

USSR

UDC 620.178.5

TROSHICHENKO, V. T., GRYAZNOV, B. A., GORODETSKIY, S. S., ROYTMAN, A. B.,
NALIMOV, Yu. S., (Kiev)

"Study of the Influence of Technological Factors on the Endurance of Gas Turbine Blades"

Kiev, Problemy Prochnosti, No 8, 1972, pp 8-12.

Abstract: This work presents an analysis of the influence of certain technological factors on the endurance of the third stage of a gas turbine engine. The blade manufactured by mechanical working of stamped blanks of EI437B vacuum-arc remelted alloy. The deviations in the technology of manufacture of the working turbine blades (scratches, burns, and additional operation called "lustering") have no significant influence on the fatigue strength of blades with a test base of 10^7 cycles at 20 and 570°C. The range of change of fatigue limits in the test blades in comparison with a control group of blades at 20°C was from -0.5% to +7%, at 570°C -- from 0 to +5%. The technological deviations studied do increase the scattering of blade test results in the area of limited durability.

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USSR

UDC: 621.373+621.397.331.222+621.386.2/7

6

BAYKOV, A. F., BELAGO, V. A., BUDARNYKH, V. I., DOTSENKO, V. I.,
KURASHOV, E. M., LYUBIN, V. M., NALIVAYKO, V. I., FEDOROVA, Ye. I.,
TSUKERMAN, V. G., and SHESTAK, A. F.

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

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

Abstract: A description is given of a complex of pulsed x-ray sources with memory elements for recording fast processes, along with highly sensitive systems for visualizing two-dimensional x-ray images of threshold intensity. The radiation required has a duration of 10^{-6} to 10^{-7} sec with a hardness of several hundred kev. For the recording equipment, photographic film and television systems were used, in which the memory cells were the semi-conducting targets of sensor tubes. In such a system, the image is impressed directly on the target of the x-ray vidicon with a controllable memory, or is fixed by re-recording the video signal on a vidicon with optical memory, thus allowing connection of the recording equipment to the input of an electronic computer. The purpose of a complex of this type is to gather scientific data as part of a system for automation of the research procedure. Descriptions of the equipment are given, together with photographs.

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USSR

UDC: 621.373+621.397.331.222+621.386.2/7

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

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

2/2

UNCLASSIFIED
 TITLE--ABSORPTION METHOD FOR DETERMINING THE ENERGY DISTRIBUTION OF
 ELECTRON RADIATION INCIDENT ON A BARRIER AND PASSING THROUGH IT -U-
 AUTHOR--(03)-BARANOV, V.F., ZAYTSEV, R.YA., NALIVAYEV, V.I.

PROCESSING DATE--21NOV70

COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. 1970, 28(3), 237-8

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRON BEAM, ELECTRON ENERGY, ABSORPTION SPECTRUM, INTEGRAL EQUATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--2000/2254

STEP NO--UR/0089/70/028/003/0237/0238

CIRC ACCESSION NO--AP0125832
 UNCLASSIFIED

PROCESSING DATE--27NOV10

UNCLASSIFIED

2/2

026

CIRC ACCESSION NO--AP0125832
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE ENERGY DISTRIBUTION OF E
INCIDENT ON A BARRIER AFTER PASSING THROUGH A BARRIER OF FINITE
THICKNESS CAN BE CALCD. WITH A FAIR DEGREE OF ACCURACY IF ONE KNOWS THE
FUNCTION DESCRIBING THE ATTENUATION OF A RADIATION BEAM WITH A
CONTINUOUS SPECTRUM IN BARRIERS OF DIFFERENT THICKNESSES AND THE
FUNCTION DESCRIBING THE ATTENUATION OF MONOENERGETIC E. A SERIES OF
APPROX. EXPRESSIONS FOR THOSE FUNCTIONS, AND THE CORRESPONDING SOLNS. OF
INTEGRAL EQUATIONS FOR THE E ENERGY DISTRIBUTION ARE PRESENTED.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--RESIDUAL STRESSES IN BUILT UP CRANKSHAFTS -U-
AUTHOR--(031)-NALIVKIN, V.A., CHEPELENKO, V.I., NUYKINA, T.P.
COUNTRY OF INFO--USSR
SOURCE--AVTOMAT. SVARKA, FEB. 1970, (2), 55-49
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR, PROPULSION
AND FUELS
TOPIC TAGS--RESIDUAL STRESS, BIBLIOGRAPHY, CHROMIUM STEEL, MANGANESE
STEEL, ENGINE CRANKSHAFT, WELD FACING, METAL SURFACING

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/0317 STEP NO--UR/0125/70/000/002/0055/0059
C IRC ACCESSION NO--AP0124076
UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--A0124076

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NATURE OF THE RESIDUAL STRESSES IN CRANKSHAFTS BUILT UP BY WELDING IS DISCUSSED. THE RESIDUAL STRESSES IN THE SURFACING METAL ARE DIRECTLY RELATED TO THE NATURE OF THE WELDING MATERIAL SELECTED AND THE HEAT TREATMENT APPLIED. IN ORDER TO CREATE A FAVORABLE STRESS DISTRIBUTION, SPECIAL WELDING MATERIALS ARE REQUIRED (E.G., CR-MN STEELS), AND THE PROCESS MUST BE COMPLETED BY NORMALIZATION AND H.F. HARDENING. MECHANIZED BUILDING UP UNDER FLUX IS NOT SUITABLE FOR CRANKSHAFTS AS IT LEADS TO A SEVERE LOSS IN STRENGTH.

UNCLASSIFIED

AP9052914

UR 0289

PRIMARY SOURCE: Izvestiya Sibirskogo Otdeleniya, AN SSSR,
Seriya Khimicheskikh Nauk, Nr 12(162), Nr 5,
PP 146-148

Z. A. Naikina,
L. M. Gindin, I. M. Ivanov

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5
1
14

THE EXTRACTION OF AMMINES COBALT

The extraction of five cobalt (III) ammines: $(Co(NH_3)_6)Cl_3$, $(Co(NH_3)_5H_2O)Cl_3$, $(Co(NH_3)_5Cl)Cl_2$, $(Co(NH_3)_5NO_3)Cl_2$, $(Co(NH_3)_4Co_3)Cl$ has been investigated depending on the pH of medium. The studied complexes are extracted by caprylic acid better than ammonium ion. The extraction curves fall into groups according to the charge of the complexes.

4

1949 1613

7

1/2 047

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--RADIATION DYNAMICS AND SPECTRAL CHANGES OF NEODYMIUM LASER DURING
OPERATION WITH SELF-SYNCHRONIZATION OF AXIAL MODES -U-

AUTHOR--(03)--KOROBKIN, V.V., NALYUTIN, A.A., SHCHELEV, N.YA.

COUNTRY OF INFO--USSR

SOURCE--PIS'MA, Zh. EKSP. TEOR. FIZ. 1970, 11(3) 168-173

DATE PUBLISHED--70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NEODYMIUM LASER, LASER RADIATION SPECTRUM, LASER BEAM,
SPECTROGRAPHIC ANALYSIS, SPECTRAL FINE STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1983/1796

STEP NO--UR/0386/70/011/003/0168/0173

CIRC ACCESSION NO--AP0054630

UNCLASSIFIED

PROCESSING DATE--13NOV70

UNCLASSIFIED

2/2 047

CIRC ACCESSION NO--A0054630
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE STUDY WAS PERFORMED WITH A ND LASER OF 140 CM RESONATOR LENGTH, IN THE CENTER OF WHICH WAS PLACED A CELL WITH A FILTER. THE AXIAL MODE OF THE RADIATION WAS SEPD. BY USING A DIAPHRAGM OF 2.7 MM DIAM. THE DEVELOPMENT TIME OF THE LASER RADIATION WAS THEN STUDIED ON AN ELECTRO OPTICAL CAMERA, AND COMPARISON OF THE VARIOUS STAGES OF THE LASER PULSES WAS MADE. FOR THIS, THE LASER BEAM WAS SPLIT INTO 2, AND DIRECTED TOWARDS THE SLIT OF THE CAMERA WITH A LOG TIME OF 0-100 NSEC BETWEEN THE 2 BEAMS. THREE CHARACTERISTIC CASES WERE DISTINGUISHED: (1) THERE WERE ONLY 2 INTENSE PEAKS IN THE AXIAL MODE AT THE START AS WELL AS AT THE END OF STIMULATED EMISSION; (2) THERE WERE MANY PEAKS IN THE AXIAL MODE AT THE START AND AT THE END OF THE STIMULATED EMISSION; (3) THERE WERE 2 PEAKS AT THE START, AND MANY PEAKS AT THE END. ALSO THE TIME DEVELOPMENT OF THE LASER SPECTRUM WAS MEASURED BY USING A DIFFRACTION SPECTROGRAPH WITH RESOLUTION 12.2 CM PRIME NEGATIVE-1-MM. A NONUNIFORM SPECTRUM WAS OBSD. IN THE BACKGROUND OF THE SPECTRUM WAS FOUND A MORE INTENSE REGION WITH SHARPLY DEFINED STRUCTURE. THE SPECTRAL STRUCTURE VARIED FROM ONE PEAK TO THE OTHER. A SATISFACTORY EXPLANATION FOR THE STRUCTURE OF THE PEAKS, FOR GIANT PULSES, CANNOT BE GIVEN.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--20NOV70
 TITLE--CONDENSATION OF ALKYLPHENOLS WITH FORMALDEHYDE IN THE PRESENCE OF
 OXALIC ACID DURING THE PREPARATION OF A BENZOFURAN CARBOXYLIC ACID
 AUTHOR--(04)-ALLAKHVERDIYEV, G.A., RZAYEV, R.G., NAMAZOV, I.I., GASANOV,
 D.G.
 COUNTRY OF INFO--USSR
 SOURCE--AZERB. NEFT. KHUZ.1970, (3), 34-5
 DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY
 TOPIC TAGS--CONDENSATION REACTION, PHENOL, FORMALDEHYDE, OXALIC ACID,
 FURAN, AROMATIC CARBOXYLIC ACID, CORROSION RATE

CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--3006/1796 STEP NO--BR/0467/70/000/003/0034/0035
 CIRC ACCESSION NO--AP0135361
 UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135361

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. THE OPTIMUM CONDITIONS FOR CONDENSING ALKYLPHENOLS WITH CH SUB2 O (RATIO 100:25) WERE IN THE PRESENCE OF 0.5 PARTS HO SUB2 COO SUB2 H AT 98DEGREES. CONDENSATION IN THE PRESENCE OF HCL WAS MORE EFFECTIVE BUT THE CORROSION RATE WAS 10 TIMES THAT WITH HO SUB2 COO SUB2 H. THE PRODUCTS OF THE 2 METHODS WERE SIMILAR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--20NOV70
 TITLE--PHOSPHOSULFURIZATION O,O BISALKYLPHENYL PHOSPHORODITHIOATE
 PRODUCTION IN CONTINUOUS PILOT APPARATUS --U--
 AUTHOR--(05)--ORUDZHEVA, I.M., ZEYNALOVA, G.A., PULATOVA, SH., NAMAIZOV,
 I.I. AGAZHANSV, KH.S.
 COUNTRY OF INFO--USSR
 SOURCE--AZERB. NEFT. KHGZ. 1970, (3), 35-7
 DATE PUBLISHED-----70
 SUBJECT AREAS--MATERIALS, CHEMISTRY
 TOPIC TAGS--LUBRICANT ADDITIVE, CHEMICAL SYNTHESIS, THIOL, PHOSPHATE
 ESTER, BENZENE DERIVATIVE, ZINC OXIDE, BARIUM HYDROXIDE/(U)VNIIINP354
 LUBRICANT ADDITIVE, (U)VNIIINP350 LUBRICANT ADDITIVE, (U)VNIIINP360
 LUBRICANT ADDITIVE
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--3006/1797 STEP NO--UR/0487/70/000/003/0035/0037
 CIRC ACCESSION NO--AP0139307
 UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135362

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALKYLPHENOL (93.8 PARTS) AND 6.2 PARTS P SUB2 S SUB5 REACTED AT LESS THAN OR EQUAL TO 130DEGREES AND 1.33 KG PER HR PER L. REACTION VOL. TO GIVE 97PERCENT PRODUCT, WHICH WAS TREATED WITH ZNO AND BA(OH) SUB2 TO OBTAIN THE ADDITIVES VNII NP-354 AND 350, RESP., WHICH, MIXED IN RATIO 2:5, GAVE THE ADDITIVE VNII NP-360.

UNCLASSIFIED

UDC 621.391.2

USSR

NAMAZOV, S.A., RYZHIKINA, T.YE.

"Statistical Characteristics Of Pulse And Monochromatic Signals Reflected Obliquely From The Ionosphere"

Radiotekhnika i elektronika, Vol XVII, No 5, May 1972, pp 932-937

Abstract: The results are presented of an experimental study of the fluctuations of a pulse short-wave signal (~ 10 microsecond duration) and a monochromatic signal. The experiments were conducted in July 1968 during the day and evening at a 400-km long track. In order to compare the fluctuations of monochromatic and pulse signals, a monochromatic signal was radiated during the first 30 minutes of each hour of the experiment, and in the second 30 minutes a frequency-modulated signal on the same medium frequency. A shift of the operating frequency took place at hourly intervals. For the most part the work was conducted at frequencies of 3.5, 5.0, 6.3, and 7.0 MHz. The functions are considered of the autocorrelation of the amplitude and phase of the signals, their probability distribution and the correlation dependence of the fluctuation of the amplitude permitted in the time of the pulses (signals reflected from various layers, magnetic components and individual signals in the diffusive group during reflection from the F₂ layer). During analysis of the experimental data, particular attention was given to a study of the fluctuations of the amplitude. In the

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USSR

NAMAZOV, S.A. et al, Radiotekhnika i elektronika, Vol XVII, No 5, May 1972, pp 932-937

analysis of the phase fluctuations only a qualitative comparison was made of the functions of autocorrelation and a histogram with the corresponding data for the amplitude. The function of autocorrelation and the depth of amplitude of fading, the distribution function of the amplitude and phase of the signal, and the function of cross-correlation are considered. The authors thank V.A. Zyatitskom for composition of the program and conducting calculations on the "Mir" electronic computer. 5 fig. 6 ref. Received by editors, 29 March 1970.

2/2

NAMAZOV, S.A.

Radio - Enggr

AFCRL-72-0030
11 JANUAR 1972
TRANSLATIONS, NO. 96

NAMAZOV, S.A.

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L. G. HANSON FIELD, BEDFORD, MASSACHUSETTS

**Frequency Shift During Ionospheric
Propagation of Radio Waves of
Short Wave Range**

S. A. NAMAZOV

Radio Enggr
RAMON

Translated from Radiotekhnika i Elektronika, (Moscow) V. 14, No. 5
pp. 925-932 (June 1971)
Translated by Transist Association, P.O. Box 337, Reading, Massachusetts.

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United States Air Force



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USSR

UDC: 621.371:551.510.535

NAMAZOV, S. A.

"Frequency Shift in Ionospheric Propagation of Radio Waves in the Short-Wave Band"

Moscow, Radiotekhnika i Elektronika, Vol. 16, No 6, Jun 71. pp 905-913

Abstract: The author presents the results of a theoretical study of frequency displacement during propagation of radio waves in the short-wave band in a plane-laminar and spherical-laminar isotropic ionosphere for the case of oblique wave incidence, and also in a plane-laminar anisotropic ionosphere for the case of normal wave incidence. A method of determining the change in the local concentration of electrons in time from simultaneous measurement of the frequency shift and group delay time in the ionosphere on two close frequencies is proposed. It is found that the frequency displacement during ionospheric propagation of short radio waves depends to a considerable degree on the depth of penetration of the wave into the layer as well as on the parameters of the layer. This factor must be taken into consideration when comparing the frequency shift measured on different frequencies, and when studying the diurnal, seasonal and other regularities governing frequency displacement. The frequency shift caused by the regular change in the parameters of

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NAHAZOV, S. A., Radiotekhnika i Elektronika, Vol. 16, No 6, Jun 71, pp 905-913

the ionosphere (height of the maximum, concentration of electrons at the maximum, half-thickness of the layer) shows a pronounced diurnal variation with maximum deviations of $\pm 0.4-0.6$ Hz when $\Delta = 0.85$ (Δ is the product of the ratio of the carrier frequency to the critical frequency and the cosine of the angle of incidence of the wave on the layer, i. e. $\frac{f}{f_{cr}} (\cos \theta_0)$ at transition

time for a year of maximum solar activity, and ± 0.2 Hz in years of minimum solar activity. The final expression for the frequency displacement of magneto-ion components contains an additional term which accounts for the time variability of the geomagnetic field. This extra term explains the close correlation between fluctuations in the geomagnetic field and in the frequency displacement, and also the appreciable increase in frequency displacement on magnetically active days. On magnetically quiet days the frequency displacement of the ordinary and extraordinary components at transition time differs by a factor of 2 or more. When sphericity is taken into account, there is an increase in frequency displacement which is noticeable for angles close to critical and directions close to the horizon. The Doppler frequency shift calculated by the formulas derived in the article agrees with experimental data.

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USSR

NAMAZOV, S. T., and IPPOLITOV, P. A.

"Study of Protein Metabolism in Animals Irradiated With Small Doses of Ionising Radiation by the Method of Methionine-S-35 Incorporation in Proteins of Structural Elements of Animal Tissue Cells"

Tr. Azerb. NII virusol., mikrobiol. i gigiyeny (Works of Azerbaydzhan Scientific Research Institute of Virology, Microbiology and Hygiene), 1966 (1970), 18, pp 179-183 (summary of Azerbaydzhani) (from RZh-Biologicheskaya Khimiya, No 8, 25 Apr 71, Abstract No 8F1303, summary)

Translation: It was shown that the specific activity of proteins of rat liver and small intestine increases with an increase in the total irradiation dose. Variation in the specific activity of kidney proteins is less pronounced. No changes were observed in the specific activity of spleen proteins after irradiation.

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1/2 023 UNCLASSIFIED PROCESSING DATE--13NOV70
 TITLE--PRESENCE OF CRITICAL MIXING TEMPERATURES DETERMINED FROM DATA ON
 THE TEMPERATURE DEPENDENCE OF THE INTRINSIC VISCOSITY OF
 AUTHDR--(04)-KHODZHEVANDV, F.F., NAMETKIN, N.S., DURGARYAN, S.G., SEMENOV,
 O.S.
 COUNTRY OF INFO--USSR
 SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 283-9
 DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--THERMAL EFFECT, MATERIAL MIXING, CYCLOHEXANE, SILANE,
 CHLORINATED ORGANIC COMPOUND, DEOXYRIBONUCLEIC ACID, PHOSPHATE ESTER,
 MOLECULAR STRUCTURE, FLUID VISCOSITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--3006/1356

STEP NO--UR/0062/70/000/002/0283/0289

CIRC ACCESSION NO--AP0135030

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV79

2/2 023

CIRC ACCESSION NO--AP0135030

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. INTRINSIC VISCOSITIES AND THEIR TEMP. COEFFS. WERE DETD. FOR POLY(VINYLTRIMETHYLSILANE) IN DECAHYDRONAPHTHALIENE, CYCLOHEXANE, 1,2,4,ME SUB3 C SUB6 H SUB3, CHCL SUB3, C SUB6 H SUB6, AND ME SUB3 SICH:CH SUB2. VISCOSITY VARIATIONS OF THE POLYMER (PREPD. WITH ETLI CATALYST) WERE INTERPRETABLE BY THE PATTERSON-TAGER THEORY ON THE BASIS OF EXISTENCE OF UPPER AND LOWER CRITICAL TEMPS. OF MIXING FOR THE POLYMER SOLVENT COMPONENTS. A SIMILAR ANAL. OF VISCOSITY IN SOLNS. OF DNA AND DEOXYRIGONUCLEOPROTEIN (DNP) WAS MADE. DNP SOLN. SHOWED AN ANOMALOUS 3 FOLD RISE IN VISCOSITY PRIOR TO CHANGE OF THE SPIRAL FORM TO THE SPHERICAL ONE, EITHER CAUSED BY DISSOCIATION OF THE PROTEIN FROM THE DNA AND INCREASED ASYMMETRY REFLECTING THE CONFORMATION CHANGE, OR PERHAPS AS A RESULT OF CHANGE IN THE SUPRAMOLECULAR STRUCTURE OF DNP. FACILITY: INST. NEFTEKHIM. SIN. IM. TOPCHIEVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70
 TITLE--COPOLYMERIZATION OF ALLYTRIMETHYL OR ALLYLDIMETHYLPHENYLSILANES
 WITH ACRYLONITRILES -U-
 AUTHOR--(04)--NAMETKIN, N.S., KOZHUKHOVA, I.N., FILIPPOVA, V.G., DURGARYAN,
 S.G.
 COUNTRY OF INFO--USSR
 SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(3), 180-2
 DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COPOLYMERIZATION, ORGANIC SILANE, ACRYLONITRILE, CHEMICAL KINETICS, BENZENE DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--2000/0671

STEP NO--UR/0460/70/012/003/0180/0182

CIRC ACCESSION NO--AP0124343

UNCLASSIFIED

PROCESSING DATE--30OCT71

UNCLASSIFIED

2/2 019

CIRC ACCESSIGN NO--AP0124343

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE COPOLYMER KINETICS OF H SUB2
 C:CHCH (I) WITH ME SUB3 SICH SUB2 CH: CH SUB2 (II) OR ME SUB2 PH SICH
 SUB2 CH:CH SUB2 (III) WAS STUDIED IN BULK OR KCONME SUB2 SOLN. IN THE
 PRESENCE OF BZ SUB2 O SUB2. THE DEPENDENCE OF THE COPOLYMER COMPN. ON
 THE COMPN. OF THE STARTING MONOMER MIXTS. WAS ESTABLISHED. THE
 REACTIVITY RATIOS (R) IN THE THE I-II COPOLYMN. WERE 3.98 FOR I AND 0.11
 FOR II AND IN THE I-III COPOLYMN. 2.24 FOR I AND 0.20 FOR III. THE
 REACTIVITY FACTORS (Q) AND POLARITY FACTORS (E) WERE 0.036 AND 02.7 FOR
 II, AND 0.070 AND 0.30 FOR III, RESP. FACILITY: INST.
 NEFTEKHIM. SIN. IM. TOPCHIEVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--POLYADDITION REACTIONS OF SOME ORGANOVINYLCHLOROSILICON HYDRIDES
-U-
AUTHOR--(05)--KOBRAKOV, K.I., FEDOROV, L.A., KUZMIN, O.V., NAMETKIN, N.S.,
CHERNYSHEVA, T.I.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 18(3), 607-19 (CHEM)
DATE PUBLISHED--70

N

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLYMERIZATION, ORGANOSILICON COMPOUND, OLIGOMER, CHLORINATED
ORGANIC COMPOUND, DIMERIZATION, EPR SPECTRUM, CYCLOHEXANE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/0725

STEP NO--UR/0020/70/191/003/0607/0610

CIRC ACCESSION NO--AT0124395

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 020

CIRC ACCESSION NO--AT0124395

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POLYMN. OF MESI(CH:CH
 SUB2)CL, ETSI(CH:CH SUB2)CL, PHSI(CH:CH SUB2)CL, OR SI(CH:CH SUB2) CL
 SUB2 IN SEALED TUBES AT 100-50DEGREES IN THE PRESENCE OF H SUB2 PTCL
 SUB6.6H SUB2 O AND PT-C GAVE OLIGOMERS CONTG. ONLY (CHMESIRCL) SUBN (I)
 (R SI CL OR PH) STRUCTURES OR I AND (CH SUB2 CH SUB2 SIRCL) SUBN (II) (R
 SI ME OR ET) STRUCTURES. BESIDES I AND (OR) II (IN RS 9-11) THE POLYMN.
 ALSO GAVE DIMERS SUCH AS 1,4,DICHLORO,1,4,DIMETHYL,1,4,DISILACYCLOHEXANE
 (III) OR 1,1,4,4,TETRAMETHYL,1,4,DISILACYCLOHEXANE (IV). EPR SPECTRA
 GAVE THE CONFORMATION OF III AND SHOWED THAT IV CONTAINS ISOMERIC
 1,3,DICHLORO,1,2,3,TRIMETHYL,1,3,DISILACYCLOPENTANE. FACILITY:
 INST. NEFTEKHIM, SIN. IN. TOPCHIEVA, MOSCOW, USSR.

UNCLASSIFIED

1/3 Q21 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--HYDROXYETHYLATION OF NAPHTHENIC ACID BASED AMINES -U-
AUTHOR-(03)-~~NAMETKIN, N.S.~~, YEGOROVA, G.M., POTAPOV, G.P.
COUNTRY OF INFO--USSR N
SOURCE--NEFTEKHIMIYA 1970, 10(1), 116-19
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--NAPHTHENIC ACID, AMINE, CRUDE OIL, SURFACE ACTIVE AGENT,
CATALYSIS, ACTIVATION ENERGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0606 STEP NO--UR/0204/70/010/001/0116/0119
CIRC ACCESSION NO--AP0119522
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/3 021

CIRC ACCESSION NO--AP0119522
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CYCLOALIPHATIC AMINES DERIVED FROM NAPHTHENIC ACIDS FROM BAKU CRUDE OILS, B SUB1 110-30DEGREES AND 130-160DEGREES WERE ETHOXYLATED AND THE REACTION PRODUCTS STUDIED FOR SURFACE ACTIVE PROPERTIES. THE UNCATALYZED ETHOXYLATION GAVE ONLY N,N,BIS(HYDROXYETHYL)AMINES. THE REACTION CATALYZED BY SOLID KOH (0.5PERCENT) GAVE POLYOXYETHYLENAMINES WITH 2-14 OCH SUB2 CH SUB2 UNITS IN THE CHAIN, WITH AV. MOL. WT. 290-825. THE PRODUCTS HAVE A HIGH CLOUD POINT IN 1PERCENT AQ. SOLN. THE LOWERING OF SURFACE TENSION OF THE AQ. SOLN. IS PROPORTIONAL TO THE CONC.; THE MAX. EFFECT IS SHOWN BY COMPS. WITH 6 OCH SUB2 CH SUB2 GROUPS IN THE CHAIN. THE IR SPECTRA HAVE BANDS AT 1130 AND 1260 CM PRIME NEGATIVE1 AND A BROAD BAND AT 3400 CM PRIME NEGATIVE1. THE PRODUCTS ARE USEFUL AS FLOTATION AGENTS FOR LI ORES. KINETIC STUDIES OF ETHOXYLATION WERE MADE ON THE HIGHER BOILING FRACTION AT AN INITIAL ETHYLENE OXIDE CONC. OF 0.5 MOLE-L. THE RATE CONST. WAS CALCD. FROM THE SLOPE OF LOG DELTA P VS. TIME. FOR UNCATALYZED REACTION AT 140DEGREES, IT IS 3.0 TIMES 10 PRIME4 SEC PRIME NEGATIVE1. AUTOCATALYSIS OF THE REACTION WAS STUDIED BY ADDN. OF (HOCH SUB2 CH SUB2) SUB2-NH TO THE INITIAL REACTION MIXT. THE AUTOCATALYSIS RATE WAS DETD. FROM A SERIES OF RUNS WITH VARIED INITIAL CONC. OF (HOCH SUB2 CH SUB2) SUB2-NH AND 0.5 MOLE-L. INITIAL ETHYLENE OXIDE CONC. THE CATALYTIC EFFECT OF (HOCH SUB2 CH SUB2) SUB2 NH IS PROPORTIONAL TO ITS CONC. THE AUTOCATALYSIS RATE CONST. IS 23.7 TIMES 10 PRIME3 L.-MOLE-SEC.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

3/3 021
CIRC ACCESSION NO--AP0119522
ABSTRACT/EXTRACT--THE ACTIVATION ENERGY OF
RATE CONST. FOR THE UNCATALYZED REACTION
5.0 TIMES 10 PRIME⁴ SEC PRIME NEGATIVE,
ENERGY IS SIMILAR TO 11 KCAL-MOLE.
SIN. IM. TOPCHIEVA, MOSCOW, USSR.

REACTION WAS DETD. FROM THE
AT 150 AND 160 DEGREES (4.0 AND
RESP.). THE CALCD. ACTIVATION
FACILITY: INST. NEFTEKHIM.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--SYNTHESIS AND PYROLYSIS OF CYCLOBUTYLMETHYL TRIMETHYLSILANE -U-
AUTHOR--(05)-NAMETKIN, N.S., GUSELNIKOV, L.YE., USHAKAVA, R.L., STARTSEVA,
O.M., VOOVIN, V.M.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 494-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL-SYNTHESIS, PYROLYSIS, ORGANIC SILANE, PLATINUM
COMPOUND, CATALYST
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0847 STEP NO--UR/0062/70/000/002/0496/0496
CIRC ACCESSION NO--AP0119751
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119751

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDING 15.5 G METHYLENECYCLOBUTANE OVER 2 HR TO 23 G ME SUB2 SIHCI AND 0.2 ML H SUB2 PTGI SUB6 CATALYST IN THF, AND HEATING THE MIXT. 8 HR AT 110DEGREES GAVE 51PERCENT DIMETHYL(CYCLOBUTYLMETHYL) CHLOROSILANE, B. 167-8DEGREES, N PRIME20 SUBD 1.4465, D PRIME20 0.9296. THIS WITH MEMGI GAVE 55.4PERCENT (CYCLOBUTYLMETHYL) TRIMETHYLSILANE, B. 145DEGREES, 1.4310, 0.7816. PYROLYSIS IN A STATIC SYSTEM AT 430DEGREES GAVE 51PERCENT CH SUB2:CHCH SUB2 SIME SUB3 IN 30 MIN. IN AN IMPULSE PYROLYSIS AT 575DEGREES WITH 12 SEC CONTACT TIME, 61PERCENT CONVERSION WAS ATTAINED; THE AMT. OF SAMPLE DID NOT AFFECT THE CONVERSION, SHOWING THAT THE REACTION IS TRULY MONOMOL. AND FORMS THE ABOVE PRODUCT AND C SUB2 H SUB4. FACILITY: INST. NEFTEKHIM.SIN. IN. TOPCHIEVA, MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr. **AT0045326**

Abstracting Service:
CHEMICAL ABST.

5-70 **Ref. Code**
ULR0020


90910k Isomerization of active centers in the anionic polymerization of vinyltrimethylgermane. ~~Nametkin, N. S.; Duzgar'yan, S. G.; Tikhonova, L. I.; Filippova, G. G. (Inst. Neftekhim. Sin. im. Topchieva, Moscow, U.S.S.R.). Dokl. Akad. Nauk SSSR 1970, 190(1), 114-17 (Chem) (Rus).~~ ~~Me₃GeCH:CH₂ (I) polymd. slowly in heptane in the presence of BuLi at 35-45°. Thus, after 1150 hr at 3.41 mole/l. I concn. and 0.01 mole/l. BuLi concn., only 57% conversion was obsd. After an initial induction period, the polymn. rate was proportional to I concn. and the square root of the initiator concn. Addn. of butadiene to the reaction system after 300 hr did not cause it to polymerize, indicating the low activity of the I carbanions. The polymer chain growth is apparently complicated by deactivation of the active centers by a hydride transfer from the end of the growing chain to give LiH. This was confirmed by observation of C=C absorptions in the ir spectra of the polymer and by Br uptake corresponding to 2.2% double bonds.~~ DBJR

4-D

4

REEL/FRAME
19780250

7

1/2 027 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--SOLUBILITY OF GASES IN ICE -U-
AUTHOR--(02)-NAMIOT, A.YU., GORODETSKAYA, L.YE. 
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(3), 604-6
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--SOLUBILITY, HYDROGEN, ARGON, NEON, HELIUM, ICE,
CRYSTAL LATTICE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1984/1574 STEP NO--UR/0020/70/190/003/0604/0606
CIRC ACCESSION NO--AT0100192
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0100192

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOLYS. OF H SUB2, AR AND NE IN ICE AT 400, 600, AND 800 ATM WERE CALCD. BY MEASURING THE FREEZING POINTS OF PURE AND GAS SATD. WATER IN A NAMIOT BUKHGALTER DEVICE (1965). MEAN COEFFS. OF ABSORPTION, EXPRESSED IN TERMS OF CM PRIME3 TIMES 10 PRIME NEGATIVE3-G ATM (VOLS. REFER TO ODEGREES AND 760 TORR) ARE 11,8, AND 7 FOR HE, H SUB2 AND NE, RESP.; I.E., THE SOLYS. OF THESE GASES IN ICE ARE OF THE SAME ORDER OF MAGNITUDE AS IN WATER. HOLES IN THE LATTICE OF ICE ARE LARGE ENOUGH TO ACCOMMODATE ATOMS OR MOLLS. OF THESE GASES. GAS IN ICE SOLNS. FOLLOW THE HENRY RULE. SOLY. IN ICE OF GASES HAVING LARGER ATOMS OR MOLLS. (O SUB2, N SUB2, AR, ETC.) CANNOT BE MEASURED BY THIS METHOD BECAUSE THEY FORM CRYSTAL HYDRATES WITH WATER.

UNCLASSIFIED

USSR

UDC: None

GOL'DANSKIY, V. I., KAGAN, Yu., and NAMIOT, V. A.

"Two-Stage Excitation of Nuclei to Obtain Stimulated Emission of Gamma Quanta"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, vol 18, No 1, 5 July 1973, pp 61-63

Abstract: This letter is based, at least in part, on earlier articles by the first two authors named above (ZhETF, 64, 1973, p 90; a report presented at the scientific sessions "Otdeleniye obshchey fiziki i astronomii" and "Otdeleniye yadernoy fiziki" -- Division of General Physics and Astronomy and Division of Nuclear Physics -- of the USSR Academy of Sciences, 28 December 1972, UFN, 110, 1973, p 445) in which the possibility of creating a laser for nuclear gamma transitions (a gaser) was analyzed. In those articles, it was concluded that pulse pumping of the Mössbauer levels by the capture of neutrons is necessary. In the present letter, the authors report a two-stage method of reducing the intensity of the neutron beam required to provide the specified density of excited nuclei. In the first stage, the neutrons are captured in a target with a Mössbauer-level population having a mass number close to 1/2.

- 63 -

USSR

UDC: None

GOL'DANSKIY, V. I., et al, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, vol 18, No 1, 5 July 1973, pp 61-63

that of the nucleus. In the second stage, the radiated gamma quanta are captured by the nuclei in a second target. The targets in both stages are solids.

2/2

USSR

UDC: 537.521.7

NAMITOKOV, K. K., KRASOVITSKIY, V. B., SHNAYDER, Ya. N.,
All-Union Scientific Research Institute for Design and Plan-
ning of Electrical Equipment, Khar'kov

"Concerning Development of an Electron Avalanche in an Inter-
electrode Gap in a Weak Electric Field"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 41, No 11, Nov
71, pp 2357-2362

Abstract: The authors study the effect of electron avalanche
formation in a gas-filled interelectrode space in the presence
of a weak electric field. The analysis is based on a kinetic
equation, thus enabling the authors to follow development of
the process with time in addition to calculating the ioniza-
tion coefficient. The strength of the steady electric field
is assumed to be so low that the energy acquired by a free
electron over its mean free path is much less than the ioniza-
tion energy of the gas atoms. The ionization coefficient is

1/2

USSR

NAMITOKOV, K. K. et al., Zhurnal Tekhnicheskoy Fiziki, No 11,
Nov 71, pp 2357-2362

found as a function of the gas parameters. As in Townsend's theory, the one-dimensional problem is considered: the electrons move parallel to the electric field, which may occur in the presence of a strong magnetic field parallel to the electric field. Bibliography of 7 titles.

2/2

- 65 -

1/2 025 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--CLASSIFICATION PECULIARITIES OF THE FORMS OF MANIFESTATION OF THE
ELECTRIC EROSION -U-
AUTHOR--NAMITOKOV, K.K.
COUNTRY OF INFO--USSR
SOURCE--NOVOCHERKASSK, IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY,
ELEKTRONMEKHANIKA, NO 3, 1970, PP 279-284
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--ELECTRIC DISCHARGE, EROSION, BIBLIOGRAPHY, PLASMA DISCHARGE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1672 STEP NO--UR/0144/70/000/003/0279/0284
CIRC ACCESSION NO--AT0123499
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0123499

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALL THE VARIETIES OF FORMS OF THE ELECTRIC EROSION OF MATERIALS MAY BE DIVIDED INTO TWO LARGE CLASSES, VIZ., CONTACT EROSION AND NONCONTACT EROSION. THE CONTACT EROSION, IN TURN, MAY BE SUBDIVIDED INTO A CLOSING TYPE EROSION AND AN OPENING TYPE EROSION. TO THE NONCONTACT EROSION BELONGS FORMS OF THE EROSION OF MATERIALS, WHICH ARE OBSERVED UPON ACTION OF THE PLASMA OF AN ELECTRIC DISCHARGE. A BRIEF QUALITATIVE CHARACTERIZATION IS PRESENTED OF THE ABOVE MENTIONED FORMS OF EROSION. 6 REFS.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--MIXTURE FOR PREPARING ARC, ARRESTER CHAMBERS FOR ELECTRICAL
APPARATUS -U-
AUTHOR-(04)-NAMITOKOV, K.K., BULGAKOV, V.A., MITSKEVICH, G.F., BREZINSKIY,
V.G.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R.267,436
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--01APR70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--ARC DISCHARGE, DISCHARGE CHAMBER, PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0885

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

CIRC ACCESSION NO--AA0132975

UNCLASSIFIED

272 018

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0132975

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CHARGE FOR PREPO. ARC, ARRESTER
CHAMBERS FOR ELEC. APP. CONSISTED OF ASBESTOS 20-30, CEMENT 60-75, AND
ALK., EARTH METAL HALIDES 2-10 WT. PERCENT.

UNCLASSIFIED

Acc. Nr.

AP0049304

Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code

4R 0226

10

103090v Cermet contacts of silver-cupric oxide composition.
 Mitskevich, G. F.; Kornienko, V. P.; Namitkov, K. K.;
 Smaga, N. N.; Yudin, B. A. (Vses. Nauch. Issled. Proekt.-
 Konstr. Inst. Elektroapp., USSR). *Porosh. Met.* 1970, 10(1),
 60-5 (Russ). The production of Ag-CuO contacts with fine-
 dispersed structural components is described. Comparative data
 are presented on the properties of contacts produced from a fine-
 dispersed charge, the charge being obtained by chem. methods,
 and contacts from the mixt. of comparatively large-size powders
 obtained by mech. mixing. Comparative results are also given
 for the wear resistance of the contacts during current flow.

S. A. Mersol .

lpc

REEL/FRAME

19801121

18

AA0045189

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

243194 FIBRE OPTICS MEASURING DEVICE, described in No.153126, was based on the principle of optical measurement of length using a transmitting television tube and a bunch of light guides. Measurement is not as accurate as it might be, owing to physical movement effects from the test piece. The proposal describes an improvement. The diagram shows an objective lens 1 focussed on the test piece 6 (which may be hot) and passing an optical image to the bunch of light guides 2, which are closed up at the input end 4. The output end 5 is scanned by the television tube 3; the feature of the present development is the special arrangement of these flexible fibre guides into even and

2/70

AUTHORS: Rabinovich, V. A.; Sharf, Ye. M.; Pungar, V. A.;
Namsarayev, V. T.

21

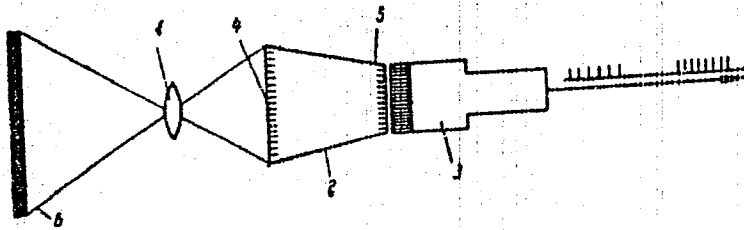
1/3

19780092

AA0045189

odd groups, as numbered at the input, so that odd numbers arrive in group A, and even in group B, of the output array. In addition they are in opposed order, as shown. The image of the hot body 6 presented to the light guides is converted by the television tube into one depending on the scanning method, but any dynamic error due to movement is only equal to the difference of the errors in each part A and B of the final image.

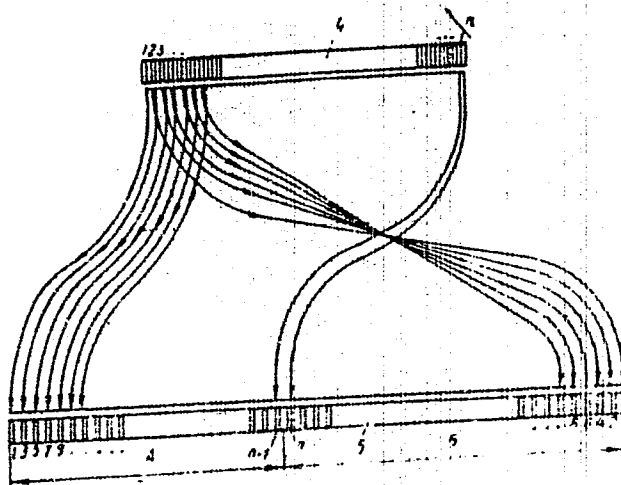
5.11.67 as 1195767/25-28 Add to 153126.V.A.RABINOV-
ICH et al.(17.9.69) Bul 10/.5.5.69. Class 42b.
Int.Cl.G 01b.



19780093

2/3

AA0045189



3/3

19780094

NANEYSHVILI, B. R.

SO: JPKS 53378
16 JUNE 71
UDC: 616.895.8-07:616.831/.832-091.8-07

EXPERIMENTAL AND CLINICO-MORPHOLOGICAL INVESTIGATION OF ULTRASTRUCTURES OF THE BRAIN IN SCHIZOPHRENIA *psikhiazny*

Article by B.R. Naneyshvili, Institute of Psychiatry imeni V.M. Asatiani, Georgian Ministry of Health, Tbilisi; Moscow, *Vestnik Akademii Meditsinskikh Nauk SSSR*, Russian, No 5, May 1971, pp 75-77

The purpose of the present study was to evaluate ultrastructural changes in the brain associated with schizophrenia and in the light of data obtained from electron microscopic study of the brain of animals to whom blood plasma from schizophrenics was administered.

The difficulty of studying structural changes in nerve tissue elements in the presence of schizophrenia lies in that in such cases death usually occurs as a result of a serious somatic disease capable of inducing diverse morphological changes in the central nervous system. In addition, one must also take into consideration the severe hypoxia associated with the agonal state, as well as autolytic processes that develop after death. It is particularly important to take these influences into consideration when pursuing electron microscopic studies. In view of the development of post mortem changes, some authors limit the time within which pieces of tissue are fixed for submicroscopic studies to 15 (Kjostrom) and even 3 minutes (Zalner) from the time of death. Some researchers, however, believe that this can be extended somewhat. For example, L.S. Gol'din and V.P. Fedov observe that the main ultrastructural elements of nerve tissue remain intact when the material is immersed in fixing fluid several hours after death. But this view is not shared by all investigators, and the requirement of minimal intervals in obtaining material for electron microscopic studies is one of the most important conditions.

In the present article, however, we submit data from electron microscopic examination of section material made 7.5 and three hours after death. We deemed it feasible in view of the fact that our chief objective was not to demonstrate "schizophrenic" changes in brain tissue, but rather to compare the structural changes observed at these times in the brain of patients who had suffered from schizophrenia with the same changes demonstrable in animals to whom blood plasma from schizophrenics had been administered, at different

UNCLASSIFIED
 PROCESSING DATE--13NOV70
 1/3 : 017
 TITLE--ON THE COMPLEX NATURE OF THE PARADOXICAL SLEEP IN THE CAT -U-
 AUTHOR--(03)-ONIANI, T.N., MOLNAR, P., NANEYSHVILI, T.L.
 COUNTRY OF INFO--USSR
 SOURCE--FIZIOLOGICHESKIY ZHURNAL SSSR IMENI I. M. SECHENOVA, 1970, VOL 56,
 NR 5, PP 689-695
 DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
 TOPIC TAGS--SLEEP, CAT, ELECTRODE, HIPPOCAMPUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--3001/0243

STEP NO--UR/0239/70/056/005/0689/0695

CIRC ACCESSION NO--AP0126021

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

2/3 017

CIRC ACCESSION NO--A0126021
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. SPECTRAL ANALYSIS OF THE CORTICO AND SUBCORTICOGRAMS RECORDED WITH IMPLANTED ELECTRODES SHOWED THE PARADOXICAL SLEEP TO BE COMPOSED OF THREE DISTINCT PERIODS. 1) THE HIPPOCAMPAL DESYNCHRONIZATION PERIOD, WITHOUT RAPID EYE MOVEMENTS AND MUSCLE TWITCHES, DURING THE SLOW WAVE SLEEP. 2) THE THETA PERIOD OF HIPPOCAMPAL SYNCHRONIZATION, WITH THE SUDDEN APPEARANCE OF THETA BURSTS, ACCOMPANIED BY RAPID EYE MOVEMENT, MUSCLE TWITCHES AND ARRHYTHMIC HEART RATE AND RESPIRATION. 3) THE DELTA PERIOD OF HIPPOCAMPAL SYNCHRONIZATION, I.E. THE GRADUAL SLOWING OF THE HIPPOCAMPAL ACTIVITY, WITHOUT MUSCLE TWITCHES AND WITH OCCASIONAL EYE MOVEMENTS, FURTHERMORE WITH A DECREASE OF THE HEART RATE. THE LATTER PERIODS OF HIPPOCAMPAL SYNCHRONIZATION REPEATEDLY APPEARED DURING EACH PARADOXICAL SLEEP PHASE. THE APPEARANCE OF THE SLOW WAVE SLEEP WAS FOUND TO BE PRECEDED BY HIPPOCAMPAL SYNCHRONIZATION PERIOD, I.E. DELTA PERIOD USUALLY. ACCEPTING THE VIEW THAT THE NEURAL ESSENCE OF THE PARADOXICAL SLEEP WOULD BE THE LIBERATION OF THE RETICULAR ACTIVATING SYSTEM FROM THE INHIBITORY INFLUENCE OF THE PONTINE SYNCHRONIZING STRUCTURES (12), AND TAKING INTO CONSIDERATION THE ROLE OF THE HYPOTHALAMIC STRUCTURES IN THE GENESIS OF THE HIPPOCAMPAL SYNCHRONIZATION (15), THE RETICULAR FORMATION WAS SUPPOSED TO RISE THE HIPPOCAMPAL DESYNCHRONIZATION, AND THE HYPOTHALAMUS TO RISE THE TWO HIPPOCAMPAL SYNCHRONIZATION PERIODS.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

3/3 017

CIRC ACCESSION NO--AP0126021

ABSTRACT/EXTRACT--THE RECENT DATA OF THE GRASYAN'S GROUP (14) AS WELL AS THE CONTROL STIMULATION EFFECTS IN THE PRESENT STUDY SUGGEST THE LATERAL HYPOTHALAMIC ORIGIN OF THE THETA PERIOD WITH RELATIVE FUNCTIONAL DOMINANCE OF THE MEDIAL STRUCTURES DURING THE DELTA PERIOD OF THE PARADOXICAL SLEEP.

FACILITY: INSTITUTE OF PHYSIOLOGY GEORG.

SSR, TBILISI.

UNCLASSIFIED

USSR

UDC 010.49

2

ABDULLAYEV, G. B., ANTONOV, V. B., BELEN'KIY, G. L., GUSEYNOV, D. T., KANI, R. KH., and SALAYEV, E. YU., Institute of Physics, Academy of Sciences Azerbaydzhan SSR

"Photoconductivity of $CdIn_2S_4$ Single Crystals, Recombination Scheme"

Baku, Investiya Akademii Nauk Azerbaydzhanckoy SSR, Seriya Fiziko-Tekhnicheskikh i Matematicheskikh Nauk, No 4, 1971, pp 127-131

Abstract: A study of the photoelectric properties of $CdIn_2S_4$ single crystals under intrinsic excitation, thermally stimulated conductivity, as well as the radiation spectrum of crystals under the action of fast electrons, enabled the authors to obtain information on the energy level spacing in the forbidden band of $CdIn_2S_4$ and to determine some recombination and trapping center parameters.

1/1

USSR

UDC 621.315.592

SALAYEV, YU. E., KHALILOV, V. KH., ANTONOV, V. B., NAMY, R. KH.

"Faraday Effect in the Exciton Absorption Region in GaSe"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 267-270

Abstract: A study was made of Faraday rotation in the exciton absorption region for weak fields (13.5 kilogauss) and at temperatures of 300 and 120° K. Comparison of the results with the data obtained from magneto-optical measurements in strong fields [K. Aoyagi, et al., J. Phys. Soc. Japan, No 21 (supplement), 1966] shows good agreement of the results. This agreement confirms the applicability of the mathematical model used and the results obtained by the different methods.

The result from investigating the Faraday effect in the absorption region of the exciton line $n = 0$ were processed on the basis of the Halpern theory [J. Halpern, Phys. Rev., Vol 134, No A140, 1964] and the Zwara approximation [M. Zwara, Phys. St. Sol., No 36, 735, 1969]. Relaxation times of $\tau = 0.443 \cdot 10^{-13}$ for 300° K and $\tau = 0.845 \cdot 10^{-13}$ sec for 120° K were obtained. The effective values of the g-factors were $g^* = 3.88$ for 300° K and $g^* = 3.46$ for 120° K. The estimated concentrations of the exciton states were $N = 1.59 \cdot 10^{16} \text{ cm}^{-3}$ for 300° K and $N = 0.89 \cdot 10^{16} \text{ cm}^{-3}$ for 120° K.

1/1

1/2 014 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--LOW TEMPERATURE RADIOLYSIS OF ALIPHATIC SULFIDES -U-

AUTHOR--(C4)--~~NANOBASHVILI, YE.M., PANCHVIDZE, M.V., DAPKVEASHVILI, A.G.,~~
KHIDESHILI, G.I.
COUNTRY OF INFO--USSR

SOURCE--SCCBASHCH. AKAD. NAUK GRUZ. SSR 1970, 57(1), 81-4

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--RADIOLYSIS, SULFIDE, FREE RADICAL, ALPHA RADIATION, BETA
RADIATION, ORGANIC SULFUR COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1233

STEP NO--UR/0251/70/057/001/0081/0084

CIRC ACCESSION NO--AP0128649

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128649

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RADIOLYSIS AT 77DEGREE SK. OF (C
SUBN H SUB2N PLUS 1) SUB2 S (N EQUALS 1, 2, 3, 4, 5, 7, 10, AND 12,
RESP.) RESULTS IN ABSTRACTION OF ALPHA OR BETA-H ATOMS. THE RADICAL
YIELD INCREASES CURVILINEARLY WITH N. FACILITY: INST. NEORG.
KHM. ELEKTROKHM., TBILISI, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--RADIOLYSIS OF 1,HEXADECANE AND 1,OCTADECANETHIOLS --U-
AUTHOR--(03)-CHIRAKADZE, G.G., NANOBASHVILI, YE.M., MOSASHVILI, G.A.
COUNTRY OF INFO--USSR
SOURCE--SOOBSHCH. AKAD. NAUK BRUZ. SSR 1970, 57(2), 341-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--RADIOLYSIS, DECANE, THIOL, X RAY, GAMMA RADIATION, SULFIDE,
SULFONIC ACID
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/0797 STEP NO--UR/0251/70/057/002/0341/0344
CIRC ACCESSION NO--AP0136231
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136231

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPS., (I) AND (II), RESP., WERE EXPOSED TO X AND GAMMA RAYS. I HAVING RECIEVED A DOSE OF 2.2 TIMES 10 PRIME19 OR 3.6 TIEMS 10 PRIME19 EV-ML SHOWED A CONVERSION YIELD OF 0.4 TIMES 10 PRIME NEGATIVE3 OR 0.8 TIMES 10 PRIME NEGATIVE3 MOLE-L., RESP. I DISSOLVED IN ORG. SOLVENTS WAS CONSIDERABLY MORE SENSITIVE TO CHANGES, THE EXTENT BEING A FUNCTION OF SOLVENT POLARITY: A 0.008M SOLN. IN ETOH HAVING RECEIVED A DOSE OF 0.9 TIMES 10 PRIME19 OR 3.6 TIMES 10 PRIME19 EV-ML SHOWED A DECOMPN. OF 0.75 TIMES 10 PRIME NEGATIVE3 OR 2 TIMES 10 PRIME NEGATIVE3 I MOLE-L., AND A 0.008M SOLN. IN ISOOCTANE UNDER THE SAME CONDITIONS, 0.49 TIMES 10 PRIME NEGATIVE3 OR 1.2 TIMES 10 PRIME NEGATIVE3 I MOLE-L., RESP. DOUBLING THE CONC. OF I NEGLIGIBLY RAISED THE CONVERSION OF I. II BEHAVED SIMILARLY WHEN TESTED UNDER SIMILAR CONDITIONS. THE MAIN CONVERSION PRODUCTS WERE THE CORRESPONDING DISULFIDES (SULFIDES, SULFONIC ACIDS, AND H SUB2 S WERE FORMED ONLY IN MINOR AMTS.). THE COMPARISON OF THESE DATA WITH THOSE FOR LOWER MDL. WT. HOMOLOGS SHOWS THAT THE EFFECTS OF MDL. WT. DIMINISHES SHARPLY STARTING WITH I AND THE HIGHER THIOLS RESEMBLE RADIATION STABLE HYDROCARBONS IN MANY RESPECTS. FACILITY: INST. NEORG. KHIM. ELEKTROKHIM., TBILSI, USSR.

UNCLASSIFIED

USSR

UDC 612-82

MANCBASHVILI, Z. I., and IOSELIANI, T. K., Institute of Physiology, Academy of Sciences Georgian SSR

"Effect of Stimulation of the Mesencephalic Reticular Formation on Convulsive Electrical Activity of the Brain"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, No 2, 73, pp 429-431

Abstract: Stimulation of the dorsal hippocampus in cats evoked convulsive activity chiefly in the stimulated region. Intensification of the stimulation resulted in the discharges spreading to the ipsilateral ventral hippocampus, and then to other subcortical and neocortical structures. Preliminary stimulation of the reticular formation inhibited afterdischarges. After 7-second stimulation of the reticular formation, stimulation of the dorsal hippocampus failed to evoke convulsive waves in any of the structures recorded. However, if the reticular formation was stimulated after convulsive activity had been evoked, inhibition did not occur and the duration of the after-discharge even increased slightly.

1/1

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USSR

UDC 621.376.23(088.8)

NANOS, A. M., VOLKOV, V. A.

"Device for Linear Two-Half Period Rectification of Electric Signals"

USSR Author's Certificate No 268513, Filed 24 Nov 67, Published 25 Aug 70
(from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4D63P)

Translation: A balanced rectifier is proposed. In order to insure rectification of the signals in a large dynamic range with small minimum signals in the load, to reduce the intake and decrease the overall dimensions, the cross-connected base-emitter junctions of the rectifier transistors are connected to the collectors of the transistors of the balanced two-cycle preamplification cascade and, simultaneously, to the primary winding of the transformer whose secondary winding is connected via resistors to the emitters of the transistors of the preamplification cascade.

1/1

1/2 032 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--PROBLEMS CONCERNED WITH ARTICULATION -U-
AUTHOR--(02)-NAPADOV, M.A., SAPOZHNIKOV, A.L.
COUNTRY OF INFO--USSR N
SOURCE--STOMATOLOGIYA, 1970, VOL 49, NR 3, PP 72-74
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DENTISTRY, DENTURE, PROSTHESIS, JAW
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/0073 STEP NO--UR/0511/70/049/G03/0072/0074
CIRC ACCESSION NO--AP0120773
UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--16DCT70

CIRC ACCESSION NO--AP0120773

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUMMARY. THE AUTHORS ARE OF THE OPINION THAT DENTAL ARCHES IN DENTURES FOR TOOTHLESS JAWS SHOULD BE DESIGNED IN ACCORDANCE WITH ANATOMICAL AND FUNCTIONAL FEATURES SPECIFIC TO THE CRANIAL STRUCTURE. FUNCTIONAL DISORDER OF MASTICATION ASSOCIATED WITH THE LOSS OF TEETH, LEADS TO ALTERATIONS OF ALL ELEMENTS OF THE MAXILLODENTAL SYSTEM AND BONES OF THE FACIAL SKULL. AS THE RESULT OF THIS THERE OCCURS ASYMMETRY OF THE BONES WHICH SHOULD BE TAKEN INTO CONSIDERATION WHEN PREPARING ARTIFICIAL TEETH. ON THE BASIS OF MEASUREMENTS OF THE INCLINATION ANGLES OF INTERALVEOLAR LINES IN RESPECT TO THE SAGITTAL PLANE IN THE MOLAR REGION ON BOTH SIDES IN 200 PATIENTS WITH TOOTHLESS JAWS THE AUTHORS DESIGNED A DISMANTLING PLATE FOR THE FIXATION OF ARTIFICIAL TEETH WITH A SPHERICAL SURFACE HAVING A RADIUS OF 9 CM. THE AUTHORS CONSIDER THE SPHERICAL THEORY OF ARTICULATION AND CONSTRUCTION OF DENTAL ARCHES AS THE MOST RATIONAL. FACILITY: KAFEDRA ORTOPEDICHESKOY STOMATOLOGII KHAR'KOVSKOGO INSTITUTA USQVERSHENSTVOVANIYA VRACHEY.

UNCLASSIFIED

USSR

UDC: 621.372.5

KAULAKIS, L. I., NARGELAS, A. A., FAUKHA, V. V.

"Characteristics of a Transistorized Quadripole Gyrator"

V sb. Elektrotehnika (Electrical Engineering--collection of works), Kaunas, 1970, pp 241-244 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A196)

Translation: The authors analyze a gyrator circuit which consists of two voltage-controlled current generators. Parallel networks are introduced into the gyrator to ensure operation for any input voltage polarity. Special circuits based on multiple transistors are used to increase the input and output impedances. Two operating modes are possible: the compensation mode and the balanced mode. Analysis shows certain advantages of the balanced mode. Curves are given for the temperature dependence of the output current, and an expression is presented for the relative error as a function of the gyrator impedance. Five illustrations, bibliography of one title. N. S.

1/1

USSR

UDC 669.71'781.018.9

NAPAL'KOV, V. I., KHODAKOV, P. Ye., and MITVOL', L. S.

"Preparation of Aluminum-Boron and Aluminum-Titanium-Boron Alloys"

Tekhnol. legkikh splavov. Nauchno-tekhn. byul. VILSa (Technology of Light Alloys. Scientific and Technical Bulletin of All-Union Institute of Light Alloys), 1970, No 3, pp 95-97 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No G240 by S. KRIVONOSOVA)

Translation: The article considers the increasing of boron assimilability during the preparation of alloys. The assimilability of boron into aluminum from B_2O_3 under a layer of cryolite at 1200° in a 30-minute period is 50% (with a 1:1 ratio of these substances), and from KB_2F_4 under a layer of KCl at $950-970^\circ$ in a 60-minute period, 75-92%. An alloy of aluminum with titanium and boron is made by introducing titanium and KHF_4 shavings under a layer of KCl. Two tables.

1/1

Functional Analysis

USSR

UDC 517.5

NAPALOV, V. V., Division of Physics and Mathematics, Bashkir Branch of the Academy of Sciences USSR

"On the Region of Regularity of the Limit Function of a Sequence of Analytic Functions"

Moscow, Matematicheskkiye Zametki, Vol 12, No 6, Dec 72, pp 681-692

Abstract: Let $f(z)$ be an integral function, λ_n ($n=0,1,2,\dots$) complex numbers such that the system $\{f(\lambda_n z)\}_{n=0}^{\infty}$ is not complete in the circle

$|z| < R$ and the sequence $Q_n(z)$ takes the form: $\sum_{k=0}^{P_n} a_{nk} f(\lambda_k \cdot z)$.

The problem is to study properties of the sequences of linear aggregates

$$P_n(z) = \sum_{k=1}^c a_{nk} f(\lambda_k z) \quad (n = 0, 1, \dots), \quad (1)$$

USSR

NAPALKOV, V. V., *Matematicheskiye Zametki*, Vol 12, No 6, Dec 72, pp 681-692
where $f(z)$ takes the form

$$f(z) = 1 + \sum_1^{\infty} \frac{z^n}{P(1)P(2)\dots P(n)}$$

and $\{\lambda_k\}$ satisfies the condition

$$\lim_{k \rightarrow \infty} \frac{k}{|\lambda_k|^{1/n}} = \tau < \infty.$$

It is shown that the limit function of a sequence of form (1) at the origin of coordinates can have a pole when

2/3

USSR

NAPAIKOV, V. V., *Matematicheskiye Zametki*, Vol 12, No 6, Dec 72, pp 681-692

$$f(z) = 1 + \sum_{n=1}^{\infty} \frac{z^n}{P(1) \dots P(n)},$$

where $P(z) = z + 1$.

3/3

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UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

243206 RECORDING SEISMIC INFORMATION from a processing machine can be done via a cathode ray tube and a photo-sensitive means of recording the display, but cannot record variants of the information for one cycle of operation of the processing. The proposed device does this by incorporating in the system, consisting of tube 3, objective 4, and cassette 6 holding the photo-sensitive device, a rotatable multi-faced prism 1 which can be fixed to present any desired face in order to photograph the record. When the parameters of the information are changed, the prism is moved round so as to present a new face. This can be done mechanically, or be connected electrically

2/70

1.2.68 as 1214260/26-25.0.I.SPASIBUKHOV et al.
 PETROLEUM & GAS CHEMICAL INST. (18.9.69) Bul 16/
 5.5.69. Class 42c. Int.C1.G 01v.

12

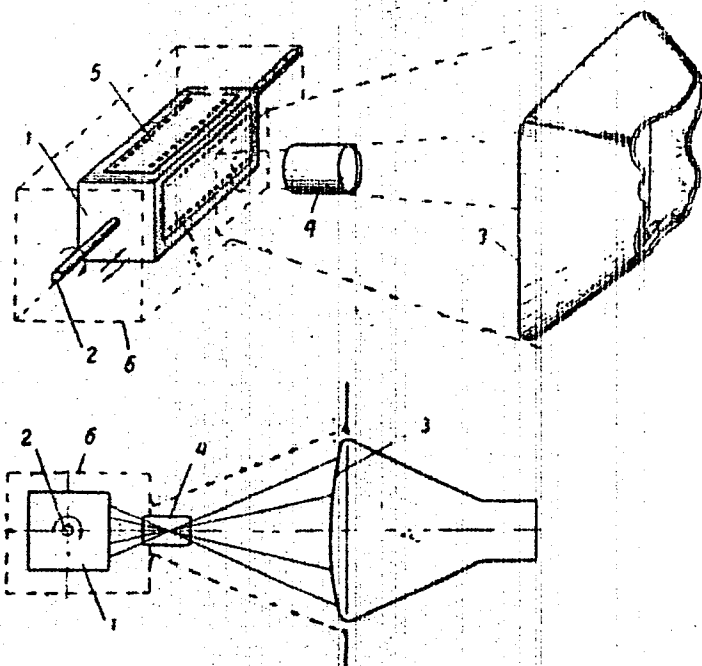
AUTHORS: Spasibukhov, O. I.; Bogdanov, A. A.; Petrov, L. A.
Napalkov, Yu. V.; Voskresenskly, Yu. V.

Moskovskiy Institut Neftekhimicheskoy i Gazovoy Promyshlennosti im.
Akad. I. M. Gubkina

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19771356

USSR

UDC: 621.375.82

BABENKO, V. P., MAKAROV, V. I., NAPERSTAK, Yu. A., RUBINCHIK, B. Ya.,
TYCHINSKIY, V. P.

"A Laser apparatus With Preset Control for Cutting Materials"

Moscow, Kvant. elektronika--sbornik (Quantum Electronics--collection of works),
No 1(13), "Sov. radio", 1973, pp 132-133 (From RZh-Fizika, No 8, Aug 73,
abstract No 8D1174 by the authors)

Translation: An automatic apparatus has been developed for gas-laser cutting
of materials. The unit includes a carbon dioxide laser with power of about
500 w and a series-produced coordinate indexer with preset control (EM-703).
The basic parameters of the apparatus and results of technological tests are
given.

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USSR

JPRS 50483
UDC 627.814(575.3)

NAPETVARIDZE, SH. G., BELGORODSKAYA, G. N., ABDURAUFOV, KH. SH., Institute of Earthquakeproof Construction and Seismology, Academy of Sciences of the Tadjik SSR

"Elementary Band Method in Solving Earthquakeproof Dam Design Problems"

Dushanbe, Doklady Akedemii Nauk Tadjikskoy SSR, Vol 12, No 4, pp 71-76

Abstract: The authors present a method for determining the seismic stability and dynamic rigidity of dams. Using the cross section of a dam, it is divided into n uniformly thick horizontal layers, resulting in a system with n degrees of freedom. The maximum number of horizontal layers n is conditioned both by the dimensions of the dam and the program which can be realized by the computer. In this case $n \leq 10$. The mass, horizontal shift, and rigidity are calculated for each layer. Earthquake accelograms are used as the dynamic disturbance for the given system. Relative horizontal shifts are calculated and are used

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for determining individual displacement. An expression is derived for determining the fundamental tone period of a dam. The BESM-2 and Minsk-22 computers are used in computing data for the Nurekskaya and Rogunskaya hydroelectric stations. Results of these calculations show that applicable engineering results can be obtained without using more than 10 finite elements.

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Construction

USSR

UDC 627.814(575.3)

NAPETVARIDZE, SH. G., BELGORODSKAYA, G. N., ABDURAUFOV, KH. SH., Institute of Earthquakeproof Construction and Seismology, Academy of Sciences of the Tadzhik SSR

"Elementary Band Method in Solving Earthquakeproof Dam Design Problems"

Dushanbe, Doklady Akedemii Nauk Tadzhikskoy SSR, Vol 12, No 4, pp 71-76

Abstract: The authors present a method for determining the seismic stability and dynamic rigidity of dams. Using the cross section of a dam, it is divided into n uniformly thick horizontal layers, resulting in a system with n degrees of freedom. The maximum number of horizontal layers n is conditioned both by the dimensions of the dam and the program which can be realized by the computer. In this case $n \leq 10$. The mass, horizontal shift, and rigidity are calculated for each layer. Earthquake accelograms are used as the dynamic disturbance for the given system. Relative horizontal shifts are calculated and are used for determining individual displacement. An expression is derived for determining the fundamental tone period of a dam. The BESM-2 and Minik-22 computers are used in computing data for the Nurekskaya and Rogunskaya hydroelectric stations. Results of these calculations show that applicable engineering results can be obtained without using more than 10 finite elements.

1/1

USSR

NAPLATANOV, N. D., MARINOV, Yul. P., VENKOV, P. G.

"Method for Machine Recognition of Biological Information"

Avtomatiz. nauch. issled. na osnove primeneniya ETSVM [Automation of Scientific Research by the Use of Digital Computers -- Collection of Works], Novosibirsk, 1971, pp 380-384 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V697) by the authors)

Translation: A method is suggested for recognition of repeating biological signals, based on the principle of agreement between the input signal and a set of standard signal patterns, and a criterion is suggested for estimation of the accuracy of recognition.

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USSR

YEMEL'YANOV, S. V., DUDIN, Ye. B., DARICHEV, O. I., MALEVICH, A. A.,
NAPPEL'BAUM, E. L., OZERNOY, V. M.

"Preparation and Making of Decisions in Organizing Control Systems"

Tekhn. Kibernetika. 1969. (Itogi Nauchki i Tekhn) [Engineering Cybernetics, 1969 (Results of Science and Technology), Moscow, 1971, pp 89-184 (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V496 by M. Kazakova).

Translation: This work is a review dedicated to certain problems of the science of control, related to the preparation and making of decisions in organizing control systems. The problem of utilization of expert information, the structural problems of the structure of organization systems and certain procedures for decision making are also studied. The article consists of 5 sections, divided into points, each of which has its own bibliography.

1. Decision making. 1.1. General characteristics of problems of decision making. 1.2. Applications of the theory of usefulness for decision making under conditions of uncertainty and risk. 1.3. Decision making with a vector criterion. 1.4. Collective decisions. 1.5. Decision making in organizational systems (103 Biblio. Refs.). 2. Man-machine decision-making procedures (25 Biblio. Refs.). 3. Application of cost-effectiveness analysis
1/2

JSSR

YEMEL'YANOV, S. V., DUDIN, Ye. B., DARICHEV, O. I., MALEVICH, A. A.,
NAPPEL'BAUM, E. L., OZERNOY, V. M., Tekhn. Kibernetika. 1969. (Itogi
Nauchki i Tekhn), Moscow, 1971, pp 89-184.

for decision making in one class of systems (7 Biblio. Refs). 4. Methods of
production of expert information during preparation and making of decisions.
4.1. Collection and generalization of expert conclusions using the DELFI
method. 4.2. The method of V. M. Glushkov. 4.3. The method of rank corre-
lation (10 Biblio. Refs). 5. Some mathematical models of organizational
systems (34 Biblio. Refs.).

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USSR

NAPPEL'RAUM, E. L., Novyye Knigi za Rubezhom Seriya, A, No 10, October 1970, pp 28-30

filtration using an approach analogous to the Kalman approach. Considerable attention is given here to various numerical methods of solution." He further remarks: "All of part II (five chapters), which examines questions pertaining to the application of filtration theory to spacecraft guidance, will be of exceptional interest to the reader." "The Busy and Joseph book unconditionally merits speediest translation into Russian," he concludes.

1/1

USSR

UDC 536.2.08

NAPR'IN, Yu. A., SHAKHURDIN, V. I.

"Use of the Schlieren Method to Study the Temperature Fields in a Solid"

Minsk, Inzhenerno-Fizicheskiy Zhurnal, Vol. 20, No. 3, Mar. 71, p. 510-514.

Abstract: The application of the Schlieren method for measurement of the temperature field and gradients in a solid is studied; the field and gradients are compared with a theoretical calculation of the temperature field in a finite cylinder with second and third order boundary conditions.

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USSR

GDC 621.357.7.035.4:669.587

NAPURH, E. Z.

"Electrolyte for Galvanic Zinc Coating"

V sb. Obmen opytom v radioprom-sti (Exchange of Experience in the Radio Industry — collection of works), vyp. II, Moscow, 1971, pp 30-34 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 6L296)

Translation: A study was made of the effect of the composition of a solution on the thickness and quality of contact Zn-coatings on Mg for deposition of them from pyrophosphate solution prepared on the basis of $K_4P_2O_7$. It was established that the film of contact Zn deposited at 20° in 20 minutes or at 60° in 5 minutes from a solution with the composition (in g/liter) 100-115 $ZnSO_4 \cdot 7H_2O$, 50-100 $K_4P_2O_7 \cdot 3H_2O$, 360-270 $K_4P_2O_7 \cdot 3H_2O$ and 15-20 KF with a pH of 10.2-11 are relatively nonporous with a contact layer thickness of ~0.2-0.25 μ at the same time as for solutions based on $Na_4P_2O_7$ this barrier thickness is 1.6-1.8 μ . Some data are presented on the corrosion testing of Mg protected by various coatings. It is demonstrated that the protective properties of Mg-specimens contact coated in advance in an electrolyte based on $K_4P_2O_7$ are approximately twice as high (the number of pores is half as many) as those of specimens treated in a solution based on $Na_4P_2O_7$.

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USSR

UDC 612.433:612.453 .

NARBAYEV, B. N., Laboratory of Experimental Endocrinology, Institute of Physiology imeni I. P. Pavlov, Academy of Sciences USSR, Leningrad

"Effect of Low Ambient Temperatures on the Pituitary-Adrenal System"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR, No 5, 1971, pp 61-66

Abstract: Rats were exposed to temperatures of 0 to 3°C and -6 to -8°C and sacrificed from 30 minutes to 2 months later to study the dynamics of the corticosteroid hormones in blood plasma, adrenal and brain tissue, and liver and the content of ACTH in the pituitary. The content of the corticosteroids increased in the various tissues studied while that of ACTH in the pituitary decreased, the extent varying with the temperature. The changes in hormonal activity were wavelike. The first wave after exposure to 0 to 3°C occurred within 30 minutes and ended after 24 hours. The second wave set in after 3 days and ended 2 weeks later. The first wave after exposure to the lower temperatures also occurred after 30 minutes but was more pronounced. However, the second wave persisted for 2 months. Hypothermia decreased the concentration of the corticosteroids in brain tissue while increasing it in the liver.

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1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70
 TITLE--EXTRACTIVE PROPERTIES OF HEXYL PHENYLSULFONAMIDO PHENYLPHOSPHONATE
 -U-
 AUTHOR--(05)-SHEVCHENKO, F.D., KUZINA, L.A., AGEYEV, V.A., GOLIK, G.A.,
 NARBUT, A.V.
 COUNTRY OF INFO--USSR
 SOURCE--DOPDV. AKAD. NAUK UKR. RSR, SER. B 1970, 32 (3), 261-3
 DATE PUBLISHED-----70
 SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--BENZENE DERIVATIVE, SULFONAMIDE, ORGANIC PHOSPHORUS COMPOUND,
 SOLUBILITY, DISSOCIATION CONSTANT
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--3002/1303 STEP NO--UR/0442/70/032/003/0261/0263
 CIRC ACCESSION NO--AT0128717
 UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0128717

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHSD SUB2 N:PPHCL SUB2 (0.005 MOLE) IN 25 ML C SUB6 H SUB6 WAS TREATED WITH 0.23 G NA IN 15 ML HEXYL ALC. 12 HR TO GIVE PHSD SUB2 N:PPH(OC SUB6 H SUB13) SUB2 (I). I (0.001 MOLE) WAS HEATED 3 HR WITH 15 ML 0.4N AQ.-ALC. NAOH TO GIVE 60PERCENT PHSD SUB2 N(NA)P(O)PH(OC SUB6 H SUB6, DISTRIBUTION CONST. BETWEEN C SUB6 H SUB6 AND H SUB2 O, AND DISSOCN. CONST. (2.44) OF THE FREE ACID WERE DETD. FACILITY: KIIV. DERZH. UNIV., KIEV, USSR.

UNCLASSIFIED

USSR

UDC 537.312.62

KOLIN'KO, L. YE., NARBUT, T. P., BONDARENKO, L. A., BONDARENKO, S. I.,
DMITRIYENKO, I. M.

"Methods of Creating Weak Superconducting Contacts"

Tr. Fiz.-tekhn. in-t nizek. temperatur AN USSR (Works of the Physico-Technical
Low Temperature Institute of the Ukrainian SSR Academy of Sciences), 1970,
vyp. 9, pp 91-110 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4D469)

Translation: A study was made of the basic methods of obtaining weak super-
conducting contacts: 1) micropuncture of the dielectric layer or normal
metal between the superconductors; 2) pressing a sharp needle to the flat
surface of the superconductor; 3) electric microrupture (fritting) of the
dielectric layer between the metals. The possibility of using whiskers of
various metals as thin conducting couplings is also investigated. The basic
characteristics of the contacts obtained by the enumerated methods are
analyzed, and conclusions are drawn regarding the prospectiveness of their
application in devices using the phenomenon of quantum interference in super-
conductors. There are 6 illustrations, 1 table and a 37-entry bibliography.

1/1

Antennas

USSR

UDC 621.396.677.8

N
NARBUT, V. P., KHMEL'NITSKAYA, N. S.

"Polarization Structure of Axially Symmetrical Mirror Antenna Radiation"

Moscow, Radiotekhnika i elektronika, No 10, 1970, pp 2047-2059

Abstract: Asserting that comparatively little research has been done on the polarization structure of noise in sharply directed antennas, the authors analyze this structure in axially symmetrical reflecting antennas by the method of geometrical diffraction theory. This method is much simpler and more graphic than the method of currents. It is explained and a formula is derived for computing the noise by that method. In their research into the polarization structure in parabolic antenna noise, the authors note that the formulas they obtain are not valid in the main lobe region of the directional diagram without additional transformations, and that, because of their use of an asymptotic solution of the diffraction problem, there is a zone of indeterminacy in the end lobe of the circular diagram. Results of experiments made to determine the structure of the noise polarization are also given.

i/1

USSR

UDC 612.019

NARIKASHVILI, S. P., KADZHAYA, D. V., and TEMCHENKO, A. S., Institute of Physiology, Georgian Academy of Sciences

"Effect of Stimulation of the Nonspecific Thalamic Nuclei on Spontaneous and Evoked Spindles in the Auditory Cortex"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, No 1, 1973, pp 181-184

Abstract: High-frequency stimulation (300/sec) of the median center, anterior ventral nucleus, or central medial nucleus of the thalamus in immobilized, lightly anesthetized cats did not significantly alter the spindles in the auditory cortex, spontaneous or evoked by clicks, but it markedly suppressed spontaneous spindles in the associative cortex (middle suprasylvian gyrus). Nor did the spindles in the auditory cortex evoked by the clicks change even when they were preceded (by 100 msec) by stimulation of the nonspecific nuclei. Thus, it appears that nonspecific (medial and intralaminar) thalamic nuclei play no part in the origination of spindles in the sensory cortex.

1/1

USSR

UDC: 621-019

TIMCHENKO, A. S., KADZHAYA, D. V., NARIKASEVILI, S. P., Corresponding Member of the Academy of Sciences of the Georgian SSR, Institute of Physiology of the Academy of Sciences of the Georgian SSR.

"Interaction of Induced and Spontaneous Spindles in the Cerebral Cortex"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 67, No 2, Aug 72, pp 433-435

Translation: It is known that under certain conditions an isolated peripheral stimulus in the appropriate sensory region of the cortex induces both a primary response and an aftereffect in the form of rhythmic slow waves (see ref. 1-3). The slow cortical aftereffect (SCA) shows up best on a specimen whose background activity is characterized by infrequent spontaneous spindles or a tendency toward synchronized activity (see ref. 4).

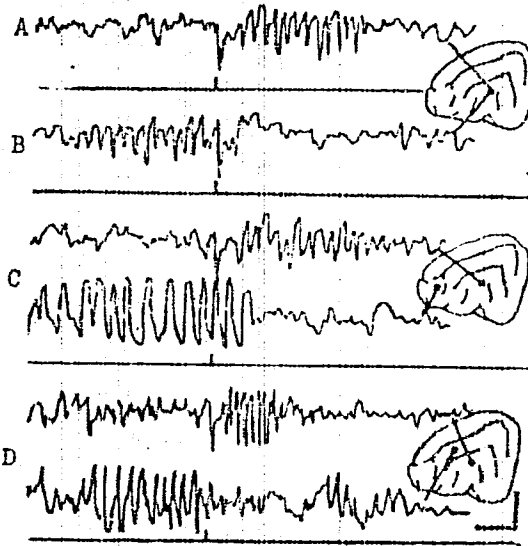
It has been shown (ref. 4) that increasing Nembutal narcosis reduces the frequency, amplitude and number of waves in the SCA arising in response to audible clicks in parallel with (and corresponding to) a drop in the frequency, amplitude and number of the waves in spontaneous spindles in the auditory cortex. These common features in spindles and the SCA suggest a

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USSR

TIMCHENKO, A. S. et al., Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 67, No 2, Aug 72, pp 433-435

Fig. 1. Interaction between the SCA of the auditory cortex and preceding localized spontaneous spindles of the auditory (B), somatosensory (C), and associative (D) cortex. The calibration here and in Fig. 2 is 0.5 mV and 0.5 s.



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USSR

TIMCHENKO, A. S. et al., Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol. 67, No 2, Aug 72, pp 433-435

common generating mechanism. In such a case, the aftereffect ought to be a spindle evoked by the peripheral stimulus.

Settling once and for all the question of the identity between the mechanisms which generate the spontaneous spindle and the SCA necessitated clarifying the nature of the interaction between the SCA and spontaneous spindles arising both in the same region of the cortex and in other regions.

Experiments were done on cats under mild Nembutal narcosis (25-30 mg/kg). The SCA was induced by infrequent audible clicks acting on both ears. The induced and spontaneous activity were registered by monopolar recording (an indifferent electrode in the bone of the frontal sinus) from the surface of the cortex on the Al'var electroencephalograph.

According to data in the literature (5-7), each thalamocortical system or even parts of such a system independently of one another induce a spontaneous spindle in the corresponding projection region of the cortex. If the SCA is a spindle induced by a peripheral stimulus (which can also be generated spontaneously and periodically), then an audible stimulus supplied during or immediately following a spontaneous spindle in the auditory cortex

3/6

1/2 025 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--RESPONSES IN DIFFERENT REGIONS OF ASSOCIATIVE CORTEX OF CAT -U-
AUTHOR--(03)-NARIKASHVILI, S.P., TIMCHENKO, A.S., KADZHAYA, D.V.
COUNTRY OF INFO--USSR
SOURCE--NEYROFIZIOLOGIYA, 1970, VOL 2, NR 2, PP 126-139
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CAT, ANESTHESIA, BRAIN, SENSORY PHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REF/FRAME---1986/1387

STEP NO--UR/0660/70/002/002/0126/0139

CIRC ACCESSION NO--AP0103237

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UNCLASSIFIED

PROCESSING DATE--02JCT7C

2/2 025

CIRC ACCESSION NO--AP0103237

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. RESPONSES FROM DIFFERENT REGIONS OF ASSOCIATIVE CORTEX (AC) (MOTOR CORTEX, PROPEAL, ORBITAL ANTERIOR MARGINAL AND MIDDLE SUPRASylvian GYRI) TO DIFFERENT PERIPHERAL STIMULATIONS (SKIN OF CONTRA AND IPSILATERAL FOREPAW, LIGHT FLASHES AND CLICKS) WERE RECORDED SIMULTANEOUSLY IN CHLORALASED CATS (70-80 MG-KG). IN ALL REGIONS OF AC RESPONSES WERE OF ALMOST EQUAL CONFIGURATION TO ALL STIMULI USED. THE RESPONSES IN ORBITOFRONTAL AND MOTOR CORTEX HAD SHORTER LATENCY AND WERE MORE STABLE. IN EACH ASSOCIATIVE REGION THERE WAS ONE AND THE SAME POINT FOR RESPONSES OF MAXIMAL AMPLITUDE TO ALL STIMULI. TESTING ASSOCIATIVE RESPONSES APPEARED TO BE MORE STABLE AGAINST THE BLOCKING ACTION OF CONDITIONING RESPONSES IN ORBITOFRONTAL REGION ARISING TO SKIN STIMULATION AND RESPONSES TO THE LIGHT FLASHES IN SUPRASylvian GYRUS. IT IS SUGGESTED THAT ORBITOFRONTAL CORTEX IS PROBABLY THE SITE WHERE INTEGRATION OF SENSORY IMPULSES OF DIFFERENT MODALITIES WITH EFFERENT DISCHARGE TAKES PLACE, WHILE IN SUPRASylvian GYRUS THE SENSORY IMPULSES ARE INTEGRATED INDEPENDENTLY FROM EFFERENT DISCHARGE. SOME QUESTIONS OF SENSORY CONVERGENCE ARE DISCUSSED.

UNCLASSIFIED

Acc. Nr:

AP0044214

Ref. Code: UR 0239

PRIMARY SOURCE: Fiziologicheskij Zhurnal, 1970, Vol 56,
Nr 1, pp 3-12

MODALITY-SPECIFIC ACTION OF PRIMARY SENSORY AREA ON ASSOCIATION
RESPONSES

Narikashvili, S. P.; Kadzhava, D. V.; Timchenko, A. S.

From the Institute of Physiology, Georg. Ac. Sci., Tbilisi

In the chloralised cats the association responses (ARs) in the middle suprasylvian gyrus evoked by paired single stimuli of the same or different modalities (electrical skin stimulation and light flashes) were studied before and after bilateral aspiration of the first somatosensory or visual areas. After aspiration definite changes were observed only in the ARs of that modality the first sensory cortical area of which had been removed. The changes were especially pronounced when peripheral stimulations of different modalities were used. So, after aspiration of the first somatosensory area the testing ARs to skin stimulation were blocked easier by conditioning light flashes (at a longer interval of time between stimuli) than before aspiration, and under the influence of conditioning skin stimulation the testing ARs to light flashes were blocked at a significantly shorter interval than before aspiration. The same was found after aspiration of the first visual area but in the reverse direction.

From the above mentioned it follows that the first sensory area plays important role part in the origin of the ARs and gives them a modality-specific character.

REEL/FRAME

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NARIMANOV, A.A.

bio-physic

UNCLASSIFIED

DATE

SECTION III
50: Selected Abstracts
Faculty's
PCS-89
June 91

12

Name: Institute of Biophysics, Pushchino
Description:

(U) During this quarterly reporting period, 13 new articles were located from the Institute of Biophysics at Pushchino. On the basis of these articles, it was possible to associate 19 new persons with the Institute. These persons are listed below together with the subjects and dates of the articles:

Basurmanov, O. K.	all- biophysic endocrine system	1979 (17)
Ermentovskiy, G. R.	phospholipids	1979 (28)
Gaziyev, A. I.	DNA	1979 (29)
Ivanikova, A. G.	plant physiology	1969 (20)
Kiselev, Ya. Ye.	muscle physiology	1970 (31)
Kravchenko, N. A.	EPR spectra	1970 (32)
Yarlanov, A. A.	radiation effects	1970 (33)
Panov, A. A.	endocrine system	1970 (34)
Panoyan, V. G.	EPR spectra	1970 (22)
Peredkov, V. I.	muscle physiology	1970 (21)
Pasnikova, G. B.	chromatography	1970 (24)
Rachin, V. D.	phospholipids	1970 (16)
Revin, A. F.	radiation effects	1970 (23)
Sukhoruchikina, L. V.	chromatography	1970 (26)
Tincher, K. S.	plant physiology	1969 (20)
Vasilov, Yu. V.	radiation effects	1970 (25)
Zaikin, A. N.	hydrogen peroxide	1970 (25)
Zakharkevich, D. T.	DNA	1970 (19)
Zuzin, A. M.	DNA	1970 (19)

USSR

UDC: 8.74

NARIMANOV, V. Kh.

"Model of a Multilayered Network of Threshold Elements"

Tr. Mosk. in-ta elektron. mashinostr. (Works of the Moscow Institute of Electronic Machine Building), 1971, vyp. 23, pp 181-185 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V590)

Translation: A multilayered network of threshold elements performs conversion of initial information vectors. It is shown in the paper that the result at the output of R layers can be obtained by sequential multiplication of the input vector by matrices of the weight coefficients of the threshold elements of each layer.

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USSR

UDC: 8.74

PUPKOV, K. A., NARIMANOV, V. Kh., GALUSEKIN, A. I.

"A Specialized Recognition Device"

Tr. Mosk. in-ta elektron. mashinostr. (Works of the Moscow Institute of Electronic Machine Building), 1971, vyp. 23, pp 156-165 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V586)

Translation: Principles of design of specialized recognition devices are considered. One of such devices having a variable structure is described. Authors' abstract.

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1/2 027 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ROENTGENKYMNOGRAPHIC STUDY OF CARDIAC FUNCTION IN CHILDREN AFFECTED
WITH RHEUMATIC FEVER DURING CIRCULATORY INSUFFICIENCY -U-
AUTHOR-(02)-SOKOLOVA, K.F., NARINA, F.P.

COUNTRY OF INFO--USSR

SOURCE--KARDIOLOGIYA 10(1): 78-82. 1970

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PEDIATRICS, HEART DISEASE, RADIOGRAPHY, BLOOD CIRCULATION,
DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/0551

STEP NO--UR/0495/70/010/001/0078/0082

CIRC ACCESSION NO--AP0131174

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0131174

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE ACUTE STAGE OF RHEUMATIC FEVER THERE ARE NOTICABLE CHANGES IN THE HEART FUNCTION. IN CHILDREN WITH CIRCULATORY INSUFFICIENCY OF THE I AND II-A STAGES DURING ABATEMENT OF THE RHEUMATIC PROCESS THERE WAS IMPROVEMENT OR COMPLETE RESTORATION OF THE FUNCTIONAL STATE OF THE HEART. IN CIRCULATORY INSUFFICIENCY OF THE II-B AND III STAGES DURING THE ABATEMENT OF RHEUMATIC FEVER IN MOST CHILDREN THE POSITIVE DYNAMICS WERE INSIGNIFICANT. FACILITY: MOSCOW RES. INST. PEDIAT. CHILD SURG., MIN. HEALTH RSFSR, MOSCOW, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--MENTAL WORKING CAPACITY OF THE SUBJECTS DURING THE PERIOD OF
AFTEREFFECTS OF ACCELERATIONS UP TO 5G -U-

AUTHOR--~~NARINSKAYA, A.L.~~

COUNTRY OF INFO--USSR

SOURCE--KOSMICHESKAIA BIOLOGIIA I MEDITSINA, VOL. 4, JAN.--FEB. 1970, P.
49-52

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BIOLOGIC ACCELERATION EFFECT, HUMAN MEMORY, MENTAL DISORDER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1965

STEP NO--UR/0453/70/004/000/0049/0052

CIRC ACCESSION NO--AP0120608

UNCLASSIFIED

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CIRC ACCESSION NO--A0120608
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT. CENTRIFUGE SIMULATION STUDY OF THE ATTENTION SHIFT AND STABILITY, THE OPERATIONAL MEMORY SHIFTS, THE DEVELOPMENT AND SHIFTS OF ROUTINE MENTAL HABITS, THE MEMORY PRODUCTIVITY AND THE SENSOMOTOR REACTIONS IN A GROUP OF 30 FIGHTER PILOTS PRIOR TO AND AFTER EXPOSURE TO STEPWISE 30 SECOND ACCELERATIONS FROM 3 TO 5G FOR A TOTAL ACCELERATION TIME OF UP TO 1 MIN 20 SEC. ACCELERATIONS IMPAIRED PERFORMANCE BY 50PERCENT IN MORE THAN HALF OF THE SUBJECTS. THE MENTAL ROUTINE OF THE SUBJECTS WAS AFFECTED THE HARDEST.

UNCLASSIFIED

NARINSKAYA, A.L.

DYNAMICS OF PSYCHO PERFORMANCE DURING 72-HOUR
WAKEFULNESS

Author: A. L. Narinskaya, Institute of Psychology, Academy of Sciences of the USSR, Moscow, U.S.S.R.
Journal: *Journal of Experimental Psychology: Applied*, 1971, Vol. 7, No. 2, pp. 101-109

The objectives of this study was an investigation of the dynamics of psychologic performance during 72-hour continuous wakefulness. Experiments with the participation of ten healthy males in the age group from 22 to 36 years, who had undergone a complete physical examination, were conducted in an isolation chamber (air temperature 22-26°C with a relative humidity of 60-65%).

The 72 hours of wakefulness were preceded by three-day background investigations with an ordinary daily schedule (sleep from 2300 to 0700 hours and wakefulness from 0700 to 2300 hours). There was a series of five such investigations, in each of which two subjects participated. Pairs were formed on the basis of a similarity in the work and rest schedules of the subjects in ordinary life. The following methods were used in the study of psychologic performance:

- 1) reproduction of a text (optional voluntary memory);
- 2) completed conversion of figures into letters (productivity of mental activity);
- 3) addition of numbers with switching (developing and reforming an elementary mental skill);
- 4) correction test (stability and concentration of attention);
- 5) number and letter combinations (capacity for working when a time deficit prevails).

SPRS 32,499
14 JULY 72

72

NARINSKAYA, A.L.

SPRS 56, 499
14 JULY 72

77

STUDY OF PSYCHIC PERFORMANCE DURING ADAPTATION OF THE PATIENT
SCHEDULE

Article by A. I. Narinskaya; Moscow, Akademiya Nauk SSSR, Biologiya i Meditsina, 1972, pp 159-160/

This paper presents the results of a study of the individual characteristics of the dynamics of psychic performance during man's adaptation to an unusual work and rest schedule.

Two pairs of subjects were selected from the groups of subjects separated during an experiment with 72-hour sleep-performance and a group with a less clear expression of these rhythms).

Both pairs of subjects were exposed successively to two 45-day experiments in an isolation chamber (air temperature 25-26° at a relative humidity of 60-65%). During the first stage of the 45-day experiments the dynamics of performance was studied for a normal daily regime (sleep from 2300 to 0700 and wakefulness from 0700 to 2300). Such a regime continued for the first ten days. The psychological methods used were: 1) text reproduction; 2) complicated combination of numbers into letters; 3) addition of numbers with "top" combination. These tests were performed four times a day: 0930, 1415, 1930 and 2100 hours. On the 11th day there was an inversion of the daily schedule: a shift by 12 hours. After the shift psychic performance was studied using the same psychological methods as before it.

The results of a study of psychic performance indicate an individual character of the process of adaptation to a new regime. The decrease in the indices of psychic performance for the more "rhythmic" subjects was greater and for a greater

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UDC: 53.07/.08+53.001.5

KOSTYLEV, V. A., FISHMAN, L. Ya., ~~MARKOVICH, B. Ya.~~ NARKEVICH, B. Ya.

"Optimizing the Parameters of Multichannel Collimators for Radioisotopic Scanning"

V sb. Vopr. dozimetrii i zashchity ot izluch. (Problems of Dosimetry and Radiation Shielding--collection of works), vyp. 12, Moscow, Atomizdat, 1971, pp 179-186 (from RZh-Fizika, No 4, Apr 72, Abstract No 4A684)

Translation: The authors discuss the difficulties of optimizing the parameters of a collimating device which to a considerable extent determines the effectiveness of radioisotopic scanning. The quality of the collimating device is characterized by the degree of reliability with which it enables detection of spatial gradients in the activity of a gamma emitter. A detection system is considered which is made up of a scintillation detector and a multichannel focusing ring collimator. It is noted that systems of this type have higher sensitivity than systems with cellular collimators, and better resolution than with single-channel collimators. The sensitivity of the collimated detecting system to a point isotropic source was calculated on the BESM-4 computer using the optical approximation. The

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KOSTYLEV, V. A. et al., Vopr. dozimetrii i zashchity ot izluch., vyp. 12, Moscow, Atomizdat, 1971, pp 179-186

method of steep ascent on the BESM-4 was used in determining the maximum of the quality factor of the collimator as a function of its parameters. Parameters are presented for a universal focusing ring collimator constructed on the basis of these calculations. M. L.

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