"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

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UDC: 535.35

ANISIMOV, S. I., IMAS, YA. A., ROMANOV, G. S., and KHODYKO, YU. V.

"The Effect of High-Power Radiation on Metals"

Deystviye Izlucheniya Bol'shoy Moshchnosti Na Metally [English version above] Moscow, Nauka Press, 1970, 272 pages

Translation: This monograph presents the results of the principal works on the interaction of intensive radiation with materials and systematically develops concepts concerning the physical processes which they indicate. The most important case of condensed material with high initial absorbtion coefficient and the highest flux of energy achievable at the present time (up to 10^{13} w/cm^2) is analyzed. The presentation of a number of problems is based on the investigations of the authors themselves. Fourteen tables; 80 figures; 182 biblio. refs.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR

UDC 535.35

ANISIMOV, S. I., IMAS, Ya. A., ROMANOV, G. S., KHODYKO, Yu. V.

"Action of High-Intensity Radiation on Metals"

Deystviye izlucheniya bol'shoy moshchnosti na metally, Moscow, 1970, "Nauka" Publishing House, Main Editorial Staff for Physicomathematical Literature, 272 pp, 1 r., 04 k, 5000 copies

Abstract: The monograph presents an ordered presentation of fundamental studies on the interaction of intense radiation with matter, and ideas on the physics of the processes that stem from these studies are systematized. The most important and thoroughly investigated case of condensed substances with a high initial absorption coefficient is discussed in detail along with the range of energy flux densities that are achievable at the present time (up to 10^{13} w/cm^2). The presentation of several problems is based on the research of the authors themselves. 14 tables, 80 figures, 182 references.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4"

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

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UNCLASSIFIED

TITLE--THE EFFECT OF VERY POWERFUL RADIATION ON METALS -U-

PROCESSING DATE--30OCT70

AUTHOR-(04)-ANISIMOV, S.I., IMAS, YA.A., ROMANOV, G.S., KHODYKO, YU.V.

COUNTRY OF INFO--USSR

R

SOURCE--(DEYSTVIYE IZLUCHENIYA BOL'SHOY MOSHCHNOSTI NA METALY) MOSCOW. NAUKA. 1970

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--METAL, RADIATION EFFECT, SURFACE PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0037

STEP NO--UR/0000/70/000/000/0001/0271

CIRC ACCESSION NO--AM0123825

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

2/2 041

UNCLASSIFIED

CIRC ACCESSION NO--AM0123825 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PREFACE 5. CHAPTER I INTRODUCTION 7. II THE EFFECT ON METALS OF RADIATION FLUX OF SMALL DENSITY 36. III THE DISINTEGRATION OF METALS AT MODERATE DENSITIES OF RADIATION FLUX. THE "THERMAL" MECHANISM OF DISINTEGRATION 71. IV THE HYDRODYNAMICS OF THE DISPERSION OF VAPOR AND THE ABSORPTION OF LIGHT BY THE DISINTEGRATION PRODUCTS 119. V THE EFFECT OF HIGH DENSITY RADIATION FLUX ON THE ABSORBING SUBSTANCES. THE "HYDRODYNAMIC" MECHANISM OF DISINTEGRATION 178. VI THE FORMATION OF HOLES AND THE MELTING OF METAL UNDER THE EFFECT OF INTENSIVE RADIATION 227 LITERATURE 264. SUBJECT INDEX 270. THE MONOGRAPH DEALS WITH THE RESULTS OF BASIC WORKS ON THE INTERACTION OF INTENSIVE RADIATION WITH MATTER, AND SYSTEMATIZES THE CONCEPTS RESULTING FROM THEM CONCERNING THE PHYSICS OF THE PROCESSES. EXAMINED IS THE MOST IMPORTANT CASE, INVESTIGATED IN DETAIL, CONCERNING CONDENSED SUBSTANCES WITH A HIGH INITIAL COEFFICIENT OF ABSORPTION AND AT THE PRESENT EXPERIMENTALLY ATTAINABLE RANGE OF DENSITIES OF THE ENERGY FLOW. (UP TO 10 PRIME13 WATT-CM PRIME2).

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR

UDC 577.391

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

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

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

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

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UDC 547.26'118 + 543.226

USSR

PUDOVIK, A. N., KONOVALOVA, I. V., ANOSHINA, N. P., and ROMANOV, G. V., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR and Kazan' State University imeni Ul'yanov-Lenin

"Determination of the Activation Energy of the Phosphonate-Phosphate Rearrangement and of Some Other Reactions by the Method of Differential-Thermal Analysis"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 10, Oct 73, pp 2153-2156

Abstract: Determination of the activation energy of the decomposition of sodium bicarbonate, isomerization of the ethylphosphonous acid diallyl ester, phosphonate-phosphate rearrangement, and the breakdown of α-hydroxyalkylphosphonates and their analogs was carried out by means of the differential thermal analysis (DTA). A satisfactory agreement has been achieved between the calculated and literature data. It has been shown that DTA may be used in determining E_{act} for thermal reactions of α-hydroxyalkylphosphonates.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR

UDC 591.104

FINAKOVA, G. V., ROMANOV, G. V., BYKOV, E. G., and PIRUZYAN, L. A., Institute of Chemical Physics, Academy of Sciences, USSR, Moscow

"The Effect of Permanent Magnetic Field Pretreatment on Histochemical Indexes of the Adrenal Cortex of X-ray-Irradiated Animals"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 6, Nov/Dec 73, pp 913-916

Abstract: Experimental results are reported on the effect of permanent magnetic field (PMF) and x-ray irradiation on the contents of sudanophilic lipids, keotsteroids, cholesterol and nonspecific esterase activity in the rat's adrenal cortex. Animals pretreated with PMF before irradiation did not show any more pronounced changes of the indexes studied in the first 72 hrs than those treated with x-ray alone. The data suggest that PMF pretreatment of animals prevents development of changes in the content of sudanophilic lipids, double refracting substances, nonspecific esterase activity characteristic of isolated x-ray treatment.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

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UDC 547.26'118+543.226

ROMANOV, G. V., YAGFAROV, M. Sh., KONOVALOV, A. I., PUDOVIK, A. N., KONOVALOVA, I. V., and YUSUPOVA, T. N., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR, and Kazan' State University imeni V. I. Ul'yanov-Lenin, Kazan'

"The Thermodynamic and Kinetic Characteristics of the Phosphonate-Phosphate Rearrangement"

Leningrad, Zhurnal Obshchey Khimii, Vol 43, No 11, pp 2378-2386

Abstract: The thermal effects in the rearrangement (I) → $(R)(R')P(=X)-O-CH(R'')(R''')$ (II) were studied, where R=Alk, AlkO, Ph; R' =Alk, AlkO, Ph, OH; R'' = H, Me, Ph, COOAlk; R''' = COOAlk, COMe, $P(O)(OR)_2$, CN; X = O, S. The heat capacities at -50 - +120° and the changes in enthalpy during the rearrangement I → II at the temperature of the reaction were determined for a number of compounds I. It was shown that an approximately liner relation exists between the temperatures at which the reaction begins and the logarithms of the velocity constants of the isomerization of compounds I determined at a single temperature.

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UDC 547.26'118 + 543.226

USSR

PUDOVIK, A. N., KONOVALOVA, I. V., YAGFAROV, M. Sh., GOL'DFARB, E. I., and ROMANOV, G. V.

"Decomposition of α-Hydroxyalkyl(benzyl)phosphonates"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 3, Mar 73, pp 556-559

Abstract: Thermal behavior of α-hydroxyalkylphosphonates containing alkyl and phenyl substituents at the α-carbon atom has been studied by means of differential-thermal analysis in the range 20-300°. Substituting a hydrogen atom for a methyl group at the α-carbon results in a higher temperature of the endoeffect of the beginning of breakdown, while introduction of a phenyl group lowers the thermal stability of the phosphonate. Differential thermal analysis of an equimolar mixture of O-ethylethylphosphonite and ethylpyroracemate shows a formation of O-ethyl-α-carboethoxyethylphosphinate followed by its isomerization to O-ethyl-O-(α-carboethoxyethyl)ethylphosphonate; benzaldehyde and diethylphosphite from diethyl-α-hydroxybenzylphosphonate in temperature range 100-120° to be followed by decomposition. Thermography of phenyl-α-hydroxybenzylphosphinic acid at 220-250° is accompanied by a strong exothermic effect yielding a dense mass suggestive of the formation of phenylphosphine.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

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UDC 547.245'241

PUDOVIK, A. N., ROMANOV, G. V., NAZMUTDINOV, R. Ya., and KONOVALOVA, I. V., Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Academy of Sciences, USSR, and Kazan' State University Imeni V. I. Ul'yanov-Lenin

"Reaction of bis(Trimethylsilyl)hypophosphite With Methyl Pyroracemate"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 3, Mar 73, p 678

Abstract: Title reaction carried out in an atmosphere of argon at -5 to 0° followed by overnight stirring at room temperature gave trimethylsilyl(α-carbomethoxy)ethylphosphite, b.p. 83°/0.2 mm, d_4^{20} 1.0857, n_D^{20} 1.4276.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

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PUDOVIK, A. N., KONOVALOVA, I. V., ROMANOV, G. V., and NAZMUTDINOV, R. Ya., Kazan' State University

"Reaction of Partial Esters of Phenylphosphonous and Phosphorous Acids With Benzophenone"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 323-326

Abstract: O-Methyl- and O-ethyl phenylphosphonites, and also dimethyl-, diethyl-, di-n.-propyl- and di-isopropyl phosphites reacted with benzophenone. It was found that the partial esters of phenylphosphonous and phosphorous acids add to benzophenone with the formation of monoalkyl esters of α-hydroxybenzhydrylphenylphosphinic and dialkyl esters of α-hydroxybenzhydrylphosphonic acids. When heated, α-hydroxybenzhydrylphosphinates and phosphonates dissociate into the initial products and undergo rearrangement to the corresponding phosphonates and phosphates.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR

UDC 547.241

PUDOVIK, A. N., GUR'YANOVA, I. V., ROMANOV, G. V., and LAPIN, A. A., Kazan' State University imeni V. I. Ul'yanov-Lenin

"Reaction of Diphenylphosphine With Methyl Ester of Pyruvic Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 3, Mar 71, pp 709-710

Abstract: Diphenylphosphine was added dropwise to an excess of methyl pyruvate, the mixture heated to 45-50°, and then cooled. After several days crystals appeared and were recrystallized from hexane to give (α-hydroxy-α-carbomethoxy)-ethyldiphenylphosphine, m.p. 126-128°. In the temperature range 129-148 the production isomerised:

$$(C_6H_5)_2\overset{O}{\overset{\|}{P}}-\underset{CH_3}{\overset{OH}{C}}-COOCH_3 \xrightarrow{t^o} (C_6H_5)_2-\overset{O}{\overset{\|}{P}}-O-\overset{CH_3}{CH}-COOCH_3$$

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

1/2 039 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ELECTRONMICROSCOPICAL INVESTIGATION OF THE GARDING PASSY MELANOME UNDER THE INFLUENCE OF A QUANTUM GENERATOR -U-

AUTHOR-(05)-PIRUZYAN, L.A., ROGOVIN, V.V., ROMANOV, G.V., MERTSALOVA, L.V., DEMENTYEV, V.A.

COUNTRY OF INFO--USSR

R

SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA BIOLOGICHESKAYA, 1970, NR 3, PP 463-467

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, PHYSICS

TOPIC TAGS--LASER RADIATION, ELECTRON MICROSCOPE, TUMOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1176 STEP NO--UR/0216/70/000/003/0463/0467

CIRC ACCESSION NO--AP0126778

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

2/2 039 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126778

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF LASER IRRADIATION ON THE GARDING PASSY MELANOMA ULTRASTRUCTURE IS DISCUSSED. IT WAS FOUND THAT THE ZONES WHICH HAD NOT BEEN DIRECTLY ILLUMINATED CONTAINED IRREVERSIBLE CHANGES. AMONG THE ORGANELLES OF A GARDING PASSY MELANOMA CELL THE MITOCHONDRIA APPEARED TO BE MOST DAMAGED WHEREAS THE MYELIN STRUCTURES THE NUCLEUS AND THE NUCLEOLI AS WELL AS VIRUS LIKE FORMATIONS REVEALED NO MORPHOLOGICAL CHANGES. STRONG VACUOLIZATION OF THE CELL CYTOPLASM WAS STATED. A DIAGRAM OF THE TEMPERATURE CHANGES IN THE MELANOME TISSUE RELATIVE TO THE DISTANCE OF THE EPICENTER OF THE LASER LESION IS SHOWN. THE LESIONS CAUSED IN THE MELANOME CELL UNDER LASER ACTION ARE EXPLAINED ON THE BASIS OF THE EFFECT OF THE THERMOMECHANICAL FACTOR. FACILITY: INSTITUTE OF CHEMICAL PHYSICS, ACADEMY OF SCIENCES, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4"

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USSR UDC: 616.006

PIRUZYAN, L.A., ROGOVIN, V.V., ROMANOV, G.V., MERTSALOVA, L.V., and DEMENT'YEV, V.A., Institute of Chemical Physics, Academy of Sciences, USSR

"Electron Microscope Study of Harding-Passy Melanoma Under the Influence of Lasers"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 3, May/Jun 70, pp 463-467

Abstract: The effect of laser irradiation on the ultrastructure of Harding-Passy melanoma was studied. It was found that the zones which had not been irradiated directly contained irreversible changes. Mitochondria were most damaged, and their organization disrupted, whereas the myelin structures, nucleus and nucleoli, and virus-like formations showed no morphological changes. A strong vacuolization in the cytoplasm of the cells was noted. Temperature changes in melanoma tissue are proportional to the distance from the center of laser action. All changes in melanoma tissues under the action of lasers are explained on the basis of the thermomechanical effect.

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DEPARTMENT OF THE NAVY
NAVAL INTELLIGENCE SUPPORT CENTER
TRANSLATION DIVISION
4301 SUITLAND ROAD
WASHINGTON, D.C. 20390

CLASSIFICATION: UNCLASSIFIED

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TITLE: Effect of Laser Beams on Biological Objects

Vozdeystviye luchey kvantovogo generatora (lazera) na biologicheskiye ob'yekty

AUTHOR(S): Piruzyan, L. A.; Dement'yev, V. P.; Kurseyan, L. Kh.; Savchenko, G. S.; Rogovin, V. V.; Mertsalova, L. V.; ~~Romanov, G. V.~~

PAGES: 20

SOURCE: Paper Delivered at 42nd ASMA, Houston Texas 27 April 1971

ORIGINAL LANGUAGE: Russian

TRANSLATOR: DWM

NISC TRANSLATION NO. 3367

APPROVED P.T.K.

DATE 14 November 1972

ROMANOV, G.V.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4"

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ROMANOV, G.V.

Lasers

EFFECT OF LASER BEAMS ON BIOLOGICAL OBJECTS

[illegible], V. P.; [illegible], L. Kh.; [illegible], [illegible], G. V., Vozdeystviye luchey kvantovogo generatora (lazera) na biologicheskiye ob'yekty. Paper Delivered at 42nd ASUA, Houston, Texas, 27 April 1971, Russian]

The present work investigates the effect of focussed and unfocussed neodymium-glass laser beams operating at 10,600 Å on pigmented and nonpigmented tissue in an attempt to explain the degree of damage to a biological structure as a function of its pigmentation.

Theoretical computations are made of the temperatures reached in tissue at different laser radiation energy levels, making possible a preliminary estimate of the temperature generated in the tissue at a given irradiation energy. Morphological investigations confirmed the theoretical computations of the temperature coefficients.

Electron microscope investigations have shown that when pigmented tissue is subjected to laser radiation, mitochondria are the most labile cellular structures. Their total or partial destruction is attributed to the thermomechanical effect of the laser beam that leads to great temperature and, subsequently, pressure drops which could be the main cause of the damage to the cristae and mitochondrial membrane.

Investigation of the concentration of free radicals in pigmented tissue subjected to an unfocussed laser beam has shown that low energy densities do not disturb the physical and chemical properties of the tissue that might impair biochemical processes. 12

The results of the investigation described above facilitate a deeper understanding of the problem of the effects of light on the activity and properties of living matter, since to date there has been no unified picture of such effects on bioobjects encompassing the entire frequency spectrum from the far infrared to the ultraviolet. Besides the scientific interest involved in an explanation of the mechanism of action of a powerful light flux on biostructures, the investigation has important practical applications in space biology and medicine, especially related to the problem of ensuring astronaut protection against light effects.

The introduction of lasers into the arsenal of scientific laboratories has made it possible to begin investigations dealing with the effect of powerful light fluxes on biological objects. In this matter, the development of specific technical conditions for laser operation

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USSR UDC 547.438.1+547.26'118+543.226

PUDOVIK, A. N., KONOVALOVA, I. V., ROMANOV, G. V., FIRSEVA, R. G., and BURMISTROVA, N. P.

"Study of Phosphonate-phosphate Regrouping and the Processes accompanying It by the Differential Thermal Analysis Method with Simultaneous Recording of the Electrical Conductivity"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 41-45

Abstract: The study of phosphonate-phosphate regrouping and the processes accompanying it by the thermographic method with simultaneous recording of the electrical conductivity is continued. The thermal behavior of a series of α-oxyalkyl phosphonates and substituted α-oxyethylphenyl phosphonic acids was studied. The thermal conversion of α-oxyalkylphosphonates and their analogs was preceded by ionization of the hydroxyl group on the α-carbon atom. The study was made of the mechanism of thermal phosphonate-phosphate regrouping.

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UDC: 616.[illegible]

ELECTRON MICROSCOPIC INVESTIGATION OF THE HARDING-PASSY MELANOMA UNDER THE EFFECT OF LASER RADIATION

[Article by L. A. Piruzyan, V. V. Rogovin, G. V. Romanov, [illegible] Mertsalova, and V. A. Dement'yev; Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, Russian, No 3, 1970, pp [illegible] 466]

The article examines the effect of laser radiation on the ultrastructure of the Harding-Passy melanoma. It has been established that irreversible changes occurred in the zones not directly irradiated. The worst damaged organelles of a Harding-Passy melanoma cell were the mitochondria, whereas the myelin structures, the nucleus and the nucleoli, as well as the virus-like formations, revealed no morphological changes. Strong vacuolization was noted in the cell cytoplasm. A diagram of temperature changes in the melanoma tissue according to the distance from the epicenter of the laser lesion is presented. The disorders which occurred in the melanoma cell under the effect of the laser are explained as the effect of the thermomechanical factor.

The creation of lasers has permitted biophysicists to begin investigations connected with the effect of powerful luminous fluxes on biological objects. The literature contains information about the histological changes of malignant tumors (melanomas) after irradiation by a laser (Piruzyan et al, [illegible]) and also on the free-radical content in an irradiated melanoma (Piruzyan et al, 1968). Therefore it is of interest to explain affections in a tumor on the ultrastructural level.

In the present work a Harding-Passy melanoma was subjected to laser irradiation in order to investigate the electron

JPRS 57928
8 Jan 73

ROMANOV, G.V.

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Polymers and Polymerization

USSR UDC 678.06:631.459

REVUT, I. B., ROMANOV, I. A., and MARTYNOV, V. P.

"Effectiveness of the Utilization of Latexes in Preventing Soil Erosion"

Moscow, Plasticheskiye Massy, No 11, 1973, pp 26-28

Abstract: The preventive action of several latexes on wind erosion of the soil has been studied. In particular the attention was directed towards the serial divinylstyrene latex SKS-50PG and SKS-65GP. Both formed durable film covers within a very short time, which were able to withstand hurricane force winds both on sandy soils as well as on clay surfaces. No particular changes were noted in water permeability temperature of the soil or in biological processes after treatment with the latex. The yield of the products increased principally on account of decreased losses due to wind effect and seeds being blown away with top soil surface.

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USSR

UDC: 541.126.2

ROMANOV, I. D., SMEN'GACH, V. V., Moscow

"Sensitivity of PETN to an Electric Spark"

Moscow, Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 6, Nov/Dec 72, pp 152-155

Abstract: The paper gives the results of an experimental study of the sensitivity of PETN to an electric spark. The research covers the effect of dispersity, density, temperature and moisture content of the explosive on its sensitivity to an electric spark. A study is also made of the part played by the interelectrode spacing and the inductance of the discharge loop with respect to the energy necessary for initiating an explosion.

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UDC 621.396.4:621.396.669.8

USSR

ROMANOV, I.M., NEZHNETDINOV, T.K., KOBCHIKOV, A.V., NUGMANOV, I.S.

"Introduction To The Theory Of Designing Asynchronous Pulse Radio Systems"

Vvedeniy v teoriyu proyektirovaniya asinkhronnykh impul'snykh radiosistem (cf. English above), Moscow, "Sov.radio," 1971. 193 pp, ill. 54 k. (From RZh: Radiotekhnika, No 2, Feb 1972, Abstract 2A203K)

Translation: From the position of system engineering the book considers a number of basic problems of the initial designing of asynchronous pulse radio systems (APRS) in which several nonsynchronized transmitters transmit information to a common receiving center. In the process, problems are considered connected with a specific efficiency of the APRS, and some interrelations of the probability characteristics of the system. Considerable attention is given to problems of the use of methods of the theory of mass maintenance and to evaluations of the noise immunity and the traffic capacity of the APRS on exposure to noise which imitates the applicable complex signals. Some methods are considered of increasing the efficiency and noise immunity of the APRS by additional processing of information by special logical devices and use of information and structural adaptations in these systems. The books is intended

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ROMANOV, I. M. et al, Vvedeniy v teoriyu proyektirovaniya asinkhronnykh impul'snykh radiosistem, Moscow, "Sov. radio," 1971, 193 pp, ill. 54 k.

for specialists occupied with problems of designing complex radio systems and also for graduate students and students of advanced courses of higher educational institutions for corresponding specialities. 49 ill. 9 tab. 79 ref. Annotation.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

UDC 621.391:519.27

USSR

NEZHMETDINOV, T. K., PANKOVETS, V. V., ROMANOV, I. M.

"Effectiveness of Introducing Adaptation in Complex Radio Systems with Information and Structural Adaptation"

Priyem i obrabotka inform. v slozhn. inform. sistemakh -- V sb(Information Reception and Processing in Complex Information Systems -- collection of works), Vyp. 2, Kazan', Kazan' University, 1970, pp 14-19 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A37)

Translation: The savings from introduction of adaptation in individual system links -- the receiver and the device for subsequent information processing -- are estimated. The estimate is made by comparing the "income" from increasing the properly received information and the "expenses" determined by the necessary complication of the system. There is 1 illustration and a 1-entry bibliography.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR UDC 51:330.115

ROMANOV, I. M., TAYURSKIY, A. G., TAYURSKAYA, G. V.

"Probability of Servicing of Signals of Heterogeneous Flows with Equal Rights"

Priem I Obrabotka Inform. V Solzhn. Inform. Sistemakh, [Reception and Processing of Information in Complex Information Systems--Collection of Works], No 2, KAZAN' University Press, 1970, pp 20-23, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V573).

No Abstract.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--PROBABILITY OF SERVICING IN A TWO CHANNEL SYSTEM WITH INTERCONNECTIONS -U-

AUTHOR-(03)-ROMANOV, I.M., TAYURSKIY, A.G., TAYURSKAYA, G.V.

COUNTRY OF INFO--USSR

SOURCE--KAZAN', V SB. PRIYEM I OBRABOTKA INFORM. V STRUKTURNO-SLOZHN.

REFERENCE--RZH, ELEKTROSVYAZ', NO 2, FEB 70, ABSTRACT NO 2.64.11

DATE PUBLISHED--------69

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--SIGNAL ANALYSIS, ELECTRONIC FEEDBACK, SERVICING TECHNIQUE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0405 STEP NO--UR/0000/69/000/000/0036/0041

CIRC ACCESSION NO--AR0124156

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UNCLASSIFIED PROCESSING DATE--30OCT70

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CIRC ACCESSION NO--AR0124156

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PROCESS IS CONSIDERED FOR SERVICING A LOCATION IN A COMPLEX SYSTEM WHICH CONSISTS OF TWO SETS OF RECEIVING APPARATUS TUNED TO DIFFERENT FREQUENCIES. A FLOW OF SIGNALS OF A SPECIFIC INTENSITY ENTERS EACH SET. THE FEEDBACK BETWEEN THE TWO SETS OPERATES SO THAT SERVICING IN ONE SET DOES NOT INFLUENCE SERVICING IN THE OTHER, BUT INCAPACITATION OF ONE IMMEDIATELY PRODUCES INCAPACITATION OF THE OTHER. THE PROBABILITY OF SERVICING IN SUCH A SYSTEM IS DETERMINED.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

S/019/60/000/016/107/134
A152/A029

AUTHOR: Romanov, K.M.

TITLE: A Bracket-Type Boring Bar

PERIODICAL: Byulleten' izobreteniy, 1960, No. 16, p. 59

TEXT: Class 49a, 57. No. 131185 (647966/25 of December 21, 1959). 1) This bracket-type boring bar with a cutting unit adjusted by means of an adjusting screw is distinguished by the following special feature: in order to make it possible to quickly exchange and set standard cutting tools independently of the adjusting screw, it is made with a transverse groove in its end face for the free passage and movement of a screw which engages with a thread in the side wall of the cutting unit for fixing the cutting tool in its through hole. 2) A bracket-type boring bar as in 1, distinguished by the following special feature: in order to prevent axial movement of the adjusting screw, the latter is provided with a split cover, placed over its neck and having a hole through which long cutting tools can be passed. 3) A bracket-type boring bar as in 1 and 2, distinguished by the following special feature: the adjustable cutting unit is of rectangular cross-section.

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USSR

KONTUSH, S. M., ROMANOV, K. V.

UDC: 532.529.5/.6

"Formation of a Jet of Monodisperse Drops When Gas is Blown Through a Thin Layer of Liquid"

Fiz. aerodispers. sistem. Mezhved. nauch. sb. (Physics of Aerodisperse Systems. Interdepartmental Scientific Collection), 1971, vyp. 4, pp 38-43 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7B511)

Translation: A diagram is proposed for a monodisperse aerosol generator based on the formation of droplets when gas bubbles collapse. A thin layer of liquid is applied to a solid surface with an air supply channel giving out onto the surface. Excess pressure in the air channel produces an air bubble which collapses as its diameter becomes equal to the thickness of the liquid layer. The resultant "tongue" throws out several drops which are borne outward. This process is periodically repeated, resulting in continuous drop formation. Conditions for formation of a jet of monodisperse drops are considered. An elementary theoretical model is proposed for the phenomenon. The paper describes the results of a study of the operation of a generator of monodisperse drops from 6 to 30 μ in

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR

KONTUSH, S. M., ROMANOV, K. V., Fiz. aerodispers. sistem. Mezhved. nauch. sb., 1971, vyp. 4, pp 38-43

diameter at drop velocities of 0.5-3 $m \cdot s^{-1}$ and a prf of 7-10 Hz. The parameters of generator operating conditions are given. Bibliography of ten titles.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

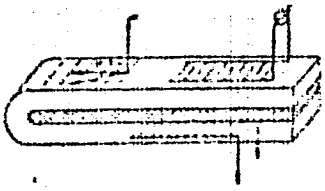
USSR UDC 621.374.5

KARINSKIY, S. S., KOMAROV, V. G., MONDIKOV, V. D., GOLIKOV, M. I., ROMANOV, L. N., KOMAROVA, I. S., KRISTININA, L. I.

"An Integrated Ultrasonic Single-Crystal Delay Line"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 15, May 71, Author's Certificate No 302808, Division H, filed 22 Sep 69, published 28 Apr 71

Translation: This Author's Certificate introduces an integrated ultrasonic single-crystal delay line for surface waves. The device contains a piezoelectric single-crystal acoustic line with a slot on one end which is filled with an absorber. The device also contains lattice-type two-phase receiving and transmitting converters. As a distinguishing feature of the patent, the delay time is increased by locating the converters on the upper and lower surfaces of the acoustic line, and by rounding the other end of the line with a radius of at least ten ultrasonic resonance wavelengths.



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1/2 022 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--SOME DATA CONCERNING CHANGES IN THE GASTRIC MUCOSA IN PATIENTS HAVING SUSTAINED INFECTIOUS HEPATITIS, UNDER THE INFLUENCE OF HEALTH

AUTHOR-(02)-KOZHARSKIY, V.V., ROMANOV, N.I.

COUNTRY OF INFO--USSR

SOURCE--TERAPECTICHESKIY ARKHIV, 1970, VOL 42, NR 3, PP 28-31

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEPATITIS, INFECTIOUS DISEASE, BIOPSY, HISTOCHEMISTRY, DIGESTIVE DISEASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0013 STEP NO--UR/0504/70/042/003/0028/0031

CIRC ACCESSION NO--AP0102775

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

2/2 022 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0102775

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE IS DEVOTED TO THE STUDY OF THE GASTRIC MUCOSA IN PATIENTS HAVING SUSTAINED INFECTIOUS HEPATITIS AT DIFFERENT PERIODS AFTER JAUNDICE AND ITS CHANGES UNDER THE INFLUENCE OF COMPLEX HEALTH RESORT THERAPY. TAKING OF SAMPLES IS DONE BY MEANS OF ASPIRATION GASTROBIOPSY PRIOR TO AND AT THE END OF TREATMENT. OF 30 PATIENTS WHO UNDERWENT TREATMENT AT PYATIGORSK HEALTH RESORT IN 27, SUPERFICIAL GASTRITIS AND IN 3, ATROPHIC ONE WERE DETECTED. HISTOCHEMICAL FINDINGS SHOWED THAT THERE WAS A GREAT AMMOUNT OF NEUTRAL MUCOPOLYCACCHARIDES IN TEGUMENTAL, PITTED AND CERVICAL EPITHELIUM. ACID MUCOPOLYSACCHARIDES WERE MAINLY DITECTED IN CERVICAL EPITHELIUM AND TO A LESSER DEGREE IN PITTEB EPITHELIUM. IN SUPPERFICIALLY DISPOSED CELLS OF THE GASTRIC GLANDS THERE WAS FOUND A SMALL AMOUNT OF SIALOMUCINS. AT THE END OF HEALTH RESORT TREATMENT THE CONDITION OF TEGUMENTAL, PITTED AND CERVICAL EPITHELIUM CHANGED, THERE REDUCED AND CHANGED CELLULAR INFILTRATION. IN HISTOCHEMICAL STUDIES THER WAS OBSERVED A DROP IN THE PRODUCTION OF MUCIN AND CHANGE OF ITS COMPOSITION.

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USSR

UDC: 51:330.115

ROMANOV, O. K.

"Experimental Analysis of a Noncooperative Two-Person Game With Nonzero Sum"

Uch. zap. Mosk. obl. ped. in-t (Scientific Notes of the Moscow Oblast Pedagogical Institute), 1970, 282, pp 169-205 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V764)

[No abstract]

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USSR

UDC 681.327.2

ROMANOV, P.

"Development of a Device for Reading and Coding of Complex Images"

Nauchno-Tekhnicheskaya Informatsiya, Serriya 1, No 3, 1971, pp 28-30

Abstract: The author suggests a system for typing structural chemical formulas differing from the Shell and Friden systems. The system requires more strokes than the Shell system but has fewer elements than the Friden system, and the authors believe that the system is more suitable for automatic reading and the quality of the images produced by the system is sufficient to allow photosetting. The structural elements (letters) consist of thirty-six single and double lines oriented in various directions within square spaces. Several letters can be typed before advancing the carriage each time. The keyboard includes the 36 lines and line combinations, twenty-six latin letters, twenty-one Russian letters which differ from the Latin letters, nine numerals, seventeen Greek letters, and seventeen special symbols. A device has been developed for scanning, coding, and input of text written using these characters, consisting of a precision electronic-optical image reader matched with a Minsk-22 computer. Standard descriptions

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ROMANOV, P., Nauchno-Tekhnicheskaya Informatsiya, Serriya 1, No 3, 1971, pp 28-30

of all characters to be recognized are stored in machine memory. The description of an unknown character produced by the scanning device is compared with the standards and identified according to the criterion of greatest similarity (minimum distance). The code for each symbol is recorded along with the coordinates of the symbol in machine memory. The device is currently undergoing testing.

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USSR

UDC 669.18.658.562

KOPPISHON, E. Yu., NOVITSKIY, V. K., ROMANOV, P. A., SOBOLEV, V. V., SOBOLEV, Yu. V.

"Smelting of Steel for the Rotors of Large Turbine Generators"

Moscow, Stal', No 2, Feb 73, pp 116-117.

Abstract: Large ingots for the manufacture of powerful turbine generator rotors can be produced by mixing of acid open-hearth steel in the required quantities with basic electric steel in an evacuated ingot mold. The study of the mechanical properties of the metal taken from various parts of the resulting ingot, contaminated with nonmetallic inclusions, segregations of the basic elements, macrostructures, etc., has shown that this type of mixed ingot satisfies all the basic quality requirements.

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USSR

UDC: 621.385.64

ROSHAL', A. S. and ROMANOV, P. V.

"Statistical Modeling of a Plane Magnetron's Steady-States"

Kiev, Izvestiya VUZ -- Radioelektonika, Vol. 13, No. 9, 1970, pp 1092-1098

Abstract: Since modeling of the magnetron's transient operation requires a great deal of time, even when done on an electronic computer, the steady-state operation only is considered in this article. The modeling was done on a type M-220 computer. By using only the steady state of the magnetron, the authors could model the transition processes from one steady state to another through a jump variation of one of the system parameters. Thus, the time required for the formation of a space-charge cloud is reduced to zero, the transition time to the new steady state can cover several periods of the magnetron's oscillation through special limiting mechanisms, and the modeling of a whole combination of steady states for various parameters can be done within a rea-

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sonable time. The time taken to compute one steady state with a step of 0.1 of the period was 0.7 to 2 hours. For simplicity, the authors limit themselves to the first moments of the random process distribution, with the emission characteristics of the cathode and the Q specified constant. The results of the computations are given in the form of curves. It is found that the nature of the relationships found in the statistical modeling agrees closely with the electron cloud dynamics in a plane magnetron, and that the results obtained can be used for determining the characteristics required for designing magnetrons.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR

UDC 669.295.5'71'292:620.174

CHERNETSOV, V. I., ROMANOV, S. B., BOKMAN, N. N.

"Resistance to Crack Propagation in Titanium Alloys"

Tr. Sev.-Zap. zaoch. politekhn. in-ta (Works of the Northwestern Correspondence Polytechnic Institute), 1971, No 16, pp 84-87 (from RZh-Metallurgiya, No 4, Apr 72, Abstract No 4I750)

Translation: A study was made of the effect of the environment (air and a 3% solution of NaCl), the loading rate (0.005 and 1.2 mm/min), and the grain size and H content (from 0.002 to 0.03%) on the work of crack propagation in two α-alloys of the Ti-Al-V system. Prismatic samples with an acute crack were tested for static bending. The fine-grain alloy resists crack propagation more than the large-grain alloy. With an increase in the loading rate, the crack propagation work drops. A 3% solution of NaCl decreases the crack propagation resistance in comparison with air, especially with large grain structure. In spite of the high total corrosion resistance of Ti α-alloys, they are inclined toward the effect of the corrosive environment under stress, for the protective oxide film is destroyed in the crack formation process. With an H content of 0.01% and more, the work of crack propagation drops sharply, and brittle fracture takes place. 4 illustrations and 2 tables.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR

UDC: 621.315.592

GERASIMENKO, N. N., DVURECHENSKIY, A. V., ROMANOV, S. I., and SMIRNOV, L. S.

"Interaction of Defects and Impurities in the Introduction of Ions into Silicon"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1978-1981

Abstract: The experiments described in this paper were designed for examination of the interaction involving the defects appearing with the introduction of ions into crystals by ion bombardment, and implanted as well as diffusion-generated impurities. Specimens for the experiments were Si doped with boron, with a resistivity of about 1 ohm·cm, bombarded by Ar^+, B^+, E = 40, and P^+, E = 40 kev. The methods of electron paramagnetic resonance and the diffraction of fast electrons by reflection were used for the investigation. Anode oxidation controlled removal of the Si layers. A curve giving the number of paramagnetic defects as a function of the ion irradiation dosage shows that the process of defect accumulation under Ar^+ bombardment is subject to laws found earlier by these same authors (e.g., FTP, 5, 1971, p 1700) but that

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USSR

UDC: 621.315.592

GERASIMENKO, N. N., et al, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1978-1981

irradiation by B^+ and P^+ produce different results, with a reduction in the number of VV centers as a result of higher dosage. This anomaly is explained by the disappearance of the VV centers at a definite concentration of the introduced impurity, while further bombardment leads to restoration of the crystal structure.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR

UDC: 538.574.4

VVEDENSKIY, V. N., CHERNYAYEV, Ye. N., KRYLOV, I. S., and ROMANOV, S. I.

"Transformation of the Stokes Parameters in Electromagnetic Wave Backscattering"

Gor'kiy, Izvestiya VUZ -- Radiofizika, vol 15, No 4, 1972, pp 601-609

Abstract: The purpose of this paper is to establish a connection between the elements of the interaction matrix and the parameters of the scattered field that can be measured in practice with relative ease, where the interaction matrix is the expression of the interaction of the radiation with a reflecting object and can be defined by $\vec{S}_2 = M\vec{S}_1$, where $\vec{S}_2$ and $\vec{S}_1$ are the vector parameters of the reflected and incident waves respectively and M is the matrix. The analysis is conducted under the following limitations: the object is irradiated by a plane electromagnetic wave; the polarization transformation is considered for the reflection only; and only the case of reflection is considered in which it is described by linear, homogeneous equations. The computation of the generalized correlation coefficient of the linear orthogonal scatter field components for radiation with arbitrary elliptical

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

-USSR-

UDC: 538.574.4

Vvedenskiy, V. N., et al, Izvestiya VUZ -- Radiofizika, vol 15, No 4, 1972, pp 601-609

polarization is given as an example of implementation of the authors' methods. The authors thank Ye. M. Kuchkov for his assiduous attention to the work.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR

UDC 577.44

ROMANOV, S. N., Laboratory of Cytoanalysis of the Effects of Mechanical Factors on Living Systems, Institute of Cytology, Academy of Sciences USSR, Leningrad

"Some Prospects in the Investigation of the Biological Effects of Low-Frequency Mechanical Oscillations (Vibrations)"

Leningrad, Tsitologiya, Vol 14, No 2, 1972, pp 150-157

Abstract: Low-frequency mechanical vibrations (LFMV) of 25-200 hz exert diverse effects on biological entities. The enzymatic activity of actomyosin is inhibited by 200 hz vibrations, resistance of muscles to high temperature is decreased by 25 and 200 hz and increased by 100 hz vibrations, and oxidative phosphorylation in mitochondria is suppressed by 50-150 hz vibrations. Any organelle can respond as a resonator to vibrations of certain frequencies. In man, vibration sickness can assume a very severe form. Many animals -- worms, fishes, reptiles, insects, and birds -- are highly sensitive to LFMV. Their vibroreceptors have a maximum sensitivity in the 100-400 hz frequency range. In view of the above, LFMV must be of ecological significance, and valuable information may be gained in the following research areas: 1) phylogenetic adaptation to the ubiquitous LFMV; 2) man-controlled stimulation of any

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

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ROMANOV, S. N., Tsitologiya, Vol 14, No 2, 1972, pp 150-157

cellular resonator; 3) mechanisms of the pathological effects of vibration on man; and 4) prognosis of the biological effects of vibrations of any frequency.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR

UDC 681.142.624:506.2

OPRISHKO, V. S., ROMANOV, S. P.

"A Plastic Neuron Model"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 3, Jan 71, Author's Certificate No 291202, Division G, filed 28 Mar 66, published 6 Jan 71, pp 119-120

Translation: This Author's Certificate introduces a plastic neuron model based on memistors. The model contains n input devices, a reference voltage oscillator, and series-connected amplifier and output circuit. As a distinguishing feature of the patent, computation of the optimum weights of input signals is automated and the circuit is simplified by adding phase detectors with some of their inputs connected through a transformer to the corresponding inputs of the circuits of the model, while the other inputs of the phase detectors are connected to the secondary windings of the transformer connected in the collector circuit of the amplifier. The outputs of the phase detectors are connected through limiting resistors to the controlling electrodes of the corresponding memistors.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR

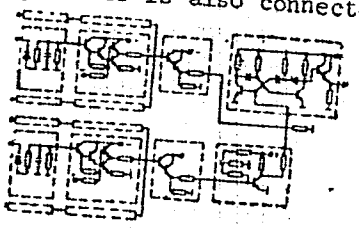
ROMANOV, S. P.

UDC: 681.325.65

"A Neuron Model"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 31, 1970, Soviet Patent No 283700, Class 42, filed 7 Apr 69, p 143

Abstract: This Author's Certificate introduces a neuron model containing integrators at the stimulating and inhibiting inputs. The outputs of the integrators are connected to adders of the stimulating and inhibiting voltages. The device also includes a voltage-to-frequency output converter. As a distinguishing feature of the patent, the functional possibilities of the device are extended by connecting controlled keys between the integrator outputs and the adders, and by connecting an inverter between the inhibiting voltage adder and the input of the voltage-to-frequency converter. The output of the stimulating voltage adder is also connected to the converter input.



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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR

UDC 612.273.2-08:[612.24+616.22

ROMANOV, S. S., L'vov Institute of Veterinary Medicine

"A Functional Test With Hypoxic Hypoxia"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 2, 1973, pp 89-92

Abstract: The proposed test with hypoxic hypoxia, recommended for use in studying respiration in animals and man, involves decreasing the oxygen content of inspired air and determining the threshold at which oxygen intake is minimal. This threshold serves as an indication of the state of the biochemical and physiological mechanisms of respiration (presence of histotoxic hypoxia, intensity of anaerobic processes, etc.). The underlying principle of the method is as follows. During respiration in the closed system of a spirograph without a supply of oxygen but with intake of the CO_2 released, the oxygen content gradually diminishes and its intake virtually ceases at a particular moment and dyspnea becomes acute. The rate of oxygen intake (per kg of weight in 1 min) is calculated at various times during the test and a determination is made of the amount of oxygen in the air of the spirograph at which its intake is no longer possible.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR

UDC 533.92:621.039.61

ALEKSIN, V. F., ROMANOV, S. S., SEBKO, V. P., and LOKTIONOV, Yu. M.

"Magnetic Configurations With Sheer and Minimum $\overline{B}$"

Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb. (Plasma Physics and Problems of the Controlled Thermonuclear Fusion. Republic Interdepartmental Collection), 1972, No 3, pp 113-125 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G277)

Translation: Magnetic configurations of one-, two- and three-slope helical fields (n = 1, 2, 3) with an axial current were investigated. Particular attention was given to the properties of rotational conversion of magnetic lines of force and to the minimum average magnetic field. The relationship between the magnetic well and sheer and the characteristics of the structure of each configuration was established. Numerical values are given for the sheer for each magnetic system (n = 1, 2, 3).

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR

ROMANOV, V.

"R-126 Radio [Walkie Talkie]

Moscow, Radio, No 9, 1970, pp 15-17

Abstract: This article contains a description of a new small portable radio R-126 which operates in the FM telephone mode and provides automatically tuned communications in the frequency range from 48.5 to 51.5 megahertz (6.18-5.83 meters). There are 31 operating frequencies in this range with 100 kilohertz spacing between adjacent operating frequencies. The radio is built from superminiature rod tubes supplied with power from two series connected STsD-12 batteries. A block diagram of the radio is presented, and detailed descriptions are given of the transmitter and receiver. The transmitter power is 0.3-0.4 watts and the receiver sensitivity is no worse than 2 microvolts. With a reception/transmission ratio of 3:1 the radio can operate for 12-14 hours. The range of the radio in the case of moderate terrain operating on a rod antenna reaches 2 km and operating on a beam it reaches 4-5 km. The radio weighs 2.8 kg and is 210 x 180 x 105 mm.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR

KONDALEV, A. I., Doctor of Technical Sciences, BAGATSKIY, V. A., Engineer, ROMANOV, V. A., Engineer, KUDLYAK, V. N., Engineer

UDC: 681.325.63

"Particulars of Designing Information Form Converters Based on Integrated Circuitry"

Kiev, Mekhanizatsiya i Avtomatizatsiya Upravleniya, No 5, Sep/Oct 73, pp 51-54

Abstract: The development of new kinds of computers has raised the problem of designing converters for changing the form of information. This paper discusses some of the difficulties involved in making converters with an element base which is compatible with state-of-the-art computers. Particular importance attaches to the problem of adapting integrated circuit techniques to information form converters. Some examples are given of developments in this area as regards analog components of information form converters based on series-produced integrated circuits. On the basis of these elements, the Institute of Cybernetics of the Ukrainian Academy of

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USSR

KONDALEV, A. I. et al., Mekhanizatsiya i Avtomatizatsiya Upravleniya, No 5, Sep/Oct 73, pp 51-54

Sciences has developed a high-speed analog-digital converter with the following characteristics: dynamic range of input signals 0.1, 1, 10, and 100 v; principal conversion error 0.1%; additional temperature error 0.007%/°C; frequency of readings 1000 kHz; operating time to failure more than 2000 hours.

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USSR

UDC 612.14+612.824/.06:612.886

ROMANOV, V. A., and GAYEVYY, M. D., Chairs of Otorhinolaryngology and Pharmacology, Semipalatinsk Medical Institute, Semipalatinsk

"Effects of Stimulation of the Vestibular Analysor on the Cerebral Circulation Volume and the Total Arterial Pressure"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 72, No 11, Nov 71, pp 3-4

Abstract: The effects of electric stimulation of the vestibular apparatus on the volume blood flow in vessels supplying the brain and also in extracranial vessels of the head were studied in experiments carried out under extreme conditions on cats anesthetized with chloral-urethan and dogs anesthetized with morphine-hexenal. Dogs exhibited an increase in the blood flow that was more pronounced in the internal than external carotid artery. Cats showed irregular blood flow changes in the internal maxillary artery, with the total arterial blood pressure dropping in the majority of experiments. The observed changes in bloodflow constituted manifestations of an active reaction of the vascular beds under study in response to stimulation of the vestibular apparatus, because they also took place in experiments in which the regional arterial pressure was stabilized. A device described earlier by Gayevyy (Fiziol. Zh. SSSR, No 7, 891, 1969) was used to stabilize the arterial pressure.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR

UDC 621.316.019.3:621.311.001.1

ROMANOV, V. A.

"Effect of the Power System Structure on Optimal Reliability of the Electric Power Supply"

Tr. Novocherkas. politekhn. in-ta (Works of the Novocherkassk Polytechnical Institute), 1970, No 209, pp 13-20 (from RZh-Elektrotekhnika i Energetika, No 4, Apr 71, Abstract No 4 Ye179)

Translation: The necessity of considering the variation of fuel consumption when calculating the emergency power reserve of the power systems, the development of which is realized by introducing high-power economical units, is indicated. In this case, the term considering variation of the variable expenditures in the power systems on introduction of new equipment also enters into the equation for calculating the expenditures when determining the optimal magnitude of the power reserve along with the losses from interruptions of the electric power supply. The optimal reliability is found from the condition of equality of the first derivative of the specific expenditures with respect to the power reserve to zero. Consideration of the fuel economy in the power system leads to an increase in the economically

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USSR

ROMANOV, V. A., Tr. Novocherkas. politekhn. in-ta (Works of the Novocherkassk Polytechnical Institute), 1970, No 209, pp 13-20 (from RZh-Elektrotekhnika i Energetika, No 4, Apr 71, Abstract No 4 Ye179)

expedient reliability of the electric power supply and, consequently, an increase in the emergency power reserve. The relative decrease in the probable deficit will depend on the rates of increase in efficiency of the power system and can reach 70-80%. The optimal reliability is higher, the greater the difference in individual increments of fuel expenditures of the newly introduced and old (operating at the load chart peak) units. Unpacking the load chart leads to an increase in the optimal probability of the power deficit. There are 2 illustrations and an 8-entry bibliography.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

UNCLASSIFIED

-- THE USE THE DP-2 APPARATUS FOR ARTIFICIAL VENTILATION OF THE LUNGS IN SMALL LABORATORY ANIMALS -U-

PROCESSING DATE--16OCT70

AUTHOR--ROMANOV, V.A.

COUNTRY OF INFO--USSR

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SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 5, PP 125

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANIMAL EXPERIMENT, LUNG, RESPIRATOR/(U)DP2 RESPIRATOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0206

CIRC ACCESSION NO--AP0120904

STEP NO--UR/0219/70/069/005/0125/0125

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

031

CIRC ACCESSION NO--AP0120904 UNCLASSIFIED PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR ARTIFICIAL VENTILATION OF THE LUNGS IN SMALL LABORATORY ANIMALS THE AUTHOR EMPLOYED A SOVIET APPARATUS DP-2, MANUFACTURED IN 1957, WITH A SOMEWHAT MODIFIED DESIGN. IN THE RESPIRATORY AUTOMATON THE SPRING, WHICH MOVES THE MEMBRANE THROUGH A SYSTEM OF LEVERS, WAS REPLACED BY A MORE ELASTIC ONE (BY 7 AND ONE HALF TIMES), THIS RESULTING IN AN 8 FOLD REDUCTION OF THE PRESSURE IN THE LUNGS NECESSARY FOR THE SWITCHING OF VALVES. THE REFERRED TO MODIFICATION OF THE APPARATUS MADE IT POSSIBLE TO USE IT FOR ARTIFICIAL VENTILATION OF THE LUNGS IN SMALL LABORATORY ANIMALS.

FACILITY: SEMIPALATINSK MEDICAL INSTITUTE.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

GLORIA

SO: JPRS 55937
09 MAY 1972

A METHOD FOR CONTROLLING THE HUMAN OPERATOR

[Article by A. S. Osennyi and V. D. Romanov; Kiev, Mikroelektronika i Vychislitel'naya Tekhnika, Russian, No 7, 1970, pp [illegible]]

The problem of objective control of the state of the operator becomes more and more urgent in connection with the increasing complexity and responsibility of his functions. The need for controlling the activity of the many structures in the human organism leads to the use of electrophysiological indices characterizing the functional state of the working organs in the system. One of the most important of these indices is the electrical activity of the brain (the encephalogram).

The principal peculiarity of this parameter is its statistical nature, accompanied by an essential instability. The use of the general principles of analysis of complex systems, developed by statistical dynamics, for treating electroencephalograms (EEG) permits the improvement of the known methods of investigating EEG and the development of new and finer methods of their analysis.

One such method, described in [1], proposes the use of a fast-acting computer in the control system of the human operator. This cannot always be done even in experimental practice. Besides, the method of EEG analysis from moment correlation functions described by the authors complicates comprehension of the physiological basis of the phenomena that are taking place.

The present paper proposes a new method for current statistical analysis of EEG from the numerical characteristics of the energy spectrum to permit the detection of fine changes in the spectral makeup of the EEG. The method is based on the possibility of describing every distribution of its moments. The following are used in the process: the first absolute moment or the average frequency of the energy spectrum

$$\omega_1 = \frac{1}{\sigma^2}\int_0^\infty \omega f(\omega)\, d\omega, \qquad (1)$$

ROMANOV, V. D

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR

OSENNIY, A. S., ROMANOV, V. D. UDC 51:155.001.57:612.82

"One Method of Testing a Human Operator"

Kibernet. i Vychisl. Tekhn. Resp. Mezhved. Sb. [Cybernetics and Computer Engineering, Republic Interdepartmental Collection], No 7, 1970, pp 50-53, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V660 by the authors).

Translation: A method is suggested for objective testing of the status of a human operator on the basis of statistical parameters of the electrical activity of the brain. The method is based on the possibility of describing any distribution of its moments. The studies showed the high information content of the simplest first moments of the distribution of the mean power of electrical activity of the brain with respect to frequency components.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR

ZHEGALOV, V. I., ROMANOV, V. F. UDC 681.3.001:51

"Improved Logic for Connection Between Analog and Digital Computers in an Analog-Digital Computer Complex"

Sb. nauch. tr. Vladimir. politekhn. in-t (Collected Scientific Works. Vladimir Polytechnical Institute), 1971, vyp. 13, pp 136-139 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 9, Sep 72, Abstract No 9B446)

Translation: The authors consider an improved logic for connection between computers in an analog-digital complex with provision for the computing time in the digital unit to exceed the quantization step while simultaneously simplifying control of the complex and improving its efficiency. One illustration. V. Kh.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

UNCLASSIFIED

DISTRIBUTION OF SOME ELEMENTS IN THE BOTTOM SEDIMENTS OF THE NORTHWESTERN ATLANTIC OCEAN -U-

PROCESSING DATE--13NOV70

AUTHOR-(03)-BELYAVSKIY, G.A., MITROPOLSKIY, O.YU., ROMANOV, V.I.

COUNTRY OF INFO--USSR, ATLANTIC OCEAN

SOURCE--DOPOV. AKAD. NAUK UKR. RSR, SER. B 1970, 32(3), 198-202

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GEOGRAPHIC LOCATION, OCEAN BOTTOM SAMPLING, CHEMICAL COMPOSITION, POTASSIUM, SODIUM, CALCIUM, BARIUM, VANADIUM, NICKEL, COBALT, IRON, CHROMIUM, STRONTIUM, TITANIUM, BERYLLIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1726

STEP NO--UR/0442/70/032/003/0198/0202

CIRC ACCESSION NO--AT0131992

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

UNCLASSIFIED

CIRC ACCESSION NO--AT0131992 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISTRIBUTION OF K, NA, CA, BA, V, NI, CO, SR, MG, FE, CR, TI, BE, AND MN BOTTOM SEDIMENTS WAS STUDIED FOR 4 SECTIONS SITUATED IN THE ZONES OF THE GULF STREAM, THE LABRADOR CURRENT, AND THEIR INTERSECTION. THE SPATIAL PATTERN OF ELEMENT DISTRIBUTION WAS AFFECTED BY BOTH THE LABRADOR CURRENT AND THE GULF STREAM, WHICH SORTED AND TRANSPORTED PRODUCTS OF ROCK DISINTEGRATION, DELIVERED FROM CONTINENTS, AND PROMOTED MIGRATION AND PPTN. OF BIOGENIC, CHEMOGENIC, LITHOGENIC, AND HYDROGENIC MATERIAL.

FACILITY:

INST. GEOL. NAUK, KIEV, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

UNCLASSIFIED

PROCESSING DATE--04DEC70

CHARACTER OF ALKALINE EARTH AND ALKALI METAL DISTRIBUTION IN BOTTOM SEDIMENTS OF THE NORTHWESTERN PART OF ATLANTIC OCEAN -U-

AUTHOR-(03)-BELYAVSKIY, G.A., MITROPOLSKIY, A.YU., ROMANOV, V.I.

COUNTRY OF INFO--USSR, ATLANTIC OCEAN

SOURCE--GEOL. ZH. (UKR. ED.) 1970, 30(2), 142-9

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--ALKALINE EARTH METAL, OCEAN BOTTOM, GEOGRAPHIC LOCATION, BOTTOM SEDIMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0960

CIRC ACCESSION NO--AP0133046

STEP NO--UR/0008/70/030/002/0142/0149

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

006

CIRC ACCESSION NO--AP0133046 UNCLASSIFIED PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SAMPLES OF BOTTOM SEDIMENTS WERE TAKEN IN 4 SECTIONS WHICH ARE DESCRIBED. ALL ANALYZED ELEMENTS WERE SEPD. INTO 2 GROUPS ACCORDING TO THEIR GENETIC CHARACTERISTICS: (1) CA, SR, BA, MG, AND K AND (2) BE AND NA. THE BIOGENIC AND CHEMOGENIC FACTORS PLAYED THE MAIN ROLE IN DISTRIBUTION OF ELEMENTS OF THE 1ST GROUP. THE DELIVERY AND REDISTRIBUTION OF TERRIGENOUS MATERIAL PLAYED THE MAIN ROLE IN BEHAVIOR OF ELEMENTS OF THE 2ND GROUP. THE ELEMENTS OF THE 1ST GROUP ARE DISTRUBUTED MORE OR LESS UNIFORMLY IN THE STUDIED AREA WITH SMOOTH VARIATION OF THEIR CONTENT IN VERTICAL DIRECTION. THE ACTIVITY OF LABRADOR CURRENT AND THAT OF GULF STREAM, WHICH SORTED AND TRANSPORTED THE PRODUCTS, OF ROCK DISINTEGRATION, DELIVERED FROM CONTINENTS, AFFECTED STRONGLY THE DISTRIBUTION OF ELEMENTS OF THE 2ND GROUP.

FACILITY: INST. GEOL. NAUK, KIEV, USSR.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

Single Crystals

USSR

UDC 546.289:548.55

ROMANENKO, V. N., BESSONOVA, N. V., VASILEVSKIY, S. A., LAVINZON, D. I., MALOROSSIYANOV, V. S., OSTANINA, K. V., and SMIRNOV, YU. K.

"Investigation of Programmed Growing of Germanium Single Crystals"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 10, No 3, Mar 74, pp 536-539

Abstract: A more detailed program for growing single crystals of germanium was compiled and studied which made it possible to control the process parameters (rate of elongation and angular rotation velocity) simultaneously. With simul aneous control of the elongation and angular rotation rates the constancy of crystal diameter can be maintained, thus yielding a crystal with a constant resistivity throughout. This same control also aids in keeping impurity content low and uniformly distributed. Two figures, 11 bibliographic references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR

IVANOV, V. S., ROMANOV, V. N.

UDC 534.26

"Concerning Determination of the Sonic Pressure in the Vicinity of the Surface of an Infinite Plate, Excited by a Concentrated Force"

Moscow, Akusticheskiy Zhurnal, Vol 16, No 4, 1970, pp 526-529

Abstract: A determination is made of the three-dimensional boundary of a region in which it is possible to employ the asymptotic solution of the problem concerning the radiation of a plate under the action of a concentrated force, obtained by L. Ya. Gutin. Analytic expressions for the sonic pressure in the vicinity of the plate around the line of action of the force are presented. 4 figures, 2 bibliographic entries.

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AA9025820

Soviet Inventions Illustrated, Section III Mechanical & General, Derwent, Feb 1969

218580 BROACH SHARPENING :- with grinding wheel fed axially at higher speed than normally required for shaping the teeth. The advance is regulated according to the tooth pitch on the conical part of broach. The broach is fixed and grinding wheel is set for cutting back of tooth and is inclined to correspond with its angle. To obtain required rise axial feed of grinding wheel is advanced by the amount less than width of groove divided by number of turns on the conical part of broach. Grinding takes place with axis of grinder and broach always at constant distance and the width of grinding wheel is equal or slightly greater than the distance between teeth. 29.5.66. as 1075363/25-8, GILOV, E.I. and ROMANOV, P.N. Lenin Machine Plant in Perm. (30.8.68) Bul. 17/17.5.68. Class 67a, 3, Int. Cl. B 24b.

1935 2315

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

022

UNCLASSIFIED

TITLE--TENSODIODE EFFECT DURING THE BENDING OF ELONGATED SEMICONDUCTOR DIODE PLATES -U-

PROCESSING DATE--09OCT70

AUTHOR-(04)-GRIBNIKOV, Z.S., ZHADKO, I.P., ROMANOV, V.A., SERDEGA, B.K.

COUNTRY OF INFO--USSR

SOURCE--UKRAIN'KII FIZICHNII ZHURNAL, VOL. 15, FEB. 1970, P 300-317

DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--SEMICONDUCTOR DIODE, ELECTRIC CURRENT, ELECTRIC PROPERTY, BENDING STRESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1991/0335

STEP NO--UR/0185/70/015/000/0300/0317

CIRC ACCESSION NO--AP0110223

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

2/2 022 UNCLASSIFIED

CIRC ACCESSION NO--AP0110223 PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL AND EXPERIMENTAL STUDY OF THE EFFECT OF BENDING ON THE CURRENT VOLTAGE CHARACTERISTIC OF ELONGATED FLAT SEMICONDUCTOR DIODES. PROCEDURES ARE GIVEN FOR CALCULATING THE CURRENT VOLTAGE CHARACTERISTICS OF DIODES OF THIS CLASS, SUBJECTED TO BENDING. THE CURRENT VOLTAGE CHARACTERISTICS OF GERMANIUM DIODES OF THIS CLASS ARE MEASURED. THE DEPENDENCE OF THESE CHARACTERISTICS ON THE TYPE AND DEGREE OF BENDING AND THE LENGTH OF THE DIODE BASE IS STUDIED. THE EXPERIMENTAL RESULTS ARE FOUND TO BE IN GOOD AGREEMENT WITH THEORETICAL EXPECTATIONS. IT IS BELIEVED THAT THESE DIODES CAN BE EFFECTIVELY USED IN AUTOMATIC CONTROL SYSTEM.

FACILITY: AKADEMIIA NAUK UKRAINS'KOI RSR, INSTITUT NAPIVPROVIDNIKIV, KIEV, UKRAINIAN SSR.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

ACC. Nr: AP0046688

Abstracting Service: 5/70 INTERNAT. AEROSPACE ABST.

Ref. Code: UR0185

A70-23191 # Transverse Dember effect in elastically bent germanium plates (Poperechnii efekt Dembera v pruzhno zignutikh plastinkakh germaniiu). I. P. Zhad'ko and V. O. Romanov (Akademiia Nauk Ukrains'koi RSR, Institut Napivprovidnikiv, Kiev, Ukrainian SSR). *Ukrains'kii Fizichnii Zhurnal*, vol. 15, Jan. 1970, p. 62-68. 16 refs. In Ukrainian.

Study of the transverse Dember effect in an elastically bent single crystal of germanium subjected to continuous illumination of one face by a narrow light beam. The theoretical calculations and experimental data showed that the distribution of emf is determined by the ratio between the dimensions of the germanium plate and the diffusion length as well as the values of the surface recombination on the plate sides. It is shown that the bent germanium plate may be used as a position-sensitive photocell.

Z.W.

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REEL/FRAME 19782004

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR

UDC: 51:155.001.57:681.3.06

ROMANOV, V. P., ZHITKOV, G. N.

"Elements of the Statistical Theory of Pattern Recognition. I. Recognition of Images of Fixed Shape"

Elementy statisticheskoy teorii opoznavaniya izobrazheniy. I. Opoznavaniye izobrazheniy fiksirovannoy formy (cf. English above), All-Union Institute of Scientific and Technical Information, Moscow, 1971, 61 pp, ill. bibliography of 12 titles (No 2638-71 Dep.) (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V789)

Translation: The paper considers a statistical approach to the recognition of images whose shape is predetermined. It is shown that an image can be described by means of a system of characteristic features whose determination reduces to calculating a linear functional. The authors consider groups of permissible conversions on the plane, the characteristic features being absolutely invariant with respect to these conversions. Problems of selecting resolving rules and the effectiveness of resolving rules are illuminated by the theory of solutions. It is shown

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

ROMANOV, V. P., ZHITKOV, G. N., Elementy statisticheskoy teorii opoznavaniya izobrazheniy. I. Opoznavaniye izobrazheniy fiksirovannoy formy, Moscow, 1971

that the optimum Bayes strategem and criterion of minimum error in recognition are equivalent to the criterion of maximum a posteriori probability. The resolving rule for minimum probability of recognition error divides the multidimensional space into regions. Various modifications of separating functions (discriminative functions) are presented as related to the form of covariation matrices. An optimum recognition procedure is derived from a dimensionless relation. It is shown that such a procedure leads to the necessity of inverting the matrices of covariants in the case of correlated components. Methods are presented for analytical inversion of covariation matrices of a certain special type. Kul'bak's divergence is used for distinguishing two distributions. The difference between classes with regard to permissible conversions is defined as the difference between distributions in the sense of Kul'bak's divergence. Author's abstract.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

1/2 016 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--HYDRODYNAMIC FLUCTUATIONS IN A RELAXING MEDIUM -U-

AUTHOR-(03)-ROMANOV, V.P., SOLOVYEV, V.A., FILATOVA, L.S.

COUNTRY OF INFO--USSR

R

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 3, PP 887-896

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HYDRODYNAMIC PROPERTY, LIGHT SCATTERING, ENTROPY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1977/0087 STEP NO--UR/0056/70/058/003/0887/0896

CIRC ACCESSION NO--AP0043683

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

2/2 016 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0043683

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ANALYSIS OF THE SPECTRAL INTENSITIES OF FLUCTUATIONS IN AN ISOTROPIC MEDIUM IN THE PRESENCE OF INTERNAL RELAXATION PROCESSES IS PRESENTED. IS IST IS SHOWN THAT IN THIS CASE ONLY FLUCTUATIONS OF THE GENERALIZED COORDINATES CAN BE DETERMINED WHEREAS FLUCTUATIONS OF THE GENERALIZED FORCES CANNOT BE FOUND. ONE CONSEQUENCE OF THIS IS THAT THE RYTOV RESULTS (PRIME3 TO PRIME5) FOR A DISPERSIVE MEDIUM ARE ERRONEOUS. DENSITY AND ENTROPY FLUCTUATIONS WHICH AFFECT LIGHT SCATTERING ARE CALCULATED FOR SUCH MEDIA.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

1/2 032 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--THE WAY THE "SOYUZ" WAS DEVELOPED -U-

AUTHOR--ROMANOV, Y.

R

COUNTRY OF INFO--USSR

SOURCE--GUDOK, JUNE 17, 1970, P 3, COLS 1-7

DATE PUBLISHED--17JUN70

SUBJECT AREAS--SPACE TECHNOLOGY

TOPIC TAGS--DESIGN BUREAU, MANNED SPACECRAFT/(U)SOYUZ MANNED SPACECRAFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0489 STEP NO--UR/9002/70/000/000/0003/0003

CIRC ACCESSION NO--AN0114742

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

2/2 032 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AN0114742

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DESCRIBES A VISIT PAID BY GAGARIN, NIKOLAYEV, BYKOVSKIY, SERGEY KOROLEV, THE AUTHOR OF THE ARTICLE, ET AL, TO A DESIGN BUREAU RESPONSIBLE FOR THE DEVELOPMENT OF THE "SOYUZ" SPACE SHIP. THERE AT THE EXPERIMENTAL PLANT THEY MET A LEADING DESIGNER, REFERRED TO AS YEVGENIY ALEKSANDROVICH OR SIMPLY ZHENYA.

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USSR

UDC: 532.529

KISEL'NIKOV, V. N., LEBEDEV, V. Ya., ROMANOV, V. S., VYALKOV, V. V., BARULIN, Ye. P. KOROCHKIN, V. A.

"Study of Distribution of Concentration of Solid Phase in a Horizontal Two-phase Flow"

Tr. Ivanov. Khim.-Tekhnol. In-ta [Works of Ivanovo Institute of Chemical Technology], 1972, No 13, pp 134-138 (Translated from Referativnyy Zhurnal Mekhanika, No 12, 1972, Abstract No 12B998, by V. K. Starkov)

Translation: Results are presented from an experimental study of the distribution of concentrations of the solid phase both over cross sections and over the length of a horizontal pipe (pneumatic feed) for various products and various hydrodynamic modes of the two-phase flow. The distribution of the solid phase through the cross sections of the pneumatic feeder was determined by the method of sectors and by trapping of material with a special multi-level trap with subsequent weighing of the products collected in each level of the trap. The studies were performed using the following materials: spherical silica gel (d=3 mm), cylindrical silica gel (d=4 mm, h=4 mm), SG-1 resin (d=3 mm), granulated urea (d=1.5 mm and 2 mm), amonium sulphate (d=1 mm). The air flow was varied between 39 and 52 m^3/hr, material flow -- between 27 and 90 kg/hr. The

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USSR

Kisel'nikov, V. N., Lebedev, V. Ya., Romanov, V. S., Vyalkov, V. V., Barulin, Ye. P., Korochkin, V. A., Tr. Ivanov. Khim.-Tekhnol. In-ta, 1972, No 13, pp 134-138.

experiments established that there is uneven distribution of concentrations both through the height of the cross section and along the length of the pipe and that this unevenness increases with increasing flow rate, size and density of particles. The corresponding graphs are presented. Six biblio. refs.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

ROMANOV, V. S.

Space Physiology

SO: JPRS 53440
24 Jan 71

660457

UDC 612.17-06:612.765.2

CHANGES IN CARDIAC ACTIVITY DURING PROLONGED RESTRICTION OF MOTOR ACTIVITY

(Article by T. N. Krupina, B. M. Fedorov, T. V. Benevolenskaya, O. I. Boykova, V. S. Nevstruyeva, Ye. N. Kul'kov, R. S. Morozov and V. S. Romanov; Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 5, No 2, 1971, pp 76-81, submitted for publication 1 June 1970)

Abstract: This paper gives the results of clinical and experimental investigations of animals and human subjects conducted to study the mechanisms underlying the effect of hypodynamia on the cardiac function. Clinical investigations which involved a 120-day bedrest experiment indicated that lessened activity resulted in deterioration of the autonomic function and asthenization of the body at later stages. Cardiac changes were traced in the ECG, largely due to a reduced amplitude of the T waves in the first standard and left chest leads. Hypokinetic experiments on rabbits revealed a drastic reduction in noradrenaline content in the hypothalamus at early stages and an inhibition of the adrenal function at later times. Ultrastructural investigations of myocardial cells revealed focal changes in contractile elements (myofibrillar swelling), trophic formations (reduced number of cristae in mitochondria) and increased permeability of the capillary endothelium. Changes in ECG waves which are typical of hypokinetic exposure can be attributed to disturbances in cardiac regulation and trophic support of the myocardium.

Studies of the effect of hypokinesis on the human body have shown that a marked restriction of motor activity causes a number of shifts in cardiac activity and vascular tone, as well as reduced adaptability of the cardiovascular system and circulatory regulation apparatus (A. L. Myasnikov, et al.; Yu. V. Latova; G. P. Mikhaylovskiy and T. V. Benevolenskaya; V. S. Georgiyevskiy and V. M. Mikhaylov; L. I. Kakurin; A. V. Korobkov, et al.; N. K. Panferova, et al.; A. V. Beregovkin, et al.; A. D. Voskresenskiy, et al.; A. M. Genin, et al.; A. R. Kotovskaya; I. D. Pestov, et al.; P. A. Sorokin, et al.,

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

ROMANOV, V. S.

Space Physiology

SO: JPRS 53801
12 AUG 71

UDC 612.172.6.014.47:631.113

MORPHOLOGICAL CHANGES IN THE MYOCARDIUM DURING MULTIHOUR ACCELERATIONS

u (SPACE PHYSIOLOGY) 12

[Article by P. I. Katunyan and V. S. Romanov; Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 5, No 3, 1971, pp 82-83, submitted 11 March 1969]

The duration of man's presence in space will undoubtedly increase in the near future. Accordingly, there will also be an increase in exposure to a number of spaceflight factors. This paper gives the results of a study of a series of histological, histochemical and electron microscope manifestations of myocardial reactions under the influence of $+2G_z$ accelerations.

We studied the hearts of 36 male rats weighing 200-250 g which were exposed to $+2G_z$ accelerations for periods of 8, 16, and 24 hours on a centrifuge with a 70-cm arm and also studied the aftereffect 24 and 72 hours after the centrifuge was stopped.

No structural changes were detected in the muscle cells as a result of eight-hour acceleration. Some increases in plethora of intramural vessels and a decrease in glycogen content were observed. By the 16th hour of exposure to acceleration the plethora of capillaries and venous lacunae had increased; individual muscle cells with homogeneous eosinophilic sarcoplasm appeared. The number of muscle cells with an intense reaction to proteins in the sarcoplasm increased in comparison with the control. The glycogen content in the heart, especially in the sectors under the epi- and endocardium, increased and exceeded the initial level. By the 24th hour of continuous exposure to acceleration the number of eosinophilic muscle cells and cells with an intense reaction to proteins in the sarcoplasm and myofibrils had increased and fibers with an intensified anisotropy of the A disks had appeared. The myocardial glycogen content had decreased.

Disintegration and dissociation of protofibrils were detected in the myofibrils of individual muscle cells, primarily in the left ventricle,

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR UDC 620.172.253.05

VASIL'CHENKO, G. S., CHERNYAVSKIY, L. L., ROMANOV, V. S., and MART'YANOV, N. S., Moscow

"The VRD-300 Installation for Strength Testing of High Speed Turbine Disks"

Kiev, Problemy prochnosti, No 1, 1971, pp 97-100

Abstract: The VRD-300 installation, planned and constructed at the Central Scientific Research Institute for Heavy Machine Building in 1965, is designed for strength testing of turbine wheels up to 300 mm in diameter weighing up to 15 kg at rotating speeds up to 75,000 rpm and temperatures up to 900°C under conditions approaching actual operating conditions. The machine is similar to the VRD-500 machine designed for larger, heavier and slower turbine wheels; the VRD-300 is driven by a centripetal air turbine and rides on bearings using copper inserts between the babbit and steel bushing. Drawings of the device and a description of its principal characteristics are presented.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

USSR

UDC: 612.766.2

KOVALENKO, Ye. A., POPKOV, V. L., KONDRAT'YEV, Yu. I., MAILYAN, E. S., GALUSHKO, Yu. S., PROKHONCHUKOV, A. A., KAZARYAN, V. A., MOROZOVA, R. S., SEROVA, L. V., POTAPOV, A. N., ROMANOV, V. S., and PISHCHIK, V. B.

"Shifts in the Functions of the Organism During Prolonged Hypolinesia"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, Vol 14, No 6, Nov/Dec 70, pp 3-9

Abstract: Rats kept immobilized for up to 170 days in special cages showed an increase in general gas exchange and rate of oxygen utilization in the muscles, and a slowing of the rate of tissue metabolism in the liver and myocardium. The level of phosphotylation in the myocardium and, to some extent, in the skeletal muscles and liver dropped. Prolonged hypokinesia also stunted the animals' growth, pervented them from gaining weight, and in some cases caused them to lose weight. Besides disturbing mineral and protein metabolism, immobilization resulted in exhaustion of the hypothalamus - pituitary - adrenal cortex system.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

1/2 026 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--CHARACTERISTICS OF VARIOUS FORMS OF BENIGN HYPERBILIRUBINEMIA CLINICAL, HISTOLOGICAL AND ELECTRON MICROSCOPIC STUDY -U-

AUTHOR-(03)-PODYMOVA, S.D., ZOLOTAREVSKIY, V.B., ROMANOV, V.S.

COUNTRY OF INFO--USSR

SOURCE--SOV MED 33(1): 26-31 1970

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LIVER, BIOPSY, BILIRUBIN, BIOLOGIC PIGMENT, HISTOCHEMISTRY, ENZYME ACTIVITY, ELECTRON MICROSCOPY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0174 STEP NO--UR/0399/70/033/001/0026/0031

CIRC ACCESSION NO--AP0120874

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4

2/2 026 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120874

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SALIENT CLINICAL AND MORPHOLOGICAL FEATURES OF THE LIVER PUNCTURES IN 42 PAITENTS WITH BENIGN HYPERBILIRUBINEMIA, INCLUDING 24 WITH THE GILBERT MEULENGRACHT VARIETY, 13 WITH POSTHEPATIC, 2 WITH DUBIN JOHNSON AND 3 WITH ROTOR FORMS, ARE PRESENTED. IN ALL 3 GROUPS OF HYPERBILIRUBINEMIA THE PIGMENT WAS FOUND TO DEMONSTRATE SIMILAR HISTOCHEMICAL PROPERTIES CHARACTERISTICS OF CHROMOLIPOID LIPOFUSCINS-PHOSPHOLIPIDS, THE PIGMENT DISPLAYED BRIGHT BROWNISH RED PRIMARY LUMINISCENCE. THE ACTIVITY OF OXIDATIVE ENZYMES IN THE CENTER OF LUBULES, WHERE DEPOSITION OF THE PIGMENT WAS AT ITS HIGHEST, DIMINISHED. REPEATED BIOPSIES HELPED TRACE THE FORMATION OF THE PIGMENT FROM FATTY DROPS. DILATATION AND PROLIFERATION OF BILIARY CAPILLARIES, BROUGHT IN EVIDENCE THROUGH ELECTRON MICROSCOPY, MAY BE OF IMPORTANCE FOR THE UNDERSTANDING OF THE MORPHOLOGICAL BASIS UNDERLYING THE DISRUPTION OF THE BILIFICATION MECHANISMS. FACILITY: I. M. SECHENOV 1ST MOSCOW MED. INST., MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710003-4"