"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

UDC 547.96:576.3/:576.858.5

DYACHENKO, N. S., NOSACH, L. M., VANTSAK, N. P., and GUSHCHA, K. P., Institute of Microbiology and Virology, Academy of Sciences UkSSR

"Intensity of Protein Accumulation in the Dynamics of Formation of Intranuclear Inclusions in Cells Infected With Type I Adenovirus"

Kiev, Mikrobiologicheskiy Zhurnal, Vol 33, No 4, Jul/Aug 71, pp 478-483

Abstract: The accumulation of protein in nuclei and cytoplasm of KB cells infected with type I adenovirus was investigated cytophotometrically according to Mazia. Cells with inclusions of the following types in the nucleus (corresponding to types II-VI of DNA-containing inclusions) were subjected to cytophotometric study: 1) fine-grained, 2) granular, 3) coarse-grained inclusions, 4) unformed central corpuscle, 5) formed central corpuscle. Accumulation of protein continued only in stage 1. In stages 2-5 the amount of protein in the nucleus remained constant. Its amount in the cytoplasm decreased in stages 2-4 to a level corresponding to that for uninfected controls, while it increased in stage 5. The results indicated that the accumulation of protein, which began in the nuclei and cytoplasm before any changes in the cells were discernible upon staining according to Mazia, was completed in stage 1. One may assume that in stages 2-5 the

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USSR

UDC: 576.858.5:612.015.33

DYACHENKO, N. S., NOSACH, L. N., GUSHCHA, K. P., and VANTSAK, N. P., Department of Viral Biophysics, Institute of Microbiology and Virology of the Academy of Sciences Ukrainian SSR, Kiev

"Cytophotometric Study of the Degree of Protein Accumulation in Cells Infected With Type 1 Adenovirus"

Leningrad, Tsitologiya, Vol 13, No 2, Feb 71, pp 252-258

Abstract: The sequence of stages in the development of type 1 adenovirus and the formation of intranuclear inclusions was studied in connection with a proposed mechanism for the action of adenovirus on a sensitive cell. The accumulation of proteins in cells and cytoplasm of normal and infected KB cells was studied by use of preparations stained with bromophenol blue sublimate. Statistically reliable values of the mean concentration of protein in the cytoplasm and nuclei of infected cells were observed 18 and 24 hours, respectively, after infection. This process occurs together with the replication of the infected virus and with synthesis of the sensitizing antigen. The protein accumulation is accompanied by the formation of finely divided inclusions. At later stages in the development of these inclusions, the protein contents of the nuclei remain the same, whereas those of the cytoplasm are reduced to control level.

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USSR

DYACHENKO, N. S., et al, Tsitologiya, Vol 13, No 2, Feb 71, pp 252-258

Cells containing formed nuclear bodies represent an exception: a considerable increase in the protein contents is observed in them. The data obtained indicate that the inclusions have a different function in the replication of adenovirus and in cellular metabolism at different stages of formation.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

CHAVCHANIDZE, V. V., Corresponding Member of the Georgian Academy of Sciences; VAHYAN, A. R.; et al (Georgian Academy of Sciences, Institute of Cybernetics)

"Assessment of Projective Holographic Systems by Comparing the Line Scattering Functions (LSF) of the Corresponding Holographic Images"

Tbilisi, Bulletin of the Academy of Sciences of the Georgian SSR; February 1973, pp 309-312

Abstract: The problem of determining the resolving capacity of projective holographic systems by comparing the line scattering functions of corresponding holographic images is considered. The optimum experimental conditions resulting in high-grade holograms of two-dimensional objects were found. Judging by the experimental results, the half-width of SLF at diffusion illumination (lighting) of the object is 1.4 times greater than at holographing in non-scattered beams. The observed difference is mainly due to interference (noise disturbance) resulting from a coarse-grained scatterer. With a more fine-grain scatterer this difference becomes negligible and therefore both methods can give equal accuracy according to their resolution.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

1/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--AN EXPERIMENT OF FREQUENCY SOUNDING OF THE EARTH ON THE BASIS OF THE RESULTS OF A SPHERICAL ANALYSIS OF THE GEOMAGNETIC FIELD VARIATIONS

AUTHOR-(05)-BERDICHEVSKIY, M.N., VANYAN, L.L., LAGUTINSKAYA, L.P., ROTANOVA, N.M., FAYNBERG, E.B.

COUNTRY OF INFO--USSR

SOURCE--GEOMAGNETIZM I AERONOMIIA, VOL. 10, NO. 2, 1970, P. 374-377

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GEOMAGNETIC FIELD, RESISTIVITY, MODEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0163 STEP NO--UR/0203/70/010/002/0374/0377

CIRC ACCESSION NO--AP0119159

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

2/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSICN NO--AP0119159

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PRELIMINARY RESULTS OF A FREQUENCY SOUNDING OF THE EARTH BASED ON DATA FROM A SPHERICAL ANALYSIS OF SQ, DST, AND 27 DAY GEOMAGNETIC FIELD VARIATIONS. TABLES INCLUDE CALCULATED VALUES OF THE THICKNESS OF THE NONCONDUCTING SHELL, THE RESISTIVITY OF THE NUCLEUS, AND THE MODULI AND ARGUMENTS OF THE RATIO OF THE OUTER AND INNER PORTICNS OF THE MAGNETIC POTENTIAL. THE RESULTS OBTAINED ARE COMPARED WITH THE PARAMETERS OF THE LAMB MODEL. FACILITY: MOSKOVSKII GOSUDARSTVENNYI UNIVERSITET. FACILITY: AKADEMIIA NAUK SSSR, INSTITUT KOSMICHESKIKH ISSLEDOVANII, MOSCOW. FACILITY: AKADEMIIA NAUK SSSR, INSTITUT ZEMNOGO MAGNETIZMA, IONOSFERY I RASPROSTRANENIIA RADIOVOLN, KRASNAYA PAKHRA, USSR. FACILITY: AKADEMIIA NAUK TURKMENSKOI SSR, INSTITUT FIZIKI ZEMLI I ATMOSFERY. ASHKHABAD, TURKMEN SSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

1/2 018 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--LEAD TELLURIDE AND MERCURY TELLURIDE SYSTEM -U-

AUTHOR-(03)-VANYARKHO, V.G., ZLOMANOV, V.P., NOVOSELOVA, A.V.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1), 133-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--EUTECTIC MIXTURE, SOLID SOLUTION, PHASE ANALYSIS, X RAY DIFFRACTION ANALYSIS, ELECTROMOTIVE FORCE, LEAD COMPOUND, MERCURY COMPOUND, TELLURIUM COMPOUND, CRYSTALLIZATION, SOLID SOLUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0616 STEP NO--UR/0363/70/006/001/0133/0134

CIRC ACCESSION NO--AP0105598

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

2/2 018 UNCLASSIFIED

CIRC ACCESSION NO--AP0105598 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PBTE-HGTE SYSTEM WAS STUDIED BY DTA, X RAY DIFFRACTION, AND MICROSTRUCTURAL ANAL., AS WELL AS BY THE MEASUREMENT OF THE MICROHARDNESS AND THE THERMAL EMF. AS A FUNCTION OF COMPN. TWO SERIES OF SAMPLES OF THE FOLLOWING COMPNS. WERE PREPD.: 100-90 MOLE PERCENT PBTE AT EVERY 2 MOLE PERCENT, AND AFTER THAT, OVER THE ENTIRE COMPOSITIONAL RANGE AT EVERY 5 MOLE PERCENT. THE SAMPLES OF THE 1ST SERIES WERE REMELTED WITH VIBRATIONAL AGITATION AND WERE ANNEALED AT 560DEGREES FOR 1100 HR. THE SAMPLES OF THE 2ND SERIES WERE CRUSHED (TO 250 MESH) AFTER SMELTING, THEN PLACED INTO EVACUATED QUARTZ AMPULS AND IMMEDIATELY BEFORE THE HOMOGENIZATION ANNEALING WERE HEATED TO A TEMP. WHICH WAS 50DEGREES HIGHER THAN THE TEMP. OF THE EUTECTIC. THE 2 PROBE METHOD WAS USED TO DET. THE DEPENDENCE OF THERMAL EMF. ON THE COMPN. NO LINES CORRESPONDING TO THE INITIAL COMPONENTS WERE OBSD. ON THE X RAY DIFFRACTION PATTERNS OF OYNTHESIZED PBTE AND HGTE. THE UNIT CELL PARAMETERS WERE DETD. BY THE EXTRAPOLATION FUNCTION METHOD AND ARE ALPHA EQUALS 6.450 ANGSTROM FOR HGTE AND ALPHA EQUALS 6.458 ANGSTROM FOR PBTE. THE PBTE-HGTE SYSTEM IS A QUASIBINARY SECTION OF THE TERNARY PB-HG-TE SYSTEM, AND IT INTERSECTS 2 FIELDS OF PRIMARY CRYSTN.: THAT OF THE SOLID SOLN. OF HGTE IN PBTE (ALPHA PHASE), AND THAT OF THE HGTE BASED SOLID SOLN. (BETA PHASE) AND THE SEGREGATION REGION. THE PRIMARY CRYSTN. OF ALPHA AND BETA SOLID SOLNS. TERMINATES AT THE EUTECTIC TEMP 605DEGREES. THE REGION OF ALPHA SOLID SOLN EXTENDS TO 5 MOLE PERCENT HGTE.

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28 May 71

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FPD:CYBERNETICS

38. USSR

SO: FOREIGN PRESS DIGEST 28 May 1971

VANYASHOVA, A., special Pravda correspondent

"Diagnosis at a Distance"

Moscow, Pravda, 10 Jan 71, p 6

Abstract: Computers are now being used in diagnosis. Doctors at the Yaroslavl Medical Institute have written a program using the most obvious symptoms from 2,000 case studies. More than 10 years ago A. A. Vishnevskiy, a doctor, and I. I. Artobolevskiy, an expert in automatic control started a small discussion group on the use of mathematical methods in surgery. This work led to the establishment of a laboratory. Vishnevskiy feels that the field of medicine is so vast that it is impossible for an individual to master even a small specialty. The computer's vast memory is indispensable here. In some cases the computer's diagnosis is more accurate than a doctor's. Soon several medical institutes will be linked in a communications-computer system. Time sharing will be arranged so that emergency cases have priority. The computer's work will soon be extended from diagnosis to determining the proper treatment. Man-machine communications will become more flexible. It is necessary to develop a multi-institute computer network, and a system whereby many clinics can consult with specialists. In cases of rare and uncertain diseases, doctors could have their diagnosis verified by computers. This will require flexible programs.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--KINETICS AND MECHANISM OF THE OXIDATION OF ZINC SULFIDE -U-

AUTHOR-(02)-DIMITROV, R., VANYUKOV, A.V.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(3), 7-11

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--OXIDATION, ZINC SULFIDE, CRYSTAL DEFECT, CHEMICAL KINETICS, EXOTHERMIC REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1413 STEP NO--UR/0136/70/043/003/0007/0011

CIRC ACCESSION NO--AP0126951

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

2/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0126951

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STRONGLY EXOTHERMIC REACTION WAS SHOWN AT HIGHER TEMPS. OF OXION. BY AMORPHOUS (IS GREATER THAN 773DEGREES), CUBIC (IS GREATER THAN 898-1013DEGREES), AND HEXAGONAL (IS GREATER THAN 923DEGREES) FORMS CORRESPONDING TO APPARENT ACTIVATION ENERGIES Q OF 153, 190-6, AND 205-33 KCAL-MOLE. CUBIC ZNS SHOWED A KINETIC CHARACTER AT 1203DEGREES IN OXION. EFFICIENCY RELATIVE TO GASEOUS O CONTENT, HOWEVER THE CURVES OVER THE COMPLETE TEMP. RANGES ILLUSTRATED MULTIPLE REACTIONS. FREE ENERGY CALCNS. ENABLED PREDICTION OF OXION. TO ZNSO SUB4 AT LOWER, AND TO ZNO AT HIGHER TEMPS. THAT ZNSO SUB4 FORMATION AT HIGHER TEMPS. WAS POSSIBLE WAS ATTRIBUTED TO REACTIONS WITH GASEOUS SO SUB2. PRACTICAL ANALYSES CONFIRMED THE LIMITATION OF ZNSO SUB4 TO GREATER THAN 1PERCENT BYINTERACTION WITH ZNS. PRELIMINARY SURFACE REPLACEMENT BY DENSE ZNO COULD BE OBSD. IN POLARIZED LIGHT, OR STEPWISE ATTACK AT ACTIVE CENTERS BY THE ELECTRON MICROSCOPE. THAT FORMED ON HEXAGONAL ZNS, Q EQUALS 3.811, HAD THE LATTICE CONST. A EQUALS 3.249 ANGSTROM COMMON TO ZINCITE, WHEREAS ON CUBIC ZNS A EQUALS 5.412 IT WAS LESS DENSE, MORE FRIABLE, AND THUS MORE FAVORABLE TO OXION. INTERNALLY VIA CRYSTAL DEFECTS; IN THE LATTER CASE, THE OXIDE FILM ASSUMED A FLOCCULATED APPEARENCE THOUGH NOT ASSOCD. WITH CRYSTAL DECREPITATION.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

1/2 010 UNCLASSIFIED

TITLE--SATURATED VAPOR PRESSURE OF MERCURY TELLURIDE -U- PROCESSING DATE--16OCT70

AUTHOR-(04)-LEVITSKAYA, T.D., VANYUKOV, A.V., KRESTOVNIKOV, A.N., BYSTROV, V.P.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 559-60

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MERCURY COMPOUND, TELLURIDE, VAPOR PRESSURE, THERMAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0834 STEP NO--UR/0363/70/006/003/0559/0560

CIRC ACCESSION NO--AP0118010

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

2/2 010 UNCLASSIFIED

CIRC ACCESSION NO--AP0118010 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SATD. VAPOR PRESSURE FOR HGTE WAS DETD. OVER COMPNS. CORRESPONDING TO THE HG AND TE BOUNDARIES OF THE HOMOGENEITY REGION, USING THE STATIC COMPENSATION METHOD. THE PRESSURE OVER HGTW ENRICHED WITH HG IS CONSIDERABLY HIGHER THAN THE PRESSURE OVER HGTE ENREICHED WITH TE. THE VAPOR PRESSURE ABOVE HGTE SATD. WITH TE REMAINS CONST. AT 460-560DEGREES INDICATING A CONST. COMPN. OF THE SOLID PHASE; ABOVE THIS POINT, IT BEGINS TO INCREASE, ATTESTING TO ENRICHMENT OF THE SOLID PHASE BY TE AT HIGHER TEMPS. THE HEAT OF FORMATION FOR HGTE IS 16.3 KCAL-MOLE AND THE HEAT OF FUSION, 8.5 KCAL-MOLE. THE M.P. OF HG SUB1-X TE WAS 668DEGREESC, WHICH IN GOOD AGREEMENT WITH THE DTA CURVES; THE CORRESPONDING PRESSURE IS 12.5 ATM. FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW. USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

1/2 034 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--NEUTRAL DEFECTS IN MERCURY TELLURIDE -U-

AUTHOR-(03)-LEVITSKAYA, T.D., VANYUKOV, A.V., KRESTOVNIKOV, A.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 556-8

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--SINGLE CRYSTAL, CRYSTAL LATTICE DEFECT, HALL EFFECT, THERMAL EFFECT, IONIZATION, CHEMICAL BONDING, MERCURY COMPOUND, TELLURIDE, CRYSTAL GROWTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1889 STEP NO--UR/0363/70/006/003/0556/0558

CIRC ACCESSION NO--AP0115708

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

2/2 034 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115708

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY OF THE KINETICS OF ANNEALING OF HGTE SINGLE CRYSTALS GROWN BY THE BRIDGMAN TECHNIQUE INDICATES THAT THEY CONTAIN NEUTRAL DEFECTS. THIS IS ILLUSTRATED WELL BY COMPARING THE CHANGE IN THE TEMP. DEPENDENCE OF THE HALL COEFF. AND THE CURRENT CARRIER MOBILITIES AS A FUNCTION OF THE ANNEALING TIME AT VARIOUS TEMPS. THE OBSD. RAPID CHANGE IN THE PROPERTIES AT 204 AND 300DEGREES CAN BE CAUSED ONLY BY THE IONIZATION OF NEUTRAL DEFECTS ALREADY EXISTING IN THE CRYSTALS. DEFECTS THAT ARE NEUTRAL AT 204DEGREES BECOME IONIZED AT 353.5DEGREES, WHICH IS REFLECTED IN THE HALL CONST. AND THE CARRIER MOBILITY VALUES. SHORT TERM HIGH TEMP. TREATMENT OF SAMPLES ANNEALED AT 358.5DEGREES DOES NOT CHANGE THE PROPERTIES OF THE HGTE. THUS, NEUTRAL DEFECTS ARE PRESENT IN HGTE AFTER CRYSTN. BY THE BRIDGMAN METHOD, WHICH INHIBIT THE DIFFUSION OF HG INTO THE CRYSTAL WHICH REMAINS NEUTRAL TO SIMILIAR TO 360DEGREES BUT IONIZES AT HIGHER TEMPS. INASMUCH AS IONIZATION OF THESE DEFECTS LEADS TO AN INCREASE IN THE ACCEPTOR CONCN., THEY APPARENTLY REPRESENT EXCESS TE ATOMS. MORE LIKELY THAN NOT, THIS TYPE OF DEFECT IS ASSOCD. WITH THE CHANGE IN THE POSITION OF EXCESS TE IN THE LATTICE, PUSSIBLY WITH THE EMERGENCE OF TE-TE BONDS. FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

1/2 017 UNCLASSIFIED

TITLE--ELECTROTRANSPORT OF SILVER IN MOLTEN ZINC -U- PROCESSING DATE--18SEP70

AUTHOR-(03)-VANYUKOV, A.V., BELASHCHENKO, D.K., SAMEDINOV, U.K.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL. METALLOVED. 1970, 29(1), 182-4

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--LIQUID METAL, ZINC, SILVER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0696 STEP NO--UR/0126/70/029/001/0182/0184

CIRC ACCESSION NO--AP0105672

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

2/2 017 UNCLASSIFIED

CIRC ACCESSION NO--AP0105672 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TEMP. AND CONCN. DEPENDENCES OF THE EFFECTIVE CHARGE OF AG IN A MOLTEN SOLN. OF AG IN ZN WERE STUDIED. THE TESTS WERE CARRIED OUT AT 520, 560, AND 620DEGREES. THE CONTENT OF AG IN THE SPECIMEN WAS 0.003-3.5 AT. PERCENT. THE C.D. WAS 150-180 A.-CM PRIME2. IN THE SOLN. STUDIED, THE EFFECTIVE CHARGE OF AG IN ZN DOES NOT DEPEND EITHER ON THE COMPN. OR THE TEMP. AND IS (1.1 PLUS OR MINUS 0.3)E.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

UNCLASSIFIED

TITLE--DIFFUSION OF OXYGEN INTO CADMIUM TELLURIDE STUDIED WITH A MASS SPECTROMETRIC MICROANALYZER -U- PROCESSING DATE--17JUL70

AUTHOR--VOLOVATOV, F.F., INDENBAUM, G.V., VAAYUKOV, A.V.

COUNTRY OF INFO--USSR

SOURCE--FIZL. TVERD TELA 1970, 12(1), 22-5

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GAS DIFFUSION, OXYGEN, CADMIUM TELLURIDE, MASS SPECTROMETER, VISIBLE LIGHT QUANTUM GENERATOR, TEMPERATURE DEPENDENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1979/1999 STEP NO--UR/0181/70/012/001/0022/0025

CIRC ACCESSION NO--AP0048277

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

Acc. Nr: AP0048277

Abstracting Service: CHEMICAL ABST. 5-70

Ref. Code: UR0181

104045w Diffusion of oxygen into cadmium telluride studied with a mass-spectrometric microanalyzer. Vodovatov, F. F.; Indenbaum, G. V.; Vanyukov, A. V. (Inst. Stali Splavov, Moscow, USSR). *Fiz. Tverd. Tela* 1970, 12(1), 22-5 (Russ). The distribution of O in pure CdTe produced as a result of oxidn. at various temps. was studied by probing with a beam from an optical quantum generator and subsequent mass-spectrometric anal. Temp. dependences were detd. of the diffusion coeffs. of O in *p*- and *n*-type specimens.

A. Libackyj

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

UDC: 621.375.82

VANYUKOV, M. P., MITKIN, V. M., SEREBRYAKOV, V. A., SOKOLOV, D. V., and STARIKOV, A. D.

"Monopulse Lasers Using Neodymium Glass With Diffraction Divergence of Radiation"

Moscow, V sb. Kvant. elektronika (Quantum Electronics--collection of works) "Sov. radio," No 1(13), 1973, pp 85-89 (from RZh--Fizika, No 7, 1973, Abstract No 7D985)

Translation: An investigation is made of a number of monopulse lasers using neodymium glass with various optical resonator configurations for the purpose of determining the optimal variant of the master oscillator in a power laser device with intense brightness. The basic physical requirements for designing a stable monopulse oscillator with diffraction angular divergence of the radiation are formulated. Bibliography of 12. Authors' abstract

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

UDC 621.378.325

VANYUKOV, M. P., KRYZHANOVSKIY, V. I., SEREBRYAKOV, V. A., STARIKOV, A. D.

"Laser Systems for Generating High-Intensity Picosecond Light Pulses"

Moscow, Kvantovaya Elektronika, No. 5, 1971, pp 69-76

Abstract: A laser system with a radiation energy of 60-80 joules in a pulse of duration $(2-5)\cdot 10^{-11}$ sec was developed, and the energy densities of total surface and internal breakdown of active elements by pulses of various durations were determined. The authors note that a high-intensity laser system is required to heat a plasma up to thermonuclear temperatures and that the system should incorporate the possibility of producing radiation pulses of great power at a low divergence of the light beam. This paper is devoted to problems arising in developing the following: (1) a master generator of picosecond pulses with a radiation divergence close to the diffraction limit; (2) a multicascade amplifier system with minimum distortion of the wave front of the beam; (3) a nonaberrational optical system to concentrate radiation on the target. A multipass amplifier with an amplification coefficient of up to 10^3 was designed with which it was possible to obtain an output energy of 0.6 joule for a pulse length of $(5-10)\cdot 10^{-12}$ sec at an angle close to the diffraction limit while using the low-power master generator. Further amplification of the light beam raised the radiation energy up to 40 joules and provided a brightness in the diffraction core of the beam of $(4-5)\cdot 10^{19}$ w/sterad$\cdot$cm^2 and an axial brightness of more

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

VANYUKOV, M. P., et al, Kvantovaya Elektronika, No. 5, 1971, pp 69-76

than 10^{20} w/sterad·cm^2. The authors claim that this is higher than the known values of brightness obtained in powerful laser systems by an order of magnitude. Studies also showed that the energy density in a pulse at which the active elements of the amplifier cascades begin to breakdown intensively is 5-6 joule/cm^2 and changes very little with a change in the duration of the laser pulse in the range $5 \cdot 10^{-9}$ - $5 \cdot 10^{-11}$sec. Upon achieving these energy densities there was a light breakdown causing total dulling of the surface after only 4-5 bursts on the surface of the output end. In the opinion of the authors intensive self-focusing arising in the rods of the output amplifier cascades is primarily responsible for breakdown of the ends of the active elements. In neodymium glass there arise multiple intensive nets of self-focusing, a considerable portion of which end at the output face of the active element, and this determines the appearance of light breakdown at the face. In rods with a platinum admixture there were local breakdowns with the formation of bubbles, which in the case of self-focusing led to strong scattering of the radiation. The authors conclude that a further rise in the energy and power of the output radiation of solid state lasers will involve increasing the resistance of active elements to the action of the intense light field and the fabrication of active elements of greater cross section with higher optical homogeneity.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR UDC 621.38:61

LAGUNOVA, I. G., LIKHOVETSKAYA, L. L., VISHNEVSKIY, A. A., ROZENFEL'D, E. B., RAZYGRIN, B. A., VANYUKOV, N. P., and MALYSHEV, B. N.

"Irradiation of Metastases of Melanoma By Pulsed Laser"

V. sb. Ispol'z. optich. kvant. generatorov v sovrem. tekhn. i med. Ch. 203 (Use of Lasers in Contemporary Technology and Medicine. Parts 2-3 -- Collection of Works), Leningrad, 1971, p 102 (from RZh Elektronika i yeye Primeneniye, No 2, Feb 72, Abstract No 2A508)

TRanslation: Melanomas are first among primary malignant tumors which metastasiz to the skin, Use of laser emission in such cases is advisable in view of the possibility of simultaneous irradiation of several dozen tumor sites. Type GOS-500 and GOS-1000 pulsed neodymium lasers operating in a free pulse generation modes were used for irradiation. The output energy of the pulse fluctuated from 100 to 500 joules. The total density of the incident energy at the metastatic tumor varied from 1,000 to 5,000 joules/cm^2. Summary.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR UDC 621.373.826

VANYUKOV, M. P., KRYZHANOVSKIY, V. I., SEREBRYAKOV, V. A., STARIKOV, A. D.

"Laser Systems for Generation of Picosecond High-Brightness Light Pulses"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), Moscow, No 5, 1971, pp 69-76 (from RZh-Radiotekhnika, No 1, 1972, Abstract No 1D346)

Translation: A laser system with a radiation energy of 60-80 joules in a pulse of duration $(2-5)\cdot 10^{-11}$ seconds was developed, and the energy densities of the total surface and internal destruction of the active elements by pulses of different duration were determined. A multipass amplifier circuit with an amplification coefficient up to 10^3 was created, which, on using a low-power master oscillator, permitted an output energy of 0.6 joules to be obtained with a pulse duration of $(5-10)\cdot 10^{-12}$ seconds at an angle close to the diffraction limit. Further amplification of the light beam permitted an increase in the radiation energy to 40 joules. This insured a brightness in the diffraction core of the beam of $(4-5)\cdot 10^{19}$ watts/steradian-cm^2 and an axial brightness of more than 10^{20} watts/steradian-cm^2. There are 6 illustrations and an 18-entry bibliography.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

UDC 621.378.325

VANYUKOV, M. P., GORLANOV, A. V., LYUBIMOV, V. V., ORLOVA, I. B., PETROV, V. F.

"A Neodymium Glass Multichannel Monopulse Laser"

Moscow, Kvantovaya Elektronika, Sbornik Statey, No 4, "Sovetskoye Radio", 1971, pp 117-120

Abstract: The authors consider certain problems in the design of multichannel monopulse laser systems. An evaluation is made, and experimental data are presented on the influence which scattering of light in the gate has on the angular divergence of a beam from a laser with an unstable cavity. An experimental study is made of the limiting possibilities of a single-channel amplification system based on neodymium glass rods 45 mm in diameter and 600 mm long. A six-channel monopulse laser system is described with a total emission energy of 1 000 J and a pulse power of 15 GW. Four figures, bibliography of nine titles.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

UDC 778.37

VANYUKOV, M. P., YEVDOKIMOV, S. V., NILOV, YE. V., and CHERTKOV, A. A.

"A Laser With Periodic Modulation of Quality for High-Speed Filming"

Moscow, Kvantovaya Elektronika, No 3, 1971, pp 108-110

Abstract: This brief article examines a laser which emits individual series of light pulses at a wavelength of 530 nm at a repetition frequency of the pulse train of 15 kHz. The authors examine the design of a quality modulator of a master oscillator operating on neodymium glass. They describe the theoretical circuit of the radiation converter and cite the results of testing the oscillator. Figure 1 shows the master oscillator operating at a wavelength of 1060 nm and describes the operating elements. The quality modulator is an optico-mechanical system consisting of rotating rectangular prisms. The radiation frequency converter operates in visible radiation, since the photographic film used has a comparatively low sensitivity in the infrared band. The supply unit consists of 20 condensors, 200 μf each, and 20 inductance coils of 40 μh. This supply source ensures laser operation at a repetition frequency of 1/60 Hz. The required power does not exceed 500 w. The authors found that the radiation has the form of ordinary gigantic pulses from the laser. Their duration is 40-50 nsec and the scatter in amplitudes of the

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

VANYUKOV, M. P., et al., Kvantovaya Elektronika, No 3, 1971, pp 108-110

pulses does not exceed 20-25% for the first 10-12 pulses. With a pumping energy of 2000 J the total energy of the series of 30 pulses comprised 16 J at a wavelength of 1060 nm. After converting the radiation to the second harmonic, the total energy of the series of light pulses was 2.1 J at a wavelength of 530 nm. The authors mention that the frequency of pulse repetition obtained in the series is not maximal for equipment of this type. With increase in frequency, the efficiency of such an oscillator is improved and tends toward the value of the efficiency in a mode of free oscillation. The article contains 2 figures and a bibliography of 6 entries.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR UDC 621.373:530.145.6

AVDEYEVA, V. I., AL'PEROVICH, M. A., VANYUKOV, M. P., ISAYENKO, V. I., LEVKOYEV, I. I., SEREBRYAKOV, V. A., STARIKOV, A. D.

"Use of Liquid and Film Transmission Gates in a GOS-1000 Laser"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 2, Moscow, 1971, pp 69-73 (from RZh-Radiotekhnika, No 7, Jul 71, Abstract No 7D114)

Translation: Data are presented on a transmission gate based on a thin polymer film into which polymethyne dye is introduced, and on the use of this gate in a GOS-1000 laser as a Q-switch. Four illustrations, bibliography of five titles. Resumé.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

UDC: 621.378.325

AVDEYEVA, V. I., AL'PEROVICH, M. A., VANYUKOV, M. P., ISAYENKO, V. I., LEVKOYEV, I. I., SEREBRYAKOV, V. A., STARIKOV, A. D.

"Use of Translucent Liquid and Thin-film Gates in the GOS-1000 Laser"

Moscow, Kvantovaya Elektronika, No 2, 1971, pp 69-73

Abstract: The authors present data on a translucent laser gate based on a thin polymer film to which polymethyne dye has been added, and it is shown that such a film gate can be used along with a liquid gate to obtain high--power monopulse emission in the GOS-1000 laser. It is found that film and liquid gates can be used for Q-switching neodymium glass lasers with a large output beam aperture (45 mm or more). The described gates are fairly simple and can be used in serially produced industrial lasers type GOS-1000, in the analogous type GOS-300 unit and others without any appreciable change in the construction of the device or in the power supply circuit. The highest energy and emission power on the GOS-1000 laser in the monopulse mode (80 J and 2.5 GW) can be attained by using a gate which is a cell filled

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

AVDEYEVA, V. I. et al., Kvantovaya Elektronika, No 2, 1971, pp 69-73

with polymethyne dye solution. The new film gate described in this paper, which is a thin polymer film with polymethyne dye added to the film base, is most simple in use and provides comparatively high emission parameters in the GOS-1000 laser (50 J and 1.5 GW), has no optical components in its design, is suitable for use for long periods (8-10 months), and can be used repeatedly at comparatively low energies in the monopulse (20 J).

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

UDC 621.375.82

VANYUKOV, M. P., ISAYENKO, V. I., PASHININ, P. P., SEREBRYAKOV, V. A.
SIZOV, V. N., STARIKOV, A. D.

"Formation of Powerful Pulses With a Steep Leading Front in a Laser System With Passive Nonlinear Elements"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No. 1, Moscow, 1971, pp 35-41 (from RZh-Fizika, No 7, Jul 71, Abstract No 7D1147)

Translation: The change in the length of light pulses in passage through an illuminating medium of varying transparency was investigated. A nonmonotonic shortening of the length of the trailing pulse was observed under a change in the density of the light load. There was established a dependence of the region of maximum contraction of the light pulse on the magnitude of the light load for various concentrations of the illuminating solutions. There was also established an anomalous change in the process of illumination of a metallized film under its illumination by powerful light radiation. It is proposed that the effects observed be used for the formation of short pulses with a steep leading front. A neodymium glass laser system with a pulse length of 5-7 nsec, a steepness of the leading front of ~ 1 nsec, and a radiation power of 20 Gw was developed. 10 ref. Authors abstract

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR UDC: 621.373:530.145.6

VANYUKOV, M. P., ISAYENKO, V. I., PASHININ, P. P., SEREBRYAKOV, V. A., SIZOV, V. N., STARIKOV, A. D.

"Shaping of High-Power Pulses With a Steep Leading Edge in a Laser System With Passive Nonlinear Elements"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 1, Moscow, 1971, pp 35-41 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D177)

Translation: An investigation is made of the change in duration of light pulses during passage through illuminated media of different transparencies. A nonmonotonic reduction in pulse duration after passage through the medium is observed when there is a change in the density of the light load. A relationship is established between the region of maximum constriction of the light pulse and the magnitude of the light load for different concentrations of transilluminated media. An anomaly is found in the curve for the process of transillumination of a metallized film when it is exposed to intense light flux. Recommendations are made on using the observed effects for shaping short pulses with a steep leading edge, leading to development of a laser system based on neodymium glass with a pulse length of 5-7 nsec with a rise time of approximately 1 nsec and emission power of 20 GW. Five illustrations, bibliography of ten titles. Resumé.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

UDC 621.378.325

VANYUKOV, M. P., Doctor of Sciences, Deceased, KRYZHANOVSKIY, V. I., SEREBRYAKOV, V. A., SIZOV, V. N., STARIKOV, A. D.

"Multichannel Neodymium Glass Laser System with Picosecond Radiation Pulse Length"

Optiko Mekhanicheskaya Promyshlennost', No 12, 1972, pp 31-32.

Abstract: A powerful three-channel laser system made with neodimium glass with picosecond pulse length and an angular divergence near the diffraction limit is described. The output radiation energy of the device reaches 1,000 j with a pulse power of 10^{14} w.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

PAVLOV, V. A., VANYUKOV, S. A., and KUDRYASHOV, G. N.

"The Influence of Aerodynamic Drag Forces on Gyroscope Drift in the Event of Skewness of the Principal Axis"

Tr. Leningr. in-t aviats. priborost. (Works of Leningrad Institute of Aviation Instrument Manufacture), 1970, vyp. 66, pp 170-173 (from RZh-Mekhanika, No 1, Jan 71, Abstract No 1A87 by S. S. Rivkin)

Translation: The article presents results of an experimental verification of the appearance of systematic drift of a two-degree-of-freedom astatic gyroscope around the outer axis of suspension, caused by aerodynamic drag forces in the event of a skewed principal axis. An expression is given for the moment of aerodynamic drag forces appearing during rotation of the rotor, and its physical nature is ascertained. It is shown that the component of this moment along the axis of rotation of the inner gimbal ring, which appears if the principal axis of the gyroscope is skewed, gives rise to azimuthal gyroscope drift. An expression is given for the angular velocity of this drift. A description is given of the mock-up for laboratory verification of the gyroscope drift. An account is given of the nature

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

PAVLOV, V. A., et al., Tr. Leningr. in-t aviats. priborost. (Works of Leningrad Institute of Aviation Instrument Manufacture), 1970, vyp. 66, pp 170-173 (from RZh-Mekhanika, No 1, Jan 71, Abstract No 1A87 by S. S. Rivkin)

of the procedure for conducting the experiment. Results of experimental verification and calculation of the angular velocity of gyroscope drift are given in a table. A graph of calculated and measured gyroscope drift values is plotted according to the data of this table. It is shown that experimental results agree rather well with calculated data.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

1/2 011 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--ISOSTERIC ANALOGS OF ALPHA CHYMOTRYPSIN SUBSTRATES -U-

AUTHOR-(02)-ANTONOV, V.K., VANYUKOVA, N.A.

COUNTRY OF INFO--USSR

SOURCE--BIOKHIMIYA 1970, 35(1), 202-3

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TRYPSIN, ENZYME ACTIVITY, ORGANIC SULFUR COMPOUND, BENZENE DERIVATIVE, AMINE DERIVATIVE, HYDROLYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0871 STEP NO--UR/0218/70/035/001/0202/0203

CIRC ACCESSION NO--AP0055571

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

2/2 011 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0055571

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALPHA CHYMOTRYPSIN EXHIBITED SIMILAR SPECIFICITY, IN TERMS OF KSUBO-KSUBM AGAINST PHXCH(COSUB2ME)NHBZ (I, X EQUALS CHSUB2, S, AND NH) BUT WAS MUCH LESS EFFECTIVE IN CATALYZING THE HYDROLYSIS OF I (X EQUALS NME). INTRODUCTION OF THE BETA SUBSTITUENT SHARPLY DECREASED KSUBO BUT HAD LITTLE EFFECT ON THE APPARENT KSUBM.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

UDC 535.511.082.52

VANYURIKHIN, A. I., KUZNETSOV, Yu. A., MAYSTRENKO, V. F., TRON'KO, V. D.

"Recording the Oscillation Plane Angle of Linearly Polarized Infrared Radiation"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 8, August 1970, pp 30-33

Abstract: An efficient, compact Faraday modulator has been developed, with a ferrite-garnet magneto-optical element. On the basis of this modulator has been constructed a highly sensitive polarization unit which permits an angle to be recorded with an accuracy of 0.0002 degree. An analysis is made of the relationship of the sensitivity to the parameters of the optical system and the modulator. 3 figures, 9 bibliographic entries.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR UDC 547.963.3

VANYUSHIN, B. F., GALIYEV, M. S., KVARATSKHELIYA, M. T., and KOKURINA, N. A., Chair of Plant Biochemistry, Moscow State University imeni M. V. Lomonosov, and Laboratory of Bacterial Fertilizers, All Union Scientific Research Institute of Agricultural Microbiology

"The DNA Composition of Bacillus Megatherium Variants Obtained Through the Action of Certain Phages"

Moscow, Biologicheskiye Nauki, No 5 (89), 1971, pp 82-85

Abstract: A study of the mutability of microorganisms was performed on the basic strains P-57 and 28 of Bacillus megatherium. Mutants were obtained through exposure of these strains to phages and to ultraviolet light. DNA composition was determined by chromatography. While the DNA of the basic Bac. megatherium cultures belong to the AT type and had 41% of GC pairs, mutants 769 and 771 obtained from the P-57 strain by the action of phage PK form wrinkled colonies, and their DNA contains 41.9% and 43.1% GC pairs respectively Through the action of phage 201, dissociation of Bac. megatherium strain 28 can proceed without changes in DNA composition, giving rise to mutant 2875. Similarly, DNA composition in the ultraviolet mutant 122 is identical with that in the basic strain P-57. No methylated bases (5-methylcytosine or N^6-methyladenine) were found in the DNA of any of the above-mentioned cultures.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR UDC 547.963.3

VANYUSHIN, B. F., DEDIYEVA, YE. P., MAZIN, A. L., MITINA, V. S., and IVANOVSKIY, N. N., Interfaculty Laboratory of Bioorganic Chemistry, Moscow State University imeni M. V. Lomonosov, Chair of Biochemistry Saratov Medical Institute

"Some Structural Characteristics of DNA in Pasteurella pestis Strain EV"

Moscow, Biologicheskiye Nauki, No 12, 1970, pp 82-86

Abstract: DNA isolated from P. pestis EV cells is hyperchromic after thermal denaturation (32 to 34%). The molecule is two-strand and contains guanine (24.3 mol.%), cytosine (24.3 mol.%), adenine (25.6 mol.%), N^6-methyladenine (0.27 mol.%), thymidine (25.5 mol.%), and guanine+cytosine (48.6 mol.%). Some 56% of the nucleotide material is concentrated in the mono- and dipyrimidine sequences. P. pestis DNA also differs from some other bacterial DNA in having more dipyridine than monopyrimidine fragments, i. e., the Pur-Pyr-Pyr-Pur sequence is much less common than the Pur-Pyr-Pur sequence. This distribution explains why no bacterial DNA can form "molecular Hybrids" with DNA from animal cells. The nature of the distribution of pyrimidines in P. pestis DNA shows that bacterial DNA possesses some peculiarities of organization of nucleotide sequences that distinguishes it from the DNA of higher organisms.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

1/2 008 UNCLASSIFIED

TITLE--ADVANCES AND PROBLEMS IN STUDIES OF NUCLEIC ACIDS -U- PROCESSING DATE--04DEC70

AUTHOR--VANYUSHIN, B.F.

COUNTRY OF INFO--USSR

SOURCE--BIOL. NAUKI 1970, (4), 63-75

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NUCLEIC ACID, PROTEIN SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3009/0179 STEP NO--UR/0325/70/000/004/0063/0075

CIRC ACCESSION NO--AP0139042

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 008

CIRC ACCESSION NO--AP0139042

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW DISCUSSES THE MECHANISMS FOR TRANSMISSION OF GENETIC INFORMATION AND FOR PROTEIN SYNTHESIS IN A CELL.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

UNCLASSIFIED PROCESSING DATE--20NOV70

1/3 011

TITLE--THERMAL FRACTIONATION OF DNA ACCORDING TO BASE COMPOSITION -U-

AUTHOR-(03)-MAZIN, A.L., SULIMOVA, G.YE., VANYUSHIN, B.F.

COUNTRY OF INFO--USSR

SOURCE--MOLEKULYARNAYA BIOLOGIYA, 1970, VOL 4, NR 2, PP 265-274

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DNA, FREEZING, CHROMATOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0463/70/004/002/0265/0274

PROXY REEL/FRAME--1983/1395

CIRC ACCESSION NO--AP0054264

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

2/3 011 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0054264

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PROCEDURE HAS BEEN ELABORATED FOR THERMAL FRACTIONATION OF DNA ACCORDING TO BASE COMPOSITION. THE METHOD CONSISTS OF THREE MAIN CONSECUTIVE STAGES: (1) PARTIAL DENATURATION OF DNA AT A GIVEN TEMPERATURE (IN THE DNA MELTING RANGE) IN 0.01 M PHOSPHATE BUFFER, PH 6.8. (2) FIXATION OF PARTIALLY DENATURED STAGE OF DNA BY QUICK FREEZING AT THE LIQUID NITROGEN TEMPERATURE WITH SUBSEQUENT THAWING AT ROOM TEMPERATURE IN THE PRESENCE OF 1PERCENT FORMALDEHYDE. (3) SEPARATION OF NATIVE AND DENATURED DNA MOLECULES BY MEANS OF CHROMATOGRAPHY ON HYDROXYLAPATITE IN THE PRESENCE OF 0.5PERCENT FORMALDEHYDE. THE ABOVE METHOD OF FIXATION OF PARTIALLY DENATURED STAGE OF DNA EXCLUDES RENATURATION OF TOTALLY DENATURED MOLECULES. CHROMATOGRAPHY ON HYDROXYLAPATITE ENSURES QUANTITATIVE SEPARATION OF NATIVE AND DENATURED DNA: SINGLE STRANDED DNA ARE ELUTED AT A LOWER CONCENTRATION (0.12 M) OF PHOSPHATE BUFFER AS COMPARED TO DOUBLE STRANDED DNA (0.22 M). THE QUANTITY (F) OF DENATURED DNA HAS A LINEAR DEPENDENCE ON THE DENATURATION TEMPERATURE (T) AND CAN BE DESCRIBED BY THE REGRESSION EQUATION F EQUALS 7.4 T MINUS 431.8. BY THE METHOD OF STEP FRACTIONATION 11 FRACTIONS OF VARIOUS BASE COMPOSITION WERE ISOLATED FROM TOTAL ULTRASONIC TREATED CALF THYMUS DNA (PERCENTAGE OF GC VARIES FROM 30 TO 60). THE RELATIONSHIP BETWEEN THE COMPOSITION (PERCENTAGE OF GC) OF THESE FRACTIONS AND THE MEAN TEMPERATURE AT WHICH THEY WERE ISOLATED (T) IS CLOSE TO LINEAR AND MAY BE DESCRIBED BY THE FOLLOWING EQUATION: GC (MOLAR PER CENT) EQUALS 2.2 T-100.6. THE REGRESSION COEFFICIENT IS 2.2PERCENT GC PER 1DEGREE.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

3/3 011 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0054264

ABSTRACT/EXTRACT--THUS, THE ABOVE PROCEDURE ALLOWS TO FRACTIONATE DNA MOLECULES OR THEIR FRAGMENTS IN ACCORDANCE WITH THEIR MELTING TEMPERATURES AND, HENCE, IN STRICT CONFORMITY WITH THEIR BASE COMPOSITION.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

1/2 014 UNCLASSIFIED

TITLE--RARE BASES IN ANIMAL DNA -U- PROCESSING DATE--23OCT70

AUTHOR-(03)-VANYUSHIN, B.F., TKACHEVA, S.G., BELOZERSKIY, A.N.

COUNTRY OF INFO--USSR

SOURCE--NATURE LONDON 1970, 225(5236), 948-9

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DNA, MAMMAL, REPTILE, AMPHIBIAN, MOLLUSCA, INSECTA, SPONGE, CHEMICAL COMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0233 STEP NO--UR/0000/70/225/000/0948/0949

CIRC ACCESSION NO--AP0119229

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

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2/2 014 UNCLASSIFIED

CIRC ACCESSION NO--AP0119229 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRESENT KNOWLEDGE OF THE SPECIFICITY OF DNA METHYLATION IN ANIMAL CELLS IS SCANTY AND CONTRADICTORY. THE CONTENT OF 5 METHYLCYTOSINE (I) IN THE DNA FROM 16 ANIMALS BELONGING TO MAMMALIA, REPTILIA, AMPHIBIA, OSTECHTHTES, ECHINEDERMATA, MOLLUSCA, COELENTERATEA AND PORIFERA WAS DETD. G PLUS C PLUS I MOLES-100 MOLES RANGED FROM 44.8 (LIVER OF TESTUDO HORNSFIELDY (TURTLE)) TO 38.5 (SUBERTIES DOMUNCULA (SPONGE): WHOLE ANIMAL). I VARIED FROM 0.5-2.0 MOLES-100 MOLES DEPENDING ON THE SPECIES. THE MORE DISTANT THE SPECIES TAXONOMICALLY, THE GREATER WAS THE DIFFERENCE OF PROPORTION OF I IN THEIR DNA. ATTEMPTS TO FIND N PRIME6 METHYLADENINE IN DNA HYDROLYZATES BY PAPER CHROMATOG. OR UV SPECTROSCOPY FAILED. I SEEMS TO BE THE ONLY RARE BASE PRESENT CONSISTENTLY IN ALL ANIMAL DNA.

FACILITY: LAB. BIOORG. CHEM., MOSCOW STATE UNIV., MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

UDC: 621.396.67:624.97

BOL'SHUNOV, F. F., VANYUSHIN, V. N., DUBROVIN, V. F., DMITRIYEVSKIY, N. M., POLINOV, Yu. S., REZNIK, A. P.

"Antenna-Mast Support"

USSR Author's Certificate No 266868, filed 10 Jun 68, published 3 Jul 70 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1B102 P)

Translation: The proposed support consists of interconnected elements, a support framework mounted on a truck platform, an antenna with attached feeder channel, and mechanisms for folding and unfolding the support. To simplify folding and unfolding of the support, the feeder channel is made in the form of individual sections which are securely fastened to the elements of the mast and hinged together.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

Mathematics

VAPNIK, V.N.

GUKIA

SO: JPRS 55352
6 MAR 72

EFFECTIVE SEARCH ALGORITHMS FOR OPTIMAL SOLUTIONS WITH RESPECT TO EMPIRICAL DATA

All-Union Institute

[Article by V. N. Vapnik, A. Ya. Chervonenkis; Moscow, V Vsesoyuznoye Soveshchaniye po teoriyam upravleniya, Moscow, 1971, Referaty Dokladov, Russian, Part II, 1971, pp 113-117]

1. Many problems of searching for optimal solutions with respect to empirical data reduce to the following statement: find the minimum of the functional

$$J(\alpha) = \int_x F(x, \alpha)P(x)dx, \tag{1}$$

if the density $P(x)$ is unknown, but the sample $x_1, \ldots, x_l$ of fixed length l is given.

For the solution of this problem at the present time, a computer process is used connected with the ideas of minimizing the magnitude of the empirical functional

$$J_e(\alpha) = (1/l) \sum_{i=1}^{l} F(x_i, \alpha). \tag{2}$$

Its essence consists in the fact that the function $F(x, \alpha^*)$ minimizing (1) is approximated by the function $F(x, \alpha^{**})$ which minimizes (2).

The theoretical studies devoted to this search process for the minimum of (1) are aimed primarily at estimating the magnitude of the possible error.

In reference [1], we obtained the following estimate: the inequality

$$J_e(\alpha) - k\sqrt{(HQ(l) - \ln \eta)/l} \leq J(\alpha) \leq J_e(\alpha) + k\sqrt{(HQ(l) - \ln \eta)/l}. \tag{3}$$

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

VAPNIK, V. N.

"Pattern Recognition Learning Algorithms"

Algoritmy Obucheniya Raspoznavaniyu Obrazov [English Version Above], Sov. Radio Press, 1973, 201 pp (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1972, Abstract No 9V788).

Translation: The publication of this book has two purposes. First of all, to familiarize readers with various design ideas for algorithms successfully performing the task of recognition. Secondly, to allow the reader who is interested in problems of applications to produce with minimum effort programs realizing effective pattern recognition learning algorithms.

Abstracted article by article.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

UDC: 51:155.001.57:681.3.06

VAPNIK, V. N., LERNER, A. Ya., CHERVONENKIS, A. Ya.

"Methods of Instruction in Problems of Diagnosis"

Tr. Mezhdunar. simpoziuma po tekhn. i biol. probl. upr., 1968. Raspoznavaniye obrazov. Adaptivn. sistemy (Works of the International Symposium on Technical and Biological Problems of Control, 1968. Pattern Recognition. Adaptive Systems), Moscow, "Nauka", 1971, pp 31-40 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V618)

Translation: The authors consider relations between theory and heuristics in problems of teaching pattern recognition. A study is made of the fundamental relationship between the job of teaching pattern recognition and the problem of uniform convergence of frequencies to probabilities with respect to a class of events. The use of methods of instruction in problems of diagnosis is considered. Authors' abstract.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

1/2 045 UNCLASSIFIED

TITLE--NEW SYNTHETIC HEAT AND SOUND INSULATING MATERIAL ISOKAPRON -U- PROCESSING DATE--20NOV70

AUTHOR-(03)-TAUBIN, M.G., VAPNIK, Z.A., FARTOROVICH, L.M.

COUNTRY OF INFO--USSR

SOURCE--STROIT. MATER. 1970, (3), 27-8

DATE PUBLISHED--------70

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

TOPIC TAGS--CAPRONE, POLYAMIDE RESIN, VARNISH, ACOUSTIC INSULATION, HEAT INSULATION, CONSTRUCTION MATERIAL, AIRCRAFT MATERIAL/(U)ISOKAPRON INSULATING MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1241 STEP NO--UR/0228/70/000/003/0027/0028

CIRC ACCESSION NO--AP0128657

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

2/2 045 UNCLASSIFIED

CIRC ACCESSION NO--AP0128657 PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ISOKAPRON (I) (A MIXT. OF TWISTED AND STRAIGHT KAPRON (II) FIBERS BONDED WITH A POLYAMIDE VARNISH) WAS OBTAINED FROM CURLY II FIBER BY PRODUCTS. I CAN BE EXTENSIVELY USED IN THE CONSTRUCTION AND AIRCRAFT INDUSTRIES FOR HEAT AND SOUND INSULATION.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

VARAKIN, L.YE.

UDC 621.396.961

"Passive Noise Filtration And Partial Volume Of The Ambiguity Function"

Kiev, Izvestiya Vuzov SSSR--Radioelektronika, Vol XIV, No 10,1971,pp 1183-1190

Abstract: The problem is considered of the filtration of passive noise entering a radar receiver, with matching of signal and filter. Maximization of the ratio signal/noise + interference at the receiver output is the equivalent of minimization of the partial volume of an ambiguity function. It is shown that as a function of the distribution of passive noise, an optimum autocorrelation function can be found with which the partial volume is minimized (approaches zero). During this the filter remains matched with the signal. The autocorrelation function presented as an illustration is not realizable, but makes it possible to formulate the problem of the synthesis of signals, with an autocorrelation function close to that cited. The synthesis of such signals is an independent problem and is not considered in this paper. Because a considerable experience has accumulated in the field of synthesis of signals, the author believes that it is possible to assume that the problem of synthesis of signals for the best filtration of passive noise will be solved. Received by editors 18 Dec 70. 22 ref. 5 fig.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

VARAKIN, L.YE.

UDC 621.391

"Choice Of Signal System For Asynchronous Address Systems Of Communication With Coherent Reception"

Moscow, Elektrosvyaz', No 12, Dec 71, pp 51-59

Abstract: A solution is given for the following problems which arose during projection of an asynchronous address system of communication with code separation: 1) To justify the basis for a choice of a signal system and to determine the characteristics which it is necessary to know in order to compare signal systems and to choose the best; 2) To demonstrate that the choice of signal systems has a practical sense, i.e., that systems are possible which assure great noise immunity. Received by editors 30 Apr 71. 11 ref. 3 fig.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

Leonid Yegorovich Varakin

"Theory of Complex Signals"
(Teoriya slozhnykh signalov),
Moscow, 970, Sovetskoye Radio, 12,000 copies, 376 pages

ABSTRACT: The book presents the theory of complex signals. The reasons for the application of complex signals are explained and their fundamental properties are presented. The correlation properties of complex signals are investigated in detail. Various frequency-modulated (with linear and quadrature FM, multifrequency, etc.) and phase-manipulated (M-series, Legendre series, nonlinear, etc.) signals are examined. The solutions to problems of synthesizing frequency-modulated and phase-manipulated signals according to their autocorrelation functions and undefined bodies are presented. Some problems of constructing a system of orthogonal signals are examined.

The book is intended for scientists, engineers, and graduate and advanced undergraduate students in radio engineering specialties. The book has 88 figures, 18 tables, and 120 citations.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

Leonid Yegorovich Varakin, Sovetskoye Radio, 1970, 376 pages

The chapter headings are as follows:

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Chapter 1. General Properties of Complex Signals	5
Chapter 2. Correlation Function And Undefined Body	42
Chapter 3. Signals With Frequency Modulation	122
Chapter 4. Phase-Manipulated Signals	177
Chapter 5. Synthesis of Complex Signals	269
Bibliography	365
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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

VARAKIN, L. Ye.

UDC: 621.396.626

"Noise Immunity in Complex Signal Reception"

Moscow, Radiotekhnika, Vol. 25, No. 10, 1970, pp 19-25

Abstract: An investigation of the noise immunity is made in reception of complex signals, where there is a combination of limited medium-power noise and white noise with limited spectral density. Cases of the detection of signals with an unknown delay as well as detection in combination with measurement of the unknown delay are considered. Beginning with the assumptions that the interval of the delay indeterminacy is equal to the duration of the complex signal, and that the signal passing through the matched filter is ideally compressed -- i.e., that its autocorrelation function consists only of a fundamental peak of duration equal to the reciprocal of the signal spectrum width -- an equation is obtained for the signal-to-noise ratio at the matched filter output. It is found that the noise increases asymptotically with increasing

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

tains relationships which interconnect the structures of the electronic circuitry, the signals, and the processing algorithm; these enable him to set up a system for the design of radio receiver detection and signal filtration circuits. He begins this procedure by assuming that the physical processes in a four-terminal network can be described by differential equations, and that the design problem reduces to finding and solving them. He finds that for the detection of radio signals, it is simplest to realize the receiver circuits which can be described by the Hill equation. In his conclusion, he notes that the problem of engineering realization of the receiver circuits that can be described by the Hill equation is equivalent to the problem of structural synthesis of an electrical circuit from the specified differential equation, a process which involves no essential difficulties.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

VARAKIN, L. Ye., VLASOV, V. N., VOLKOV, L. N., KORICHNEV, V. V., KOSICHKIN, O. A.

UDC 621.391:82

"Problem of the Methods of Processing Complex Signals"

Tr. Mosk. elektrotekhn. in-ta svyzai (Works of Moscow Electrotechnical Communications Institute), 1969, vyp. 1, pp 48-53 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8A103)

Translation: A general survey of passive and active filters used for processing complex signals is presented. Comparison shows that in cases where no restrictions are imposed on the time of entry into synchronism, it is expedient to use active filtration with the exception of systems with signals having very broad spectra. For long signals it is necessary to use discrete matched filters. There are two illustrations and an eight-entry bibliography.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

VLASOV, V. N., VOLKOV, L. N., VARAKIN, L. Ye.

UDC 621.391.82

"Passive Reception of Binary Information Transmitted by Complex Signals"

Tr. Mosk. elektrotekhn. in-ta svyzai (Works of Moscow Electrotechnical Communications Institute), 1969, vyp. 1, pp 23-26 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8A98)

Translation: This article contains an investigation of a possible version of construction of a system for transmitting discrete information by complex signals. The complex signals are processed by matched filters in videofrequency delay lines. The initial phase of the received signal is random.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

1/2 032

UNCLASSIFIED

TITLE--THEORY OF COMPOUND SIGNALS -U-

PROCESSING DATE--04DEC70

AUTHOR--VARAKIN, L.YE.

COUNTRY OF INFO--USSR

SOURCE--THEORY OF COMPOUND SIGNALS (TEORIYA SLOZHNYKH SIGNALOV) MOSCOW, SOVETSKOYE RADIO, 1970, 373 PP

DATE PUBLISHED--------70

SUBJECT AREAS--NAVIGATION

TOPIC TAGS--SIGNAL ANALYSIS, MULTIPLEX SIGNAL, CORRELATION FUNCTION, FREQUENCY MODULATION, MONOGRAPH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3009/0322

STEP NO--UR/0000/70/000/000/0001/0373

CIRC ACCESSION NO--AM0139139

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 032

CIRC ACCESSION NO--AM0139139

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: PREFACE 3. CHAPTER I GENERAL PROPERTIES OF COMPOUND SIGNALS 5. II CORRELATION FUNCTION AND BODY OF INDETERMINANCY 42. III SIGNALS WITH FREQUENCY MODULATION 126. IV PHASE MANIPULATED SIGNALS 177. V SYNTHESIS OF COMPOUND SIGNALS 269. LITERATURE 365. SUBJECT INDEX 371. THE BOOK WAS WRITTEN FOR SCIENTISTS, ENGINEERS, POST GRADUATES AND SENIOR STUDENTS OF RADIO ENGINEERING.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

1/2 038 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--EFFECT OF ACCELERATION ON THE RECEPTION OF RADIOLOCATION SIGNALS -U-

AUTHOR--VARAKIN, L.Y.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, RADIOTEKHNIKA, NO 3, 1970, PP 13-15

DATE PUBLISHED--------70

SUBJECT AREAS--NAVIGATION

TOPIC TAGS--SIGNAL RECEPTION, SIGNAL CORRELATION, DIRECTION FINDING SIGNAL, SIGNAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1289 STEP NO--UR/0108/70/000/003/0013/0015

CIRC ACCESSION NO--AP0123248

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

2/2 038 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123248

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ANALYSIS IS CONDUCTED ON THE EFFECT THAT ACCELERATION HAS ON BODY SHAPE INDETERMINANCY OF COMPLEX SIGNALS IN THE AREA OF STRONG CORRELATION WITH RESPECT TO REAL SIGNAL PROPERTIES. INSTANCES OF SIGNAL REFLECTION AND DISTANCE VARIATION AT UNKNOWN ACCELERATION VALUES ARE STUDIED. ORIGINAL ARTICLE: NINE BIBLIOGRAPHIC ENTRIES.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

1/2 023 UNCLASSIFIED

TITLE--CRITERION OF COMPLEX SIGNAL SYNTHEIS -U- PROCESSING DATE--02OCT70

AUTHOR--VARAKIN, L.YE.

COUNTRY OF INFO--USSR

SOURCE--KIEV, IZVESTIYA VUZOV SSSR-RADIOELEKTRONIKA, VOL 13, NO 2, 1970, PP 181-185

DATE PUBLISHED-------70

SUBJECT AREAS--NAVIGATION

TOPIC TAGS--SIGNAL ANALYSIS, MATHEMATIC EXPRESSION, SIGNAL CORRELATION, CORRELATION ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1991/0152 STEP NO--UR/0452/70/013/002/0181/0185

CIRC ACCESSION NO--AP0110118

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

2/2 023 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0110118

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER ATTEMPTS TO CLARIFY A PECULIARITY OF THE PROBLEM OF SIGNAL SYNTHESIS, THAT AS YET NO FIRM BASIS HAS BEEN LAID FOR A CRITERION OF SUCH A SYNTHESIS. TO DO THIS, THE AUTHOR USES THE EXAMPLE OF SIGNAL SYNTHESIS THROUGH THE AUTOCORRELATION FUNCTION. THE CRITERION IS REQUIRED TO OBTAIN SMALL SIDE PEAKS IN THE CORRELATION FUNCTION; THIS, IN TURN, IS NECESSARY FOR SIGNAL SYNTHESIS. AT THE PRESENT TIME, TWO CRITERIA INVOLVING THE LEVEL OF THESE SIDE PEAKS ARE KNOWN: THE FIRST IS THE MINIMAX; THE SECOND, THE MEAN SQUARE CRITERION. THE FIRST INVOLVES SUCCESSIVE MINIMIZATION OF THE MAXIMUM SIDE PEAKS; THE SECOND INVOLVES MINIMIZATION OF THE MEAN SQUARE VALUE OF THE SIDE PEAKS. FROM THE PRACTICAL POINT OF VIEW, THE SECOND IS PREFERABLE, BUT INVOLVES A GREAT DEAL OF MATHEMATICAL DIFFICULTY. THIS PAPER SHOWS THE EXPEDIENCY OF USING THIS SECOND CRITERION, AND DOES IT BY CONSIDERING THE EFFECT OF THE SIDE PEAKS ON THE FALSE ALARM PROBABILITY.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

UDC: 621.391:519.2

VARAKIN, L. Ye.

"Theory of Complex Signals"

Teoriya slozhnykh signalov (cf. English above), Moscow, "Sov. Radio", 1970, 375 pp, ill. 1 r. 28 k. (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7A24)

Translation: A theory of complex signals is proposed. The necessity for using complex signals is explained, and their fundamental properties are given. The correlation properties of complex signals are studied in detail. Consideration is given to various frequency-modulated (with linear and quadratic FM, multifrequency, etc.) and phase-keyed (M-sequences, Legendre sequences, nonlinear, etc.) signals. Solutions are given for problems of synthesizing frequency-modulated and phase-keyed signals from their autocorrelation functions and fields of indeterminacy. Several problems are considered in the construction of systems of orthogonal signals. The book is written for scientific workers, engineers, graduate students and students in advanced courses in radio engineering. 88 illustrations, 18 tables, bibliography of 120 titles. Resumé.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

VARAKIN, L. Ye.

UDC 621.391

"Criterion of Complex Signal Synthesis"

Kiev, Izvestiya Vuzov SSSR-Radioelektronika, Vol 13, No 2, 1970, pp 181-185

Abstract: This paper attempts to clarify a peculiarity of the problem of signal synthesis, that as yet no firm basis has been laid for a criterion of such a synthesis. To do this, the author uses the example of signal synthesis through the autocorrelation function. The criterion is required to obtain small side peaks in the correlation function; this, in turn, is necessary for signal synthesis. At the present time, two criteria involving the level of these side peaks are known: the first is the minimax; the second, the mean-square criterion. The first involves successive minimization of the maximum side peaks; the second involves minimization of the mean-square value of the side peaks. From the practical point of view, the second is preferable, but involves a great deal of mathematical difficulty. This paper shows the expediency of using this second criterion, and does it by considering the effect of the side peaks on the false alarm probability.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

UDC 621.391.14

VARAKIN, L. YE., Active Member of the Scientific and Technical Society of Radio Engineering, Electronics and Communications imeni A. S. Popov

"Correlation Properties of Derivative Signals"

Moscow, Radiotekhnika, Vol 27, No 1, 1972, pp 6-9

Abstract: The correlation properties of systems of derivative signals formed from the Walsh functions and M-sequences were investigated. In constructing asynchronous address communication systems a large number of different signals with respect to shape with good correlation properties, that is, with a low level of side peaks of the mutual correlation functions, are required. A number of methods of constructing the signal systems are known. In spite of the sharp difference between these methods, they are based on the common integral property of mutual correlation functions. Cutting a segment out of the M-sequence used to construct the signal systems means multiplication of it by the generating signal in the form of a square pulse with duration equal to the length of the segment. A study was made of the method of formation of signal systems using multiplication of the signals. Correlation functions of the derivative signals are derived, and descriptions are presented for wide band and narrow band generating signals. The signal multiplication method leads to a decrease in the side peaks of the mutual correlation function of the

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

VARAKIN, L. YE., Radiotekhnika, Vol 27, No 1, 1972, pp 6-9

derivative signals only if the base of the generating signals $F_V T$ is greater than the base of the initial signals so that $\sqrt{F_V T} > F_U T$ (F_U is the spectral width of the initial signals, and F_V is the spectral width of the generating signals). The method with a narrow band generating signal does not lead to the creation of large signal systems with a low level of side peaks of the auto-correlation functions. In this respect it is inferior to the method with wide band generating signals. In the case of wide band generating signals, if there are several good generating signals, the method permits more derivative signals to be obtained than there were initial signals.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

UDC 669.295:620.187

VARAKINA, L. P., POLYANSKIY, V. M. and SHAMALO, V. V.

"A Method of Producing VT3-1 Titanium Alloy Foil for Electron Microscopy Studies"

Moscow, Zavodskaya laboratoriya, Vol 38, No 4, 1972, pp 462-464

Abstract: Microstructure examinations of metals and alloys by transmission electron microscopes require fine foil of the test material. The study described here deals with methods of preparing the test specimens as well as with structural changes occurring in the material in the process of electrospark cutting. Involved here were thin sections of VT3-1 titanium alloy. Following electrospark cutting, the specimen's surface layer over a depth of 0.2-0.3 mm showed β-phase and TiC formations with crystal lattice periods of 3.25 and 4.28 Å, respectively. Below the 0.2-mm depth, the α-phase crystal lattice periods of the material become constant. This means a thickness requirement of 0.5 mm on electrospark-cut test blanks for making test foil. The VT3-1 alloy for the initial blanks was heat treated under two procedures: 1) hardening from 850°C, holding for 30 min, cooling in water; 2) hardening as above and subsequent aging at 600°C for 4 hrs. (2 illustrations)

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

1/2 035 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--OPTICAL SENSITIVITY AND POLARIZABILITY ANISOTROPY OF CROSSLINKED POLYSILOXANES -U-

AUTHOR-(04)-RISKINA, M.A., SOKOLOV, S.I., VARAKSIN, M.E., KURLOVA, T.V.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(4), 890-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYSILOXANE, BENZENE DERIVATIVE, NITRILE, FLUORINATED ORGANIC COMPOUND, ELASTOMER, ANISOTROPY, OPTIC PROPERTY, POLYMER CROSSLINKING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0681 STEP NO--UR/0459/70/012/004/0890/0894

CIRC ACCESSION NO--AP0124353

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

2/2 035 UNCLASSIFIED

CIRC ACCESSION NO--AP0124353 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE APPLICATION OF TENSION CHANGES THE BIREFRINGENCE OF POLY(METHYLVINYLSILOXANE), POLY(METHYLVINYLPHENYLSILOXANE), POLY(METHYL(GAMMA CYANOPROPYL)SILOXANE), AND POLY(METHYL(TRIFLUOROPROPYL)SILOXANE). THE INCREASE OF THE ELASTOMERS' CROSSLINKING HAS NO EFFECT ON THEIR OPTICAL SENSITIVITY (C SUB0) AND THE SEGMENTAL ANISOTROPY (DELTA ALPHA). THE REPLACEMENT OF ME WITH PH OR F SUB3 CCH SUB2 CH SUB2 GROUPS CHANGES DELTA ALPHA FROM NEGATIVE 16.5 TIMES 10 PRIME NEGATIVE25 TO NEGATIVE 17.4 TIMES 10 PRIME NEGATIVE 25, OR NEGATIVE 2.4 TIMES 10 PRIME NEGATIVE25, RESP. THE TEMP. INCREASE EITHER INCREASES OR HAS NO EFFECT ON C SUB0 DEPENDING ON THE DONFIGURATIONAL CHANGES OF THE ELASTOMER HELIXES AND THE SIDE GROUPS.

FACILITY: MOSK. INST. KHIM. MASHINOSTR., MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

681.846:534.11

RAGUL'SKIS, K. M., NAVITSKAS, A. Y., VARANAUSKAS, P. A., CHEPULKAUSKAS, A. V.

"Methods of Studying Tape Movement"

Nauchn. Tr. Vyssh. Uchebn. Zavedeniy LitSSR. Vibrotekhnika [Scientific Works of Higher Educational Institutions of LitSSR. Vibration Techniques], No. 1, 1969, pp 63-72 (translated from Referativnyy Zhurnal Metrologiya I Izmeritel'naya Tekhnika, No. 4, 1970, Abstract No. 4.32.432, unsigned)

Translation: Methods are presented for measuring oscillations of a magnetic tape during operation of tape drive mechanisms. A circuit for measurement of transverse oscillations of a tape with uneven range of transverse displacement due to contact pressure on the head with simultaneous measurement of skew oscillations and oscillations perpendicular to the plane of the tape is described. An analysis is presented of the structure of the electric portion of the measuring apparatus. Six illustrations, nine biblio. refs.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

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UDC: 661.143:546.48'221

SHCHUL'MAN, V. M., POPOV, V. P., REDCHENKO, V. T., VARAND, V. L., ZEGZHDA, T. V.

"A Thiourea Method of Synthesizing Cadmium Sulfide for Phosphors"

Sb. nauch. tr. VNII lyuminoforov i osobo chist. veshchestv (Collected Scientific Works of the All-Union Scientific Research Institute of Phosphors and Extra Pure Materials), 1971, vyp. 5, pp 144-150 (from RZh-Khimiya, No 7, Apr 72, Abstract No 7L175)

Translation: A hydrogen sulfide free method of synthesizing CdS is developed which is based on deposition of CdS from an aqueous solution of $CdSO_4$ by thiourea in the presence of NH_3. The resultant CdS contains 98% or more of the basic substance, and 10^{-4}% or less of heavy metal impurities (Fe, Cu, Ni and Co combined). The cadmium sulfide synthesized by the thiourea method is suitable for making luminescent compositions of various grades. The diagram for synthesis of cadmium sulfide is given. Bibliography of 13 titles. Resumé.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--COMPLEXES OF COPPER I, SILVER I, AND GOLD I CHLORIDES WITH SELENOUREA -U-

AUTHOR-(03)-VARAND, V.L., SHULMAN, V.M., KHLYSTUNOVA, E.V.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 450-2

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COPPER COMPLEX, SILVER COMPOUND, GOLD COMPOUND, ORGANOSELENIUM COMPOUND, UREA, COMPLEX COMPOUND, IR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0638 STEP NO--UR/0062/70/000/002/0450/0452

CIRC ACCESSION NO--AP0119550

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

2/2 019 UNCLASSIFIED

CIRC ACCESSION NO--AP0119550 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TREATING 60 ML 0.04M CUCL SUB2 WITH COOLING WITH 50 ML 0.2M SELENOUREA IN NHCL GAVE INITIALLY A VIOLET PPT. WHICH DISSOLVED AND DEPOSITED A COLORLESS COMPLEX WITH CU SUB2 CL SUB2, 2SEC(NH SUB2) SUB2.2CUCL, ALONG WITH FORMATION OF (SECNH SUB2:NH) SUB2. REACTION OF SELENOUREA WITH AGCL GAVE AGCL.2SEC(NH SUB2) SUB2. HAUCL SUB4 AND SELENOUREA (4 MOLES) REACTED IN AQ. HCL BORAX TO FORM COLORLESS AUCL.2SEC(NH SUB2) SUB2. THE IR SPECTRA OF THE PRODUCTS INDICATED THAT THE SELENOUREA BONDS TO THE METAL VIA THE SE ATOM.

FACILITY: INST. NEORG. KHIM., NOVOSIBIRSK, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

UDC 533.9.08

VARANOV, R.B., MERIAKRI, V.V. [In-t radiotekhn. i elektron. AN SSSR--Institute of Radio Engineering And Electronics, AS, USSR]

"Device For Plasma Diagnostics"

USSR Author's Certificate No 204302, filed 18 Mar 65, published 4 May 70 (from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11A255P)

Translation: A device patented for plasma diagnostics with the aid of a microwave quasioptical beam formed by lenses, and containing an analyzer, differs in the fact that with the object of registration of the higher modes for determination of the parameters of the plasma layer which result from interaction of waves, the analyzer consists of a receiving waveguide, transient section, matching adapter, and a number of microwave radiation detectors. With the object of a more precise identification of the radiation, the microwave radiation detectors are made in the form of directional couplers, each of which is tuned to one wave of a higher order.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

1/2 012 UNCLASSIFIED

TITLE--MILITARY AND PATRIOTIC EDUCATION OF STUDENTS OF THE MEDICAL INSTITUTE -U- PROCESSING DATE--20NOV70

AUTHOR-(03)-KAZANTSEV, V.V., VARANOVSKIY, YA.M., DYMCHENKO, D.D.

COUNTRY OF INFO--USSR

SOURCE--VOYENNO-MEDITSINSKIY ZHURNAL, NO 3, 1970, PP 16-18

DATE PUBLISHED--------70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--MEDICAL TRAINING, MEDICAL INSTITUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0410 STEP NO--UR/0177/70/000/003/0016/0018

CIRC ACCESSION NO--AP0134178

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

2/2 012

UNCLASSIFIED

CIRC ACCESSION NO--AP0134178 PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE PRESENT ARTICLE WE WOULD LIKE TO SHARE EXPERIENCE IN THE MILITARY AND PATRIOTIC EDUCATION OF STUDENTS OF THE LENINGRAD SANITARY HYGIENIC MEDICAL INSTITUTE. THAT WORK IS PLANNED AND ORGANIZED BY THE PARTY AND KOMSOMOL COMMITTEES AND ALSO BY THE TRADE UNION ORGANIZATIONS. A LARGE ROLE IN THE IMPLEMENTATION OF THE TASKS OF MILITARY AND PATRIOTIC EDUCATION BELONGS TO THE CHAIRS OF THE SOCIAL SCIENCES AND ALSO TO A NUMBER OF CLINICAL AND THEORETICAL CHAIRS WHOSE PROGRAM OF INSTRUCTION INCLUDES CERTAIN APPLIED MILITARY AND MAINLY MILITARY MEDICAL ASPECTS.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

UDC 617-001.17-085.38-72

VARAVVA, L. A.

"A Modified Apparatus for Intraosseous Infusions and the Irrigation of Burn Wounds"

Leningrad, Vestnik Khirurgii imeni I. I. Grekova, Vol 106, No 5, May 71, pp 107-109

Abstract: An apparatus was designed by means of which intraosseous infusions in open fractures and irrigation of burn wounds can be conveniently carried out. The apparatus consists of a sterilized container for the antiseptic solution (a bottle or a corrosion-proof metal vessel) and an O_2 cylinder. The container is equipped with a stopper that has an outlet for ejecting the solution and an inlet connected to the O_2 cylinder. After the container has been put under O_2 pressure by opening the reduction valve of the cylinder, the solution is ejected through the outlet of the container. The outlet is equipped with interchangeable nozzles of various diameters and types. When a nozzle with a slit opening is used, the solution is ejected in the form of a spray (shower) rather than in a steady stream.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

VARAZASHVILI, N. G. UDC 627.81.034(47+57)

"Problems of Planning and Designing Reservoirs and Forecasting the Revision of Shorelines Under the Conditions of Mountainous and Foothill Zones (in the Example of Georgia)"

Tr. koordinats. soveshchaniy po gidrotekhn. (Works of the Coordinating Meetings on Hydroengineering), No 59, 1970, pp 72-80 (from RZh-Elektrotekhnika i Energetika, No 2, Feb 71, Abstract No 2 D42)

Translation: The study of geological and geomorphological conditions, hydrometeorological and operating conditions and also many years of observations of development of banks at a number of the mountain reservoirs of Georgia (Tbilisi, Sionskiy, Khramskiy, Gumatskiy, Tkibuli, Ladzhanurskiy, and Shaorskiy) permitted discovery of the basic laws of formation of the banks of mountain reservoirs. According to the research data, the dimensions, rate and nature of revision of the banks basically depend on the lithological composition, nature of bedding and state of the rock and also the amplitude and displacement rate of the water level in the reservoir. The role of wave action has, in this case, subordinate significance. The basic factors causing the development of the bank formation process on mountain reservoirs are the following: a) variation of the basic physical-mechanical properties of the rock and disruption of the slope statics

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

VARAZASHVILI, N. G., Tr. koordinats. soveshchaniy po gidrotekhn., No 59, 1970, pp 72-80

during periodic water saturation and drying connected with periodic decreases in levels; b) tectonic dislocation of bedrock in the banks; c) significant development of slide and avalanche phenomena and seismic effects. Determination of the elements of the erosion profile (the erosion boundaries and bank angles) by theoretical relations in which there is the possibility of considering the variation of physical-mechanical properties of the soil, the magnitudes of the bottom water velocities and time of effect of waves of given height at the calculated level which is especially significant under conditions of inconstancy of the water level in the reservoir, is considered most expedient. Consideration of the listed indexes becomes possible when studying the stability of soil particles on the bank slope and compiling the equations of equilibrium beginning with the theory of calculating structures with respect to limit constants considering the dependence of the fatigue strength of the soil on the dislocation with respect to time. There is 1 illustration and 2 tables.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

1/2 018 UNCLASSIFIED

TITLE—SPECTROPHOTOMETRIC INVESTIGATION OF SOME WOLF RAYET AND OF TYPE STARS -U- PROCESSING DATE--09OCT70

AUTHOR-(02)-KAZARYAN, M.A., VARDANYAN, K.V.

COUNTRY OF INFO--USSR

SOURCE--SOOBSHCHENIYA BYURAKANSKOY OBSERVATORII AKADEMIYA NUAK ARMYANSKOY SSR, 1970, NR 41, PP 46-55

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, ASTRONOMY,ASTROPHYSICS

TOPIC TAGS--STAR, ELECTRON DENSITY, SPECTROPHOTOMETRIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0076 STEP NO--UR/2620/70/000/041/0046/0055

CIRC ACCESSION NO--AP0114472

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

2/2 018 UNCLASSIFIED

CIRC ACCESSION NO--AP0114472 PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPECTROPHOTOMETRIC INVESTIGATION OF SOME WOLF RAYET AND OF TYPE STARS IN THE ASSOCIATION AROUND P CYG HAVE BEEN MADE. THE SPECTROPHOTOMETRIC TEMPERATURES AND THE RELATIVE INTENSITIES OF EMISSION BANDS OF THESE STARS WERE OBTAINED. THE TRUE TEMPERATURES OF THESE STARS WERE OBTAINED WITH THE COMBINATION OF ZANSTRA'S AND AMBRATZUMIAN'S FORMULAE. THE OPTICAL THICKNESSES OF THE SHELLS FOR L SUBC RADIATION, THE RADIUS OF THE TWICE IONIZED HELIUM ZONE AND THE ELECTRON DENSITIES AT THE BOTTOM OF THE SHELLS HAVE BEEN CALCULATED AS WELL.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

1/2 020 UNCLASSIFIED

TITLE--STRESS CONCENTRATION AROUND A HOLE OF GENERAL FORM IN AN ISOTROPIC PHYSICALLY NONLINEAR PLATE DURING PURE SHEAR -U-

PROCESSING DATE--16OCT70

AUTHOR--VARDANYAN, L.M.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK ARMIANSKOI SSR. IZVESTIIA, MEKHANIKA, VOL. 23, NO. 1,1970,P. 58-65.

DATE PUBLISHED-------70

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

TOPIC TAGS--STRESS CONCENTRATION, HOLE IN STRUCTURE, THIN PLATE, SHEAR STRESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0944

STEP NO--UR/0430/70/023/001/0058/0065

CIRC ACCESSION NO--AP0118110

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

2/2 020 UNCLASSIFIED

CIRC ACCESSION NO--AP0118110 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF AN UNBOUNDED, ISOTROPIC, PHYSICALLY NONLINEAR PLATE WITH AN ARBITRARILY SHAPED HOLE, SUBJECTED TO PURE SHEAR AT INFINITY WITH THE EDGE OF THE HOLE BEING FREE FROM EXTERNAL LOADS. THE PROBLEM IS POSED FOR STRENGTHENING PHYSICALLY NONLINEAR MATERIALS WITH SLIGHT DEVIATION FROM HOOK'S LAW, AND THE SOLUTION WITHIN THE LIMITS OF GEOMETRICAL LINEARITY OF STRAINS IS REDUCED TO THE INTEGRATION OF A FOURTH ORDER DIFFERENTIAL EQUATION. FORMULAS ARE DERIVED FOR THE STRESS CONCENTRATION COEFFICIENT AT THE HOLE CONTOUR. FACILITY: EREVANSKII POLITEKHNICHESKII INSTITUT, YEREVAN, ARMENIAN SSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

1/2 020 UNCLASSIFIED

TITLE--POLARIMETRIC INVESTIGATION OF LONG PERIOD VARIABLE STARS -U- PROCESSING DATE--30OCT70

AUTHOR--VARDANYAN, R.A.

COUNTRY OF INFO--USSR

SOURCE--ASTROFIZIKA, VOL. 6, FEB. 1970, P. 77-87

DATE PUBLISHED--------70

SUBJECT AREAS--ASTRONOMY,ASTROPHYSICS

TOPIC TAGS--VARIABLE STAR, POLARIMETER, LIGHT POLARIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1764 STEP NO--UR/0388/70/006/000/0077/0087

CIRC ACCESSION NO--AP0125380

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

2/2 020 UNCLASSIFIED

CIRC ACCESSION NO--AP0125380 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. QUANTITATIVE ANALYSIS OF THE RESULTS OF POLARIMETRIC OBSERVATIONS OF LATE TYPE STARS (SPECTRAL TYEPS M, N, R, AND S). ATTENTION IS GIVEN TO THE DEGREE OF POLARIZATION OF LIGHT FROM AB CYG, AK PEG, VCVN, AND RX BOO AS A FUNCTION OF BRIGHTNESS AND WAVELENGTH. THE DATA OBTAINED CAN BE USED FOR COMPARISON OF TWO POSSIBLE MECHANISMS RESPONSIBLE FOR THE INTRINSIC POLARIZATION: (1) MOLECULAR SCATTERING OF LIGHT, AND (2) NONTHERMAL (SYNCHROTRON) EMISSION. FACILITY: BIURAKANSKAIA ASTROFIZICHESKAIA OBSERVATORIIA, YEREVAN, ARMENIAN SSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

1/2 022 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--ON ONE PROBLEM OF THE RADIATION TRANSFER IN CONTINUUM -U-

AUTHOR-(02)-VARDANYAN, R.S., YENGIBARYAN, N.B.

COUNTRY OF INFO--USSR

SOURCE--SOOBSHCHENIYA BYURAKANSKOY OBSERVATORII AKADEMIYA NAUK ARMYANSKOY SSR, 1970, NR 41, PP 91-98

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, ATMOSPHERIC SCIENCES

TOPIC TAGS--ATOM, IONIZATION, ATMOSPHERIC RADIATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0063 STEP NO--UR/2620/70/000/041/0091/0098

CIRC ACCESSION NO--AP0114459

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

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UNCLASSIFIED

CIRC ACCESSION NO--AP0114459 PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NON LINEAR PROBLEM OF THE RADIATION TRANSFER IN THE PLANE PARALLEL LAYERS, WHEN THE LAYERS CONSIST OF ATOMS WITH TWO ENERGETIC LEVELS, BASIC AND IONISATION, IS CONSIDERED. FOR SOLUTION OF THE PROBLEM AMBARZUMIAN'S METHOD OF SELF COORDINATED OPTICAL DEPTHS IS APLICATED.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

VARDANYAN, V. A., Yerevan Medical Institute

"The Effect of a Magnetic Field on Blood Flow"

Moscow, Biofizika, Vol 18, No 3, May-Jun 73, pp 491-496

Abstract: Blood flow in the large arteries in the presence of a homogeneous magnetic field was studied by the mathematical methods of magneto hydrodynamics. A rough model of the blood vessel in the form of a cylindrical tube was used. It was learned that where all other conditions are normal (pressure gradient, heart capability, peripheral resistance to blood flow) a magnetic field reduces the velocity of the blood flow and the minute volume of blood. The organism can counteract this external influence, reducing the velocity of blood flow but keeping the per-minute expenditure of blood unchanged. In this case the pressure gradient increases, which is possible in two cases -- decrease in diastolic pressure and intensified mechanical activity by the heart (which may be fatal to a weak heart). A strong magnetic field (unlike the weak geomagnetic field) is a harmful factor which can not only aggravate various vascular illnesses but also may affect heart activity. This is relevant to practices at plants and enterprises where a significant "magnetic anomaly" is found. Considering

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

VARDANYAN, V. A., Biofizika, Vol 18, No 3, May-Jun 73, pp 491-496

the characteristics of the magnetic field's effect on hemodynamics, it may be recommended for therapeutic use, for example with hypertension, to stop internal bleeding, and in general to regulate the velocity of blood flow. It should be kept in mind that these conclusions are limited in nature because they were drawn on the basis of a rough model, a cylindrical tube with rigid walls; consideration of the elasticity of blood vessels would clarify the matter further.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

UDC 531.787

VARDANYAN, V. R., STEPANYAN, A. A., MAMYAN, S. Z., OGANESYAN, M. G., and GAMBARYAN, A. A.

"New Combination Sensor for Registration of the Pressure Shock Waves in Air"

Nauch. Tr. Yerevan. Politekhn. In-ta [Scientific Works of the Yerevan Polytechnic Institute], 1972, Vol 36, No 4, p 1, pp 152-158 (from Referativnyy Zhurnal, No 10, Oct 72. 32. Metrologiya i Izmeritel'naya Tekhnika. Single Issue. Abstract No 10.32.714)

Translation: A new combination altitude sensor is described. It has a movable electrode (membrane) and an immovable electrode located parallel to it. The capacitance originates between the upper movable membrane, on which acts the shock wave, and the plane immovable electrode, the gap between which comprises fractions of a millimeter. Five illustrations, five bibliographical references.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

UDC 621.373.826:550.3

VARDANYAN, A. S., ISKHAKOV, I. A., SUKHONIN, Ye. V., and SOKOLOV, A. V.

"Measurement of Atmospheric Absorption in the Wavelength Range of λ = 980-1600 Microns" by the Radioastronomical Method"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses--collection of works) "Nauka," 1972, pp 61-65 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10D380)

Translation: The described method is based on relative measurements of the sun's radiation, attenuated by the atmosphere, at various values of its elevation above the horizon. For the measurements, a radiotelescope with an immersion detector of n-type InSb was used. The measurements were made at sea level in the temperate latitudes. The minimum measured absorption value was obtained for the 1260 micron wave in water vapor and in the transparency window, and was equal to about 0.6 dB/hr·m^{-3} at $\theta = 0°$.
A. K.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203420020-6

USSR

UDC 542.91+542.951.2

KAZARYAN, L. Z., and VARDANYAN, TS. KH., Yerevan Polytechnical Institute imeni K. Marks

"Synthesis of Dialkyl Acetals of β-N,N-Dialkylaminobutyraldehydes"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 24, No 9, 1971, pp 782-785

Abstract: A series of β-N,N-dialkylaminobutyraldehydes was synthesized. A mixture of 17.4 g morpholine, 20.85 g β-chlorobutyraldehyde dipropyl acetal, 15 g anhydrous sodium iodide, and 50 ml propanal was stirred at 90-95° for 30 hrs. The propanal was removed and the solid was filtered off. To the filtrate, 6 g of flacial acetic acid was added, the unreacted β-chlorobutyral was extracted with ether and the residue was then treated with concentrated aqueous base solution. The aminobutyral formed is extracted with either, dried, and evaporated to yield 11.2 g dipropylacetal of β-morpholinobutyraldehyde, b.p. 160°/8mm, d_4^{20} 0.9304, n_D^{20} 1.4450. Other acetals were prepared in similar manner.

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TITLE--ALKYLATION OF PHENOLS AND THEIR ETHERS BY ISOPROPENYL ACETYLENIC ALCOHOLS, CHLORIDES, AND DIVINYL KETONES -U-

PROCESSING DATE--16OCT70

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