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UNCLASSIFIED

TITLE--SHIP RADIOLOCATION AND METEOROLOGY -U-

AUTHOR--(02)--KRASYUK, N.P., POZENBERG, V.I.

COUNTRY OF INFO--USSR

K

SOURCE--SHIP RADIOLOCATION AND METEOROLOGY (KORABEL'NAYA RADIOLOKATSIYA I METEOROLOGIYA) LENINGRAD. SUDOSTROYENIYE. 1970. 327 PP
DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MECH., IND., CIVIL AND MARINE ENGR, NAVIGATION
TOPIC TAGS--SHIP NAVIGATION, METEOROLOGIC INSTRUMENT, HYDROMETEOROLOGY, SEA RETURN

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

ABSTRACT. INTRODUCTION 3. CHAPTER I
 ELECTROMAGNETIC PARAMETERS AND THE STRUCTURE OF HYDROMETED FORMATIONS
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 HYDROMETEORS 48. III THE WEAKENING INFLUENCE OF THE ATMOSPHERE WITH
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 RADIOLOCATION DISPERSION AND WEAKENING OF RADIO WAVES OF THE CENTIMETER
 AND MILLIMETER RANGES BY HYDROMETED FORMATIONS OF VARIOUS TYPES, AND
 ALSO THE DISPERSION OF RADIO WAVES BY THE SURFACE OF THE SEA. THE BOOK
 IS DESIGNED FOR ENGINEERS DESIGNING AND OPERATING SHIP RADIOLOCATION
 SYSTEMS.

UNCLASSIFIED

USSR

UDC 621.315.592

GULYAYEVA, A. S., KRASYUK, V. A., MASLOV, V. N., and BAKHAEV, B. A., Corresponding Member of the Academy of Sciences USSR, State Scientific Research and Planning Institute of the Rare Metals Industry, Moscow

"Change of GaAs Single Crystal Photoluminescence in Regions Damaged by a Laser Beam"

Moscow, Doklady Akademii Nauk SSSR, Vol 205, No 4, 1972, pp 815-817

Abstract: The authors studied changes in the photoluminescence of GaAs single crystals with p- and n-type conduction and a carrier concentration of $1 \cdot 10^{17}$ -- $3 \cdot 10^{17}$ cm^{-3} in the regions damaged by a laser beam. The p-type Zn-doped samples were obtained by the Czochralski method; the n-type Te-doped samples, by the Czochralski and Bridgman methods. The samples were exposed to single light pulses of 500-microsecond duration from a laser with the active element of glass with neodymium, $\lambda = 1.06 \mu$. The absorption coefficient of the samples at this wavelength was $\alpha = 1-3 \text{ cm}^{-1}$. At a mean luminous flux density of $\sim 5 \cdot 10^5$ w/sq cm the damage appeared on the sample face opposite

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USSSR

GULYAYEVA, A. S., et al., Doklady Akademii Nauk SSSR, Vol 205, No 4, 1972, pp 815-817

the laser beam, probably as a result of local sample temperature elevation during the action of the laser pulse. The light source for studying the photoluminescence spectrum was a (He-Ne) laser with a wavelength of 6328 \AA . For each sample the emission spectrum was recorded in several places for both the damaged and undamaged areas of the sample.

The photoluminescence spectra for all samples at 293° K had only one "edge" emission line with a peak of 1.43 eV, with the emission intensity of the damaged regions being only a third to a fourth of the emission intensity for the undamaged regions. The photoluminescence spectra of the p-type samples at 77° K likewise had only one "edge" emission peak with an energy of 1.48 eV, with the intensity in the damaged regions about half that of the undamaged areas. The photoluminescence spectra of the n-type samples had peaks with energies of 1.51 and 1.23 eV respectively, with the "edge" luminescence intensity of the damaged regions decreasing about 50 to 60% and the intensity of the 1.23-eV peak increasing 1.5-2 times.

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GULYAYEVA, A. S., et al., Doklady Akademii Nauk SSSR, Vol 205, No 4, 1972, pp 815-817

To see if in all GaAs samples containing Te there is an increase in the intensity of the line with the 1.23-ev peak in laser-damaged areas, n-type samples underwent heat treatment at 800° C for six hours so as to introduce copper into them. The line with the 1.23-ev peak was found to disappear for samples containing copper.


The authors thank T. G. YUGOVA for carrying out the heat treatment of the samples.

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Simulations

USSR

UDC 681.333


KRASYUKOV, V. A. and STEPANOV, B. S.

"A Modeling Device"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obratzysy, Tovarnyye Znaki, No 8, 1970, p 121, patent No 264007, filed 24 Jan 69

Abstract: This Author's Certificate introduces a modeling device which contains a current-carrying modeling frame with current regulator, magnetic field pickups, commutators, a converter, and a cathode ray tube with scanning unit. As a distinguishing feature of the patent, the device is simplified and its logical possibilities are extended by including a memory unit connected through a commutator to the vertical deflecting plates of the cathode ray tube. The outputs of the magnetic field pickups are connected to the inputs of the pickup commutator. The output of this commutator is connected through the converter to the inputs of the memory unit.

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1/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--A MODELING DEVICE -U-
AUTHOR--(02)-KASYUKOV, V.A., STEPANOV, B.S. *K*
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. PATENT NO 264007
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI, NR 3,
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--PATENT, MEMORY ELEMENT, CATHODE RAY TUBE, MAGNETIC METHOD,
ELECTRONIC CIRCUIT MODELING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/1781 STEP NO--OR/0492/70/00J/008/0121/0121
CIRC ACCESSION NO--AA0130614

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2/2 019

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PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0130614

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS AUTHOR'S CERTIFICATE INTRODUCES A MODELING DEVICE WHICH CONTAINS A CURRENT CARRYING MODELING FRAME WITH CURRENT REGULATOR, MAGNETIC FIELD PICKUPS, COMMUTATORS, A CONVERTER, AND A CATHODE RAY TUBE WITH SCANNING UNIT. AS A DISTINGUISHING FEATURE OF THE PATENT, THE DEVICE IS SIMPLIFIED AND ITS LOGICAL POSSIBILITIES ARE EXTENDED BY INCLUDING A MEMORY UNIT CONNECTED THROUGH A COMMUTATOR TO THE VERTICAL DEFLECTING PLATES OF THE CATHODE RAY TUBE. THE OUTPUTS OF THE MAGNETIC FIELD PICKUPS ARE CONNECTED TO THE INPUTS OF THE PICKUP COMMUTATOR. THE OUTPUT OF THIS COMMUTATOR IS CONNECTED THROUGH THE CONVERTER TO THE INPUTS OF THE MEMORY UNIT.

UNCLASSIFIED

USSR

UDC 539.3

ZHELEZOVSKAYA, L. A., KRASYUKOV, V. P., PANKRATOV, N. D., RASSUDOV, V. N.

"Calculation of Hollow Shells in a Temperature Field"

Nauch. tr. Saratov. politekhn. in-t (Scientific Works of Saratov Polytechnical Institute), 1970, No. 49, pp 79-83 (from RZh-Mekhanika, No 9, Sep 71, Abstract No 9V125)

Translation: A hollow shell rectangular in plan with constant major curvatures and heated according to a linear law over the thickness and according to an arbitrary law along the coordinates in the plan is discussed. For the case when the temperature changes only over the thickness and along one of the coordinates in plan the system of equations for shell equilibrium in displacements reduces to a differential equation of the eighth order relative to the displacement function. The latter is integrated for a shell in which two edges (along which the temperature is a variable) are fastened in an arbitrary manner and the two others are hinged. The general solution is given in the form of the sum of a particular solution of the nonhomogeneous equation and the solution of the corresponding homogeneous equation. The first is assumed to be known and the second is obtained in the form of a unary series. Numerical results are not given. V. M. Kulakov.
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USSR

UDC: 539.3:534.1

RASSUDOV, V. M., KRASYUKOV, V. P., PANKRATOV, N. D.

"Stability of a Heated Shallow Shell of Constant Twist."

Nauch. tr. Saratov. politekhn. in-t (Scientific Works of Saratov Polytechnical Institute), 1970, vyp. 49, pp 75-79 (from EZh-Mekhanika, No 7, Jul 71, Abstract No 7V264)

Translation: The authors study the stability of a shallow shell of rectangular planform in a temperature field, assuming that the curvatures of the shell in two directions are equal to zero, and that twist is a constant quantity. The modulus of elasticity and coefficient of linear expansion depend on temperature. The initial state of the shell is taken as momentless, and the problem is described by a differential equation of eighth order with respect to the function of displacements. Hinged support of the edges is considered. The critical temperature is found. The effect of the temperature dependence of the coefficient of linear expansion is evaluated. Ya. N. Grigorenko.

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1/2 010 UNCLASSIFIED PROCESSING DATE--02OCT70
 TITLE--ARE PULSARS SINGLE STARS -U-
 AUTHOR--KRAT, V.A.
 COUNTRY OF INFO--USSR *R*
 SOURCE--ASTROPHYSICS AND SPACE SCIENCES VOL, 6, MAR. 1970, P 420-421
 DATE PUBLISHED-----70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS
 TOPIC TAGS--PULSAR, STAR, NOVA, SUPERNOVA, STELLAR EVOLUTION

CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--1987/1029 STEP NO--NE/0000/10/000/000/0420/0421
 CIRC ACCESSION NO--AP0104427
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UNCLASSIFIED

PROCESSING DATE--0210170

CIRC ACCESSION NO--AP0104427

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL CONSIDERATIONS CONCERNING THE NATURE OF PULSARS, ON THE BASIS OF A HYPOTHESIS (KRAAT, 1940) ACCORDING TO WHICH THE MAIN ENERGY OF NOVAE AND SUPERNOVAE BURSTS IS THE GRAVITATIONAL ENERGY OF COLLAPSE. THE DISCUSSION LEADS TO THE CONCLUSION THAT CONDENSED (COLLAPSED) STARS WILL BE GENERALLY DOUBLE AND IN SOME CASES MULTIPLE STARS, AND THAT THE FORMATION OF CLOSE DOUBLE STARS IS A NATURAL CONSEQUENCE OF RAPID COLLAPSE DURING CRITICAL PHASES OF STELLAR EVOLUTION.

UNCLASSIFIED

USSR

UDC 612.821.2

KRATIN, Yu. G., Institute of Physiology imeni I. P. Pavlov, Academy of Sciences USSR, Leningrad

"Analyzing the Brain System and Its Interaction With Activators"

Moscow, Uspekhi Fiziologicheskikh Nauk, Vol 4, No 4, 1973, pp 34-51

Abstract: The concept of an integrative system for analyzing stimuli is introduced. This dynamic system unifies the central components of the various analyzers which measure or sense stimuli and transform them into neural processes. Its function is evaluating external factors affecting the organism according to their biological significance, using convergence, comparison of internal and external stimuli and synthesis of afferent impulses leading to action, inhibition or reinforcement. The adjustment factor used is the most biologically significant stimulus. In this process the analyzing system also stimulates the brain stem and controls a nonspecific activation apparatus. Experiments by the author and others concerning brain stem stimulation, inhibition, reinforcement and signal differentiation are cited to support the model for signal analysis proposed.

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USSR

UDC 612.822.3+612.85

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

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

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

Abstract. The effect of the duration of sound signals on EEG and behavioral responses in conditioned reflex activity was studied in cats. The sound signals were gradually shortened from 3 to 0.015 sec. Upon reduction of the signals to 0.5-1.0 sec, behavioral reactions remained unchanged but the general level of activation of the brain rhythm was raised, and the bioelectric reactions of the brain to positive stimuli and stimuli involving fine differentiation because of a moderate variation in the sound frequency were lengthened. In the 0.1-0.2 sec signal range, activation of the brain rhythm increased to a still greater extent and conditioned reflex activity was considerably disturbed. Prolonged successive inhibition and failures in fine
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ANDREYEVA, V. N., et al, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenova, Vol 56, No 9, Sep 70, pp 1,193-1,207

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

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USSR

UDC 615.371:576.851.42].015.4:612.015.6:577.164.2

KRATINOV, A. G., POLYAKOVA, A. M., and KHAR'KOVA, N. M., Scientific Research
Anti plague Institute of the Caucasus and Transcaucasus

"The Effect of Live Brucellosis Vaccine on Ascorbic Acid Levels in Animal
Organs"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1971,
pp 146-147

Abstract: The distribution of ascorbic acid was studied in mice, rats, and guinea pigs after a single subcutaneous injection of live brucellosis vaccine from strains 19-BA and 104-M. The vaccine caused considerable shifts in the animals' ascorbic acid metabolism. The ascorbic acid level dropped, for example, in the adrenals and myocardium of mice and rats while rising in the skeletal muscles. In the guinea pigs, vaccination decreased the ascorbic acid concentration of the adrenals, spleen, and lungs while increasing it in the thymus and myocardium. These shifts are regarded as a protective-adaptive response to antigenic stimulation and should be compensated in vaccinated humans with supplemental doses of vitamin C.

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USSR

UDC 612.352.1+612.352.17/.18].014-46:515.372:576.851.45.097.29

KRATINOV, A. G. and KHAR'KOVA, N. M., Scientific Research Antiplague Institute
of the Caucasus and Transcaucasus, Stavropol

"Changes in the Glycogen Content of the Liver, Myocardium, and Skeletal
Muscles of Rodents During Plague Intoxication"

Moscow, Voprosy Meditsinskoy Khimii, No 4, 1971, pp 373-378

Abstract: Comparative study was conducted of some aspects of carbohydrate metabolism in three rodent species given sublethal doses of autolysate or fraction 2 of *Pasteurella pestis* EV. Three hours of intoxication decreased the glycogen content of the liver and gastrocnemius of all the animals, more so in white rats (highly sensitive to plague toxin) than in gerbils (more resistant) and guinea pigs (particularly resistant). Intoxication also decreased the glycogen content of the myocardium in gerbils and guinea pigs, but increased it in rats. During toxicosis the blood sugar level rose significantly in rats but remained unchanged in gerbils and guinea pigs. In all animals the concentration of ascorbic acid decreased significantly in the adrenals and liver.

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Devices

USSR

UDC 621.327.66

Should be M.
~~KRATKO, M. I.~~, SELEZNEV, Yu. Ye., Computing Center, Siberian Department of the Academy of Sciences of the USSR

"A Method of Making Frameless Memory Arrays"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 25, Soviet Patent No 277860, class 21, filed 14 Jun 69, published 5 Aug 70, p 45

Translation: This Author's Certificate introduces a method of making frameless memory arrays by threading a ferrite matrix in the spread-out state and then folding it up. As a distinguishing feature of the patent, the following steps are taken to increase labor productivity: the cores are mounted in two rows along technological rods; the apertures are oriented crosswise to the rod; the cores are fastened by a wire which is a coordinate conductor of one coordinate; this wire is made to follow a helix inside the cores; the wire is fastened on the ends of the rods; the rods are arranged in parallel with the apertures of each row of cores oriented opposite one another; the resultant continuous holes are threaded by wires which are the coordinate conductors of the second coordinate and lie crosswise of the rods; inhibit and readout wires are then threaded through, the

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KRAIKO, V. I., SELEZNEV, Yu. Ye., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 25, Soviet Patent No 277860, class 21, filed 14 Jun 69, published 5 Aug 70, p 45

rods are removed, the helically wound wires are stretched into straight lines, and the matrix is folded up.

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172 048 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--DISTRIBUTION OF POLYENIC SEQUENCES DURING POLY(VINYL CHLORIDE)
THERMAL DEGRADATION -U-
AUTHOR--(03)-MINSKER, K.S., KRATS, E.O., PAKHOMOVA, I.K.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(3), 483-8
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, CHEMISTRY, PHYSICS
TOPIC TAGS--POLYVINYL CHLORIDE, THERMAL DEGRADATION, OXIDATIVE
DEGRADATION, CHEMICAL STABILIZER, LEAD COMPOUND, PHENOL, POLYMER
STRUCTURE, LASER RADIATION, POLYCARBONATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1191 STEP NO--UR/0459/70/012/003/0483/0488
CIRC ACCESSION NO--AP0116656
UNCLASSIFIED

2/2 048

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PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0116656

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONTENT OF SHORT CONJUGATED SEGMENTS INCREASED DURING THE OXIDATIVE THERMAL DEGRADATION OF TITLE POLYMER (I) AT 175DEGREES. THE DISTRIBUTION AND CONTENT OF POLYENE SEQUENCES IN I DEGRADED IN THE AIR AND STABILIZED WITH PBO,PBSO SUB4, OR ANTIOXIDANTS (E.G., 4,METHYL,2,6,DI,TERT,BUTYLPHENOL, BIS,(5,METHYL,3,TERT,BUTYL, 2,HYDROXYPHENYL)METHANE, OR BISRENE, AND POLYCARBONATES, WERE STUDIED. THE RELATION OF MICROCRACKS TO THE POLYMER MICROSTRUCTURE AND THE LASER IRRADN. INDUCED DEVELOPMENT OF DESTRUCTIVE CRACKS FROM THE MICROCRACKS ARE DISCUSSED.

UNCLASSIFIED

USSR

UDC 615.786.787:610.8-009.24:612.824.1

KRATSKIN, I. L., Sechenov Institute of Evolutionary Physiology and Biochemistry, USSR Academy of Sciences, Leningrad

"Study of Central Nicotine-Sensitive Cholinoreceptors After the Injection of Bis-Quaternary Ammonium Compounds Into the Lateral Ventricles"

Moscow, Farmakologiya i Toksikologiya, No 3, 1973, pp 261-266

Abstract: Hexamethonium and 13 other bis-quaternary compounds, including some with 16 atoms between the nitrogens, varied in their ability to prevent nicotine-induced convulsions in mice when introduced into the lateral ventricles. The ganglion-blocking agents were 3 to 30 times less active against the N-cholinoreceptors than hexamethonium. The bis-quaternary compounds were able to prevent convulsions in rabbits when introduced into the lateral ventricles 60 minutes before intravenous injection of nicotine, but they had no effect in this respect when introduced 10 minutes before.

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Geology

INTERNATIONAL CONFERENCE ON METAMORPHIC TECTONICS OF PALEOZOIC
Articles by Corresponding Member AS USSR R. D. ...
Leningrad, U.S.S.R., November 1971. No. 100-1001

An International Conference on Precambrian Tectonics of the eastern part of the Baltic Shield was held on 7-19 July by the Institute of Geology and the Vsesoyuznyy Nauchnyy Tsentr of the Institute of Precambrian Geology and Geochronology and the Institute on Experimental Research of the Academy of Sciences USSR. The almost 150 delegates attending the conference included representatives of more than 30 scientific research and industrial establishments from the Soviet Union, plus scientists from Bulgaria, Brazil, the GDR, Spain, Germany, Norway, Poland, the United States, Finland, France, and Sweden. The conference opened in Leningrad and ended in Petrozavodsk.

The Precambrian era -- an enormous, more than 3 billion year stage in the history of the development of the earth's crust -- offers extensive opportunities to elucidate many problems of theoretical and applied geology. For this reason it is increasingly attracting scientific interest. At the same time intensive Precambrian geologic investigations which are being conducted in various parts of the world, and which frequently carry differing methodological and theoretical emphasis, urgently demand joint efforts and a strengthening of mutual scientific contacts in order to further our knowledge of the early stages of the earth's development. This is particularly essential today, when efforts in planetary geology are becoming more and more extensive.

A need for such cooperation has been particularly displayed in the area of Precambrian tectonics in connection with the preparation of tectonic maps of Europe and the world. This conference was the first attempt at step-by-step talks with the aim of bringing the researchers with the Precambrian tectonics and stratigraphy of Europe, with the achievements of Soviet geologists in their research, to direct contact with the other world-wide geologists on a large scale. The conference was held in Petrozavodsk, Karelia, in 1971. In connection with the conference a 6-day excursion through southern central and northeastern Karelia was organized, devoted to the stratigraphy and tectonics of the geologic complexes of the Archaean and Proterozoic eras.

KRATTS, K O

1/3 011 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--ISOTOPIC GEOCHRONOLOGY AND DEEP CRUSTAL STRUCTURE, ISOTOPIC
GEOCHRONOLOGY AND DEEP CRUSTAL STRUCTURE -U-
AUTHOR--(02)-KRATTS, K.O., LUBACHZHUCHENKO, S.B.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, GEOTEKTONIKA, NO 2, 1970, PP 74-79
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, NUCLEAR SCIENCE AND
TECHNOLOGY
TOPIC TAGS--GEOCHRONOLOGY, EARTH CRUST AGE, ISOTOPE, GEOLOGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/1648 STEP NO--UR/9066/70/060/002/0074/0079
CIRC ACCESSION NO--AP0109649
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PROCESSING DATE--09OCT70

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CIRC ACCESSION NO--AP0109649

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

ABSTRACT. EXPERIENCE IN STUDYING PRECAMBRIAN REGIONS IN THE USSR SHOWS THAT ISOTOPIC GEOCHRONOLOGICAL DATA CAN BE EXTREMELY VALUABLE IN STUDYING OTHER ASPECTS OF GEOLOGY SUCH AS CRUSTAL STRUCTURE, THE SPECIFIC NATURE OF ITS DEEP ZONES, CHARACTERISTICS OF REGIONAL STRUCTURES, ETC. THERE IS SOME INTERRELATIONSHIP BETWEEN DATA FROM ISOTOPIC GEOCHRONOLOGY AND DEEP CRUSTAL STRUCTURE WHICH SUGGESTS THAT THE ISOTOPIC AGE OF ROCKS (MINERALS) REFLECTS CRUSTAL STRUCTURE. THIS ARTICLE GIVES SOME NEW, PRESENTLY UNEXPLOITED METHODOLOGICAL POSSIBILITIES OF ISOTOPIC GEOCHRONOLOGY IN THE STUDY OF COMPLEX GEOLOGICAL PROBLEMS. FOR EXAMPLE, COMPARISON OF THE MAP OF DEEP STRUCTURE OF THE BALTIC SHIELD AND A GEOCHRONOLOGICAL MAP OF THIS SAME AREA REVEALS A SURPRISING CORRESPONDENCE BETWEEN THE GEOCHRONOLOGICAL AND GEOPHYSICAL FIELDS AND ACCORDINGLY WITH CRUSTAL BLOCKS HAVING DIFFERENT STRUCTURE. IN THE ARE OF THE EASTERN BLOCK THERE IS A GEOCHRONOLOGICAL FIELD CORRESPONDING TO THE SAAMO-KARELIAN GEOCHRONOLOGICAL ZONE, CHARACTERIZED BY AN AGE IN THE RANGE FROM 3,000 TO 1,700 MILLION YEARS. THIS AND MANY OTHER EXAMPLES CITED BY THE AUTHORS SHOW THAT LARGE GEOCHRONOLOGICAL FIELDS CORRESPOND TO LARGE CRUSTAL BLOCKS DEFINED ON THE BASIS OF GEOPHYSICAL DATA, DIFFERING FROM ONE ANOTHER IN THEIR DEEP STRUCTURE. THE BOUNDARIES MARKING THE LIMITS OF GEOCHRONOLOGICAL FIELDS AT THE SAME TIME REFLECT THE PRINCIPAL VERTICAL DISCONTINUITIES, DEEP FAULTS BOUNDING LARGE CRUSTAL BLOCKS DIFFERING IN DEEP STRUCTURE.

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CIRC ACCESSION NO--AP0109649

ABSTRACT/EXTRACT--IT IS CLEAR THAT THE ISOTOPIC GEOCHRONOLOGICAL CHARACTERISTICS OF TERRITORIES OF ANCIENT SHIELDS HAVE A DEFINITE CORRESPONDENCE TO THE GEOPHYSICAL CHARACTERISTICS OF THESE AREAS AND REFLECT BOTH THE GEOLOGICAL AND DEEP STRUCTURE OF THE CRUST WITHIN THEIR LIMITS. ACCORDINGLY, ISOTOPIC GEOCHRONOLOGY FOR EXTENSIVE AREAS, TOGETHER WITH OTHER METHODS, CAN BE USED FOR THE DETECTION AND MAPPING OF LARGE STRUCTURES OF SEGMENTS OF THE CRUST. ISOTOPIC GEOCHRONOLOGY CAN BE USED IN DETERMINING THE TIME OF FORMATION OF SUCH STRUCTURES AND FOR STUDYING THE CHARACTERISTICS OF THEIR STRUCTURE AND DEVELOPMENT. AS A RESULT, AN APPROACH CAN BE MADE TO STUDYING THE SEQUENCE OF DEVELOPMENT OF LARGE CRUSTAL STRUCTURES, THE NATURE OF THEIR CROSS SECTIONS AND CRUSTAL DEVELOPMENT AS A WHOLE.

UNCLASSIFIED

Radiation Chemistry

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UDC 541.182.65:541.15

USSR

MAZINA, G. R., PANICH, R. M., USTINOVA, Z. M., VOYUSKIY, S. S., FODIMAN, N. M.,
KRATSHTEYN, P. N., and KUZNETSOVA, G. I., Moscow Institute of Fine Chemical
Technology imeni M. V. Lomonosov

"Effect of Ionizing Radiation on the Properties of Fluorine-containing
Copolymer Latex"

Moscow, Kolloidnyy Zhurnal, Vol 33, No 5, Sep-Oct 71, pp 690-692

Abstract: The effect of ionizing radiation on the properties of fluorine-con-
taining copolymer latex was studied by using Co^{60} as a source, the radiation
dose ranging from 0.25 to 50 Mrad. The pH of the irradiated copolymer latex
became lower, as did the resistance to electrolytes. After irradiation the
coagulation threshold of the latex was also lowered with simultaneous coagula-
tion of globules and intraglobular crosslinking of the polymer. Increased
radiation dose resulted in greater three-dimensional lattice density. Irradia-
tion of the latex does not lead to formation of intraglobular chemical bonds
and to better film formation.

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KRAUKLIS, Arnold

medicine

Article by Arnold Krauklis, Doctor of Medicine, University of Maryland School of Medicine, Baltimore, Maryland, in "Psychiatry" no. 6, 1973, pp. 5-11

APPROVED FOR RELEASE: 09/17/2001

2 NOV 1973

Can a person who would like to get rid of harmful habits be able to do so? The question is how to do it. One of the effective methods of eliminating psychotic reaction syndromes (the scientific designation for harmful habits) is autogenic training. However, the key to success lies in the combination of systematic training in the preparation with regular training in real situations.

Each one of us has developed thousands of automatic behavioral reactions with which we respond to various situations in certain situations or in the solution of various tasks. These reactions are the fruit of our life experience. They are combined into complexes -- so-called behavioral syndromes -- that automatically respond each other. Most any typical reaction is present in the family or at school, in the street or at work -- each of which conditions us and we respond to them in a certain way. These automatic reactions are the fruit of an individual's reaction to stimuli and therefore provide to a certain degree a look of his character. The social and biological motivation and the effectiveness of behavior depend on such syndromes. However, it should be said that the decisive role is played here by those situations which control our behavior in difficult conditions. After all, our actions in such situations involve tremendous nervous tension, while functional and emotional sources of the brain are expended at high intensity. Here, for example, is a familiar situation: In a short period of time one is obliged to go to a number of places and solve a number of diverse problems. How should he go about it? A person who has developed a reflexive reaction to a conditioning stimulus from first takes care of the principal problem; he goes to

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USSR

USSR 612.178.4-612.825.4

KRAUKLIS, A. A. and ZABAROVSKIY, Ya. Ya., Latvian Institute of Experimental and Clinical Medicine, Ministry of Health, Latvian SSR

"Dynamics of Indexes of Nervous Tension During Mental-Emotional Stress and Physical Exertion in Healthy Persons"

Riga, Izvestiya Akademii Nauk Latvian SSR, No 3, 1973, pp 57-65

Abstract: The purpose of the study was to compare the changes observed mainly in cardiovascular functions of human subjects of both sexes during concentrated mental activity with those occurring during static physical exertion under laboratory conditions. The stress of mental work produced significantly greater changes in the phases and frequency of heart contractions, respiratory rate, and electrodermogram than did physical exertion. It also resulted in more significant changes in the frequency spectrum of the EEG, mainly an increase in the duration of the theta waves and decrease in that of the alpha waves. The mental test raised blood pressure more in the males than in the females, but in other respects (pulse rate, cardiac output, electrodermogram, etc) there were no appreciable differences between the sexes. Criteria are suggested for determining individual reactions to standard stimuli.

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USSR

UDC 539.3:534.231.1

HOLOTKOV, I. A., KRAUKLIS, P. V.

"Mixed Surface Waves at the Boundary of a Nonuniform Elastic Medium with a Non-uniform Liquid"

Tr. V Vses. simpoz. po difraktsii i rasprostr. voln, 1970 (Works of the Fifth All-Union Symposium on Wave Diffraction and Propagation, 1970), Leningrad, Nauka Press, 1971, pp 144-162 (from RZh-Mekhanika, No 11, Nov 71, Abstract No 11V114)

Translation: The solutions of the equations of motion of a nonuniform medium called mixed surface waves are isolated. The waves are propagated along the boundary of an elastic medium and a liquid and are formed as a result of interference of whisper tunnel waves and ordinary Stanley or Rayleigh surface waves. The solution is found in the form of asymptotic series with respect to powers of $\omega^{-1/3}$ (ω is the frequency). Substitution of the series in the equations and boundary conditions leads to a system of differential equations which must be solved. The physical properties of the waves are investigated: dispersion, polarization, damping and depth of penetration. The possibility of using the method of structural interference to describe mixed surface waves near the boundaries of nonuniform media where the beam field loses its regularity is confirmed.

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1/4 030 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--THE PHYSICS OF ELECTRONIC AND ATOMIC COLLISIONS -U-

AUTHOR--1921-DAMBURG, R.YA., KRAULINYA, E.K.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, VESTNIK AKADEMII NAUK SSSR, RUSSIAN, VOL 40, NO 1, JANUARY
1970, PP 112-113
DATE PUBLISHED-----70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, PHYSICS

TOPIC TAGS--CONFERENCE, ELECTRON COLLISION, ATOM, SOLID STATE, DISCHARGE
PLASMA, IONIZATION, DISSOCIATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1652

STEP NO--UR/0030/70/040/001/0112/0113

CIRC ACCESSION NO--AT0135267

UNCLASSIFIED

2/4 030

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0135267

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOURTH ALL UNION CONFERENCE ON THE PHYSICS OF ELECTRONIC AND ATOMIC COLLISIONS WAS HELD ON 15-20 SEPTEMBER 1969 IN RIGA. THE INSTITUTE OF PHYSICS OF THE AS LATVIAN SSR AND THE UNIVERSITY OF LATVIA TOOK UPON THEMSELVES THE ORGANIZATION OF THE MEETING. PARTICIPATING IN THE WORK WERE ABOUT 350 REPRESENTATIVES OF ACADEMIC AND BRANCH INSTITUTES AND VUZES OF THE COUNTRY AND ALSO GUESTS FROM BULGARIA, HUNGARY, EAST GERMANY AND YUGOSLAVIA. ONE HUNDRED AND EIGHTY REPORTS WERE READ AT THE PLENARY AND SECTIONAL SESSIONS. TO STRENGTHEN AND EXPAND CONTACTS WITH THOSE RELATED AREAS, FOR THE FIRST TIME AT THE CONFERENCE SURVEY REPORTS WERE MADE ON ATOMIC COLLISIONS IN THE SOLID STATE (O. B. FIRSOV, V. A. MOLCHANOV AND E. S. PARILIS), ON MULTIPHOTON IONIZATION (N. B. DELONE AND L. V. KELDYSH), ON THE CREATION AND DESTRUCTION OF COHERENT STATES BY COLLISIONS (U. KH. KOPVILLEM), AND ON CHEMICAL ACCELERATORS (D. V. LEONAS). YU. N. GNEDIN READ JOINTLY WITH A. Z. DOLGINOV A REPORT ENTITLED "THE OBSERVATION OF COMETS AS A SOURCE OF INFORMATION ABOUT ELEMENTARY PROCESSES UNDER COLLISIONLESS CONDI~~TIONS~~TIONS". ALL THE SURVEY REPORTS AROUSED MUCH INTEREST AND ACTIVE DISCUSSION. A VERY LARGE NUMBER OF REPORTS DEALT WITH EXPERIMENTAL INVESTIGATIONS OF ATOM-ATOM COLLISIONS.

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UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0135267

ABSTRACT/EXTRACT--TRANSFER OF EXCITATION BETWEEN HELIUM ATOMS WAS STUDIED UNDER CONDITIONS OF DISCHARGE PLASMA (LENINGRAD AND GRUBASH UNIVERSITIES AND THE CENTRAL SCIENTIFIC RESEARCH INSTITUTE OF PHYSICS OF THE HUNGARIAN ACADEMY OF SCIENCES), BETWEEN HYDROGEN ATOMS (PHYSICOTECHNICAL INSTITUTE IMENI A. F. IOFFE OF THE AS USSR) AND FROM EXCITED HYDROGEN ATOMS TO ARGON ANOMS (INSTITUTE IMENI R. BOSHKOVIICH, YUGOSLAVIA), MEASUREMENTS WERE MADE OF THE MEAN LIFE OF METASTABLE HELIUM ATOMS, PROCESSES IN XENON WERE INVESTIGATED, ETC. IN A LARGE NUMBER OF REPORTS THERE WERE DISCUSSIONS OF QUESTIONS RELATING TO EXPERIMENTAL STUDY OF REACTIONS OF IONIZATION, DISSOCIATION AND RECHARGING, AND ALSO TO ION MOLECULAR REACTIONS (PHYSICOTECHNICAL INSTITUTE OF THE AS USSR, PHYSICOTECHNICAL INSTITUTE OF THE AS UKRAINIAN SSR, PHYSICOCHEMICAL INSTITUTE IMENI L. YA. KARPOV, THE INSTITUTE OF NUCLEAR PHYSICS OF THE SIBERIAN DEPARTMENT OF THE AS USSR, THE JOINT NUCLEAR RESEARCH INSTITUTE, THE UNIVERSITIES OF UZHGORODSK AND L'YOV, AND THE INSTITUTE IMENI B. KIDRICH IN YUGOSLAVIA). CONSIDERABLE INTEREST WAS AROUSED BY A SESSION DEVOTED TO INELASTIC LOSSES IN ATOMIC COLLISIONS AND AUTIIONIZATION STATES. HERE REPORTS WERE PRESENTED ON THE INVESTIGATION OF THE SPECTRA OF INELASTIC LOSSES DURING SINGLE COLLISIONS OF AR PRIME POSITIVE WITH AR, NE PRIME POSITIVE WITH NE, OF NE PRIME POSITIVE IONS, OF N PRIME POSITIVE AND NE PRIME POSITIVE WITH AR ATOMS, OF H PRIME POSITIVE IONS, AND OF D PRIME POSITIVE WITH ATOMS OF INERT GASES (PHYSICOTECHNICAL INSTITUTE OF THE AS USSR).

UNCLASSIFIED

4/4 030 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0135267

ABSTRACT/EXTRACT--IN A NUMBER OF REPORTS OF CO WORKERS OF THE SAME INSTITUTE WERE RESULTS OF INVESTIGATIONS OF THE ENERGY SPECTRA OF ELECTRONS LIBERATED DURING COLLISIONS OF POSITIVE AND NEGATIVE IONS WITH ATOMS. THAT METHOD PROVED TO BE SUCCESSFUL IN STUDYING AUTOIONIZATION STATES OF AR, NE, NA, K, RB AND CS ATOMS. LONG LIVED AUTOIONIZATION STATES OF AR, KR, AND XE ATOMS AND THE AR PRIME POSITIVE ION WERE DETECTED BY MEANS OF MASS SPECTROMETRY (PHYSICO-CHEMICAL INSTITUTE IMENI L. YA. KARBOV). METHODS OF FORMATION OF LONG LIVED AUTOIONIZATION STATES OF LITHIUM LIKE AND METASTABLE HELIUM LIKE PARTICLES WERE INVESTIGATED (MOSCOW UNIVERSITY).

UNCLASSIFIED

USSR

UDC: 621.372.632(088.8)

KRAUS, V. V., AVTONOMOV, V. N.

"A Frequency Multiplier"

USSR Author's Certificate No 277879, filed 17 Feb 69, published 6 Nov 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D60 P)

Translation: A frequency multiplier for the decimeter wave band is proposed which contains a transistor, an input loop and two tank circuits which are connected to each other and to the collector lead of the transistor. To eliminate parasitic coupling reactances, one of the tanks in the collector circuit takes the form of a quarter-wave short-circuited section of coaxial cable placed inside the quarter-wave output capacitance-shortened coaxial resonator.

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- 7 -

USSR

UDC 621.313.2:538.4

KRAUYA, V. M.

"A Conduction Pump With a Circular Duct"

Riga, Magnitnaya Gidrodinamika, No 4, Oct-Dec 71, pp 133-137

Abstract : By the method of conformal mapping, formulas have been developed for the electric field intensity between electrodes in the cylindrical duct of an induction pump of direct current. The average electromagnetic head of the pump and the current in the duct were determined by numerical integration disregarding boundary effects. According to a performed comparison, the current in the cylindrical duct is by 1.5-2 times higher and the efficiency is by 1.5-2 times lower than in a hydraulically equivalent duct of rectangular section. The derived relations are good for approximate computation of main parameters of a conduction pump with circular duct. Three illustr., 19 formulas, five biblio. refs.

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- 176 -

USSR

UDC 621.313.333:538.4

KRAIYA, V. M.

"Regulation of the Head of a Liquid Metal Induction Pump"

Magnitnaya Gidrodinamika, No 2, 1971, pp 88-92.

ABSTRACT: A theoretical foundation is presented for a method of regulation of the electromagnetic head of an induction pump for liquid metal by asymmetrization of the phase currents of the inductor. The method allows the head to be changed over broad limits with constant heat liberation by vortex currents in the liquid metal. The necessary dependences are concluded for combined calculation of the dynamic, thermal and electrical modes of the pump. The influence of the zero sequence current in the inductor in the electromagnetic head and heat liberation in the channel is studied. The method of regulation is suggested for metallurgical pumps operating in the braking mode.

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USSR

UNC: 621.313.29:538.4

GOLODOV, N. N., KRAUYA, V. M., YANKOP, E. K.

"Use of a DC Conduction Pump for Ferrous Metals in Cut-Off Conditions"

Riga, Magnitnaya Gidrodinamika, No 3, Jul-Sep 1971, pp 118-124

Abstract: The particulars of operation of a DC conduction pump in the cut-off (deceleration) mode are experimentally and theoretically studied for molten ferrous metal. The following possibilities are considered:
a) development by the pump of a head sufficient to slow down the jet; and
b) limiting the change in temperature of the molten metal within the pump so that it is not allowed to solidify there at low velocities. It is proposed that the head of the pump in the cut-off state be calculated from relations for an idealized pump with the introduction of a coefficient of head reduction. A method is given for determining the proposed coefficient which takes current spreading into account. Studies of an experimental cut-off device confirmed the feasibility of regulating jets of iron and steel by electromagnetic forces up to total cessation of metal flow from the tank at a pressure of 1 atmosphere. One table, six illustrations, bibliography of seven titles.

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USSR

UDC: 62-55

KRAJZ, M.

"Two Algorithms for Piecewise Linear Approximation"

V sb. Prom. sistemologiya (Industrial Systematology--collection of works) Kiev, Tekhnika, 1971, pp 28-32 (from RZh. Avtomatika, telemekhanika, i vychislitel'naya tekhnika, No. 12, 1971, Abstract No. 12A142)

Translation: Algorithms designed for modeling a nonlinear system of linear intervals capable of being connected are described. It is shown that these algorithms can be used for investigating dynamic systems of group control. Two illustrations, two tables, bibliography of three. Resume

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USSR

UDC 612.812.2

KRAUZ, V. A., SOROKOUNOV, V. A., and SKOROMETS, A. A., Institute of Experimental Medicine, Academy of Medical Sciences USSR, and First Medical Institute ineni I. P. Pavlov, Leningrad

"Effect of Ethimizole on Short-Term Memory and Mental Performance"

Moscow, Zhurnal Vyshey Nervnoy Deyatel'nosti, No 5, 1972, pp 907-911

Abstract: Experiments on dogs showed that ethimizole, an iminazole dicarboxylic acid derivative, significantly improved short-term memory compared with the control. The degree of improvement varied with the amount of previous training. The less trained the memory of an animal, the more pronounced the stimulatory effect of ethimizole. The drug also improved the ability of human subjects with a poor memory to recall numbers and words, but it had no effect of those with a high capacity for quick memorization. The stimulating action of ethimizole is attributed to its facilitating the conduction of excitation in the synapses, possibly because of the increased accumulation of acetylcholine.

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USSR

UDC 612.821.2.014.46:615.21

BORODKIN, Yu. S. and KRAUZ, V. A., Laboratory of Experimental Pharmacotherapy
Institute of Experimental Medicine, Academy of Medical Sciences USSR, Leningrad

"Role of Intracentral and Interneuronal Relationships in the Mechanism of Control of Short-Term Memory"

Moscow, Farmakologiya i Toksikologiya, No 5, 1972, pp 533-537

Abstract: Experiments on dogs and rabbits showed that an improvement or deterioration of short-term memory is directly related to the state of reciprocity existing both between individual structures of the hippocampal-reticular complex and between individual neurons and neuronal populations within a single structure. Such neuropharmacologic agents as nivaline [Gananthus woronowii alkaloid], orotic acid, ethimysol, ethipyrol, ethaphil, and amphetamine improved short-term memory by increasing the excitability of the reticular formation while depressing that of the dorsal hippocampus. On the other hand, the central m-cholinolytics methyldiazil and glipin impaired short-term memory by exciting the dorsal hippocampus and depressing the reticular formation.

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USSR

UDC 612.821.3

BORODKIN, YU. S., and KPAUZ, V. A., Department of Pharmacology, Scientific Research Institute of Experimental Medicine, Academy of Medical Sciences USSR, Leningrad

"Pharmacological Analysis of the Participation of the Hippocampal-Reticular Complex in the Memory Process"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23, No 1, Jan/Febr 73, pp 166-173

Abstract: In dogs, endogenous acetylcholine, orotic acid, ethiphyll, ethipyrol, ethimyzol, and phenamine (administered intramuscularly or orally) improve short-term memory and, at the same time, lower the excitability of the dorsal hippocampus and raise the excitability of the mesencephalic reticular formation. Anticholinergic drugs, such as metamizyl and glypime, exert the opposite effect. They impair short-term memory, raise the excitability of the dorsal hippocampus, and inhibit M-cholinoreceptors in the reticular formation. It appears that improvement in memory is conditioned by a higher reciprocity between the dorsal hippocampus and the mesencephalic reticular formation, while deterioration of memory is due to a disturbed mutual relationship between these two structures.

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USSR

UDC 612.821.4

KRAUZ, V. A., Laboratory of Experimental Pharmacotherapy, Department of
Pharmacology, Institute of Experimental Medicine, Academy of Medical Sciences
USSR, Leningrad

"The Effect of Ethipyrrol and Orotic Acid on the Training and Memory of Dogs"

Moscow, Farmekologiya i Toksikologiya, No 5, 1972, pp 537-541

Abstract: In experiments on 9 dogs, orotic acid and ethipyrrol [bis-(methylamido)-1-ethyl-pyrazole-3,4-dicarboxylic acid] markedly improved short-term memory as determined by the recall of auditory and visual conditioned stimuli and the location of food. The intensity of the effect of the two agents in increasing the maximum time of delayed reactions varied with the extent to which the animals' memory had been trained. The less trained the memory was, the more pronounced the effect of the drugs, and vice versa. Ethipyrrol and orotic acid equally lengthened the duration of short-term memory as determined by the recall of the location of food behind a screen, but the former had a more pronounced effect on the maximum time of delayed reactions as determined by the recall of conditioned stimuli. Both agents accelerated the learning process in the dogs and they had no effect on firmly established situational conditioned reflexes.

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USSR

UDC 615.217.34.015.45:612.826.2

BORODKIN, Yu. S., and KRAUZ, Y. A., Division of Pharmacology at the Institute of Experimental Medicine, Academy of Medical Sciences USSR, Leningrad

"The Effect of Central Cholinolytics on the Interrelations of the Mesencephalic Reticular Formation With the Structures of the Forebrain and Diencephalon"

Moscow, Farmakologiya i Toksikologiya, Vol 34, No 3, May-Jun 71, pp 259-263

Abstract: The role of cholinoreactive systems in the interrelations of mesencephalic reticular formation with the forebrain and diencephalon structures was studied on female rabbits with electrodes implanted into the brain structures. The inhibition of brain cholinoreceptors with central n-cholinolytics -- methylidiazine(metamizil) and intravenously injected scopolamine did not disrupt relations between the mesencephalic reticular formation and the limbic system structures. Glypime and atropine tended to distort these interrelations. Glypime exerted a similar influence on the relation between the reticular formation of the mesencephalon and non-specific thalamic nuclei. Inhibition of the brain n-cholinoreceptors with various substances of the n-cholinolytic series did not upset relations between the mesencephalic reticular formation and those of the forebrain and diencephalon.

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67

USSR

UIC 612.82:612.262

GRECHIN, V. B., and KRAUZ, Ye. I., Department of Applied Neurophysiology,
Institute of Experimental Medicine, Academy of Medical Sciences USSR, Leningrad

"Spontaneous Fluctuations in the Partial Pressure of Oxygen in Various Structures of the Human Brain"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 75, No 3,
1973, pp 20-22

Abstract: The study was performed on five patients with chronic postencephalitis parkinsonism and one epileptic treated by means of electrodes implanted in various cerebral areas. Reproducible spontaneous pO_2 fluctuation curves of nonperiodic, quasiperiodic, and periodic natures were recorded by 92% of the electrodes implanted in cell structures and by 40% of the electrodes implanted in white matter. The fluctuations amounted up to 50% of the average pO_2 level and had a cycle duration of 1-40 sec in the amygdaloid nucleus, 4-8 sec in the cortex, 5-10 sec in the brain stem, 5-20 sec in the thalamic nuclei, 8-10 sec in the amygdala, and 2-5 min in the globus pallidus. The power spectra had a maximum in a range of 6-11 sec in the cell formations and 1-6 sec in the white matter. Consistent diurnal changes were observed. In the evening, the amplitude and periodicity of the oscillations increased, especially in nonspecific $1/2$

USSR

GRINCHIN, V. B., and KRAUZ, Ye. I., Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 75, No 3, 1973, pp 20-22

thalamic nuclei and in the substantia nigra. Similarly, consistent changes occurred during performance of mental or physical work, after administration of drugs, and during inhalation of oxygen or hyperventilation. No pO_2 fluctuations were recorded 3-6 months after implantation of the electrodes. The reason might have been altered condition of nervous and vascular tissue and changes occurring at the active surface of the electrodes.

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USSR

KARINOS, D. M., KRAYCHENKO, A. A., PILIPOVSKIY, Yu. Ya., KRACHENKO, V. G.,
SHANATOV, Yu. M., KHARCHENKO, V. K., Kiev

"Study of Mechanical Characteristics of Hot Pressed Tungsten-Copper Pseudo-
alloys"

Kiev, Problemy Prochnosti, No. 12, Dec 70, pp. 64-68

Abstract: Studies are made of the mechanical characteristics of hot-pressed tungsten-copper pseudoalloys and their dependence on the density of the tungsten framework containing the lower-melting component and the time of isothermal holding at the pressing temperature. It is demonstrated that the strength, plasticity and impact toughness increase with increasing density of the refractory framework and holding time in the 1900-2200°C temperature interval during pressing. The hardness and strength in compression depend primarily on the density of the framework and the degree of filling of the pores with copper.

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USSR

UDC: 621.315.592

KRAVCHENKO, A. F., MOROZOV, B. V., and SKOK, E. M., Institute of Semiconductor Physics, Novosibirsk

"Reluctance of Semiconductor Films"

Leningrad, Fizika i tekhnika poluprovodnikov, No 8, 1972, pp 1520-1527

Abstract: Since the reluctance of semiconductor films offers a convenient and real method of studying the structural and kinetic characteristics of the films, the authors undertake theoretical and experiment investigation of their reluctance to weak and strong magnetic fields transverse to epitaxial semiconductor layers. The heterogeneous distribution of the local film parameters over their thickness is approximated by a step function, and the behavior of the reluctance anisotropy is analyzed. A table showing the results of the latter analysis is given. The experimental work was done on GaAs specimens grown on a semi-insulating substrate. To study the anisotropy of the transverse magnetic reluctance, angular diagrams for various specimens were plotted at temperatures of 77 and 300° K in constant magnetic fields up to 30 kOe. Comparative curves for the theoretical and experimental results are plotted.

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Waveguides

USSR

UDC: 621.372.822

~~KRAVCHENKO~~ V. E., KARETNIKOV, S. N., USTIMENKO, V. V., KAR-
MAJULOV, V. S.

"Experimental Investigation of Scattering and Transmission of
Electromagnetic Waves by Spherical Nonhomogeneities in a Rec-
tangular Waveguide"

Radiotekhnika. Resp. mezhved. temat. nauch.-tekhn. sb. (Radio
Engineering. Republic Thematic Interdepartmental Scientific
and Technical Collection), 1971, vyp. 17, pp 39-44 (from RZh-
Radiotekhnika, No 3, Mar 72, Abstract No 3B110)

Translation: In connection with the proposed method of cal-
culation, which is used in solving internal problems of elec-
trostatics on scattering and transmission of electromagnetic
waves by a rectangular waveguide with nonhomogeneities of regu-
lar shape, experimental studies which showed the singularities
in measurement of the reflection factor were done. Ways are
indicated for using the discovered experimental effects in the
development of specific microwave devices. Six illustrations,
bibliography of six titles. Resumé.

USSR

UDC: 621.315.592

KRAYCHENKO, A. F., KRIGER, E. D., MORGZOV, B. V., POLOVINIKIN, V. G., and SKOZ, E. M., Institute of Semiconductor Physics, Siberian Department, Acad. Sci. USSR, Novosibirsk
"Nernst-Ettingshausen Effects in n-GaAs in the Phonon Drag Region"
Leningrad, Fizika i tekhnika poluprovodnikov, vol 6, No 6, 1972,
pp 1150-1151

Abstract: This paper is based on an earlier article written by some of the authors named above and published in the same journal (5, 1971, p 1608) reporting observation of the phonon drag effect of the thermo-emf in n-type GaAs. The present brief communication presents curves of the Nernst-Ettingshausen effects, longitudinal and transverse, as functions of temperature. The measurements made for plotting the curves were conducted in weak magnetic fields. A sharp rise in the effects below 200° K is noticeable in the curves; this is attributable to the drag effect. In the mathematical analysis, an expression is derived for the contribution of the phonon drag to the coefficient of the transverse N-E effect. The authors, associated with the Novosibirsk Institute of Semiconductor Physics, conclude that the relaxation time of long-wave phonons is independent of the wave vector and that the electrons are dragged by the acoustic phonons through the deformation potential.

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UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--ABSORPTION OF ULTRASOUND IN A PRIMEV II PRIMEV SEMICONDUCTOR
COMPOUNDS -U-
AUTHOR--(02)-BOBYLEV, B.A., KRAYCHENKO, A.F.

K

COUNTRY OF INFO--USSR

SOURCE--AKUST. SH. 1970, 16(1), 15-19

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SEMICONDUCTOR MATERIAL, ULTRASONIC ABSORPTION, GALLIUM ARSENIDE, GALLIUM ANTIMONIDE, INDIUM ARSENIDE, INDIUM ANTIMONIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/2256

STEP NO--UR/0046/70/016/001/0015/0019

CIRC ACCESSION NO--AP0125834

UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--APO125834

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ULTRASONIC ABSORPTION IN SEMICONDUCTORS (GAAS, INAS, GASB, INSB) IS CARRIED OUT AT DIFFERENT TEMPS. AND AT 90 MHZ BY AN PULSE METHOD WITH AN ACCURACY OF 1PERCENT. AT 20-100DEGREEK A RAPID INCREASE OF ABSORPTION WITH TEMP. IS CHARACTERISTIC OF LONGITUDINAL AND TRANSVERSE WAVES PROPAGATED ALONG MEAN VALUE OF 110 WITH POLARIZATION MEAN VALUE OF 1.4 OR 1.0. AT 20DEGREEK, THE INCREASE OF ABSORPTION IS SIMILAR TO THAT OF SP. HEAT. WITH DIFFERENT TYPES OF POLARIZED WAVES, THE DEPENDENCE OF ABSORPTION OF TEMP. IS THE SAME FOR ALL THESE MATERIALS. AT LOW TEMP. THE ABSORPTION DECREASES WITH A DECREASE OF FREE CHARGE CARRIERS CONCN. FOR PIEZOACTIVE WAVES. IN MANY CASES THERE IS A SHARP MAX. IN THE ABSORPTION AT 60DEGREEK. AT 11DEGREEK IN GAAS, THERE IS A PEAK IN THE ABSORPTION CURVE FOR FREQUENCIES OF 31-165 MHZ. THE GENERAL CHARACTERISTIC OF ABSORPTION VS. TEMP. SHOWS THAT THE PHONON ABSORPTION MECHANISM IS IMPROTANT. THE EXPTL. RESULTS ARE COMPARED WITH THE PHONON ABSORPTION THEORY OF WOODRUFF AND EHENRICH. ASSUMING A TEMP. DEPENDENCE OF THE GREENEISEN CONST., A CURVE FOR SUCH A VARIATION IS GIVEN.
FACILITY: INST. FIZ. POLUPROV., NOVOSTOIRSK, USSR.

UNCLASSIFIED

USSR

UDC 621.791:546.621:532.72

LARIKOV, L.N., FAL'CHENKO, V.M., RYABOV, V.R., LEZOVSKAYA, A.V., ~~KRAVCHENKO, A.G.~~, and YEREMINA, A.H.

"Determination of Aluminum Self-Diffusion in Intermetallics Formed During Welding"

Kiev, Avtomaticheskaya Svarka, No 6, Jun 71, pp 71-72

Abstract: In the present work, conducted by the Institute of Electric Welding jointly with the Institute of Metal Physics, Academy of Sciences Ukrainian SSR, with the use of isotope Al^{26} self-diffusion was studied in samples of pure aluminum and Fe-Al alloys having the following intermetallic phases: $FeAl_3$, $FeAl$, Fe_2Al , Fe_3Al_5 , and $FeAl_2$. Equations for the temperature relationship of self-diffusion coefficients were derived. 1 table, 2 bibliographical references.

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Magnetohydrodynamics

USSR

UDC 533.915+535.343.1

MORGULIS, N. D., POLUSHKIN, I. N., KRAYCHENKO, A. I.

"Spectral Emission and Population of Cesium Levels in a Short Plasma Diode. I"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 2, February 1971, pp 335-338

Abstract: In this report some preliminary data are presented from a spectral study of nonequilibrium processes in a short cesium plasma diode. The emission of some spectral lines of the diffuse and main cesium series in a short (5 mm) plasma discharge diode with an incandescent cathode was investigated. Measurements were taken at various (low) cesium vapor pressures, different current densities and voltages on the diode, and at different distances from the cathode x . The populations of the various D-, 7P-, and 8P-levels were determined on the basis of the data obtained, taking into account reabsorption of emission. Simultaneously, the characteristics of the investigated plasma were also determined for various values of x using a sliding cylindrical probe. The experimental results demonstrated that the plasma obtained under such conditions can be so much in equilibrium that noticeable inversion of the populations of some of the D- levels with respect to the indicated P-levels is impossible. For example, in the experiments for the $9D_{5/2} - 8P_{1/2}$ transition, it reaches $\sim 10^8 \text{ cm}^{-3}$.

USSR

MORGULIS, N. D., et al., Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 2, February 1971, pp 335-338

This inversion depends essentially on the experimental conditions and on the value of x . On the basis of this and previous experiments it is possible to draw the conclusion that the occurrence of this inversion is connected with the effect of superhigh-frequency plasma oscillations existing in the diode under these conditions. Finally, the generation conditions for stimulated radiation are calculated as an example. All of these conditions are favorable, although it is possible to select better ones than used in the given example.

2/2

- 44 -

USSR

BABITSKIY, A. F. and KRAYCHENKO, A. M., Institute of Hydromechanics, Ukrainian Academy of Sciences

"Conductometric Measurement of Volume Concentrations of the Components of a Two-Phase Flow"

Kiev, Gidromekhanika, No 20, 1972, pp 92-95

Abstract: Among methods used in industry for determining volume concentrations, those based on variation in electrical properties are most widely employed, and are apparently the most accurate (the so-called conductometric methods). The authors ran tests, using a probe inserted in a two-phase flow directed perpendicularly against an electrode plane, to determine volume concentration on the basis of electrical conductivity.

It was concluded that the accuracy of measurements from a given electrical circuit depends substantially on temperature constance of the surrounding medium. A number of hours of testing the apparatus in ordinary room conditions showed reading errors of about 8 percent. Greater accuracy can evidently be achieved through thermostatic control of the apparatus, among other corrective measures.

1/1

USSR

UDC 576.8.097.083.23(049.3)

KRAVCHENKO, A. T., Reviewer

"Chakhava, O. V. Gnotobiologiya, Izd-vo Meditsina, Moscow, 1972, 199 pp"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1973,
pp 145-146

Abstract: This review concerns the first book on gnotobiology in Russian. The book is divided into four sections dealing with theory, methods, significance of "normal" microflora and formation of the host's protective functions, and examples of the use of gnotobiology in clinical medicine. The reviewer found this book of interest and well written.

1/1

- 104 -

USSR

UDC 615.371.03

KRAVCHENKO, A. T., Control Institute of Medical Biological Preparations izeni
Tarasevich, Moscow

"The Problem of Decontamination of Live Vaccines (Survey)"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 5, May 71,
pp 66-71

Abstract: The technological processes involved in the preparation of vaccines from live bacteria guarantee their purity from contamination with other bacteria or viruses. However, contamination of live virus vaccines with pathogens is possible and difficult to eliminate. Some such vaccines are prepared on animal skin (smallpox) others in chick embryos (poliomyelitis), and the treatments to which these media are subjected do not always kill all pre-existing bacteria and viruses. Even official standards permit 1 gram of smallpox vaccine to contain up to 500 live saprophytic bacteria. Thus, in addition to tissues which may be used as culture media, there are long lists specifying the pathogens which may be present in these tissues and the size effects they produce. While safer production methods are being developed, the current standards must be strictly enforced, including selection of animals which serve as tissue donors, selection of pathogen strains for cultivation, and packaging techniques, and final testing of the vaccines before they are released for use.

1/1

USSR

UDC 615.371:576.858.21].012

KRAVCHENKO, A. T., and BORODINA, T. A., State Control Institute of Medical and Biological Preparations imeni L. A. Tarasevich, Moscow

"Prospects for Obtaining a Safe and Effective Antirabies Vaccine" (Review in Commemoration of the 150th Anniversary of the Birthday of Pasteur)

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, pp 389-394

Abstract: Rabies is still treated by the original or somewhat modified vaccines and methods developed by Pasteur in 1885. This treatment is rather effective since it reduces mortality from about 50% among nontreated persons to about 0.4% among treated patients. This remaining mortality can be ascribed to several factors. In some vaccines, the fixed rabies virus still possesses some activity and causes postvaccinal rabies. The dry antirabies vaccine currently manufactured and used in the USSR has a much lower titer of fixed virus activity, and lethal results from vaccination have decreased to single cases. Vaccines contaminated with other viruses cause severe complications, and those contaminated with bacteria induce allergic reactions to polypeptides. Current USSR regulations prohibit the presence of either live or killed bacteria in the vaccines. Allergic reactions also occur to vaccines cultured in pure brain tissue of newborn animals. These are allergic reactions to foreign

1/2

USSR

KRAVCHENKO, A. T., et al, Voprogli, No 4, Jul/Aug 71, pp 389-394

brain tissue, which involve stress reactions and even demyelination of the nervous tissue of the patient. Neither the USSR nor other countries have standards concerning the presence of brain tissue from the culture medium in the vaccine. Statistical data indicate that the frequency of postvaccinal rabies is relatively high when a large number of injections (up to 20) of antirabies vaccine are given during the treatment. For this reason, the Pasteur Institute reduced the number of injections to seven, and its recent report covering the 1952-1959 period indicates that this modification totally eliminated cases of lethal postvaccinal rabies. Thus, in order to be safe, the antirabies vaccine must contain no active rabies viruses, no other viruses or bacteria, and no animal brain tissue. In order to be effective even when marked temperature fluctuations occur during storage, the vaccine should be manufactured in the dry form, with the solvent supplied in separate vials. The prospects for obtaining a safe and effective antirabies vaccine are quite realistic.

2/2

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USSR

UDC 616.9-056.3-092:616-056.13

KRAVCHENKO, A. T., and FIRSANOV, V. I., State Institute imeni
~~L. A. Parasevich~~ for the Control of Medical and Biological
Preparations, Moscow

"Infectious Allergy. XIII. Role of Hypersensitivity of the
Delayed Type in the Development of Infectious Allergy to Bacterial
Exotoxins"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii,
Vol 48, No 2, Feb 71, pp 98-103

Abstract: Following sensitization of guinea pigs with sublethal
doses of diphtheria or botulinus exotoxin, the animals showed a
positive reaction of the delayed type in skin tests with the
respective toxoid. Animals sensitized with either exotoxin also
developed a non-specific sensitivity to diphtheria exotoxin,
which was indicated by the results of Schick tests and the cyto-
toxic action of this toxin on peritoneal macrophages. The macro-
phages of guinea pigs sensitized to diphtheria exotoxin showed an
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USSR

KRAYCHENKO, A. T., and FIRSANOV, V. I., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 48, No 2, Feb 71, pp 98-103

increased capacity to bind this toxin as compared with control animals, while the capacity to bind diphtheria toxin by macrophages of animals sensitized with botulinus toxin remained unchanged. Upon passive transfer to guinea pigs of infectious allergy to diphtheria toxin by the injection of macrophages from sensitized animals, the skin of the recipients showed a positive reaction to diphtheria toxoid and macrophages were more sensitive to the cytotoxic effect of diphtheria exotoxin, while an increased skin sensitivity to the exotoxin did not develop. The results showed that development of specific sensitization (hypersensitization of the delayed type) had no direct connection with the condition of infectious allergy to bacterial toxins, which was nonspecific and associated with a general increase in the reactivity of the organism rather than the effect of antibodies and lymph cells.

2/2

USSR

UDC: 621.372.852.1(088.8)

LYAVDANSKIY, S. Ye., MASHARSKIY, Ye. I., KRAVCHENKO, A. P., Novosibirsk
Electrical Engineering Institute

"A Band Filter for Vacuum-Tube Amplifiers"

USSR Author's Certificate No 266098, filed 6 Jul 68, published 28 Jul 70
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12D70 P)

Translation: A filter is proposed which consists of a plate circuit to which a load circuit is coupled. To reduce the size and extend the range of coupling control between circuits, the plate circuit is made in the form of a half-wave section of coaxial line loaded at one end by the output capacitance of the tube, and open at the other end, with increase in wave impedance on the quarter-wave section closest to the tube. The load circuit is made in the form of a quarter-wave section of coaxial line with shorting piston at the end. Coupling between the ends of the tank is regulated by moving the inner conductor of the load circuit along the common shield of the tank circuits.

1/1

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UDC: 616.912-084.4(47)091

USSR

^K
KRAVCHENKO, A.T., Control Institute for Biomedical Preparations izani
Tarashevich

"History of the Efforts to Eradicate Smallpox in the USSR"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 2, 1970,
pp3-8

Abstract: For over one hundred years, the Czarist Government possessed the knowledge but not the will to control smallpox, even though it presented a serious problem. Yet the Soviet regime under more difficult economic conditions was able to eradicate the disease in approximately 15 years. Compulsory vaccination was initiated by a law signed by Lenin in 1919. The law was tightened in 1924, and within 6 years most of the population had been vaccinated and the threat of epidemics lifted. Some laxity on the part of local health agencies led to major outbreaks in 1931-1933. But two massive vaccination and revaccination campaigns in 1935-1936 reduced the disease to isolated cases. The only cases now reported are imported from neighboring countries.

1/2 022
 UNCLASSIFIED
 TITLE—ON DISSOCIATION OF A NEUTRAL COMPLEX FROM DIPHTHERIA EXOTOXIN AND ANTITOXIN IN THE ORGANISM OF ANIMALS IN THE STATE OF INFECTIOUS ALLERGY
 AUTHOR—(02)—KRAVCHENKO, A.T., FIRSANOV, V.I.
 COUNTRY OF INFO—USSR
 SOURCE—ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 6, PP 54-58
 DATE PUBLISHED—70
 SUBJECT AREAS—BIOLOGICAL AND MEDICAL SCIENCES
 TOPIC TAGS—ALLERGIC DISEASE, BACTERIAL TOXIN, DIPHTHERIA, SEROLOGY
 CONTROL MARKING—NO RESTRICTIONS
 DOCUMENT CLASS—UNCLASSIFIED
 PROXY REEL/FRAE--3001/1839
 CIRC ACCESSION NO--AP0127249
 UNCLASSIFIED
 PROCESSING DATE—30OCT70
 STEP NO--UR/0016/70/000/006/0054/0058

2/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127249

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADMINISTRATION TO GUINEA PIGS SENSITIZED WITH BACTERIAL EXOTOXINS OF A COMPLEX OF DIPHTHERIA TOXIN WITH SPECIFIC SERA (IN EXCESS) PROVOKED CLINICAL SIGNS OF INTOXICATION, AND SOME OF THE ANIMALS PERISHED. THE ACTIVITY OF THE COMPLEX DEPENDED ON THE TYPE OF SPECIFIC SERUM INTRODUCED INTO IT. IN ORDER OF DESCENDING ACTIVITY OF THE COMPLEXES THE SERA WERE PLACED THUS: MONOLOGOUS, HORSE AND RABBIT. GUINEA PIGS SENSITIZED WITH NORMAL HORSE SERUM OR WITH COMPLETE FREUND'S ADJUVANT FAILED TO REACT TO THE ADMINISTRATION OF A NEUTRAL COMPLEX FROM DIPHTHERIA EXOTOXIN WITH SPECIFIC SERA.
FACILITY: GOSDARSTVENNYY KONTROL'NYY INSTITUT. IM. TARASEVICH, MOSKVA.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70
 TITLE--A HEMAGGLUTINATING ADENO ASSOCIATED SIMIAN VIRUS -U--
 AUTHOR--(05)--KRAVCHENKO, A.T., OHELCHENKO, T.N., DODONOVA, N.N.,
 KHETAGUROVA, A.K., ALTSHTEYN, A.D. **K**
 COUNTRY OF INFO--USSR
 SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 3, PP 301-308
 DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
 TOPIC TAGS--ADENOVIRUS, HEMAGGLUTINATION, ANTIBODY, MONKEY

CCNTRCL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--2000/1469

STEP NO--UR/0402/70/000/003/0301/0308

CIRC ACCESSION NO--AP0125097
 UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 022

CIRC ACCESSION NO--AP0125097
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A HEMAGGLUTINATING ADENO
ASSOCIATED VIRUS (AAV) WAS RECOVERED FROM A STRAIN OF SIMIAN ADENOVIRUS
SV15. ITS MORPHOLOGY AND CAPACITY TO BE ACTIVATED BY DIFFERENT SIMIAN
ADENOVIRUSES WAS STUDIED. HIGHLY ONCOGENIC SIMIAN ADENOVIRUSES SV20 AND
SA7(C8) DID NOT ACTIVATE THE STRAINS OF AAV UNDER STUDY, UNLIKE 14 OTHER
SEROTYPES OF SIMIAN ADENOVIRUSES. A METHOD FOR TITRATION OF THE
INFECTIONAL ACTIVITY OF AAV WAS DEVELOPED. FORMATION OF AAV
HEMAGGLUTININS WAS SHOWN TO BE ONLY PARTIALLY INHIBITED BY
5,10DD,DEOXYURIDIN AND ALMOST COMPLETELY INHIBITED BY
5,FLUCRO,2,DEOXYURIDINE. PROPERTIES OF HEMAGGLUTININS AND CONDITIONS
FOR PERFORMING HA TEST AND HI TEST WITH AAV WERE STUDIED, AS WELL AS
PROPERTIES OF HEMAGGLUTINATION INHIBITORS IN MONKEY SERA. SEVENTY FOUR
PER CENT OF GREEN MONKEYS IMPORTED TO MOSCOW ANIMAL HOUSES WERE SHOWN TO
HAVE ANTIBODY FOR THE HEMAGGLUTINATING AAV STRAIN. NO ANTIBODY FOR AAV
WAS FOUND IN HUMAN SERA. FACILITY: GOSUDARSTVENNIY KONTROLYNYY
INSTITUT MEDITSINSKIKH. FACILITY: BIOLOGICHESKIKH PREPARATOV
IMENI I. A. TARASEVICH, INSTITUT EPIDEMIOLOGII I MIKROBIOLOGII IMENI N.
F. GAMALEI, MOSKVA.

UNCLASSIFIED

USSR

KRAVCHENKO, A. Z., Moscow

"Use of Gyroscope in Passive Vibration Insulation Systems"

Moscow, Stroyitel'naya Mekhanika i Raschet Soyoruzheniy, No 5, 1974,
pp 41-44.

Abstract: This work studies the dynamic characteristics of combined systems of passive vibration insulation for rotary oscillations. In order to improve the quality of vibration insulation, a gyroscope in a Gimbal support was used. The possibility of using a second vibration insulating loop and a dynamic oscillation damper in these systems is also studied. The simple passive vibration insulation system using a gyroscope in a Gimbal support studied in this article has a number of significant shortcomings, principally in the assumptions made in its calculation. The shortcomings are not present in more complex, multiple-rotor passive vibration insulation systems with gyroscopes, although the dynamic characteristics of these systems coincide to the dynamic characteristic of the system studied. If two gyroscopes are used with equal and oppositely directed kinetic moment and parallel axes of rotation, the transmission of reactive torque to the base can be eliminated. Two such pairs of gyroscopes with mutually perpendicular axes of rotation can produce a system providing effective vibration insulation in relationship to rotary oscillations of the base in two mutually perpendicular planes.

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USSR

UDC 621.9.01.669.018.25

REZNIKOV, N. I., BURMISTROV, Ye. V., ZHARKOV, I. G., ZYKIN, A. S., KRAYCHENKO, B. A., LENILIN, V. I., MEDVEDEV, L. P., MITRYAYEV, K. F., URYVSKIY, F. P.

"Cutting of Heat-Resistant, High-Strength Titanium Alloys"

Obrabotka Rezaniyem Zharoprochnykh Vysokoprochnykh i Titanovykh Splavov [English Version Above], Moscow, Mashinostroyeniye Press, 1972, 198 pages.

Translation of Foreword: The Twenty-Fourth CPSU Congress defined the main trends in further development of the socialist economy and indicated the necessity of comprehensive acceleration of scientific and technical progress.

One primary trend in the development of the economy is increasing the effectiveness of production. This means that under today's conditions, ever greater significance is being given to increasing the output of products, improving their quality and technical and economic indicators.

Over the past years, the tool industry has solved important problems related to the creation of new tool designs, the development of the production and improvement of tools, as well as mass production of tools of ever stronger high-speed steels. Broad utilization of automated machine tools, continuous and automatic production lines in large-series and mass production requires an increase in the output of cutting tools of long life and

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UDC 621.9.01.669.010.25

USSR

REZNIKOV, N. I., BURMISTROV, Ye. V., et. al., Obrabotka Rezaniiem Zharoprochnykh Vysokoprochnykh i Titanovykh Splavov, Moscow, Mashinostroyeniye Press, 1972, 198 pages.

high accuracy, capable of operating under severe cutting conditions for long periods of time without replacement. Tool life can be increased if the tool industry is provided with high quality steels and alloys. Soviet scientists have created alloys with high strength characteristics and high heat resistance. The workability of alloys and steels can be improved by the use of various methods based on ultrasonics, electric contact and induction heating, application of small electric currents to the cutting zone, etc. These methods allow the life of a cutting tool to be increased by 2 to 5 times, increasing the cutting speed and productivity of processing. Part quality can be improved by using tools of natural and synthetic diamonds, as well as elbor.

The present work familiarizes the reader with research conducted into the physics of the cutting process, materials for cutting tools, optimal cutting modes and methods of improving the quality and workability of parts.

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UDC 621.9.01.669.013.25

USSR

REZNIKOV, N. I., BURMISTROV, Ye. V., et. al., Obrabotka Rezaniiem Zharoprochnykh Vysokoprochnykh i Titanovykh Splavov, Moscow, Mashinostroyeniye Press, 1972, 198 pages.

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UDC 621.9.01.669.018.25

USSR

REZNIKOV, N. I., BURMISTROV, Ye. V., et. al., Obrabotka Rezaníyem Zharoprochnykh Vysokoprochnykh i Titanovykh Splavov, Moscow, Mashinostroyeniye Press, 1972, 198 pages.

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USSR

UDC 621.9.01.660.018.25

REZNIKOV, N. I., BURMISTROV, Ye. V.. et al., Obrabotka Rezaniiem Zharoprochnykh Vysokoprochnykh i Titanovykh Splavov, Moscow, Mashinostroyeniya Press, 1972, 198 pages.

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UDC 621.9.01.660.018.25

USSR

REZNIKOV, N. I., BURMISTROV, Ye. V., et al., Obrabotka Rezaniyem Zharopro-
chnykh Vysokoprochnykh i Titanovykh Splavov, Moscow, Mashinostroyeniya Press,
1972, 198 pages.

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1/2 019 UNCLASSIFIED PROCESSING DATE--11SEP70
 TITLE--OXIDATION OF HIGHLY CONCENTRATED SULFUR DIOXIDE USING TECHNICAL
 GRADE OXYGEN IN A CONTACT UNIT WITH FLUIDIZED CATALYST BEDS -U-
 AUTHOR--MAYDUROVA, D.V., MALKIMAN, V.I., KONDRATYEVA, G.P., KRAYCHENKO,
 E.A.
 COUNTRY OF INFO--USSR
 SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(1) 24-7
 DATE PUBLISHED-----70
 SUBJECT AREAS--MATERIALS
 TOPIC TAGS--FLUIDIZED BED CATALYST, WEAR RESISTANCE
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--1986/0012 STEP NO--UR/0064/70/045/001/0024/1027
 CIRC ACCESSION NO--AP0102112
 UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--11SEP70

2/2 019

CIRC ACCESSION NO--AP0102112

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GASEOUS MIXT. CONTG. 54.5 VOL. PERCENT SO SUB2 AND 42.6 VOL. PERCENT O SUB2 WAS PASSED (AT A FLOW RATE OF 1600 VOL. PER HR) THROUGH A CATALYTIC REACTOR WITH 3 FLUIDIZED BEDS OF A WEAR RESISTANT CATALYST; THE TEMPS. OF THE FIRST, SECOND, AND THIRD BEDS WERE 600, 550, AND 500 DEGREES, RESP., AND THE PRESSURE WAS 1 ATM. THE DEGREE OF OXIDN. OF THE SO SUB2 AFTER THE THIRD BED WAS 93.1 PERCENT. EXPTS. IN A PILOT PLANT REACTOR CONFIRMED THAT STABLE OPERATION MAY BE ACHIEVED WITHOUT PREHEATING THE GAS; A FLOW SHEET FOR A LARGE SCALE OXIDN. PLANT IS PROPOSED.

UNCLASSIFIED

USSR

UDC 669.14.018.584.001.6

BABAKOV, A. A., LEVIN, F. L., KONDRAT'YEV, A. I., GOLQVIN, A. I., KUL'KOVA,
M. N., DANILYUK, YE. B., PEVZNER, A. YE., OPANEVICH, G. A., and KRAYCHENKO,
I. D.

"Experience in Production of Sheet From 25Kh17N4G15AF2 Steel"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works],
No 77, Metallurgiya Press, 1970, pp 124-131

Translation: The first experimental group of 40-mm sheets of type 25Kh17N4G15AF2 high-strength nonmagnetic steel has been manufactured. Based on studies of the specifics of the production of the steel during various stages of the technological process and study of the properties of the metal produced, practical recommendations are given for the production of sheet. 3 figures; 3 tables.

1/1

172 022 UNCLASSIFIED PROCESSING DATE--19SEP70
 TITLE--AUTOMATIC ARRANGEMENT FOR STUDYING ANTENNA RADOMES -U-
 AUTHOR--(02)-VILKOTSKIY, M.A., ~~KRAVCHENKO, L.T.~~
 COUNTRY OF INFO--USSR *R*
 SOURCE--AKADEMIIA NAUK BSSR, DOKLADY, VOL 14, JAN 1970, P 29-32
 DATE PUBLISHED----JAN70
 SUBJECT AREAS--NAVIGATION
 TOPIC TAGS--RADOME, ANTENNA THEORY, GRAPHIC TECHNIQUE, MEASUREMENT
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY PERL/FNAME--1980/0346 STEP NO--OR/0250/70/014/000/0029/0032
 CIRC ACCESSION NO--AT0048619
 UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0048619

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF AN ARRANGEMENT FOR STUDYING THE EFFECT OF AN ANTENNA RADOME ON THE CHARACTERISTICS AND PARAMETERS OF THE ANTENNA AS A FUNCTION OF THE POSITION AND ORIENTATION OF THE ANTENNA IN THE RADOME. THE PROPOSED ARRANGEMENT, WHICH CONSISTS OF AN ELECTROMECHANICAL SYSTEM, A PROGRAMMING DEVICE, AND AN ELECTROMAGNETIC FIELD AMPLITUDE AND PHASE METER, MAKES IT POSSIBLE TO AUTOMATICALLY MOVE, ORIENT, AND RECORD THE REQUIRED CHARACTERISTICS ON GRAPH TAPE. THE USE OF THIS ARRANGEMENT FOR STUDYING RADOMES MAKES IT POSSIBLE TO IMPROVE THE MEASUREMENT ACCURACY AND TO SHORTEN THE TIME REQUIRED FOR THE MEASUREMENTS.

K

UDC: 62-50.22+621.317.772

USSR

VILKOTSKIY, M. A., KAZARIN, A. N. (deceased), HRNAVCHENKO, I. T.,
Belorussian State University imeni V. I. Lenin

"An Automatic Installation for Studying Radomes"

Minsk, Doklady Akademii Nauk BSSR, Vol 14, No 1, 1970, pp 29-32

Abstract: A device is proposed for automatically studying the effect of a radome on the characteristics and parameters of the enclosed antenna. The unit consists of two parts: an amplitude-phase meter which gives an automatic chart recording of the amplitude and phase characteristics of the electromagnetic field, and an electromechanical system which automatically fixes the phase center of the given antenna at a predetermined point in the radome enclosure and rotates the antenna through the required angle. The amplitude-phase meter is based on a bridge circuit with high-frequency tracking phase shifter. The phase shifter is the balancing element in a waveguide bridge, and is connected to
1/3

USSR

VIL'KOTSKIY, M. A., et al, Doklady Akademii Nauk BSSR, Vol 14,
No 1, 1970, pp 29-32

a servomotor by a mechanical gear train with an element with free play which can be set from 0 to 50° . A block diagram of the circuit is given as well as a description of the operating principles in the phase-recording and amplitude-recording modes. The electro-mechanical part of the unit consists of a swivel stand on which two servomotors are mounted. The first motor rotates the antenna in the horizontal plane, the second shifts the antenna along the radome radius, and the swivel stand permits rotation of the radome and enclosed antenna about the vertical axis. A system of limit cutoffs connected with the shafts of the servomotors is used for programming the device for automatic measurements depending on predetermined angular limits. When measurements have been completed, the unit automatically shuts itself off and gives a signal indicating completion of the measurement process. Amplitude recording accuracy is 5%, phase recording accuracy is 3%, the angle

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USSR

VIL'KOTSKIY, M. A., et al, Doklady Akademii Nauk SSSR, Vol 14, No 1, 1970, pp 29-32

of turn of the antenna can be set within 0.5° , and the distance between the center of the radome and the phase center of the antenna can be set within 0.2 mm.

3/3

1/2 010 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--PREPARATION OF BLACK PORTLAND CEMENT -U-

AUTHOR--(05)-KMITRIYEVA, V.A., ~~KRAMENKO~~, I.V., ALESHINA, D.K.,
CHISTYAZOV, G.I., YEMELYANDVA, D.YA.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 267,431
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--01APR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PATENT, CEMENT, PIGMENT, CARBON BLACK, HIGH TEMPERATURE HEAT
TREATMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/1410

STEP NO--08/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128809

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AA0128809

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BLACK PORTLAND CEMENT WAS PREPD. BY INTRODUCING A PIGMENT ADDITIVE, SUCH AS CARBON BLACK, INTO THE CLINKER WHICH WAS REMOVED FROM THE FURNACE AT GREATER THAN OR EQUAL TO 1200DEGREES AND WAS COOLED IN A REFRIGERATING APP. IN A NATURAL GAS MEDIUM TO 800DEGREES. FACILITY: STATE SCIENTIFIC RESEARCH INSTITUTE OF THE CEMENT INDUSTRY.

UNCLASSIFIED

1/2	006	UNCLASSIFIED	PROCESSING DATE--13NOV70
TITLE--PREPARATION OF BLACK CEMENT -U-			
AUTHOR--(05)-KRAVCHENKO, I.V., CHEREPOVSKIY, S.S., ALESHINA, I.K., CHISTYAKOV, G.I., DMITRIYEVA, V.A.			
COUNTRY OF INFO--USSR			
SOURCE--U.S.S.R. 267,430			
REFERENCE--OTKRYTIYA, IZOBRE., PROM. OBRATSY, TOVARNYE ZNAKI 1970,			
DATE PUBLISHED--01APR70			
SUBJECT AREAS--MATERIALS			
TOPIC TAGS--CEMENT, PATENT, PIGMENT, MANGANESE COMPOUND			
CONTROL MARKING--NO RESTRICTIONS			
DOCUMENT CLASS--UNCLASSIFIED		STEP NO--OR/0482/70/000/400/0000/0000	
PROXY REEL/FRAE--3002/1404			
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UNCLASSIFIED			

UNCLASSIFIED

PROCESSING DATE--15NOV70

2/2 006

CIRC ACCESSION NO--AA0128803

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BLACK CEMENT BASED ON ORDINARY PORTLAND CEMENT WAS OBTAINED BY INTRODUCING A PIGMENT ADDITIVE INTO THE CLINKER. TO OBTAIN A DEEPER TONE, THE CLINKER WITH A MY ORE ADDITIVE WAS COOLED IN AN O ENRICHED GAS MEDIUM FROM ITS SINTERING TEMP. TO 900DEGREES. FACILITY: STATE SCIENTIFIC RESEARCH INSTITUTE OF THE CEMENT INDUSTRY.

UNCLASSIFIED

1/2 006 UNCLASSIFIED PROCESSING DATE--20NDV70
 TITLE--WHITENING OF A PORTLAND CEMENT CLINKER -U-
 AUTHOR--(05)-KRAVCHENKO, I.V., CHEREPOVSKIY, S.S., ALESHINA, D.K.,
 DMITRIYEVA, V.A., CHISTYAKOV, G.I.
 CCUNTRY OF INFO--USSR
 SOURCE--USSR, 267,432
 REFERENCE--UTKRYTIYA, IZOBRET., PROM. OBKAZTSY, TOVARNYE ZNAKI 1970,
 DATE PUBLISHED--01APR70

SUBJECT AREAS--MATERIALS
 TOPIC TAGS--CEMENT, PATENT

CONTROL MARKING--NO RESTRICTIONS

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 PROXY REEL/FRAE--3002/1434

STEP NO--UR/04B2770/000/000/0000/0000

CIRC ACCESSION NO--AA0128833

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2/2 006

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AA0128853

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PORTLAND CEMENT CLINKER WAS
WHITENED BY BEING COOLED FROM 1200 TO 450 DEGREES IN A REDUCING GAS
MEDIUM CONTG. 3-10 VOL. PERCENT CO PLUS H. FACILITY: STATE
SCIENTIFIC RESEARCH INSTITUTE OF THE CEMENT INDUSTRY.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--A FOLLOW UP STUDY OF PATIENTS WITH TRANSITORY DISORDERS OF
CIRCULATION IN THE VERTEBRO BASILLAR BASIN -U-
AUTHOR--(03)-SARIN, M.I., KRAVCHENKO, L.G., BUGAYEV, V.S.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,
VOL 70, NR 6, PP 808-811
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BRAIN, BLOOD CIRCULATION, ATHEROSCLEROSIS, HYPERTENSION,
VENEREAL DISEASE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FAME--3001/0922 STEP NO--UR/0246/70/070/006/0808/0811
CIRC ACCESSION NO--AP0126581
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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126581

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS CONDUCTED A FOLLOW UP STUDY OF 100 PATIENTS WHO WERE DISMISSED FROM HOSPITALS 1-5 YEARS BEFORE, WITH A DIAGNOSIS OF TRANSITORY DISORDERS OF CEREBRAL CIRCULATION IN THE VERTEBRO BASILLAR SYSTEM (IN ATHEROSCLEROSIS, HYPERTENSIVE DISEASE, SYPHILITIC VASCULITIS, CERVICAL OSTEOCHONDROSIS AND WITH INITIAL SYMPTOMS OF ATHEROSCLEROSIS). THE MOST SEVERE DEVELOPMENT WAS SEEN IN THE GROUP OF PATIENTS WITH LATE STAGES OF HYPERTENSIVE DISEASE AND ATHEROSCLEROSIS. IN TRANSITORY DISORDERS OF CEREBRAL CIRCULATION DUE TO CERVICAL OSTEOCHONDROSIS AND INITIAL SYMPTOMS OF ATHEROSCLEROSIS THE FOLLOW UP STUDIED DISPLAYED MORE FAVORABLE STATES. IN ALL CASES THE DECISIVE ROLE IN THE DEVELOPMENT OF THE DISEASE WERE CONDITIONS OF LIFE, WORKING READAPTATION AND INTRAFAMILIAL RELATIONSHIP, AS WELL AS CONTROL ON BEHALF OF THE PHYSICIAN AND OUTPATIENT TREATMENT.

UNCLASSIFIED

USSR

UDC 541.11:546.65

AFANAS'YEV, YU. A., KRAVCHENKO, L. KH., and BABINA, K. A., Institute of Inorganic Chemistry, Novosibirsk, Siberian Department Academy of Sciences USSR

"Thermochemistry of Anhydrous Double Selenates of Rare-Earth Elements of the Cerium Group and of Ammonium"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 7, Jul 70, pp 1622-1624

Abstract: The heats of solution ΔH_s of the double selenates $M_2(SeO_4)_3 \cdot (NH_4)_2SeO_4$ ($M = La, Pr, Nd, Gd$) were determined. The standard enthalpies of formation ΔH_f° of these double salts in the anhydrous state were calculated from ΔH_s and the values of ΔH_f° for $M_2(SeO_4)_3$ and $(NH_4)_2SeO_4$ in dilute aqueous solutions, which were taken from the literature. By the method of comparative calculation, the values of ΔH_f° for the anhydrous salts $M_2(SeO_4)_3 \cdot (NH_4)_2SO_4$ ($M = Ce III, Sm, Eu$) were also determined. In calculations for the double salts of Sm and Eu, the relation ΔH_f° (selenate) = 0.813 ΔH_f° (sulfate) - 58.6 was applied, while ΔH_f° for the anhydrous double Ce III selenate was determined on the basis of the linear relation between ΔH_f° values for the anhydrous double

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USSR

AFANAS'YEV, YU. A., et al., Zhurnal Fizicheskoy Khimii, Vol 44,
No 7, Jul 70, pp 1622-1624

selenates and double selenates in dilute aqueous solutions. The temperatures (T_d) of decomposition of the double selenates of the rare-earth metals were lower by approximately 100° than those of the analogous double sulfates. The values of ΔH_s , ΔH_f° , and T_d that were determined for the double selenates are listed in tables.

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KRAVCHENKO, L. N.

Microelectronics

MICROELECTRONICS

JPRS 57313
25 October 1972

Excerpt from Russian-language book edited by I. V. Gurin;
Mikroelektronika, No. 5, 1972, Sovetskoye Radio Publishing House,
Moscow, UDC 621.382.021.296.6-191.5.

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recording and readout. The memory element consists of two four-electrode Gunn diodes, the first of which serves for recording and storage, the second of which serves for readout of the stored information. The time of the memory-increase cycle is about 0.3 nsec. The power consumed in storage mode is about 100 mW; in storage mode it is about 115 mW.

The article contains 4 figures and 3 bibliographic references.

UDC 621.372.4 + 621.374.1

Diode-Translator Logic Circuit With Feedback. Жуков, Ю.В. и Бузнев, Л.Б. In the collection Микроэлектроника - путь к созданию систем с высокой надежностью (Microelectronics - the way to the creation of systems with high reliability) Moscow, Radio Publishing House, 1972.

The article gives a theoretical analysis of the electrical parameters of a circuit with feedback. Its advantages are analyzed in comparison to the diode-translator circuit without feedback. It is shown that the use of a feedback circuit is especially effective in designing micropower circuits. An experimental investigation is given for the circuit with feedback in the micropower band a comparison is given with the microcircuit "Mikrovatt-1".

The article contains 11 figures, 1 table, and 4 bibliographic references.

UDC 621.382.029.64

Logic Elements on Gunn Diodes. Воронкова, Г.Н., Орлова, Л.К., Степанович, В.И., and Савельев, А.С. In the collection Микроэлектроника - путь к созданию систем с высокой надежностью (Microelectronics - the way to the creation of systems with high reliability) Moscow, Radio Publishing House, 1972.

The article describes the properties of experimental samples of planar Gunn diodes. On 200-um long samples the authors take a current impulse shape and memory elements of two types.

The article contains 6 figures, 1 table, and 5 bibliographic references.

UDC 621.375.001.24:621.387.32

Static Analysis of the Simplest Differential Cascade on NPN Transistors. Степаненко, Л.П. In the collection Микроэлектроника, edited by Л.В. Турин, No 5, p 190, Sovetskoye Radio Publishing House, 1972.

1/2 017 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--EFFECT OF THE TOP DRESSING APPLICATION OF TRACE ELEMENTS ON THE
YIELD OF FRUIT FROM FRUIT TREES -U-
AUTHOR--(02)-NESTEROVICH, N.D., KRAVCHENKO, L.V.

COUNTRY OF INFO--USSR

SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. BIYAL. NAVUK 1970, (1), 5-10

DATE PUBLISHED-----70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AGRICULTURE CROP, TRACE ELEMENT, PLANT PHYSIOLOGY, BORON,
ZINC, COPPER, MANGANESE

CONTROL MARKING--NO RESTRICTIONS

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STEP NO--UR/0440/70/000/000/0005/0010

CIRC ACCESSION NO--AP0126251

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0120261

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. APPLICATION OF B, ZN, CU, MN, OR THEIR MIXT. IN TOP DRESSINGS IN THE PERIOD OF BUDDING, BLOSSOMING, AND FRUCTIFICATION INCREASED FRUIT PRODUCTION OF WILD GROWING TREE SPECIES BY 117-484PERCENT. BEST EFFECTS WERE PRODUCED WITH BORIC ACID AND ZNSO SUB4, LESS EFFECTIVE WERE CU2O SUB4 AND A MIXT. OF ALL TRACE ELEMENTS. MNSO SUB4 HAD A FAVORABLE EFFECT ONLY IN SPECIES GROWING ON A SOIL WITH MEDIUM MN CONTENT. IN SPECIES GROWING ON A SOIL WITH A HIGH MN CONTENT IT PRODUCED AN ADVERSE EFFECT. FACILITY: INST. EKSP. BOT., MINSK, USSR.

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