"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

UDC 612.019

NARIKASHVILI, S. P., KADZHAYA, D. V., and TIMCHENKO, 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.

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USSR

UDC: 621-019

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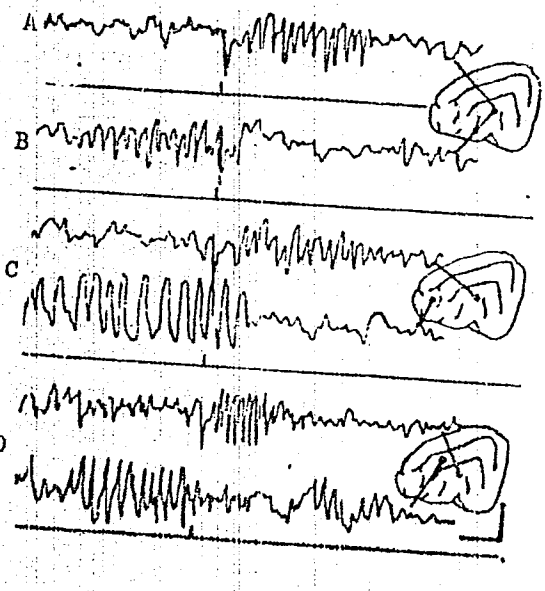
TIMCHENKO, A. S. et al., Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 67, No 2, Aug 72, pp 433-435

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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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 thalmocortical 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

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1/2 025

UNCLASSIFIED

TITLE--RESPONSES IN DIFFERENT REGIONS OF ASSOCIATIVE CORTEX OF CAT -U-

PROCESSING DATE--02OCT70

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 REEL/FRAME--1986/1387

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

CIRC ACCESSION NO--AP0103237

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

UNCLASSIFIED PROCESSING DATE--02OCT70

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 CHLORALESED 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 ORBITOIRONTAL 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.

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AP0044214

Ref. Code: UR 0239

PRIMARY SOURCE: Fiziologicheskiy Zhurnal, 1970, Vol 56, Nr 1, pp 3-13

MODALITY-SPECIFIC ACTION OF PRIMARY SENSORY AREA ON ASSOCIATION RESPONSES

Narikashvili, S. P.; Kadzhaya, 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.

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USSR

UDC 669.71.472

TSYPLAKOV, A. M., SENIN, V. N., TIMCHENKO, B. I., IKRIN, G. YE., FROLOVA, E. B.

"Aluminum Electrolyzer with Consumable Pins"

Tr. Vses. n.-i. i proyektn. in-ta alyumin., magn. i elektrodn. prom-sti (Works of the All-Union Scientific Research and Planning and Design Institute of Aluminum, Magnesium and Electrode Industry), 1970, No 71, pp 75-84 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G168)

Translation: An experimental electrolyzer with a current strength of 130 kiloamps with consumable pins manufactured from 128 x 7 m Cu tubes was tested. Replacement of the extractable steel pins by consumable copper pins permitted the mean voltage to be decreased by 286 millivolts as a result of which the yield of aluminum per kilowatt-hour was increased by 5.5 grams. The current efficiency was increased by 1.25%. Improvement of the anode quality by lowering the thermal load and absence of rearrangement of the pins led to a reduction in the consumption of the anode mass by 67 kilograms/ton of aluminum and a reduction in the removal of carbon-carrying froth by 43 kg/ton as a result of which the consumption of F salts was reduced by 24 kg/ton.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

TSYPLAKOV, A. N., et al., Tr. Vses. n.-i. i proyektn. in-ta alyumin., magn. i elektrodn. prom-sti, 1970, No 71, pp 75-84

The copper material balance indicating that 89% of the copper goes into the aluminum is presented. The nonrecoverable losses of copper are ~ 4%. There are 3 tables, 1 illustration and an 8-entry bibliography.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

UDC 669.295.053.2 (088.8)

TIMCHENKO, B. S., MAL'TSEV, N. YE., Dneprovsk, Titanium-Magnesium Plant

"Device for Automatic Control of the Process of Metallothermic Reduction of Titanium Tetrachloride"

USSR Author's Certificate No. 271804, Filed 6/01/67, Published, 10/09/70. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G215P).

Translation: A device for automatic control of the process of metallothermic reduction of $TiCl_4$, including the interrelated units for programmed feed of $TiCl_4$, consist of a rheostat sensor flow meter built into the programmer, an electronic relay controlling a reversing motor, an $MgCl_2$ weighing and drain unit, a pressure sensor and a secondary device for measurement of pressure in the reactor, and a relay unit controlling the reactor surface temperature. To provide more reliable operation of the device, the programmed $TiCl_4$ feed unit and temperature control unit for the reactor surface temperature include ferrodynamic converters at the comparison point and a phasesensing semiconductor amplifier with a relay unit, the contacts of which are included in the control unit, while the programmed feed controller for titanium tetrachloride is built into the flow meter.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

Vacuum Tubes

USSR

UDC 621.385.633

IL'INA, YE. M., KAN, A. M., TIMCHENKO, L. P.

"Two-Dimensional Theory of a Type O BWT"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue 12, pp 12-32 (from RZh-Elektronika i yeye primeneniye, No 3, March 1970, Abstract No 3A164)

Translation: A two-dimensional nonlinear theory is developed for a type O backward-wave generator with a zero space charge. The current lowering for a delay system in a dynamic regime is investigated as well as the change of the electron trajectories under the influence of high-frequency electrical and magnetic focusing fields. The output parameters are computed of a type O backward-wave tube as a function of the geometry of the beam and its saturation coefficient of the transit channel, the magnitude of the focusing magnetic field, and the operating conditions. 16 reference. Summary.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

IL'INA, YE. M., KATS, A.M., TIMCHENKO, L.P. UDC 621.385.633

"Nonlinear Theory Of A Type-O BWT With The Distribution Of The High-Frequency Field With Respect To The Beam Taken Into Account".

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 8, pp 143-146 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12A179)

Translation: It is shown that the efficiency of a Type-O backward-wave tube (with the distribution of the field with respect to the beam taken into account) comes out to be considerably less than in conventional one-dimensional theory. 8 ref.

Summary.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

UDC 621.315.592

GUSLIKOV, V. M., YEMEL'YANENKO, O. V., NASLEDOV, D. N., NEDEOGLO, D. D., and TIMCHENKO, I. N.

"Effect of a Magnetic Field on the Ionization Energy of Small Donor Impurities in GaAs and InP"

Leningrad, Fizika i Tekhnika Poluprovodnikov, No 9, Sep 73, pp 1785-1789

Abstract: An analysis is made of the ionization energy of small donors as a function of the magnetic field intensity in the area of fairly weak fields, using as specimens pure GaAs and InP crystals. As described in earlier articles published in the journal noted above (V. F. Dvoryankin et al, 5, 1971, p 1882), experiments along this line have already been conducted. In the present paper, the analysis noted above is made by considering the Hall coefficient as a function of the temperature under various magnetic field intensities. A table of the parameters for n-GaAs and n-InP, together with curves of the Hall coefficient, as functions of the temperature for the various types of specimen listed in the table is given. Curves are also plotted for the Hall coefficient and the resistivity as functions of the magnetic field intensity in GaAs at 4.5° K and for the change in ionization energy of small donor impurities as a function of the magnetic field intensity. In this last curve, the theoretical results are compared with the data found by the authors of the present article and others.

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UDC 51

USSR

KOSHARSKIY, B. D., ASHEROV, A. T., TIMOSHENKO, A. N., TIMCHENKO, N. D., MELYUSHKINA, L. P.

"Problem of Selecting the First Stage of an Automated Enterprise Control System"

V sb. Sistemotekhnika (Systems Engineering--collection of works), Kiev, 1971, pp 113-125 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V400)

Translation: The problem of selecting the first stage of automation when introducing an automated enterprise control system is formulated. Possible optimalness and restriction criteria, possible statements of the problem and the statement used in the present paper, the method of solution and the results of experimental research for the Western Siberian Metallurgical Plant are presented.

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1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--HISTOCHEMICAL AND CYTOCHEMICAL STUDIES OF INTERRELATIONS BETWEEN THE CAUSAL ORGANISM OF POTATO WART DISEASE SYNCHYTRIUM ENDOBIOTICUM AND

AUTHOR-(02)-LIPSITS, D.V., TIMCHUK, K.S.

COUNTRY OF INFO--USSR

SOURCE--MIKOL. FITOPATOL. 1970, 4(1), 34-43

DATE PUBLISHED-------70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--VEGETABLE CROP, PLANT DISEASE, BIOLOGIC STAIN, HISTOCHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605001/E11 STEP NO--UR/9063/70/004/001/0034/0043

CIRC ACCESSION NO--AP0139383

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

2/2 015

UNCLASSIFIED

CIRC ACCESSION NO--AP0139383 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE 2-3 MM SHOOTS OF THE CANCER RESISTANT AND CANCER SENSITIVE POTATO TUBER VARIETIES WERE INFECTED WITH THE WART DISEASE INDUCING CULTURE OF S. ENDOBIOTICUM. SAMPLES OF SHOOTS WERE COLLECTED AT DIFFERENT TIMES AFTER INFECTION, AND FIXED. THE FIXED MATERIAL WAS DEHYDRATED, SEALED IN PARAFFIN, AND STAINED WITH BROMPHENOL BLUE. THE 10 MU THICK CUTTINGS WERE ANALYZED ACCORDING TO D. MAZIA, ET AL. (1953). THE HISTOCHEM. AND CYTOCHEM. ANAL. WERE CONDUCTED ACCORDING TO V. B. IVANOV (1963). THE RESULTS REVEALED THAT IN THE CANCER SENSITIVE VARIETIES OF POTATO TUBERS DESTRUCTION OF PROTEIN OCCURRED FASTER THAN IN THE CANCER RESISTANT VARIETIES. IT WAS CONFIRMED BY AN ENZYMIC TREATMENT OF SAMPLES WITH PEPSIN, TRYPSIN, AND PAPAIN SOLNS.

FACILITY: VSES. NAUCH.-ISSLED. STA, RAKU KARTOFELYA, BOYANY, USSR.

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1/2 009 UNCLASSIFIED

TITLE--PURIFICATION OF POLYMERIC MATERIALS -U- PROCESSING DATE--30OCT70

AUTHOR-(04)-TIME, A.V., USHAKOV, V.G., MARTINOVSKIY, G.A., PAPKO, V.V.

COUNTRY OF INFO--USSR

SOURCE--USSR 264,690

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

DATE PUBLISHED--03MAR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SYNTHETIC RUBBER, CHEMICAL PURIFICATION, CHEMICAL PATENT, EMULSION, ELECTRIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1469 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128868

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272 009

UNCLASSIFIED

CIRC ACCESSION NO--AA0128868 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYMERIC MATERISL, E. G. SYNTHETIC RUBBERS, ARE PURIFIED FROM ZIEGLER NATTA CATALYST RESIDUES BY TREATING THE HYDROCARBON SOLNS. OF POLYMERS WITH H SUB2 O, WITH THEIR SUBSEQUENT REMOVAL FROM THE FORMED H SUB2 O HYDROCARBON EMULSION. THE EMULSION IS ACTED UPON BY AN ELEC. FIELD OF INDUSTRIAL FREQUENCY AND HIGH VOLTAGE.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

1/2 026 UNCLASSIFIED

TITLE--FREQUENCY SPECTRA OF INTENSITY FLUCTUATIONS OF SPHERICAL WAVES PROPAGATED IN THE ATMOSPHERE -U- PROCESSING DATE--11DEC70

AUTHOR-(02)-GURVICH, A.S., TIME, N.S.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, NO. 4, 1970, PP 812-815

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, ATMOSPHERIC SCIENCES

TOPIC TAGS--ATMOSPHERIC TURBULENCE, SPECTRUM, REFRACTIVE INDEX, AUTOCORRELATION FUNCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605041/E02 STEP NO--UR/0109/70/000/004/0812/0815

CIRC ACCESSION NO--AP0142747

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

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UNCLASSIFIED

CIRC ACCESSION NO--AP0142747 PROCESSING DATE--11DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FLUCTUATIONS DISCUSSED IN THIS SHORT COMMUNICATION ARE THOSE CAUSED BY THE MOVEMENT OF TURBULENT HETEROGENEOUS INDICES OF REFRACTION BY THE WIND. FOR A PLANE WAVE, THE FREQUENCY SPECTRUM AND CORRELATION FUNCTION OF FLUCTUATIONS IN THE LOGARITHM OF THE ILLUMINATION CAN BE COMPUTED ON THE BASIS OF SPATIAL CORRELATION FUNCTIONS IN COMBINATION WITH THE HYPOTHESIS OF "FROZEN TURBULENCE". FOR SPHERICAL WAVES IN A TURBULENT ATMOSPHERE, HOWEVER, THE FROZEN HYPOTHESIS CANNOT BE APPLIED TO THE ILLUMINATION FIELD, AND THE SPATIAL CORRELATION FUNCTION OF THE SPHERICAL WAVE AMPLITUDE CANNOT THEREFORE BE SUED FOR COMPUTING THE FREQUENCY SPECTRA. USE OF THE "FROZEN TURBULENCE" FOR THE REFRACTION INDEX FIELD MAKES POSSIBLE THE COMPUTATION OF THE AUTOCORRELATION FUNCTION AND THE FREQUENCY SPECTRUM OF THE FLUCTUATIONS IN THE LOGARITHM OF SPHERICAL WAVE INTENSITIES. IN COMPUTING THE AUTOCORRELATION FUNCTION, THE LIGHT IS ASSUMED TO BE A POINT SOURCE AT THE COORDINATE ORIGIN. CURVES ARE GIVEN FOR THE AUTOCORRELATION FUNCTIONS FOR PLANE AND SPHERICAL WAVES, AND FOR THE FREQUENCY SPECTRA OF BOTH WAVES FOR KOLMOGOROV TURBULENCE SPECTRA. THE AUTHORS ALSO DESCRIBE EXPERIMENTAL CHECKS THEY MADE OF THE THEORETICALLY OBTAINED RESULTS, USING A HELIUM NECN LASER AS THE LIGHT SOURCE OPERATING IN THE WAVELENGTH OF 0.63 MICRONS AND PRODUCING SPHERICAL WAVES. CURVES OF THE EXPERIMENTAL AND COMPUTED SPECTRA SHOW A FAIRLY CLOSE CORRELATION.

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USSR

UDC 582.288.42:632.4:581.4:633.511

TARUNINA, T. A., USMANOV, Z. U., and [redacted], R. N., All Union Institute of Plant Protection, Leningrad

"Morphological and Cultural Forms in Different Populations of the Fungus Verticillium dahliae Kleb. on Cotton"

Leningrad, Mikologiya i Fitopatologiya, No 5, 1971, pp 449-455

Abstract: A total of 66 Verticillium dahliae populations isolated from a large number of cotton varieties in Soviet Central Asia were divided into six morphological groups on the basis of differences in morphology of the colonies grown on Czapek's medium, rate of formation of microsclerotia, structure of the conidiophores, and shape and size of conidia. Clones of all six morphological forms attacked cotton varieties with different degrees of wilt resistance. The morphological group to which a clone belonged did not determine its virulent properties because the clones differed in virulence for the cotton varieties tested.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

ALADINSKIY, V. K., and TIMERBULATOV, A. M.

UDC 621.382.2

"On Two Forms of Avalanche Breakdown in P-N Junctions"

Elektron. tekhnika. Nauch.-tekhn. sb. Poluprovodn. pribory (Electronics Technology. Scientific-Technical Collection. Semiconductor Devices), 1970, Issue 7(57), pp 39-43 (from RZh-Elektronika i yeye primeneniye, No 7, July 1971, Abstract No 7B264)

Translation: It is shown that two stationary forms of avalanche breakdown are possible. In homogeneous p-n junctions of sufficiently large area, the steady state of the avalanche breakdown results from the narrow overlapping of the damping avalanches of the electrons and holes. In homogeneous p-n junctions of small area (microplasmas) a quasistationary form of the breakdown is possible, which is connected with one selfsupporting avalanche which is stabilized by the space charge of the mobile carriers. Summary.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

UDC 678.7.074

GINIYATULLIN, M. KH., KHASANOV, M. KH., TIMERGALEYEV, R. G., and VOSKRESENSKIY, V. A., Chair of Plastic Materials, Kazan' Engineering Construction Institute

"Synthesis and Study of Modifying Properties of Phosphorus Containing Oligourethanes"

Ivanovo, Izvestiya VUZ -- Khimiya i Khimicheskaya Tekhnologiya, Vol 16, No 4, 1973, pp 631-632

Abstract: A study was carried out on the possibility of modifying polyvinyl chloride with specially synthesized oligourethanes containing phosphorus. The oligomers were obtained by reacting 2,4-toluylenediisocyanate, a simple polyester, with trihydroxymethylphosphine at 80°, in a stream of nitrogen. A complex of physical properties of the system PVC-oligourethane has been presented as a function of the concentration of components. An interpretation has been presented for the non-linear type of changes of the effective viscosity, glassing temperature, temperature of fluidity, and flow index n for the above system. It has been shown that addition of small quantities of oligourethanes (4-5 weight parts per 100 weight parts of PVC) to PVC lowers the n_{ef}, T_s and increases

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

GINIYATULLIN, N. KH., et al., Izvestiya VUZ -- Khimiya i Khimicheskaya Tekhnologiya, Vol 16, No 4, 1973, pp 631-632

relative elongation, improving the processing and utilization qualities of the material.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

UDC: 51:155.001.57:681.3.06

TIMERKAYEV, V. S.

"The 'Forel'-1' Program Set up in ALGOL-60 (TAM-22) for the 'Minsk-22' Computer"

V sb. Vychisl. sistemy (Computer Systems--collection of works), vyp. 45, Novosibirsk, "Nauka", 1971, pp 19-22 (from RZh-Matematika, No 11, Nov 71, Abstract No 11V880)

Translation: A program is described for distinguishing formal elements (taxons) with a given degree of proximity by means of hyperspheres. The text of a program in ALGOL is presented.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR UDC: 51:155.001.57:681.3.06

TIMERKAYEV, V. S.

"The 'Foral'-1' Program Compiled in ALGOL-60 (TAM-22) Language for the 'Minsk-22' Computer"

V sb. Vychisl. sistemy (Computer Systems--collection of works), vyp. 45, Novosibirsk, "Nauka", 1971, pp 19-22 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V880)

Translation: A program is described for isolating formal elements (taxons) with a given degree of proximity by means of hyperspheres. The text of a program in ALGOL is presented.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

1/2 009 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--EXPERIMENTAL ADOPTION OF AN APPARATUS FOR THE CATALYTIC CRACKING OF A VACUUM DISTILLATE OF TURKMEN PETROLEUMS -U-

AUTHOR--CHVERTKIN, A.L., TIMERKHANOV, R.V., SEDUNOV, YU.P., SIDORIN, V.P.

COUNTRY OF INFO--USSR

SOURCE--NEFTPERERAB. NEFTEKHIM. (MOSCOW,) 1970, (1) 1-4

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY, PROPULSION AND FUELS

TOPIC TAGS--CATALYTIC CRACKING, PETROLEUM DEPOSIT, FLUIDIZED BED, GASOLINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1139 STEP NO--UR/0318/70/000/001/0001/0004

CIRC ACCESSION NO--AP0107628

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

2/2 009 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107628

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OPERATION OF A FLUIDIZED BED CATALYTIC CRACKING INSTALLATION, DIFFERING FROM STD. ONLY IN THE ABSENCE OF A GAS DESULFURIZER, IS DESCRIBED. THE DISTILLATE LEAD, B. 350-500DEGREES, GAVE 0.25PERCENT COKE INSTEAD OF THE 0.1PERCENT DESIGN VALUE. AFTER 2 MONTH'S OPERATION, THE ACTIVITY OF THE CATALYST DECREASED TO 21-22 AND THE GASOLINE YIELD TO 26 WT. PERCENT, THE TEMP. IN THE REACTION ZONE INCREASING TO 485-490DEGREES INSTEAD OF TO 470DEGREES. THE REGENERATION OF THE CATALYST WAS IMPROVED, REDUCING ITS COKE CONTENT TO 0.1-0.2 INSTEAD 0.7-0.9PERCENT. BY IMPROVING THE RECOVERY BOILER, THE TEMP. OF THE CHIMNEY GASES WAS REDUCED FROM 400 TO 240DEGREES.

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USSR

KOPAYEV, YU. V., and TIMEROV, R. KH.

"Effect of Impurity States on Semiconductor-Semimetal Phase Transition"

Leningrad, Fizika Tverdogo Tela, Vol 13, No 1, Jan 71, pp 122-124

Abstract: The article considers an isotropic model of a semimetal with Coulomb interaction between electrons and holes, with the concentrations of these being the same. The dependence of phase transition on impurity concentration is studied, with allowance for the existence of local impurity states in such systems. It is shown that at low impurity concentrations the disappearance of the impurity states takes place by a second-order phase transition at the temperature T_0, but the system above or below T_0 remains in the semiconductor state. At high impurity concentrations, when impurity states disappear at the semiconduc-

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

KOPAYEV, YU. V., and TIMEROV, R. KH., Fizika Tverdogo Tela, Vol 13, No 1, Jan 71, pp 122-124

tor-semimetal phase transition point, it is possible for a sequence of semiconductor-semimetal-semiconductor-semimetal phase transitions to occur.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

Electrochemistry

USSR

UDC 621.357.7:531.717.521(088.8)

TIMEYEV, YU. G.

"The Method for Measuring the Thickness of Galvanic Plating"

USSR Author's Certificate No 328328, Filed 19 Oct 70, Published 29 Mar 72 (from Referativnyy Zhurnal -- Khimiya, Svodnyy Tom, No 23(II), 1972, Abstract No 23L288P)

Translation: The patented method for measuring the thickness of deposited films requires that the standard and manufactured parts be submerged into the electrolyte. The standard part is made as a plate with built-in sensing device which records the plate deformation and produces certain signal which is used for determining the thickness of the deposited layer.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

UDC 538.27:546.18

IONIN, B. I., TIMFEYEVA, T. N.

"Use of Proton Magnetic Resonance for the Study of Organophosphorus Compounds"

Moscow, Uspekhi Khimii, Vol 41, 1972, pp 758-782.

Abstract: This review discuses methods of analysis of PMR spectra of organophosphorus compounds, discusses the basic features of chemical shifts of protons and the constants of proton-proton and proton-phosphorus spin-spin interactions, and analyzes the basic trends in the study of organophosphorus compounds by PMR methods. The peculiarities of the analysis of complex PMR spectra characteristic of organophosphorus compounds are discussed. The practical application of PMR spectroscopy lies primarily in the area of establishment of the structure and geometric characteristics of organic compounds. PMR has been widely used in organophosphorus chemistry recently for confirmation of the structure of five-member phosphorus-containing heterocycles, the products of the interaction of derivatives of trivalent phosphorus with conjugate systems.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

KHODOROV, B. I. and TIMIN, YE. N., Institute of Surgery imeni A. V. Vishnevskiy, Academy of Medical Sciences USSR, Moscow

"Theoretical Analysis of Mechanisms of Nerve Impulse Propagation Along a Nonuniform Axon. III. Transformation of Rhythms in the Cooled Region of the Fiber"

Moscow, Biofizika, Vol 15, No 3, May/Jun 70, pp 503-512

Abstract: The ionic mechanism of rhythm transformation in the cooled region of the squid giant axon were investigated using the Hodgkin-Huxley nerve model. Computations have shown that the lengthening of the refractory period is the cause of the periodic nerve impulse blockade. This lengthening is induced not only by cooling itself (reduction of all alpha and beta rate constants but also by the increase of sodium inactivation (drop of h) and potassium conduction (gK) in the course of rhythmic activity. As a result of lengthening of the refractory period, each succeeding impulse arises in an earlier refractory period than the preceding one. Therefore it is propagated with a decrement, and is completely extinguished if the cooled region of the axon is long enough. But if it is short, then the low amplitude action potential excites the membrane in the normal sections of the fiber and induces a fullsized spike. The latter propagates not only forward, but also induces a retrograde depolarization wave, which increases and lengthens the action

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

KHODOROV, B. I. and TIMIN, YE. N., Biofizika, Vol 15, No 3, May/Jun 70, pp 503-512

potentials in the cooled zone. As a result of this retrograde wave, the propagation of the next spike is inhibited. A considerable propagation of impulses in the cooled region induces (electrotonically) the lengthening of the falling phase of the spikes in the sections of axon lying just before the cooled zone. At the same time, the amplitude of these spikes is reduced owing to strengthening of the local hyperpolarizing current which originates in the cooled region where the impulse initiation is slowed down.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

UDC 612.08:519.24

KHODOROV, B. I., GRILIKHES, R. I., and TIMIN, Ye. N., Institute of Surgery imeni A. V. Vishnevskiy, Academy Medical Sciences, SSSR, Moscow

"Ion Mechanisms of Autorhythmic Activity Studies on Mathematical Models of Excitable Membranes"

Moscow, Byulleten' Eksperimentalnoy Biologii i Meditsiny, No 4, 1970, pp 24-29

Abstract: Studies of mathematical models of membranes of the giant axon and nodes of Ranvier were conducted on frogs. Autorhythmic activity occurs only when the ratios of parameters of ion permeability are as follows 1) the incoming ion current at rest starts to exceed the outgoing current by a value sufficient for the development of regenerative depolarization of the membrane, and 2) during the development of spike the outgoing current (potassium and leakage) increases to values sufficient for complete repolarization (or hyperpolarization) of the membrane. In the giant axon the first condition may be fulfilled both by increasing sodium conductivity (g_{Na}) and decreasing potassium conductivity (g_K) at the resting potential. In the nodes of Ranvier an increase of sodium permeability (P_{Na}) is obligatory. The impulse repetition rate depends on the degree of initial changes of ion permeabilities (conductivity) of the membrane and, to a greater measure, on the time constant of potassium permeability, t_n. The latter is due to the fact that the steepness of increase of interspike depolarization ("pacemaker potential") is largely dependent

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

KHODOROV, B. I., et al., Byulleten' Eksperimentalnoy Biologii i Meditsiny, No 4, 1970, pp 24-29

upon the rate of decrease of g_K (or P_K) after the end of action potential. In the instance of an excessive rise of g_{Na} or a very marked decline of g_K the rhythmic discharge acquires a damping character, since in both cases the process of repolarization of the membrane, necessary to eliminate inactivation, proves to be inadequate.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

1/2 016 UNCLASSIFIED

TITLE--IONIC MECHANISMS OF AUTORHYTHMIC ACITIVITY (INVESTIGATION ON MATHEMATICAL MODELS OF EXCITABLE MEMBRANES -U-

PROCESSING DATE--16OCT70

AUTHOR-(03)-KHODOROV, B.I., GRILIKHES, R.I., TIMIN, YE.N.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 4, PP 24-29

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MATHEMATIC MODEL, FROG, CELL MEMBRANE, SODIUM, POTASSIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1728

STEP NO--UR/0219/70/069/004/0024/0029

CIRC ACCESSION NO--AP0106457

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

2/2 016 UNCLASSIFIED

CIRC ACCESSION NO--AP0106457 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INVESTIGATION WAS CARRIED ON MATHEMATICAL MODELS OF MEMBRANES OF THE GIANT AXON AND RANVIER'S NODE OF FROG. AUTORHYTHMIC ACTIVITY OCCURS ONLY IN SUCH A RATIO OF PARAMETERS OF IONIC PERMEABILITY DURING WHICH: 1) THE INWARD IONIC CURRENT AT REST STARTS TO EXCEED THE OUTWARD CURRENT TO A VALUE SUFFICIENT FOR THE DEVELOPMENT OF REGENERATIVE DEPOLARIZATION OF THE MEMBRANE AND 2) DURING THE DEVELOPMENT OF SPIKE THE OUTWARD CURRENT (POTASSIUM AND LEAKAGE) INCREASES UP TO VALUES SUFFICIENT FOR COMPLETE REPOLARIZATION (OR HYPERPOLARIZATION OF THE MEMBRANE. IN THE GIANT AXON THE FIRST CONDITION MAY BE FULFILLED BOTH BY AUGMENTING THE SODIUM CONDUCTION (GNA) AND AS THE RESULT OF DECREASING THE POTASSIUM CONDUCTANCE (G) SUBK AT THE RESTING POTENTIAL. IN RANVIER'S NODE THE INCREASE OF THE SODIUM PERMEABILITY (PNA) IS OBLIGATORY. THE FREQUENCY OF THE SEQUENCE OF IMPULSES DEPENDS ON THE DEGREE OF INITIAL CHANGES OF IONIC PERMEABILITY (CONDUCTANCE) OF THE MEMBRANE AND, TO A GREATER MEAUSRE, ON THE TIME CONSTANT OF THE POTASSIUM PERMEABILITY, TAU SUBN. THE LATTER IS CONDITIONED BY THE FACT THAT THE STEEPNESS OF INCREASE OF INTERSPIKE DEPOLARIZATION (PACEMAKER POTENTIAL) IS LARGELY DEPENDENT UPON THE RATE OF DECREASE OF G SUBK (OR P SUBK) AFTER THE END OF ACTION POTENTIAL. IN THE INSTANCE OF EXCESSIVE RISE OF GNA OR VERY MARKED DECLINE OF G SUBK THE RHYTHMIC DISCHARGE ACQUIRES A DAMPING CHARACTER, SINCE IN BOTH CASES THE PROCESS OF REPOLARIZATION OF THE MEMBRANE, NECESSARY FOR ELIMINATION OF INACTIVATION, PROVES TO BE INADEQUATE. FACILITY: A. A. VISHNEVSKY INSTITUTE OF SURGERY, MOSCOW.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

UNCLASSIFIED

TITLE--THEORETICAL ANALYSIS OF THE MECHANISMS OF NERVE IMPULSE CONDUCTION ALONG A NONUNIFORM AXON. II. CONDUCTION OF A SINGLE IMPULSE THROUGH A

PROCESSING DATE--30OCT70

AUTHOR-(04)-KHODOROV, B.I., TIMIN, YE.N., VILENKIN, S.YA., GULKO, F.B.

COUNTRY OF INFO--USSR

SOURCE--BIOFIZIKA 1970, 15(1), 140-6

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SQUID, NEURON, MATHEMATIC MODEL, NARCOTIC, CALCIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0628

STEP NO--UR/0217/70/015/001/0140/0146

CIRC ACCESSION NO--AP0117854

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

2/2 018

UNCLASSIFIED

CIRC ACCESSION NO--AP0117854 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NERVE IMPULSE CONDUCTION ALONG A FIBER REGION WITH ALTERED MEMBRANE PROPERTIES WAS STUDIED ON A MATH. MODEL OF SQUID GIANT AXON. THE EFFECTS OF TETRODOTOXIN, NARCOTICS, AND CA PRIME2 POSITIVE WERE CONSIDERED.

FACILITY: A. V. VISHNEVSKII INST. SURG., MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

Therapy

USSR

UDC 616.932+616-008.97(VIBRIO)-085.332(TETRACYCLINUM)-033

TIMINA, V. P., TUMANOV, F. A., and SHALYGINA, N. B., Central Scientific Research Institute of Epidemiology, Ministry of Health USSR, Moscow

"Distribution of Tetracycline in Vibrio Carriers and Cholera Patients"

Moscow, Antibiotiki, No 2, 1973, pp 174-178

Abstract: A group of El Tor vibrio carriers (180) received 300,000 or 500,000 IU of tetracycline orally while a series of cholera patients (8) were given 500,000 IU of the antibiotic together with rehydration therapy. The antibiotic was taken at 6-hour intervals. This schedule was sufficient to maintain a therapeutic level of the drug in the serum, but it was much higher in the gastrointestinal tract. Boosting the dose given the carriers from 300,000 to 500,000 IU produced only a slight increase in the amount present in the tissues studied, but the amount excreted with feces increased sharply. The serum tetracycline concentration in the cholera patients with pronounced diarrhea was considerably higher than in the carriers. Those suffering from severe gastro-enteritis excreted the antibiotic rapidly, thereby reducing its therapeutic value.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

TIMIREV, N. P.

UDC 621.396.677.45

"Determining the Active Zone of Quasifrequency-Independent Antennas in the Shape of Spirals on Semielliptoids of Revolution"

Tr. Sev.-Zap. zaoch. politekhn. in-t (Works of the North-Western Correspondence Polytechnic Institute), 1972, No 20, pp 33-36 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 B55)

Translation: A method is proposed for determining the boundaries of the active zone of spiral antennas based on the analysis of the subintegral functions of their radiation vector. Formulas are given which make it possible to determine the coordinates of these boundaries. Brillouin diagrams are recommended in determining the active zone boundaries in the case where the structure of the spiral comes close to being periodic. Original article: one illustration and three bibliographic entries. Resume.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

TIMIREV, N. P.

SO: JPRS 55394

9 March 1972

CALCULATION OF DIRECTIVITY CHARACTERISTICS OF EQUIANGULAR CONICAL DOUBLE-SPIRAL ANTENNAS

[Article by N. P. Timirev and V. S. Zadvornov; Moscow, Antenny, Russian, No 11, 1971, pp 60-73]

Radiation field of a conical equiangular double-spiral antenna is determined in this article. In solving the problem it is assumed that directivity characteristics of an antenna are formed by a certain region the boundaries of which are determined on the basis of analysis of expression for the radiation vector created by different sections of the spiral. Expressions for an engineering calculation of an antenna's radiation patterns and experimental results confirming the calculated data are given.

Introduction

Among antennas used for the reception or radiation of the rotating-polarization waves in the ultrashort-wave range the conical equiangular double-spiral antennas are especially suitable. Along with clearly marked wide-band properties these antennas are characterized by a considerable simplicity of the arrangement, ease of excitation and non-criticalness of dimensions. Such antennas are often called frequency-independant or super-wide-band antennas. A number of works devoted to a theoretical investigation of these antennas are known in literature. However, results obtained in these and other works do not make it possible to calculate the characteristics of such antennas directly.

This work is devoted to a determination of the radiation field of a conical equiangular double-spiral antenna. Formulas for calculating its directivity characteristics are also derived in the work.

Initial Relationships for Calculating the Field

Suppose we have an infinitely fine ideally conducting double spiral with an angle of conicity Θ_0 whose branches are made with a constant angle of winding α and are excited at the starting points in antiphase. Figure 1 shows one of the branches oriented in the co-

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

UDC: 621.396.677.45

ZADVORNOV, V. S. and TIMIREV, N. P.

"Determining the Active Region Boundary for Conical Right-Angle Spiral Antennas"

Kiev, Izvestiya VUZ--Radioelektronika, Vol. 14, No. 1, 1971, pp 40-48

Abstract: The method proposed by the authors for determining the limit of the active region for this type of antenna is based on an analysis of the expression for the radiation vector set up by various sections of the spiral. They begin their derivation of this expression with the formula for an arbitrary wire radiator when the source of the electromagnetic field is a linear current in a segment of the wire. Assuming that for any wave of the operating range, the directivity of the antenna is formed by a segment of its active region while the radiation contributed by the remaining portions of the antenna can be neglected, they proceed with their derivation by dividing the spiral into such segments and summing up their effects. Expressions are also

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

ZADVORNOV, V. S. and TIMIREV, N. P., Izvestiya VUZ--Radioelektronika, Vol 14, No 1, 1971, pp 40-48

obtained for the active region of the double-turned spiral. The authors assert that their method can also be used for determining the active region of any wire antenna of spiral form.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

1/2 028

UNCLASSIFIED

TITLE--KINETIC CHANGES IN THE NRNA OF THE HIPPOCAMPUS, THE CEREBELLUM AND THE CEREBRAL CORTEX OF RATS IN THE PROCESS OF LEARNING -U-

PROCESSING DATE--18SEP70

AUTHOR-(04)-TIMKIN, V.N., KUZMIN, S.M., MEZEBTSEVM, A.N., DANILOVA, R.A.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL VYSSHEY NERVNOY DEYATEL'NOSTI, 1970, VOL 20, NR 1, PP 185-190

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HIPPOCAMPUS, CEREBELLUM, CEREBRAL CORTEX, RAT, RNA, PSYCHOLOGIC CONDITIONING, LEARNING MECHANISM, CONDITIONED REFLEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1982/0734

STEP NO--UR/0247/70/020/001/0185/0190

CIRC ACCESSION NO--AP0052187

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

2/2 028

UNCLASSIFIED

CIRC ACCESSION NO--AP0052187 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE PROCESS OF SIMPLE INSTRUMENTAL CONDITIONING IN RATS THE RNA CONTENT IN THE NUCLEI OF THE CORTEX, THE HIPPOCAMPUS AND THE CEREBELLUM AT FIRST INCREASES, PASSES A MAXIMUM, AND BY THE END OF LEARNING DROPS TO NORMAL. THE MAXIMUM OF N RNA CONTENT CORRESPONDS TO THE BEGINNING OF THE CONDITIONED REFLEX STABILIZATION. AFTER THE END OF LEARNING, THE N RNA CONTENT IN THE CORTEX AND THE HIPPOCAMPUS SLOWLY GOES UP, REACHING 30 TO 50PERCENT IN 24 HOURS, AND DIMINISHES TO NORMAL IN TWO OR THREE DAYS. NO SUCH CHANGES ARE OBSERVED IN THE CEREBELLUM. IN ANIMALS WHICH RECEIVED SIMULTANEOUSLY WITH THE EXPERIMENTAL ONES, SIGNAL AND ALIMENTARY STIMULI REGARDLESS OF THE MOTOR REACTIONS, SIMILAR N RNA CHANGES OCCURRED IN THE PROCESS OF LEARNING; BUT THEIR DEPENDENCE ON TIME DISPLAYED A LESS PRONOUNCED MAXIMUM AND A SLOWER DROP BY THE END OF LEARNING. APART FROM THIS, IN THE LATTER CASE THE N RNA CONTENT DOES NOT INCREASE AFTER THE ELABORATION OF THE CONDITIONED REFLEX. THESE DIFFERENCES ARE APPARENTLY LINKED WITH THE PECULIARITIES OF THE NERVE CELL ACTIVITIES DURING LEARNING AND STIMULATION.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

UDC 612.833.81

TIMKIN, V. N., KUZ'MIN, S. M., MEZENTSEV, A. N., and DANILOVA, R. A.

"Kinetic Changes in Nuclear RNA of the Hippocampus, Cerebellum, and Cerebral Cortex in Rats in the Process of Learning"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti, No 1, 1970, pp 185-190

Abstract: The RNA content of the nuclei of nerve cells in the cortex, cerebellum, and hippocampus of Wistar rats increase shortly after the beginning of formation of a food conditioned reflex, reaching a peak in 20-30 min and returning to normal in abotu 40 min. The peak coincided with the beginning of stabilization of the reflex. After the reflex was formed, the nRNA content in the cortex and hippocampus slowly increased, returning to normal after 2 or 3 days. This did not occur in the cerebellum. Control rats (animals receiving signal and food stimulation unrelated to motor responses) also exhibited an increase in the RNA content of the neuron nuclei, but the time dependence had a less pronounced peak and a slower decrease by the end of the "learning" period. Possible causes and mechanisms of the phenomena observed are discussed.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

1/2 032 UNCLASSIFIED

TITLE--METABOLISM OF THE NUCLEAR RNA OF THE CEREBRAL CORTEX IN THE PROCESS OF MOTOR ALIMENTARY CONDITIONING -U- PROCESSING DATE--23OCT70

AUTHOR-(04)-KUZMIN, S.M., TIMKIN, V.N., MEZENTSEV, A.N., VASILYEV, O.P.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL VYSSHEY NERVNOY DEYATEL'NOSTI, 1970, VOL 20, NR 3, PP 474-477

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--CONDITIONED REFLEX, BRAIN, NERVE TISSUE, RNA, LEARNING THEORY, METABOLISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0385 STEP NO--UR/0247/70/020/003/0474/0477

CIRC ACCESSION NO--AP0121072

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6"

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2/2 032 UNCLASSIFIED

CIRC ACCESSION NO--AP0121072 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT HAS BEEN FOUND THAT IN THE PROCESS OF ELABORATION OF A SIMPLE FOOD PROCURING CONDITIONED REFLEX IN RATS, THE METABOLISM OF THE NUCLEAR RNA OF THE CORTICAL NERVE CELLS INCREASES, PASSES THROUGH A MAXIMUM AND BY THE END OF LEARNING REVERTS TO THE INITIAL VALUE. WITHIN THE LIMITS OF EXPERIMENTAL ERROR, A LINEAR CORRELATION IS RECORDED BETWEEN THE INCREMENT OF THE ANIMAL'S BEHAVIOUR ENTROPY IN THE PROCESS OF LEARNING AND AN ENHANCED NUCLEAR RNA METABOLISM.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

UDC 591.3+612.81

IVANOV, L. A., and TIMKO, N. A., Institute of Gerontology, Academy of Sciences USSR, Kiev

"Neuromuscular Function and Oxygen Tension in Peripheral Tissue of Persons of Different Ages in Experimental Ischemia"

Leningrad, Fiziologicheskiy Zhurnal SSSR, No 12, 1971, pp 1,832-1,839

Abstract: Neuromuscular function was studied in 3 groups of healthy persons, age 18 to 32, 60 to 74, and 75 to 89, after circulatory hypoxia was induced by compressing the blood vessels of an extremity with a Riva-Rocci cuff. Changes in the rate of propagation of nerve impulses along the ulnar nerve and in the amplitude and duration of action potential of the abductor digiti quinti (of hand) set in later and were less pronounced in those over 60 than in the younger persons. The dynamics of oxygen tension in subcutaneous tissue during ischemia reflected a less distinct lowering of the PO_2 level in the elderly because of the age-related decrease in intensity of tissue respiration. While the neuromuscular functional parameters were slower to return to normal in the older persons, the differences between the various age groups with respect to stabilization of the PO_2 level were insignificant.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

023

UNCLASSIFIED

TITLE--AGE CHANGES OF THE CONDUCTION VELOCITY OF EXCITATION ALONG MOTOR FIBERS OF PERIPHERAL NERVES -U-

PROCESSING DATE--09OCT70

AUTHOR--TIMKO, N.A.

COUNTRY OF INFO--USSR

SOURCE--FIZIOLOGICHESKIY ZHURNAL SSSR IMENI I. M. SECHENOVA, 1970, VOL 56, NR 4, PP 552-557

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MUSCLE STIMULATION, PERIPHERAL NERVE, BIOLOGIC AGING, MEDICAL R AND D

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1189

STEP NO--UR/0239/70/056/004/0552/0557

CIRC ACCESSION NO--AP0054088

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

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CIRC ACCESSION NO--AP0054088 UNCLASSIFIED PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MAXIMAL VELOCITY OF EXCITATION CONDUCTION ALONG THE MOTOR FIBERS OF ULNAR AND PERONEAL NERVES WAS MEASURED IN YOUNG (18-32 YEARS), MIDDLE AGED (60-74 YEARS) AND OLD (75-89 YEARS) HEALTHY SUBJECTS. ALSO THE RESIDUAL TIME OF CONDUCTION WAS DETERMINED, AND THE AMPLITUDE AND DURATION OF THE ACTION POTENTIAL OF THE V FINGER'S ABDUCTOR MUSCLE AND THE SHORT ENTENSOR OF THE FOOT'S FINGERS, WERE RECORDED. STATISTICALLY RELIABLE DIFFERENCE (P SMALLER THAN 0.01) WAS NOTED FOR THE CONDUCTION VELOCITY OF EXCITATION IN ULNAR AND PERONEAL NERVES BETWEEN MIDDLE AGED AND OLD SUBJECTS AND THE GROUP OF YOUNG SUBJECTS. THE DIFFERENCE WAS NOTED FOR THE RESIDUAL TIME OF CONDUCTION. THE AMPLITUDE OF THE MUSCLE ACTION POTENTIAL ALSO CHANGES WITH AGE, PARTICULARLY IN LEGS. DURATION OF THE MUSCLE ACTION POTENTIAL STATISTICALLY RELIABLY INCREASED WITH AGE IN THE LEGS ONLY.

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USSR

UDC 615.281.8:547.963.32

TIMKOVSKIY, A. L., AKSENOV, O. A., BRESLER, S. Ye., KOGAN, E. M., SMORODINTSEV, Al. A., and TIKHOMIROVA-SIDOROVA, N. S., Institute of Nuclear Physics, Academy of Sciences USSR, Institute of High Molecular Weight Compounds, Academy of Sciences USSR, and All-Union Scientific Research Influenza Institute, Ministry of Public Health USSR, Leningrad

"Molecular Weight Characteristics of the Polyriboguanilic-Polyribocytidylic Acid Complex and Their Relation to Antiviral and Interferonogenic Activity"

Moscow, Voprosy Virusologii, No 3, May/Jun 1973, pp 350-355

Abstract: Molecular weight characteristics and immunological activity of (poly-G)·(poly-C) were studied in comparison to those of (poly-I)·(poly-C) to determine the reasons for variations in the compound's immunological activity. It was found through gel chromatography that the molecular weight of the complex depended directly on the quantity of oligonucleotide impurities within either of the precursors, poly-G acid or poly-C acid. While impure precursors produce a complex with molecular weight 300,000-500,000 daltons, purification of both results in molecular weight close to that of (poly-I)·(poly-C) (over $1 \cdot 10^6$ daltons). Antiviral activity of the purified complex in white mice was practically identical to that of

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USSR

TIMKOVSKIY, A. L., et al., Voprosy Virusologii, No 3, May/Jun 1973, pp 350-355

(poly-I)·(poly-C). Activity also depended directly on precursor molecular weight, disappearing at 30,000-40,000 daltons. It is suggested that molecular weight is more important than nucleotide composition to antiviral and interferonogenic activity. Thus although the mechanism of action of both complexes remains to be clarified, apparently it is identical for both and depends directly on complex molecular weight and precursor purity.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

UDC 615.281.8:547.963.32

AKSENOV, O. A., TIMKOVSKIY, A. L., AGEYEVA, O. N., KOGAN, E. M., BRESLER, S. Ye., SMORODINTSEV, Al. A., and TIKHOMIROVA-SIDOROVA, N. S., All-Union Scientific Research Influenza Institute, Ministry of Public Health USSR, Institute of Nuclear Physics, Academy of Sciences USSR, and Institute of High Molecular Weight Compounds, Academy of Sciences USSR, Leningrad

"Interferonogenic and Antiviral Activity of Double-Stranded Polyriboguanilic and Polyribocytidylic Acid Complex"

Moscow, Voprosy Virusologii, No 3, May/Jun 1973, pp 345-350

Abstract: The interferonogenic and antiviral activity and toxicity of (poly-G)·(poly-C) complexes produced by two methods were compared with those of (poly-I)·(poly-C). Stable complexes were formed both by adding NaCl (0.1M) to an equimolar solution of poly-G and poly-C in 0.005M sodium phosphate buffer (pH 7.4) at 20°C, and by heating the polynucleotide mixture in the same buffer for 10 min at 100°C with subsequent slow cooling. Success of the first method, not encountered in other papers, is probably due to careful purification of the polynucleotides. The double-strand complex stimulated maximum interferon formation in white mice 2-4 hours after intravenous injection. Interferon disappeared after 10-12 hours,

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AKSENOV, O. A., et al., Voprosy Virusologii, No 3, May/Jun 1973, pp 345-350

(Poly-G)·(poly-C) produced less interferon than did (poly-I)·(poly-C) (160-320 vs. 640-1,280 units/ml). The complex protected mice from lethal doses of AO/PR8 influenza virus, though (poly-I)·(poly-C) was somewhat more effective. (Poly-G)·(poly-C) was most effective when administered within 1 day of infection, while (poly-I)·(poly-C) was most effective when administered 2-3 days prior to the virus. The protective effect was higher for complex produced at 20°C than for that produced at 100°C. (Poly-G)·(poly-C) was nontoxic to white mice even at maximum dose (50 mg/kg), while (poly-I)·(poly-C) was 50 percent lethal at 10-15 mg/kg. Though (poly-G)·(poly-C) was found to be generally less effective than (poly-I)·(poly-C), its lower toxicity makes it a preferable antiviral agent.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

UNCLASSIFIED

TITLE--N,ALKYL,N,CYCLOHEXYLPIPERIDINIUM IODIDES -U-

PROCESSING DATE--20NOV70

AUTHOR-(03)-TIMOFEYENKO, L.A., FOKIN, A.V., KIRILLOV, N.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 941.

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IODINATED ORGANIC COMPOUND, PIPERIDINE, ALKYLATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1371

STEP NO--UR/0079/70/040/004/0941/0941

CIRC ACCESSION NO--AP0135045

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

CIRC ACCESSION NO--AP0139045 UNCLASSIFIED PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALKYLATION OF N,CYCLOHEXYLPIPERIDINE WITH ALKYL IODIDES RESULTED IN MUCH TAR AND GAVE BUT 40-7PERCENT QUATERNARY SALTS IN 15-16 HR AT 135-40DEGREES IN AUTOCLAVE WITHOUT A SOLVENT. IN MECH, TAR FORMATION WAS REDUCED AND THE REACTION REQUIRED ONLY 5 HR TO YIELD 85PERCENT N,ALKYL,N,CYCLOHEXYLPIPERIDINIUM IODIDES (ALKYL SHOWN): HEPTYL, M. 96-8DEGREES; DECYL, M. 104-5DEGREES.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

UDC 547.822.4

TIMOFEYENKO, I. A., FOKIN, A. V., and KIRILLOV, N. V.

"N-Alkyl-N-cyclohexylpiperidinium Iodides"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, p 941

Abstract: The authors attempted to obtain representatives of N-alkyl-N-cyclohexylpiperidinium iodides ($R = C_7 - C_{10}$) by the usual method -- alkylation reaction of tertiary alcohols of cyclic structure with alkyl iodides. Corresponding quaternary salts were obtained, but the process proceeded with significant resinification, and the yield of quaternary salts was not over 40-47 percent. The reaction was staged in an autoclave at 135-140° without a solvent, reaction time 15-16 hours. Experiments using the synthesis of N-heptyl- and N-decyl-N-cyclohexylpiperidinium iodides as an example showed that if this reaction is staged in acetonitrile, there is a sharp decrease in the formation of resinous products and in the reaction time to five hours, with an increase in the yield of iodides to 83-85 percent.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

023

UNCLASSIFIED

TITLE--INDUSTRIAL EXPERIENCE FOR OBTAINING ELECTRODE COKE FROM VACUUM RESIDUE OF MANGYSHLAK PETROLEUM -U-

PROCESSING DATE--11SEP70

AUTHOR--ZMIYEVSKIY, P.K., TIMOFEYEV, A.A., MITROFANOV, M.G., DEREKH, P.A., MARTIROSOV, V.G.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (1) 5-8

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY, PROPULSION AND FUELS

TOPIC TAGS--PETROLEUM PRODUCT, CRUDE OIL, ELECTRODE, COKE, PETROLEUM DISTILLATION, VACUUM DISTILLATION, KEROSINE, PETROLEUM DESALTING, CHEMICAL COMPOSITION, SULFUR, VANADIUM, GASOLINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1140

STEP NO--UR/0318/70/000/001/0005/0008

CIRC ACCESSION NO--AP0107629

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

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CIRC ACCESSION NO--AP0107629 UNCLASSIFIED PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESIDUE, DISTG. 10PERCENT SMALLER THAN OR EQUAL TO 500 DEGREES, D PRIME20 0.926, ASH 0.06, S 0.26, V 0.001, NI 0.002, COKE 8.0, TAR 28, ASPHALTENES 1.75, OIL 70, HARD PARAFFINS 17 WT. PERCENT, YIELDED, BY DELAYED COKING, ELECTRODE COKE CONTG. 7PERCENT VOLATILE MATTER. GOOD RESULTS WERE OBTAINED WHEN THE CRUDE PETROLEUM WAS DESALTED TO 10-15 MG AND THE RESIDUE CONTAINED MAX. 30-45 MG NACL-L., YIELDING GAS 9PERCENT, GASOLINE 8. SMALLER THAN OR EQUAL TO 200DEGREES 10, KEROSINE, GAS OIL, AND FUEL 62, COKE 16, INCLUDING ELECTRODE COKE 6.5 WT. PERCENT. THE LATTER CONTAINED S 0.6 AND V 0.0014-0.0022PERCENT.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

Magnetohydrodynamics

USSR

UDC 538.082:533.082

KALMYKOV, A. A., TIMOFEYEV, A. D., SHEVCHUK, B. A.

"Using Charged Particle Beams to Measure Magnetic Field Strength in a Plasma"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 41, No 11, Nov 71, pp 2442-2453

Abstract: The authors analyze the possibilities of measuring the strength of magnetic and electric fields by using a beam of charged particles in coaxial plasma systems in the presence of E_r, E_z, and H_ϕ field components. A detailed analysis is made of the conditions under which such measurements are possible and of the factors which influence measurement accuracy. The problem is solved both analytically and by numerical methods for various forms of distribution of the fields. The distribution of magnetic fields is experimentally measured in a coaxial plasma pulse accelerator by using beams of protons and deuterons with an energy of 10-40 keV. The experimental results are compared with data of measurements using magnetic probes. The authors thank A. I. Morozov for interest in the work. Eight figures, bibliography of fourteen titles.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

UNCLASSIFIED

TITLE--STATISTICAL EVALUATION OF THE EFFECT OF PRESSING TECHNOLOGY ON THE MECHANICAL PROPERTIES OF FIBERGLASS -U-

PROCESSING DATE--13NOV70

AUTHOR-(02)-STRELYAYEV, V.S., TIMOFEYEV, A.F.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, VESTNIK MASHINOSTROYENIYA, NO 2, 1970, PP 42-47

DATE PUBLISHED-------70

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

TOPIC TAGS--FIBERGLASS, PLASTIC MECHANICAL PROPERTY, PRESSURE EFFECT, PLASTIC FABRICATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1868

STEP NO--UR/0122/70/000/002/0042/0047

CIRC ACCESSION NO--AP0130695

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

272 032

CIRC ACCESSION NO--AP0130695 UNCLASSIFIED PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OPTIMUM TECHNOLOGICAL REGIMES FOR PRESSING PARTS (CYLINDERS, CONES, AND PLATES) ARE VALIDATED BY THE MULTIFACTOR DISPERSION ANALYSIS METHOD. A DESCRIPTION IS GIVEN OF THE EFFECTS OF PRESSING TEMPERATURE, PRESSURE, AND HOLDING TIME IN THE MOLD ON THE SHORT TERM STRENGTH OF PARTS. AN EVALUATION OF THE MUTUAL EFFECT OF THESE FACTORS IS ALSO GIVEN.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

1/2 018 UNCLASSIFIED

TITLE--DIFFUSION OF IMPURITIES IN POLYCRYSTALLINE COPPER. II. DIFFUSION OF ARSENIC -U- PROCESSING DATE--27NOV70

AUTHOR-(04)-KLOTSMAN, S.M., RABOVSKY, YA.A., TALINSKY, V.K., TIMOFEYEV, A.N.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA METALLOV I METALLOVEDENIE, APR. 1970, 29, (4), 803-806

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--METAL IMPURITY, METAL DIFFUSION, COPPER, ARSENIC, RADIOACTIVE TRACER, POLYCRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1801 STEP NO--UR/0126/70/029/004/0803/0806

CIRC ACCESSION NO--AP0129169

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

2/2 018

CIRC ACCESSION NO--AP0129169 UNCLASSIFIED PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THREE DIMENSIONAL AND INTERCRYSTALLITE (TWO DIMENSIONAL OR BOUNDARY) DIFFUSION OF AS IN POLYCRYSTALLINE CU WAS STUDIED BY A RADIOISOTOPE METHOD (LAYER BY LAYER ANALYSIS). THE THREE DIMENSIONAL DIFFUSION EQUATION FOR THE RANGE 800-1100DEGREESC WAS D EQUALS 0.2 EXP(NEGATIVE 42 130-RT) CM PRIME2-S; THE INTERCRYSTALLITE DIFFUSION OBEYED THE RELATION DELTA D EQUALS 7.9 TIMES 10 PRIME NEGATIVE10 EXP(NEGATIVE 12 3500RT) CM PRIME3-S, WHERE DELTA WAS THE WIDTH OF THE BOUNDARY LAYER.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

UDC: 621.373.531(088.8)

TIMOFEYEV, A. O.

"A Current Pulse Shaper"

USSR Author's Certificate No 265180, filed 22 Oct 64, published 17 Jun 70 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2G246 P)

Translation: This Author's Certificate introduces a current pulse shaper based on transistors with a coupling transformer in the input circuit. To reduce the rise time of the shaped pulse, the transformer has two primary windings connected in opposite phase, and in series with each of these primaries is a transistor, controllable inductance and variable resistor.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

USSR

TIMOFEYEV, A. V.

UDC: 8.74

"Concerning a Class of Polynomial Separating Functions in Problems of Recognition and Diagnosis"

V sb. Metody vychisleniy (Methods of Computations--collection of works), vyp. 7, Leningrad, Leningrad University, 1971, pp 106-121 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V569)

Translation: The author considers a class of separating functions of type

$$s(x, u) = \sum_{j=1}^{N} x_j a_j(x), \qquad (1)$$

where $x = \| \xi_i \|_{i=1}^{n} \in X^n$, X^n is a closed unit cube in Euclidean space, $u = \| x_j \|_{j=1}^{N}$ is the vector of weight coefficients, $a_j(x)$ are all kinds of polynomials of degree no higher than r, $r < n$. Taken as a measure of the effectiveness of class of separating functions (1) is the overall number of separations of a point set S of m points $x_h \in X^n$, $h = 1, \ldots, m$, which can be realized by using functions of this class. In this connection it is assumed that a separation of set S has taken place if neither of the sets $S^+ = S \cap \{x : s(x) > 0\}$ or $S^- = S \cap \{x : s(x) < 0\}$ is empty. The author establishes the number of different divisions of

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

TIMOFEYEV, A. V., Metody vychisleniy, vyp. 7, Leningrad, Leningrad University, 1971, pp 106-121

set S with points which in some sense occupy a common position in X^n. It is shown that this number depends only on parameters m and N and is independent of the relative arrangement of points $x_h \in X^n$, $h=1,\ldots,m$. A recognition problem is considered, i. e. a problem in determining the coefficients of polynomial (1) with respect to given sets S^+, S^-. It is pointed out that this problem may be solved by using certain known finitely convergent algorithms for solving infinite systems of inequalities. A procedure is presented for constructing separating functions of type (1) with an "approximately" minimum number of terms, and with error-free separation of a sample sequence. Experiments are described on solving various problems of recognition, and technical and medical diagnosis by means of polynomial separating functions. The results are compared with those of psychophysiological experiments where the same problems were solved by a group of people. V. Mikheyev.

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GLORIA

SO: JPRS 55937
09 MAY 72

ADAPTIVE HUMAN OPERATOR MODEL IN ONE PURSUIT TRACKING PROBLEM

[Article by V. A. Yakubovich and A. [illegible]: Kiev, Kibernetika i Vychislitel'naya tekhnika, Russian, No 7, [illegible] pp 56-58]

Recently, special attention has been given to the study of "human factors" in the manual control, guidance, and stabilization of a broad class of dynamic systems — automobiles, submarines, aircraft, and space ships.

This paper attempts a mathematical description of the operation of an adaptive system which models the activity of the human operator in a pursuit tracking situation on the basis of the mathematical apparatus of [1, 2].

Stating the Problem and Describing the Model

Suppose the operator sees on his indicator screen a section of the trajectory of motion of his target. The operator then has the possibility of resetting the cursor on the screen through a control device. The problem of the human operator is to match the cursor with the ϵ neighborhood of the target.

Let us proceed to a formal statement of the problem of constructing an adaptive human operator model. Let us imagine the screen of an indicator on which, at discrete moments of time $t = 0, 1, 2, \ldots$, the "cursor" and "target" points light up. We consider the indicator screen to be circular, with a radius of L, and with its center at the coordinate origin. The positions of the cursor and the target are shown on the plane by points (complex numbers) z_t ("cursor") and c_t ("target"). The operator has the possibility of acting manually on the cursor through an executing instrument. The activity of the operator is directed toward "trapping" the target, i.e., maintaining the condition $|z_t - c_t| < \epsilon$. To do this, obviously, the operator must correctly predict the behavior of the target in the next moment of time.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

MAN-MACHINE SYSTEMS

GLORIA

SO: JPRS 55352
6 MAR 1972

ADAPTIVE HUMAN OPERATOR MODELS IN CONTROL SYSTEMS WITH NONSTATIONARY DYNAMICS

[Article by A. V. Timofeyev: Moscow, V Vsesoyuznoye soveshchaniye po Problemam Upravleniya, Moscow, 1971, Referaty Doklady, Russian, Part II, 1971, pp 116-120]

Recently, the flow of operations aimed at developing methods of describing the behavior of the human operator in man-machine systems [1-3] has increased appreciably. Consideration of the human operator as a dynamic link permitted formulation of a number of new problems and extension of the methods of automatic control theory to the complex region of psychological and physical activity of man. Linear and quasilinear models of the human operator were constructed in relatively simple "nonadaptive" control problems where the characteristics of the environment and control system satisfy the conditions of stationarity [1-2].

A broad class of control systems functioning with the participation of the human operator (for example, the motor vehicle, aircraft, and so on) can be represented in the form of a block diagram depicted in Figure 1. The problem of the human operator (pilot, for example) consists in controlling the control system in accordance with a given purpose condition[1]. The human operator shapes the control with respect to signals S_T from the display 1 which depend on previously unknown states C_T of the environment and the target Z_T and also on the conditions under which the control system must operate. If for any conditions or states of a class m, the human operator always generates control for which the purpose condition is satisfied, we say that the human operator is adapted to the class m. The problem investigated below consists in constructing the human operator model with respect to the given class which

[1] The purpose condition usually consists in requiring that certain characteristics connected with the environment and the control systems lie within the given limits.

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USSR

UDC 51:155.001.57:518.9

YAKUBOVICH, V. A., TIMOFEYEV, A. V.

"Adaptive Human Operator Model in One Problem of Pursuit Tracking"

Kibernet. i Vychisl. Tekhn. Resp. Mezhved. Sb. [Cybernetics and Computer Engineering, Republic Interdepartmental Collection], No 4, 1970, pp 56-58, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V657 by the authors).

Translation: An adaptive model of the behavior of a human operator is suggested in one problem of pursuit tracking. The operator is modeled by a system consisting of input sensors (visual sensors), and adaptive regulator (the "brain") and an actuating organ (mechanical arm). Primary attention is turned to the problem of synthesis of the "brain" in correspondence with certain arbitrary criteria of "intelligence." The model suggested is capable of adapting itself both to changes in the medium and to changes in the dynamics of the control object and internal parameters of the model itself. The model has been imitated on a computer. Results are presented from similar psychophysiological experiments with a group of operators.

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USSR

UDC: 51:155.001.57:681.3.06

TIMOFEYEV, A. V.

"Optimum Polynomial Recognition Algorithms"

V sb. Obnaruzh. i raspoznavaniye. Planir. eksperimentov (Detection and Recognition. Planning of Experiments--collection of works), Moscow, "Nauka", 1970, pp 43-54 (from RZh-Kibernetika, No 1, Jan 71, Abstract No 1V652)

Translation: A procedure is proposed for constructing optimum and sub-optimum polynomial separating functions which have a number of peculiarities and advantages as compared with existing methods (in particular those described by G. S. Sebastian). It is shown that this procedure is more general in comparison with algorithms of classification by minimum spacing, and the "rule of the nearest neighbor." Probability density functions are evaluated, and the competence of the evaluations is verified. Polynomial separating functions are synthesized. For the case of binary characteristics, a procedure of synthesis is given which permits a simple technical realization. The effectiveness of optimum polynomial separating functions is illustrated by solving the problem of diagnosing Botkin's disease and cancer of the liver, which are poorly diagnosed by physicians. The teaching sequence consisted of 70 histories of the diseases, and the control sequence consisted of 140 histories. A table is given of the characteristics of

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TIMOFEYEV, A. V., Obnaruzh. i raspoznavaniye. Planir. eksperimentov, Moscow, "Nauka", 1970, pp 43-54

diagnosis of the diseases by physicians and by four algorithms which realize separating functions of varying complexity. A. Doroshenko.

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Mechanical and Optical

USSR

STUYT, V. A., TIMOFEYEV, A. V., Leningrad State University imeni A. A. Zhdanov

UDC 535.8

"Recognition of Photo Images by Means of Optical Filters"

Leningrad, IVUZ, Priborostroyeniye, No 11, 1970, pp 102-105

Abstract: A method for the recognition of arbitrary images is presented, based upon mapping of the images into a space of characteristics by means of filters of a special type. In a case where the images to be recognized are invariant with respect to some group of transformations (transfer, rotation, transformation of similarities), a procedure for synthesis of the invariant characteristics is proposed. Experimental results are presented. 3 figures, 7 bibliographic entries.

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USSR

UDC: 8.74

TIMOFEYEV, A. V., KHARICHEV, V. V., SHMIDT, A. A., YAKUBOVICH, V. A.

"A Problem in Pattern Recognition and Description"

Kiev, Biol., med. kibernet. i bionika, sbornik (Biology, Medical Cybernetics and Bionics--collection of works), 1971, pp 364-375 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V660 by E. Vagner)

Translation: In the teaching mode, images are presented to a computer, each of which is accompanied by its "description" in word form. The "content" of the words of the descriptions is not communicated to the computer, and it learns on its own to "understand" the simplest concepts. In the recognition mode, only the images are presented to the computer; the machine itself constructs their descriptions, which become the "output". In this connection, the computer also constructs descriptions which have not been presented during teaching. The words of the description are broken down in the teaching process into "adjec-

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TIMOFEYEV, A. V. et al., Biol. med. kibernet. i bionika, 1971, pp 364-375

tives" associated with different groups of image transformations, and "nouns" which are invariant with respect to these groups. Each image is a set of n points, where n is always less than some fixed N. In other words, a set of n complex numbers is assigned. A family of transformations consisting of a group of rotations about the coordinate source, similarity transformations, and horizontal and vertical translations can be applied to this set. A complete system of invariant functions can be constructed, which are given on the set of all images and do not change their value with any transformations of any image. In the recognition mode, the computer calculates the values of the invariants of the image presented, compares them with the corresponding values for the images of the teaching sequence, and determines the noun of the description. Then, in accordance with the recognition of the center of gravity of the image, its dimensions, and the angle of turn, the adjectives are found.

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USSR

UDC 576.893.192.1.098.31:577.154.365

TIMOFEYEV, B. A., Scientific Production Laboratory, Ministry of Agriculture ~~USSR~~

"The Presence of Hyaluronidase and Diffusion Factor in Toxoplasma"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyya Bolezni, Vol 40, No 4, Jul/Sug 71, pp 438-440

Abstract: In order to establish the presence of the diffusion factor and hyaluronidase, the following Toxoplasma preparations were studied: peritoneal exudite of white mice inoculated with strains of high (RH) virulence, using the centrifugate from the RH strain; a Toxoplasma lysate from the peritoneal exudate of white mice; lyophilized Toxoplasma antigen for the complement fixation test (CFT); and untreated peritoneal exudate of white mice inoculated with strains of low virulence and RH strains. The potential of Toxoplasma for production of one of the diffusion factor components -- hyaluronidase -- was investigated. Each preparation obtained from Toxoplasma was tested on rabbits: seven series with RH strain centrifugates and lysates; four series with lysates from the strains of low virulence; one series with the Toxoplasma antigen for CFT; and one trial with peritoneal exudate. Results showed that the presence of hyaluronidase and the diffusion factor could not be established.

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AP0045085

Abstracting Service: 5170 Ref. Code: UR0109

INTERNAT. AEROSPACE ABST.

A70-22411

Features of He-Ne laser emission modulation through the active element's excitation source (Osobennosti moduliatsii izlucheniia He-Ne OKG cherez istochnik vozbuzhdeniia aktivnogo elementa). E. P. Ostapchenko, B. A. Timofeev, and Iu. M. Iakovlev. *Radiotekhnika i Elektronika*, vol. 15, Jan. 1970, p. 143-146. In Russian.

Investigation of the features of He-Ne laser emission modulation by varying the discharge current through the tube to cause changes in the output power. Attention is given to the effect of gas pressure at different mixture ratios on the modulation, and the role of the ballast resistor is examined. Recommendations are given for the excitation circuit, ballast resistance, and gas mixture and pressure from the viewpoint of obtaining a maximum modulation depth and a maximum amplitude of the modulated signal.

T.M.

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USSR

TIMOFEYEV, A. V., UDOVICHENKO, S. P., KHARICHEV, V. V., SHMIDT, A. A.

"Full and Continuous Systems of Invariants in a Pattern Recognition Problem"

Vestn. Leningr. Un-ta [Herald of Leningrad University], 1972, No 19, pp 143-144 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V700, by the authors).

Translation: A problem of recognition of classes of images which are invariant relative to groups of transforms is studied. Definitions are presented and full and continuous systems of invariants of the group of shifts, rotations and similarity transforms frequently encountered in applied pattern recognition problems are constructed.

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USSR

Computers: Digital

UDC: 681.325.5

TIMOFEYEV, B. B., SUKHOMLINOV, M. M., FERENETS, N. K., STEPKO, D. P., NIKITENKO, V. M., OVERKO, V. A., PRSHISOVSKAYA, T. A., LYFAR', I. N.

"A Specialized Digital Computer"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 47, Dec 73, Author's Certificate No 408304, Division G, filed 23 Jun 70, published 10 Dec 73, p 172

Translation: This Author's Certificate introduces a specialized digital computer which contains registers, counters, and a control module connected to the registers and to the overflow outputs of the counters. The device also contains adders, flip-flops, an auxiliary code formation module, coincidence gates, buffer circuits, and a cadence pulse circuit connected to the input of a circuit for obtaining digit potentials. The outputs of this circuit are connected to the inputs of the control module. As a distinguishing feature of the patent, the functional possibilities of the computer are extended by adding a circuit for isolating transition signals, a transition counter, and three auxiliary registers. The output of the transition counter is connected to the first input of the first adder,

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TIMOFEYEV, B. B., et al., USSR Author's Certificate No 408304

whose output is connected to the input of the transition counter. The output of the first auxiliary register is connected to its input through the first coincidence gate, while the outputs of the second and third registers are connected through the second and third coincidence gates to the first inputs of the second and third adders whose outputs are connected to the inputs of the second and third registers respectively. The output of the second adder is connected through the fourth coincidence gate to the first input of the first buffer circuit. The second input of this buffer circuit is connected to the output of the first register, and the output of the buffer circuit is connected to the first input of the circuit for isolating transition signals. The second input of this circuit is connected to the output of the transition counter and, through the fifth and sixth coincidence gates, to the first inputs of the second and third buffer circuits. The outputs of these buffer circuits are connected to the second and third inputs, whose outputs are connected to the second inputs of the second and third adders respectively. The output of the circuits for isolating transition signals is connected through the seventh and eighth coincidence gates to the second inputs of the second and third buffer circuits respectively and, through the ninth coincidence gate,

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TIMOFEYEV, B. B., et al., USSR Author's Certificate No 408304

to the input of the auxiliary code formation module whose output is connected to the third input of the second buffer circuit. The output of the third register is connected through the tenth coincidence gate to the set input of the flip-flop whose output is connected through the eleventh coincidence gate to the second input of the first adder.

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UR9015

AUTHORS-- TIMOFEYEV, R., CORRESPONDING MEMBER OF THE UKRAINIAN ACADEMY OF SCIENCES, DIRECTOR, INSTITUTE OF AUTOMATICS, AND ANDRIYEVSKIY, S., CHIEF ENGINEER OF THE INSTITUTE

TITLE-- THE MACHINE THAT READS

NEWSPAPER-- RABOCHAYA GAZETA, FEBRUARY 24, 1970, P 3, COLS 7-8

ABSTRACT-- THE CHAIR OF ENGINEERING ELECTRONICS OF THE KIYEV POLYTECHNIC INSTITUTE IS ONE OF THE CENTERS WHERE RESEARCH IS BEING CONDUCTED IN THE AUTOMATED PROCESSING OF GRAPHIC INFORMATION. THE TEAM WHICH IS INVOLVED IN THIS WORK IS HEADED BY DOCTORS OF TECHNICAL SCIENCES V. P. SIGORSKIY AND A. I. PETRENKO. ASSOCIATES OF THE CHAIR HAVE PUBLISHED 5 MONOGRAPHS, INCLUDING "METHODS AND DEVICES FOR THE CONVERSION OF GRAPHIC INFORMATION", AND "THE AUTOMATIC INPUT OF GRAPHS IN ELECTRONIC COMPUTERS". THE RESEARCH ENCOMPASSED THE FOLLOWING AREAS-- IMPROVING THE ACCURACY AND THE RELIABILITY OF MEASURING INDEXES. DEVELOPMENT OF COLOR READING DEVICES, DEVELOPMENT

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OF CONVERTING DEVICES FOR OBTAINING GRAPHS WITH SPECIFIED CHARACTERISTICS. USING SIMPLE AND RELIABLE COLOR DECODERS, THERE HAVE BEEN PROPOSED AND TRIED METHODS OF READING AND DIGITAL RECORDING OF MAPS AND GRAPHS. ONE OF THE DEVICES DEVELOPED BY THE INSTITUTE ENABLES A COMPUTER TO READ READILY GRAVITATIONAL, MAGNETIC OR TOPOGRAPHIC MAPS. ANOTHER DEVICE ENABLES ANY COMPUTER TO DISTINGUISH THE COLORS OF RAINFALL, TO RECORD THEM AND TO READ THEM INTO ITS MEMORY.

THE CHAIR OF ENGINEERING ELECTRONICS IS COORDINATING RESEARCH IN THE AREA OF CONVERSION AND INPUT OF GRAPHIC MATERIAL ON THE ALL-UNION SCALE.

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USSR UDC 8.74

ZAYTSEV, V. G., TIMOFEYEV, B. B.

"Organization of Graphic Dialog with a Computer"

V sb. Prom. kibernetika (Industrial Cybernetics -- collection of works), Kiev, 1971, pp 289-298 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V619)

No abstract

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UDC: 8.74

TIMOFEYEV, B. B., KOZLIK, G. A., KULAKOV, A. F., MART'YANOV, A. I.

"Algorithmization in Automatic Control Systems"

Algoritmizatsiya v Avtomatizirovannykh Sistemakh Upravleniya [English version above], Kiev, Tekhnika Press, 1972, 240 pp (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V499K)

Translation: Problems of the development, computer programming, testing and operation of complex system control algorithms, algorithmic control systems (AICS) are systematized using a single methodological basis. Significant attention is given to analysis of the problems of statement and solution of these problems during the process of creation and introduction of automatic control systems (ACS). A method is suggested for study and improvement of the qualitative characteristics of complex algorithmic systems. The book is based on the experience gained in development of specific ACS, in particular economic ACS. Its content is illustrated with examples. It is designed for engineering, technical and scientific workers involved in the development, introduction and operation of automated and automatic control systems. It may be useful to

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Timofeyev, B. B., Kozlik, G. A., Kulakov, A. F., Mart'yanov, A. I., Algorithmizatsiya v Avtomatizirovannykh Sistemakh Upravleniya, Kiev, Tekhnika Press, 1972, 240 pp

graduate students and university students, as well as persons interested in problems of algorithmization and application of cybernetics to the national economy.

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USSR

UDC: 621.396.6-181.5(088.8)

GRIGOR'YEV, A. N., TIMOFEYEV, B. I., ALIMKIN, N. S.

"A Device for Making Microcircuits"

USSR Author's Certificate No 277895, filed 3 Mar 69, published 19 Nov 70 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V159 P)

Translation: This Author's Certificate introduces a device for making microcircuits. The device contains a substrate-feeding mechanism, a mechanism for coating the substrates with cement, a mechanism for step-feeding the film, and a mechanism for shaping the current-conducting elements of the microcircuit. In order to increase the work productivity of the device, the mechanism for shaping the current-conducting elements of the microcircuit is made in the form of a hollow punch set with a feed-through channel which is open to the inner cavity of a cylindrical punch holder which is fitted with a spring-loaded piston. A locator made in the form of a spring-loaded lever fits into a slot in the piston rod.

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USSR UDC 621.3.049.75

GRIGOR'YEV, A. N., TIMOFEYEV, B. I., ALIMKIN, N. S.

"A Device for Making Microcircuits"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 25, Soviet Patent No 277895, class 21, filed 3 Mar 69, published 5 Aug 70, p 53

Translation: This Author's Certificate introduces a device for making microcircuits which contains a mechanism for feeding substrates, a mechanism for coating the substrates with cement, a mechanism for step-feeding the film, and a mechanism for shaping the current-conducting elements of the microcircuit. As a distinguishing feature of the patent, the work productivity of the device is increased by making the device which shapes the current-conducting elements of the microcircuit in the form of a set of hollow punches with a cavity through them which communicates with the inner cavity of a cylindrical punch holder equipped with a spring-loaded piston. A locator made in the form of a spring-loaded lever fits in a slot in the piston rod.

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USSR UDC 539.385

BARGYALIS, A. S., MEDEKSHA, G. G., DAUNIS, M. A., TIMOFEYEV, B. T.

"Behavior of Pearlitic Welded Seams with Low-Cycle Loading at High Temperatures"

Soprotivl. Materialov. Materialy XXII Resp. Nauch.-tekhn. Konf. [Strengths of Materials, Materials of XXII Republic Scientific and Technical Conference -- Collection of Works], Kaunas, 1972, pp 32-36, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 V1226 by A. P. Gusenkov).

Translation: The static and cyclical strength and ductility characteristics of materials 15Kh2MF, 22K and Kh18N22V2T2 at 350° are presented. Diagrams of static deformation, values of yield points and strength, rupture resistance and coefficient of reduction in area are produced. Curves of low-cycle fatigue are constructed for rigid loading in the coordinates initial loading deformation vs. number of cycles to crack formation. The maximum durability is $5 \cdot 10^4$-10^5 cycles.

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USSR

UDC 621.791.053:620.178.3

TIMOFEYEV, B. T., Engineer, KARZOV, G. P., Candidate of Technical Sciences, ZEMZIN, V. N., Doctor of Technical Sciences, and DAUNIS, M. A., Candidate of Technical Sciences

"Low-Cycle Fatigue of the Metal of Welded Seams Made by Mechanized Methods"

Moscow, Svarochnoye Proizvodstvo, No 2, Feb 71, pp 38-40

Abstract: This work presents a study of the cyclical strength of welded joints of 22K steel produced by automatic welding under flux and by the electric slag method for low-cycle loading. The low-cycle fatigue resistance of the metal in a low-carbon seam and its strength properties depend significantly on the welding method, welding materials used, and heat treatment of the joint or structure: the greatest strength is achieved by hardening the metal of the seam, produced by electric slag welding with Sv-10GSMT wire, the least strength by normalizing the seam metal and using Sv-10G2 welding wire. Stress concentrators should not be allowed in welded structures of 22K steel made by mechanized methods, since this reduces the resistance to repeated static loading. The experimental data produced on durability for the welded seam metal with automatic and electric slag welding corresponds to the well known equation of Coffin.

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Geological + Mineralogical Sci.

JPRS 54563
26 Nov 71

MICROPHYTOFOSSILS OF THE PROTEROZOIC AND EARLY PALEOZOIC

(Symposium in Leningrad)

[Article by Doctor of Geological and Mineralogical Sciences [illegible], Russian, Vol 41, No 9, September 1971, pp [illegible]]

During a symposium held on [illegible] April in the Institute of the Geology and Geochronology of the Pre-Cambrian of the AS USSR there was discussion mainly of questions of the taxonomy, classification and nomenclature of very old microfossils and their stratigraphic, diagnostic and paleographic significance. The participants in the symposium represented [illegible] scientific institutions and production organizations of [illegible] cities of the country. About 30 reports and presentations were presented.

In an introductory report entitled "The significance of very old microfossils of plant nature" B. S. Sokolov pointed out the great interest as regards biological history of remains of the very old organic world. Microfossils with an organic shell gradually are beginning to occupy a leading place in the biostratigraphy of the pre-Cambrian. However, many questions still remain, for the solution of which purposeful and meticulous work will be required. Deserves in mind the following: further clarification of the nature of the very old microphytofossils -- the acritarchs (based on [illegible] and precise investigations, including paleobiochemical), the development and adoption for them of a single morphological classification with consideration of the principles and rules of the International Codex of Botanical Nomenclature; complete solution of the genetic and [illegible] composition of microfossils on the basis of comparative study of their types and "[illegible]" variability; strict establishment of standard complexes of species of acritarchs for all the main stratigraphic subdivisions of the pre-Cambrian (especially the lower) [illegible] and assurance of the sterility of the complex of plant microfossils.

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TIMOFEYEV, B.V.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

1/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--CONSTANT SPEED D.C. MOTOR -U-

AUTHOR-(04)-TIMOFEYEV, B.V., SAMOKHIN, V.P., BOKOVOY, YU.V., KUROCHKIN, YU.M.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 248039

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI NR 23

DATE PUBLISHED--05JAN70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--DIRECT CURRENT, ELECTRIC MOTOR, PATENT, SPEED REGULATOR, TACHOMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/1523 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0121940

UNCLASSIFIED

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CIRC ACCESSION NO--AA0121940 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ILLUSTRATION SHOWN ON MICROFICHE. CONSTANT SPEED D.C. MOTOR IS SIMPLIFIED IN DESIGN. THE POWER TO THE MOTOR (4) IS SUPPLIED FROM AN INVERTOR (1) THROUGH A GENERATOR AND CONTROLLED RECTIFIERS (3). THE SPEED OF THE MOTOR IS CONTROLLED BY PULSES GENERATED IN THE COMPARISON CIRCUIT (9) BALANCING THE SIGNALS FROM THE STANDARD POTENTIOMETER (14) AGAINST THE PULSES OF THE TACHOGENERATOR (5). TYPICALLY FOR THE SPEED CONTROL SYSTEMS A SELFOSCILLATING ARRANGEMENT IS ESTABLISHED.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203310013-6

Adsorption

USSR

UDC 541.183:541.11

TIMOFEYEV, D. P., and YERASHKO, I. T., Institute of Physical Chemistry, Academy of Sciences USSR, Moscow

"The Role of Thermal Effects in the Kinetics of Adsorption"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 45, No 3, Mar 71, pp 651-654

Abstract: During determinations of the kinetics of adsorption of benzene and MeOH vapors on carbon AR-3 and of water vapor on zeolite CaA, changes of the temperature in the center and on the surface of adsorbent grains were determined by means of thermocouples. During slow adsorption in vacuo, the increase in temperature due to evolution of the heat of adsorption did not exceed several degrees. When adsorption was carried out from a stream of carrier gas, the increase in temperature was still smaller ($\leq$ 1-2°). The external temperature was kept constant in the experiments conducted. The results showed that under ordinary conditions of adsorption measurements the effect of the temperature rise due to adsorption is very small and that the error arising in calculations of the coefficient of inner diffusion because of the non-isothermal conditions produced by evolution of the heat of adsorption is negligible.

N. A. TVERDOKHLEB participated in the work described.

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"Approximate Equation of Desorption Kinetics for Substances With a Sharply Curved Isotherm of Adsorption"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 46, No 5, May 72, pp 1083-1085

Abstract: Adsorption systems with a Sharply curved adsorption isotherm have typically high equilibrium adsorption values at low concentrations of the adsorbate in the gasseous phase. In this paper an approximate equation has been derived for the kinetics of desorption from granular porous sorbent for a similar system with sharply curved adsorption isotherm. This newly derived equation makes it possible to estimate the effects of various factors on the time of desorption. The equation for the time of desorption τ is:

$$\tau = \frac{na_0R^2B^{1/n}}{6(1-n)DC_s\,\gamma^{1/n-4}}$$

where: a_0 = initial content of the adsorbate, R = radius of the granules, D = coefficient of internal diffusion, C_s = concentration of the saturated vapor, γ = relative adsorption value, and n, B = constants.
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TIMOFEYEV, E. V.

"Tickborne Encephalitis on the Transbaikal Railroad"

V sb. Tezisy dokl. Nauchno-Prakt. konferentsii vrachey Zabayk. zh.-d. (Thesis Reports of the Scientific and Practical Conference of Physicians of the Transbaikal Railroad), Ch. 2, Chita, 1970, pp 165-167 (from RZh-36. Meditsinskay Geografiya, No 1, Jan 71, Abstract No 1.36.90)

Translation: Epidemiological characteristics of cases of tickborne encephalitis in 1958-1969 are presented. Foci of infection are related to the Petrovsk-Zabaykal'skiy rayon of Chitinskaya Oblast (the settlement of Katangar, Kharauz, Tarbagatay) and the Skovorodinskiy rayon of Amurskaya Oblast (Skovorodino and Taldan villages).

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