

Nuclear Physics

USSR

UDC: 53.07/.08+53.001.5

BLOKHIN, V. T., KATSAUROV, L. N., NECHAYEVA, L. P., RIKHTER, V. Ya.

"A Method of Measuring the Beam Position During Acceleration in a Sectoral Cyclotron"

Kratkiye soobshch. po fiz. (Brief Reports on Physics), 1971, No 8, pp 26-30
(from RZh-Fizika, No 4, Apr 72, Abstract No 4A501)

Translation: A description is given of the method used on the three-section cyclotron model at the Physics Institute imeni P. N. Lebedev (Moscow) for determining the radial position (and orbit number) of the beam. The cyclotron uses pulse injection: the duration of the injecting beam is less, and the injection cycle repetition period several times greater, than the period of the accelerating voltage. For indication, the method used an electrostatic signal electrode and two opaque pickups which enable registration of the beam current and the visual observation of quartz plate fluorescence. By covering the beam with the opaque pickup and simultaneously using an oscilloscope to measure the time interval from the time of injection to the instant that the beam reaches the pickup, one can determine the radial position of the beam to within ± 2 mm when the orbit spacing is approximately 5 mm or more, including those cases in which the order of succession of the orbits is changed on certain azimuths because of radial fluctuations in the beam. V.N.K.

1/1

USSR

GLADYSHEV, V. A., KATSAUROV, L. N., MOROZ, Ye. M., NECHAYEVA, L. P.

"The Focusing of a Beam of Ions with Drift in a Heterogeneous Magnetic Field"

Moscow, Tr. Fiz. Instituta imeni P. N. Lebedev. Vol 53, 1971, pp 226-238.

Abstract: The drift of ions across the gradient of a magnetic field can be used in the performance of external injection into a cyclotron by directing the ions so that the beam drifts along the boundary of one of the sectors of the cyclotron to the central area. This work clarifies the nature of the trajectories of ions in this drift and studies problems related to the focusing of the beam. The motion of particles in the median plane of a magnet is studied, and it is considered that the system of coordinates is rectangular, and the field is a function of one coordinate only. In spite of these simplifying assumptions, a good deal of necessary information is produced concerning the nature of the trajectories during drift.

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1/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--IMPLANTATION TYPE TRITIUM TARGERS MADE FORM SCANDIUM, YTTRIUM,
PRASEODYMIUM, NEODYMIUM, AND ERBIUM -U-
AUTHOR-(04)-STRIZHAK, V.I., PRIMENKO, G.I., KATSAUROV, L.N., PRONMAN, I.M.
COUNTRY OF INFO--USSR
SOURCE--AT. ENERG. 1970, 28(3), 249-51
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--ION IMPLANTATION, TRITIUM, SCANDIUM, YTTRIUM, PRASEODYMIUM,
NEODYMIUM, ERBIUM, PARTICLE ACCELERATOR TARGET
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1038 STEP NO--UR/0089/70/028/003/0249/0251
CIRC ACCESSION NO--AP0124696
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0124696

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE IMPLANTATION OF T INTO ER, SC, ND, Y, AND PR TARGETS, BY USING AN ACCELERATION VOLTAGE OF 120 KV AND A T CURRENT OF 100 MUA, SATN. OF THE TARGETS WITH T OCCURS AFTER 35-50 MIN OF BOMBARDMENT; THE YIELD OF N FROM THE T(D,N) REACTION ON THE ABOVE TARGETS IS 2.1 TIMES 10 PRIME7, 1.8 TIMES 10 PRIME7, 1.5 TIMES 10 PRIME7, 1.5 TIMES 10 PRIME7, AND 1.8 TIMES 10 PRIME7 N-MUCI, RESP., AS COMPARED WITH 1.8 TIMES 10 PRIME7 N-MUCI FROM A TI TARGET WITH ABSORBED T. HEATING OF IMPLANTATION TYPE RARE EARTH TARGETS REDUCES THE N YIELD FROM THE T(D,N) REACTION, E.G., BY SIMILIAR TO 30PERCENT AFTER HEATING TO 400DEGREES, BUT THE N YIELDS FROM SUCH HEATED TARGETS ARE MUCH HIGHER THAN THE YIELDS FROM HEATED ZR-T TARGETS (WHERE THE YIELD DECREASES BY A FACTOR OF R).

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--USE OF A SIDE PRODUCT OF THE FERRO ALLOY INDUSTRY INSTEAD OF FERRO
SILICON -U-

AUTHOR--(03)--KATSAY, YE.V., KORNILOV, L.N., DANILOV, A.M.

COUNTRY OF INFO--USSR

SOURCE--METALLURG, JAN. 1970, (1), 25

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FERROALLOY, FERROSILICON, CORUNDUM, TITANIUM STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0147

STEP NO--UR/0130/70/000/001/0025/0025

CIRC ACCESSION NO--AP0114543

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0114543

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITY OF USING SI AND TI
CONTG. SIDE PRODUCTS FORMED IN THE PRODUCTION OF ELECTRO CORUNDUM
INSTEAD OF ORDINARY FERRO-SI IN STEELMAKING IS DISCUSSED. THE QUALITY
OF THE STEEL SO PRODUCED IS IN NO WAY INFERIOR TO THAT OBTAINED BY THE
CONVENTIONAL TECHNIQUE, BUT THE TI CONTENT IS APPRECIABLY HIGHER (BY A
FACTOR OF 2-4). THE USE OF THESE PRODUCTS IS PARTICULARLY RECOMMENDED
IN THE PRODUCTION OF TI STEELS.

UNCLASSIFIED

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2

Refractory Materials

USSR

BUGAYEV, N. F., SIMONOV, K. V., CHERNYAVSKAYA, V. P., KATSAY,
YE. V., VORONIN, I. G.

"Refractories of Caustic Magnesite"

Moscow, Ogneupory, No 3, Mar 70, pp 2-3

Abstract: This article describes the experience in manufacture and service testing of magnesite refractories based on 0-1 mm fraction powder produced by roasting caustic magnesite without sintering additives. The experimental products were made using the technological process for the production of ordinary magnesite products and roasted at 1650°C. The properties of the roasted products are described. The deformation temperature under load is 80°C higher than that called for by the standards. Furnace tests showed that the experimental brick wears evenly during operation. The experimental refractories held up to usage as well as standard refractories.
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USSR

UDC 621.371:523.152

KATSELENBAUM, B. Z.

"Discrete Representation of the Field Propagated Over a Nonuniform Range"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln, Tezisy dokl. Sekts. 5 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 5--collection of works) "Nauka," 1972, pp 12-16 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A382)

Translation: The propagation of waves over nonuniform ranges is considered as propagation in an irregular open line, using the discrete representation of the field to expand it into a series of special functions. Bibliography of six

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USSR

UDC 669.14:559.292

DAZHAYEV, P. Sh., and KATSNEL'SON, A. A., Moscow State University named N. V. Lomonosov

"Atomic Local Ordering in Ni-Si Alloys at 300 and 400° C"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 6, Sep 70, pp 663-665

Abstract: Studies show that the process of ordering in Ni-Si alloy. (7at.% Si) with isothermal annealing after deformation (300-400°) begins with the establishment of close order at short distances, then leads to the appearance of local order in various forms. At later stages, at least partial resorption of these formations occurs.

1/1

USSR

KATSENOVICH, R. A., and USMANOVA, I. Ya., Uzbek Scientific Research Institute of Sanitation, Hygiene and Occupational Diseases

"Appearance of Antihepatic Autoantibodies in Persons Exposed to Pesticides"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 7, Jul 70, pp 6-8

Abstract: A study was conducted to determine the involvement of the liver in autoimmune processes of persons exposed to various chloro- and phosphorus pesticides. Antihepatic autoantibodies were determined with the aid of the Khudomal complement reaction as modified by Romanyuk. Forty subjects who had contact with pesticides were divided into three groups: those with definite pesticide intoxication (19 persons), those with some toxicity symptoms (13 persons), and those with no toxic manifestations (8 persons). The first group showed symptoms of disorders of the nervous and gastrointestinal systems; 17 were found to have autoantibodies to liver tissue. In the second group, six subjects had antihepatic autoantibodies. In the third group, autoantibodies were found in four subjects, all of whom had a history of gastrointestinal disorders. Since antihepatic autoantibodies appear not only in advanced cases of hepatic disorders but also in early dysfunctions of the liver, their presence represents a useful indicator of the development of a pathological process.

1/1

USSR

K 535.813:666.1.053.65

FURMAN, Sh. A., FOMENKO, P. N., SKORODUMOV, V. N., KATSNEL'SON, L. B.

"Vacuum Application of Multi-Layered Dielectric Coatings on Large Parts"

Optiko-Mekhanicheskaya Promyshlennost', No. 3, 1970, pp 36-41.

Abstract: The vacuum-method application of dielectric materials forming multi-layered coatings on large optical parts up to 2600 mm in diameter, and the usage of a vacuum installation with a chamber diameter of 3250 mm, equipped with a system beneath the cap with a rotating evaporator and photometer, which tests the thickness of the layers during the process of manufacture of the coating are analyzed. Photographs are presented of parts of the system. The investigations showed that the coatings had identical optical characteristics at various points on the surface of the specimen and good operational qualities. For example, mirrors were prepared, consisting of 9 to 13 alternating layers of zinc sulfide and magnesium fluoride or zinc sulfide and strontium fluoride, having $R = 98-99.5\%$ in the area of the main maximum of coefficient of reflection, and minimum and maximum values of R for a fixed wave length differing by not over 0.1% over a 1400 mm diameter surface area. The coatings have high mechanical strength, can be cleaned with a dry cloth, ether, alcohol or a cotton pad wet with water.

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USSR

UDC 621.373.826:621.396

ZEGE, B. P., IVANOV, A. P., KATSEV, I. L., KARGIN, B. A.,
KUZNETSOV, S. V., and MIKHAYLOV, G. A.

"Some Problems of Optical Pulse Radar in Natural Dispersing
Formations"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl.
(Tenth All-Union Conference on the Propagation of Radio Waves;
Report Theses--collection of works) "Nauka," 1972, pp 337-341 (from
RZh--Radiotekhnika, No 10, 1972, Abstract No 10D440)

Translation: A method is given for computing the signal/noise ratio
of an optical radar system combining receiver and transmitter,
under the condition that the signal is propagated in a medium char-
acterized by the probability Λ of photon survival. With increasing
distance between the object and the transceiver, the signal/noise
ratio varies according to the law

$$\gamma \sim \sqrt{\tau} \exp -(\gamma - 1 + \Lambda)\tau,$$

where τ is the distance between the object and the radar and γ is
the eigenvalue of the characteristic equation. Bibliography of
five. A. L.

USSR

UDC 535.36

BUSEMAKOVA, O. V., ZEGE, E. P., and KATSEV, I. L.

"Asymptotic Formulas for the Brightness Coefficients of Thick Layers of a Dispersive Medium"

Minsk, Doklady Akademii Nauk BSSR, Vol 15, No 4, 1971, pp 309-311

Abstract: This article concerns recent work done on the problem of obtaining brightness coefficients for thick layers of a dispersive medium with an arbitrary indicatrix of dispersion. The authors cite G. V. Rozenberg's approximation formulas, which apply to low-absorption media and which have been used extensively to solve geophysical and spectroscopic problems. They explain the ways in which these formulas are related to the formulas developed by V. V. Sobolev for brightness coefficients which have been averaged with respect to the azimuth and which apply to the case of arbitrary absorption. They show that the two sets of formulas coincide to a specified degree of accuracy when $\int_0^1 \mu^2 g(\mu) d\mu = 1/3$ (μ is the cosine of the angle of dispersion of $g(\mu)$ is the angular distribution of the brightness of the light which has passed through a purely dispersive layer). This condition is fulfilled quite well for a broad class of indicatrices.

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39

USSR

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UDC 535.361

ZEGE, E. P., KATSEV, I. L., MAKAREVICH, S. A.

"Characteristics of the Light Field in Weakly Absorbent Media"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 12, No 6, 1970, pp 1137-1139

Abstract: This short mathematical article deals with formulas developed by G. V. Rozenberg for the brightness coefficient, the diffuse reflection, and the conductance of light in weakly absorbent layers of large optical thickness. Although the determination of the parameters of the equation can be done experimentally or through the proper computations, the authors assert that there is no need for determining all these parameters experimentally. They then proceed to work out equations through which the parameters can be found. The two sources they cite of information on the Rozenberg equations are a paper written by Rozenberg for the collection Spektroskopiya svetorasseivayushchikh sred (The Spectroscopy of Light-Dispersive Media), Minsk, 1963, p 5, and a paper written by A. P. Ivanov and G. K. Il'ich for the journal named above (2, 356, 1965).

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1/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--PHYSICO-CHEMICAL STUDY OF THE REACTION OF DIETHYLAMINE WITH COPPER
SALTS IN AQUEOUS SOLUTIONS -U-
AUTHOR--KATSEVA, G.N.
COUNTRY OF INFO--USSR *R*
SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(2), 151-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--DIETHYLAMINE, COPPER CHLORIDE, COPPER SULFATE, NITRATE,
AQUEOUS SOLUTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1100 STEP NO--UR/0153/70/013/002/0151/0154
CIRC ACCESSION NO--AT0134726

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0134786

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM MEASUREMENTS OF THE N, D., ABSORBANCE AND REAGENT EXCESS, IN MIXTS. OF 0.25 M SOLNS. OF ET SUB2 NH WITH SOLNS. OF 0.25 M CUCL SUB2, CU₂SO SUB4, OR CU(NH SUB3) SUB2, IT IS DEDUCED THAT, FOR CU PRIME2 POSITIVE-ET SUB2 NH RATIOS LARGER THAN OR EQUAL TO 2:3, THE BASIC COMPS. CU SUB2 (OH) SUB3 CL, CU SUB4 (OH) SUB6 SO SUB4 OR CU SUB2 (OH SUB3) NO SUB3 ARE PPTD. QUANT. FOR MIXTS. WITH CU PRIME2 POSITIVE-ET SUB2 NE LARGER THAN OR EQUAL TO 0.5, CUO IS FORMED. FACILITY: KRYM. GOS. PEDAGOG. INST. IM. FRUNZE, SIMFEROPOL, USSR.

UNCLASSIFIED

USSR

ASHKINYZE, V. G. and KATSEVA, V. P.

"Computer Modeling of the Process of Proof of Geometric Theorems"

Vopr. Algoritmiz. i Programmir. Obuch. [Problems of Algorithmization and Programming of Learning -- Collection of Works], No 2, Moscow, Pedagogika Press, 1973, pp 89-110 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V802).

Translation: An algorithm and program for the BESM-4 computer are described, modeling the process of solution of geometric problems requiring proof. The given class of problems is formally described as follows. It is assumed that a certain finite set M is given (as a universal set -- the universum). It is also assumed that certain subsets $A \subseteq M$ are set in correspondance with certain elements; one subset may correspond to various elements. The problem is the pair (D, X) , where $D \subseteq M$ is a subset, the elements of which are called given elements of the problem, while $X \subseteq M$ is called the desired element. The program described is designed to prove theorems relating to a certain fragment of elementary geometry; this fragment includes the theory of equality of triangles and the theory of parallels. The language of the program contains 15 types of statements used in the proof of theorems from this section of

1/2

USSR

Ashkinyze, V. G., and Katseva, V. P., Vopr. Algoritmiz. i Programmir. Obuch., No 2, Moscow, Pedagogika Press, 1973, pp 89-110.

geometry. A continuous listing of all formally possible versions to achieve each goal is practically impossible, even in simple geometric problems. In order to reduce the list, a drawing is used -- a coordinate model of the problem. However, even when the drawing is used heuristically, the volume of the list which must be run through for selection of a goal is too great in complex problems: it is never known when the listing can be interrupted and an attempt judged unsuccessful. The program described allows the depth of the runthrough to be externally limited (assignment of maximum resolved level in the tree of the problem). It is noted that the program of proof of the geometric theorems allows quantitative estimation of the relationship between elements of logic and clarity in elementary geometry proofs: of all conditions of the "axioms" of this program, some 40% are statements based solely on references to the drawing.

V. Mikheyev

2/2

USSR

ASHKINUZE, V. G. and KATSEVA, V. P.

"Heuristic Methods in Computer Modeling of the Process of Proof of Geometric Theorems"

Vopr. Algoritmiz. i Programmir. Obuch. [Problems of Algorithmization and Programming of Learning -- Collection of Works], No 2, Moscow, Pedagogika Press, 1973, pp 111-117 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V803).

Translation: Problems of the expansion of heuristic aspects of programs modeling the search for proof of theorems from elementary geometry on computers are discussed. Heuristic methods are divided into syntactical and semantic on the basis of the nature of the information used in the solution of the problem. Heuristic methods based on information related only to the formal system itself are called syntactic methods; heuristic methods based on information relating also to the model of the system (or to the model alone) are called semantic methods. Heuristic limiting methods (excluding certain search areas from analysis as unpromising) and guiding methods (indicating the directions in which search should first be performed) are also distinguished.

V. Mikheyev

1/1

- 76 -

USSR

UDC 616.981.57-022.38-022.7

KATSITADZE, G. K., and SAKVARELIDZE, N. K., Scientific Research Institute of Sanitation and Hygiene imeni G. M. Natadze, Ministry of Health, Georgian SSR, Tbilisi

"Biological Characteristics of *Cl. perfringens* Strains Isolated During Food Poisoning"

Moscow, Gigiyena i Sanitariya, No 12, 1971, pp 36-38

Abstract: Study of 105 *Cl. perfringens* strains isolated from victims of food poisoning and from various foods showed them to have the usual morphology. Most formed S-type colonies on solid nutrient media. All fermented lactose, glucose, sucrose, xylose, maltose, glycogen, and inositol, forming acid and gas. The neutralization test revealed 103 strains to be of type A. A high degree of lysogenicity was noted, with 14 phage lines isolated and stabilized. Lysogenicity was lost in the course of spore formation, either because lysogenic phage DNA existed apart from the host cell genome or because it became denatured during sporogenesis. There were some indications that toxigenicity could be transmitted from toxin-forming to non-toxin-forming strains by transduction. A method of typing *Cl. perfringens* type A strains by means of five lines of bacteriophages characterized by a fairly stable spectrum of lytic activity (phages H, 1, 2, 5, 6) is proposed.

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1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--REACTION OF TRIETHYLHYDROSTANNANE WITH ACETYLENIC AND
VINYLACETYLENIC TERTIARY ALCOHOLS -U-
AUTHOR--(03)-GVERDTSITELI, I.M., ADAMIYA, S.V., KATSITADZE, M.M.
COUNTRY OF INFO--USSR
SOURCE--SOBSHCH. AKAD. NAUK GRUZ. SSR 1970, 57(1), 65-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ORGANOTIN COMPOUND, ALIPHATIC ALCOHOL, TERTIARY ALCOHOL,
CATALYTIC HYDROGENATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605013/B06 STEP NO--UR/0251/70/057/001/0065/0068
CIRC ACCESSION NO--AP0140350

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--04DEC79

CIRC ACCESSION NO--AP0140350

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERMAL AND CATALYTIC HYDROSTANNATION OF ACETYLENIC AND VINYL ACETYLENIC TERTIARY ALCS. WAS STUDIED. ET SUB3 SNH ADDED TO THE TRIPLE BONDS OF (HO)AC TRIPLE BOND CH AT 80-90DEGREES UNDER N TO GIVE TRANS (HO)ACH:CHSNET SUB3, WHERE A EQUALS ME SUB2 C, MEETC, MEPRC, ME(ISO-PR) C, CYCLOPENTYLIDENE, AND CYCLOHEXYLIDENE. A(OH)C TRIPLE BOND C, CH:CH SUB2 AND ET SUB3 SNH GAVE A(OH)CH:C(SNET SUB3)CH SUB2 CH SUB2 SNET SUB3 AND A (OH)CH:C(SNET SUB3)CH:CH SUB2, WHERE R EQUALS ME SUB2 C AND MEETC. ME SUB2 C(OH)CH:C(SNET SUB3) CH:CH SUB2 HYDROGENATED OVER RANEY NI GAVE ME SUB2 C(OH)CH:CETSJET SUB3. FACILITY: TBILIS, GOS. UNIV., TBILISI, USSR.

UNCLASSIFIED

USSR

UDC: 533.6.011

KATSKOVA, O. N., CHUSHKIN, P. I.

"Three-Dimensional Supersonic Flow of a Gas With Nonequilibrium Physico-chemical Transformations Around Solids"

Tr. II Resp. konf. po aerogidromekh., teploobmenu i massoobmenu. Sekts. "Aerodinamika bol'sh. skorostey" (Works of the Second Republic Conference on Aerohydromechanics, Heat Exchange and Mass Exchange. "High-Velocity Aerodynamics" Section), Kiev, Kiev University, pp 63-69 (from RZh-Mekhanika, No 5, May 72, Abstract No 5B332)

Translation: A scheme proposed earlier by the authors is used for studying supersonic nonequilibrium flows in a three-dimensional nozzle and around the tail section of a blunt body having the shape of an inverted cone. The above-mentioned numerical scheme is obtained by representing the relations between the unknown functions and the angular variable ψ of the cylindrical coordinate system through trigonometric polynomials in ψ with interpolation points on a series of meridional planes $\psi = \text{const}$. As a result, an approximating system of differential equations of two independent variables is found for determining the unknown functions on all meridional interpolation

1/3

USSR

KATSKOVA, O. N., CHUSHKIN, P. I., Tr. II Resp. konf. po aerogidromekh.,
teploobmenu i massoobmenu. Sekts. "Aerodinamika bol'sh. skorostey", Kiev,
Kiev University, pp 63-69

planes. At supersonic velocities, the system is hyperbolic, having two families of wave characteristics (Mach lines) and a family of stream line analogs on each interpolation plane, and is solved by means of an inverse scheme of the method of characteristics in which reckoning is done by layers $x = \text{const}$, where x is measured off along the axis of the cylindrical coordinate system.

Nonequilibrium flow of dissociated oxygen is considered in the calculated examples. In these examples the nozzle had a cylindrical external generatrix of elliptical cross section as well as an elliptical profiled (tapered) central plug. The calculations revealed "freezing" of the gas composition as it expanded in the nozzle. In calculating nonequilibrium flow around a blunt body with tail section in the form of an inverted cone, various half-angles of the vertex of the cone were considered: $\omega = 0^\circ, 10^\circ$ and 30° , and two angles of attack: $\alpha = 10^\circ$ and 15° . It is noted that nonequilibrium dissociation of oxygen causes an appreciable reduction in temperature and increase in density as compared with the case of a perfect gas.

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- 13 -

USSR

KATSKOVA, O. N., CHUSHKIN, P. I., Tr. II Resp. konf. po aerogidromekh., teploobmenu i massoobmenu. Sekts. "Aerodinamika bol'sh. skorostey", Kiev, Kiev University, pp 63-69

At the same time, the influence of the nonequilibrium state on pressure, and consequently on the aerodynamic characteristics of the investigated bodies is slight. It is found that the gas composition close to the surface of the body on its conical tail section is practically frozen. A. N. Krayko.

3/3

KATSKOVA, O.N.

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Katskova, O. N., and P. I. Chushkin, Three-dimensional supersonic flow around bodies by a gas with nonequilibrium physico-chemical transformations, IN: Trudy II Respublikanskoy konferentsii po aerogidromekhanike, teplotnemu i massobmenu, Sektsiya 'Aerodinamika bol'shikh skorostey', Kiev, Kiyevskiy Universitet, 1971, 63-69. (RZMtekhn, 5/72, no. 5B332)

A scheme proposed earlier by the authors is applied to the investigation of supersonic nonequilibrium flow in a three-dimensional nozzle and near the tail section of a blunt body in the shape of an inverted cone. The numerical scheme is obtained by representing the relations of the desired functions to the angular variable ψ of a cylindrical system of coordinates by trigonometric polynomials along ψ with interpolation points on a series of meridional planes $\psi = \text{const}$. For determination of the desired functions, an approximating system of differential equations of two independent variables is consequently obtained on all the meridional planes of interpolation. At supersonic speeds this system is hyperbolic, with two sets of wave characteristics (Mach lines) and a family of flow-line analogs on each interpolation plane, and is solved by an inverse scheme of the method of characteristics. Calculation is performed in accordance with layers of $x = \text{const}$, where x is measured along the axis of the cylindrical system of coordinates.

The calculated examples are of nonequilibrium flow of dissociated oxygen. The nozzle had a cylindrical external generator of elliptical cross section, as well as an elliptical (narrowing) central body. The calculations revealed a "freezing" of the gas composition during expansion in the nozzle. In calculating nonequilibrium flow around a blunt body with a tail section in the shape of an inverted cone, various half-angles of the cone, $\alpha = 0^\circ, 10^\circ$, and 30° , and two angles of attack $\alpha = 10^\circ$ and 15° , were considered. It is noted that nonequilibrium oxygen dissociation causes a

1/2 037 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--EFFECT OF NONEQUILIBRIUM DISSOCIATION ON SUPERSONIC SPATIAL FLOWS
PAST INVERTED CONES -U-
AUTHOR--(02)-KATSKOVA, O.N., CHUSHKIN, P.I. *K*

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA, MEKHANIKA ZHIKOSTI I GAZA,
MAR.-APR. 1970, P. 182-185
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SUPERSONIC FLOW, GAS FLOW, OXYGEN, AERODYNAMIC FORCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/L337

STEP NO--UR/0421/70/000/000/0182/0185

CIRC ACCESSION NO--AP0124987

UNCLASSIFIED

2/2 037

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0124987

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL STUDY OF THE EFFECT OF NONEQUILIBRIUM DISSOCIATION ON THE PHYSICAL PARAMETERS OF A SUPERSONIC SPATIAL FLOW OF OXYGEN INCIDENT ON INVERTED BLUNTED CONES AT AN ANGLE OF ATTACK. IT IS CONCLUDED THAT THE FINITE DISSOCIATION RATES OF UNSTEADILY DISSOCIATING OXYGEN ATOMS HAVE A SIGNIFICANT EFFECT ON THE THERMAL FLUXES BUT DO NOT APPRECIABLY AFFECT THE AERODYNAMIC FORCES ACTING ON INVERTED CONES IN A SUPERSONIC OXYGEN FLOW.

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KATSMAN A.E. UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent,

2/70

244554 SPINNERET NOZZLE HOLDER comprises cylindrical body 1 with edge 2 supporting nozzle plate 3, screen 4, spacer 5 and strainer 6. The latter is surmounted by melt feeding cup 7 with flanges 8 & 9 in slots 10 & 11 of the body, and sealed by disc 13 secured in the body by bayonet connector 12. The melt is fed through channel 16, and the holder is fitted in nest 18 where it is clamped by screw 19.

9.10.67. as 1190372/28-12, PONOMAREV, O.V. et al. Synthetic Fibres Equipment Design Office. (8.10.69) Bul. 18/28.5.69. Class 29a, Int. Cl. D Old.]

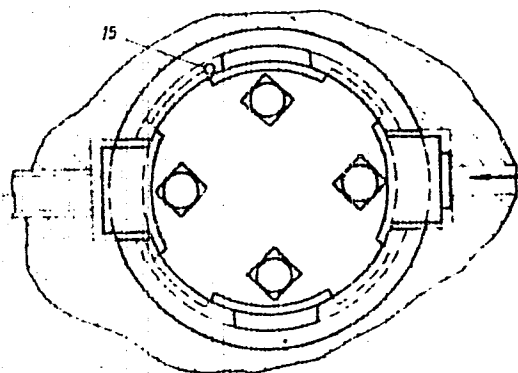
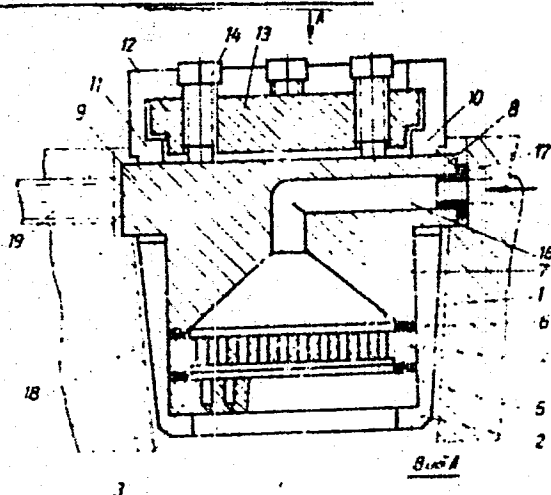
1/2

7

19821238

AA0052561

Ponomarev, O.V.; Rudovskiy, B.A.; Zel'din. L.M.; Katsman. A.F.:
Spetsial'noye Konstruktorско-Tekhnologicheskoye Byuro Mashin
Khimicheskikh Volokon



19821239

1/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--SELECTIVITY OF STYRENE OXIDATION BY PALLADIUM CHLORIDE IN WATER -U-
AUTHOR--(04)-ZAKHAROVA, L.M., VARGAFTIK, M.N., MOISEYEV, I.I., KATSMAN,
L.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. *K*AKAD. NAUK SSSR, SER. KHM. 1970, (3), 700-2
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--STYRENE, OXIDATION, PALLADIUM CHLORIDE, LITHIUM PERCHLORATE,
CARBONYL COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1906 STEP NO--UR/0062/70/000/003/0700/0702
CIRC ACCESSION NO--AP0123690
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123690

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC DATA WERE REPORTED ALONG WITH PRODUCT DISTRIBUTION IN THE OXIDN. OF PHCH:CH SUB2 BY PDCL SUB2 IN H SUB2 O, RUN AT 25DEGREES WITH LICLO SUB4 TO MAINTAIN CONST. IONIC STRENGTH IN HCL OR HCLO SUB4 SOLN. THE REACTION GAVE PHCH SUB2 CHO, ACPH, UNREACTED PHCH:CH SUB2 AND SOME BZH. THE CARBONYL COMPODS. WERE FORMED IN SUMMARY 98PERCENT YIELD BASED ON CONVERTED HYDROCARBON.

FACILITY: INST. OBSHCH. NEORG. KHIM. IM. KURNAKOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.3.049.75

KATSMAN, S. A., KOTOV, A. A.

"A Method of Making Printed-Circuit Board Drawings"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 2, Jan 71, Author's Certificate No 290488, division H, filed 19 Apr 68, published 22 Dec 70, p 169

Translation: This Author's Certificate introduces a method of making printed-circuit board drawings, using a photocontact process to make a negative on reversal paper and a positive on photosensitive film. As a distinguishing feature of the patent, in order to cut down the work involved in planning printed-circuit boards, the original drawing of the printed circuit board is made by combining a photographic original and a drawing mask carrying all dimensions and the required technical specifications.

1/1

USSR

UDC 539.212

KATSNEL'SON, A. A., SILONOV, A. M., and SILONOV, V. M., Moscow State University
imeni M. V. Lomonosov

"Effect of Short-Range Ordering on Electric Resistance and Magnetoresistance
of Ni-Al Alloy Containing 6.3 at.% Al"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 33, No 6, Jun 72, pp 1267-
1270

Abstract: An experimental investigation was made of the effect of atomic short-range ordering on the electric resistance (ρ) and magnetoresistance of an Ni-Al alloy containing 6.3 at.% Al. The results are discussed by reference to diagrams of time-dependent changes of ρ in isothermal annealing at 400°C and in a transverse magnetic field ($H=16$ kOe). A principally different dependence of ρ and $\Delta\rho_M$ (ρ_M =the resistance part dependent on the scattering of electrons on magnetic heterogeneities) on the isothermal post-deformation annealing time was established. The character of magnetoresistance in annealing correlates with the change of most short-range neighboring Ni-Ni pairs. This effect can be coupled both with the change of the Curie point and the increase of magnetization. In the latter case, it cannot be explained by an increase in the number of neighboring Ni-Ni atoms. Three figures, four bibliographic references.

1/1

1/2 034 UNCLASSIFIED PROCESSING DATE--04DEC70
 TITLE--LOCAL ORDER IN A NICKEL ALUMINUM, 6.3 AT.PERCENT ALUMINUM, ALLOY
 AND ITS INFLUENCE ON PHYSICAL PROPERTIES -U-
 AUTHOR-(02)-KATSNELSON, A.A., DAZHAYEV, P.SH. ✎
 COUNTRY OF INFO--USSR
 SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(4), 23-9
 DATE PUBLISHED-----70
 SUBJECT AREAS--MATERIALS
 TOPIC TAGS--PHYSICAL CHEMISTRY PROPERTY, ALUMINUM ALLOY, NICKEL ALLOY,
 CRYSTAL STRUCTURE, X RAY ANALYSIS, ALLOY ANNEALING, METAL MICROHARDNESS
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--3008/0602 STEP NO--UR/0139/70/013/004/0023/0029
 CIRC ACCESSION NO--AT0137687
 UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0137687

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NI-AL (6.3PERCENT AL) ALLOY WAS OBTAINED IN AN INDUCTION OVEN. THE INGOT WAS HOMOGENIZED AT 1000DEGREES IN A VACUUM OVEN AND THEN IT WAS CUT IN A MILLING MACHINE INTO 3 PLATES: ONE BEING 2 MM THICK, AND THE OTHER TWO BEING 4 MM THICK. THE 4 MM THICK SAMPLES WERE ROLLED TO 2 MM AND CUT INTO 3 PORTIONS. TWO PORTIONS WERE USED TO MEASURE THE DIFFUSE SCATTERING OF X RAYS AND THE MICROHARDNESS, AND THE 3RD WAS ROLLED FURTHER TO 0.10-0.15 MM. THE SPECIMENS WERE ANNEALED IN A VACUUM OVER (3-5 TIMES 10 NEGATIVE PRIMES TORR) AT 300, 400, AND 700DEGREES. THE EXPTL. RELATIONS BETWEEN LIGHT DIFFUSION INTENSITY AND I ARE DESCRIBED FOR SAMPLES ANNEALED AT 300 AND 400DEGREES. THE MAX. DIFFUSE SCATTERING POINT WAS LOCATED NEAR THE SUPERSTRUCTURAL LINE (100). AT 700 AND 400DEGREES MAXIMAL DIFFUSION IS REACHED ALREADY AFTER 1 HR OF ANNEALING, WHEREAS AT 300DEGREES THE MAX. IS REACHED ONLY AFTER 3 HR ANNEALING. BACKGROUND INTENSITY DOES NOT INCREASE WITH I , THUS INDICATING THAT THE SIZE EFFECT IN THE EXPTL. ALLOY IS OF LITTLE IMPORTANCE. FACILITY: MOSK. GOSUNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 519.2

KATSNET'SON, A. N.

"Conditions of Stability in a Mean-Square Linear System With n Degrees of Freedom in the Case of Random Parametric Excitation"

Tr. Leningr. politekhn. in-ta (Works of Leningrad Polytechnical Institute), 1971, No 318, pp 22-27 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V176)

Translation: The paper deals with differential equations which describe the motion of a linear system with n degrees of freedom in the case of small random changes in a parameter. It is assumed that this parameter is a stationary random process. Necessary conditions are found for stability of the system on the rms average. These conditions are derived as conditions of stability of a system of finite-difference equations relating

the quantities $m\left\{x_j^2(t) + \frac{x_j^2(T)}{k_j^2}\right\}$, $j=1, 2, \dots, n$, over equal time intervals.

Author's abstract.

1/1

USSR

UDC 613.633+613.648]:666.76

LEMYASEV, M. F., BABUSHKINA, L. G., SEMENOV, G. V., (Deceased), KATSNIL'SON, E. A., KARACODINA, I. V., TREYGER, S. I., and BELOBRAGINA, G. V., Scientific Research Institute of Hygiene and Occupational Diseases, Medical Institute, Oblast Sanitary-Epidemiological Station, Sverdlovsk

"Dust and Radiation Factors in the Production of Fireproof Articles From Zirconium Dioxide"

Moscow, Gigiyena i Sanitariya, No 10, Oct 1970, pp 38-41

Abstract: Tests with rats confirmed that the fibrogenic character of "pure" ZrO_2 dust is lower than that of the commercial product. This difference is attributed to the admixture of radioactive elements in the dust of the insoluble commercial ZrO_2 , which is used as raw material in the production of various fireproof objects, so that the fibrogenic action of this dust on the lungs is intensified. On the basis of data from this experiment and from studies in an industrial environment, it is recommended that maximum permissible concentrations of ZrO_2 dust and similar substances be established which taken into account the radioactive contamination present in these dusts.

1/1

USSR

UDC 612.112.3.553.62

STARIKOVA, S. K., KATSNEL'SON, B. A., ARONOVA, G. V., and SHNAYDMAN, I. M.,
Sverdlovsk Institute of Labor Hygiene and Occupational Diseases, and Kazakh
Institute of Labor Hygiene and Occupational Diseases, Karaganda

"Participation of Polymorphonuclear Leukocytes in Alveolar Phagocytosis of Quartz
Dust, and Its Connection With the Biological Aggressiveness of Quartz"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 70, No 9, Sep 70,
pp 113-116

Abstract: Experiments were carried out to determine the effects of chronic in-
halation of quartz dust on rats. Macrophages and polymorphonuclear leukocytes
were washed out of the lungs by the La Belle and Brieger method, and the ratio be-
tween them was determined. Polymorphonuclear leukocytes predominated in experi-
mental animals, while macrophages were more common in the controls since they
were less damaged from dust. This relationship was confirmed in a special chronic
inhalation experiment in which the resistance of alveolar macrophages to the
cytopathogenic effect of quartz was enhanced by treatment with polyvinylpyridine-
N-oxide. With endotracheal introduction, quartz treated with trimethylchloro-
silane (which resulted in low fibrinogenic activity) caused a significantly lower
shift in the cellular composition of lung perfusate toward polymorphonuclear
leukocytes than nontreated quartz dust. Phagocytosis of quartz dust by
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USSR

STARIKOVA, S. K., et al, Byulleten' Eksperimental'noy Biologii i Meditsiny,
Vol 70, No 9, Sep 70, pp 113-116

polymorphonuclear leuhocytes appears to be an additional factor in pulmonary self-purification from especially aggressive particles. This process apparently occurs as a result of irritation by quartz dust and by the products of macrophage degeneration. The neutrophils seem to be less sensitive to the cytopathogenic effect than the macrophages.

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- 77 -

USSR

UDC 615.272.2:547.821.4.03:616.24-003.662-092.9

KATSNEL'SON, B. A., BABUSHKINA, L. G., ARONOVA, G. V., STARIKOVA, S. K.,
POCHASHEV, Ye. N., SHNAYDMAN, I. Ya., POSTOVSKIY, S. N., BORODULINA, S. N.,
and MALYARENKO, I. S., Sverdlovsk Institute of Industrial Hygiene and
Occupational Diseases, and Karaganda Institute of Industrial Hygiene and
Occupational Diseases and Ural Polytechnic Institute, Sverdlovsk

"Experimental Study of the Protective Effect of Polyvinylpyridine-N-Oxide
Against Silicosis"

Moscow, Gigiyena i Sanitariya, No 10, Oct 1970, pp 20-23

Abstract: A polyvinylpyridine-N-oxide polymer with a molecular weight of
117,500 was prepared, and its activity and effectiveness against silicosis
were compared with those of a previously prepared polymer of molecular
weight 40,000 and the P-204 polymer (Bayer, West Germany). It was found
that the new polymer was more effective than either of the other two
polymers against intratracheal dust (cristobalite) introduced in rats
for a period of 3-1/2 months. Development of silicosis was sharply re-
duced, as indicated by the decrease in size and number of cellular-dust
lumps and the reduction in proliferating reactions, and sclerotic shifts.
1/2

USSR

KATSNEL'SON, B. A., et al, Gigiyena i Sanitariya, No 10, Oct 1970, pp 20-23

Dust elimination from the lungs and inhibition of the silicotic fibrogenesis process are associated with an increase in the resistance of the alveolar macrophages to the cytopathic effect of silicon. It was found that this process was accompanied by a decrease in the diffusion of a lysosome hydrolytic enzyme (acid phosphatase) into the cytoplasm of macrophages due to the effect of silicon, a fact which is attributed to the anti-silicosis effect of the new polyvinylpyridine-N-oxide polymer.

2/2

1/2 022 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ELECTROVACUUM ELECTRONIC AND IONIC DEVICES -U-
AUTHOR--(03)-KATSNELSON, B.V., KALUGIN, A.M., LARIONOV, A.S.
COUNTRY OF INFO--USSR *K*
SOURCE--MANUAL, BOOK II. MOSCOW ENERGIYA, 1970, 336 PP
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., ENERGY CONVERSION
(NON-PROPULSIVE)
TOPIC TAGS--ELECTROVACUUM, ELECTRONIC EQUIPMENT, ELECTRIC GENERATOR,
MODULATOR TUBE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1995/0978 STEP NO--UR/0000/70/000/000/0001/0366
CIRC ACCESSION NO--AM0116470
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AM0116470

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: PART V. ELECTRONIC GENERATOR AND MODULATOR TUBES. CHAPTER 18 GENERAL DATA ON MODULATOR AND GENERATOR TUBES 4. CHAPTER 19 REFERENCE DATA ON GENERATOR, MODULATOR AND CONTROL TUBES OF LOW FREQUENCIES 16. CHAPTER 20 REFERENCE DATA ON GENERATOR TUBES FOR OPERATION IN THE RANGE UP TO 30 MC 41. CHAPTER 21 REFERENCE DATA ON GENERATOR TUBES FOR OPERATION IN THE RANGE UP TO 600 MC 71. CHAPTER 22 REFERENCE DATA ON GENERATOR TUBES FOR OPERATION IN THE RANGE ABOVE 600 MC 183. CHAPTER 23 REFERENCE DATA ON PULSE GENERATOR TUBES 213. CHAPTER 24 REFERENCE DATA OF MODULATOR PULSE TUBES 302. THE MANUAL CONSISTING OF 2 BOOKS CONTAINS BASIC DATA ON THE MAJORITY OF CONTEMPORARY ELECTRONIC AND IONIC DEVICES. BOOK 2 CONTAINS DATA ON MODULATOR AND GENERATOR TUBES.

UNCLASSIFIED

1/2 032 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ELECTROVACUUM ELECTRONIC AND IONIC DEVICES -U-
AUTHOR--(03)-KATSNELSON, B.V., KALUGIN, A.M., LARIONOV, A.S.
COUNTRY OF INFO--USSR
SOURCE--ELEKTROVAKUUMNYE ELEKTRONNYE I IONNYE PRIBORY. MANUAL. BOOK I.
MOSCOW, ENERGIYA, 1970, 601 PP
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--ELECTROVACUUM, ELECTRONIC EQUIPMENT, ELECTRON BEAM
OSCILLOGRAPH, TV RECEIVER, ELECTRON BEAM, MEMORY ELEMENT, PHOTOELECTRET,
ELECTRON MULTIPLIER, THYRATRON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1995/0976 STEP NO--UR/0000/70/000/000/0001/0601
CIRC ACCESSION NO--AM0116469
UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AM0116469

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: PREFACE 3.
PART I GENERA DATA. CHAPTER 1 DESIGNATIONS OF ELECTRONIC AND IONIC
DEVICES 9. CHAPTER 2 EXPLANATIONS TO REFERENCE DATA 12. PART II
ELECTRON BEAM DEVICES. CHAPTER 3 BASIC DEFINITIONS 25. CHAPTER 4
TELEVISION RECEIVER TUBES, KINESCOPIES 35. CHAPTER 5 ELECTRON BEAM
OSCILLOGRAPHIC TUBES 117. CHAPTER 6 ELECTRON BEAM INDICATOR TUBES
199. CHAPTER 7 ELECTRON BEAM MEMORY TUBES 244. CHAPTER 8 ELECTRON
BEAM TRANSMITTING DEVICES 275. PART III ELECTROVACUUM
PHOTOELECTRONIC DEVICES. CHAPTER 9 GENERAL DATA ON PHOTOELEMENTS AND
PHOTOELECTRONIC MULTIPLIERS 344. CHAPTER 10 VACUUM AND GAS FILLED
PHOTOELEMENTS 351. CHAPTER 11 PHOTOELECTRONIC MULTIPLIERS 370.
PART IV IONIC ELECTROVACUUM DEVICES. CHAPTER 12 PHANATRONS AND GLOW
DISCHARGE THYRATRONS 457. CHAPTER 13 GLOW DISCHARGE AND CORONA
DISCHARGE STABILITRONS 496. CHAPTER 14 DECATRONS 530. CHAPTER 15
GLOW DISCHARGE DIGITAL INDICATORS 547. CHAPTER 16 PHANATRONS AND
THYRATRONS WITH AN INCANDESCENT CATHODE 552. CHAPTER 17 PULSE
THYRATRONS 629. THE MANUAL CONSISTING OF 2 BOOK CONTAINS BASIC DATA
ON THE MAJORITY OF CONTEMPORARY ELECTRONIC AND IONIC DEVICES. BOOK I
CONTAIN DATA ON ELECTRON BEAM RECEIVER AND TRASMITTER TUBES,
ELECTROVACUUM PHOTOELECTRONIC DEVICES AND ELECTROVACUUM IONIC DEVICES.
THE BOOK WAS WRITTEN FOR SPECIALISTS WORKING WITH RADIOELECTRONIC
EQUIPMENT, AS WELL AS STUDENTS AND RADIO AMATEURS.

UNCLASSIFIED

1/2 OIR
 UNCLASSIFIED
 PROCESSING DATE--27NOV70
 TITLE--MECHANISM OF THE DEHYDROGENATION OF ISOPENTANE BY IODINE IN THE
 PRESENCE OF OXYGEN -U-
 AUTHOR--(05)-ADELSON, S.V., ADELSONVELSKIY, G.M., VEDENEYEV, V.I.,
 KATSNELSON, I.G., NIKONOV, V.I.
 COUNTRY OF INFO--USSR
 SOURCE--DOKL. AKAD. NAUK SSSR 1970, 192(3), 594-7
 DATE PUBLISHED-----70
 SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--DEHYDROGENATION, ISOPENTANE, IODINE, OXYGEN, CHEMICAL REACTION
 RATE, KINETIC EQUATION, ISOPRENE, CHEMICAL REACTION MECHANISM
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRA--3004/1865
 STEP NO--UR/0020/70/L92/003/0594/0597
 CIRC ACCESSION NO--AT0132127
 UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--A10132127

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC DATA WERE TABULATED FOR FOR REACTION RATED AND RATE CONSTS. IN THE DEHYDROGENATION OF ISOPENTANE BY IODINE IN THE PRESENCE OF O AT 500DEGREES. IN ALL, 19 REACTION STEPS WERE REPRESENTED BY APPROPRIATE KINETIC EQUATIONS AND THEIR THERMODYNAMIC CHARACTERISTICS WERE TABULATED FROM COMPUTER ANAL., USING EXISTING LITERATURE DATA ON ACCUMULATION OF REACTION PRODUCTS. CONVERSION DATA ON ISOPRENE AND ISOPENTENE ISOMERS WERE ALSO INCLUDED IN THE ANAL. A REACTION MECHANISM WAS PROPOSED. FACILITY: MOSK. INST. NEFTEKHIM. GAZOV. PROM. IM. GUBKINA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 681.3.02

ARIN', E. I., MATSNEL'SON, L. Z.

"Structure and System of Commands of the Series GE-400 Computer"

Tr. 3-y Zimney shkoly po mat. programir. i smezhnyia vopr., 1970. Vyp. 1
(Works of the Third Winter School on Mathematical Programming and Related
Problems, 1970, No 1), Moscow, 1970, pp 66-69 (from RZh-Kibernetika, No
7, Jul 71, Abstract No TV676)

[No abstract]

1/1

Acc. Nr: AP0040922

Ref. Code:

PRIMARY SOURCE: Avtomatika i Telemekhanika, 1970, Nr 1, pp 142-158

K.
UR 0103

OPERATIVE CONTROL OF SUPPLY OF METAL PRODUCTION

V. N. BURKOV, M. B. KATSNELSON

There is considered the problem of re-distributing the production between consumers and suppliers at the appearance of disturbances in the system without taking into account the productivity of the units in grades and dimensions. The problem is reduced to a transport one. An aggregated algorithm of its solution under various methods of setting the function of purpose is suggested.

REEL/FRAME
19750661

18 lc

USSR

BURKOV, V. N., KARTASHOVA, O. Ye., KATSNEI'SON, M. G., NURKHAYDAROV, B. Kh.

"Problem of Control of Consumption of Finished Products and Algorithm for its Solution"

Izv. AN KazSSR. Ser. fiz.-mat. [News of Academy of Sciences, KazSSR, Physics-Mathematics Series], 1973, No 1, pp 7-13 (Translated from Referativnyy Zhurnal - Kibernetika, No 8 V568 by the authors)

Translation: The problem is studied of operative planning of consumption of finished products at enterprises with limited intermediate capacities. The problem is reduced to the transport problem with limitations on throughput capacity of communications lines. An algorithm is suggested for its solution, considering the greatly extended nature of the matrix of expenditures.

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USSR

UDC 669.14

STREKALOVSKIY, M. M., SMIRNOV, Yu. D., CHERNOV, G. I., KATSIHEL'SON, Ya. Ye.,
KHOLODOV, Yu. A., STARIKOVA, A. P., MUKHOMIA, P. P., and FALYGIN, Yu. D.

"Improvement of Technology and Quality of the 18Kh2N4VA Structural Steel as
the Result of Vacuum Tapping"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISIS) (Collection of
Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and
Alloys), Izd-vo "Metallurgiya," No 61, 1970, pp 241-242

Translation of Abstract: An installation is described which ensures metal
tapping under vacuum. The results of an investigation of some technological
alternatives for melting and treatment of the 18Kh2N4VA steel are given.

1/1

Acc. Nr:

AP0048344

Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:

UR 0065

K

102169r Separation of heterogeneous particles in a fluidized bed. ~~Khotomlyanskii, L. N.; Brun-Tsekhoval, A. R.; Katsobashvili, Ya. R.; Petrov, V. N.; Skoblo, A. I. (MINSK GP. MOSCOW, USSR). Khim. Tekhnol. Topl. Mater. 1970, 15(1), 13-17 (Russ).~~ The app. included 2 interchangeable glass columns of 78 and 147-mm inside diam. with gas-distributor grids of 68 and 105 mm diam., resp. and orifices of 0.8 mm; their free surfaces amounted to 3.8%. River sand as the heavy phase and heat carrier and Al silicate, on which metallic Ni was pptd. as the catalyst, had 0.63-0.85 and 0.25-0.315-mm grain size and d. of 2.65 and 1.30 g/cm³, resp. The height of the 2 beds varied from 70 to 100 and 130 to 190 mm, resp., according to the air velocity variation from 0.218 to 0.435 m/sec. The beds obtained in the reactor models had 5 zones differing in their compn. and structure and the sepn. mechanism occurring in them. The upper zone, contg. 80-98% of the catalyst, was the greater and the heat carrier settled. The 2nd zone contained <1% of the catalyst. In the 3rd zone above the grid, the catalyst concn decreased slowly. In the 4th zone at the level of the grid, the catalyst concn. decreased somewhat more intensively.

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REEL/FRA
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18

AP0048344

The lower zone below the grid, with higher flow velocity, was the venting zone. The field of the concns. depended on the filtration velocity, height of the moving heat-carrier bed, and fluidization coeff. of the latter. The sepn. of the catalyst particles depended significantly on the entrainment of the heat-carrier bed by the gas stream. A high sepn. of the catalyst was obtained up to a concn. of 0.001%. The exptl. app. and results are presented graphically.

GGJR ✓

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19800047

1/2 037 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--MODEL OF A REACTOR-SEPARATOR FOR FLUIDIZED-BED PROCESSES WITH A
SEPARABLE HEAT-TRANSFER AGENT -U-
AUTHOR--(03)-BRUNTSEKHOVCI, A.R., KATSOBASHVILI, YA.R., YEVREYNOY, A.V.
COUNTRY OF INFO--USSR
SOURCE--KHIM. PRGM. (MOSCOW) 1970, 46(1), 53-5
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS
TOPIC TAGS--MODEL, FLUIDIZED BED, CHEMICAL SEPERATION, INDUSTRIAL
PRODUCTION, HYDROGEN, CATALYST, HEAT TRANSFER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/2047 STEP NO--UR/0064/70/046/001/0053/0055
CIRC ACCESSION NO--AP0109979
UNCLASSIFIED

2/2 037

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0109979

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN A FLUIDIZED BED REACTOR SEPARATOR FOR THE PRODUCTION OF H SUB2 BY CONVERSION OF HYDROCARBON GASES (B.-T., ET AL., 1964), THE CATALYST CONC. AT THE OUTLET OF THE APP. 1ST DECREASED AND THEN INCREASED WITH INCREASING GAS VELOCITY, W, IN THE COLUMN; THE MIN. IN CATALYST CONC. CORRESPONDED TO W OF THE ORDER OF 0.30-0.35 M, SEC, BUT ITS EXACT VALUE DEPENDED ON THE GAS VELOCITY IN THE BLOWING ZONE OF THE APP. THE FREE CROSS SECTION OF THE TRAYS HAD LITTLE EFFECT ON THE CATALYST CONC. AT THE OUTLET AND ON THE DEGREE OF SEPN., PROVIDED THAT THE HOLE DIAM. WAS LESS THAN OR EQUAL TO 1.2 MM. AN EQUATION FOR THE CALCN. OF THE MIN. CATALYST CONC. IN THE GAS IS PROPOSED.

UNCLASSIFIED

1/3 024 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--EFFECT OF A SODIUM IMPURITY ON THE ACTIVITY OF AN ALUMINUM, NICKEL,
MOLYBDENUM CATALYST -U-
AUTHOR--(02)-KATSOBASHVILI, YA.R., SIDOROVA, N.V. *R*
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 241-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--SODIUM, METAL IMPURITY, CATALYST ACTIVITY, ALUMINUM, NICKEL,
MOLYBDENUM, CATALYTIC CRACKING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--19B7/0411 STEP NO--UR/0080/70/043/002/0241/0244
CIRC ACCESSION NO--AP0104042
UNCLASSIFIED

2/3 024

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104042

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AL, NI, MO HYDROCRACKING CATALYSTS WERE PREPD. BY THE PPTN. OF THE AL HYDROXIDES FROM THE AL(NO SUB3) SUB3 SOLNS. WITH NaOH AT ROOM TEMP. AND PH EQUALS 10.5. THE PPT. WAS WASHED WITH H SUB2 O TO REMOVE NaOH, MIXED WITH THE NI AND MO HYDROXIDES, FORMED, DRIED AT 150DEGREES AND CALCINED AT 650DEGREES FOR 3 HR. THE CATALYST CONTAINED SIMILAR TO 10PERCENT NiO AND MOO SUB3. THE INDIVIDUAL CATALYST SAMPLES CONTAINED 0.43, 0.47, 0.72, 0.90, AND 2.50 WT. PERCENT NA SUB2 O FOR THE SAMPLES DENTED WITH NOS. 19C, 20C, 21C, 22C, AND 23C, RESP. THE PROPERTIES OF THE SAMPLES WERE AS FOLLOWS: BULK D. 0.92, 0.92, 0.91, 0.82, AND 0.80 G-CM PRIME3, APPARENT D. 1.41, 1.45, 1.34, 1.34, AND 1.32 G-CM PRIME3, REAL D 3.45, 3.50, 3.41, 3.38, AND 4.02 G-CM PRIME3, PORE VOL. 0.42, 0.41, 0.45, 0.49, AND 0.51 CM PRIME3-G, SP. AREA 147, 177, 187, 178, AND 200 M PRIME2-G, TENSILE STRENGTH 1050, 1150, 1160, 0, AND 0 G-MM, AND THE ABRASIVE WEAR RESISTANCE 74, 56, 45, 0, AND 0PERCENT, FOR THE SAMPLES 19C, 20C, 21C, 22C, AND 23C, RESP. THE ACTIVITY OF THE CATALYSTS WAS TESTED IN THE HYDROCRACKING PROCESS OF THE ARLAN CRUDE OIL (D TAKEN BETWEEN THE VALUE 4 OF THE VARIABLE AND ITS VALUE 20 0.895, S 3.1 WT. PERCENT, DISTILLATES B. SMALLER THAN 300DEGREES, 35.8 WT. PERCENT) AT 450DEGREES, 30 ATM, FEED THROUGHOUT 1 KG-1. HR, AND H CIRCULATING RATE SIMILAR TO 1000 L.-KG HR.

UNCLASSIFIED

3/3 024

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104042

ABSTRACT/EXTRACT--THE VOL. OF THE CATALYST IN THE APP. WAS SIMILAR TO 100 ML AND THE OPERATING TIME 2 HR. THE FOLLOWING RESULTS WERE OBTAINED: YIELD OF THE LIQ. PRODUCTS 89.8, 89.9, 89.1, 90.5, AND 89.8 PERCENT ON FEED, THE DEGREE OF THE DESULFURIZATION 90.2, 89.6, 85.7, 83.6, AND 81.2 PERCENT, THE DEGREE OF DECOMP. 37.0, 36.6, 38.4, 36.5, AND 37.0 PERCENT, D. OF THE LIQ. PRODUCTS 0.841, 0.836, 0.837, 0.840, AND 0.840, S IN THE LIQ. PRODUCTS 0.34, 0.36, 0.50, 0.56, AND 0.64 WT. PERCENT, I NO. 5.7, 6.4, 7.0, 8.3, AND 8.1, AND THE SULFONATING RESIDUE 61.2, 58.0, 58.4, 58.1, AND 57.5 VOL. PERCENT, FOR CATALYSTS SAMPLES 19C, 20C, 21C, 22C, AND 23C, RESP. THEREFORE, THE NA IMPURITIES REMAINING IN THE AL, NI, MO CATALYSTS AS A RESULT OF INSUFFICIENT H SUB 2 WASHING OF THE AL HYDROXIDES CAUSE A DECREASE IN THE ACTIVITY OF THE HYDROCRACKING CATALYSTS. THE PHYS. AND CHEM. INVESTIGATIONS SHOWED THAT THE NA IMPURITIES DO NOT CONC. ON THE CATALYST SURFACE BUT FORM CHEM. COMPS. IN THE BULK OF THE CATALYST. JERZY KRAMARZ.

UNCLASSIFIED

KATSOV, K.B.

Metallurgy

THE INFLUENCE OF SURFACE-ACTIVE SUBSTANCES ON CONTACT
FATIGUE LIFE OF HARDENED BALL-BEARING STEEL

G.V. Karpenko, K.B. Katsov & A.B. Kushtskii

Akad Dopov Nauk UKR NSR 11, (1969) 1042-1044
(from Russian)

ORIC Transl. No. 2358

July 1972

Translated by Lt Cdr P.N. Hiles

BR 30221

1/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--INFLUENCE OF THE MOLYBDENUM DISULFIDE BASED LUBRICANTS ON THE
HYDROEXTRUSION PROCESS OF THE SHKH15 STEEL -U-
AUTHOR--(04)--KARPENKO, I.V., KATSOV, K.B., OGNETOVA, Zh.N., KHRUNIK, R.A.
COUNTRY OF INFO--USSR
SOURCE--FIZIKO-KHIMICHESKAIA MEKHANIKA MATERIALOV, VOL. 6, NO. 2, 1970, P.
115, 116
DATE PUBLISHED-----70

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

TOPIC TAGS--HYDROSTATIC EXTRUSION, METAL LUBRICANT, MOLYBDENUM DISULFIDE,
BALL BEARING STEEL, BIBLIOGRAPHY/(U)SHKH15 BALL BEARING STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/0072

STEP NO--UR/0369/70/006/002/0115/0116

CIRC ACCESSION NO--AP0125907

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125907

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. STUDY OF THE HYDROEXTRUSION
PROCESS OF SHKH15 STEEL AT DIFFERENT REDUCTIONS AND USING DIFFERENT
LUBRICANTS. THE USEFULNESS OF LUBRICANTS BASED ON MOLYBDENUM DISULFIDE
AND PHENOL FORMALDEHYDE RESIN FOR HYDROEXTRUSION PURPOSES IS
DEMONSTRATED. FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR,
FIZIKO-TEKHNICHESKII INSTITUT, DONETSK; FACILITY: AKADEMIIA
NAUK UKRAINSKOI SSR, FIZIKO-MEKANICHESKII INSTITUT, LVOV, UKRAINIAN
SSR.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

1/2 040

TITLE--EFFECT OF AQUEOUS MEDIA AND ADDITIVES OF SURFACE ACTIVE AGENTS ON THE CONTACT FATIGUE STRENGTH OF CHISEL STEEL 20KHN3A -U-

AUTHOR--(05)--KATSOV, K.B., KUSLITSKIY, A.B., KARPENKO, G.V., SENTSOVA, E.P., DYUSUSCHE, M.ZH.

COUNTRY OF INFO--USSR

K

SOURCE--FIZ.-KHIM. MEKH. MATER. 1970, 5(6), 757-8

DATE PUBLISHED-----70

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

TOPIC TAGS--SURFACE ACTIVE AGENT, ALLOY DESIGNATION, CHROMIUM NICKEL STEEL, ELECTROSLAG MELTING, METAL CORROSION, HYDROGEN, FATIGUE STRENGTH, METALWORKING, CUTTING TOOL/(U)20KHN3A CHROMIUM NICKEL STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0636

STEP NO--UR/0369/70/005/006/0757/0758

CIRC ACCESSION NO--AP0105615

UNCLASSIFIED

2/2 040

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0105615

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE STUDY WAS CARRIED OUT WITH STEEL 20KH3A MELTED ACCORDING TO 2 ALTERNATIVES: ELECTROARC AND ELECTROSLAG REMELTED. THE LATTER STEEL HAD MUCH LESS IMPURITIES THAN THE FORMER. AFTER MECH. WORKING SPECIMENS WERE SUBJECTED TO CEMENTATION IN SOLID CARBURIZER TO THE DEPTH OF CARBURIZED LAYER 1.8-2.0 MM WITH HARDNESS OF SURFACE LAYER HRC 57 AND 58 (CORE HARDNESS 36-8 HRC). C CONCN. AT A DISTANCE 0.2 MM FROM THE SURFACE WAS 0.8PERCENT; THE MICROSTRUCTURE OF CEMENTED LAYER WAS FINE ACICULAR MARTENSITE, WHILE THAT OF THE CORE WAS TROOSTITESORBITE. TESTING WAS DONE ON A SPECIAL APP. WITH AND WITHOUT ADDN. OF SURFACE ACTIVE SUBSTANCES (S.A.S.) TO THE WATER AND BY USING TAP WATER, STRATAL WATER WITH AND WITHOUT H SUB2 S. THE VERY SHARP DECREASE OF CONTACT ENDURANCE OF STEEL UNDER STUDY IN RUNNING (WASH) WATER WHOULD BE EXPLAINED NOT ONLY BY ADSORPTION EFFECT BUT ALSO BY THE CORROSION IN COMBINATION WITH HYDROGENATION OF STEEL SURFACE IN CONTACT WITH WATER. IN THIS CONNECTION, THE FAVORABLE EFFECT OF S.A.S. IS EXPLAINED BY THE FORMATION ON THE METAL SURFACE OF A POLYMOL. PROTECTIVE FILM.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--27NOV70
 TITLE--POSSIBLE INCREASE IN THE CONTACT DURABILITY OF DRILLING STEEL
 20KHN3A BY ADDING SURFACE ACTIVE AGENTS TO THE CLAY WASHING MORTAR -U-
 AUTHDR--(05)-KATSOV, K.B., KUSLITSKIY, A.B., KHRUNIK, R.A., ZHIDOVYSEV,
 N.A., GILMAN, K.M.
 COUNTRY OF INFO--USSR
 SOURCE--FIZ.-KHIM. MEKH. MATER. 1970, 6(1), 102-3
 DATE PUBLISHED-----70
 SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS
 TOPIC TAGS--ALLOY DESIGNATION, SURFACE ACTIVE AGENT, LOW ALLOY STEEL, WELL
 DRILLING MACHINERY, EXPLORATORY DRILLING, CLAY/(U)20KHN3A LOW ALLOY
 STEEL
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--3001/0327
 CIRC ACCESSION NO--APC126083
 UNCLASSIFIED
 STEP NO--UR/0369/70/006/001/0102/0103

2/2 021

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0126083

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE STUDY WAS CARRIED OUT ON APP. AND WITH THE METHOD AS DESCRIBED BY K. B. K. (1968). THE CLAY SUSPENSION HAD SMALLER THAN OR EQUAL TO 1PERCENT SAND, PH EQUALS 7.5, AND SP. GR. 1.16. SPECIMENS DIAM. 10 MM FROM STEEL 20KHNB1 AFTER CONVENTIONAL HEAT TREATMENT (AS USED FOR OIL DRILLS) HAD HARDNESS OF SURFACE LAYER HRC 59-60. THE FOLLOWING 4 SURFACE ACTIVE MIXTS. WERE INTRODUCED AT 2PERCENT INTO THE CLAY WASHING MORTAR: (IN PARENTHESES ARE GIVEN NO. OF MILLIONS OF CYCLES UNTIL THE APPEARANCE OF PITTING CORROSION ON THE SURFACE): CLAY WASHING MORTAR ALONE (1.14), SAME PLUS 2PERCENT OXIDIZED PETROLATUM WITH ACID NO. 20 MG OF KOH (1.95), SAME PLUS 2PERCENT PETROLUUM ASPHALT WITH ACID NO. 60 MG KOH (NO PITTING AFTER 10), SAME PLUS 2PERCENT ESTERFIED PETROLEUM ASPHALT WITH ACID NO. 15 MG KOH (NO PITTING AFTER 10), TAP WATER AS A CONTROL (0.93), MACHINE OIL AS CONTROL (11.8). THE ADDN. OF THE PETROLEUM ASPHALT ALONE OR ESTERFIED CAN IMPROVE CONSIDERABLY THE WORK OF OIL DRILLS. FACILITY: FIZ.-MEKH. INST., LVOV, USSR.

UNCLASSIFIED

USSR

UDC 552.1:552.321

BORUKHOV, M. Yu., KEYTLIN, L. G., KATSOYEVA, F. N., LIKHOYDOV, G. G.,
KHAMRABAYEV, I. Kh.

"Behavior of Rock During Heating in a Vacuum (Part II. Phase Composition
and Physical-Mechanical Properties)"

Uzbekskiy Geologicheskii Zhurnal, No 6, 1971, pp 16-22.

ABSTRACT: The influence of vacuum treatment on the composition of the crystallizing phases of three petrographic types of basic and ultrabasic rocks was studied using nine samples from Western Uzbekistan and Kanchatka. The possibility was established in principle of using the method of crystallization "from the bottom" for satisfactory identification of the crystalline phases formed. It was demonstrated that vacuum heat treatment has a significant influence on the composition of the crystallizing phases. The results of the work performed indicate a method for production of high-quality structural material. Apparently, optimal modes of production of crystalline structures and glasses can be found for each type of mineral raw material, considering changes in the material occurring during heat treatment in a vacuum. High iron and titanium contents of the initial raw material provide high light-protection characteristics of cast products.

1/1

- 63 -

USSR

UDC 531.43

SEMENOV, A. P., KATSURA, A. A., and POZDNIKOV, V. V.

"The Friction of Rhenium at High Temperatures"

Moscow, Mashinostroyeniye, No 6, Nov-Dec 72, pp 80-84

Abstract: The temperature relationships of the coefficient of friction of rhenium in a vacuum (10^{-4} - 10^{-5} torr) was obtained in the case of the friction of two like specimens of rhenium against each other, and in case of the friction of a rhenium specimen against corundum ceramics (containing 0.6% MgO), on laboratory installations at temperatures of up to 1500°C. The presented experimental results testify to the high antifriction properties of rhenium at high temperatures in a vacuum and in inert gaseous media. 4 figures, 18 references.

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- 43 -

KATSURA, A.V.

1. Report No. JPRS 50729	2	3	4
ECOLOGICAL FORECASTING AND THE OPTIMIZING OF THE BIOSPHERE		5. Report Title	7. AUGUST 1973
I. H. Nayak and A. V. Katsura		6. Issuing Organization	
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PHILOSOPHICAL BASIS			
The report contains an examination of ecological forecasts in discussing the natural science aspects of the interaction of man and the environment.			
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USSR Biology and medical sciences Environmental biology Ecology			
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JPRS 59729
7 August 1973

ECOLOGICAL FORECASTING AND THE OPTIMIZATION OF THE BIOSPHERE

Article by Prof. I. B. Kovik, doctor of philosophical sciences, and A. V. Katsura, Ecological Forecasting and the Process of Optimizing the Biosphere, Moscow, Ekologiya i Zhizn, Russian, No 3, 1973, pp 10-15

Scientific and technical forecasting is presently in a state of great development. The importance and even the necessity of a scientifically based forecast are now recognized by specialists in virtually all areas of human knowledge. Forecasting is mentioned particularly often in discussing the natural science aspects of the interaction of man and the environment. It may be a question of soil erosion or earthquakes, the prospects for using fresh water or changes in the landscape in the process of urbanization, the pollution of the environment or the spreading of the atmosphere -- everywhere the question arises of the need for a scientific forecast, and as everywhere the- jable a one as possible, making it possible to change the existing plan of human activity for the better. The necessity of such forecasts is felt par- ticularly in our times when under the conditions of modern scientific and tech- nical progress, and with the present-day gigantic scale of man's transforming of nature, the danger arises of an irreversibly destruction of the biosphere. The biosphere is the immediate habitat of man and all living things. The co- tious development of this environment is a vitally important aspect of man- and a condition for the optimum development of man himself. The develop- of science, engineering and the technology of human activity as a whole in the necessary manner should be related to this acute problem. This is why the multiplicity of particular forecasts in one or another area of human ac- tivity directly or indirectly is related to the global forecasting of the nature of the biosphere's development and the ways of optimizing it.

The Methodological Approach to Optimizing the Biosphere

Modern mankind is not capable of returning to the old forms of activity. When people had an insignificant influence upon natural processes, they them- sely will carry out certain changes in the natural environment. And it is essential to know what ultimately will be the consequences of these changes. For this, at present, there is often not enough scientific information. Given we read in the literature of certain equally plausible proposals concerning

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future radical changes in nature. For example, it is said that on the earth a sufficient mass of dry land is occupied by desert which eventually must be irrigated (and at present this problem is completely feasible in scientific and technical terms), but it has turned out that this resource entails consequences for the entire planet.

Let us assume that we are to provide water to all the deserts, and then the amount of snow will increase, the process of its thawing will be delayed, and as a result the seasonal cycle will be disrupted. Ultimately the summer and even the winter might disappear, and there will be only two seasons, spring and autumn. As yet we do not know how this might occur and what the consequences would be. These questions still have not raised a final answer. They must be solved by the methods of modern science, and at the same time they should be philosophically analyzed. A final need arises for an unique methodological approach which would study the ways for harmonizing the "man-nature" relationship. Analysis of the internal contradictions of human activity should serve as the basis for such an approach. At the present stage, there is an essential contradiction which can be formulated as follows: the actual available scientific and technical forces of the human effort on the natural environment surpasses the force of the rather remote ecological forecast of the consequences of this effect in the biosphere. Under these conditions, man must not stimulate technical growth, in correlating it to the factors of the biosphere.

U'ton one continues to hear that nature must be conquered, but at present it is obvious that the issue is not merely a conquest but rather the harmonious effect of man on nature.

Human activity is an expression of man's essence, but under present-day conditions, when the scale of human activity has grown immeasurably, the problem of optimizing activity comes a problem of man's life and death. The discrepancy between the growth rate of our activity and forecasting should in no manner increase. The very nature of human activity under the effect of these contradictions should be altered. Human activity should be improved primarily on the level of differentiating it in terms of four basic types and not on the professional level, as is presently done, but rather in terms of other criteria. The division along professional lines leads to an excessive splitting up of human actions. The first form of activity, productive activity, is related to the effect of man on the external world, to a change in the nature of the environment, and to providing society with the energy and material resources. And this is the activity in which we are engaged in the course of production.

At present productive activities cannot be the only ones. They must be balanced against a different form of activity, namely compensatory activity which is related to the neutralization of those negative consequences which productive activity produces.

The controlling activity of man also is assuming great significance. It is becoming particularly essential under the conditions of full automation when the cycle of producing things and energy will be entrusted to an

38

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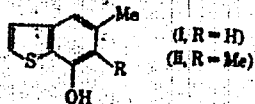
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Abstracting Service:
CHEMICAL ABST.

4120

Ref. Code:
UR 0409

90170a Preparation of 7-hydroxy derivatives of thionaph-
thene. New means for synthesizing thionaphthenic acid. Dul-
enko, V. I.; Katts, I. G.; Dulenko, L. V.; Dorofeenko, G. N.
(Donets. Otd. Fiz.-Org. Khim., Donetsk, USSR). *Khim.
Geterotsikl. Soedin.* 1970, (1), 134 (Russ). Thieno[2,3-*c*]pyryl-
ium salts prepd. by acylation of 3-acetylthiophene opened the
ring in alkali to form 2-acyl-3-acetylthiophenes which then



cyclized to 7-hydroxythianaphthenes. Thus, in aq. alc. NaOH
was prepd. 5-methyl-7-hydroxythianaphthene (I), m. 68°, and
5,6-dimethyl-7-hydroxythianaphthene (II), m. 99-100°.

G. M. Kosolapoff

REEL/FRA
19801894

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USSR

UDC: 535.14:621.001

BOROVICH, B. L., ZUYEV, V. S., KATULIN, V. A., NOSACH, O. Yu.,
TYURIN, Ye. L., SHCHEGLOV, V. A.

"Concerning Propagation of a Light Pulse in a Moving Two-Level
Absorbing Medium"

Moscow, Kvantovaya Elektronika, Sbornik Statey, No 2(8), 1972,
pp 88-89

Abstract: A solution is found for equations of propagation of a monochromatic pulse with arbitrary time dependence $I_0(t)$ through a two-level absorbent medium with density of active particles $N_0 = \text{const}$ and velocity $v(t)$. It is found that depending on the ratio of v and $v_0 = 2I_0/N_0$, there are two modes of wave propagation with interface at $v = v_0$. The analysis is also applicable to a source of emission moving with an arbitrary velocity in the medium. Bibliography of six titles.

1/1

- 45 -

USSR

UDC 621.375.82

BOROVICH, B. L., ZUYEV, V. S., KATULIN, V. A., NOSACH, O. Yu., TYURIN, Ye. L., SHCHEGLOV, V. A.

"On the Propagation of a Light Pulse in a Moving, Two-Level Absorption Medium"

V sb. Kvant. elektronika (Quantum Electronics --- Collection of Works), No. 2, Moscow, "Sov. radio", 1972, pp 88-89 (from RZh-Fizika, No 10, Oct 72, Abstract No 10D845)

Translation: A solution is obtained for the transfer equations for a monochromatic pulse of radiation of an arbitrary time form $I_0(t)$ in a two-level absorption medium with a density of active particles $N_0 = \text{const}$ and a velocity $v(t)$. It is shown that, depending on the relationships v and $v_0 = 2I_0/N_0$, there exist two modes of propagation of illumination waves with the interface at $v = v_0$. The study is also applicable for a radiation source moving with an arbitrary velocity in the medium. 6 ref. Authors abstract.

1/1

USSR

UDC 534.84

KATININ, G. P., RYSIN, YU. S.

"Comparison of Certain Methods of Measuring the Time of a Reverberation

Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR (Works of the Educational Institute of Communication. Ministry of Communications USSR), 1971, No. 53, pp 173-176 (from RZh-Fizika, No 3, Mar 72, Abstract No 3Zh567)

Translation: Various methods of determining the time of a reverberation are compared. A method in which the sound source is the shot of a starter pistol is recommended on the basis of the results. The reverberation is recorded on a magnetic recorder over the entire spectrum. The interpretation is conducted under laboratory conditions. Resume.

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- 50 -

USSR

UDC 621.732.413

KATUNIN, V. V., KURILIN, B. I.

"Analysis of a Resonator with a Contactless Plunger"

Radiotekhnika. Resp. mezhved. nauchno-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 15, pp 102-110 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4B147)

Translation: Expressions are obtained for the Q-factor of the resonance impedance and resonance equation of a resonator. There are 6 illustrations and a 5-entry bibliography.

1/1

- 151 -

KATUNYAN, P. I.

Space
Physiology

So: JPRS 53801
12 AUG 71

UDC 612.172.6.014.47:631.113

MORPHOLOGICAL CHANGES IN THE MYOCARDIUM DURING
MULTIHOUR ACCELERATIONS

(Article by P. I. Katunyan and V. S. ¹² Semakova; Moscow, Kosmicheskaya Bi-
ologiya i Meditsina, Moscow, Vol. 5, No. 3, 1971, pp. 82-87, submitted
11 March 1969)

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

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

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

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

USSR

UDC 543.544+632.954

ATURYAN, M. M., KATVALYAN, G. T., and DOVLATYAN, V. V., Armenian Agricultural Institute (Yerevan)

"Thin Layer Chromatography of Herbicides. Identification and Analysis of Crotyline, 2,4-D and Its Sodium Salt"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol XXIV, No 12, 1971, p 1085

Abstract: A study was made of the chromatographic behavior of crotyline on a thin layer of aluminum oxide. This offers the possibility of determining it in microamounts in different products and also of separating of the herbicide from the admixtures in the technical preparation: free 2,4-D and its sodium salt. The values of R_f of crotyline, 2,4-D and its sodium salt were measured in a series of solutions, in mixtures of acetone and water, acetone-water-NH₄OH, in different volumetric ratios. The complete text of the report (available at the All-Union Institute of Scientific and Technical Information, Registration No 3254-71, 9 August 1971) contains the data from these measurements. For analysis of the crotyline and 2,4-D mixture it is necessary to have neutral aluminum oxide; 2,4-D partially reacts with basic aluminum oxide to form a salt.

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USSR

ATURYAN. M. M., ~~KATVANYAN G. T.~~, DOVLATYAN, V. V.

"Thin-Layer Chromatography of Herbicides, Identification and Analysis of Crotyline, 2, 4-D Acid and Its Sodium Salt"

Tonkosloynaya Khromatografiya Gerbitsidov, Identifikatsiya i Analiz Krotilina, 2,4-D Kisloty i Yeye Natriyevoy Soli. [English Version Above], Yerevan, 1971, 10 pages. (Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract No 4N695 Dep. by the authors).

Translation: Crotyline is produced as a herbicide on a commercial scale. A method of TLC is suggested for determination and identification of crotyline, 2, 4-D, the Na salt of 2, 4-D. The method suggested is sensitive, convenient and simple, can be used in the production of crotyline and for purity testing of the preparate produced.

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1/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--GAMMA RADIATION OF PALLADIUM-99 -U-
AUTHOR--(05)-ANTONYEVA, N.M., GRIGORYEV, YE.P., KATYKHIN, G.S., NIKITIN,
M.K., PROTASOVA, L.F.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSR, SER. FIZ. 1970, 34(1), 54-8
DATE PUBLISHED-----70
SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--GAMMA SPECTRUM, PALLADIUM ISOTOPE, HALF LIFE, ISOTOPE
SEPARATION, RADIATION INTENSITY, RADIOACTIVE DECAY SCHEME, BETA PARTICLE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/0228 STEP NO--UR/0048/70/034/001/0054/0058
CIRC ACCESSION NO--AP0105304
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105304

ABSTRACT/EXTRACT--(U) CP-0- ABSTRACT. THE GAMMA SPECTRUM OF THE PD FRACTION FROM CD IRRADIATED WITH 660-MEV RHO WAS STUDIED WITH GE(LI) DETECTORS. BESIDES PRIME99 PD, THE FRACTION ALSO CONTAINED OTHER PD NUCLIDES, AND PRIME98 RH, PRIME99 RH, AND PRIME104 AG. THE PRIME99 PD GAMMA LINES WERE IDENTIFIED FROM THEIR HALF LIVES AND FROM THE CONSISTENCY IN RELATIVE INTENSITIES DURING VARIOUS STAGES AFTER IRRADN. THE PROBABLY DECAY SCHEME OF PRIME99 PD IS PRESENTED. THE BETA TRANSITIONS TO PRIME99 RH LEVELS SHOWED A HIGH DEGREE OF PROBABILITY: LOG FT EQUALS 4.9 FOR THE 1ST EXCITED LEVEL. SOME SIMILARITIES IN THE DECAY SCHEMES OF PRIME99 PD AND PRIME101 PD ARE POINTED OUT. FACILITY: NAUCH.-ISSLED. FIZ. INST., LENINGRAD. GOS. UNIV., LENINGRAD, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--EXTRACTION OF RHODIUM STANNOUS CHLORIDE COMPLEXES BY TRI N BUTYL
PHOSPHATE -U-
AUTHOR--(04)-KALININ, S.K., KATYKHIN, G.S., NIKITIN, M.K., YAKOVLEVA, G.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. ANAL. KHIM. 1970, 25(3), 535-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--RHODIUM COMPOUND, TIN CHLORIDE, COMPLEX COMPOUND, ORGANIC
PHOSPHATE, CHEMICAL SEPARATION, SOLVENT EXTRACTION, SPECTROGRAPHIC
ANALYSIS, PHOTOMETRIC ANALYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0013 STEP NO--UR/0075/70/025/003/0535/0538
CIRC ACCESSION NO--AP0132313
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NC--AP0132313

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OPTIMUM CONDITIONS WERE FOUND FOR THE EXTN. SEPN. OF TRACE AMTS. OF RH AS ITS COMPLEX WITH SNCL SUB2 FROM HCL MEDIA WITH BU SUB3 PG SUB4. RH CAN BE QUANT. EXTD. FROM 6.0M HCL OR FROM 2-6M HCL0 SUB4 MEDIA BY USING GREATER THAN OR EQUAL TO 0.064M SNCL SUB2. EQUIL. IS ESTABLISHED AT VARIOUS INTERVALS FOR 0.5, 2.0, OR 6.0M HCL; IN THE LATTER CASE IT TAKES 30 SEC. RH CAN BE REEXTD. FROM THE ORG. PHASE WITH 0.25-0.5M HCL AFTER DILN. WITH C SUB6 H SUB6. RH CAN BE DETD. SPECTROGRAPHICALLY IN THE AQ. PHASE BY SUING THE RH 3434 ANGSTROM LINE OR BY A PHOTOMETRIC METHOD WITH SNCL SUB2.

FACILITY: STATE SCI. RES. DES. INST. GIPRONIKEL, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 681.3:51

KATYS, G. P., ZDOR, S. YE., and SHIROKOV, V. B.

"Optimal Structures of Optoelectronic Retrieval and Recognition Systems"

Moscow, Tsifrovaya Vychislitel'naya Tekhnika i Programirovaniye, No 7, 1972, pp 172-181

Abstract: The article considers the question of the optimal synthesis of optoelectronic retrieval and recognition systems from the standpoint of the construction of rational structures optimized according to certain information criteria. Information on radiation fields can be obtained by parallel and serial methods. Both methods can be combined into one, in which the field scanning, over many parallel channels is accompanied by the simultaneous scanning by these channels, thus permitting a significant expansion of retrieval system capabilities. If there is a priori information, a possible approach to optimization of radiation field scanning involves the compilation of some optimal program. The lack of such data on the field being scanned makes it necessary to introduce self-tuning or learning, consisting in the use of the intermediate scan results to correct the search or recognition procedure. The article discusses questions in the development of scanning programs and self-tuning algorithms in retrieval and recognition systems.

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USSR

UDC: 621.391.19

KATYS, G. P., ZOYOV, V. D., POLIKARPOV, S. P., VINOGRADOVA, Ye. P., "Order of Lenin" Institute of Control Problems (Automation and Remote Control), Academy of Sciences of the USSR

"An Image Converter"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 36, Dec 71, Author's Certificate No 322781, Division G, filed 19 May 70, published 30 Nov 71, p 163

Translation: This Author's Certificate introduces an image converter made in the form of a semiconductor plate to which metal ring electrodes and a central point electrode are applied for a radial field. As a distinguishing feature of the patent, conversion errors which result from rotation and change of image scale are eliminated by using a sawtooth voltage source and by placing an additional electrode on the semiconductor plate inside the ring electrode. This auxiliary electrode is made from a material with conductivity opposite to that of the semiconductor plate and takes the form of one turn of an Archimedes spiral with one end connected to the ring electrode and the other end connected through a load to the source of sawtooth scanning voltage.

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1/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ON DESIGN AND CONTROL OF AUTOMATIC UNITS FOR EXPLORATION OF PLANET
SURFACE -U-
AUTHOR-(04)-~~KATYS~~, G.P., IIINSKIY, V.M., MELNICHENKO, I.K., ZDOR, S.E.
COUNTRY OF INFO--USSR, FRANCE
SOURCE--INTERNATIONAL FEDERATION OF AUTOMATIC CONTROL, SYMPOSIUM ON
AUTOMATIC CONTROL, 3RD, TOULOUSE, FRANCE, MAR. 2-6, 1970, PAPER. 27 P.
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., MECH., IND., CIVIL AND
MARINE ENGR, ASTRONOMY, ASTROPHYSICS
TOPIC TAGS--PLANETARY SURFACE, AUTOMATIC CONTROL EQUIPMENT, LUNAR SURFACE,
VEHICLE, PROGRAMMED AUTOMATIC CONTROL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/0008 STEP NO--UR/0000/70/000/000/0000/0000
CIRC ACCESSION NO--AT0117308
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0117308

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF THE BASIC CHARACTERISTICS OF UNMANNED VEHICLES WHOSE CONTROL SYSTEMS USE SELF ADJUSTING AND LOGIC CIRCUITS. THE PARAMETER DISTRIBUTION ANALYSIS PROBLEMS WHICH CAN BE SOLVED BY THE VEHICLES ARE DISCUSSED. THE LOCOMOTION TECHNIQUES OF THE VEHICLES ARE EXAMINED. THE PROGRAMMING OF THE MOTION IS CONSIDERED TAKING INTO ACCOUNT THE SCANNING AND ANALYZING CHARACTERISTICS OF THE CRAFT.

UNCLASSIFIED

USSR

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UDC 621.307

KATYS, G. P.

"Automatic Scanning"

Avtomaticeskoye skanirovaniye (book), Moscow, "Mashinostroyeniye", 1969, 518 pp, ill., 3 r. 69 k. (from RZH-Metrologiya i Izmeritel'naya Tekhnika, No 1, Jan 70, Abstract No 1.32.112 K)

[No abstract]

USSR

KATYS, G. P., ASRATYAN, A. A., and KRUPNOV, V. I.

"Device for Representing Information in Three Dimensions"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 33, 1972, p 115, Author's certificate No (11)357559

Abstract: The device contains a flat, semitransparent screen and an image source, the screen consisting of a series of flat liquid-crystal films with electrically controlled transparency. The films are connected to a switch which, in turn, is connected to the image source through a synchrogenerator.

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- 45 -

USSR

UDC 538.561

KATYSHEV, Ye. G., PANASYUK, V. S., PANKRATOV, S. G., ROMANOVSKIY, V. F., SAMOSHENKOV, Yu. K., SOKOLOV, A. A., SPEKTOR, Ya. M., STEPANOV, B. M.

"Investigation of Electromagnetic Emission of a Modulated Electron Beam"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 42, No 11, Nov 72, p 2446

Abstract: The paper gives a block diagram and the parameters of an installation for studying velocity-modulated emission of an electron beam, as well as the results of measurements. The beam energy was 33 keV, beam current in the pulse 0.25 A, pulse duration 4 μ s, pulse repetition rate 25 Hz, frequency of the modulating rf field 482 MHz, length of the emission region 55 cm, and pressure in the system 10^{-4} mm Hg. It was found that the emission power received by an antenna with effective area of 750 sq. cm at a distance of 2.5 m from the beam is 1 mW. The vector of intensity of the modulating electric field lies in a plane which passes through the axis of the beam. The ratio of emission intensity on the second harmonic to that on the first harmonic is approximately 5%.

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- 42 -

1/2 011 UNCLASSIFIED PROCESSING DATE--27NOV70
 TITLE--TO THE PROBLEM OF THE C YIELDS TO THE INFINITY LIMIT IN THE
 RELATIVISTIC SCHRODINGER EQUATION -U-
 AUTHOR-(03)-ZHIDKOV, E.P., KADYSHEVSKIY, V.G., KATYSHEV, YU.V.
 COUNTRY OF INFO--USSR
 SOURCE--TEORETICHESKAYA I MATEMATICHESKAYA FIZIKA, 1970, VOL 3, NR 2, PP
 191-196
 DATE PUBLISHED-----70
 SUBJECT AREAS--MATHEMATICAL SCIENCES
 TOPIC TAGS--SCHROEDINGER EQUATION, DIFFERENTIAL EQUATION
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--3003/0323 STEP NO--UR/0646/70/003/002/0191/0196
 CIRC ACCESSION NO--AP0129555
 UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129555

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MATHEMATICAL APPROACH IS DEVELOPED FOR INVESTIGATING THE REGULAR DEGENERATION OF THE SOLUTIONS OF RELATIVISTIC SCHRÖDINGER EQUATION SHOWN ON MICROFICHE TO THE SOLUTION OF NONRELATIVISTIC ONE SHOWN ON MICROFICHE FOR THE S WAVE CASE. THE PROPOSED METHOD OF SMALL PARAMETER BY HIGHEST DERIVATIVES OF DIFFERENTIAL EQUATION IS APPLIED TO SOME CONCRETE PROBLEMS. FACILITY: OB'YEDINENNYI INSTITUT YADERNYKH ISSLEDOVANIY.

UNCLASSIFIED

USSR

(11) 391832 (21) 1016331/31-16 (22) 09.07.65
(51) A 61k 27/00 (53) 547.62:615.3

(72) KRAFT, M. Ya., KATYSHKINA, V. V., PERSHIN, G. N., BOGDANOVA, N. S.,
KRASNOV, M. L., and KUKHAR', E. Ye., (71) All-Union Scientific-Research
Chemico-pharmaceutical Institute imeni S. Ordzhonikidze

(54) "A Medicinal Preparation"

Moscow, Otkrytiye Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki,
No 32, 1973, p 32

Translation: Application of 1,2,3,4-tetraoxotetrahydronaphthaline (Oxoline)
as an antiviral preparation.

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- 41 -

USSR

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UDC 621.375.132

KATYUKHIN, V. Ye.

"Analysis of the Circuit Diagram of Tube Amplifiers with Complex Current Feedback"

Tr. Uralskogo politekhn. in-ta (Works of Urals Polytechnical Institute), 1970, collection 182, pp 144-149 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8D54)

Translation: This article contains an investigation of equivalent circuits of single- and multiple-cascade amplifiers. Formulas are derived for the gain factor of various versions. The results of experimental checking on a tube two-cascade amplifier are presented. The bibliography has seven entries.

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1/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70
 TITLE--DETERMINATION OF 10 PRIME NEGATIVE7 10 PRIME NEGATIVE6 PERCENT
 IMPURITIES IN LEAD BY STRIPPING ANALYSIS -U-
 AUTHOR--(03)--KAPLIN, A.A., KATYUKHIN, V.E., STROMBERG, A.G.
 COUNTRY OF INFO--USSR
 SOURCE--ZAVOD. LAB. 1970, 36(1), 18-19 K
 DATE PUBLISHED-----70
 SUBJECT AREAS--CHEMISTRY, MATERIALS
 TOPIC TAGS--LEAD, METAL CHEMICAL ANALYSIS, METAL IMPURITY
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--L993/0302 STEP NO--UR/0032/70/036/001/0018/0019
 CIRC ACCESSION NO--AP0113232
 UNCLASSIFIED

2/2 016

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PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0113232

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. PB SAMPLE, 0.2 G WAS DISSOLVED BY GENTLE HEATING IN 5 ML OF 3N HNO SUB3. THE SOLN. WAS ELECTR LYZED FOR 1.5 HR WITH A CYLINDRICAL PT GAUZE ELECTRODE AND A CONST. C.D OF 0.1 A-CM PRIME2. THE DARK BROWN PPT. OF PBO SUB2 (PLUS IMPURITIES) ON THE ANODE WAS DISSOLVED IN 6-10 ML IN HNO SUB3 CONTG. 0.1 ML 30PERCENT H SUB2 O SUB2. THE SOLN. WAS EVAPD. TO DRYNESS, REDISSOLVED IN 3 ML H SUB2 O AND REEVAPD. 4 TIMES. THE RESIDUE WAS DISSOLVED IN 3 ML OF 0.01 M KCl AND ZN WAS DETD. BY POLAROGRAPHY. AFTER ADDN. OF 0.03 ML OF ETHYLENEDIAMINE SOL., IN AND CD WERE DETD. SIMILARLY. THE POTENTIAL WAS SMALLER THAN OR EQUAL TO 1.6 V. PEAK HEIGHTS ARE PROPORTIONAL TO CONC. TOTAL ANAL. TIME WAS 4-5 HR. THE DETNS. OF ZU, CD, AND IN AT THE 10 PRIME NEGATIVE 8PERCENT LEVEL ARE CONSIDERED ACCURATE WITH A CONFIDENCE LIMIT GREATER THAN 95PERCENT.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--11DEC70
 TITLE--DYNAMIC ECONOMIC OPTIMUM -U-
 AUTHOR--KATZ, A.I.
 COUNTRY OF INFO--USSR
 SOURCE--DYNAMIC ECONOMIC OPTIMUM (DINAMICHESKIY EKONOMICHESKIY OPTIMUM)
 MOSCOW, EKONOMIKA, 1970, 198 PP
 DATE PUBLISHED-----70
 SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES
 TOPIC TAGS--ECONOMIC DEVELOPMENT, ECONOMIC MODELING, CAPITAL INVESTMENT, R
 AND D CAPITAL INVESTMENT, LABOR, ECONOMIC PLANNING PROBLE
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--2000/0045 STEP NO--UR/0000/70/000/000/0001/0198
 CIRC ACCESSION NO--AM0123829
 UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AM0123829

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: INTRODUCTION
3. I GENERAL MODEL OF DYNAMIC OPTIMIZATION 11. II ERRONEOUS THEORIES
OF OPTIMIZATION 56. III USE OF THE GENERAL CRITERION OF DYNAMIC
OPTIMUM 132. AFTERWORD 194. THE WORK DEALS WITH DYNAMIC OPTIMIZATION
OF ECONOMIC DEVELOPMENT GIVEN IS A GENERAL MODEL FOR DYNAMIC
OPTIMIZATION OF THE GROWTH OF PUBLIC LABOR PRODUCTIVITY, WHICH IS USED
FOR DERIVATION OF THE GENERAL CRITERION OF DYNAMIC OPTIMIZATION OF
ECONOMIC EFFECTIVENESS OF CAPITAL INVESTMENTS PROVIDING MAXIMUM RATES IN
TECHNOLOGICAL PROGRESS AND GROWTH OF PUBLIC LABOR PRODUCTIVITY. THE
WORK IS WRITTEN IN A POLEMIC FORM. THE AUTHOR GIVES A CRITICAL REVIEW
OF CONCEPTS OF STATISTICAL OPTIMIZATION USED IN SOLUTION OF DYNAMIC
ECONOMIC PROBLEMS.

UNCLASSIFIED

USSR

UDC 677.4:54-171:539.16.04

STARKOVA, A. N., KIRILENKO, YU. K., SHAPIRO, YE. I., YEGS, A. I., VOL'F,
L. A., VISHNYAKOVA, T. P., VLASOVA, I. D., PANCHENKOV, G. M., and KAUCHAN-
SKY, D. A.

"Radiation Resistant Polyamide Fiber"

Leningrad, Radiokhimiya, Vol 13, No 5, 1971, pp 785-786

Abstract: An attempt was made to increase the resistance of polyamide fiber towards γ -radiation by treating it with ferrocene containing compounds. Caprone cord fiber was treated with ferrocenealdehyde (FCA) under following conditions: FCA - 3%; catalyst - 6.5% H_3PO_4 ; temperature - 75°C; duration - 2 hrs; solvent - ethanol. The fiber obtained was more resistant to thermo-oxidative destruction than the starting material; after heating for 2 hrs at 200°, the modified fiber retained 60-70% of the initial strength, while the starting material dropped down to 25%. The modified fiber was found to possess high adhesiveness towards the resin; it can be used in production of hoses, conveyor belts, driving belts, etc, performing under radiation.

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USSR

UDC 677.4.54-171:539.16.04

SLATINA, S. D., KIRILENKO, YU. K., VOL'F, L. A., MEOS, A. I., SHAPIRO, YE. I.,
VISHNYAKOVA, T. P., PANCHENKOV, G. M., VLASOVA, I. D., KAUCHANSKIY, D. A.,
and MARNAUSOV, V. A.

"Radiation Resistant Polyvinylalcohol Fibers Containing Ferrocene"

Leningrad, Radiokhimiya, Vol 13, No 5, 1971, pp 786-787

Abstract: Polyvinylalcohol fibers containing ferrocene were obtained by impregnating a freshly formed or thermostabilized PVA-fibers with 5-18% solution of 1,1'-diacetylferrocenylformaldehyde resin [1,1'-DAFF] in acetone. After the impregnation the material was heated to 140-160°C for 10-20 min, resulting in formation of chemical bonds between the hydroxyl groups of the PVA-fiber and the methylal group of 1,1'-DAFF resin (14-18% of chemically bound 1,1'-DAFF resin). The 1,1'-DAFF resin was obtained by polycondensation of diacetylferrocene with formaldehyde in ethanol at 50°C and in presence of sodium carbonate. The modified fiber was subjected to γ -radiation in presence of air oxygen. The strength and the elastic indicators of the ferrocene containing material were superior in comparison to the starting material.

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- 75 -