTENT OF LIQUID DROP CLOUDS. IF THE TOTAL WATER CONTENT IS DETERMINED FROM RADIOMETRIC MEASUREMENTS AND RADAR IS USED IN MEASURING THE EXTENT OF THE DROPLET PART OF THE CLOUD, THE RATIO OF THESE VALUES WILL GIVE THE MEAN LIQUID WATER CONTENT OF THE DROPLET PART OF THE CLOUD IN THE DIRECTION OF MEASUREMENT BECAUSE THE RADIO EMISSION OF THE CRYSTALLINE PART OF THE CLOUD CAN BE NEGLECTED. WITH SIMULTANEOUS MEASUREMENTS OF ABSORPTION IN A CLOUD AT SEVERAL WAVELENGTH IT IS ALSO POSSIBLE TO ESTIMATE THE EFFECTIVE TEMPERATURE OF THE CLOUD. RADAR MEASUREMENTS, TOGETHER WITH RADIOSONDE DATA, GIVE THE TEMPERATURE DISTRIBUTION IN THE CLOUD AND REFINE THE EFFECTIVE TEMPERATURE. RADAR MEASUREMENTS OF THE DROP SIZE DISTRIBUTION CAN BE USED IN AN INTERPRETATION OF THE RADIO BRIGHTNESS TEMPERATURE OF RAIN. JOINT RADAR AND RADIOMETRIC MEASUREMENTS WERE MADE IN 1966 AT PUSHCHINO USING THE RADIOTELESCOPE OF THE PHYSICS INSTITUTE AT WAVELENGTHS 0.88 AND 1.6 CM AND IN 1968 AT KIMRA USING A RADIO TELESCOPE OF THE CENTRAL AERONAUTICAL OBSERVATORY (ANTENNA DIAMETER 3 M) AT THE WAVELENGTHS 0.88 TO 1.35 CM. THE TOTAL TIME OF CLOUD OBSERVATION WAS MORE THAN 120 HOURS. A RADAR SET IN THE 3-CM RANGE WAS USED. THE RADIOMETRIC AND RADAR OBSERVATIONS WERE ACCOMPANIED BY MEASUREMENTS OF THE METEOROLOGICAL PARAMETERS BY RADIOSONDES. IN ADDITION, THE DROP SIZE DISTRIBUTION WAS MEASURED BY SAMPLING ON FILTER PAPER.

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3/3 031

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--APC142759

ABSTRACT/EXTRACT--ALTITUDE OF THE LOWER CLOUD BOUNDARY WAS DETERMINED AND THE RADIO EMISSION OF CLOUDS WAS ASCERTAINED AT WAVELENGTHS 0.8, 1.35 AND 1.6 CM WITH A FIXED ANTENNA WITH MOVEMENT IN AZIMUTH AT A CONSTANT RATE. THE RESULTS OF ALL THESE INTEGRATED OBSERVATIONS ARE GIVEN. THIS EXPERIMENT WITH THE SIMULTANEOUS USE OF THE RADIOASTRONOMICAL AND RADAR METHODS REVEALED THAT THIS APPROACH IS VERY EFFECTIVE IN THE STUDY OF CLOUDS AND PRECIPITATION.

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USSR

UDC 621.317.799:538.569.4

KUTUZA, V. G.

"Variation in the Absorption of Millimeter Waves in a Cloudless Atmosphere from Results of Radioastronomic Measurements of the Sun"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses--collection of works) "Nauka," 1972, pp 66-70 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A423)

Translation: The method and the results of radioastronomical measurements of the time variations for atmospheric absorption at wavelengths of 0.8 and 1.35 cm are given.

1/1

USSR

UDC 621.039.512.45

BASS, L. P., BRODER, D. L., ZHILKIN, A. S., KUTUZOV, A. A., SMETANIN, A. A., SUVOROV, A. P., SHESTOPALOV, Ye. V., SHIPILOV, A. Ye.

"Reactor Neutron Spectra in a Cylindrical Neutron Duct Surrounded by Water"

V sb. Vopr. fiz. zashchity reaktorov (Problems in Reactor Safety Physics -- Collection of Works), No. 5, Moscow, Atomizdat, 1972, pp 123-129 (from RZh-50. Yadernyye reaktory, No 5, May 72, Abstract No S.50.61)

Translation: The energy and spatial distributions of neutrons with energies above 200 kev in an iron cylindrical neutron duct at distances up to 66 cm from its origin are discussed. The experimental data are compared with computational results made by two-dimensional programs using the P_1 -approximation of the spherical harmonics method and the $2D_{10,5}$ -approximation of the characteristic method. The presence of experimental data on the neutron energy spectra makes possible a corrective check on the methods for calculating the parameters of shields of limited transverse dimensions.

7 ill., 8 ref.

1/1

- 46 -

USSR

UDC 621.039.512.4

BRODER, D. L., ZHILKIN, A. S., KUTUZOV, A. A., POPOV, K. K.,
SHESTOPALOV, Ye. V.

"Reactor Neutron Spectra in Water and Iron"

V sb. Vopr. fiz. zashchity reaktorov (Problems in Reactor Safety Physics --
Collection of Works), No. 5, Moscow, Atomizdat, 1972, pp 79-90 (from
RZh-50. Yadernyye reaktory, No 5, May 72, Abstract No 5.50.59)

Translation: The change in the spectrum of the scalar flux of neutrons with
energies above 0.1 Mev in water and iron shields is of interest from the
viewpoint of establishing quantitative characteristics of the attenuation of the
flux by the shielding substance and determining the accuracy of certain
methods for calculating the passage of neutrons, particularly the semi-
empirical method based on calculations of fluxes of intermediate neutrons
in lower approximations of the spherical harmonics method and the assignment
of a group of fast neutrons in accordance with experimental data. 12 ill.,
11 ref.

1/1

USSR

UDC 577.391

ARTSRUNI, G. G., ROMANOV, G. V., KUTUZOV, A. D., and PIRUZYAN, L. A.,
Institute of Chemical Physics, Academy of Sciences USSR, Moscow

"Effect of an Electrostatic Field on the Survival Time of White Nonpurebred Mice After X-Irradiation"

Moscow, Izvestiya Akademii Nauk SSR, Seriya Biologicheskaya, No 3, 1973,
pp 435-438

Abstract: Nonpurebred mice were subjected to whole-body irradiation at 500 r and then placed in a specially designed chamber where they were exposed to an electrostatic field of 1000 v/cm for 1 or 24 hours. More controls were alive 11 days after irradiation than experimental animals, but by day 30 the survival rate of the latter exposed to the electrostatic field for 1 and 24 hours was 27 and 36% higher, respectively. The higher initial mortality is attributed to the early biochemical changes triggered by the electrostatic field. Subsequent intensification of the oxidation-reduction processes prolonged the survival time of the more radioresistant animals.

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USSR

KUTUZOV, B. N., KRYUKOV, G. M., GABDRAKHMANOV, S. B.

"Methods and Results of Experimental Studies of Mechanical Properties of Rock at High Deformation Rates"

Termomekh. Metody Razrusheniya Gorn. Porod. Ch. 1. [Thermomechanical Methods of Rock Destruction, Part 1 -- Collection of Works], Kiev, Nauk. Dumka Press, 1972, pp 28-33, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 V729, by Ye. I. Shenyakin).

Translation: Cylindrical specimens 30-42 mm in diameter and two to four diameters high were studied on an installation for monaxial dynamic deformation of rock at deformation rates $\dot{\epsilon}$ of up to 500 sec^{-1} . The experiments showed that the modulus of elasticity is independent of deformation rate and corresponds to the dynamic modulus determined by the ultrasonic method in the range of change of $\dot{\epsilon}$ from 30 to 500 sec^{-1} . It was established that, in contrast to the modulus of elasticity, the strength characteristics of rock depend significantly on the deformation rate. With $\dot{\epsilon} = 500-600 \text{ sec}^{-1}$, the strengths of the rocks studied in monaxial compression increased by 5-7 times over their static values, reaching approximately $0.01 E_2$; the rise rate of strength decreases with increasing deformation rate. 6 Biblio. Refs.
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USSR

KUTUZOV, G. P., ZOSIMOVSKAYA, T. V., KANYGIN, Yu. I.

"Herbicides in Feed Production"

Gerbitsidy v Kormoproyizvodstve [English Version Above], Moscow, Rossel'khozizdat Press, 1971, 144 pages (Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No 3 N676 K by T. Belyayeva).

Translation: This book discusses problems related to the use of herbicides for destruction of weeds in hay fields and pastures, and factors influencing the toxicity of herbicides.

1/1

USSR

UDC 621.396.6-181.5

KUTUZOV, O. I., POPKOV, O. I.

"On a Method of Estimating Power When Designing a Microcircuit for
Commutating and Conversion Devices in Multichannel Telemetry Systems"

Tr. Lenigr. in-t aviats. priborost. (Works of the Leningrad Institute
of Aircraft Instrument Building), 1971, vyp. 70, pp 327-339 (from Elektr.
-Radiotekhnika, No 8, Aug 71, Abstract No 8V237)

Translation: This paper considers a method of evaluating the power
dissipated in a microcircuit with regard to the statistical scatter of
determining parameters. Resumé.

1/1

1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--A RIVER STRONG MAN -U-
AUTHOR--KUTUZOV, V.
COUNTRY OF INFO--USSR *K*
SOURCE--IZVESTIYA, JULY 24, 1970, P 6, COL 5
DATE PUBLISHED--24JUL70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--SHIPBUILDING ENGINEERING, SHIPYARD, HARBOR TUGBOAT/(U)MARSHAL
BLYUKHER TUGBOAT

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/0543 STEP NO--UR/9003/70/000/000/0005/0006
CIRC ACCESSION NO--AN0122664

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AN0122664

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RYBINSK SHIPBUILDING PLANT HAS COMPLETED THE CONSTRUCTION OF A 4,000 HP RIVER TUGBOAT, THE "MARSHAL BLYUKHER". IT WILL BE ABLE TO TOW BARGES WITH TOTAL DISPLACEMENT OF 12,000 TONS.

UNCLASSIFIED

UDC 632.95

USSR

MANDEL'BAUM, Ya. A., LOMAKINA, V. I., KUTUZOVA, L. R.

"A Method of Synthesizing Dialkyl 1-Aryl-2-chlorovinyl Phosphates"

USSR Author's Certificate No 289732, filed 28 Jul 69, published 22 May 72
(from RZh-Khimiya, No 9, May 73, abstract No 9N494 by N. V. Lebedeva)

Translation: Compounds of the general formula $(RO)_2P(O)OC(R')=CHCl$ (I) (R = alkyl; R' = chlorine-substituted or bromine-substituted Ph) are synthesized by reacting $(RO)_2P(O)Cl$ (II) with compounds of the formula $ClCH_2C(O)R'$ (III) in inert organic solvents in the presence of alkaline agents with a yield of up to 85%. Example. 0.1 mole of II (R = Me) is added to 0.2 mole of finely crushed NaOH in 300 ml of ether. The mixture is heated to boiling, and a solution of 0.1 mole of III (R' = 2,4,5-Cl₃C₆H₂) in ether is slowly added. The reaction mass is boiled for 4 hours, allowed to stand for ~16 hours, filtered, evaporated, and compound I (R = Me, R' = 2,4,5-Cl₃C₆H₂) is produced with a yield of 83%, melting point 94-5°. By a similar method compound I is produced (R = Et, R' = 2,4,5-Cl₃C₆H₂) with a yield of 56%, melting point 77-78.5°. These compounds can be used as insecticides.

1/1

- 27 -

USSR

UDD 881.385:382.21

K
MCSTOVSKIY, A.A., LAPUSHINA, L.V., KUTKOVA, T.D., KAZANEVICH, G.A.

"Photoelectronic Receiver With Semitransparent Photocathode"

USSR Author's Certificate No 252455, Filed 9 Nov 62, Published 9 Mar 70 (from
RZh--Elektronika i yeye primeneniya, No 10, October 1970, Abstract No 10A201F)

Translation: A method is proposed for increasing the sensitivity of semitransparent photocathodes by use of the phenomenon of total internal reflection with the aid of an external prism of the same material as the substrate of the photocathode.
N.S.

1/1

USSR

UDC: 621.372.852

MESHCHANOV, V. P., NIBIRSKIY, Yu. V., and KUTUZOVA, Ye. N.

"Directivity of Band Couplers With Inner Circular Conductors"

Elektron. tekhnika. Nauchno-tekhn. sb. Kontrol'no-izmerit. apparatura (Electronic Engineering, Scientific-Technical Collection, Control and Measurement Equipment) 1970, No. 3(21), pp 154-157 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 5B153)

Translation: A method is considered for improving the directivity of the coupler with ribbon lines and inner circular conductors, involving the connection of grooved line sections between standard conducting coaxial lines and the coupling region. Computations of the coupler are given. The results of the computation are confirmed by the experimental data. Three illustrations, three tables, bibliography of three. K. S.

1/1

USSR

UDC: 681.325.3

KUTYATINA, V. N., KOSINSKIY, A. V., RUBINA, V. B."An Angle-to-Code Converter"

USSR Author's Certificate No 332487, filed 28 May 69, published 29 Apr 72
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, Jan
73, abstract No 1B472 P)

Translation: An angle-to-code converter is proposed which contains a phase shifter, pulse generator, coincidence gate, and two null indicators, the input of the first being connected to the input terminals of the device directly, while the input of the second null indicator is connected to the input terminals of the device through the phase shifter. The outputs of the null indicators are connected respectively to the first input of the main flip-flop and to the input of a counter. To reduce the frequency error, the converter contains an additional flip-flop, two switches, a peak detector, and a filter. The filter output is connected to one of the inputs of the second null indicator, the output of this null indicator being connected to one of the inputs of the additional flip-flop. The second input of the main flip-flop is connected to the output of

1/2

USSR

KUTYATINA, V. N. et al., USSR Author's Certificate No 332487

the flip-flop for the last digit of the counter, and the other input of the additional flip-flop is connected to the output of the first null indicator. The outputs of the flip-flops are connected to the controlling inputs of the corresponding switches. The controlled input of one switch is connected to one of the input terminals of the device, and the output is connected to the input of the peak detector. The output of the peak detector is connected to the controlled input of the other switch, the output of this switch being connected to the filter input.

2/2

1/2 025 UNCLASSIFIED PROCESSING DATE--10R0V70
TITLE--THE CLINICO RADIENCOLOGICAL PICTURE IN POSTOPERATIVE VENTRAL
HERNIA -U-
AUTHOR--KUTYAVIN, L.I. R
COUNTRY OF INFO--USSR
SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 40, NR 6, PP 113-115
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--GASTROINTESTINAL SYSTEM, SMALL INTESTINE, SURGERY, RADIOGRAPHY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REF/FRAPL--3002/1737 STEP NO--08/0497770/0481006/0113/0115
CIRC ACCESSION NO--AP017115

2/2 025

UNCLASSIFIED

PROCESSING DATE--2000/07/0

CIRC ACCESSION NO--AP0120155

ABSTRACT/EXTRACT--(U) OP--C- ABSTRACT. CLINICALLY AND ROENTGENOLOGICALLY THE AUTHOR INVESTIGATED THE STATE OF THE GASTROINTESTINAL TRACT IN 49 PATIENTS WITH POSTOPERATIVE HERNIAS OF THE ANTERIOR ABDOMINAL WALL. DEFINITE FUNCTIONAL AND MORPHOLOGICAL CHANGES OF THE ENTIRE GASTROINTESTINAL TRACT WERE REVEALED. FUNCTIONAL ALTERATIONS WERE MANIFESTED BY DECELERATED PASSAGE OF THE CONTRAST MEDIUM, IRREGULAR FILLING OF THE INTESTINE, ACCUMULATION OF GASES IN THE SMALL INTESTINE. MORPHOLOGICAL CHANGES WERE CHARACTERIZED BY REORGANIZATION OF THE MUCOUS FOLDS. THERE EXISTED A RELATIONSHIP BETWEEN THE DEGREE OF FUNCTIONAL AND MORPHOLOGICAL SHIFTS IN THE GASTROINTESTINAL TRACT, AND THE SIZE OF HERNIA, WIDTH OF THE HERNIAL OPENING AND DURATION OF THE DISEASE.
FACILITY: KLINKA ODSHOEY KHIRURGII IZHEVSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

K

UDC 621.396.671.624.074

3

USSR

SOKOLOV, A. Ye., USANOV, A. P., SHAPIRO, A. Z., D'YACHKOV, V. K., KUTYAYKIN, V. A.
MURKHI, G. L., NARYSEKOV, V. M.

"A Device for Suspension of the Primary Radiating Element of Rotating Antennas"

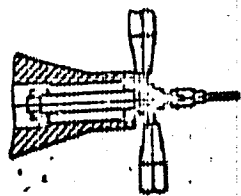
Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 6,
1970, p 41, patent No 262198, filed 20 May 68

Abstract: This Author's Certificate introduces a device for suspension of the primary radiating element of a rotating antenna. The unit contains a girder designed for holding the radiating element. This girder is fastened to the reflector or antenna array by means of rod supports equipped with hinges. As a distinguishing feature of the patent, the effect which deformations of the elastic elements in the device have on the electrical properties of the antenna is reduced by connecting the girder to the rod supports by means of bearings, and connecting it to the reflector or antenna array by means of additional guys. The connection lines of the points of fastening of the guys to the reflector or antenna array and to the girder form parallelograms.

1/2

USSR

SOKOLOV, A. Ye., et al., Otkrytiya, Izobreneniya, Promyshlennyye Obratsy,
Tovarnyye Znaki, No 6, 1970, p 41, patent No 262198, filed 20 May 68



2/2

USSR

UDC: 621.396.67:624.97(088.8)

3

SOKOLOV, A. Ye., USANOV, A. P., SHAPIRO, A. Z., D'YACHKOV, V. K., KUTYAYKIN, V. Ya., MUROKH, G. L., NARYSHKOV, V. M.

"A Device for Suspending the Radiating Element of Rotating Antennas"

USSR Author's Certificate No 262198, filed 20 May 68, published 3 Jun 70
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11B77 P)

Translation: This Author's Certificate introduces a device for suspending the radiating element of rotating antennas. The device contains a girder designed for fastening the radiating element, this girder being fastened to the reflector or antenna array by rod supports equipped with hinges. In order to reduce the effect which deformations of the elastic elements have on the electrical parameters of the antenna, the girder is connected to the rod supports through bearings, and to the reflector or antenna array through auxiliary guys, the lines which connect the points of fastening of these guys to the reflector or antenna array and to the girder forming a parallelogram. Two illustrations. Resumé.

1/1

15

USSR

UDC 547.341

ISHMAYEVA, E. A., KUTYREV, G. A., and PUDOVIK, A. N., Kazan' State University
imeni V. I. Ul'yanov-Lenin

"Dipole Moments of Some Vinyl Derivatives of the Phosphoric Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 10, Oct 73, p 2328

Abstract: Dipole moments were determined for the ethyl ester of vinylthiophosphoric acid (I) in CCl_4 at 25° , trying to find out which conformations were the most stable ones. The theoretically calculated dipole moment of (I) was close to the experimental when the PO_3 and the ethyl groups were in gauche₁-gauche₁ or gauche₁-gauche₂ orientation, evidently due to a conformational equilibrium. Analogously the dipole moments of diethylvinylphosphine sulfide and vinyl-, vinylthiophosphonic acid dichlorides have been determined. On the basis of the dipole moment value a conjugation of a double bond with $P(=S)(C_2H_5)_2$ group has been demonstrated for diethylvinylphosphine sulfide.

1/1

USSR

UDC 547.26:118:541.124

PUDOVIK, A. N., CHERKASOV, R. A., KUTYREY, G. A., SAMIROV, YU. YU.,
MUSINA, A. A., GOL'DFARB, E. I., Kazan' State University imeni
V. I. Ul'yanov-Lenin, Kazan, Ministry of Higher and Secondary
Specialized Education RSFSR

"Reactivity of Phosphorus Dithioacids in Reactions With Acryloni-
trile"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70,
pp 1982-1985

Abstract: This paper is concerned with the effect of substituents A and B in phosphorus dithioacids of the type $ABP(S)SH$ on reaction rates with 1,3-conjugated reagents such as acrylonitrile. It was shown by means of kinetic measurements and differential-thermal analysis that the reactivity of phosphorus dithioacids with acrylonitrile increases in the order dithiophosphinates, dithiophosphonates, and dithiophosphates. A linear correlation $\lg k$ to the total values of substituents $\Sigma \sigma$ was determined. Through the use of NMR (P^{31}) spectroscopy, it was found that reactivity of

1/2

USSR

PUDOVIK, A. N., et al, Zhurnal Obshchey Khimii, Vol 40, No 9,
Sep 70, pp 1982-1988

dithioacids increases with increase in the total number of electrons in the d orbitals of the phosphorus atom. It was also determined that the dominant role of the effect of the substituent conjugation at the dithioacid phosphorus atom in the transitional state is determined by the reactivity of dithioacids of the phosphate and phosphonate structures.

2/2

USSR

UDC 616.981.452-084.471

AGAFONOV, V. I., BABKIN, Ye. I., VDOVIN, D. G., VOROBEYCHIKOV, Y. M.,
VOROB'YEV, A. A., GABESHIKO, Kh. P., GAPOCHKO, K. G., GEFEN, H. Ye., YEVSTIGNEEV,
V. I., YEMEL'YANOVA, O. V., ZENSKOV, Ye. M., KAMALITSEV, O. G., KAMALOV, I. I.,
KVIRIKADZE, V. V., KUTYREV, P. A., MISHKOV, O. P., PUSHKAROV, V. P., and
ROZDESTVENSKIY, D. A., Military Medical Academy imeni S. M. Kirov, Leningrad

"A Comparative Efficiency Characteristic of Different Immunization Methods
Against Plague Infection"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 11, 1972,
pp 106-112

Abstract: Analysis of the available literature data led to the conclusion
that oral, aerogenic, and jet immunization methods are the most efficient
compared with subcutaneous and skin methods. The average number of patients
inoculated against plague infection was 517, 817 (419), and 937 per hr for jet
injectors, aerogenic method liquid and dry vaccine, and oral method (tablets),
respectively, compared with only 43 and 28 for the subcutaneous and skin
methods, respectively.

1/1

KUTYRKIN, YU. M.

Microelectronics

Экспериментальная база данных, созданная в Институте Радиоэлектроники
Микросистемной техники, No 5, 1977. Советский Радиотехнический Издательский Дом,
Москва, УДК 621.372.621.196.6-181.5.

MI CROELECTRONICS

SPUS 57333
25 October 1972

CONTENTS

| | |
|---|---|
| Annotation..... | 1 |
| Obituary of Igor Viktorovich Lukin..... | 2 |
| Foreword..... | 3 |
| Abstracts..... | 5 |

PAGE

- 2 -

(1 - USSR - F

parameters on temperature of the surrounding atmosphere. They give a comparison of the parameters of the photoemitter during operation in longitudinal and transverse modes.
The article contains 11 figures and 6 bibliographic references.

DOC 6712593, J11, 4 671, 359, 5-15, 1962

Analysis of Several Characteristics of the Operation of a Resonance High-Frequency Oscillator Amplifier Made According to a Circuit with a Common Emitter. Azenov, A. I. Zhurnal Sovetskoye Radio, Moscow, USSR, 1962, No. 1, p. 115. Coverage: Radio Electronics, 1962.

The article gives an analysis of the operation of a resonance high-frequency oscillator amplifier operating in a linear mode. It is shown that with a constant time of the emitter circuit equal to zero, the magnitude of the capacitance of the piezoelectric condenser is found to be the least. They also established that, for contemporary case-free high-frequency dynamic capacitance on the frequency characteristics of the cascade can be ignored.

The article contains 6 figures, 2 tables, and 5 bibliographic references.

-END-

11,734
CS01 0702/73-6

USSR

UDC: 621.396.6.019.3:621.382

AKSENOV, A. I., KUTYRKIN, Yu. M.

"Analysis of Modes of Operation of Semiconductor Devices in Radio Electronic Equipment Systems"

Obmen opytom v radioelektron-sti (Experience Pooling in the Radio Industry), Vyp. 10, Moscow, 1970, pp 69-71 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2V316)

Translation: Data are given from an analysis of the electrical modes of operation of semiconductor devices in radio electronic circuits. It is shown how basic electrical parameters depend on the mode of operation of semiconductor devices. Causes for failure of semiconductor devices are discussed.

1/1

KUTYSHEVA, E. V.

TECHNOLOGY OF PRODUCING NEW MATERIALS

JPRS 59473
23 August 1973

23

TRANSLATION OF RUSSIAN-LANGUAGE COLLECTION: TEKHNOLOGIYA
POLOZHENIYA NOVIKH MATERIALOV, 1972, N257

CONTENTS Page

| | |
|--|----|
| Isotropy of zirconium and niobium carbides in the Region of Homogeneity <u>(L.N. Oshreshchuk, G. Sh. Upadhyaya)</u> | 1 |
| Work Function of Silicon Carbide <u>(L.N. Oshreshchuk)</u> | 4 |
| Electrical Resistance of Composite Materials <u>(Ye. M. Petrova)</u> | 8 |
| Heat Capacity Measurement in Some Ceramic Materials <u>(D.M. Karpinos, V.S. Klimenko)</u> | 14 |
| Thermal Conductivity of Reinforced Plastics <u>(D.M. Karpinos, V.S. Klimenko)</u> | 18 |
| One Optimum Case of a Method of Axial Thermal Flow for Determining the Coefficient of Thermal Conductivity <u>(V.S. Klimenko, et al.)</u> | 21 |
| Study of Sintering Kinetics by Hot Extrusion of Zirconium and Tantalum Carbides in the Regions of Their Homogeneity <u>(V. Ya. Naumenko, R. Ya. Petr/Kina)</u> | 25 |
| Hot Pressing Features of Molybdenum Carbide <u>(Ye. I. Rogovoy, M.S. Koval'chenko)</u> | 32 |

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Technical Report of the Institute for Metals

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CONTENTS (continued)

Production of Silicon Carbide Parts by Hot Casting Under Pressure
(G.V. Trunov)..... 20

Production of Highly Dispersed Copper-Base Powder Composites Containing Rhenium-Metal Carbides
(V.I. Kolyaznev)..... 21

Production of Yttrium Subgroup Rare-Earth Metal Doped Carbides
(V.V. Oshinoyev)..... 23

Sintering Titanium Diboride-Molybdenum Composites
(G.V. Izrael'skiy)..... 24

Removal of the Plasticizer from Die-Extruded Hard-Alloy Parts
(O. V. Pivunov)..... 25

Study of Solid-Phase Interaction of Hydrogen and Tungsten Disilicides With Ti and Zr in an Electron-Beam Heater
(G.S. Yurchenko)..... 26

Effect of Alloying Elements on Sinter of the Alpha-Beta Transformation in Titanium and Zirconium
(S.K. Bishin)..... 27

Study of Some Properties of Aluminium With Additions of Transition Metals
(V.F. Pilyipov)..... 28

Rare-earth Metal Modification of Titanium
(V.A. Koshchub, A.I. Cherkashin)..... 29

Increasing the Physical and Mechanical Properties of Ceramics
(P.I. Chaplygin)..... 30

Effect of Gadolinium, Yttrium, and Lanthanum Oxides on the Properties of Nickel Ferrite
(L.A. Alekseyuk)..... 31

Interaction of Transition Metal Carbides With Silicon
(E.V. Kutysheva)..... 32

Fracturation of Fine Metallic Powders
(M.F. Shapoval)..... 33

AA0040643

Kutyukov, G. F.

UR 0482

1-76

Soviet Inventions Illustrated, Section I Chemical, Derwent,

241193 GALVANOPLASTIC PRODUCTION of complex-shape articles from cadmium, using permanent aluminium moulds preliminarily subjected to thermal treatment and anodised in sulphuric acid, is improved in that the anodised moulds are copper-plated in a sulphuric acid electrolyte, then the copper deposit is removed and the cadmium-plating is carried out in an ammonium fluoroborate electrolyte. In an example, parts of an aluminium mould, which are not wanted to be cadmium-coated, are protected by a gelatine emulsion coating; then the mould is anodised in 4N H₂SO₄ at 1 A/dm.² (16°C), and copper-plated in an electrolyte containing CuSO₄ (20g./l.), H₂SO₄ (70 g./l.) and alcohol (5 ml./l.) at 4A/dm.² to a thickness of 0.05-0.08 mm. Subsequently, the copper deposit is removed from the mould, but the copper remaining in the pores and the oxide film facilitates the separation of the cadmium article from the mould. The cadmium-plating is carried out

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AA0040643

AUTHORS: Gofman, Ya. A.; Kutukov, G. T.; and Antonova, N. S.

in a solution containing (in g/l.): Cd(BF₄)₂ 70-75, NH₄BF₄ 150-170, OP-7 (surface active agent) 5-7, ammonium 2-naphthyl-5-sulphonate 0.5-1.0; the pH is 4.5-5.5, and the current density 1-1.5A/dm². After the separation of the cadmium article (adhesion strength does not exceed 10g./cm²), the mould can be utilised again, without repeating the preliminary operations.

30.3.67 as 1145504/22-1. YA.A.GOFMAN et alia.
NOVOSIBIRSK ELECTROTECHNICAL INST. (20.8.69) Bul 13/
1.4.69. Class 48a. Int.Cl. C 23b.

3/8
Novosibirskiy Elektotekhnicheskiy Institut

19750219

Biochemistry

USSR

UDC 561.144.7:577.471+577.471:546.11

ZAKHZHEVSKIY, D. A., ROZONOVA, L. N., and KUTYURIN, V. M., Institute of Photosynthesis, Academy of Sciences USSR, Pushchino-on Oka, and V. I. Vernadskiy Institute of Geochemistry and Analytical Chemistry, USSR Academy of Sciences, Moscow

"Specific Effect of a Hydrogen Atmosphere on Oxygen Release by Tradescantia Chloroplasts"

Moscow, Doklady Akademii nauk SSSR, No 4, 1973, pp 980-982

Abstract: Tradescantia fluminesis chloroplasts were exposed to light after dark incubation under anaerobic conditions in an atmosphere of different gases. Incubation of the chloroplasts in helium and nitrogen had no effect on the release of oxygen; in both cases in intensity of the process was comparable to the aerobic control. Incubation of the chloroplasts in a nitrogen atmosphere, on the other hand, suppressed oxygen release. The inhibitory effect progressed quickly and after one hour of incubation, the rate of oxygen release decreased by 50% on the average. Unlike whole leaves, the effect of H_2 on isolated plastids was not reversible.

1/1

KUTYURIN V.M.

SPRS 58318

26 February 1972

THE INSTITUTE OF AN ATMOSPHERE OF MOSCOW'S UNIVERSITY FROM THE
INSTITUTE OF PHYSICS OF THE ACADEMY OF SCIENCES OF THE USSR

Article by V.M. Kutyurin and L.N. Korotova, Institute of Photosynthesis,
USSR Academy of Sciences, Pushchino and V.M. Kuturina, Institute of Geo-
chemistry and Analytical Chemistry, USSR Academy of Sciences, Moscow,
Moscow, U.S.S.R., No. 6, Vol. 19, 1972, submitted 28 April 1972,
signed to press 9 November 1972, pp 1194-1201/.

The effect of atmosphere of H₂ and of H₂ on the evolu-
tion of O₂ by leaves of Tradescantia virginiana Vail was compar-
ed. It was shown that the function of evolution of O₂ is much
more sensitive to dark preincubation in an H₂ atmosphere than the
fixation of C¹⁴O₂. After prolonged stay of the leaves in the
dark in an atmosphere of H₂ (15 hours) the absorption of carbon
dioxide may be realized in general without the evolution into
the gaseous phase of free oxygen. Helium does not have a
similar effect. On the contrary, the replacement of an atmos-
phere of H₂ by He leads to reactivation of the oxygen-evolving
system of photosynthesis.

One of the approaches during investigation of the mechanism of bio-
logical oxidation of water up to molecular oxygen may be the study of the
particularities of the gaseous exchange in anaerobically adapted plants. It
was shown earlier that the leaves of certain higher plants preserve the
capacity for fixation of carbon dioxide after prolonged incubation of them
in the dark in an atmosphere of molecular hydrogen/1,2/. At a temperature
of 20-25° and a light intensity of 2.7-10 erg/cm they fix C¹⁴O₂ at a rate
comparable to that in photosynthesis under aerobic conditions. Thus, for
example, a 15-hour stay of Tradescantia leaves in the dark in an ordinary
atmosphere reduces the intensity of subsequent photosynthesis by an average
of 10 percent and preliminary incubation of the leaves in the dark in an
atmosphere of hydrogen reduces the intensity of light fixation of C¹⁴O₂ in
an atmosphere of this same gas by approximately 20 percent (figure 1)2/.

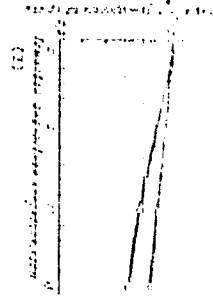


Figure 1: The intensity of light transmission through leaves in an ordinary atmosphere and in an atmosphere of H₂ in dependence upon the wavelength of the incident light. The curves correspond to the results of measurements in the atmosphere of the USSR government. (1) - ordinary atmosphere; (2) - atmosphere of H₂.

Some peculiarities of the process studied are: namely, in the ordinary atmosphere, the absorption of carbon dioxide in the leaves is not dependent on the intensity of the incident light. At the same time, the suppression of fixation of carbon dioxide by hydrogen (H₂) initiated the functioning of the photosynthetic system of chloroplasts, which indicated the fundamental difference of the phenomena observed from the photochemical reaction of the formation of carbon dioxide in the atmosphere. The process of assimilation of carbon dioxide by leaves in an atmosphere of H₂ is characterized by the fact that the rate of fixation of carbon dioxide is not dependent on the intensity of the incident light. This indicates that the rate of fixation of carbon dioxide in an atmosphere of hydrogen may be limited by carbon dioxide without formation of free oxygen.

Naturally, the question arises as to whether hydrogen under these conditions is a competitor of water or starch. It reduces the hydrogen radicals (in other words, which is equivalent to the result of oxidation of bound water) and thereby impedes the formation of molecular hydrogen. Both of these alternatives were discussed in the literature in connection with the mechanism of photoreduction of water. It is clear that the mechanism of photoreduction of water is connected with the formation of the photosynthetic system of chloroplasts. This question was not posed in respect to the photosynthetic system.

It was necessary in connection with this to study at the first stage of the investigation, the effect of prolonged incubation of leaves of higher plants in an atmosphere of hydrogen of helium (control experiments on the effect of anaerobiosis) on the intensity of evolution of oxygen.

1/2 007 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--OPERATIONAL CALCULATIONS BY MEANS OF THE THEORY OF PROBABILITIES
-U-
AUTHOR--(05)-MARTYNOV, I.M., SOTNIKOV, YE.A., TULPOV, L.P., KUTYYEV, G.M.,
SHABALIN, N.N.
COUNTRY OF INFO--USSR
SOURCE--(EKSPLUATATIONNYYE RASCHETY S PRIMENENIYEM TEORII VEROYATNOSTEY)
MOSCOW, TRANSPORT, 1970, 238 PP
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATHEMATICAL SCIENCES
TOPIC TAGS--RAILWAY NETWORK, RAILWAY TRAFFIC, PROBABILITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/1699 STEP NO--UR/C000/70/000/000/0001/0238
CIRC ACCESSION NO--AM0130569
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AM0130569

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: PREFACE 3.
CHAPTER I. ELEMENTARY CONCEPTS OF THE THEORY OF PROBABILITIES 5. II.
CERTAIN PROBLEMS IN OPERATION OF RAILROAD STATIONS 47. III.
RELATIONSHIP BETWEEN TECHNOLOGICAL INDICES AND PARAMETERS OF EQUIPMENT
OF STATIONS 72. IV. THE PROCESS OF ACCUMULATION OF RAILROAD CARS IN
THE SORTING YEARD 138. V. USE OF THE THEORY OF PROBABILITIES IN
ORGANIZATION OF CAR FLOW AND OPERATION OF RAILROAD JUNCTIONS 164. VI.
CERTAIN PROBABILITY RULES IN DAILY FORCAST OF UNLOADING, LOADING AND
CHECK OF CARS 195. VII. OPERATIONAL CALCULATIONS BY MEANS OF THE
INFORMATION THEORY 312. THE BOOK CONTAINS BRIEF SIMPLE DATA ON THE
THEORY OF PROBABILITIES, MATHEMATICAL STATISTICS AND INFORMATION THEORY.
GIVEN ARE METHODS FOR THE USE OF INDICATED SECTIONS OF MATHEMATICS IN
PLANNING OF OPERATION OF RAILROAD STATIONS, CALCULATION OF PARAMETERS OF
THEIR FACILITIES AND OPERATING INDICES. THE BOOK HAS WRITTEN FOR
ENGINEERING TECHNICAL PERSONNEL AND SCIENTISTS IN RAILROAD TRANSPORT, AS
WELL AS STUDENTS.

UNCLASSIFIED

USSR

UDC 631.95

2

SUVOROV, B. V., KIGARITSKIY, A. D., KAN, I. I., YEREM'YANOV, V. L., KUTZEMANOV, R. T., and PAVLOV, YE. A.

"A Means of Obtaining 3-Cyanopyridine"

USSR Author's Certificate No 311914, filed 28 Jan 70, published 11 Oct 71 (from Referativnyy Zhurnal -- Khimiya, No 10 (II), 1972, Abstract No 10N604P by T. A. Belyayeva)

Translation: 3-CNC₅H₄N (I) is obtained by oxidative ammonolysis of 2-R-5-R' C₅H₃N (II) (R and R' = alkyl, alkenyl) over a transition-metal catalyst. A mixture of steam and air (300-500 and 100-300 mole, respectively, to each mole of (II) is used as an oxidizing agent. Through a reaction tube (1100-2200 mm) filled with granulated catalyst (V₂O₅ and TiO₂ in a 1:16 molar ratio) are passed II (R=Me, R'=CH=CH₂), water, air, and NH₃ at a rate of 23 g, 950 g, 3000 l, and 75 g respectively for each liter of catalyst every hour at a temperature of 370° for 10 hours (time of contact: 0.4 seconds). The catalyst is washed with petroleum ether, extracted with CHCl₃ and dried over Na₂SO₄. I is separated by rectification. The yield is 83.2%, boiling point 100-4°/24, melting point 50.4°. I is used as a plant-growth stimulant in agriculture, and for the production of nectinamide. 1/1

USSR

UDC 681.3.06.51

KUUSIK, V.

"Description of Files in VELGOL"

Tallin, Izvestiya Akademii Nauk Estonskoy SSR -- Fizika i matematika, Vol 20, No 1, 1971, pp 15-19

Abstract: The possibility of description of files by means of a special subroutine of VELGOL is investigated. The complete description of the subroutine is given, and some methods of accelerating the operation of the programs describing the files are considered. The differences between using COBOL and VELGOL for file description are pointed out in the example of a payroll application.

The subroutines FAYL [FILE] and PEREOPR [REDEFINE] are presented as an illustration of how easy the COBOL constructions can be executed in VELGOL. It is noted that sets are described in the subroutines for which the limits of variation of the indexes are indicated inexactly. This means that the user can make use of indexes which go beyond the limits without him knowing it. Although:

1/2

USSR

KIUSIK, V., Tallin, Izvestiya Akademii Nauk Estonskoy SSR -- Fizika-Matematika,
Vol 20, No 1, 1971, pp 15-19

this is forbidden in the description of the VILGOL language, it is
permissible in certain cases.

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- 71 -

1/2 024

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--DETERMINATION OF THE ADHESION OF POLYMERIC MATERIALS TO BASE

MATERIALS -U-

AUTHOR--(03)-KUVARZIN, I.N., PYATYKHIN, L.I., KARYAKINA, M.I.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,976

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

DATE PUBLISHED--10FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--POLYMER, ADHESION, SURFACE ACTIVE AGENT, PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1084

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0116550

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AA0116550

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADHESION OF POLYMERIC MATERIALS TO BASE MATERIALS IS DETD. BY SUPPLYING THE ADHESIVE SUBSTRATE BORDER OF SEPN. WITH SURFACTANT AND FIXING THE DISTRIBUTION RATE OF THE BREAKOFF FRONT.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ANGULAR ANISOTROPY OF THE FISSION OF Pb PRIME204 AND Pb PRIME208 BY
ALPHA PARTICLES NEAR THE THRESHOLD -U-
AUTHOR-(03)-KUVATOV, K.G., UKOLOVICH, V.N., SMIRENKIN, G.N.
COUNTRY OF INFO--USSR *K*
SOURCE--JSTP LETTERS (USA), VOL. 11, NO. 1, P. 42-6 (JAN. 1970)
DATE PUBLISHED----JAN70
SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--ANISOTROPY, LEAD ISOTOPE, ALPHA PARTICLE, SPECTRUM, EXCITED
NUCLEUS, DEFORMED NUCLEUS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/1749 STEP NO--05/0000/70/011/001/0042/0046
CIRC ACCESSION NO--AP0133654
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--13NDV70

CIRC ACCESSION NO--AP0133654

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM THE ANGULAR ANISOTROPY MEASUREMENTS IT WAS ESTABLISHED THAT THE ENERGY GAP IN THE SPECTRUM OF THE INTERNAL EXCITATIONS OF THE NUCLEUS IN ITS TRANSITION STATE, ΔF , HAS A WEAK DEPENDENCE ON THE DEFORMATION OF THE NUCLEUS IN THE FISSION PROCESS. (10 REFS.). FACILITY: KAZAKH ACADE. SCI. USSR.

UNCLASSIFIED

1/2 031 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ANGULAR ANISOTROPY OF LEAD 204 AND LEAD 208 FISSION BY ALPHA
PARTICLES NEAR THRESHOLD -U-
AUTHOR-(03)-KUVATOV, K.G., OKOLOVICH, V.N., SMIRENKIN, G.N.
COUNTRY OF INFO--USSR *K*
SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(1), 42-6
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--ANISOTROPY, LEAD ISOTOPE, NUCLEAR FISSION, ALPHA BOMBARDMENT,
FISSION CROSS SECTION, EXCITATION ENERGY, EXCITED NUCLEUS, ANGULAR
DISTRIBUTION, POLONIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/0679 STEP NO--UR/0386/70/D11/001/0042/0046
CIRC ACCESSION NO--APO105655
UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105655

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTS. WERE CARRIED OUT WITH A CYCLOTRON AND TARGETS OF PRIME204 PB AND PRIME208 PB PREPO. BY ELECTROLYTIC METHODS, BY SIMULTANEOUS DETN. OF CROSS SECTIONS OF SIGMA SUBF OF THE (ALPHA, F) PROCESS AND OF THE ANGULAR DISPERSION WITHETA) OF THE FISSION FRAGMENTS. THE ENERGY DROP OF ALPHA PARTICLES WAS DETD. BY AL FOILS WITH ACCURACY IS LESS THAN OR EQUAL TO PLUS OR MINUS 0.2 MEV. ANGULAR ANISTROPY W(0DEGREES)-W(90DEGREES) WAS PLOTTED AS A FUNCTION OF THE EXCITATION ENERGY E FOR PRIME208 PO, PRIME212 PO, AND PRIME210 PO, WITH E EQUALS E SUBX NEGATIVE E SUBF, WHERE E SUBX IS THE INITIAL ENERGY OF EXCITATION OF THE EXISTING NUCLEUS AND E SUBF IS THE HEIGHT OF THE FISSION BARRIER. E SUBF FOR PRIME208 PO WAS 19.8 MEV BY DETN. OF THE FUNCTION SIGMA SUBF (E SUBX). VALUES ASSUMED FOR PRIME210 PO AND PRIME212 PO WERE 20.5 AND 18.8 MEV, RESP. (S. G. THOMPSON, 1967). EXPTL. RESULTS AND THEORETICAL ANAL. OF THE ANISOTROPY PROVED THE WEAK DEPENDENCE OF THE ENERGY GAP DELTA SUBF ON THE NUCLEUS DEFORMATION IN THE FISSION PROCESS. FACILITY: INST. YAD. FIZ., ALMA ATA, USSR.

UNCLASSIFIED

USSR

UDC 548.0:532.783

KAPUSTIN, A. P., KUVATOV, Z. Kh., TROFIMOV, A. N., Institute of Crystallography, Academy of Sciences of the USSR, Bashkir State University

"Thermodielectric Effect With Phase Transition Between a Liquid Crystal and a Solid Crystal"

Moscow, Kristallografiya, Vol 18, No 3, May/June 73, pp 647-648

Abstract: It has long been known that an electrically charged solid phase is grown in the case of phase transitions between an isotropic liquid and a solid dielectric. In this paper the authors describe an analogous effect accompanying phase transitions between a liquid crystal and a solid crystal. A small drop of molten azoxyanisole was crystallized on a grounded substrate at a cooling rate of 5 deg/min. At the instant of crystallization, charge induction was observed on a measurement electrode placed close to the specimen. It was found that the specific charge of the solid specimen depends on the rate of crystallization. The charge increases with crystallization rate, approaching some saturation value. The charge gradually decreases with time, apparently due to the adsorption of ions from the air.

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172 020 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--APPLICATION OF ELECTRIC COUPLED STIMULATION TO IMPROVE THE EFFICACY
OF CERTAIN METHODS OF SYNCHRONOUS AUXILIARY CIRCULATION -U-
AUTHOR--(04)-SHUMAKOV, V.I., KUVAYEV, A.YE., TOLPEKIN, V.YE., SVETLOV, V.P.

COUNTRY OF INFO--USSR

SOURCE--PATOLOGICHESKAYA FIZIOLOGIYA I EKSPERIMENTAL'NAYA TERAPIYA, 1970,
VOL 14, NR 2, PP 83-88
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEART RATE, BLOOD CIRCULATION, HEART STIMULATOR,
ELECTROPHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/0033

STEP NO--UR/0396/70/014/002/0033/0088

CIRC ACCESSION NO--AP0109132

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--2300T70
CIRC ACCESSION NO--AP0105132
ABSTRACT/EXTRACT--(U) GP-G- ABSTRACT. IT WAS SHOWN IN EXPERIMENTS ON DOGS THAT APPLICATION OF COUPLED STIMULATION IN USING OF SOME METHODS OF AUXILIARY CIRCULATION (BY PASS SHUNTING OF THE LEFT CARDIAC VENTRICLE AND COUNTERPULSATION) IN CASES OF MARKED TACHYCARDIA AND SOME TYPES OF ARRHYTHMIA, CONSIDERABLY INCREASED THE EFFICACY OF THESE METHODS.
FACILITY: LABORATORIYA ISKUSSTVENNOYE SERDITSE I KLAPANNIYE PROTEZY NAUCHNO ISSLEDOVATEL'SKOGO INSTITUTA KLINICHESKOY I EKSPERIMENTAL'NOY KHIRURGII MINISTERSTVA ZDRAVU OKHRANENIYA SSSR, MOSCOW.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--TEMPERATURE FUNCTION OF THE ELECTROPHYSICAL PROPERTIES OF COMPOUNDS
OF LANTHANUM HEXABORIDE WITH TRANSITION METALS. II -U-
AUTHOR--(02)-BGNJARENKO, V.P., KOVENSKAYA, B.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 90-3

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--CRYSTAL LATTICE STRUCTURE, ELECTRICAL CONDUCTIVITY, LANTHANUM
COMPOUND, BORIDE, TUNGSTEN COMPOUND, HAFNIUM COMPOUND, TANTALUM
COMPOUND, RHENIUM COMPOUND, CHEMICAL BONDING, THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1993/1917

STEP NO--UR/0139/70/0137(00270090/0093

CIRC ACCESSION NO--AT0114357

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--0900170

CIRC ACCESSION NO--AT0114357

ABSTRACT/EXTRACT--(U) GP-Q- ABSTRACT. THE ELEC. RESISTANCE WAS MEASURED OF LAB SUB6 CONTG. 0.5-15 AT. PERCENT HF, TA, W, OR RE AT 200-800DEGREES. THE THERMAL COEFF. OF ELEC. RESISTANCE (BETA) DEPENDS ON THE PROPERTIES OF THE DISSOLVED METAL. VALUES OF BETA INDICATE THAT ADDN. OF 0.5 AT. PERCENT OF W CAUSED STRENGTHENING OF THE INTERAT. BONDS IN THE L SUBA B SUB6 LATTICE, WHILE WITH 0.5 AT. PERCENT HF, THE EFFECT WAS OPPOSITE. FACILITY: KIEV. POLITEKH. INST., KIEV, USSR.

UNCLASSIFIED

USSR

ZAYTSEV, A. I., KUVSHINOV, A. A., Izv. Tomsk. politekh. in-ta, 1970, 211, pp 3-9 (from RZh--Elektronika i yeye primeneniya, No 1, Jan 1971, Abstract No 1B441)

during investigation of electromagnetic processes in the circuit of the capacitor the assumption is accepted that the phase electromotive forces of the transformer in the intervals of operation of the unit for artificial commutation remain constant. Test computations on a digital computer showed that with such an assumption the precision of computation is found within the limits of 15%.
2 ill. 3 ref. I. R.

2/2

- 37 -

172 031 UNCLASSIFIED PROCESSING DATE--13NDV70
TITLE--THE THEORY OF SIGNAL TRANSMISSION --U--
AUTHOR--(03)--NAZAROV, M.V., KUVSHINOV, B.I., POPOV, G.V.
COUNTRY OF INFO--USSR
SOURCE--THE THEORY OF SIGNAL TRANSMISSION (TEORIYA PEREDACHI SIGNALOV)
MOSCOV. SVYAZ'. 1970. 367 PP.
DATE PUBLISHED-----70
SUBJECT AREAS--NAVIGATION
TOPIC TAGS--SIGNAL TRANSMISSION, MATHEMATIC ANALYSIS, SIGNAL CODING,
HANDBOOK
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/1277 STEP NO--UR/0000/70/000/000/0001/0167
CIRC ACCESSION NO--A40130262
UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AM0130262

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: PREFACE 10.
INTRODUCTION 11. CHAPTER I MATHEMATICAL REPRESENTATION OF MESSAGES,
SIGNALS AND INTERFERENCES 15. II CONVERSION OF COMMUNICATIONS AND
SIGNALS 81. III MODULATED SIGNALS 112. IV CHANNELS OF INFORMATION
TRANSMITTERS 148. V FUNDAMENTALS OF THE THEORY OF INFORMATION
TRANSMISSION 174. VI TRANSMISSION OF DISCRETE COMMUNICATIONS 219.
VII CORRECTION CODES 269. VIII TRANSMISSION OF CONTINUOUS
COMMUNICATIONS 294. IX TRANSMISSION OF COMMUNICATIONS BY MULTICHANNEL
SYSTEMS 323. CONCLUSION 366. LITERATURE 367. THIS IS A TEXT BOOK
APPROVED BY THE MINISTRY OF COMMUNICATION OF THE USSR FOR STUDENTS AT
ELECTROTECHNICAL INSTITUTES OF COMMUNICATION. DISCUSSED ARE THE BASIC
POSITIONS OF THE THEORY OF TRANSMISSION OF CONTINUOUS AND DISCRETE
COMMUNICATIONS ALONG COMMUNICATION CHANNELS. EXAMINED ARE QUESTIONS ON
THE THEORY OF INFORMATION, THEORY OF POTENTIAL RESISTANCE TO
INTERFERENCE AND THE THEORY OF CODING.

UNCLASSIFIED

USSR

UDC 641.391:519.2

K
KUVSHINOV, B. I.

"Potential Noise Resistance of Communications Systems with Single-Band Frequency Modulation and Single-Band Phase Modulation"

Tr. Mosk. elektrotekhn. in-ta svyazi (Works of Moscow Electrotechnical Communications Institute), 1970, vyp. 1, pp 55-58 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9A32)

Translation: The spectral density of the noise intensity at the output of Kotelnikov-optimal receivers of single-band frequency modulated and single-band phase modulated signals is determined under the assumption of weak normal fluctuation noise of the white noise type. It is demonstrated that at the output of the optimal single-band frequency modulation and single-band phase modulation receivers the noise has less intensity than at the output of FM and phase modulation receivers with the same modulation indexes. The bibliography has one entry.

1/1

USSR

110 021.091

HAZARDV, M. V., KUVSHINOV, B. I., POPOV, O. V.

"Theory of Signal Transmission. Textbook for Electrical Engineering Institutes of Communication"

Teoriya peredachi signalov. Vneshnik dlya elektrotekhn. in-stov svyazi (cf. English above), Moscow, "Svyaz", 1970, 307 pp, ill., 90 kop. (from Radio-Enginering, No 6, June 1970, Abstract No 6.64.4K)

Translation: The basic statements are discussed of the theory of transmission of continuous and discrete information on communication channels. The properties of information, signals, and noise, and the characteristics of the channels are considered. Problems of information theory, the theory of potential freedom from noise, and the theory of encoding are considered; the basic statements of the theory of signal separation are formed; and the basic directions for realization of the theoretical possibilities during information transmission are discussed. The book is intended for students of electrical engineering institutes of communication and can be used by specialists in the field of radio engineering and electrical communication. 50 ill. 10 tab. 161 ref. Summary.

1/1

USSR

UDC 535.212.2.033

BORZYAK, A. N., LEPESHKIN, YU. D., and KUVSHINOV, G. A.

"An Experimental Device for Measuring the Thermal Conductivity of Metals and Alloys at Low Temperatures"

Moscow, *Teplofiz. svoystva veshchestv pri nizek. temperaturakh -- sb. (Thermophysical Properties of Substances at Low Temperatures -- Collection of Works)*, 1972, pp 159-162 (from *Referativnyy Zhurnal -- Metrologiya i Izmeritel'naya Tekhnika*, No 2, 1973, Abstract No 2.32.979 by V. S. K.

Translation: The authors describe a device for measuring the thermal conductivity coefficient of metal samples by the steady-state heat flow method. The device is a metallic helium cryostat containing a chamber for the sample in which the sample is mounted on a metal block suspended from the top of the chamber. A heater is fastened to the bottom end of the sample, which is surrounded by a protective cylinder to eliminate radiation losses of heat from the surface. The temperature along the sample is measured by thermocouples or semiconductor resistance thermometers. In order to maintain the necessary thermal state in the sample, four independent automatic temperature control systems are used, giving a control accuracy of approximately 10^{-2} K. Measurement accuracy is 2.5-3 percent. (2 illustrations; 3 bibliog. ref.)
1/1

USSR

UDC: 62-55

GUMENYUK, V. M., KUVSHINOV, G. Ye.

"An AC Differentiator With an Inductive Memory Device"

Nauch. tr. Dal'nevost. politekhn. in-t (Scientific Works. Far-Eastern Polytechnical Institute), 1971, 75, pp 115-124 (from RFZh-Avtomatika, Telemechhanika i Vychislitel'naya Tekhnika, No 7, Jul 72, Abstract No 7A150)

Translation: From the standpoint of the result produced, the most effective devices are those which realize direct differentiation of the modulating function of a signal with provision for delay compensation over a wide range of modulation frequencies. The simplest from the standpoint of manufacturing and adjustment are AC differentiators with capacitive memory. However, this type of memory has disadvantages which limit the field of application. For instance, using it in a current feedback loop involves an increase in losses to adjustment resistance; in addition, precise adjustment is made more difficult due to discrete selection of capacitance. These disadvantages are eliminated in the proposed AC differentiator with inductive memory. The device is described, and the results of an experimental check are given. Three illustrations, bibliography of three titles. O. Sh.

1/1

USSR

UDC 621.762.002.5(088.8)

DRUSHININ, L. K., LIEPINA, YE. D., KUYSHINOV, P. S., SIMONOV, L. P., SAFRONOV, B. V., PERFILOV, L. S., and TOKAREVA, L. I.

"Apparatus for Making Powders and Granules by Centrifugal Pulverization of Melt"

Ussr Authors' Certificate No 272501, Cl. 31 b³, 9/00, 49 1, 3, [B 22 r 9/00, B 05 b 3/12], filed 12 Sep 68, published 2 Sep 70 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G470P by G. Derkacheva)

Translation: An apparatus is suggested for making powders and granules by centrifugal pulverization of a melt. The apparatus consists of a rotating ring with a hole in the bottom for delivery of the material to be pulverized, a local heat source situated above this material, and a cooler which is unique in that, in order to increase powder and granule quality, it is rigidly fastened to the outside of the ring.

1/1

- 6 -

USSR

UDC 539.126.34+530.145

KUVSHINOV, V. I., FEDOROV, F. I., Institute of Physics of the Academy of Sciences BSSR

"Diagram Technique in Scattering Theory for a Combined Scalar Electrodynamics Field"

Minsk, Izvestiya Akademii Nauk BSSR, Seriya Fiziko-Matematicheskikh Nauk, No. 3, 1972, pp 56-66

Abstract: A general diagram technique for the combined electrodynamic field of scalar mesons

$$\Psi(x) = (\Psi_A(x)) = \begin{pmatrix} \Psi^1(x) \\ \Psi^i(x) \\ \Psi^2(x) \end{pmatrix}$$

$A = \alpha, \bar{\alpha}, k', [kl]; \alpha, \bar{\alpha} = 0, 1, 2, 3, 4; k, k', i = 1, 2, 3, 4,$

is considered. In previous studies a classical theory of the field φ was constructed including the field equations and conservation laws, secondary quantization of φ was carried out, and the scattering amplitude of second-order perturbation theory was analyzed. In this approach the scattering process was

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USSR

KUVSHINOV, V. I., FEDOROV, P. I., *Investiya Akademii Nauk SSSR, Seriya Fiziko-Matematicheskikh Nauk*, No. 3, 1972, pp 56-66

considered as the self-action of the combined field caused by its nonlinearity. Results show that this approach has greater information value than the ordinary approach and makes it possible to consider from this aspect the theory of interacting fields and establish many specific properties of this theory. A perturbation theory formalism for the scattering of the combined field Ψ is constructed and it is shown that the amplitude of the N -tail has $N!$ terms differing in the arrangement of the external pulses. The impulse portion of the amplitude is invariant to crossing and twisting transformations. Those diagrams which are connected by a reflection from the axis of symmetry among the $N!$ terms of the amplitude are equal to one another.

2/2

- 91 -

USSR

FEDOROV, F. I., KUVSHINOV, V. I.

"Laws for the Preservation of Scalar Electrodynamics in the Formalism of a Unified Field"

Minsk, Vestsi Akaderii Navuk BSSR: Seryya Fizika-Matematychnykh Navuk; No. 1, 1971; pp 83-9

ABSTRACT: The authors consider the Lagrangian of the unified field

$$L = \frac{1}{2} \Psi (\beta^A \partial_A + \beta^0) \Psi + \frac{ie}{6} P \Psi \Psi \Psi;$$

where Ψ includes the wave functions of a scalar particle, an antiparticle, and a Maxwellian field (in 10-dimensional formalism), β^A are antisymmetrical matrices, β^0 is a symmetrical matrix, $P = (P_{ABC})$ is a matrix of the third rank, symmetrical with respect to all indices.

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USSR

FEDOROV, F. I., and KUVSHINOV, V. I., Vestsi Akademii Navuk
BSSR: Seryya Fizika-Matematichnykh Navuk, No 1, 1971, pp 83-89

On the basis of this Lagrangian, laws for the preservation of the energy-momentum, the angular momentum, and the current for a unified field, as well as the charge conjugation are considered.

The article includes 49 equations. There are 7 references.

2/2

- 100 -

USSR

K

FEDOROV, F. I., KUVSHINOV, V. I. (Institute of Physics, Belorussian Academy of Sciences)

"Nonlinear Equations of the Electrodynamics of Scalar Mesons"

Minsk, Vestsi Akademii Navuk BSSR: Seryya Fizika-Matematychnyish Navuk; No. 5, 1970; pp 69-75

ABSTRACT: Equations for interacting electromagnetic and scalar meson fields

are derived in general form:

$$(\gamma^{\mu} \partial_{\mu} + \gamma^0) \psi + \psi \Lambda \psi = 0,$$

where the square

matrices

$$\gamma^{\mu}, \gamma^0$$

and the matrix of the third rank Λ have a

dimension of 20. The properties of these matrices are considered. A Lagrangian function for the total field and projective operators which distinguish the possible states in the case of noninteracting fields are obtained.

The article includes 41 equations. There are 5 references.

1/1

UDC: 621.039.538.4

USSR

BUSYGIN, B. P., KRIVCNOSOV, A. I., ~~KUYSHUKOV, V. Z.~~, Moscow Automobile and Highway Institute

"A Device for Measuring and Regulating the Temperature of the Coolant in an Internal Combustion Engine"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraboty, Tovarnyye Znaki, No 7, Mar 72, Author's Certificate No 329515, Division G, filed 15 May 70, published 9 Feb 72, p 189

Translation: This Author's Certificate introduces a device for measuring and regulating the temperature of the coolant in an internal combustion engine. The device contains a pickup located in the cooling system of the engine and connected in the circuit of a thermal converter which controls an electromagnetic clutch connected to the fan. The device also contains a water pump connected to the crankshaft of the engine. As a distinguishing feature of the patent, control accuracy is improved, the design is simplified and power consumption is reduced by making the electromagnetic clutch in the form of a generator with stationary field winding connected at the output of the thermal converter and equipped with beak-shaped poles. Lo-

1/2

- 169 -

USSR

BUSYGIN, B. P. et al., USSR Author's Certificate No 320515

cated in the field of these poles is part of a short-circuited winding on the shaft of the water pump. The other part of this winding is located in an annular groove on the base of the fan. The two parts of the shorted winding are separated by a diamagnetic sheave.

2/2

USSR

UDC 621.81:539.4

KUVSHINOV, YU. A., IOSILEVICH, G. B.

"Testing Threaded Parts Under Repeated Impact Loading"

Tr. Ufim. aviats. in-ta (Works of the Ufa Aviation Institute), 1971, vyp. 32, pp 134-141 (from RZh--Mekhanika, No 6, Jun 73, Abstract No 6V902)

Translation: The experiments were performed at high impact rates, on the order of $7.4 \cdot 10^4$ kg/mm²-sec. As a result of the high degree of dispersion of the experimental data, they were processed by the statistical method. The results of the tests indicate that the impact fatigue strength for steel is approximately 55% higher than the cyclic strength and for titanium, it is 60% higher. The bibliography has 11 entries.

1/1

Publicacions

USSR

KUVSHINSKIY, D. D., and GRIN', V. A.

Sluzhba Zdorov'ya (The Health Service), Moscow, "Voyennoye Izdatel'stvo Ministerstva Oborony SSSR," 1971, 240 pp

Translation: Annotation: No matter where our soldiers have served, in the harsh Polar region or the burning deserts of Central Asia, in the taiga or the mountains, the cities or in remote garrisons -- everywhere the military doctor performs his responsible and honorable work at their side. This book tells how military medical personnel accomplish the complex and important missions of strengthening the health of Soviet fighting men. The book consists of the following chapters: "Formation and Development of Soviet Military Medicine," "Military Medical Personnel in the Battles for the Homeland," "Military Medicine in the Postwar Period," and "Military Medicine in Modern War."

The simple, accessible language of the book makes it appropriate for the general reader. In it, military medical personnel, political and propaganda officers, officers, soldiers, and seamen will find a great deal of interesting material.

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USSR

KUVSHINSKIY, D. D., and GRIN', V. A., Sluzhba Zdorov'ya (The Health Service), Moscow, "Voyennoye Izdatel'stvo Ministerstva Oborony SSSR," 1971, 240 pp

| Table of Contents: | | Page |
|---|--|------|
| Chapter One. Formation and Development of Soviet Military Medicine | | 3 |
| 1.1 | From the History of Domestic Military Medicine | 4 |
| 1.2 | Formation of the Soviet Military Health Service | 23 |
| 1.3 | Military Medical Personnel on the Fronts of the Civil War | 29 |
| 1.4 | The Military Medical Service During Peacetime | 48 |
| Chapter Two. Military Medical Personnel in the Battles for the Homeland | | 59 |
| 2.1 | In the Battles at Lake Khasan | 59 |
| 2.2 | In the Fighting at the Khalkhin-Gol River | 64 |
| 2.3 | During the Soviet-Finnish War | 68 |
| 2.4 | Military Medical Personnel at the Fronts During World War II | 75 |

2/4

USSR

KUVSHINSKIY, D. D., and GRIN', V. A., Sluzhba Zdorov'ya (The Health Service), Moscow, "Voyennoye Izdatel'stvo Ministerstva Oborony SSSR," 1971, 240 pp

| | |
|--|-----|
| Chapter Three. Military Medicine in the Postwar Period | 149 |
| 3.1 Switching the Military Medical Service to a Peacetime Situation | 149 |
| 3.2 Studying and Generalizing the Experience of World War II | 151 |
| 3.3 The Introduction of Nuclear Rocketry into the Armed Forces and Military Medicine | 154 |
| 3.4 Man and Modern Technology | 157 |
| 3.5 Concern for the Health of the Fighting Man Is the First Duty of Military Medical Personnel | 159 |
| 3.6 Medical Monitoring of Conditions of Military Labor | 186 |
| Chapter Four. Military Medicine in Modern War | 201 |
| 4.1 Weapons of Mass Destruction and the Aggressive Plans of the Imperialists | 202 |
| 4.2 Steadily Increasing the Combat Readiness of Military Medical Personnel | 207 |
| 3/4 | |

USSR

KUVSHINSKIY, D. D., and GRIN', V. A., Sluzhba Zdorov'ya (The Health Service), Moscow, "Voyennoye Izdatel'stvo Ministerstva Oborony SSSR," 1971, 240 pp

| | |
|--|-----|
| 4.3 Improving the Military and Specialized Knowledge of Medical Personnel | 216 |
| Conclusion | 223 |
| Bibliography | 232 |

4/4

- 21 -

USSR

K
UDC: 661.84

NAKHODKIN, N. G., KUVSHINSKIY, K. G., SHEVLYAKOV, YU. A., KENTRAV, V. P.,
NEUZHIY, S. A., BORODKINA, M. S., USEVSKIY, V. I., SELEKRESTOV, V. I., Kiev
State University imeni T. G. Shevchenko and the All-Union Scientific Research
Institute of the Chemical and Photographic Industry

"A Photothermopolymerization Data Recording Method"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obratzy, Tovarnyye Znaki, No 3,
1970, p 43, patent No 259961, filed 25 Jan 67

Abstract: This Author's Certificate introduces a photothermopolymerization data recording method based on the cross-linking response of polymers when they are exposed to radiation such as light. As a distinguishing feature of this method, the resolving power of the recording is improved and permanent recordings are made by converting the latent image to a three-dimensional relief with subsequent fixation through the process of heating the carrier material to its softening temperature and then cooling it.

1/1

1/2 016 UNCLASSIFIED PROCESSING DATE--18SEPT70
TITLE--EXPANSION OF THE SPECTRAL REGION OF LIGHT SENSITIVE VARIATION IN
THE VOLUME OF THIN COLOPHONY FILMS -U-
AUTHOR--(05)-KUVSHINSKIY, N.G., TANTSYURA, L.YA., FEDROVA, L.N.,
NAKHODKIN, N.G., POCHINOK, V.YA. K
COUNTRY OF INFO--USSR
SOURCE--ZH. NAUCH. PRIKL. FOTOG. KINEMATOG. 1970, 15(1), 57-9
DATE PUBLISHED-----70
SUBJECT AREAS--METHODS AND EQUIPMENT
TOPIC TAGS--DYE, SPECTRUM, PHOTSENSITIVITY, PHOTOGRAPHIC FILM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1983/1485 STEP NO--UR/0077/70/015/001/0057/0059
CIRC ACCESSION NO--APO054341

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--A0054341

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPECTRAL SENSITIVITY REGION OF ROSIN (I) ABIETIC ACID (II) FILMS WAS EXPANDED BY PHOTSENSITIZED O TRANSFER WITH EOSIN, METHYLENE BLUE, OR CHLOROPHYLL (III). THE FILMS WERE EXPOSED TO FILTERED LIGHT FROM AN INCANDESCENT LAMP AND WERE SENSITIZED ONLY IN THE PRESENCE OF O, THE DYE PRESUMABLY CATALYZING THE PHOTSENSITIZED TRANSFER OF O WHICH CAUSED IRREVERSIBLE CHANGES IN II, THUS INCREASING THE VOL. OF THE IRRADIATED FILMS ON HEATING. THE SENSITIVITY WAS EXTENDED TO INCLUDE THE ENTIRE VISIBLE REGION; FILMS CONTG. III WERE SENSITIVE TO LAMBDA GREATER THAN 630 NM.

UNCLASSIFIED

Rubber and Elastomers

USSR

UDC 678.032.8:678.762.2:678.01:
539.3

SIDOROVICH, YE. A., MAREY, A. I., and KUVSHINSKIY, YE. V., All-Union Scientific Research Institute of Synthetic Rubber Leningrad. Labedev

"Effect of the Molecular Weight of Rubber on the Temperature Dependence of the Dynamic Mechanical Properties of Its Vulcanizates"

Moscow, Kauchuk i Rezina, No 6, 1970, pp 3-6

Abstract: The authors undertook to study variations in the dynamic mechanical properties of rubberlike polymers of varying molecular weight, with a varying degree of cross-linking, in a wide temperature range. Cis-1,4-butadiene rubbers SKB and natural rubber were used as the objects of study. It was found that in the region above the transition temperature the molecular weight of rubber is the principal factor governing the dynamic behavior of the vulcanizates. The influence of the initial molecular weight of the rubber becomes insignificant only with rather high degrees of cross-linking (considerably above the optimal degrees). An increase in the initial molecular weight increases the rebound elasticity of the vulcanizates and decreases its temperature coefficient. Inversion of the elasticity temperature coefficient 1/2

USSR

SIDOROVICH, YE. A., et al., *Kauchuk i Rezina*, No. 8, 1970, pp 3-5

is observed with a change in the thickness of the vulcanization network. An increase in the molecular weight increases the degree of cross-linking at which the inversion occurs. The character of the observed regularities is not affected by the type of rubber or cross-linking.

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1/2 027 UNCLASSIFIED PROCESSING DATE--020CT70
 TITLE--PHOTOElastic PROPERTIES OF CROSSLINKED VINYL AROMATIC COPOLYMERS
 -U-
 AUTHOR--(03)-ZLOTNIKOV, N.S., ARBUZOVA, I.A., KUVSHINSKIY, YE.V.
 COUNTRY OF INFO--USSR
 SOURCE--MEKH. POLIM. 1970, 6(1), 3-9
 DATE PUBLISHED-----70
 SUBJECT AREAS--MATERIALS, CHEMISTRY
 TOPIC TAGS--ELASTIC MODULUS, POLYSTYRENE RESIN, ETHYLENE GLYCOL, ACRYLATE,
 POLYMER CROSSLINKING, PHOTOELASTICITY
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAmE--1992/1398 STEP NO--08/0374/70/005/001/0003/0009
 CIRC ACCESSION NO--AP0112878

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0112878

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CERTAIN PHYS. CONSTS. (SOFTENING TEMP., ELASTICITY MODULUS, BIREFRINGENCE CONSTS.) OF POLYSTYRENE, POLY(CHLOROSTYRENE), OR POLY(VINYLTOLUENE) CHANGE LINEARLY OR IN A NEAR LINEAR MANNER WITH INCREASING CROSSLINKING AGENT CONCN. (ETHYLENE GLYCOL DIMETHACRYLATE). AN ATTEMPT WAS MADE TO CORRELATE THE PHOTOELASTICITY OF THESE POLYMERS WITH THE NOMINAL NO. OF CROSSLINKS PER UNIT VOL. (N SUBG). HOWEVER, N SUBG NOT EQUAL TO $E-3KT$ (E IS THE ELASTICITY MODULUS, K IS THE BOLTZMANN CONST. AND T IS THE SOFTENING TEM. IN DEGREESK). THE PHOTOELASTIC PROPERTIES OF THESE POLYMERS COULD NOT BE CORRELATED WITH ANY KNOWN GAUSSIAN OR NON GAUSSIAN THEORY OF POLYMER CROSSLINKING.

UNCLASSIFIED

USSR

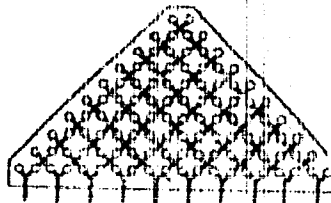
UDC: 621.3.049.73

~~KIVYRKOV, P. P.~~, TEMNIKOV, F. Ye., Moscow "Order of Lenin" Power Engineering Institute

"A Circuit Board"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztzy, tovarnyye znaki, No 10, Apr 71, Author's Certificate No 298088, Division H, filed 24 Feb 69, published 11 Mar 71, p 197

Translation: This Author's Certificate introduces a circuit board which contains a network of current-conducting rowing wires arranged on both sides of the board, and holes for accommodating and soldering hanging components. As a distinguishing feature of the patent, the process of installation and construction of functional electronic subassemblies is simplified by using V-shaped wires with one branch on one side of the board and the other branch on the opposite side. Each of the branches on one side of the board intersects with all the other branches on the other side.



1/1

USSR

UDC 669.71.053.4.067(088.8)

MAL'TSEVA, N. N., PYBAKOV, V. V., SHARKOV, V. I., ~~KLIMBINA, N. I.~~

"Method of Precipitation of Red Slimes"

USSR Author's Certificate No 307065, filed 23/03/70, published 5/08/71.
(Translated from Referativnyy Zhurnal Metallurgiya No 3, 1972, Abstract No. 3G129P by G. Svodtseva).

Translation: Intensification of the process of precipitation of red slimes from solutions used in the production of alumina is achieved by using a polysaccharide such as xylane as a flocculant. In the case of the use of xylane, 10 minutes after the beginning of the experiment, the content of solids in the clarified layer is 2.5 times less than when polyacrylamide is used.

1/1

USSR

UDC 535.853.31

KUYINDZHI, V. V., STREZHNEV, S. A.

"Production of Moire Interference Bands in a System of Three Reflecting Diffraction Gratings"

Optiko-mekhanicheskaya Promyshlennost', No 10, 1971, pp 11-13.

ABSTRACT: Results are presented from testing of a device for measurement of linear displacements on the basis of Moire bands, containing three reflecting diffraction grids. Using this device, Moire bands are produced with a value of 0.208μ with a transmission of the system of 5% and a modulation depth of 80%. Observation of the bands was performed in white light in zero order. The plan of the device allows the inconstancy and difference of steps of the gratings used to be compensated and thereby increases the modulation depth of the light flux at the output of the system.

1/1

L/2 028 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--ON THE ANTIPHAGE SUBSTANCE ISOLATED FROM ACTINOMYCES GLOBISPORUS
-U-
AUTHOR--(04)-KURAIISHI, H., KUIMOVA, T.F., SKALDZUB, N.G., KRASILNEKOV, N.A.
COUNTRY OF INFO--USSR
SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 1, PP 120-124
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PHAGE, ACTINOMYCES, ION EXCHANGE, CHROMATOGRAPHY, ANTIOXIDANT
ADDITIVE, PROTEIN, DNA, RNA
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/1441 STEP NO--UR/0220/70/019/001/0120/0124
CIRC ACCESSION NO--AP0109501

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--02OCT70
CIRC ACCESSION NO--AP0109501
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FURTHER PURIFICATION WAS CARRIED
OUT ON THE RAW PREPARATION WITH ANTIPHAGE ACTIVITY ISOLATED FROM THE
CULTURAL BROTH OF ACTINOMYCES GLOBISPORUS 81 VAR. A. THE PROCEDURE
CONSISTED IN A STEPWISE FRACTIONATION WITH AMMONIUM SULPHATE AND ION
EXCHANGE COLUMN CHROMATOGRAPHY ON DEAE-SEPHADEX A-50 WITH THE FOLLOWING
RECYCLING CHROMATOGRAPHY ACCORDING TO OUR SCHEME. ALL STAGES OF
PURIFICATION WERE CARRIED OUT AT 4-6 DEGREES WITH AN ADDITION OF 0.0002
B BETA-MERCAPTOETHANOL INTO BUFFER SOLUTIONS AND SEPHADEX COLUMNS AS A
STABILIZER OR ANTIOXIDANT. THE HIGHLY ACTIVE ANTIPHAGE SUBSTANCE,
ISOLATED FROM THIS STRAIN, WAS SHOWN TO BE OF PROTEIN NATURE WITH
SPECIFICALLY NEUTRALIZED WITH DNA PREPARATIONS OF VARIOUS BASE
COMPOSITION BUT NOT WITH RNA.

UNCLASSIFIED

USSR

UDC: 539.3/5

BASH, V. Ya., ISHCHEENKO, I. I., KUYUR, A. I., Institute of Mechanics,
Academy of Sciences of the UkrSSR, Kiev

"Determining the Yield Stress of Materials by a Thermoelectric Method"

Kiev, Prikladnaya Mekhanika, Vol 8, No 4, Apr 72, pp 128-131

Abstract: The paper presents the results of a study of various materials (technical copper in the cold-deformed state, L68 brass, VPL-00 technical titanium, technical molybdenum, U8A steel, NP-2 nickel and tungsten) under tension in the elastic and elastoplastic regions of deformation. Analysis of stress-strain and stress-temperature differential deformation curves shows that the thermoelectric method can be recommended for determining the yield stress of these materials with appropriate allowance for residual deformation. Two figures, three tables, bibliography of seven titles.

1/1

1/2 014 UNCLASSIFIED PROCESSING DATE--0900170
 TITLE--A CATHODE WITH SLITS FOR THE ELECTROCHEMICAL POLISHING OF GEARS -U-
 AUTHOR--(04)-GOROBETS, G.K., KUZAMIN, N.F., KORNEY, A.D., COURTSON, N.I.
 COUNTRY OF INFO--USSR
 SOURCE--MUSCOW, STANKI I INSTRUMENT, NO 2, 1970, PP 27-28
 DATE PUBLISHED-----70
 SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
 TOPIC TAGS--METAL POLISHING, ELECTROCHEMICAL MACHINING, GEAR CUTTING
 MACHINE
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY RELL/FRAME--1993/1777 STEP NO--08/0121/70/000700270027/0026
 CIRC ACCESSION NO--AP0114276
 UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--090CF70
CIRC ACCESSION NO--AP0114276
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE BENEFITS ACCORDING FROM THE
ELECTROCHEMICAL POLISHING OF GEARS ARE NULLIFIED WHEN A CONVENTIONAL FLAT
OR ANNULAR CATHODE IS USED, DUE TO APPROXIMATE DOUBLING OF THE TOOTH
PROFILE ERROR AS A RESULT OF THE FORMATION OF AN EXCESSIVELY LARGE
FLANK. A CATHODE WITH SLITS IS PROPOSED, WHICH PROVIDES FOR
INVARIABILITY OF THE TOOTH PROFILE IN POLISHING. A DESCRIPTION OF THE
CATHODE IS PRESENTED, AND ITS OPERATION IS DESCRIBED. WHEN GEARS WERE
ELECTROCHEMICALLY POLISHED WITH THE USE OF SUCH A CATHODE, WITH A
CURRENT DENSITY OF 1.0 A-DM² AND A TEMPERATURE OF 35 DEGREES C, A
PROFILE WAS OBTAINED, THE ERROR OF WHICH CORRESPONDS ESSENTIALLY TO THE
INITIAL GRINDING ERROR OF THE TOOTH PROFILE.

UNCLASSIFIED

USSR

UDC 669.295:610.172.251.2

GETSOV, I. B., and KUZEMA, Yu. A.

"Temperature Dependence of Static, Quasi-Static, and Fatigue Failure Conditions of Titanium Alloys"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metalloy, No 11, 1972, pp 35-37

Abstract: The observed anomaly of the temperature dependence of creep resistance of α - and $\alpha+\beta$ -titanium alloys is used for the study of deformation criteria of fatigue failure of metals under cyclic loads of constant sign. Fatigue tests under low-frequency conditions of VT-8 titanium alloy (6.6% Al, 3.4% Mo, 0.3% Si, 0.05% C, 0.02% N, 0.14% Fe, 0.005% H, the rest Ti) proved that fatigue failure under stresses below the proportionality limit is possible only at temperatures at which creep is observed. Under these conditions, at cyclic stresses of constant sign, the loop width of elastic hysteresis is determined by the creep in loading. A formula is presented which characterizes properties of materials under cyclic loads of constant sign. Two figures, two tables, five bibliographic references.

1/1

USSR

UDC 539.4

STRIZHALO, V. A., IL'YN, A. A., KUZEMA, Yu. A.

"Study of Low-Cycle Fatigue of Light Alloy Welded Joints"

Kiev, Problemy Prochnosti, No 11, Nov 72, pp 31-35.

Abstract: Results are presented from a study of the low-cycle fatigue strength of joints in the aluminum alloys AMg6 and D20-1 and the titanium alloy VT3-1 at room temperature with axial application of a pulsating load. The frequency of application was approximately two cycles per minute, with holding times of approximately ten seconds at the maximum stress. The factors causing a drop in strength and durability of welded joints are analyzed and methods to increase their static and fatigue strength are discussed. These methods include making welded joints for all these alloys symmetrical, as well as mechanical working of seams for those alloys for which the material of the welded joints is as strong as the base metal.

1/1

USSR

UDC: 51

OGORODNEYCHUK, I. F., KUNIK, Ye. G., KUZEMIN, A. Ya., OSIYEVSKIY, A. G.,
GOLOVKO, L. A.

"Methods of Multiple-Criterion Optimization"

Pribory i sistemy avtomatiki. Resp. mezhved. temat. nauch.-tekhn. sb. (Auto-
mation Systems and Devices. Republic Interdepartmental Thematic Scientific
and Technical Collection), 1973, vyp. 27, pp 43-54 (from RZh-Matematika,
No 9, Sep 73, abstract No 9V589 from the authors' abstract)

Translation: A survey is done on a series of methods of solving optimi-
zation problems having several quality criteria. As an object of optimi-
zation, the authors examine the yearly program of an enterprise with three
goal functions (quality criteria). A method is described for solving
problems of optimizing an object with many criteria with application of
a random search algorithm. Bibliography of 14 titles.

1/1

- 53 -

USSR

UDC 159:581.2.035.36

KUZENKO, V. S., SITNIKOV, L. S.

"Operator Errors During Operation with Digital Display Devices and Methods for Their Elimination"

Izmeritel'naya Tekhnika, No 11, 1971, pp 71-73.

ABSTRACT: Up to the present time, the parameters of digital display devices have rarely been coordinated with the psychophysiological properties of operators. This has resulted from a number of factors, in particular the conception that digital readout has no characteristic subjective error, as well as the unavailability of the required recommendations. A comparative analysis of information characteristics of digital and analogue readout, performed in this work, indicates that the following measures should be taken to increase the effectiveness of perception of digital display devices: utilization of information redundancy to create a three dimensional visual model corresponding to the equivalent analogue reading by adding one or more dimensions; elimination of unnecessary information (noise) from readout by means of an indication register; separation of the dynamics of change of indications.

1/1

KUZENKOV, A. F.

Aerological Radiosonde

This article briefly describes the new RKZ-5-2 aerological radiosonde. In contrast to the RKZ-2 aerological radiosonde used in network observations, in the RKZ-5-2 radiosonde the temperature and humidity measurement frequencies are reduced by approximately half. The pedestal frequency is 1000 cps. The duration of the meteopauses varies from 250 sec to half their repetition rate. The RKZ-5-2 radiosonde uses the same temperature unit as in the RKZ-2 network radiosonde. The switching device is an electromechanical commutator with a miniaturized electric motor. Tests of the RKZ-5-2 radiosonde in combination with the "Meteorit-2" radar were very encouraging.

(Abstract: "RKZ-5-2 Aerological Radiosonde," by N. N. Grushin, A. E. Kuzenkov and N. A. Kuz'micheva, Moscow, Trudy Tsentral'noy Aerologicheskoy Observatorii, No 102, 1971, pp 139-140)

[From: Moscow, Referativnyy Zhurnal, Geofizika, Svedeniya Tom, No 10, 1971, 10841]

JPRS 57577 - 9 -
29 Nov 71

1/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70
 TITLE--RADIOACTIVE AEROSOL DISTRIBUTION IN THE MIDDLE AND UPPER
 TROPHOSPHERE OVER THE USSR IN 1963-1968 -U-
 AUTHOR--(05)-NAZAROV, L.E., KUZENKOV, A.F., MALAKHOV, S.G., VOLOKITINA,
 L.A., GAZIEV, YA.I.
 COUNTRY OF INFO--USSR
 SOURCE--J. GEOPHYS. RES. 1970, 75(18), 3575-88
 DATE PUBLISHED-----70

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SUBJECT AREAS--ATMOSPHERIC SCIENCES, NUCLEAR SCIENCE AND TECHNOLOGY
 TOPIC TAGS--RADIOACTIVE AEROSOL, TROPOSPHERE, FISSION PRODUCT,
 STRATOSPHERE, JET STREAM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--3007/0933

STEP NO--US/0000/70/075/018/3575/3588

CIRC ACCESSION NO--AP0136364

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136364

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISTRIBUTION OF RN DAUGHTERS AND CONC. OF AEROSOL FISSION PRODUCTS IN THE TROPOSPHERE WERE MEASURED OVER THE USSR DURING SEVERAL PERIODS FROM 1963 TO 1968. AN INTENSIVE FISSION PRODUCT TRANSPORT FROM THE STRATOSPHERE TO THE TROPOSPHERE OCCURS ON THE CYCLONIC SIDE OF THE JET STREAM. AS A RULE, THE INCLUSION OF THESE PRODUCTS IN THE SURFACE AIR IS OBSERVED ON THE ANTICYCLONIC SIDE OF THE JET STREAM. THE SIMPLEST THEORETICAL SCHEME IS GIVEN TO DESCRIBE THE VERTICAL DISTRIBUTION OF RN AND FISSION PRODUCT CONCNS. IN THE TROPOSPHERE; THE THEORY TAKES INTO ACCOUNT THE VERTICAL TURBULENT EXCHANGE COEFF. AND VERTICAL MOTION. THE DIRECTIONS OF VERTICAL MOTION, ESTD. FROM THE VERTICAL DISTRIBUTION OF BOTH RN AND FISSION PRODUCTS IN THE TROPOSPHERE, AGREE VERY CLOSELY WITH METEOROL. DATA. FACILITY: HYDROMETEOROL. SERV., INST. EXPTL. METEOROL., OBNINSK, USSR.

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