UDC 612.314.58(088.8)

USSR

YEFREMOV, I. S., KOSAREV, G. V., KOS'KIN, O. A., and STRATIY, V. I. [Mosk. energ. in-t-- Moscow Power Institute]

"Device for Regulation of D-C Voltage"

USSR Author's Certificate No 2599995 (sic), filed 3 Feb 68, published 4 May 70 (from RZh--Elektronika i yeye primeneniye, No 5, May 1971, Abstract No 5B443P)

Translation: An improvement of the circuit of a direct pulse d-c converter is proposed. In order to decrease overvoltage at the principal thyristor, the circuit is fulfilled so that the cathode of an auxiliary thyristor is connected with the positive terminal of the power supply through a commutating capacitor, and the anode of both thyristors is connected across a commutating choke coil. 1 ill. I.A.

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Acc. Nr: AP0040326 K Ref. Code: UR 0481

PRIMARY SOURCE: Eksperimental'naya Khirurgiya i Anesteziologiya, 1970, Nr 1 , pp 32-34

ON SUSTAINED HAEMODIALYSIS

Galchikov, V. I.; Trikashchnyy, A. A.; Koblov, Yu. M.; Gorbovitskiy, Ye. B.

A preliminary report on sustained haemodialysis with a small dialyzer.

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REEL/FRAME
19741757

02 lc.

USSR UDC: 681.34.0

GREZDOV, G. I., GISHCHAK, K. I., KOSMACH, Yu. P., Institute of Cybernetics, Academy of Sciences of the Ukrainian SSR

"An Analog Computer Device for Hybrid Computers"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 8, Mar 71, Author's Certificate No 296131, division G, filed 21 Jun 69, published 12 Feb 71, pp 157-158

Translation: This Author's Certificate introduces an analog computer device for hybrid computers which contains a series hook-up comprised of a digital-analog converter and a quasianalog of the slope of a system of linear algebraic equations. As a distinguishing feature of the patent, the labor involved in solving a problem is reduced and reliability is increased by incorporating into the quasianalog of the slope of the system of linear algebraic equations an analog of a system of linear functions, a penalty function shaper, and a derivative shaper. The output of the analog of the system of linear functions is connected to the input of the penalty function shaper, the input of the analog of the system of linear functions is connected to the output of the digital-analog converter, and the input of the derivative shaper is connected to the output of the penalty function shaper.

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UDC:62-531

USSR

KOSNACH, Yu. P., SOMOYLOV, V. D., TKACHENKO, O. V.

"A Relay Tracking System"

USSR Authors' certificate, 21c, 46/52 (G05f), No 256841, Filed 9/12/67, Published 2/04/70 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, 1971, Abstract No 1A283P by V.D.)

TRANSLATION: In known relay systems containing a nonlinear section and a linear portion (amplifier, motor, object) it is difficult to provide high speed and reliability of operation. The device suggested differs from known devices in that a logic circuit with an oscillating period counter is connected at the input of the nonlinear element, with the counter connected to the linear drive, while the feedback loop contains a switch, the input of which is connected to a logic circuit, the other input of which is connected to the output of the oscillating period counter. This allows the accuracy and reliability of operation of the system to be increased. Two figures.

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1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--MACHINE BUILDING TECHNOLOGY -U-

AUTHOR--KOSMACHEV, I.G.

K

COUNTRY OF INFO--USSR

SOURCE--MACHINE BUILDING TECHNOLOGY. (TEKHNOLOGIYA MASHINOSTROYENIYA) LENINGRAD, LENIZD. 1970. 399 PP.

DATE PUBLISHED--------70

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

TOPIC TAGS--GEAR, METAL MACHINING, MACHINE TOOL INDUSTRY, SURFACE PROPERTY, QUALITY CONTROL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1753 STEP NO--UR/0000/70/000/000/0001/0199

CIRC ACCESSION NO--AM0130596

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AM0130596

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: CHAPTER I. BASIC CONCEPTS AND DEFINITIONS 3. II. BILLETS FOR MACHINE PARTS 10. III. PREPARING BILLETS FOR MECHANICAL WORKING 20. IV. CALCULATING SHRINKAGE IN MECHANICAL WORKING 34. V. PRINCIPLES OF BASING AND SETTING UP OF PARTS FOR WORKING 46. VI. ACCURACY OF MECHANICAL WORKING 74. VII. QUALITY OF THW SURFACE 103. VIII. THE SEQUENCE IN DESIGNING TECHNOLOGICAL PROCESSES 128. IX. WORKING OF THE SURFACES OF ROTATION BODY MOLDS 147. X. WORKING OF OPENINGS 182. XI. FORMING THREAD SURFACES 214. XII. WORKING OF FLAT SURFACES 245. XIII. WORKING OF SHAPED SURFACES 263. XIV. ABRASIVE WORKING OF MACHINE PARTS 280. XV. WORKING OF GEAR WHEELS AND SLIT SURFACES 308. XVI. FINISHING OPERATIONS 345. XVII ELECTROPHYSICAL METHODS OF WORKING 383. THE BOOK CORRESPONDS TO THE SCHOOL PROGRAM OF THE COURSE "THE TECHNOLOGY OF MACHINE BUILDING" FOR TECHNICAL SCHOOLS AND CAN BE USE AS BASIC TEXT.

UNCLASSIFIED

1/3 020 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--CORRELATION BETWEEN STRUCTURE AND FUNCTION IN THE DEVELOPING AND MATURE BRAIN -U-

AUTHOR-(02)-KLOSOVSKIY, B.N., KOSMARSKAYA, YE.N.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK AKADEMII MEDITSINSKIKH NAUK SSSR, VOL 25, NR 3, 1970, PAGES 46-52

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--EMBRYOLOGY, BRAIN, SPINAL CORD, NEURON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0978 STEP NO--UR/0248/70/025/003/0046/0052

CIRC ACCESSION NO--AP0130026

UNCLASSIFIED

2/3 020 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0130026

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE NERVOUS SYSTEM STRUCTURE AND FUNCTION ARE MUTUALLY DETERMINED THROUGHOUT THEIR INTRA AND EXTRA UTERINE DEVELOPMENT, AND THEY ARE ALSO INSEPARABLY LINKED IN THE MATURE BRAIN. HOWEVER, THE INTERDEPENDENCY OF MORPHOLOGICAL STRUCTURE AND PHYSIOLOGICAL FUNCTION EMERGES THE MOST DISTINCTLY IN THE COURSE OF EMBRYOGENESIS WHEN, WE COULD SAY, BEFORE OUR VERY EYES FUNCTION OF DIFFERENT PARTS OF THE BRAIN AND SPINAL CORD CHANGES IN ACCORDANCE WITH CHANGE IN STRUCTURE OF THE NERVOUS SYSTEM. THE CHIEF ELEMENT OF THE BRAIN MATTER IS THE NEURON. OUR INVESTIGATIONS REVEALED THAT THE CAUSES OF DEVELOPMENT OF THE STRUCTURE OF EACH NEURON IS BASED ON ITS LINK WITH PERIPHERAL RECEPTOR FIELDS. THIS RELATION CAN BE DIRECT OR INDIRECT, WHEN THE CELL RECEIVES A FLOW OF INFORMATION FROM A RECEPTOR THROUGH THE MEDIATION OF OTHER CELLS (B. N. KLOSOVSKIY, 1959; B. N. KLOSOVSKIY AND YE. N. KOSMARSKAYA, 1956, 1959; YE. N. KOSMARSKAYA, 1966). AT THE SAME TIME ORGANIZATION OF STRUCTURE AND CONSEQUENTLY OF FUNCTION OF THE NEURON ARE DETERMINED BY THE NATURE AND DISTINCTIVE FEATURES OF THE INTERNAL MEDIUM AROUND IT, I. E. BY THE STATE OF THE BLOOD AND SPINAL FLUID SYSTEMS AS WELL AS DEGREE OF DEVELOPMENT AND MEANS OF INTERACTION WITH THE GLIA (B. N. KLOSOVSKIY, 1965; B. N. KLOSOVSKIY, YE. N. KOSMARSKAYA, 1961). THUS, ACCORDING TO OUR POINT OF VIEW, WE CAN GAIN AN IDEA OF THE PATTERNS OF DEVELOPMENT OF STRUCTURE AND FUNCTION OF THE NERVOUS SYSTEM ONLY THROUGH COMBINED INVESTIGATION OF INTERDEPENDENT PROCESSES OF DEVELOPMENT OF ALL OF THE ABOVE MENTIONED COMPONENTS OF BRAIN MATTER.

UNCLASSIFIED

KOSMARSKAYA, Ye. N.

SD: JPRS 54435

9 NOV 71

UDC: 613.363.81.015.4:611.81-

THE EFFECT OF CEREBROLYSIN ON BRAIN DEVELOPMENT

[Article by Ye.N. Kosmarskaya, B.N. Klosovskiy, Institute of Pediatrics, USSR Academy of Medical Sciences, Moscow, Moscow, Vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No 9, 1971, pp 83-88]

Numerous clinical and experimental data indicate that a considerable share of congenital pathology of the nervous system of children is the result of a change in metabolic processes in pregnant women suffering from impaired function of endocrine glands or internal organs (B.N. Klosovskiy, 1949-1967; B.N. Klosovskiy and Ye.N. Kosmarskaya, 1968; M.P. Yankova, 1963; Yu.I. Barashnev; N.S. Sazonova; E.I. Critsyuk; A.V. Karandeyeva; V.I. Sheikovskiy, and others). Thus far, prophylactic measures have not been able to completely prevent the birth of infants with physical and mental deficiencies. For this reason, there is a constant need to search for methods of postnatal stimulant therapy for infants.

The wide use of glutamic acid, vitamins, nonspecific stimulants, and other agents revealed that, as a rule, both gross lesions and underdevelopment of the brain in the embryonic period of life are not totally compensated after birth.

For this reason it has become imperative to determine whether it is possible, and if so to what extent can intra-uterine processes of brain development be stimulated when prenatal ontogeny is abnormal as a result of pathology in the mother. However, when solving this problem it is necessary, in the first place, to have knowledge about the sequelae of the deleterious factor, secondly, to choose a stimulant agent, and, thirdly, to determine the effect of the stimulant on the processes whose normal course was interrupted by the deleterious factor.

The purpose of our work was to expand research in this direction and to report the results obtained when we attempted to affect brain development processes during intra-uterine ontogeny of mammals using cerebrolysin which is being used extensively in clinical practice. Cerebrolysin is a hydrolysate obtained by controlled and careful splitting of pig brain tissue; 1 ml of an aqueous solution of cerebrolysin corresponds to one gram of fresh brain. The dry preparation is 57 percent amino acids, and the rest phosphates and sodium

USSR UDC 621.387.333

KOSMARSKIY, L. N., NITYAYEV, M. V., SINEL'NIKOVA, L. G.

"Energy Losses in Controlled Gas-Discharge Devices"

Elektron. tekhnika. Nauchno-tekhn. sb. Gazorazryadn. pribory (Electronic Technology. Scientific-Technical Collection. Gas-Discharge Devices), 1970, Issue 4(20), pp 45-48 (from RZh--Elektronika i yeye primeneniye, No 5, May 1971, Abstract No 5A168)

Translation: Energy losses were studied in trigatrons filled with various gasses. It is established that the energy losses in the discharge gas are larger the higher the strength [prochnost'] of the filling gas. Summary.

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USSR

UDC 621.224-2.001.5(47+57)

ZUBRITSKAYA, M. A., PUPKO, T. YE., KOSMATOVA, G. E., PROTOPOPOVA, V. P., KUZNETSOV, V. I.

"Study of the Stressed State and Strength of the Spiral Chamber with a Steel Reinforced Concrete Shell in the Turbine Unit of the Inguri Hydroelectric Power Plant"

V sb. Nauchn. issled. po gidrotekhn, v. 1969 g. T.1 (Scientific Research in Hydroengineering in 1969, Vol 1 -- collection of works), Leningrad, Energiya Press, 1970, pp 24-25 (from RZh-Elektrotekhnika i Energetika, No 4, Apr 71, Abstract No 4 D81)

Translation: A model (1:6) of a spiral chamber was studied in order to discover the expedient reinforcement of the turbine unit of Enguriges [Inguri Hydroelectric Power Plant] and improve the supporting elements of the spiral chamber and the turbine stator. The most loaded elements turned out to be the stator columns, the stresses at individual points of which reached the yield point of the steel. On the basis of the research results, recommendations were developed with respect to strengthening the stator columns by varying the configuration and increasing their cross sections at the approach to

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ZUBRITSKAYA, M. A., et al., Nauchn. issled. po gidrotekhn, v. 1969 g. T.1, Leningrad, Energiya Press, 1970, pp 24-25

the stator rings. It turned out to be expedient to increase the rigidity of the turbine unit by increasing the thickness of the base under the generator and raising the floor of the turbine room. For the unique turbines of Inguriges recommendations were made to strengthen the shell of the spiral chamber the effectiveness of which will be checked during subsequent tests.

1/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--RELATION BETWEEN THE MECHANICAL BEHAVIOR OF HIGH DENSITY POLYETHYLENE AND THE MOLECULAR WEIGHT DISTRIBUTION -U-

AUTHOR-(05)-KARASEV, A.K., ANDREYEVA, I.N., DOMAREVA, N.A., KUSMATYKH, K.I., KARASEVA, M.G.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(5), 1127-37

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYETHYLENE, TENSILE STRENGTH, MOLECULAR WEIGHT, CRACK PROPAGATION RATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1376 STEP NO--UR/0459/70/012/005/1127/1137

CIRC ACCESSION NO--AP0135050

UNCLASSIFIED

2/2 C23 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135080

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TENSILE STRENGTH AT BREAK AND THE ELONGATION AT BREAK OF HIGH,D. POLYETHYLENE (I) FROM MIRUD 40 TO PLUS 100DEGREES WERE MAX. FOR I SAMPLES WITH NARROW MOL.,WT. DISTRIBUTION AND CONTG. HIGH,MOL.,WT. FRACTIONS. THE ABSENCE OF FRACTIONS WITH MOL. WT. IS GREATER THAN OR EQUAL TO 10 PRIMED REDUCED THE CRACK RESISTANCE OF I EVEN WHEN THE MOL.,WT. DISTRIBUTION WAS NARROW. FACILITY: NAUCH.,ISSLED. INST. POLIM. PLASTMASS, LENINGRAD, USSR.

UNCLASSIFIED

USSR UDC [illegible]

KOSMATYY, M. S., MAKEYEVKY, V. K.

"Half-Life of Chlorophos in Plants"

Moscow, Khimiya v Sel'skom Khozyaystve, No 1, 1972, pp [illegible]

Abstract: [illegible] on the decay of chlorophos in winter wheat plants and the duration of chlorophos residue in the harvest products. The half-life of chlorophos is 93.1 hours. A procedure is presented for using the half-life figure to calculate the "waiting time" for the harvest products.

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USSR

UDC 632.95

KOSMATYY, YE. S., TVERSKAYA, B. M.

"Quantitative Analysis of Residues of Keltane and Dilor by the Method of Thin-Layer Chromatography"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryaz-neniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Fodder and Environment), Tallin, 1971, pp 162-166 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N451)

Translation: In analyzing dilor (I) and keltane (II), the thin layer chromatographic method is used in a reinforced layer in biological material. For II, the mixture of Al_2O_3 with silica gel KSK (40 mesh) in a 1:1 ratio is used as the adsorbent; for I, Al_2O_3 is used. The chromatographic analysis is run in an n-hexane-acetone system 3:1 (II) and in n-hexane (I). A solution of $AgNO_3$ in NH_4OH (II) or a 2% solution of diphenylamine in acetone (I) is used as the developer. The amount of pesticide in the sample is determined by the spot area.

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USSR

UDC 632.95

BUBLIK, L. I., GAVRILOVA, G. V., KOSMATYY, YE. S.

"Application of Thin-Layer Chromatography for Express Analysis of Cyneb Residues in Tobacco"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryaz-neniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Feeds and Environment), Tallin, 1971, pp 136-138 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N477)

Translation: A study was made of the possibility of using thin-layer chromatography to analyze cyneb (I) with respect to potassium xanthogenate which is formed as a result of interaction of CS_2 released during acid decomposition of I with a solution of KOH in MeOH. The adsorbent is a mixture of silica gel KSK (40 mesh) with Al_2O_3, II degree of activity (1:1). The chromatographic analysis is performed in a mixture of acetone-MeOH (20:1). The chromogenic reagent is 2% solution of $(NH_4)_2 MoO_4$ acidified with HCl.

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USSR UDC 632.95

KOSMATYY, YE. S., BUBLIK, L. I.

"Chromatooscillopolarographic Method of Analyzing Certain Organochlorine Insecticides in Plants and Soil"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov profilakt. zagryaz-neniya pit produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Feeds and Environment), Tallin, 1971, pp 230-233 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N436)

Translation: In order to analyze residues of heptachlor (I) and epoxide I (II), the extract is evaporated and subjected to preparative thin-layer chromatography a silica gel KSK, Al_2O_3 or mixtures of them in a 1:1 ratio in hexane. The adsorbent zones containing I and II are collected and transferred to an electrolytic cell. An oscillopolarogram is taken. The I and II are reduced on a mercury drop electrode against a background of 0.005 normal Me_4NBr in 40% alcohol, and the peaks are given with peak potentials of -1.2 and -1.35 respectively.

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USSR UDC 632.95.028

VASIL'YEV, V. P., KOSMATYY, Ye. S., KUDEL', K. A., POLONSKAYA, F. I., and ZATSERKOVSKIY, V. A., Ukrainian Scientific Research Institute of Plant Protection

"Heptachlor Residues in Plants and Soil in Relation to the Application Method"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 3, 1972, pp 32-34

Abstract: No residue of heptachlor was found in the harvest of corn, wheat, or sugar beets, regardless of the method of application: pretreatment of the seeds, soil treatment, or spraying of the young plants. Depending on the method of application heptachlor residue was found for varying periods in the leaves and roots of the plants, but cleared rapidly and did not accumulate in soil.

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UDC 632.95

USSR

KOSMATYY, Ye. S., and TRET'YAK, M. G., Editorial Staff of "Elektrokhimiye," Academy of Sciences of the USSR

"Polarographic Activity of Some Insecticides -- Dithiophosphoric Acid Esters"

Polyarograficheskaya aktivnost' nekotorykh insektitsidov -- efirov ditiofosfornoy kisloty (cf. English above), Moscow, 1970, 9 pp, bibliography of 17 titles (No 2044-70 Dep.) (from RZh-Khimiya, No 2, 25 Jan 1971, Abstract No 2N549 Dep)

Translation: Some insecticidal esters of dithiophosphoric acid (sayfos, tsindial, fozalon, fenkapton, etc.) give one clear reduction wave each in the region of extreme negative potentials in a base electrolyte of tetraalkylammonium salts in dimethylformamide. The waves have a diffusion nature. The cathode process takes place irreversibly with the participation of two electrons. Polarography can be used for quantitative determination of the radicals of organophosphorus insecticides in biological media, soil and water.

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USSR

UDC 543.253:632.952

KOSMATYY, Ye. S., and TRET'YAK, M. G., Ukrainian Scientific Research Institute on Plant Protection

"Polarographic Determination of Sayphos in Soil"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 9, No 4 (9), 1971, pp 21-22

Abstract: Sayphos -- 0,0-dimethyl S-(4,6-diamino-1,3,5-triazinyl-2-methyl) dithiophosphate -- can be determined by a polarographic method with a sensitivity of 25 μg of the agent per 100 g soil and with an experimental error of 6.5-25%. A soil sample was treated with a known amount of sayphos, extracted with acetone and the solution was evaporated. Aqueous HCl was added to the residue, followed by $Mg(NO_3)_2$; the mixture was washed with hexane and chloroform in a separatory funnel. The solution was neutralized, washed with hexane and the sayphos was extracted with chloroform. The solvent was evaporated and acetone with 0.5 N HCl was added to the residue. This solution was polarographed in the -0.2 to -1.2 V potential range. This method is suitable for sayphos concentrations ranging from $0.76 \cdot 10^{-5}$ to $1.56 \cdot 10^{-4}$ M.

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1/2 017 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--A STUDY OF THE ACTIVITY OF ANTILYMPHOID SERA IN THE CULTURE OF LYMPHOCYTES IN THE PERIPHERAL BLOOD OF MAN -U-

AUTHOR-(04)-GOVALLO, V.I., GRIGORYEVA, M.P., KOPELYAN, I.I., KOSMIADI, G.A.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 4, PP 82-85

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BLOOD SERUM, LYMPHOCYTE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1579 STEP NO--UR/0219/70/069/004/0082/0085

CIRC ACCESSION NO--AP0106325

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0106325

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ACTIVITY OF DIFFERENT HETEROLOGOUS ANTILYMPHOID SERA WAS STUDIED IN THE CULTURE OF HUMAN LYMPHOCYTES IN VITRO. IT IS SHOWN THAT DIFFERENT IMMUNE ANTISERA HAVE THEIR CHARACTERISTIC SPECTRUM OF ACTION IN THE MONOCULTURE OF LYMPHOCYTES, MANIFESTING IN A VARYING DEGREE THE LEUKOAGGLUTINATING, CYTOTOXIC AND BLAST TRANSFORMING EFFECT. IN A MIXED CULTURE OF LYMPHOCYTES ANTILYMPHOID SERA CAUSED BOTH STIMULATION AND INHIBITION OF THE REACTION OF BLAST TRANSFORMATION IN COMPARISON WITH THE REACTION OF NATIVE LYMPHOCYTES.

UNCLASSIFIED

UDC 612.388.014.46-087.45

USSR

SMIRNOVA, R. D.; NOVIKOV, Yu. V.; YUDINA, T. V.; KOS'MINA, L. F.; TAMBOVTSEVA, A. M.; Candidates of Medical Sciences, Moscow Scientific Research Institute of Hygiene imeni F. F. Erisman

"Permeability of the Histohematic Barriers and Some Biochemical Indices After the Combined Effect of a Number of Substances"

Moscow, Gigiyena i Sanitariya, No 7, 1971, pp 19-23

Abstract: Radioisotope (P^{32}) study was conducted of the effects of chronic administration of six substances (isopropylbenzene and its hydroperoxide, propylbenzene, butylbenzene, acetophenone, and dimethylphenylcarbinol) on the permeability of various rat organs (liver, kidneys, spleen, pancreas, thyroid, adrenals, testes, hypophysis), blood catalast activity, vitamin (C and carotene) metabolism, and liver function. The combination of organic compounds was found to decrease the permeability of the histohematic barriers of the hypophysis and testes and, to a

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USSR

SMIRNOVA, R. D., Gigiyena i Sanitariya, No 7, 1971, pp 19-23

lesser extent, spleen and kidneys. Catalase activity and vitamin C content was lower while the carotene content was higher in the experimental animals than in the controls. Liver function (bromsulphalein test) was also impaired. However, the animals' external appearance, behavior, and weight changes were indistinguishable from the control during the nine months of the experiment.

1/2 005 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--COMPARATIVE DATA ON INFECTION RATE OF DIFFERENT GROUPS OF SCELETAL MUSCLES OF CATTLE WITH C. BOVIS -U-

AUTHOR-(02)-FILIPPOV, V.V., KOSMINKOV, N.YE.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA PARAZITOLOGIYA I PARAZITARNYYE BOLEZNI, 1970, VOL 39, NR 3, PP 306-310

DATE PUBLISHED--------70

SUBJECT AREAS--AGRICULTURE

TOPIC TAGS--MUSCULOSKELETAL SYSTEM, PARASITE, COMMERCIAL ANIMAL, VETERINARY SCIENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0218 STEP NO--UR/0358/70/039/003/0306/0310

CIRC ACCESSION NO--AP0123984

UNCLASSIFIED

2/2 005 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123984

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD OF HELMINTHOLOGIC SECTIONS (AFTER SKRYABIN) WAS USED FOR EXAMINATION OF 2024 SCELETAL MUSCLES FROM 11 CALVES PREVIOUSLY INOCULATED WITH C. BOVIS. PRACTICALLY ALL MUSCLES OF THE BODY, HEAD AND EXTREMITIES WERE EXAMINED FROM EACH CALF FOR ELUCIDATION OF THE INTENSITY OF THEIR INVASION WITH CYSTICERCS. THE INTENSITY AND EXTENSITY OF INVASION WAS FOUND TO BE THE HIGHEST IN ALL THE 11 CALVES IN THE MASSETERIC MUSCLES FOLLOWED BY COXOFEMORAL MUSCLES. AMONG THE FORMER M. MASSETER AND M. PTERYGOIDES WERE MOST INTENSIVELY INVADED, AND AMONG THE LATTER M. BICEPS FEMORIS AND MM. GLUTEUS SUPERFICIALIS, MEDIUS, PROFUNDUS. BY THE INTENSITY OF INVASION M. QUADRICEPS FEMORIS WAS SECOND AFTER MASSETER MUSCLES. THE EVIDENCE OBTAINED SUGGEST THAT ADDITIONAL EXAMINATION OF THE TONGUE, M. QUADRICEPS FEMORIS AND M. BICEPS FEMORIS AS WELL AS GLUTEUS MUSCLES SHOULD BE RECOMMENDED FOR IMPROVEMENT OF THE QUALITY OF VETERINARY SANITARY EXAMINATION OF BOVINE CARCASSES FOR MEASLES, AND NOT EXAMINATION OF CUBITAL MUSCLES AS RECOMMENDED NOW. THE ADDITIONAL EXAMINATIONS SUGGESTED WILL UNDOUBTEDLY PROVIDE BETTER PREVENTION OF HUMAN INFECTION WITH TAENIARHYNCHOSIS. FACILITY: KAFEDRA PARAZITOLOGII I BIOLOGII, MOSKOVSKOGO TEKHNOLOGICHESKOGO INSTITUTA MYASNOY I MOLOCHNOY PROMYSHLENNOSTI.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--KINETICS OF EPSILON CAPROLACTAM VINYLATION -U-

AUTHOR-(05)-KONONOV, N.F., ZARUTSKIY, V.V., POGORELOV, A.G., PISARENKO, V.N., KOSMINSKAYA, G.A.
COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 412-15

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--REACTION KINETICS, CAPROLACTAM, VINYL COMPOUND, ORGANIC SYNTHESIS, ACTIVATION ENERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0893 STEP NO--UR/C076/70/044/002/0412/0415

CIRC ACCESSION NO--AP0124556
UNCLASSIFIED

2/2. 020 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0124556
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS OF THE SYNTHESIS OF N,VINYLCAPROLACTAM (I) FROM C SUB2 H SUB2 AND CAPROLACTAM (II) WITH NA CAPROLACTAM CATALYST AT 125-45DEGREES WERE STUDIED. EXPTL. CONDITIONS WERE CHOSEN TO PROVIDE A NON RANDOMIZED COMPLETE FACTORIAL PLAN FOR THE VARIABLE TEMP., REACTION TIME, AND CATALYST CONCN. AT 2 LEVELS. WITH THE USE OF AN ITERATIVE METHOD, VALUES WERE CALCD. FOR THE PRE EXPONENTIAL FACTORS, ACTIVATION ENERGIES, AND REACTION ORDERS WITH RESPECT TO THE REACTANTS, FOR THE REACTIONS INVOLVED IN THE SCHEME II PLUS C SUB2 H SUB2 YIELDS I; II YIELDS RESINOUS PRODUCTS.
FACILITY: INST. ORG. KHIM., MOSCOW, USSR.

UNCLASSIFIED

KOSMINSKAYA, I.P.

Seismology

INTERNATIONAL SYMPOSIUM ON THE NATURE OF SEISMIC [illegible]

[illegible] by Doctor of Physical and Mathematical [illegible]
Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, Moscow, Vol 36, No 6, June 1972, pp 1095-1097

An international symposium on the nature of seismic [illegible] earth's crust, convened under the initiative of the European Seismological Commission, was held on 6-10 December 1971 [illegible] Academy of Sciences Czechoslovak specialists, scientists of socialist countries, the Soviet Union, the USA, France, and West Germany participated in it.

What are seismic boundaries, what are the forces that operate [illegible] Continents and oceans, how stable and how thick are the continents [illegible] ics, what does theory say about the possibilities of seismic methods of studying boundaries of various types within the earth's crust [illegible] tation of elastic waves from earthquakes and explosions and, finally, how [illegible] on the data of physical modeling of complex seismic boundaries agree with the theory? Discussions of these questions also were developed at the symposium.

In the history of structural seismology the last decade will undoubtedly be marked as a period of intensive study [illegible] tion of geologists, geophysicists and researchers on the [illegible] "The upper mantle and its influence on the development of the earth's crust". It was precisely during that time that [illegible] "geographic" discoveries were made in the [illegible] of the depths, discoveries which established completely definite connections between the types of tectonic zones and the deep structure of the earth's crust, substantial horizontal heterogeneities in the structure of the upper mantle were revealed. In the study of the connections of structures near the surface and deep [illegible] ference was given to the most reliable seismic parameters of the [illegible] provided the depth of the surface of the consolidated crust, the [illegible] thickness of the crust, the determined properties of the [illegible] boundary, the Moho, and also certain disputable boundaries in

- 135 -

USSR

UDC 669.24'6.018.9(088.8)

KUDRYAVTSEV, N. T., TYUTINA, K. M., KOSMODAMIANSKAYA, L. V.

"Method of Electrolytic Deposition of Tin-Nickel Alloy"

USSR Author's Certificate No 310951, filed 26 Mar 70, published 1 Oct 71 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4G318P)

Translation: A procedure is proposed for electrolytic deposition of Sn-Ni alloy and an electrolyte containing $NiCl_2$, $SnCl_2$, NH_4F. It is distinguished by the fact that in order to increase the admissible D to obtain light bright deposition of the alloy, chloral hydrate is introduced into the electrolyte with the following content of the components (in g/l): $NiCl_2$ 300-350, $SnCl_2$ 45-50, NH_4F 60-65, chloralhydrate 0.5-2.0. The process is carried out at a pH of 4-4.5, a temperature of 52-55°, and D_c = 0.5-4 a/decimeter^2. The anodes are nickel, and $S_A:S_C$ = 2:1. The alloyed deposits obtained contain 34-38% Ni.

1/1

USSR

UDC 539.3.01

KOSMODAMIANSKIY, A. S., SHALDYRVAN, V. A., SHALDYRVAN, G. G.

"On the Accuracy of the Solution of Problems of the Elasticity Theory for Thick Plates"

V sb. Kratk. tezisy dokl. k Konf. po povrezhdeniyam i ekspluat. nadzhnosti sudovykn konstruktsiy, 1972 (Brief Summaries of Papers at the Conference on Damages and the Operational Reliability of Ship Designs, 1972 -- Collection of Works), Vladivostok, 1972, pp 43-46 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V26)

Translation: The solution of the problem of the stressed state in a thick infinite plate with an opening loaded by an axisymmetric system of normal forces that are antisymmetric relative to the central plane of the plate is presented. The Bubnov-Galerkin method was used in fulfilling the boundary conditions. The infinite algebraic system of equations was solved by the method of computer reduction. The values of stresses on a cylindrical surface of the plate were found and compared with results obtained on the basis of the Kirchhoff theory of thin plates and with results of the asymptotic method. (Aksentyan, O. K., Prikl. mat. i mekh., 1966, Vol 30, No 5, pp 963-970 -- RZhMekh, 1967, Abstract No 4V12). Yu. A. Gruzdev.

1/1

USSR UDC 539.3

KOSMODAMIANSKIY, A. S., KATS, L. YE., and BARG, YA. A., Donetsk State Institute; VNIIGidroprivod All-Union Scientific Research, Planning and Design Institute of Hydraulic Drives)

"An Approximate Method Based Upon the Use of a Hydrodynamic Analogy"

Kiev, Prikladnaya Mekhanika, No 4, Apr 73, pp 57-62

Abstract: A method of hydraulic analogy is presented, based upon the similarity of physical stress fields in an elastic region and pressures in a steady flow of liquid in two-dimensional problems of elasticity and hydrodynamics theory. The analogy is as follows: If the region of flow of a two-dimensional potential steady flow of an ideal incompressible fluid is similar to an isotropic elastic region, with a free contour acting as a hard, immovable wall, and the boundary conditions in both regions are analogous, the stress distribution at any contour is similar to the pressure distribution at the corresponding flow boundary. This analogy simplifies the investigation of stress concentrations in simply connected and multiply connected regions of complex shape by means of the theoretical and experimental methods of aero- and hydrodynamics. The method of hydrodynamic analogy is used illustratively to solve problems of stress distribution beside an elliptical opening and a streamlined fillet. 9 references.
1/1

USSR UDC 539.3

KOSMODAMIANSKIY, A. S., LOZINSKIY, V. N., Donetsk

"Thermoelastic Problem for a Circular Plate with Regularly Arranged Circular Holes in Which Elastic Rings are Soldered"

Kiev, Prikladnaya Mekhanika, Vol VII, No 4, 1971, pp 58-65

Abstract: A solution is found for the problem of thermoelastic stresses in a thin circular plate with regularly arranged circular holes caused by the effect of a stationary point heat source. Elastic rings are soldered in the holes in the plate, and the temperature field of the plate and the rings is determined. The stress-strain state is found by partial solution of the equation of thermoelastic potential and complex Kolosov-Muskhelishvili potentials. A numerical study is made of the stresses acting along the solder outline and the inside outline of the ring.

Inclusion of soldered rings in the force diagram of the plate leads to a reduction in the level of tangential stresses in the plate around the hole in which the rings are inserted. The wider the ring, the greater the reduction in level of tangential stresses. The stresses in the ring on the inside diameter increase with a decrease in inside radius. The discussed procedure can also

1/2

KOSMODAMIANSKIY, A. S., et al., Prikladnaya Mekhanika, Vol VII, No 4, 1971, pp 58-65

be used to solve the problem of the stress-strain state of a plate with elastic and rigid discs soldered in it.

2/2

USSR UDC: 539.3

KOSMODAMIANSKIY, A. S., NESKORODEV, N. M., Donetsk

"Stressed State of an Anisotropic Half-Plane With a Finite Number of Curvilinear Openings"

Moscow, Izvestiya AN SSSR: Mekhanika Tverdogo Tela, No 4, Jul/Aug 71, pp 97-102

Abstract: This paper presents an approximate small parameter method for solving problems of the stressed state of an anisotropic plate weakened by curvilinear holes with a shape which deviates from elliptical (or circular). Two small parameters are introduced to account for this shape deviation for holes which are close to elliptical, giving a solution which converges rapidly to the exact solution. The accuracy of the approximation is established by checking the boundary conditions at a large number of points on the curvilinear contours. It is assumed that the openings are located close to the rectilinear boundary of an anisotropic half-plane. Stress distribution is analyzed for stretching of a half-plane with a rectangular opening. It is found that the influ-

1/2

KOSMODAMIANSKIY, A. S., NESKORODEV, N. M., IAN SSSR: Mekhanika Tverdogo Tela, No 4, 1971, pp 97-100

ence of the edge of the half-plane becomes appreciable when the distance between this edge and the boundary of the opening is shorter than a side of the opening. As the opening is brought closer to the edge of the half-plane, there is a strong increase in stresses at points of the "bridge" close to the opening. If the opening is reinforced by an absolutely rigid ring, the stress concentration decreases appreciably, and varies slowly as the opening approaches the boundary of the half-plane.

2/2

1/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--THERMAL STRESSES GENERATED IN AN ELLIPTICAL PLATE WITH A CIRCULAR HOLE BY A POINT HEAT SOURCE -U-

AUTHOR-(02)-KOSMODAMIANSKIY, A.S., LOZINSKIY, V.N.

COUNTRY OF INFO--USSR

SOURCE--PRIKLADNAIA MEKHANIKA, VOL. 6, APR. 1970, P. 74-79

DATE PUBLISHED-------70

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

TOPIC TAGS--THERMAL STRESS, FLAT PLATE, THIN PLATE STRUCTURE, BIBLIOGRAPHY, HOLE IN STRUCTURE, METAL STRESS, CLAMPING DEVICE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1650 STEP NO--UR/0198/70/006/000/0074/0079

CIRC ACCESSION NO--AP0126272

2/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0125272
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. APPLICATION OF THE THEORY OF FUNCTIONS OF A COMPLEX VARIABLE TO THE SOLUTION OF THE THERMOELASTIC PROBLEM OF THE ACTION OF A CONCENTRATED HEAT SOURCE ON AN ELLIPTICAL PLATE WITH A CIRCULAR HOLE, RIDIGLY CLAMPED AT THE EDGE OF THE HOLE. THE STRESS FIELD IS SOUGHT AS THE SUM OF TWO FIELDS. ONE FIELD IS DETERMINED WITH THE AID OF A PARTICULAR SOLUTION TO THE THERMOELASTIC POTENTIAL EQUATION, WHILE THE OTHER IS OBTAINED FROM A SOLUTION TO A TWO-DIMENSIONAL PROBLEM WHERE THE DISPLACEMENTS AT THE EDGE OF THE HOLE AND THE STRESSES AT THE EDGE OF THE PLATE ARE KNOWN. FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR, VYCHISLITEL'NYI TSENTR, DONETSK, UKRAINIAN SSR.

1/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--NONLINEAR PROBLEM OF A PLATE WEAKENED BY A DOUBLY PERIODIC SYSTEM OF CIRCULAR HOLES -U-
AUTHOR-(02)-KLOYZNER, S.M., KOSMODAMIANSKIY, A.S.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA, MEKHANIKA TVERDOGO TELA, MAR.-APR. 1970, P. 175-178
DATE PUBLISHED-------70

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

TOPIC TAGS--HOLE IN STRUCTURE, STRESS CONCENTRATION, THIN PLATE, FLAT PLATE, POLYSTYRENE RESIN, TENSILE TEST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0351 STEP NO--UR/0484/70/000/000/0175/0178

CIRC ACCESSION NO--AP0124108
UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0124108
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF THE STRESSED STATE OF A POLYSTYRENE PLATE WEAKENED BY A DOUBLY PERIODIC SYSTEM OF EQUAL CIRCULAR HOLES, USING A CARTESIAN COORDINATE SYSTEM WHOSE ORIGIN IS IN THE CENTER OF ONE OF THE HOLES. THE EXTERNAL LOADS ARE CHOSEN IN SUCH A MANNER THAT THE STRESSES DEVELOPING IN THE PLATE ARE DOUBLY PERIODIC FUNCTIONS, WITH THE PRINCIPAL LOAD VECTOR ON EACH HOLE PERIMETER BEING ZERO. EXPRESSIONS ARE DERIVED TO DESCIRBE THE STRESSED STATE OF THIS PLATE WITH THE AID OF THE KOLOSOV MUSKHELISHVILI COMPLEX POTENTIALS, AN EXAMPLE OF THE APPLICATION OF THESE EXPRESSIONS TO A POLYSTYRENE PLATE UNDER TENSION APPLIED AT INFINITY IS GIVEN, SHOWING THAT OMNILATERAL OR UNIAXIAL TENSILE LOADS APPLIED AT INFINITY LEAD TO A REDUCTION OF THE STRESS CONCENTRATIONS IN THIS PLATE. FACILITY: DONETSKII GOSUDARSTVENNYI UNIVERSITET, DONETSK, UKRAINIAN SSR.

UNCLASSIFIED

USSR

UDC 539.3

IVANOV, G. M., KOSMODAMIANS'KIY, O. S., Corresponding Member of the Academy of Sciences of the Ukrainian SSR

"Determination of the Form of Equistrength Holes in Thin Isotropic Plates"

Kiev, Dopovidi Akademii Nauk Ukrains'koi RSR, No 7, 1973, pp 634-636

Abstract: An approximation method is proposed for determining the equistrength outlines of two identical holes weakening a thin isotropic plate. The edges of the holes are either loaded or reinforced by rigid rings. As the condition of equistrength, the requirement is adopted that at all points of the desired outlines the moments assume constant values.

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USSR

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KLOYZNER, S. M., KOSMODAMIANS'KYY, Corresponding Member of Ukrainian Academy of Sciences O. A. (Donetsk State University)

"Double-Periodic Nonlinear Problem for Plate with Curvilinear Holes Supported by Rigid Rings"

Kiev, Dopovidi Akademii Nauk Ukrains'koi RSR: Seriya A - Fizyko-Tekhnichni ta Matematychni Nauky; August 1970, pp 713-716

Abstract: The authors suggest a method based on the use of a Cauchy-type integral for the solution of a nonlinear problem concerning the stressed state of a plate weakened by a double-periodic system of curvilinear holes. The problem is defined by the equations

$$\varphi^{(j)}(z+P) = \varphi^{(j)}(z); \quad \psi^{(1)}(z+P) = \psi^{(1)}(z) - \overline{P}\varphi^{(1)'}(z);$$

$$\psi^{(2)}(z+P) = \psi^{(2)}(z) - \overline{P}\varphi^{(2)'}(z) - C\overline{P}\,|\varphi^{(1)'}(z)|^{2}.$$

Here $j = 1, 2$ is the number of observations; z, $\overline{z}$ are the complex coordinates of the deformed state of the plate; $P = m\omega_1 + n\omega_2$ ($m, n = 0, \pm 1, \pm 2, \ldots$); C is a constant expressing the elasticity of a steel plate.

1/2

USSR

KLOYZNER, S. M., KOSMODAMIANS'KYY, Dopovidi Akademii Nauk Ukrainn'loi RSR: Seriya A - Fizyko-Tekhnichni ta Matematychni Nauky; August 1970, pp 713-716

For the case in which the holes weakening the plate are elliptical the problem reduces to the solution of an infinite system of quasi-regular algebraic equations.

The article includes seven equations. There are four references.

2/2

1/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--QUASI-REGULARITY OF INFINITE SYSTEMS IN PROBLEMS OF THE THEORY OF ELASTICITY FOR PLATES WITH CIRCULAR HOLES -U-
AUTHOR-(03)-KOSMODAMIANSKIY, O.S., LOZHKIN, V.M., SHALDIRVAN, V.A.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK UKRAINS'KOI RSR. DOPOVIDI, SERIIA A FIZIKO TEKHNICHNI I MATEMATICHNI NAUKI, VOL. 32 MAR. 1970, P. 248-250.
DATE PUBLISHED--------70

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

TOPIC TAGS--ELASTICITY, BIBLIOGRAPHY, HOLE IN STRUCTURE, METAL STRESS, STRAIN, STRESS STRAIN DIAGRAM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0987 STEP NO--UR/0441/70/032/000/0248/0250

CIRC ACCESSION NO--AT0118152

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0118152

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROOF OF THE QUASI-REGULARITY OF AN INFINITE SYSTEM OF LINEAR ALGEBRAIC EQUATIONS DESCRIBING THE STRESS-STRAIN STATE OF AN ELASTIC ISOTROPIC CIRCULAR PLATE WITH A FINITE NUMBER OF CIRCULAR HOLES. THE PROBLEM IS REDUCED TO THE DETERMINATION OF TWO FUNCTIONS OF TWO COMPLEX VARIABLES ACCORDING TO PROCEDURES GIVEN BY MUSKHELISHVILI (1965) AND SAVIN (1968). FACILITY: AKADEMIIA NAUK UKRAINS'KOI RSR, OBCHISLIUVAL'NIE TSENTR, DONETSK, UKRAINIAN SSR.

UNCLASSIFIED

USSR

UDC: 531.01

KLIMOV, D. M., KOSMODEM'YANSKAYA, G. N., CHERNOUS'KO, F. L.

"Concerning the Motion of a Gyroscope With Noncontact Suspension"

Izv. AN SSSR. Mekh. tverd. tela (News of the Academy of Sciences of the USSR. Solid State Mechanics), 1972, No 2, pp 3-8 (from RZh-Mekhanika, No 9, Sep 72, Abstract No 9A79)

Translation: It is assumed that a gyroscope in a noncontact suspension with center of gravity noncoincident with the point of suspension can be treated as a body with a fixed point. Slight imbalance or slight nonsphericity of the ellipsoid of inertia is taken as the small parameter ε of the problem. Averaged equations of motion are constructed and used to determine the precession of the gyroscope axis due to imbalance. It is stated that for sufficiently small ε the approximate solution guarantees an arbitrarily small error on an infinite time interval (both for the resonance and non-resonance cases). Bibliography of 6 titles. I. V. Novozhilov.

1/1

USSR

UDC 531.1

KLIMOV, D. M., KOSMODEM'YANSKAYA, G. N., CHERNOUS'KO, F. L., Kaluga, Moscow

"Concerning the Motion of a Gyroscope With a Noncontact Suspension"

Moscow, Mekhanika tverdogo tela, No. 2, Mar/Apr 72, pp 3-8

Abstract: The motion of a gyroscope suspended in a certain force field is investigated, where it is assumed that the force field by providing stability of the center of suspension of the gyroscope with respect to the base has a negligible effect on its angular motion and the center of gravity of the gyroscope has a small displacement relative to the center of suspension. The problem of the motion of a gyroscope with noncontact suspension in this formulation is equivalent to the problem of the motion of a body with a fixed point, the center of gravity of which is a small distance removed from the fixed point. Since the equations of motion of a body where the center of gravity does not coincide with the point of support are generally not integrable, the following parameters are selected as phase coordinates defining the motion of the body, having in mind the subsequent application of the method of averaging in terms of the rapidly varying coordinates: the magnitude K of the kinetic moment

1/2

USSR

KLIMOV, D. M., et al, Mekhanika tverdogo tela, No. 2, Mar/Apr 72, pp 3-8

of the body, the angles α and β determining the direction of the vector of the kinetic moment relative to the fixed coordinate system with center at the point of suspension, and the angles ψ, θ, ϕ determining the position of the axes z_i connected with the solid body relative to the axes ζ_i connected with the vector K of the kinetic moment of the body. It is shown that the kinetic energy T changes slowly with time since the values of $M_i (i = 1, 2, 3)$ are small, where the M_i are the projections of the moment of the external forces relative to the point of suspension of the axes connected with the vector K. The general case of rapid motion of a body with arbitrary moments of inertia is also discussed. The results can be used in analyzing the accuracy of gyroscopes with various suspensions, such as electrostatic and electromagnetic.

2/2

USSR

UDC 517.946

KOSMODEMYANSKIY, A. A. (Jr.), Moscow

"Behavior of Solutions of Quasilinear Equations of Elliptical Type With a Weak Nonlinearity at Infinity and in the Neighborhood of a Boundary Point"

Moscow, Matematicheskiy Sbornik, Nov. Ser., Vol. 87(129), No 1, Jan 72, pp 37-43

Abstract: The author considers quasilinear equations of the form

$$Eu \equiv \sum_{i,j=1}^{n} a_{ij}(x, u, \nabla u) \frac{\partial^2 u}{\partial x_i \partial x_j} + f(x, u, \nabla u) = 0, \qquad (1)$$

where $\lambda \sum_{i=1}^{n} \xi_i^2 < \sum_{i,j=1}^{n} a_{ij}\xi_i\xi_j < \frac{1}{\lambda} \sum_{i=1}^{n} \xi_i^2$. No other restrictions are imposed on the coefficients a_{ij}. Analysis is based on the method of s-capacity developed by Ye. M. Landis (see Е.М. Ландис, *s*-

USSR

KOSMODEMYANSKIY, A. A. (Jr.), Matematicheskiy Sbornik, No 1, Jan 72, pp 37-43

-емкость и ее приложения к исследованию решений эллиптического уравнения 2-го порядка с разрывными коэффибиентами [S-Capacity and its Application to the Study of a Second-Order Elliptical Equation With Discontinuous Coefficients], Matem. Sb., 76(118), 1968, pp 186-213). The following two principal theorems are proved.

Theorem 1. Let the function u -- a solution of equation (1) -- be defined in the half-space $\Pi=\{x: x_n \geqslant 0\}$. When $x_n = 0$ and the function u is non-positive, then either

1) $u \leqslant 0$ for all $x_n > 0$,

or

2) $\overline{\lim}_{r\to\infty} \frac{M(r)}{\ln r} > 0$, where $M(r) = \sup_{\sigma_r^n} u$.

Theorem 2. Let x^0 be a point of boundary Γ of region D, and let $e \geqslant n$ be some number; furthermore, let $s > e-2$ and $\gamma_m = C_s(Q^{r'}_{r-m} \setminus D)$. Then the point x^0 of the boundary is e-regular if the series

2/3

USSR

KOSMODEMYANSKIY, A. A. (Jr.), Matematicheskiy Sbornik, No 1, Jan 72, pp 37-43

$$\sum_{m=1}^{\infty} a_m = \sum_{m=1}^{\infty} 4^{m} \gamma_m$$

diverges. Several lemmas and auxiliary theorems are also proved. The author thanks Ye. M. Landis for assistance. Bibliography of seven titles.

3/3

1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--AQUEOUS PRIMING COMPOSITION BASED ON MICROGELS OF PYRIDINE CONTAINING COPOLYMERS -U-
AUTHOR-(04)-TOLMACHEV, I.A., VERKOLANTSEV, V.V., TSALINGOLD, V.L., KOSMODEMYANSKIY, L.V.
COUNTRY OF INFO--USSR

SOURCE--LAKOKRASOCH. MATER. IKH. PRIMEN. 1970, (2), 36-40

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--FLUID VISCOSITY MEASUREMENT, PYRIDINE, COPOLYMER, STYRENE, GEL, RUBBER/(U)SKS65MVP10 SYNTHETIC RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605019/B07 STEP NO--UR/0303/70/000/002/0036/0040

CIRC ACCESSION NO--AP0140902
UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140902

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VISCOSITY MEASUREMENTS INDICATED THAT PYRIDINE CONTG. COPOLYMERS, E.G., SKS-65 MVP-10 (I) MODIFIED WITH 50PERCENT H SUB3 PO SUB4 AND OP-10 COULD BE USED FOR PRIMING RUSTY SURFACES. MICROHARONESS MEASUREMENTS AND MICROPHOTOGRAPHY SUGGESTED THAT I PARTICLES AGGLOMERATED AND THE FILM WAS FORMED FROM THE LARGER PARTICLES. SEVERAL EQUATIONS WERE OERIVED FOR THE EVALUATION OF THE DEGREE OF PIGMENTATION OF MICROGELS.

UNCLASSIFIED

USSR UDC 531.1

KOSMODEM'YANSKIY, V. A.

"Optimal Selection of Rocket Stages"

Moscow, Mekhanika Tverdogo Tela, No 1, Jan-Feb 72, pp 25-29

Abstract: The system of a staged rocket is dealt with under the assumption that the dry weight of the stages is not proportional to the weight of the fuel of the ricket. The dry weight of a stage contains several components, and not all of them increase in direct relation to the weight of the fuel. It is assumed that the dry weight of a stage consists of the weight of the engines, the tanks, and the w ight of other components not included in the stage structure (weight of the rocket-control instruments, stage-separation devices, and the like). The conclusion is drawn, that if the stage rocket moves in a two-dimensional gravitational field at an optimal pitching angle, the rocket is optimally broken down according to the Tsiolkovskiy rule, in other words, the subdivision coincides with the optimal division of a vertically moving rocket and depends only upon the design parameters of the rocket. If the stage rocket is uniform, then with optimal breakdown, the masses of the successive subrockets change in geometric progression. One figure, four references.
1/1

- 2 -

General

USSR

K

KOSMODEM'YANSKIY, V. A.

"Problems of Big Sports in the USSR"

Moscow, Teoriya i Praktika Fizicheskoy Kul'tury, No 4, 1970, pp 50-53

Abstract: Using statistical methods, the author analyzes some aspects of big sports in the USSR. A method for quantitatively evaluating skill levels in various sports is proposed. Pareto's law is applied to determine the ideal number and distribution of coaches, the optimum organization of individual athletes, and the development of outstanding competitors. The predominance of the USSR (and US) is being slowly threatened by two trends developing in other countries - all-out efforts of individual countries to train champions in traditional specialties, and cooperation among several countries to train superstars. The process by which big sports develop and grow in the developing countries is discussed.

USSR

KOSMOLINSKIY, F., Candidate of Medical Sciences

"Seventh Tsiolkovskiy Lecture Series"

Moscow, Meditsinskaya Gazeta, 20 Dec 72, p 3

Translation: This year the seventh lecture series on the development of the scientific heritage and of the ideas of K. E. Tsiolkovskiy coincided with the 15th year of the space age and the 115th anniversary of the remarkable scientist's birthday.

Notable scientists, representatives of many scientific and technical disciplines, convened in Kaluga for the lecture series. It is typical that not only biologists and medical specialists but also engineers, chemists, mathematicians, and other took part in the proceedings of the section on space biology and medicine.

In addition to the principal problems of space biology that have become traditional in the lecture series, new interesting problems were broached.

For example in his report on magnetobiology Candidate of Technical Sciences N. Golobokiy showed on the basis of an analysis of the physicochemical features of hemoglobin molecular structure that the magnetic sensitivity of blood increases sharply when a hypoxic condition arises and the

USSR

KOSMOLINSKIY, F., Meditsinskaya Gazeta, 20 Dec 72, p 3

blood becomes saturated with de-oxygenated hemoglobin. If this phenomenon is combined with bodily electrolyte state and reduction of erythrocyte volume, the erythrocytes appear to assume a capability for becoming magnetized. In this way the entire body becomes highly sensitive to changes in external magnetic fields. In such cases an increase in blood viscosity is observed, and conditions are set for aggregation of erythrocytes into "Stacks of coins" or into coagulates. This information is very important for evaluation of the combined effects of factors encountered in space flight on the human body.

In a report on the effects of a uniform visual field on the human oculomotor apparatus Candidate of biological Sciences V. Filin suggested that during a long space flight a uniform visual fluld could cause disorders of physiological nystagmus and the appearance of pathological nystagmus comparable to that observed among miners.

Candidate of Technical Sciences I. Smirnor described the perception of space-time coordinates by cosmonauts. He established a cause- and-effect relationship between perception of such coordinates and the dynamics of the body's energy expenditure, depending on physical and mental loads, including information overloads and emotional stress.

2/4

USSR

KOSMOLINSKIY, F., Meditsinskaya Gazeta, 20 Dec 72, p 3

Theoretical problems of space biology were also touched upon at the lecture series. For example Candidate of Philosophical Sciences Yu. Stempurskiy analyzed the present trend of incorporation of space phenomena into biological sciences and demonstrated K. E. Tsiolkovskiy's role in introducing space phenomena into the sciences by referring to his research projects, including those of a purely biological nature.

An attempt to demonstrate K. E. Tsiolkovskiy's role in the development of a systemic approach to phenomena of the universe was made in the report by Candidate of Technical Sciences V. Skunov et al. This idea makes it possible to approach living organisms as large systems and to compare them with artificial systems.

The independent element of a large biological system is the "living system" -- an object which is maintained throughout its life by flows of energy, matter, and information, according to Academician V. Engel'gardt's definition. The "living system" possesses feedback -- that is it controls these flows -- and a capability for matrix synthesis. In accordance with the principle of least effort "living systems" and their symbiotic hierarchical associations must develop in such a way that energy expenditures on the processing of a unit of flow of information, energy, and matter are minimized.
3/4

- 4 -

USSR

KOSMOLINSKIY, F., Meditsinskaya Gazeta, 20 Dec 72, p 3

Prof. I. Khazen touched upon the problem of developing a theory uniting space biology and medicine. Research by classical domestic natural historians on the adaptive role of the central nervous system must serve as its basis. A re-evaluation of the meaning behind "adaptation," re-adaptation," and "Compensation" as these terms are applied to human space flight was suggested. In particular, the effect of weightlessness on the cosmonaut's body can be assessed not as an extreme stimulation but rather as an unusual but weak action proportional to time in its intensity and dependent on the body's initial functional state.

A distinguished citizen of Kaluga and twice-awarded Hero of the Soviet Union, pilot-cosmonaut V. Shatalov appeared at the concluding plenary session of the lecture series. He dwelled on the preparations for the joint Soviet-American experimental rendezvous between the Soyuz and Apollo space-ships. V. Shatalov described specific features of the work of cosmonauts during the rendezvous, in particular the necessity that they remain in the rendezvous lock for a long time (close to 2.5 hours) when transferring from one vehicle to the other in order to prevent caisson disease.

4/4

1/2 030 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--PSYCHOLOGICAL AND PHYSIOLOGICAL REACTIONS OF MAN IN SPACE -U-

AUTHOR-(03)-PARIN, V., CHASEN, I., KOSMOLINSKIY, F.

COUNTRY OF INFO--USSR

SOURCE--VOI-Z, VOL 112, NO. 6, 1970, P. 359, 360

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SPACE MEDICINE, PHYSIOLOGIC STRESS, SPACE PSYCHOLOGIC STRESS, HYPODYNAMIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/1858 STEP NO--GY/0000/70/112/006/0359/0360

CIRC ACCESSION NO--AP0127268

UNCLASSIFIED

2/2 030 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127268

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF SOME PHYSIOLOGICAL AND PSYCHOLOGICAL PROBLEMS ENCOUNTERED BY MEAN DURING SPACE FLIGHTS IN THE LIGHT OF THE CONTEMPORARY SPACE BIOLOGY, SPACE MEDICINE, AND SPACE PSYCHOLOGY. PROBLEMS OF HUMAN HYPOKINESIS, SPACE KINETOSIS, AND HUMAN REACTIONS TO LIFE CONDITIONS IN AN ISOLATED AND VERY LIMITED ROOM ARE CONSIDERED. SOME PREDICTIONS CONCERNING THE ORIENTATION OF FUTURE RESEARCH ARE OUTLINED. FACILITY: AKADEMIIA NAUK SSSR, MOSCOW, USSR. FACILITY: INSTITUT MEDIKO-BIOLOGICHESKIKH PROBLEM, MOSCOW, USSR.

UNCLASSIFIED

1/2 039 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--SPACE PSYCHOPHYSIOLOGY -U-

AUTHOR--KOSMOLINSKIY, F., MYASNIKOV, V.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA GAZETA, JUNE 5, 1970, P 3, COLS 1-2

DATE PUBLISHED--05JUN70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--METABOLISM, SLEEP, COSMONAUT TRAINING, DIET, DRUG, MAN MACHINE SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/1558 STEP NO--UR/9034/70/000/000/0003/0003

CIRC ACCESSION NO--AN0103348

UNCLASSIFIED

2/2 039 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AN0103348

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE IS A BRIEF DISCUSSION OF THE "MAN FLYING VEHICLE" THEME IN THE MEDICAL BIOLOGICAL FRAMEWORK. IN CONCLUDING, THE AUTHORS SAY THAT THE IMPROVEMENT OF THE METHODS OF GENERAL AND SPECIAL PHYSICAL TRAINING, AND THE CONTROL OF THE METABOLISM WITH THE AID OF PROPER DIETING AND CERTAIN DRUGS MERIT SPECIAL ATTEMTION. THEY ALSO STRESS THE IMPORTANCE OF SELF REGULATED SLEEP.

UNCLASSIFIED

USSR UDC 669.15.018.23-14(088.8)

BELOV, A. D., VILIM, YU. V., KOSOBUKOV, E. A., SEDOV, V. V., YAROPOLOV, I. I., VASIL'YEV, V. D.

"Automatic Cast Stainless Steel"

USSR Author's Certificate No 276433, Filed 15 Jul 68, Published 12 Oct 70, (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4I613P)

Translation: In order to improve machinability, steel containing the following (in %) is proposed: C ≤ 0.12, Cr 17-20, Ni 8-11, Bi 0.1-0.2, S 0.06-0.12, P ≤ 0.035, Si ≤ 1.0, Mn 1.0-2.0. The presence of S and Bi in steel raises the strength of the cutting tool and improves the machinability of the steel. When using the steel (compared with 1Kh18N9TL steel) the cutting rate with 60-min strength of the tool is improved by 25-50%, or the strength of the cutting tool is increased by 2-6 times.

1/1

1/2 031 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--THERMAL DEGRADATION OF AROMATIC POLYAMIDES WITH HETERO GROUPS IN THE CHAINS -U-

AUTHOR-(05)-VELYAKOV, V.K., KOSORUTSKAYA, A.A., SAVINOV, V.M., SOKOLOV, L.B., GITIS, S.S.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(3), 610-19

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--THERMAL DEGRADATION, POLYAMIDE COMPOUND, POLYMER, ACTIVATION ENERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1678 STEP NO--UR/0459/70/012/003/0610/0619

CIRC ACCESSION NO--AP0125299

UNCLASSIFIED

2/2 031 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125299

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THERMAL DEGRADATION IN AIR OF AROMATIC POLYAMIDES WAS STUDIED. THE AMTS. OF THE POLYMERS CONVERTED TO GASES IN 30 MIN AT THE DECOMPN. TEMPS., THE ACTIVATION ENERGIES OF THE DEGRADATION AT 410-20DEGREES AND 440-60DEGREES, THE TEMPS. AT WHICH 20PERCENT OF THE GEL FRACTION REMAINS, AND THE TEMPS. AT WHICH THE VISCOSITY IS REDUCED TO 0.5 OF ITS ORIGINAL VALUE IN 30 MIN ARE GIVEN. HETERO GROUPS IN THE POLYMER MOLS. LOWER THE THERMAL OXIDATIVE RESISTANCE IN THE ORDER CH SUB2 LARGER THAN S LARGER THAN CO LARGER THAN O LARGER THAN SO SUB2 LARGER THAN OR EQUAL TO CF SUB2 CF SUB2.

FACILITY: VLADIMIR. NAUCH.-ISSLED. INST. SIN. SMOL, VLADIMIR, USSR.

UNCLASSIFIED

USSR

UDC 632.951:635.9

KOSOGLAZOV, A. A.

"Phytotoxicity of Pesticides in Greenhouses"

Moscow, Khimiya v Sel'skom Khozyaystve, No 1, 1972, p 25

Abstract: The phytotoxicity of various pesticides was studied at leading greenhouses for flowers (everblooming carnations, geraniums, calla lilies, roses, chrysanthemums, cyclamen, cineraria) and some bulbs with forcing (tulips, narcissus, hyacinths). The experiments were performed in greenhouses 300-500 square meters in size over a calendar year at an air temperature from 12 to 25°C. The results of these tests are summarized briefly. Three versions of the tests were run: 1) with a minimum concentration of the compound according to instructions; 2) the maximum allowable concentrations; 3) a concentration up to 3 times the maximum allowable. Out of the 13 test [illegible], 11 did not cause burns: anthio, carbophos, metaphos, nemagon, 2,4-D, zineb, trichlorometaphos, chlorophos and chlorophenylchlorothionophosphate pesticides.

1/1

USSR

UDC 621.383.52

KOSOGOV, O.V., MARAMZINA, M.A.

"Calculation Of Collection Factor Of Indium Antimonide Photodiodes With A Nonsymmetric p-n Junction"

Izv. Leningr. elektrotekhn. in-ta (Journal Of The Leningrad Electrical Engineering Institute), 1972, Issue 110, pp 78-83 (from RZh:Elektronika i yeye primeneniya, No 11, Nov 1972, Abstract No 11B332)

Translation: The paper considers the effect of recombination constants on the spectral distribution of the collection factor with various depths of occurrence of an indium antimonide p-n junction. An analysis is made for parameters existing in the case of alloyed and epitaxial p-n junctions of n^+p type on a base of p-InSb. Summary.

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USSR UDC: 517.933

KOSOGLYAD, B. I.

"Conditions for the Existence of Single-Valued Solutions for the Equations of Motion of a Solid Body in Pseudo-Euclidean Space R5"

Uch. zap. Kazan. un-t (Kazan Institute Scientific Notes) 1970, vol. 129, No. 6, pp 87-98 (from Rzh-Matematika, No. 3, March 71, Abstract No. 3B190)

Translation: The author studies the equations of motion of a solid body around a motionless point under the action of a system of parallel forces in space with the metric $-dx^2 - dy^2 + dz^2$ (the derivative of the angular momentum has the components $A\dot{p} + (B + C)qr$, $B\dot{q} - (A + C)rp$, $C\dot{r} + (A - B)pq$). Well known approaches to the Poisson equations are used to obtain the fourth integral. As a result, the "cases" of Euler, Lagrange, Hess, Bogoyavlenskiy, Bobylev, etc., arise. It is established that the Kovalevskiy conditions are unnecessary for the existence of single-valued solutions. The same conclusion is also true of the Goryachev-Chaplygin case. I. Arzhanykh

1/1

USSR

UDC 681.335.5

LIKHTTSINDER, B.Ya., KOSOLAPOV, A.M.

"Autocompensation Multiplier-Divider"

Radioelektron. v Nar. Kh-ve SSSR, Ch. 2 [Radio Electronics in the USSR National Economy, Part 2], Kuybyshev, 1970, pp 494-497 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No. 4, 1971, Abstract No. 4B103 by IV).

Translation: The construction of a device performing the operations of multiplication, division, and raising to a power on 4 input variables from one to ten volts, with recording of the input and output variables, is described. 1 fig.

1/1

USSR

UDC 621.382.2

SIROTA, N.N., IVANOV, G.M., KORSHUNOV, F.P., KOSYACHY, N.N.

"Effect Of Electron Irradiation On P-N Junctions In Silicon"

V sb. Radiatsion. fiz. nemet. kristallov (Radiation Physics Of Non-Metallic Crystals--Collection Of Works), Minsk, "Nauka i tekhn.," 1970, pp 136-141 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2B151)

Translation: The irreversible changes of the voltampere characteristics of p-n junctions in Si on exposure to irradiation by electrons with energies of 10--25 Mev are investigated. It is established that at low injection levels the forward voltage drop after irradiation is decreased, which is explained by the reduction of concentration and lifetime of the majority charge carriers in the p- and n-regions. At high injection levels, as a result of an increase of resistance of the base during irradiation, its effect on the form of the characteristics becomes noticeable. With an increase of the temperature, equal changes of the forward drop begin with large flux density. The effectiveness of the action of irradiation by electrons on the forward characteristics grows with an increase of the energy of the electrons, while the back characteristics remain practically without change. 6 ill. 6 ref. V.M.

1/1

Acc. Nr: AP0037006 Ref. Code: UR 0239

PRIMARY SOURCE: Fiziologicheskiy Zhurnal SSSR, 1970, Vol 56, Nr 2, pp179-185

CHARACTERISTIC OF THE EFFERENT NEURONS ACTIVITY ON REFLECTORY OPENING OF THE CRAYFISH CLAW DACTYLOPODITE

T. A. Stepushkina, G. S. Kan and *V. N. Kosolapov*

Leningrad

Activity of the efferent neurons controlling contraction of the muscle-opener of the claw dactylopodite of the intact crayfish during some afferent influences, was studied. The effect of stimulation of different receptive fields on the activity pattern of efferent neurons and muscle contraction, was investigated.

The characteristic changes of the activity of the motor and the inhibitory neurons controlling the muscle reflectory contraction, were observed.

D. M.

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REEL/FRAME
19721938

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USSR UDC 620.193

BRYNZA, A. P., KOSOLAPOVA, T. YA., KEMELOVSKAYA, S. A., FEDORUS, V. B., and SIMONOVA, YE. K., Dnepropetrovsk State University and Institute of Problems of Material Science, Academy of Sciences Ukrainian SSR

"Corrosion Resistance of Titanium Carbide Powders"

Kiev, Poroshkovaya Metallurgiya, No 8, 1971, pp 67-72

Abstract: The decomposition kinetics of titanium carbide were studied in the region of homogeneity in mixtures of sulfuric acid (from 0.5 to 10 geq/l) with hydrogen peroxide (from 1.08 to 6.44 geq/l) at 25-80°. The carbides were prepared in a laboratory vacuum furnace (10^{-3} mm Hg) with a slow temperature rise (for 30-40 minutes) to 1500-1600°, with subsequent exposure at this level for 2 hours. The mean particle size of carbide powder was 15 microns. In the corrosion testing, all carbide phases completely decompose when maintained in a solution containing 10 geq/l H_2SO_4 and 6.44 geq/l H_2O_2 for 120 hours at 25°. With temperature rise, the time required for total decomposition was reduced to 10 hours at 40°, 6 hours at 60°, and 2 hours at 80°. When the concentration of sulfuric acid was increased from 0.5 to 5 deq/l, the rate of dissolution of titanium carbides was reduced, and when the acid content was varied from 5 to 10 geq/l, the rate of decomposition did not depend on solution acidity. When the hydrogen peroxide content was increased, the rate of decomposition of the titanium carbides rose. When the carbon content in titanium

1/2

USSR

BRYNZA, A. P., et al, Kiev, Poroshkovaya Metallurgiya, No 8, 1971, pp 67-72

carbide was increased, the decomposition rate declined. That is, the more defect-free the carbide is relative to carbon, the higher is its resistance in a mixture of sulfuric acid and hydrogen peroxide.

2/2

USSR

UDC 621.762.2.001:669.293.784

LYUDVINSKAYA, T. A., SINEL'NIKOVA, V. S., KOSOLAPOVA, T. YA., and SERGEYEV, V. P.

"Investigation of a Method of Obtaining Niobium Carbide Powder and Coatings From the Vapor-Gas Phase"

V sb. Tugoplavk. karbidy (The Refractory Carbides -- collection of works), Kievn "Nauk. Dumka," 1970, pp 28-32 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G338 by authors)

Translation: An investigation is made of the possibility of obtaining niobium carbide by the method of precipitation from a vapor-gas mixture in the 1500-1900° range in the form of powder and coatings. The precipitation rate is studied as a function of reagent concentration, substrate temperature, and H_2 feed rate. The maximum rate of niobium carbide precipitation was observed at the optimum 10:1 ratio of H_2 to the sum of chlorides. The authors investigate the possibility of applying the coatings to graphite, tungsten, molybdenum, and niobium. Three illustrations. Two tables. Bibliography with eight titles.

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UDC 621.762.669.018.44

USSR

SLEPTSOV, V. M. and KOSOLAPOVA, T. YA.

"Technology of Production and Properties of Refractory Materials for High-Temperature Equipment"

Sovrem. probl. poroshk. metallurgii [Modern Problems of Powder Metallurgy -- collection of works], Kiev, Nauk. dumka Press, 1970, pp. 224-242, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract No.1 G481 by the authors).

Translation: A phenomenological representation of the structure of materials is suggested, based on the idea of separation of valence electrons into localized and nonlocalized portions. Methods are described for producing high-temperature refractory compounds, as well as the technology of manufacture of products from these compounds. 5 figures; 1 table; 17 biblio. refs.

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Conferences

USSR

KOSOLAPOVA, T. Ya., and FEDORUS, V. B.

"Third Scientific Seminar on Methods of Production and Properties of Refractory Carbides and Heat-Resistant Materials Based on Them"

Kiev, Poroshkovaya Metallurgiya, No 2, Feb 71, p 107

Abstract: The Third Scientific Seminar on Methods of production and Properties of Refractory Carbides and Heat-Resistant Materials Based on Them, organized by the Institute of Problems of Material Science, Academy of Sciences, Ukrainian SSR, was held in Kiev on 26-28 October 1970. Over 100 persons representing 35 scientific research organizations in Moscow, Leningrad, Novosibirsk, Kiev, Sverdlovsk, Dnepropetrovsk, and other cities took part in the conference. Forty-three reports were heard and discussed, covering a wide range of problems, including: the nature of compounds of carbon with elements of the periodic system; the conductivity band of transition metal monocarbides; calculation of the band structure of zirconium and niobium mono-
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USSR

KOSOLAPOVA, T. YA., and FEDORUS, V. B., Poroshkovaya Metallurgiya, No 2, Feb 71, p 107

carbides in the strong bonding approximation; studies of the properties of carbides in the area of homogeneity; the study of the thermodynamic properties and structures of oxycarbides and oxycarbonitrides; the determination of new superconductivity effects in carbides; and the use of carbides and carbide-based alloys in technology. One section was dedicated to studies of non-metallic carbides.

2/2

1/2 023 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--RADIOISOTOPE SCANNING OF THE LIVER IN THE RESTORATIVE PERIOD AFTER RESUSCITATION OF THE ORGANISM -U-

AUTHOR-(04)-RADUSHKEVICH, V.P., MIKHAYLOV, M.M., KOSONOGOV, L.F., TELNOV, YU.A.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 4, PP 105-108

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIOISOTOPE, MEDICAL NUCLEAR APPLICATION, LIVER, RESUSCITATION, CLINICAL DEATH, IODINE ISOTOPE, TAGGED ATOM, ROSE BENGAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1217 STEP NO--UR/0531/70/000/004/0105/0109

CIRC ACCESSION NO--AP0054112

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054112

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DEPICTS THE EXPERIENCE IN RADIOISOTOPE SCANNING OF THE LIVER OF THE RESUSCITATED ORGANISM WITH A DIFFERENT DURATION OF CLINICAL DEATH. A RADIOIODINE LABELLED SOLUTION OF BENGAL ROSE WAS INTRODUCED INTRAVENOUSLY IN A DOSE OF 2 MUG-KG OF BODY WEIGHT. EXPERIMENTAL AND CLINICAL INVESTIGATIONS TESTIFY TO THE GREAT VALUE OF RADIOACTIVE SCANNING OF THE LIVER IN THE RESUSCITATED ORGANISM. SCANNING YIELDS ADDITIONAL INFORMATION ON THE CLINICO BIOCHEMICAL DATA FOR THE EVALUATION OF THE FUNCTIONAL CAPACITY OF THE LIVER.

UNCLASSIFIED

KOSORUKOV, A. L.

RAN/ /K-160/5-MAY 73
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(3)

Vasil'yev, M. M. Supersonic flow around a cone at an angle of attack. Trudy II Respublikanskoy konferentsii po aerogidromekhanike, teploobmenu i massoobmenu. Sektsiya "Aerodinamika bol'shikh skorostey". Kiyev, Kiyevskiy universitet, 1971, 75-78. (RZhMekh, 5/72, no. 5B338)

The method reported earlier by the author (MZhiG, no. 1, 1970, 33-39, RZhMekh, 1970,6B240) is used to solve the problem of supersonic flow around a cone at an angle of attack with an accuracy to values of the second order of smallness, inclusively. The results are compared with a solution of the problem by a method of nets of Babenko, et al. (Babenko, Voskresenskiy, Lyubimov, and Rusanov. (Prostranstvennoye obtekaniye gladkikh tel ideal'nym gazom. Three-dimensional flow around smooth bodies by an ideal gas). Moskva, Nauka, 1964, RZhMekh, 1965, 4B207K), and with the solution obtained by the method of expansion into a double series by Sapunov(IN: Transzvukovyye techeniya gaza. Transonic gas flow. Saratov. Saratovskiy universitet, 1964, 164-177, RZhMekh, 1965, 9B231).

Kosorukov, A. L. Supersonic flow around smooth bodies with relaxation. IN: Trudy II Respublikanskoy konferentsii po aerogidromekhanike, teploobmenu i massoobmenu. Sektsiya "Aerodinamika bol'shikh skorostey". Kiyev. Kiyevskiy universitet, 1971, 70-74. (RZhMekh, 5/72, no. 5B337)

Steady flow around an axisymmetric blunt body by a nonviscous, nonthermally conductive gas is solved by the method of adjustments, with account taken of oscillatory relaxation. To reduce the difficulties of solving relaxation equations, the author divides the initial system into two subsystems: 1) equations for the velocity and pressure components, and

1/2 050 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--FLOW PAST THE NOSE SECTION OF A BLUNTED BODY WITH ALLOWANCE FOR NONEQUILIBRIUM EXCITATION OF VIBRATIONAL DEGREES OF FREEDOM -U-

AUTHOR--KOSCRUKOV, A.L.

K

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA, MEKHANIKA ZHIDKOSTI I GAZA, JAN.-FEB. 1970, P. 40-47

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--BLUNT BODY, NUMERIC SOLUTION, VIBRATION RELAXATION, SUPERSONIC FLOW, DIFFERENTIAL EQUATION, VIBRATION, EXCITATION ENERGY, THERMAL EFFECT, MOLECULE, AIR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1789 STEP NO--UR/0421/70/000/000/0040/0047

CIRC ACCESSION NO--AP0112775

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--20NOV70

2/2 050

CIRC ACCESSION NO--AP0112775

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. APPLICATION OF A NUMERICAL METHOD TO THE SOLUTION OF THE PROBLEM OF THE INFLUENCE OF VIBRATIONAL RELAXATION ON THE SUPERSONIC FLOW PAST THE NOSE SECTION OF A BLUNTED BODY. THE DIFFERENTIAL EQUATIONS FOR THE VIBRATIONAL ENERGY ARE DERIVED WITH ALLOWANCE FOR TWO MECHANISMS OF EXCITATION OF VIBRATIONS: TRANSITION OF TRANSLATIONAL INTO VIBRATIONAL ENERGY, AND EXCHANGE IN QUANTA OF THERMAL VIBRATIONS AMONG VARIOUS MOLECULES. THE RESULTS ARE OBTAINED FOR AIR, USING A SPHERE AND AN ELLIPSOID OF REVOLUTION AS THE BLUNTED BODY.

UNCLASSIFIED

USSR

KOSORUKOV, A. I., Moscow

"Flow Past the Head Portion of a Blunt Body Considering Nonequilibrium Excitation of Vibrational Degrees of Freedom"

Moscow, Mekhanika zhidkosti i gaza, No. 1, 1970, pp 40-47

Abstract: The effect of vibrational relaxation on supersonic flow past the head portion of a blunt body is examined. The problem is solved by a numerical method. Two mechanisms for exciting oscillations were considered in deriving the differential equation for vibrational energy: the transition of translational energy into vibrational energy and the exchange of vibrational quanta between different molecules. The calculations were made for air with a composition of 23.14% O_2, 75.52% N_2, and 1.34% Ar, although the method is independent of the composition. A sphere and ellipsoids of rotation were used as examples of blunt bodies. It is noted that various physicochemical processes arise in supersonic flow past a blunt body associated with the sharp rise in temperature behind the shock wave: excitation of rotational and vibrational degrees of freedom of the molecules, dissociation, ionization, and other chemical reactions. This paper considers flow around the nose of an axially

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201510019-0"

USSR

KOSORUKOV, A. L., Mekhanika zhidkosti i gaza, No. 1, 1970, pp 40-47

symmetric blunt body considering oscillatory relaxation; it is assumed that the rotation of molecules is uniform and that there are no chemical reactions. Computer calculations were plotted for flow past a sphere of radius 0.5 m at an altitude of 40 km for Mach numbers of the incident flow of 6, 8, and 10 at an altitude H = 0 and M_∞ = 4. Calculations were also made for ellipses with major and minor axes equal to 1, 0.5; and 1, 2.

2/2

USSR

UDC 533.601.312

KOVALENKO, V. M., KOSORYGIN, V. S., SHUMSKIY, V. V.

"Experimental Study of Bottom Pressure in Highly Elongated Circular Cylinders"

Izvestiya sibirskogo otdeleniya Akademii Nauk SSSR, Seriya tekhnicheskikh nauk, No 8 (203), vyp. 2, Jun 1972, pp 67-70

Abstract: An experimental study of bottom pressure was made on 3 models of solids of rotation of moderate and very great elongation. The models were a combination of a cylinder and an ogive with a needle. The cylindrical section had elongation λ_c = 10.3 (model 1) and 32.8 (models 2 and 3). Model 3 differed from model 2 by the presence of an inverted tail cone. The experiments were performed in a supersonic wind tunnel with dimensions of the operating section of 0.6 × 0.6 m^2 at M = 3 and 4 and $Re_{1M} = 36 \cdot 10^6$ and $54 \cdot 10^6$ respectively.

Experimental values of the bottom drag and the relation between the bottom pressure and dimensionless thickness of the boundary layer are plotted. An increase in elongation of the cylindrical section λ_c from 10.3 to λ_c = 32.8 leads to a decrease in the bottom drag for M = 3 and 4 of 12 and 6% respectively, that is, with an increase in the M number of the oncoming flow the effect of the elongation becomes less significant. This result agrees qualitatively with the physical concepts of the nature of bottom pressure and it is consistent on

USSR

KOVALENKO, V. M., et al., Izvestiya sibirskogo otdeleniya Akademii Nauk SSSR, Seriya tekhnicheskikh nauk, No 8 (203), vyp. 2, Jun 1972, pp 67-70

the graphs showing the effect of the dimensionless thickness of the boundary layer on the bottom pressure for different M numbers. The presence of the tail cone (model 3) decreases the absolute value of the bottom pressure coefficient by approximately 5%.

USSR

UDC: 531.38

ISHTULOV, A. G., KOVALENKO, V. M., KOSORYGIN, V. S., CHERNOV, A. T., and SHUMSKIY, V. V.

"Aerodynamic Characteristics of Long Bodies of Revolution in the 0.2-6.0 Mach Number Range"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR--Seriya Tekhnicheskikh Nauk, No 3, 1972, pp 16-22

Abstract: The authors assert that they know of no earlier work in the experimental confirmation of results derived from the aerodynamic theory of long bodies of revolution. The fundamental point of interest in the experiments described in this paper is the effect of the body's extended length on the nature of the variation in the lift force factor and on the magnitude of the pressure center coefficient. In general, the method of the experiments was to use models of moderate length and extrapolate the results to much longer bodies. Eight such models were used, varying in the shape of the nose part and in the length of the cylindrical shaft. Drawings and scale photographs of the nose portions are shown, and a table of test results for Mach numbers of 0.2-6.0 is reproduced. Members of the Institute of Theoretical and Applied Mechanics in Novosibirsk, the authors conclude with the note that the question

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USSR UDC: 531.38

ISHTULOV, A. G., et al, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR--Seriya Tekhnicheskikh Nauk, No 3, 1972, pp 16-22

of the existence of eddies for small attack angles of such bodies requires further research.

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1/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--HOLOGRAPHIC IDENTIFICATION OF SIMILAR IMAGES -U-

AUTHOR-(02)-KOSOUROV, G.I., KACHALOV, O.V.

COUNTRY OF INFO--USSR

SOURCE--PRIBORY I TEKHNIKA EKSPERIMENTA, JAN.-FEB. 1970, P. 197-199

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SUBJECT AREAS--PHYSICS

TOPIC TAGS--HOLOGRAM, FORM RECOGNITION, OPTIC IMAGE, LIGHT SOURCE, OPTIC FILTER

CONTROL MARKING--NO RESTRICTIONS

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CIRC ACCESSION NO--AP0136249

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF A SCHEME FOR HOLOGRAPHIC IDENTIFICATION OF SIMILAR TWO DIMENSIONAL OBJECTS BY A LINEAR TRANSFORMATION OF THE SPACE BY MEANS OF A SPHERICAL LENS. IT IS SHOWN THAT THE OPTICAL CORRELATOR METHOD CAN BE GENERALIZED TO THE CASE WHERE THE DISPOSITIVE IS ILLUMINATED BY A POINT SOURCE OF LIGHT LOCATED AT A FINITE DISTANCE FROM IT, WHILE THE HOLOGRAPHIC FILTER IS LOCATED IN THE PLANE CONJUGATE TO THE PLANE OF THE SOURCE. IN THIS CASE THE SCALE OF THE FOUREIR IMAGE OF THE OBJECT IN THE PLANE OF THE FILTER DEPENDS ON THE DISTANCE FROM THE OBJECT TO THE LIGHT SOURCE, THUS PROVIDING A WAY OF IDENTIFYING SIMIALR IMAGES. THE OPERATION OF A CORRELATOR USING WHITE LIGHT IS DESCRIBED. FACILITY: AKADEMIIA NAUK SSSR, INSTITUT KRISTALLOGRAFII, MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002201510019-0"

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--NEW HOLOGRAPHIC METHOD FOR OBTAINING GHOSTS -U-

AUTHOR-(02)-KALINKINA, I.N., KOSOUROV, G.I.

COUNTRY OF INFO--USSR

SOURCE--PRIBORY I TEKHNIKA EKSPERIMENTA, JAN.-FEB. 1970, P. 199, 200

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HOLOGRAM, OPTIC IMAGE, LIGHT POINT SOURCE, ILLUMINATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1549 STEP NO--UR/0120/70/000/000/0199/0200

CIRC ACCESSION NO--AP0136294
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CIRC ACCESSION NO--AP0106294

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OUTLINE OF A HOLOGRAPHIC TECHNIQUE FOR RECOVERY OF A COMPLETE IMAGE (GHOST) OF AN OBJECT FROM ITS PARTIAL HOLOGRAM AND A DIFFRACTION PICTURE OF ITS ENTIRETY. A POINT SOURCE OF MONOCHROMATIC LIGHT IS USED FOR THE RESTORATION OF THE MISSING PORTION OF THE ORIGINAL, RECONSTRUCTING THE CONDITIONS OF ILLUMINATION UNDER WHICH THE ORIGINAL HOLOGRAM WAS OBTAINED. FACILITY: AKADEMIIA NAUK SSSR, INSTITUT KRISTALLOGRAFII, MOSCOW, USSR.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--MOLECULAR ORGANIZATION OF THE TAIL CORE OF T2 BACTERIOPHAGE -U-

AUTHOR-(03)-KOSOUROV, G.I., POGLAZOV, B.F., NIKOLSKAYA, T.I.

COUNTRY OF INFO--USSR

SOURCE--BIOKHIMIYA 1970, 35(2), 419-21

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BACTERIOPHAGE, ELECTRON MICROSCOPY, ELECTRON DIFFRACTION ANALYSIS, ELECTROPHORESIS, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0443 STEP NO--UR/0218/70/035/002/0419/0421

CIRC ACCESSION NO--AP0134216

UNCLASSIFIED

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CIRC ACCESSION NO--AP0134216

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELECTRON MICROSCOPIC AND DIFFRACTION STUDIES OF PHAGE T2 TAIL CORE SHOWED THAT THE ROD SHAPED PARTICLES ARE 800 ANGSTROM LONG AND 70 ANGSTROM IN OUTER DIAM. AND COMPOSED OF 6 SPIRALLY WOUND FIBERS. THE PITCH OF THE SPIRALS IS 185 ANGSTROM, AND THERE ARE 9 PROTEIN SUBUNITS PER TURN. THE SUBUNITS ARE SPHERICAL AND HAVE A DIAM. OF 21 ANGSTROM. ELECTROPHORESIS SHOWED THAT THERE WAS ONLY 1 TYPE OF PROTEIN. FACILITY: INST. CRYSTALLOGR., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 533+536.423.1

ZHALGASOV, A., KOSOV, N. D.

"Mutual Diffusion Coefficients of Certain Pairs of Gases Measured in a Center-of-Mass System"

V sb. Fizika (Physics -- Collection of Works), No. 5, Alma-Ata, 1971, pp 134-136 (from RZh-Fizika, No 1, Jan 73, Abstract No 1Ye51)

Translation: The mutual diffusion coefficients in a center-of-mass system were measured directly (by the stationary method) for the first time for five pairs of gases. The average error of measurement was <2%. There is good agreement between the measured and calculated integral diffusion coefficients. Authors' abstract.

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USSR

UDC 533+536.423.1

BOGATYREV, A. F., KOSOV, N. D., MAKLETSOVA, Ye. Ye.

"Barometric Effect of a Binary Helium-Argon Mixture in the 290-800°K Temperature Range"

V sb. Fizika (Physics -- Collection of Works), No 5, Alma-Ata, 1971, pp 94-96 (from RZh-Fizika, No 1, Jan 73, Abstract No 1Ye46)

Translation: The magnitude of the barometric effect arising in gases under nonisothermal conditions was measured. Measurements were made for pure He and four binary mixtures of He with Ar over a wide range of temperatures and pressures. The magnitude of the barometric effect was compared with formulas obtained from elementary kinetic theory. A comparison between theory and experiment shows that they agree within 10%. Authors' abstract.

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USSR UDC 533+536.423.1

VYSHENSKAYA, V. F., KOSOV, N. D., KURLAPOV, L. I., MARTYNOVA, G. P.

"Study of the Dependence of the Coefficient of Mutual Diffusion of a Helium-Carbon Dioxide System on Concentration"

V sb. Fizika (Physics -- Collection of Works), No. 5, Alma-Ata, 1971, pp 78-80 (from RZh-Fizika, No 1, Jan 73, Abstract No 1Ya45)

Translation: The coefficient of mutual diffusion in the entire concentration interval was measured by a stationary method for a concentration difference of ~0.1. A considerable decrease was noted in the coefficient of mutual diffusion with a decrease in CO_2 concentration from 0.1 to 0. The coefficient of mutual diffusion of this system can be considered constant in the CO_2 concentration interval 1-0.1. Authors' abstract.

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USSR

UDC 533+536.423.1

BERESTENKO, V. M., KOSOV, N. D., BROVANOV, I. S.

"Pressure Change Accompanying Mutual Diffusion in Compressed Gases"

V sb. Fizika (Physics -- Collection of Works), No. 5, Alma-Ata, 1971, pp 116-120 (from RZh-Fizika, No 1, Jan 73, Abstract No 1Ye49)

Translation: Pressure changes for eight pairs of gases were measured at different pressures and temperatures with the aid of a two-chamber device with electromagnetic covering of the chambers. The pressure rise in the chambers of the diffusion device increases with a rise in the initial pressure and a drop in temperature. The greatest pressure rise is observed for H_2-O_2 and He-CO_2 mixtures close to the critical region of CO_2. The pressure change is explained quantitatively by the presence of complexes in heavy gases. Authors' abstract.

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