2/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0139050
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FORMULAS FOR THE CALCN. OF THE PHOTOSYNTHETIC COEFF. OF PLANTS WITH DATA ON THE ELEMENTAL AND BIOCHEM. COMPN. OF THE TISSUES ARE REPORTED. THE FORMULAS WERE APPLIED TO CALCN. OF PHOTOSYNTHETIC COEFFS. FOR POTATOES AND CHLORELLA.

UNCLASSIFIED

USSR

UDC [537.226+537.311.33]:539.16.04

BEGUCHEV, V. P., FEDOTOVA, T. N., and MECHETIN, A. M.

"Longitudinal Cathodoconductivity of Cadmium Telluride Layers"

V sb. Tonkiye plenki soyedineniy tellura s metallami podgrupp tsinka i galliya (Thin Films of Tellurium Compounds With Metals of the Zinc and Gallium Subgroups -- Collection of Works), Vil'nyus, 1970, p 91 (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE998 by authors)

Translation: The authors investigated the cathodoconductivity (CC) of 0.5 to 5-micron-thick CdTe layers in an Al-CdTe-SnO_2 "sandwich" system. The layers were obtained by vacuum evaporation on a heated substrate and had a specific resistance of 10^9-10^{10} ohm·cm. CC was investigated during electron-beam excitation with an energy of 5-25 kev and current density $i_{excit}=10^{-7}$-10^{-10} a/sq cm, with constant or alternating bias voltage fed to the layer under investigation. The selective character of CC dependence on the velocity of the exciting beam is determined by the relation between film thickness and the depth of penetration of the electrons under investigation. The relation between the practical path of the electrons in the layers and their initial velocity is determined, as well as the dependence of CC on exciting current

1/2

USSR

BEGUCHEV, V. P., et al., Tonkiye plenki soyedineniy tellura s metallami podgrupp tsinka i galliya (Thin Films of Tellurium Compounds With Metals of the Zinc and Gallium Subgroups -- Collection of Works), Vil'nyus, 1970, p 91 (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE998 by authors)

density. On CdTe layers an amplification factor k_{ampl} (ratio of CC current to exciting current) up to $5 \cdot 10^3$ was obtained for electron velocity of 15 kev and bias voltage of 10 v. An even higher k_{ampl} (up to 10^5) was observed in layers obtained by cosputtering of CdTe and CdS.

2/2

1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--AUTOMATION F RIVER BOATS -U-

AUTHOR-(02)-BEGUNKOV, A.I., IVANOV, V.I.

B

COUNTRY OF INFO--USSR

SOURCE--(AVTOMATIZATSIYA RECHNYKH SUDOV). MANUAL. TRANSPORT, 1970, 214 PP

DATE PUBLISHED--------70

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

TOPIC TAGS--AUTOMATION EQUIPMENT, INLAND VESSEL DATA, SHIPBUILDING ENGINEERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0272 STEP NO--UR/0000/70/000/000/0001/0214

CIRC ACCESSION NO--AM0132526

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AM0132526

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PREFACE 3. CHAPTER I REMOTE CONTROL OF MAIN ENGINES 6. II CONTROL SYSTEMS OF DIESEL GENERATORS 66. III AUTOMATIC SYSTEMS OF SHIP ELECTRIC POWER PLANTS 101. IV AUTOMATION OF AUXILIARY AND UTILIZATION BOILERS 138. V SYSTEMS IN AUTOMATION OF ELECTRIC DRIVE MECHANISM 170. VI CENTRALIZED EMERGENCY WARNING SIGNALING AND LIGH PULSE "OTMASHI" 188. BIBLIOGRAPHY 212. THE BOOK CONTAINS TECHNICAL DATA, SYSTEMS AND STRUCTURAL UNITS OF THE MOST COMMON AUTOMATIC SYSTEMS ON RIVER BOATS. IT WAS WRITTEN FOR ENGINNERING TECHNICAL PERSONNEL OF SHIPS, INDUSTRIAL WORKERS AND EMPLOYEES OF DESIGN ORGANIZATIONS. IT IS RECOMMENDED AS A TEXT BOOK FOR STUDENTS OF PEOPLES' UNIVERSITIES.

UNCLASSIFIED

USSR UDC: 536.24

BEGUNKOVA, A. E., PLATUNOV, Ye. S., Leningrad Institute of Precision Mechanics and Optics

"A Nonstationary Method of Determining Localized Heat Flows"

Leningrad, Izvestiya VUZov, Priborostroyeniye, Vol 15, No 3, 1972, pp 106-109

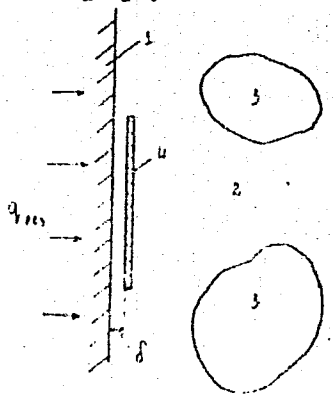
Abstract: A method of measuring localized heat fluxes is considered which combines simplicity, universality and speed. The method is illustrated by the accompanying figure. The section of the surface of the object to be studied is located in a convective-radiant (gas or liquid) medium and participates simultaneously in convective heat transfer with the medium which circulates directly over it (2) and in radiant heat exchange with external bodies (3) surrounding the object. The temperature field of the medium (2) and the bodies (3) is homogeneous in the general case, and therefore the resultant specific heat flux q_{res} on the surface of the object (1) being studied is a very complex function of many parameters. It is proposed that the heat flux q_{res} be measured by using a thin metal disc (4) with known

1/2

USSR

BEGUNKOVA, A. F., PLATUNOV, Ye. S., Izv. VUZov, Priborostr., Vol 15, No 3, 1972, pp 106-109

specific heat C. The disc is placed parallel to the surface of the object with a gap δ between them. Formulas are given for determining the resultant heat flux and the coefficient of heat exchange between the surface of the object and a nonisothermal medium. Measurements show reasonable agreement with data in the literature. The proposed method can be used to separate the convective and radiant components of the heat flux if two discs are used. Two figures, bibliography of two titles.



2/2

USSR UDC 669.71

BEGUNOV, A. I., and SKOBEYEV, I. K., Irkutsk Polytechnical Institute

"Dynamics of Cathode Heating of Aluminum Electrolyzers of Different Design"

Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Tsvetnaya Metallurgiya, No 6, 1970, pp 58-63

Abstract: The dynamics of heating two aluminum electrolyzers of different design -- one with counterfort-type case with bottom, the other with beam-type case without bottom -- were investigated. Calculations for both designs were carried out for a similar heating regime. Heating was conducted through the innter surface at a constant heat flux q_1 = 1260 kg-cal/m^2 hour, corresponding to the steady heat transfer through the cathode of the electrolyzer with the bottom, until the temperature on the fettling surfaces reached the service temperature of 930°. This was followed by holding at a constant temperature until the flux on the outer surface of the refractory lining attained 98% of the steady-state heat flux. The heating consists of three periods: inertial, regular and holding at constant temperature.
1/2

USSR

EGUNOV, A. I., and SKOBEYEV, I. K., Ysvetnaya Metallurgiya, No 6, 1970, pp 58-63

Formulas for heat fluxes and durations of all three periods are derived. The calculated heating temperature and thermal diagrams for both types of electrolyzers are presented and compared. This comparison shows that with the same heating regime, the time necessary for attaining a 930° temperature on the fettling surface for electrolyzers with a case and bottom is one-half the time required for electrolyzers with a bottom (450 and 825 hours). For electrolyzers with a case without bottom, the temperature on all surfaces becomes practically constant in 10-15 thousand hours or 1.5 year. A substantial variation of heat fluxes can be observed over a longer period ($\approx$20,000 hr).

2/2

USSR

UDC: 535.31;535.8

BEGUNOV, B. N.

"Determination of Form of Aspherical Surface by Method of Crossed Rays"

Tr. Mosk. Vyssh. Tekhn. Uch-Shcha Im N. E. Baumana [Works of Moscow Higher Technical School Imini N. E. Bauman], No. 135, 1970, pp 6-12, (Translated from Referativnyy Zhurnal Fizika, No. 8, 1970, Abstract #8D1237, by A. V. Lenskiy).

Translation: A method is described for defining a refracting aspherical surface of rotation in which 2n coefficients of the surface equation are determined from the conditions of correction of spherical aberrations and deviation from the sine condition for n rays by solution of a system of linear equations. The surface passes through the points of intersection of the rays calculated from the object point in direct travel and the image point in reverse travel; the angles of the rays with the axis are selected so that the sine condition is satisfied.

1/1

USSR UDC 543.53:546.9

BEGZHANOV, R. B., Editor, Corresponding Member of the Academy of Sciences UzSSR

"Activation Analysis of Noble Metals"

Aktivatsionnyy Analiz Blagorodnykh Metallov [English Version Above], Tashkent, FAN Press, 1970, 130 pp

Translation of Annotation: This collection analyzes methods of the use of neutron activation in the analysis of noble metals, suitable for determination of microgram quantities of elements in specimens of ores, minerals, and pure materials. The distribution of noble metals in certain sulfide ores and minerals is studied, and an investigation is made of the applicability of the method of neutron activation for decomposition of material, and for the selective separation of elements being determined, particularly elements of the platinum group.

Methods of rapid radiochemical separation of copper (Cu^{66}), silver (Ag^{108}), gold, palladium, and other elements in ores, concentrates, and pure materials are described.

1/4

USSR

BEGZHANOV, R. B., Aktivatsionnyy Analiz Blagorodnykh Metallov, Tashkent, FAN Press, 1970, 130 pp

The collection is designed for scientific workers, engineers, geologists, and chemists working in the area of analysis of ores, minerals, and pure materials for the determination of micro-quantities of elements in various objects using the method of neutron activation.

Table of Contents

2/4

USSR

BEGZHANOV, R. B., Aktivatsionnyy Analiz Blagorodnykh Metallov, Tashkent, FAN Press, 1970, 130 pp

USSR

BEGZHANOV, R. B., Aktivatsionnyy Analiz Blagorodnykh Metallov, Tashkent, FAN Press, 1970, 130 pp

4/4

1/2 020 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--NATURE OF EXCITED STATES OF RHODIUM 103 -U-

AUTHOR-(02)-BEGZHANOV, R.B., SABIROV, KH.S.

B

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(1), 3-7

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--EXCITED NUCLEUS, EXCITED STATE, RHODIUM ISOTOPE, SEMICONDUCTOR DETECTOR, PHOTO EMISSION, ANGULAR DISTRIBUTION, CASCADE, COINCIDENCE COUNTING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1980/0177 STEP NO--UR/0367/70/011/001/0003/0007

CIRC ACCESSION NO--AP0048469

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0048469

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LIFETIMES OF THE 93-, 536-, AND 650-KEV EXCITED STATES OF PRIME103 RH WERE MEASURED BY MEANS OF A DEVICE FOR SLOW FAST COINCIDENCES: SMALLER THAN OR EQUAL TO 0.8 TIMES 10 PRIME NEGATIVE9, (0.68 PLUS OR MINUS 0.04) TIMES 10 PRIME NEGATIVE10 AND SMALLER THAN OR EQUAL TO 0.1 TIMES 10 PRIME NEGATIVE9 SEC. RESP. THE FOLLOWING DETECTORS WERE USED: 40 TIMES 40 MM NAI(TL) CRYSTAL FOR THE STUDY OF THE A GULAR DISTRIBUTIO , STIL ENE OR NAI(TL) CRYSTA S FOR TIM TIM M ASUREME TS, A D 2-MM THICK PLASTIC SCINTILLATOR FOR THE E DETECTION. THE M ASUREMENTS OF THE A GULAR CORRELATIO S IN GAMMA EMISSION IN THE CASCADES 556-53 AND 443-53 KEV SHOWED THAT THE COEFFS. A SUB2 AND A SUB4 ARE AS FOLLOWS: FOR THE 1ST CASCADE A SUB2 EQUALS PLUS OR MINUS 0.127 PLUS OR MINUS 0.010 AND A SUB4 EQUALS 0.005 PLUS OR MINUS 0.009, FOR THE 2ND ONE A SUB2 EQUALS PLUS 0.136 PLUS OR MINUS 0.012 AND A SUB4 EQUALS 0.022 PLUS OR MINUS 0.017. SOME ASSUMPTIONS ON THE NATURE OF THE EXCITED STATES OF PRIME103 RH WERE MADE FROM THE ANAL. OF THE OBTAINED RESULTS. FACILITY: INST. YAD. FIZ., TASHKENT, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--PROPERTIES OF EXCITED STATES OF SAMARIUM 147 AND PROMETHIUM 149 -U-

AUTHOR-(04)-BEGZHANOV, R.B., GAFFAROV, D.G., ILKHAMOZHANOV, N., MUMINOV, A.I.

B

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK UZB. SSR. SER. FIZ.-MAT. NAUK 1970, 14(2), 65-8

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--EXCITED STATE, SAMARIUM ISOTOPE, PROMETHIUM ISOTOPE, CASCADE, MAGNETIC MOMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0570 STEP NO--UR/0166/70/014/002/0065/0068

CIRC ACCESSION NO--AP0137655

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137655

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ANGULAR CORRELATIONS OF THE CASCADE GAMMA TRANSITIONS AND THE MAGNETIC MOMENTS OF PRIME147 SM AND PRIME149 PM EXCITED STATES WERE MEASURED WITH THE FAST SLOW COINCIDENCE CIRCUIT, THE TIME RESOLN. OF WHICH WAS SIMILAR TO 5 NSEC. THE MEASUREMENTS OF PRIME147 SM EXCITED STATES WERE PERFORMED WITH A PRIME147 EU SOURCE, PREPD. BY 18-MEV P IRRADN. OF NATURAL SM; THE MEASUREMENTS OF PRIME149 PM WERE MADE WITH A PRIME149 ND SOURCE, PREPD. BY THERMAL N IRRADN. OF PRIME148 ND (ENRICHED UP TO 98PERCENT). THE THEORETICAL AND EXPTL. VALUES OF MAGNETIC MOMENTS OF THESE EXCITED STATES ARE COMPARED. THE VALUES OF THE QUADRUPOLE MAGNETIC MOMENTS ENABLE CONCLUDING THE FORM OF PRIME147 SM AND PRIME149 PM NUCLEI. THE NATURE OF THE EXCITED STATES OF TRANSIENT REGION NUCLEI (PRIME147 SM AND PRIME149 PM) CAN BE EXPLAINED BY THE KISLINGER SORCUSEN PHONON MODEL, BY TAKING INTO CONSIDERATION THE EFFECTS OF THE SUPERFLUIDITY IN SPHERICAL NUCLEI, OF THE POLARIZATION OF THE CORE OF THE NUCLEI, AND THE QUASI PARTICLE PHONON COUPLING. FACILITY: INST. YAD. FIZ., TASHKENT, USSR.

UNCLASSIFIED

Pesticides

UDC 632.954:630:576.8

USSR

KRUGLOV, Yu. V., GERSH, N. B., and BEI-BIYENKO, N. V., All Union Scientific Research Institute of Agricultural Microbiology

"The Effect of Meturin on the Biological Activity of Soil"

Moscow, Khimiya v Sel'skom Khozyaistve, No 4, 1973, pp 54-56

Abstract: It has been shown that meturin -- N-phenyl-N-hydroxy-N-methylurea -- has essentially no effect on soil microorganisms nitrification process or enzyme activity. The only significant change in the soil was found in the activity of aerobic cellulose decomposing bacteria and urease. The lowering of some indicators of biological activity in the soil treated with meturin is due to a lower weed content of a given field, so that organic materials are not introduced into the soil with the weeds.

SEE BEY . . .

FOR BEI . . .

NAMES

USSR UDC 621.357.7:669.218.7

BEK, R. YU., MASLIY, A. I., and LAVROVA, T. A.

"The Rate of Electrolytic Separation of Gold from Thiourea Solutions"

Izvestiya Sibirskogo Otdeleniya AN SSSR, Seriya Khimicheskikh Nauk, Vyp 1, No 2, 1972, pp 25-31 (from Referativnyy Zhurnal -- Khimiya, Svodnyy Tom, Abstract No 23L244 by E. Z. Napukh)

Translation: The effect of electrolysis conditions on the electrodeposition rate of Au from thiourea solutions was studied in laboratory and industrial pilot plant. A dependence of the mass transfer coefficient on cathode potential, temperature, evolution rate of H_2, and the electrolyte flow rate was established. A rapid flow of electrolyte secured the maximal Au deposition rate. Formulas are given for the calculation of the mass transfer coefficient and the removal of gold from eluate with respect to time.

1/1

USSR

UDC 669.213

BEK, R. YU., and PIROGOV, B. YA.

"Parameters of Electroelution"

Novosibirsk, Izv. Sibirskogo Otdeleniya Akademii Nauk SSSR, Ser. Khimicheskikh Nauk, No 6, 1972, pp 36-41

Abstract: Electroelution, a process which combines electrolysis with regeneration of ion exchange resin is a new, highly promising area of ion exchange technology. It reduces the total required volume of eluent, increases regeneration efficiency and reduces production time. The specific treated in this article deals with the diffusion model for electroelution of gold from an ion exchange resin. Equations are derived which enable one to predict the effects of different electroelution parameters on the efficiency of the extraction of gold, as well as select the area of the cathode to satisfy a given recovery in a prerequisite period of time. The optimum area of the cathode, so, which satisfies the diffusion control of the process, including the cost of the apparatus and operational expenses can be evaluated. The derived diffusion model for the electroelution of gold was tested experimentally at the Baleyzolot Combine Experimental Plant and found to be accurate within experimental error.
1/1

1/2 CC9 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--ION EXCHANGE TECHNOLOGY IN THE HYDROMETALLURGY OF GOLD -U-

AUTHOR-(05)-FRIDMAN, I.D., POCHKINA, L.E., ZDOROVA, E.P., BEK, R.YU., MASLIY, A.I.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(3), 70-4

DATE PUBLISHED--------70

B

SUBJECT AREAS--MATERIALS

TOPIC TAGS--HYDROMETALLURGY, GOLD, ION EXCHANGER, EXTRACTIVE METALLURGY/(U)APZ ANION EXCHANGER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1407 STEP NO--UR/0136/70/043/003/0070/0074

CIRC ACCESSION NO--AP0126945

UNCLASSIFIED

2/2 CC9 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0126945

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A TECHNOL. SCHEMATIC DIAGRAM FOR THE FILTERLESS SORPTION PROCESS IN THE EXTN. OF AU FROM CYANOGEN PULPS BY USE OF ANION EXCHANGER AP 2 IS GIVEN. AP 2, BASED ON CHLORMETHYLATED COPOLYMER STYRENE DIVINYLBENZENE AND TERTIARY AMINE, WAS SYNTHESIZED UNDER LAB. CONDITIONS. THE INCREASE IN SELECTIVITY OF AP 2 FOR GOLD IS 2-2.5 TIMES AND ITS CAPACITY IS 1.3-1.5 TIMES THAT OF OTHER ANION EXCHANGERS UNDER ANALOGOUS CONDITIONS.

UNCLASSIFIED

USSR

UDC 622.342:541.183.12

FRIDMAN, I. D., POCHKINA, L. YE., ZDOROVA, E. P., BEK, R. YU., MASLIY, A. I., PUNISHKO, O. A., POCHIVALOV, I. N., and STAFEYEVA, L. S.

"Ion-Exchange Technology in Gold Hydrometallurgy"

Moscow, Tsvetnyye Metally, No 3, Mar 70, pp 70-74

Abstract: Ion-exchange technology permits the use of filter-free systems, thus eliminating both costly equipment and cumbersome operations -- filtration of pulp and washing of precipitates as well as precipitation of Au from solutions. Sorption leaching, which is more complete in dissolving Au from ore and reduces the loss of dissolved gold in the dump pulp, offers much better conditions for higher Au extraction. In order to provide satisfactory results, the new technology requires the use of anionites, which are selective with respect to Au, and also have high kinetic, mechanical, and regeneration properties. The selectiveness of the AP-2 anionite, synthesized at the Kemerov Scientific-Research Institute for the Chemical Industry, was found to be 2--2.5 and its capacity -- 1.3--1.5 times that of similar anionites. The anionite was tested on a semi-industrial unit using a counter-current system. The high desorption capacity of the bifunctional AP-2 anionite with respect to metal impurities makes it possible to simplify the regeneration process and reduce the number of required elements. The process

USSR

FRIDMAN, I. D., et al, Tsvetnyye Metally, No 3, Mar 70, pp 70-74

includes the following phases: desorption of CN, Zn, and Ni with HNO_3 or H_2SO_4 solutions; desorption of Au, Ag, and Cu by chloride and sulfide solutions of thiourea during electroelution, and disorption of Fe by NH_4NO_3 alkaline solutions at 50--55°C. The high desorption capacity of the AP-2 anionite determines the relatively short duration of the regeneration process: desorption of CN, Zn, and Ni -- 5 hrs; desorption of Au, Ag, Cu during electroelution -- 3--5 hrs; desorption of Fe--5 hrs. The complete procedural flow chart is given in the original article.

2/2

Acc. Nr: AP0044403 Ref. Code: UR 0239

PRIMARY SOURCE: Fiziologicheskiy Zhurnal, 1970, Vol 56, Nr 1, pp 48-54

INFLUENCE OF HYPOTHALAMIC AREA ON CILIARY BODY SECRETORY ACTIVITY

Bekauri, N. V.; Fadeyeva, O. N.; Chuzhkov, M. I.; Shenger, I. F.

From the I. P. Pavlov Institute of Physiology, USSR Ac. Sci., Leningrad

The effect of electro-stimulation in the hypothalamic area on the secretory activity of the ciliary body has been studied in rabbits and cats. This activity was evaluated by the level of intraocular pressure. Acute experiments in cats have demonstrated that stimulation of various parts of the hypothalamic area (particularly its posterior part) brings about a lowering of intraocular pressure during the 2—3 hrs following stimulation without a corresponding fall in arterial pressure.

In chronic experiments in rabbit stimulation of the mammillary body in the hypothalamic region by electric current or adrenalin electrophoresis into this area evoked during 3—4 hrs following stimulation a lowering of intra-ocular pressure, preferably on the stimulated side.

Data obtained point to the participation of the hypothalamic area in regulating the ciliary body activity and to the role of both the neural and hormonal factor therein.

1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--HYDROFINING OF OIL FRACTIONS, MEANS FOR IMPROVING THE QUALITY OF LUBRICATING OILS -U-
AUTHOR-(04)-BEKAYEV, R.B., ROGOV, S.P., CHERNOZHUKOV, N.I., AGAFONOV, A.V.

B

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (4), 24-6

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ZEOLITE, LUBRICATING OIL, PETROLEUM REFINING PROCESS, HYDROREFINING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1939 STEP NO--UR/0318/70/000/004/0024/0026

CIRC ACCESSION NO--AP0133783

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133783

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HYDROFINED DISTILATES, AFTER PHENOL REFINING, GAVE OILS WITH LOWER S CONTENT AND HIGHER VISCOSITY INDEX (94-7), YIELDING 1.1-4.4PERCENT ADDNL. REFINED OILS WITH HIGHER CONTENTS OF PARAFFINIC NAPHTHENIC HYDROCARBONS AND LESS HEAVY AROMATICS AND RESINS THAN THOSE OBTAINED WITHOUT HYDROFINING. DISTILLATES HYDROFINED ON NI-MO-ZEOLITE YIELDED REFINED OILS WITH HIGHER VISCOSITY INDEXES THAN THOSE HYDROFINED ON NI-MO-AL SUB2 O SUB3. FACILITY: MOSK. INST. NEFTEKHIM. GAZOV. PROM. IM. GUBKINA, MOSCOW, USSR.

UNCLASSIFIED

USSR UDC.621.385.7:537.53

BEKBAULIYEV, B., SMIRNOV, B.G.

"Autoelectronic Emission From Single Crystals Of Niobium And Adsorption Of Zirconium At A Niobium Point"

Nauch. tr. Tashkent. un-t (Scientific Works Of Tashkent University), 1971, Issue 393, pp 223-229 (from RZh:Elektronika i yeye primeneniye, No 10, October 1972, Abstract No 10A8)

Translation: In a spherical electron project, patterns of electron emission from uncontaminated and contaminated points were qualitatively observed. The points studied were made of niobium wire 90 micron in diameter ("raw" or annealed beforehand in a high vacuum) with chemical etching. After production, the point was washed in distilled water and the support [nozhka] was welded to the flask [kolb] of the projector. The devices were evacuated continuously for 48 hours and were sealed off in a complex with a ring-shaped titanium getter and a Bayard-Al'pert type manometer. The vacuum in the sealed-off projector was better than 10^{-9} mm of mercury. The source of zirconium was a tantalum cup with grains of zirconium deposited on the bottom; the cup was heated by electron bombardment. As the migration of zirconium atoms to the surface of a niobium microcrystal proceeds, bright regions corresponding to the (116) directions are changed into weakly emitting; and the very bright regions around the (111) directions now occupy a large area and become still brighter. Such a distribution of emission

Acc. Nr: AP0051976 BEKCHANOV A.N. Rel. Code: UR 0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 3, pp 116-118

HISTOLOGICAL INVESTIGATION OF THE EYE RETINA IN RABBITS

A. N. Bekchanov

Astrakhan Medical Institute

The eye retina of rabbits aged from 1 day to 6 months was studied by Golgi's method Alongside with typical rod cells the retina was found to have cone cells and also some other types of photoreceptor cells, which had different end-points of central processes and also dissimilar shape of external and internal segments.

1/1

REEL/FRAME
19820463

2 pc

USSR UDC 581.5

SHUBIN, I. G.; BEKENOV, A.; Institute of Zoology, Academy of Sciences Kazakh SSR

"Ecological Features of Meriones Tamaricinus (Pall.) Gerbils in the Zaysan Hollow"

Moscow, Ekologiya, No 4, 1971, pp 97-98

Abstract: Although studies on Meriones tamaricinus had been conducted in western Kazakhstan, the first field work in the Zaysan hollow on this agricultural pest and disease-bearing rodent was undertaken for our study of 253 animals in 1965, 1967, and 1968. After penetrating into the Zaysan hollow from northeast China, the rodent inhabits the brush and thickets of river bottomland and often settles in loam soil and in the sandy soil at the mouth of the Chernyy Irtysh River.

Data is cited on weight of gerbils (ranging from 149.2 to 131.9 for males), dimensions, habitat, protective coloration, their predominantly vegetarian feeding habits, and reproductive patterns. In western Kazakhstan the rodent has a prolonged

1/2

USSR

SHUBIN, I. G., et al, Ekologiya, No 4, 1971, pp 97-98

reproductive season from April through August-September, so that 30% of the new generation females reach sexual maturity during the reproductive season, while in the Zayson hollow maturation occurs only after hibernation. The slower sexual maturation of the Zayson hollow females is compensated for by their slightly larger brood size: 5.5 offspring in the first brood and 5.3 and 5.2 in the second brood, compared with 4.5 and 4.9 for females in western Kazakhstan. Sexual distribution figures generally indicate a male predominance, with the ratio ranging as wide as 26 (74.3%) males to 9 (25.7%) females.

In 1968 severe winter conditions, alternating deep cold and thaws, caused a sharp drop in the total population.

2/2

BEKERS, M.

G14-14

BIOCHEMICAL, PHYSIOLOGICAL AND MORPHOLOGICAL CHARACTERISTICS OF CONTINUOUS CULTURE OF A LYSINE PRODUCER.

G.Mezina, M.Rukliša, S.Selga, A.Aleksandrova, A.Bezborodov, M.Bekers.

The August Kirchenstein Institute of Microbiology Latvian Academy of Sciences, Riga, Latvia, USSR

Kinetics of L-lysine biosynthesis by the auxotrophic mutant Brevibacterium sp.... was studied. The experiments were performed in a complex (molasses-maize) medium balanced with the help of rotatable method of the medium basic ingredients planning. The continuous fermentation was realized in accordance with chemostat principle; molasses concentration (S) and aeration intensity (pO_2) were used as growth limiting factors.

It was found that the cellular RNA content is in ordinal relation to the growth rate (μ) and the medium growth limiting factor. Protein and DNA content in the biomass are more stable. At higher growth rate the constructive metabolism and energetic processes in a cell increase. Close correlation is stated between the L-lysine biosynthesis and citrate dehydrogenase, lactate dehydrogenase and total reductive activity of cells.

Morphologic changes of cells in various conditions of cultivating were studied by the electronic microscopy method.

The continuous L-lysine biosynthesis process kinetics has shown that the values of the specific growth rate, specific lysine biosynthesis ability, metabolism coefficients, economic coefficients and culture productivity depend on the flow rate and the growth limitation.

So: OOE 324/14086-72, 19 Jun 72; 4th International Fermentation Conference Kyoto, Japan - 19-26 March 1972 (Abstracts of Soviet Papers)

BEKERS, M.

712 7

CULTURE OF MICROORGANISMS IN CIRCULATING SYSTEM LIQUID-FOAM-LIQUID.

M.Kristapsons, I.Sturmanis, M.Bekers.
The August Kirchenstein Institute of Microbiology,
Latvian Academy of Sciences, Riga, Latvia, USSR.

Studies were made of microorganisms culture in circulating foam-liquid system. Experimental devices, namely 5 to 50 cu.m fermentors were supplemented with a circulation unit, containing an external cyclone and a pipe with an ejector for the return of the culture liquid into the fermentor.

With the help of a membrane electrode used for measuring partial oxygen pressure it was found that at low circulation rate complete utilization of dissolved oxygen takes place leading to the limitation of culture growth by oxygen. The process can be normalized by the use of a circulation pipe with a 10 times smaller diametre than that of the fermentor. In the cyclone thermodynamically unstable foam was subjected also to the action of centrifugal force and low doses of surface-active substances. In the study several yeast and bacterial cultures were used - Rhodotorula gracilis Rn, Candida utilis 295-[illegible], Brevibacterium sp.22, [illegible] grown in complex media. The analysis of physiological and technological indices showed that the growth rate exceeded by 15 to 25 per cent results obtained in apparatus without the circulation unit.

So: OOE 324/14086-72, 19 Jun 72; 4th International Fermentation Conference Kyoto, Japan - 19-26 March 1972 (Abstracts of Soviet Papers)

USSR

BEKER, M., Doctor of Technical Sciences, Deputy Director, Institute of Microbiology imeni A. Kirkhenshteyn, Academy of Sciences Latvian SSR

"Water and Life"

Riga, Sovetskaya Latviya, 4 Feb 71, p 4

Extract: At the Institute of Microbiology imeni A. Kirkhenshteyn of the Latvian Academy of Sciences, the causes of cell death during drying or freezing are being studied, and ways of protecting them are being developed. Depending on growth conditions, the very same culture endures the stopping of life through dehydration differently. Yeasts which have grown in a poor nutrient medium will lose vitality and fermentation activity to a considerably greater degree than yeasts cultured on a good nutrient medium. Young, growing cells are less resistant to drying than are old ones. The regimens and methods of dehydration, freezing, and even the methods of reactivation, are of great significance. This was revealed by A. A. Upit, candidate of Technical Sciences and V. E. Lapinya, Scientific Associate during the course of their research.

1/2

USSR

BEKER, M., Sovetskaya Latviya, 4 Feb 71, p 4

Detailed study of the influence of various environmental factors on the survival rate and activity of microorganism enzymes has made it possible for Institute staff members to propose effective methods of protecting cells during the processes of dehydration and reactivation.

2/2

Lucknowitz

Inst. Institute of Biochemistry and Physiology of Microorganisms, Pushchino

Description:

(U) During this quarterly reporting period, five new articles were located from the Institute of Biochemistry and Physiology of Microorganisms at Pushchino. On the basis of these articles, it was possible to identify 13 new personalities with the institute. The personalities, the subjects of the articles, and the dates are given below:

Beker, M. Ye.	α-oxoglutaric acid	1969 (65)
Boronin, A. M.	antibiotic production	1970 (66)
Bikter, Yu. Ye.	candida lipolytica	1971 (67)
[illegible] Z. A.	α-oxoglutaric acid	1969 (65)
Korilenko, R. Ye.	α-oxoglutaric acid	1969 (65)
Lysenkova, G. [illegible]	α-oxoglutaric acid	1970 (65)
Mirolina, S. Z.	antibiotic production	1970 (66)
Poltorane, L. Zh.	α-oxoglutaric acid	1970 (65)
Rozenfel'd, S. M.	candida lipolytica	1971 (67)
Slava, V. A.	α-oxoglutaric acid	1971 (65)
Tukhovskaya, S. [illegible]	α-oxoglutaric acid	1971 (65)
Tsitsuashvili, M. [illegible]	α-oxoglutaric acid	1971 (65)
Zaytseva, G. B.	α-oxoglutaric acid	1971 (65)

Two of the five new articles were authored by personalities already identified with the Institute of Biochemistry and Physiology of Microorganisms. One of these articles deals with penicillium brevi compactum (68) and the other with methane oxidizing bacteria (69). Reference 65 was jointly issued from the above institute and the Institute of Microbiology Imeni A. Kirchenshteyn Riga, possibly indicating some joint work between the two facilities.

10

BEKER, M. Ye.

USSR

BEKER, M. Ye.

"Directed Microbial Biosynthesis"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR, No 3, 1970, pp 99-108

Abstract: Microbial biosynthesis as an industrial process is now used to produce, among other things, proteins (for fodder and human food), nucleic acids (as reagents and drugs), enzymes, lipids (as substitutes for vegetable fats), antibiotics, amino acids, vitamins, alcohols, organic acids, organic solvents, polysaccharides, vaccines, bacterial fertilizers, and biological agents to control crop pests. Fundamental reactions of microorganisms (e.g., photosynthesis by unicellular algae, microbial biosynthesis of lysine) were described and the characteristics of 22 producers of physiologically active substances (Micrococcus sp. 28, Brevibacterium 2 H, Pseudomonas sp. 209, Candida utilis 295, Penicillium vitale, Aspergillus niger EU-119, Rhizobium meliloti H 75, etc.) were summarized. The main lines of research pursued by the Institute of Microbiology imeni Avgust Kirkhenshteyn, Academy of Sciences, Latvian SSR: were outlined, including growth patterns of microorganisms, biosynthesis of amino acids, organic acids, enzymes, growth stimulants, and anabiosis of microorganisms.

1/1

Acc. Nr. AP0051142 Abstracting Service: CHEMICAL ABST. 4-70 Ref. Code: UR0197

88903s Microbial biosynthesis of amino acids. Bekers, M. (Inst. Mikrobiol. im. Kirhensteina, Riga, USSR). *Latv. PSR Zinat. Akad. Vestis* 1970, (1), 51-7 (Russ). Work of Latvian institutions is described on microbiol. production of L isomers of essential amino acids as food additives for man and animals. A diagram shows the technology of obtaining a crude feed conc. of lysine (also contg. riboflavine, betaine, other amino acids, etc.) from food industry wastes, molasses, and corn ext. Cryst. lysine for human nutrition added to wheat flour raises the biol. value of proteins and improves taste and appearance of bread. A continuous fermentation process increases yield. A math. model for lysine biosynthesis has been made. The O requirement is greater during cell division than in lysine formation and diffusion by bubbling is superior to mech. agitators. Mech. foam controls facilitate cryst. lysine production. Active glutamic acid-forming bacteria have been isolated, with sucrose as the best substrate. Tryptophan biosynthesis is attained with transformation of anthranilic acid by yeasts. Oil paraffins substrates give α-ketoglutaric acid, precursor of glutamic acid. Lignin hydrolyzates yield amino acids. For lysine production, synthetic diaminopimelic acid may be used and potato juice from the starch industry may be substituted for corn ext.

Marjorie E. Swift

40 6

REEL/FRAME
19811185

USSR

UDC 621.382:621.317.799

BEKERIS, E.P., EYZENTAL, YU.V.

"Measurement Of Noise Factor And Spectral Density Of Noise Of Semiconductor Devices In The Frequency Range 0.01--10Hz"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 3 (Proceedings Of The All-Union Scientific-Technical Conference On Radio Engineering Measurements. Vol. 3), Novosibirsk, 1970, pp 73-74 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2B508)

Translation: A device is described for measurement of the noise factor and the spectral density of noise of semiconductor devices in the range of infralow frequencies (ILF). A block diagram is presented of a receiving device. The ILF signal, modulated with respect to amplitude by the noise voltage, is recorded on a magnetic tape. Reproduction at a speed n times as great makes it possible to increase by n times the frequency of the spectrum being measured. The results are presented of measurements of the noise factor of a Type 1T308 transistor with various coverings [pokrytiye]. 2 ill. 2 ref. V.S.

1/1

USSR

UDC 621.791.761.1.052:658.562.64

BEKESHKO, N. A., Candidate of Physical and Mathematical Sciences and
POPOV, Yu. A., Engineer

"Use of Thermography for Nondestructive Testing of Spot Welded Joints"

Moscow, Svarochnoye Proizvodstvo, No 4, Apr 72, pp 55-56.

Abstract: This work studies the possibility of using the thermographic method to test the quality of spot welded joints. The distribution of the temperature fields around spot welds on both sides of the joint was studied as the spot welds were heated by a source of even heat. The thermographic method can reveal defects in spot welds, as well as the diameter of the cast plug. However, further studies are needed to determine the accuracy of testing of spot welds on dissimilar materials of different sheet thicknesses.

1/1

USSR

UDC:620.179.13

BEKESHKO, N. A., UPADYSHEV, A. B., KISELEV, V. S.

"Quality Testing of Integrated Circuits by Thermal Radiation of the Surface"

Defektoskopiya, No. 3, 1970, pp. 101-105

Abstract: Results are presented from experimental studies involving location of defects in thin-film integrated circuits by a thermal field method. Testing of the thermal field of integrated circuits allows location of deviations of thermal operating modes from the nominal modes, and in some cases allows reasons for formation of defects to be determined. The thermal testing method allows circuits both with and without protective coverings to be tested. The protective coverings change the picture of the thermal field but do not prevent determination of defects on the basis of changes in the thermal field. Comparison of the isothermal picture of the thermal field and the geometric dimensions of the circuit elements shows that the half width of the signal maximum from elements with protective coatings is increased by 2-3 times.

1/1

1/2 029 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--"USING THE THERMAL METHOD FOR DISCOVERING BREAKS IN METALLIC AND NONMETALLIC PRODUCTS" -U-

AUTHOR-(02)-BEKESHKO, N.A., UPADYSHEV, A.B.

COUNTRY OF INFO--USSR

SOURCE--SVERDLOVSK, DEFEKTOSKOPIYA, NO. 1, 1970, PP 24-29

DATE PUBLISHED--------70

SUBJECT AREAS--METHODS AND EQUIPMENT, MATERIALS

TOPIC TAGS--CATHODE RAY TUBE, THERMAL EFFECT, NONDESTRUCTIVE TEST, LAMINATED STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/0142 STEP NO--UR/0381/70/000/001/0024/0029

CIRC ACCESSION NO--AP0100671

UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100671

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTS ARE DESCRIBED TO DETERMINE THE POSSIBILITIES OF FINDING DEFECTS IN THE FORM OF BREAKS IN CONTINUITY, SUCH AS LAYER SEPARATION IN METALS AND NONMETALS, UNGLUEING IN CELLULAR STRUCTURES AND PASTED PRODUCTS BY THE THERMAL METHOD USED PRINCIPALLY FOR THE CONTROL OF THIN WALLED PRODUCTS. THE EQUIPMENT USED IN THIS METHOD PERMITS FIXING THE PICTURE OF THE TEMPERATURE DISTRIBUTION OVER THE SURFACE OF THE PRODUCT AS AN IMAGE ON A CATHODE RAY TUBE SCREEN, ON PHOTOGRAPHIC PAPER, OR IN THE FORM OF PROFILES IN INDIVIDUAL LINE SCANNING. THE AUTHORS USED THIS METHOD TO CONTROL METAL PRODUCTS OF UP TO 8 MM IN THICKNESS, OR CELLULAR PRODUCTS, AND NONMETALLIC PRODUCTS OF UP TO 15 MM IN THICKNESS. THE COMPLEXITY OF THE PROBLEM DEMANDS SPECIAL EQUIPMENT SUCH AS A HEAT SOURCE WITH AN OUTPUT POWER VARIABLE WITHIN BROAD LIMITS AND HIGHLY SENSITIVE RECEPTOR DEVICES, THE LATTER A NECESSITY SINCE THE SURFACE ON THE NONMETALLIC MATERIALS, SUCH AS PLASTICS, SHOULD NOT BE HEATED ABOVE 100DEGREESC. A SCHEMATIC DRAWING OF THE HEATING SYSTEM FOR CELLULAR STRUCTURES IS GIVEN, TOGETHER WITH CURVES FOR THE TEMPERATURE DISTRIBUTIONS ON THE SURFACES OF THE VARIOUS MATERIALS STUDIED. ANALYSIS OF THE HEAT IMAGES AND CURVES SHOWS THA THE HEAT IMAGE PERMITS DETERMINATION OF THE SHAPE, DIMENSIONS, AND LOCATION OF LARGE CONTINUITY DEFECTS. HOWEVER, COMPLEX TREATMENT OF THE IMAGE IS REQUIRED FOR MORE PRECISE TEMPERATURE DETERMINATIONS. IT IS THE AUTHORS' OPINION THAT USE OF THE THERMAL METHOD REQUIRES PRODUCTION OF BETTER EQUIPMENT WITH TEMPERATURE DISTRIBUTION RECORDS IN THE FORM OF AMPLITUDE PROFILES.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--EFFECT OF CADMIUM AND THALLIUM CATIONS ON THE ADSORPTION PROPERTIES OF RHODIUM -U-
AUTHOR-(03)-SOKOLSKIY, D.V., ZAKUMBAYEVA, G.D., BEKETAYEVA, L.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(4), 1017-20

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CURRENT DENSITY, METAL ELECTRODE, ELECTROLYTE, CADMIUM, THALLIUM, ADSORPTION, RHODIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0897 STEP NO--UR/0057/70/044/004/1017/1020

CIRC ACCESSION NO--AP0131483
UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0131483

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CURRENT D. MINUS PHI POTENTIAL CURVES OF AGED RH-PT ELECTRODE, DIPPED IN 1 N H SUB2 SO SUB4 CONTG. 2 TIMES 10 PRIME NEGATIVE3 MINUS 1 N CDSO SUB4 OR TL SUB2 SO SUB4 WERE MEASURED AT 20, 40, AND 60DEGREES. CATIONS CD PRIME3 POSITIVE AND TL PRIME POSITIVE DECREASED THE H ADSORPTION CAPACITY OF THE RH SURFACE BY OCCUPYING ITS ACTIVE CENTERS. A DECREASE IN THE ENERGY OF THE BOND RH-H WITH INCREASING AMTS. OF CD PRIME2 POSITIVE AND TL PRIME POSITIVE IN THE ELECTROLYTE WAS OBSD. FACILITY: INST. KHIM. NAUK, ALMA-ATA, USSR.

UNCLASSIFIED

USSR

UDC 66.094.1:546.791

VLASOV, V. G., PIS'MENKO, V. T., ULYASHEV, S. P., SHALAGINOV, V. N., and BEKETOV, A. R.

"Electroconductivity of Uranium β-Dioxide Modified With Admixtures of MgO, SrO, and Nb_2O_5"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 46, No 1, Jan 73, pp 36-40

Abstract: Specific electroconductivity expressed as a function of temperature for the pure uranium β-dioxide as well as one with admixtures of MgO, SrO, and Nb_2O_5 show three discrete segments: low temperature straight line segment of contaminated conductivity, the middle segment of proper conductivity and a high temperature segment with probably complete conductivity. Presence of impurities alters not only the absolute values of electroconductivity of uranium β-dioxide, but also the transition temperatures of the above three segments. This is due to concentration changes and mobility of basic current carriers. The experimentally established functions of electroconductivity are explained by the defects generated by the admixtures when they are dissolved in the lattice of U_4O_9.

USSR UDC 620.193.5

MIGAY, L. L., KOZLOVA, N. N., LYAPUNOV, A. I., MAL'CHEVSKIY, YE. G., PUKETOV, B. I., State Scientific Institute of the Rare Metal Industry

"Oxidation of Heat-Resistant Steels and Alloys"

Moscow, Zashchita Metallov, Vol 8, No 6, 1972, pp 722-723

Abstract: A study was made of the oxidation rate of several standard and experimental steels and alloys in a current of technical oxygen and in a calm air atmosphere at 1000°. Sheet specimens 2 mm thick were used to determine the oxidation resistance by the increase in mass after oxidation and its loss after removal of the scale.

The difference in oxidation resistance of the investigated materials in a calm air atmosphere is not so great as in technical oxygen. The Kh25N20S2 chromium-nickel steel alloyed with silicon is the least oxidation resistant, and materials alloyed with aluminum were the most oxidation resistant. Analogous results were obtained during prolonged experiments in the air for 5000-10,000 hours [N. N. Kozlova, et al., Struktura i svoystva zharoprochnykh metallicheskikh materialov, Moscow, Nauka, 306, 1967]. The OKh13A2 (EP 676) steel without nickel and KhN56Yu (EP 747) alloys sparingly alloyed with nickel had the greatest oxidation resistance in oxygen and air.

1/1

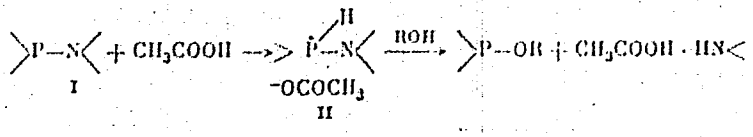
USSR UDC 547.26'118

YEVDAKOV, V. P., BEKETOV, V. P., and SVERGUN, V. I.

"Interaction of Amido Phosphites and Acetyl Phosphites with Acetic Acid, Alcohols and Phenol"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 55-59

Abstract: By studying the interaction of the amides of the acids of trivalent phosphorus (I) with hydroxyl-containing compounds it has been shown that the phosphorylation of the alcohols by amides is accelerated in the presence of acetic acids [E. Ya. Nifant'yev, et al., Vestn. MGU, No 4, 104, 1968; E. Ye. Nifant'yev, et al., ZhOKH, No 39, 854, 1969; E. Ye. Nifant'yev, et al., ZhOKH, No 36, 865, 1966]. This phenomenon is related to the formation of the extremely reactive intermediate quasiphosphonium compound (II) by which a nucleophilic attack of the alcohol takes place ending in the formation of the trialkyl phosphite.



1/2

USSR
"
YEVDAKOV, V. P., et al., Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 55-59

Upon treating the amides (I) with acids under mild conditions, the corresponding acyl phosphites are formed [E. Ye. Nifant'yev, et al., ZhOKh, No 38, 1909, 1968], in turn the acyl phosphites easily phosphorilate the alcohols [V. I. Yevdakov, et al., ZhOKh, No 33, 3770, 1963]. Thus, possible the acceleration of the reaction with alcohols in the presence of acetic acid is connected with the appearance in the reaction mixture of the acetyl derivative of trivalent phosphorus.

$$\rangle P{-}N\langle + CH_3COOH \rightarrow \rangle P{-}OCOCH_3 + HN\langle \xrightarrow{ROH} \rangle P{-}OR + CH_3COOH \cdot HN\langle$$

Accordingly, a study was made of the interaction of the amides (I) and acetyl phosphites with alcohols and phenols in the presence of acids and without them. The acceleration of the phosphorylation of the hydroxyl-containing compounds by amides of the trivalent phosphorus acids in the presence of acids for phenol is connected with the formation of acyl phosphites or aryl phosphites in the reaction mixture. The alcoholysis of the acyl phosphites is accelerated by tertiary amine additives.

2/2

1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--EFFECT OF HALOPHENOXY ACIDS ON THE PROTEIN NUCLEIC ACID METABOLISM OF ETIOLATED PEA SHOOTS -U-

AUTHOR-(02)-LADONIN, V.F., BEKETOVA, L.I.

COUNTRY OF INFO--USSR

SOURCE--AGROKHIMIYA 1970, (3), 115-23

DATE PUBLISHED-------70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHLORINATED ORGANIC COMPOUND, BENZENE DERIVATIVE, ALIPHATIC ACID, PLANT GROWTH REGULATOR, LEGUME CROP, NUCLEIC ACID METABOLISM, PROTEIN METABOLISM, RNA, MITOCHONDRION, CYTOPLASM, PLANT PHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0511 STEP NO--UR/0485/70/000/003/0115/0123

CIRC ACCESSION NO--AP0134279

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134279

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 2,EMTHYL,4,CHLOROPHENOXYACETIC ACID (I), 2,METHYL,4,CHLOROPHENOXYPROPIONIC ACID (II), AND 2,METHYL,4,CHLOROPHENOXYBUTYRIC ACID STIMULATED SYNTHESIS OF PROTEIN AND RNA IN ETIOLATED PEA SHOOTS. I HAD NO EFFECT ON RNASE IN VITRO, BUT INCREASED THE RNA IN EVERY PART OF THE STEM. I AND II INCREASED BOTH PROTEIN AND RNA IN THE NUCLEI, PLASTIDS, MITOCHONDRIA, RIBOSOMES, AND CYTOPLASM OF THE PLANT CELLS. EVIDENTLY THESE HERBICIDES STIMULATE RNA SYNTHESIS, WHICH LEADS TO DISORGANIZED PROTEIN SYNTHESIS.

FACILITY: VSES. NAUCH.-ISSLED. INST. UDOBR. AGROPOCHVOVED., MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200320006-6"

USSR

UDC: 519.2

ADEL'SON-VEL'SKIY, G. M., BEKETOVA, N. V., and CHERNYSHOVA, I. B.

"Realization of a Method for Estimating the Error in the Determination of the Parameters of an Experimentally Specified Function of Many Variables"

Alma-Ata, v. sb. Vopr. obshch. i prikl. fiz. (Problems in General and Applied Physics--collection of works) "Nauka," 1972, pp 63-65 (from RZh--Matematika, 1972, No 6, Abstract No 6V187)

Translation: A description is given of algorithms and formulas of a program for computing a matrix of errors obtained in the determination of deviations from estimates of parameters in the processing of physical and chemical experiments. The most interesting part of the paper is the explanation of an approximation method for determining the matrix of second partial derivatives. Authors' abstract

1/1

USSR UDC 518.12

BEKETOVA, N. V.

"Locally Optimum Approximation of Smooth Functions With One Derivative and the Metric C"

Moscow, Tr. 3-y Zimney shkoly po mat. programmir. i smezhnym vopr. 1970 (Transactions of the Third Winter School on Mathematical Programming and Related Problems, 1970), No 1, 1970, pp 93-103 (from Referativnyy Zhurnal -- Matematika, No 7, July 71, Abstract No 7B990, by I. Shelikhova)

Translation: The problem of finding a function in the class of functions $g = g(\alpha_1, \alpha_2, \ldots, \alpha_n; x)$ that is closest to a given function $f(x)$ in the metric C, continuous on $[0, 1]$ is examined; the functions g are differentiable up to an arbitrary order with respect to all arguments. Necessary and sufficient conditions are obtained for the locally optimum approximation of the function $f(x)$ by a function of the family g in the metric C, as well as necessary conditions for the local minimum for such an approximation of $f(x)$. A description is given of the algorithm for computer realization of the approximation of $f(x)$ with a smooth

USSR

BEKETOVA, N. V., Tr. 3-y Zimney shkoly po mat. programmir. i smezhnym vopr. 1970, No 1, 1970, pp 93-103

function from the class g which is based on executing a gradient descent, with decreasing $s(s < n)$, of equal maxima of the modulus of the difference between the functions $f(x)$ and g until the $(s+1)$-th maximum appears.

2/2

USSR UDC: 621.374.32

BEKH, A. D., CHERNETSKIY, V. V., Institute of Cybernetics, Academy of Sciences of the Ukrainian SSR

"A Pulse Counter With Variable Scaling Factor"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 10, Apr 71, Author's Certificate No 298076, Division H, filed 4 Dec 69, published 11 Mar 71, p 194

Translation: This Author's Certificate introduces a pulse counter with variable scaling factor which contains potential flip-flops, ripple-through carry diodes and a scaling factor selector switch. As a distinguishing feature of the patent, a constant delay of output signals is provided with a change in scaling factor, and the counter is simplified by making the scaling factor selector switch in the form of a set of normally open switches with one contact of each of them connected to the potential input of the carry diode for one of the digital places of the counter, while the other contacts of these switches are interconnected and tied to the source of controlling voltage. The counter output is the output of the carry diode for the flip-flop of the most significant digit.

1/1

USSR UDC: 681.327.66

BEKH, A. D., KORSUNSKIY, V. M., PAVLUS', B. I., CHERNETSKIY, V. V., Institute of Cybernetics of the Academy of Sciences of the Ukrainian SSR

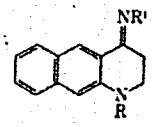
"An Accumulator"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 5, Feb 71, Author's Certificate No 293267, Division G, filed 4 Dec 69, published 15 Jan 71, pp 170-171

Translation: This Author's Certificate introduces an accumulator which contains memory elements in the form of flat magnetic films on dielectric substrates, as well as number and digit lines and a current-conducting base. As a distinguishing feature of the patent, the effect of the number current on neighboring memory elements is reduced and the density of the memory elements is increased by adding conductors between the number lines, the ends of the additional conductors being connected to the current-conducting base.

Acc. Nr: AP0049781 Abstracting Service: CHEMICAL ABST. 5/70 Ref. Code: 21R0409

100463h Synthesis of benzo[g]quinoline derivatives. V. 1-Acyl-1,2,3,4-tetrahydro-4-alkyl(aryl)iminobenzo[g]quinolines. Bekhli, A. E.; Kozyreva, N. P.; Kostyuchenko, N. P. (Inst. Med. Prazitol. Trop. Med. im. Martsinovskogo, Moscow, USSR). *Khim. Geterotsikl. Soedin.* 1970, (1), 71–3 (Russ). Condensation of 1-acyl-1,2,3,4-tetrahydro-4-oxobenzo[g]quinolines (I) with primary amines gave the title compds. (II). The N-



(II)

tosyl deriv., m. 133–4 °(heptane), was prepd. in 52.8% yield by condensing 1,2,3,4-tetrahydro-4-oxobenzo[g]quinoline with *p*-toluenesulfonyl chloride in pyridine. A mixt. of 0.01 mole I, 0.02 mole amine, and 15 ml anhyd. isoamyl alc. was boiled 3 hr with azeotropic distn. of H_2O to give II (R, R¹, m.p., and % yield given): Ac, Bu, 116–17° (heptane), 66; Ac, C_6H_4OEt-*p*, 154–5° (alc.), 75; Bz, C_6H_4OMe-*p*, 196–7° (heptane), 69; $COC_6H_3Cl_2$-2,4, C_6H_4OMe-*p*, 195–6° (alc.), 93; $COC_6H_3Cl_2$-2,4, C_6H_4OEt-*p*, 148–9° (alc.) 61; $SO_2C_6H_4Me$-*p*, C_6H_4OMe-*p*, 199–200° (Me_2CO) 57. II are easily hydrolyzed in acid forming either 1,2,3,4-tetrahydro-4-oxobenzo[g]quinoline or I, or a mixt. of both. S. K. Banerjee

1/1

REEL/FRAME
19801699

d-7

1/3 014 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--MECHANISM OF THE CYCLIZATION OF BETA-(2,CARBOXYARYL)-AMINOPROPIONIC ACIDS TO 1,2,3,4,TETRAHYDRO,4,OXOQUINOLINES -U-

AUTHOR--BEKHLI, A.F.

B

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (1), 65-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHEMICAL REACTION MECHANISM, AROMATIC CARBOXYLIC ACID, CHLORINATED ORGANIC COMPOUND, BENZENE DERIVATIVE, QUINOLINE, CHEMICAL SYNTHESIS, MOLECULAR WEIGHT, AMINE DERIVATIVE, CYCLIZATION, AMIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0477 STEP NO--UR/0409/70/000/001/0065/0067

CIRC ACCESSION NO--AP0102486

UNCLASSIFIED

2/3 014 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102486

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. CYCLIZATION OF BETA-(2,CARBOXY,5,CHLOROPHENYL)-AMINOPROPIONIC ACID (I) (X EQUALS CO SUB2 H, Y EQUALS H) (IA) TO N-ACETYL,7,CHLORO,1,2,3,4,TETRAHYDRO,4,OXOQUINOLINE (II) IN THE PRESENCE OF AC SUB2 O AND ACOK TAKES PLACE THROUGH THE INTERMEDIATE FORMATION OF THE N-AC DERIV. (III) OF THE K SALT I, WHICH THEN TRANSFORMS ITSELF TO A CYCLIC MIXED ANHYDRIDE (IV); THE LATTER THEN BREAKS DOWN TO II, EVOLVING CO SUB2. THIS CONCLUSION WAS REACHED FROM THE FOLLOWING REACTIONS. A MIXT. OF 2.5 G IA, 2 G ACOK, AND 10 ML AC SUB2 O WAS GRADUALLY HEATED WITH CONST. STIRRING. AT 60DEGREES ALL THE INGREDIENTS WENT INTO SOLN., AND IMMEDIATELY AFTERWARDS III BEGAN TO SEP. (YIELD 3.1 G, M. 253-4DEGREES (H SUB2 O)). WITHOUT SEPG. III, THE MIXT. WAS HEATED TO 110-35DEGREES TILL CO SUB2 CEASED TO EVOLVE TO GIVE 60.3PERCENT II, M. 140DEGREES (H SUB2 O), ALSO OBTAINED IN 82PERCENT YIELD IF III WAS FIRST ISOLATED, MIXED WITH AC SUB2 O (8 G IN 40 ML), AND HEATED TILL EVOLUTION OF CO SUB2 CEASED. A MIXT. OF 60.0 G 4,CHLOROANTHRANILIC ACID, 14 G NAOH IN 90 ML H SUB2 O, 42.5 G ET ACRYLATE, AND 0.5 G CUSO SUB4 WAS REFLUXED 17 HR TO GIVE 40.0 G I (X EQUALS CO SUB2 ET, Y EQUALS H), M. 121.5-22DEGREES (ALC). THIS (5.9 G), 2.5 G ACOK, AND 15 ML AC SUB2 O HEATED AT 100DEGREES 30 MIN GAVE 5.4 G I (X EQUALS CO SUB2 ET, Y EQUALS AC), M. 95-7DEGREES (C SUB6 H SUB6-PETROLEUM-ETHER). SIMILARLY OBTAINED WAS 91PERCENT I (X EQUALS CN, Y EQUALS AC), M. 210-11DEGREES (ALC.) (DECOMPN.).

UNCLASSIFIED

3/3 014 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102486

ABSTRACT/EXTRACT--I (X EQUALS CN, Y EQUALS H) (4.8 G) WAS HEATED WITH L40 ML CONCD. H SUB2 SO SUB4 4 HR AT 100DEGREES TO GIVE A MIXT. OF IA, AND ITS AMIDE; THE AMIDE M. 200DEGREES (ALC.).

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--2,6,BIS,2,HYDROXY,5,CHLOROBENZYL,4,CHLOROPHENOL, A SUBSTANCE WITH ANTHELMINTHIC ACTION -U-
AUTHOR-(03)-BEKHLI, A.F., BRAUDE, M.B., KOSHELEVA, L.I.

COUNTRY OF INFO--USSR

SOURCE--KHIM.-FARM. ZH. 1970, 4(3), 32-5

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--WORM, PARASITOLOGY, CHEMICAL SYNTHESIS, GASTROINTESTINAL DRUG, DRUG PRODUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0541 STEP NO--UR/0450/70/004/003/0032/0035

CIRC ACCESSION NO--AP0137630
UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137630

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE NONTOXIC ANTHELMINTIC (I) WAS ISOLATED DURING THE COURSE OF DICHLOROPHEN (II) SYNTHESIS. A MIXT. OF 60 G P-CLC SUB6 H SUB4 OH AND 21.4 G 32PERCENT HCHO-MEOH IN THE PRESENCE OF H SUB2 SO SUB4 GAVE 76 G II, M. 172-2.5DEGREES. A BY PRODUCT RECRYSTD. FROM AQ. ETOH GAVE 2.7 G COMPD., M. 227-8DEGREES; FURTHER CRYSTN. FROM 115 ML PHME YIELDED 1.5 G I, M. 235-6DEGREES. A MIXT. OF 128.5 G P-CLC SUB6 H SUB4 OH, 46.5 G NAOH IN 185 ML H SUB2 O, AND 265 ML 37PERCENT HCHO WAS STIRRED 5 HR AT 50-60DEGREES AND KEPT 3 DAYS AT ROOM TEMP. TO YIELD 68.9PERCENT 4,CHLORO,2,6,BIS(HYDROXYMETHYL),PHENOL (III), M. 164DEGREES (H SUB2 O). A MIXT. OF 151.2 G III AND 15.6 ML HCL WAS ADDED TO 800 G MOLTEN P-CLC SUB6 H SUB4 OH AND THE MIXT. HEATED 4.5 HR AT 40DEGREES TO YIELD 70.7PERCENT I, M. 235-6DEGREES (ETOH). FACILITY: INST. MED. PARAZITOL. TROP. MED. IM MARTSINOVKOGO, MOSCOW, USSR.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--DERIVATIVES OF QUINOLINE,7,CARBOXYLIC ACID. II. 4,AMINO SUBSTITUTED,QUINOLINE,7,CARBOXYLIC ACIDS AND THEIR DERIVATIVES -U-

AUTHOR-(02)-BEKHLI, A.F., NIKHAYLITSYN, F.S.

B

COUNTRY OF INFO--USSR

SOURCE--KHIM. FARM. ZH. 1970, 4(2), 17-20

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AMINE DERIVATIVE, QUINOLINE, AROMATIC CARBOXYLIC ACID, MOLECULAR STRUCTURE, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1002 STEP NO--UR/0450/70/004/002/0017/0020

CIRC ACCESSION NO--AP0130044

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0130044

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. I OR II (0.05 MOLE), 0.1 MOLE RNH SUB2, AND 0.0015 MOLE O-NITROPHENOL IS HEATED IN 50 ML ISOAMYL ALC. TO GIVE III AS FOLLOWS: SHOWN ON MICROFICHE. FACILITY: INST. MED. PARAZITOL. TROP. MED. IM. MARTSINOVSKOGO, MOSCOW, USSR.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--SYNTHESIS OF BENZO,G,QUINOLINE DERIVATIVES. VI MECHANISM OF THE CYCLIZATION OF BETA,2, CARBOXYNAPHTYL,3,AMINO,PROPIONIC ACID TO
AUTHOR-(03)-BEKHLI, A.F., KORZYREVA, N.P., PERESLENI, YE.M.

B

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (3), 394-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AROMATIC CARBOXYLIC ACID, BENZENE DERIVATIVE, AMINE DERIVATIVE, QUINOLINE, CHEMICAL SYNTHESIS, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1000 STEP NO--UR/0409/70/000/003/0394/0398

CIRC ACCESSION NO--AP0130043
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0130043
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NIXT. SHOWN ON MICROFICHE.

UNCLASSIFIED

USSR UDC 539.214;539.374

GORODETSKIY, V. N., BOGDANOV, V. N., BEKIN, N. G.

"On the Velocity Distribution of a Material in the Rolling Process"

Sb. nauch. tr. Yaroslav. tekhnol. in-t (Collection of Scientific Works of Yaroslavl' Technological Institute), 1972, Vol. 31, pp 16-19 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V473)

Translation: The steady-state nonsymmetric process of the rolling of a non-Newtonian material in the deformation region between cylindrical rolls is discussed. A statistical law for the flow of the material is used: $\tau = A_{eff}(B\dot{\gamma})$. This is approximated by a broken line. In the above expression τ is the shift stress, $\dot{\gamma}$ is the velocity gradient, and A and B are parameters. It is assumed that the reworked material is incompressible. The desired velocity curves are represented in the form of parabolas $v = a + cy + by^2$, the coefficients of which a, b, and c are determined by applying the principle of minimum of total deformation energy. M. I. Rozovskiy.

1/1

USSR

UDC 539.214;539.374

GORODETSKIY, V. N., BOGDANOV, V. N., BEKIN, N. G.

"On the Displacement of Material in a Longitudinally Asymmetric Rolling Process"

Sb. nauch. tr. Yaroslav. tekhnol. in-t (Collection of Scientific Works of Yaroslavl' Technological Institute), 1972, Vol. 31, pp 131-137 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V474)

Translation: The rate of longitudinal displacement of material in longitudinally asymmetric rolling of polymers is determined theoretically as applied to three cases: rolling with cylindrical nonparallel rolls, rolling with conical rolls, and bases directed toward the same side, and conical rollers with bases directed toward different sides. The material is characterized by the coefficient of Newtonian viscosity μ which is expressed in terms of the limiting value of the stress of the shift $\tau = A_{erf}(B, \dot{\gamma})$, as $\dot{\gamma} \to \infty$. The unknown rate is determined by applying the formula for the average rate in the form of an integral which is a function of the coordinates of the input and output of the material from the deformation region. Formulas are also used reflecting the corresponding geometrical structures. 6 ref. M. I. Rozovskiy.

1/1

USSR

UDC 539.214;539.374

KUZNETSOV, N. V., BOGDANOV, V. N., BEKIN, N. G.

"Certain Problems in the Theory of Rolling of a Porous Material"

Sb. nauch. tr. Yaroslav. tekhnol. in-t (Collection of Scientific Works of Yaroslavl' Technological Institute), 1972, Vol. 31, pp 38-44 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V469)

Translation: The rolling of a porous powdery material is discussed theoretically. The rolling is assumed to be one-dimensional, the rate is taken to be constant with respect to the transverse cross section of the rolled material and normal stresses are also averaged over a transverse cross section assumed to be smooth. The movement of the powder mass under rolling is considered as the motion of a viscous incompressible liquid through a grid with a variable width of the gaps, thus imitating the compressibility of a porous material due to a decrease in cavities. The magnitudes of the contact tangential stresses are functions of displacements of powder particles over the surface of the roller and statistical characteristics of their rates are used to determine these. A technique is developed using probability laws for calculating the distribution of normal contact pressure over a capture arc in the rolling of the porous

USSR

KUZNETSOV, N. V., et al, Sb. nauch. tr. Yaroslav. tekhnol. in-t, 1972, Vol. 31, pp 38-44

mass. An example is given for calculating contact pressures in the rolling of asbestos-friction molded masses. A graph is constructed showing the distribution of normal pressure of the asbestos mass on the roller along the arc of contact. It is pointed out that the calculated value of the rolling forces are in good agreement with experimental data obtained by measuring the deformation forces using hydraulic dynamometers. 9 ref. Ye. M. Tretyakov.

USSR

UDC 539.214;539.374

NEMYTKOV, V. A., BEKIN, N. G.

"On the Position of the Maximum Pressure Cross Section and the Deformation Region in the Working of Polymer Materials on Rolling Machines"

Sb. nauch. tr. Yaroslav. tekhnol. in-t (Collection of Scientific Works of Yaroslavl' Technological Institute), 1972, Vol. 31, pp 8-12 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V475)

Translation: The coordinate of the cross section for maximum pressure ψ_1 is determined by a numerical solution of the equation giving the pressure distribution in the gap of rolling machines

$$p=|\mu_1\left(\frac{U}{h_0}\right)^n\left(\frac{1+2n}{n}\right)^n\sqrt{\frac{2R}{h_0}}\int_{-\xi_1}^{\xi}\frac{|\xi^2-\xi_1^2|^{n-1}\left(\xi^2-\xi_1^2\right)}{\left(\xi^2+1\right)^{1+2n}}\,d\xi$$

where R is the radius of the rolls, ψ is the dimensionless coordinate of the position of the cross section, U is the circular velocity of the rolls, n is the flow index, h_0 is one half the magnitude of the gap, and μ_1 is the degree

1/2

USSR

NEMYTKOV, V. A., BEKIN, N. G., Sb. nauch. tr. Yaroslav. tekhnol. in-t, 1972, Vol. 31, pp 8-12

of consistency of the non-Newtonian material. It is shown that the quantity ψ_1 increases with an increase in the coordinate of the beginning of the capture arc. The degree of the non-Newtonian character of the flow of the material has a considerable effect on the position of the cross section of the maximum pressure. 11 ref. M. I. Rozovskiy.

2/2

USSR

BEKHTEL', E., Head Psychiatrist, Oblast Public Health Department, Candidate of Medical Sciences, and LUKOMSKIY, I., Professor, Head of the Department of Clinical and Social Narcology, Moscow Scientific Research Institute of Psychiatry

"Program for Activities Enhancing Discipline"

Moscow, Meditsinskaya Gazeta, 31 May 72, p 2

Abstract: The system of hospitalizing alcoholics in psychiatric departments has the serious drawback that similar treatment is given to both types of patients. Psychiatric patients must be given special consideration, because they are afflicted with diseases which are beyond their control. Most alcoholics, on the other hand, become physically and mentally incapacitated only after they drink to excess. Therefore, passive confinement to a hospital room, which breeds the attitude "our business is drinking, while curing us is the physicians' business," will never bring that cure about. On the basis of this consideration, a number of pioneering institutions have opened wards for alcoholics only, where their day is completely filled with work and other activities. By dividing and rotating household duties, the patients take care of themselves and the facilities. Each ward is treated as a unit with collective responsibility, that is, violation of discipline committed by one

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200320006-6"

USSR

BEKHTEL', E., and LUKOMSKIY, I., Meditsinskaya Gazeta, 31 May 72, p 2

patient discredits the whole ward, resulting in social pressure on the culprit. Special arrangements are made with neighboring productions plants and other business organizations for employment. From a variety of jobs offered, each patient selects one according to his preference and the physicians' recommendations. The employer gains free labor force, while the patients are offered free training and the opportunity to reenter normal life and to reestablish normal human relations. Occupational therapy, which creates new prospects for economic and social adequacy, is just as important as medical and psychiatric therapy. The objective of the strict regimentation of the daily routine is to develop self-discipline in the patients because, after they are discharged and resume private lives, self-discipline is the ultimate factor which will hold them back from drinking.

2/2

USSR

B

UDC 621.396.66(088.8)

BEKHTEREV, A. P., PECHENKO, V. V., TSYPIN, V. M., ERASTOV, E. A.

"A Device for Mechanically Tuning a Resonance Circuit"

USSR Author's Certificate No 255377, Filed 15 Jul 68, published 24 Mar 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10V420 P)

Translation: The proposed device for mechanically tuning a resonance circuit contains a kinematic chain for adjusting the tuning element, a kinematic chain for fine tuning of this element, and a mechanism for switching the kinematic chains which is controlled by a mismatch pickup. As a distinguishing feature of the patent, the construction of the device is simplified and its operational reliability is improved by using a free travel mechanism as the mechanism for switching the kinematic chains. This mechanism is equipped with a sprocket which is connected to the shaft of the tuning element. Spring-supported rollers are wedged between the sprocket and the ring of the worm wheel for the kinematic chain used for fine tuning. The switching mechanism is also equipped with a fork fitted with lugs to unwedge the rollers.

1/1

1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ACTION OF SOME PHARMACOLOGICAL SUBSTANCES ON THE FOLLICULE STIMULATING FUNCTION OF THE HYPOPHYSIS AFTER COAGULATION OF AMYGDALOID

AUTHOR--BEKHTEREVA, E.P.

B

COUNTRY OF INFO--USSR

SOURCE--FARMAKOL. TOKSIKOL. (MOSCOW) 1970, 33(1), 85-6

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PITUITARY GLAND, BRAIN, ELECTRIC DISCHARGE, REPRODUCTIVE SYSTEM, ESTRADIOL, ESTROGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0091 STEP NO--UR/0390/70/033/001/0085/0086

CIRC ACCESSION NO--AP0119087

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119087

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELECTROCOAGULATION OF THE CEREBELLAR AMYGDALA IN SEXUALLY MATURE MALE RATS INCREASED FSH SECRETION BY THE HYPOPHYSIS. METAMISYL AND ESTRADIOL MONOBENZOATE INHIBITED THIS SECRETION. SPASMOLYTIN DID NOT AFFECT OR SOMEWHAT INHIBITED FSH SECRETION. SPASMOLYTIN ACTION SEEMS TO INVOLVE BLOCKING THE N CHLORINERGIC RECEPTORS, WHILE METAMISYL AND ESTROGEN ACTION IS MEDIATED THROUGH THE HYPOTHALAMUS. FACILITY: OTD. FARMAKOL., INST. EKSP. MED., LENINGRAD, USSR.

UNCLASSIFIED

USSR UDC 612.82-073.97

BEKHTEREVA, N. P.

Neyofiziologicheskiye Aspekty Psikhicheskoy Deyatel'nosti Cheloveka (Neurophysiological Aspects of Human Activity), Leningrad, "Meditsina," 1971, 118 pp

Translation: The book discusses the main stages in research on the physiology of brain control of psychic processes and recent data on the neurophysiological mechanisms of these processes obtained by direct study of the physiology of the human brain.

Long-term studies on the diagnosis and treatment of patients using implanted electrodes as part of a comprehensive method (including observation of the dynamics of the physiological parameters of the brain incarrying out mental activity and investigation of the dynamics of spontaeous and evoked mental processes in response to local electrical stimulation of the brain) produced a mass of new data on the physiological mechanisms of psychic phenomena. Analysis of this data led to the assumption that brain control of mental activity is accomplished by the cortical-subcortical structural-functional system with elements differing in dogree of flexibility.

The author examines the main theoretical prospects for developing the problem and for the possibilities of broadening therapeutic interventions in the psychiatric and neurological clinic on the basis of newly avialable information on the human brain.

1/3

USSR

BEKHTEREVA, N. P., Neurophysiological Aspects of Human Activity, Leningrad, "Meditsina." 1971, 118 pp

Table of Contents

2/3

USSR

BEKHTEREVA, N. P., Neurophysiological Aspects of Human Activity, Leningrad, "Meditsina," 1971, 118 pp

3/3

USSR

UDC 612.821.2+616.831-073.97

BEKHTEREVA, N. P., BUNDZEN, P. V., MATVEYEV, YU. K., and KAPULNOVSKIY, A. S.,
Institute of Experimental Medicine , Academy of Medical Sciences USSR, Leningrad

"Functional Reorganization of the Activity of Human Brain Neuronal Assemblies in Short-Term Memory"

Leningrad, Fiziologicheskiy Zhurnal SSSR, No 12, 1971, pp 1,745-1,761

Abstract: The functional reorganization of the activity of cerebral neuronal assemblies was studied by means of verbal tests (3 to 5 words of one syllable) of short-term memory given to in four persons with 36 or more electrodes implanted in different subcortical structures and various portions of the cortex. The data were processed with the assistance of analog and digital computers using continuous amplitude discrimination of multicellular activity, dynamic selective correlation, and classification, factor, and information analysis. The experiments showed that the trace processes originating in the neuronal assemblies at the time of presentation of the verbal stimuli took on the appearance of spatial and temporal patterns reflecting the dynamic spectra of the acoustic signals used. Retention of the words led to substantial reorganization of the trace processes in accordance with the general laws governing the reconstruction of self-organizing biological systems and occurring against a background of relative stability of the resulting functional organization of the neuronal assemblies.

1/1

USSR

BEKHTEREVA, N. P., Leningrad Institute of Experimental Medicine

"In the Depths of the Brain"

Moscow, Trud, 7 Mar 72, p 3

Abstract: Soviet and foreign researchers have obtained new information on the specific and general mechanisms of the brain that can be used to improve the treatment of such diseases as parkinsonism, epilepsy, and some mental disorders. This information was derived from advances in brain surgery and from electrodes implanted in various areas of the brain. The brain was found to contain regions whose stimulation temporarily improves memory, relieves motor distrubances, or elicits a variety of emotional reactions. Direct observation of changes in the vital processes of the brain makes it possible to prescribe drugs with far greater precision and safety then ever before. Recent research resulted in the discovery of an "error-detecting apparatus" which enables the brain to function "normally." This apparatus can be inpaired by many factors, e.g., alcohol or narcotics. Aided by computers, scientists of the Leningrad Institute of Experimental Medicine are gaining insights into the processing of external impressions in the human brain and knowledge of the delicate changes that underlie thought.

1/1

USSR

UDC 612.821

BEKHTEREVA, N. P., KAMBAROVA, D. K., and MATVEYEV, Yu. K., Division of Applied Neurophysiology, Institute of Experimental Medicine, Academy of Medical Sciences USSR, Leningrad

"Functional Characteristics of Links in Cerebral Systems for Control of Mental and Motor Functions in Man"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 56, No 8, Aug 70, pp 1,081-1,097

Abstract: The impulse activity patterns in neuronal structures of the brain were studied during motor and psychological tests administered under ordinary conditions and after administration of neurotropic drugs. Areas of characteristic reproducible impulse patterns were discovered in various brain structures of patients with Parkinson's disease. Gold electrodes were used for the measurements, and the impulse activity was calculated by conventional means and by computer. To study the distribution of active neurons, the "specific activity" (i.e., the number of impulses per unit volume and unit time) was used. Comparison of impulse activity prior to and during the test and of the effects when the test was repeated made it possible to clearly define the activity and to refine the links of the systems of central control for various

1/2

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200320006-6"

USSR

BEKHTEREVA, N. P., et al, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 56, No 8, Aug 70, pp 1,081-1.097

forms of activity. It was shown that during psychological tests the discharge frequency increased not only when the number of active neurons increased but also when it decreased. It is proposed that the phenomenon of lateral inhibition is of importance in the activity of neuron groups. When neurotropic drugs (deseril, L-DOPA) had been administered, the background frequency shifted as did the pattern of impulse activity during psychological and motor tests. A few links of the brain systems for mental and motor control could be more clearly defined by the "inclusion" or "exclusion" brought about by the neurotropic drugs.

2/2

USSR

BEKHTEREVA, N. P., Director, Institute of Experimental Medicine, Corresponding Member, Academy of Sciences, USSR, PRIBRAM, K., Stanford University, WALTER, G., Burden Neurological Institute, Bristol, and MANUCHAROVA, Ye.

"On the Eve of Discovery"

Moscow, Nedelya, No 29, 17-23 Jul 72, p 8

Abstract: The human brain is a product of its environment. It is preeminently social. The frontal lobes of the brain, where planning and decision-making functions are performed, are well-developed in humans, but poorly developed in animals. Experiments on animals' higher mental activities and on herd animals may be more analogous to human brain functions. Two questions are presented: How has the complexity of the human brain, largely unexercised, been maintained for centuries? Will the brain continue to be able to cope with the increasing loads required of it? That the brain exercises many unneeded systems when it confronts the unknown is one hypothesis for the preservation of its complexity.

The brain has many codes, comparable to the various IBM machine languages. These codes may be different for each individual. Sensory perceptions and motor functions may operate on the principle of a hologram. An electrical signal, generated by input such as an overheard word, sets up a biochemical
1/2

USSR

BEKHTEREVA, N. P., et al., Nedelya, No 29, 17-23 Jul 72, p 8

reaction in the brain. This signal is specific for each word. A signal can be transmitted to the brain which generates a specific mental image. This signal will be the brain's code for the word described by the generated mental image.

USSR

UDC: 535.854

SHABEL'NIKOV, A. V., BEKETIN, Yu. I., Institute of Radio Engineering and Electronics, Academy of Sciences of the USSR

"A Device for Measuring Phase Fluctuations in the Optical Band"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 12, Apr 72, Author's Certificate No 334536, Division G, filed 19 Feb 70, published 30 Mar 72, pp 173-174

Translation: This Author's Certificate introduces: 1. A device for measuring phase fluctuations in the optical band. The device contains a laser, and measurement and reference channels. Installed in the measurement channel are a dual-beam optical system with the medium to be studied, a photomultiplier, an amplifier and a limiter. Installed in the reference channel are a dual-beam optical system, a photomultiplier and an amplifier. The device also includes a comparison circuit with the outputs of the above mentioned channels connected to its inputs, and also a recording device. As a distinguishing feature of the patent, sensitivity is increased, the dynamic and frequency ranges of the device are extended, the immunity of the device to interference from background noises is improved and continu-

1/2

USSR

SHABEL'NIKOV, A. V., BEKHTIN, Yu. I., USSR Author's Certificate No 334536

ous recording of the signal is ensured by including a diffraction-Doppler modulator and collimating lens between the laser and the optical system. 2. A modification of this device distinguished by the fact that the diffraction-Doppler modulator is made in the form of a disc carrying a diffraction grating on its edge and rotated by an electric motor.

2/2

USSR

UDC 535.376:621.382

KHOKHLACHEV, K.I., GAVANIN, V.A., KRUGLOV, I.I., BEKHTINA, A.B.

"Pulsed Photometric Parameters Of Light-Emitting Diodes"

V sb. Impul's. fotometriya (Pulse Photometry--Collection Of Works), Iseue 2, Leningrad, "Mashinostroyeniye," 1972, pp 147-152 (from RZh:Elektronika i yeye primeneniye, No 9, Sept 1972, Abstract No 9B312)

Translation: Information is furnished on native light-emitting diodes, apparatus is described, and the results are presented of a measurement of the peak value of the radiant intensity of light-emitting diodes and the stability of the peak value of the emission pulses of GaP light-emitting diodes during continuous operation. 4 ill. 2 tab. Summary.

1/1

USSR

UDC 620.193.4

YAROSHINSKIY, I. S., STUKANOGOV, G. A., BEKI, J., Kiev Higher Aviation Engineering Military School

"Method of Separating the Anode Film from the Surface of Aluminum Alloy"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 8, No 2, 1972, pp 112-114

Abstract: A study was made of the effect of ethyl bromide on the corrosion cracking of D16AT alloy. A method and a device are described for separating the thin-layer anodic film from the surface of this alloy. The anodic film entirely located in the pure aluminum cladding layer 60-62 microns thick was separated in a glass device. The specimen was dropped in a 220-250 mℓ cylinder the ends of which were free of metal containing 100-120 mℓ of ethyl bromide. The alloy begins to experience noticeable corrosive solution after 20-22 hours of heating (not exceeding 40° C in view of the boiling point of ethyl bromide), and it dissolves completely after 30-38 hours. The corrosion products are stored for later use of the catalyst which reduces the separation time to 12-16 hours. Films 60-80 microns thick with an area of 20 cm^2 were separated. The method is applicable for separation of thick-layer anodic films from the surfaces of D1AK6, AMTs, and AMG aluminum alloys.

1/1

USSR

UDC: 621.315.592

CHIGOGIDZE, Z. N., KHUCHUA, N. P., GUTNIK, L. M., KHARATI, R. G., VARLAMOV, I. V., BEKIREV, U. A., TYUTYUN, A. A.

"Concerning the Mechanism of Failure of Gunn Diodes"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 9, Sep 72, pp 1670-1676

Abstract: Devices based on the Gunn effect operate most effectively at high bias voltages; however, increasing the voltage causes breakdown of the device. At present there is no unanimous opinion on the mechanism of failure and degradation of Gunn diodes. In this paper the authors investigate coplanar Gunn diodes with plane-parallel and annular electrode configurations both with and without a silicon dioxide passivating coating. The diodes were tested in the pulse mode. It is shown that in accordance with previously available experimental data the failure of Gunn diodes takes place as a result of formation of a shorting channel between the contacts of the device. Information is obtained on the dynamics of the visible portion of the breakdown by means of motion picture photography of this process through an optical microscope. It is shown that silicon dioxide passivation of the

1/2

USSR

CHIGOGIDZE, Z. N. et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 9, Sep 72, pp 1670-1676

active region has an appreciable effect on the nature of the visible portion of the breakdown and on the ratio of the breakdown voltage to the threshold voltage. A microscopic x-ray analysis is made of the composition of the contact regions and the channel on various stages of thermal breakdown. It is found that a transverse magnetic field affects the position of the shorting channels and the ratio of the breakdown voltage to the shorting voltage. A study is made of Gunn diode emission in the infrared region of the spectrum at voltages close to the breakdown voltage. It is concluded that the cause of failure of Gunn oscillators at high bias voltages is the formation of current strings caused by the development of an S-shaped current-voltage curve due to impact ionization when a strong field domain passes over the specimen. The authors thank M. S. Shur for discussing the results of the paper, and N. N. Mamatsashvili for taking part in the measurements.

2/2

1/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--EFFECT OF CHORIONIC GONADOTROPIN ON THE LEVEL OF CORTICOSTERONE IN THE PLASMA OF RATS -U-

AUTHOR--BEKIROV, M.

B

COUNTRY OF INFO--USSR

SOURCE--PROBL. ENDOKRINOL.-1970, 16(3), 60-3

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GONADOTROPIN, CORTICOID, ADRENAL CORTEX, BLOOD PLASMA, RAT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0271 STEP NO--UR/0502/70/016/003/0060/0063

CIRC ACCESSION NO--AP0134076

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134076

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHORIONIC GONADOTROPIN ADMINISTERED I.M. ONCE AT 30 UNITS DECREASED THE CORTICOSTERONE PLASMA LEVEL IN BOTH MALE AND FEMALE RATS AND REDUCED THE WT. OF THE ADRENAL GLANDS. PREDNISOLONE BLOCK OF THE HYPOPHYSIS REDUCED BUT DID NOT ELIMINATE CHORICNIC GONADOTROPHIN ACTION. SINGLE OR REPEATED ADMINISTRATION OF TESTOSTERONE PROPICNATE DAILY AT 20 MG INCREASED THE LEVEL OF PLASMA CORTICOSTERONE AND THE ADRENAL GLAND WT. IN MALE RATS. THE EFFECT ON CORTICOSTERONE LEVEL WAS THE SAME IN NORMAL AND IN OVARIECTOMIZED FEMALES. THE ACTION OF CHORIONIC GONADOTROPIN ON THE ADRENAL GLANDS SEEMS TO BE MEDIATED NOT ONLY THROUGH THE GONADS BUT ALSO DIRECTLY ON THE ADRENAL CORTEX. FACILITY: LAB. BIOKHIM. STEROID. GORMONOV, INST. EKSP. ENDOKRINOL. KHIM. GORMONOV, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 519.2

BEKKER, A. V., YAGOL'NITSER, M. A.

"Algorithm for Distinguishing Homogeneous Sets of Objects"

Novosibirsk, Raspoznavaniye obrazov i regressivn. analiz v ekon. issled.--sbornik (Pattern Recognition and Regressive Analysis in Economic Research--collection of works), 1972, pp 95-105 (from RZh-Kibernetika, No 5, May 73, abstract No 5V215 by V. Konakov)

Translation: An algorithm for grouping multidimensional objects is considered which is based on nonparametric evaluation of probability density from an available sample. An iteration of the algorithm is presented which consists of seven stages, and the reasoning on which the procedure is based is given. Problems relating to convergence of the given procedure are studied. Heuristic selection of the parameter h(N) and nonparametric estimate of density are given. A numerical example is presented of investigation of arrangement of 30 points on a plane.

1/1

USSR

BEKKER, A. V., Vopr. Postroyeniya i Primeneniya Sta. Modeley Ekon. Pokazateley Predpriyatiy. Ch. 1, Novosibirsk, 1971, pp 26-32.

studied A* and absence of information transmission. Conditions are defined under which the information should not be lost. It is noted that the use of the methods of pattern recognition for construction of regressive functions is more effective if they contain a grouping algorithm in implicit or explicit form.

2/2

USSR

BEKKER, A. V.

"Use of Pattern Recognition for Construction of Regression Functions"

Vopr. Postroyeniya i Primeneniya Stat. Modeley Ekon. Pokazateley Predpriyatiy. Ch. 1 [Problems of Construction and Application of Statistical Models of Economic Indicators of Enterprises, Part 1], Novosibirsk, 1971, pp 26-32, (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V711 by V. Mikheyev).

Translation: It is demonstrated that the methods from the theory of pattern recognition allow regressive models to be used, based on samples which are not homogeneous sets. The set of statistical objects A_1, ..., A_N is considered homogeneous if the set of its measurements Z_1, Z_2, ..., Z_N can be looked upon as a sample formed as a result of independent testing of a certain object A*. A regression function means a quantitative estimate of the degree of influence of factors characterizing the results of operation of enterprises on a certain indicator of economic effectiveness of production. Two limiting cases of the construction of a regression function are studied -- absence of information loss between input and output of object being

1/2

USSR

UDC 577.16:576.314.612.12

TOTSKIY, V. N., ROZANOV, A. Ya., BEKKER, B. Z., Biochemistry Department of Odessa University imeni I. I. Mechnikov

"Effect of Vitamins on Erythrocyte Permeability for Nicotinate-C^{14} under the Effect of Acceleration on the Organism"

Kiev, Ukrains'kiy Biokhimichniy Zhurnal, Vol 44, No 4, 1972, pp 509-514

Abstract: In experiments in vitro a study was made of the characteristic features of the absorption and binding of nicotinic acid tagged with C^{14} ($NA\text{-}C^{14}$) by the blood cells of rats under supergravitation conditions. The effect on these processes of certain other functionally bound vitamins was also determined. It was established that riboflavin and pantothenate have no effect on the intensity of the $NA\text{-}C^{14}$ absorption by erythrocytes at the same time as thiamine and lipoate promote it. Under other equal conditions, the erythrocytes of the experimental animals absorb a larger amount of $NA\text{-}C^{14}$ than the control animals, and they lose it faster during repeated lavages. This indicates an increase in the permeability of the biological membranes under the effect of supergravitation. The presence of individual vitamins in the incubation medium not only does not prevent the loss of $NA\text{-}C^{14}$ by the erythrocytes of the experimental

1/2

USSR

TOTSKIY, V. M., et al., Ukrains'kiy Biokhimichniy Zhurnal, Vol 44, No 4, 1972, pp 509-514

animals with subsequent lavages, but it even promotes an increase in the losses. The complex application of the investigated vitamins has no effect on the NA-C^{14} absorption by the erythrocytes; however, it has a positive effect on the mechanisms promoting retention of nicotinic acid and its metabolites in the blood cells.