USSR

UDC: 681.3.06:51

MALININ, S., NEMIROVSKAYA, V., RYABEN'KIY, S., YELTARENKO, Ye., RUMYANTSEV, [illegible]OKOV, L.

"Deterministic Model of Evaluating Variants for Construction of Systems of Scientific-Information Servicing With Respect to Time and Cost Criteria"

V sb. Vopr. modelir. i optimiz. sistem inform. obsluzh. (Problems of Modeling and Optimizing Information Servicing Systems--collection of works), vyp. 2, Moscow, 1970, pp 39-71 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V716)

Translation: In constructing the model, primary attention is given to selecting the functional structures of systems of scientific-information servicing. Two methods of data processing are taken into consideration: centralized and decentralized.

The process of functioning of the systems is represented in the model by a set of linear expressions of the form

$$\lambda_{out} = \lambda_{in}\chi,$$

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MALININ, S. et al., Vopr. modelir. i optimiz. sistem inform. obsluzh., vyp. 2, Moscow, 1970, pp 39-71

where λ_{in} is the line vector ($1 \times m$) which maps the intensity of the flow of documents at the input of the process; X is a matrix which maps conversion of the flow at the input into the flow at the output; λ_{out} is the line vector ($1 \times n$) which maps the intensity of the flow of documents at the output of the process. The time criterion is defined as the two-dimensional vector $\bar{t} = (\bar{t}(t);\bar{t}(c))$, where $\bar{t}(t)$ is the average time for distribution of information counted from the moment when it appears in the medium external to the system; $\bar{t}(c)$ is the average time of response to demands as reckoned from the instant the system receives the demand from the user to the instant the user receives the response from the system.

The cost criterion is understood to mean the intensity of expenditures of materials, labor, equipment and monetary means necessary for normal functioning of the system.

The proposed model is illustrated by an example of a system of scientific-information servicing in electrical engineering.

USSR

UDC: 681.3.06:51

MALININ, S., NEMIROVSKAYA, V., RYABEN'KIY, S., YELTARENKO, Ye., RUMYANTSEV, V., SUMAROKOV, L.

"Deterministic Model of Evaluating Variants for Construction of Systems of Scientific-Information Servicing With Respect to Time and Cost Criteria"

V sb. Vopr. modelir. i optimiz. sistem inform. obsluzh. (Problems of Modeling and Optimizing Information Servicing Systems--collection of works), vyp. 2, Moscow, 1970, pp 39-71 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V716)

Translation: In constructing the model, primary attention is given to selecting the functional structures of systems of scientific-information servicing. Two methods of data processing are taken into consideration: centralized and decentralized.

The process of functioning of the systems is represented in the model by a set of linear expressions of the form

$$\lambda_{out} = \lambda_{in} X,$$

1/2

MALININ, S. et al., Vopr. modelir. i optimiz. sistem inform. obsluzh., vyp. 2, Moscow, 1970, pp 39-71

where λ_{in} is the line vector ($1 \times m$) which maps the intensity of the flow of documents at the input of the process; X is a matrix which maps conversion of the flow at the input into the flow at the output; λ_{out} is the line vector ($1 \times n$) which maps the intensity of the flow of documents at the output of the process. The time criterion is defined as the two-dimensional vector $\vec{t} = \{\vec{t}^{(t)}; \vec{t}^{(c)}\}$, where $\vec{t}^{(t)}$ is the average time for distribution of information counted from the moment when it appears in the medium external to the system; $\vec{t}^{(c)}$ is the average time of response to demands as reckoned from the instant the system receives the demand from the user to the instant the user receives the response from the system.

The cost criterion is understood to mean the intensity of expenditures of materials, labor, equipment and monetary means necessary for normal functioning of the system.

The proposed model is illustrated by an example of a system of scientific-information servicing in electrical engineering.

USSR

UDC: 518.5:681.3.06

ROMANENKO, A., RUMYANTSEV, V., SHAKHNAZARYAN, Ye.

"Some Problems of Modeling and Optimizing the Activity of the United Scientific and Technical Publishers"

V sb. Vopr. modelir. i optimiz. sistem inform. obsluzh. (Problems of Modeling and Optimizing Information Servicing Systems--collection of works), vyp. 2, Moscow, 1970, pp 148-170 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V778)

Translation: A procedure for organizing the activity of an information agency is proposed which is based on utilizing the methods and means of formation, transmission, accumulation, ordering, and processing of flows of statistical and accounting information on the functioning of the United Scientific and Technical Publishers. This method proposes a study of the stream of information traffic in the United Scientific and Technical Publishers, and also construction of an informational and mathematical model of the organization. As a criterion of optimization, the authors use the cost of losses due the lack of accord of the infor-

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ROMANENKO, A., Vopr. modelir. i optimiz. sistem inform. obsluzh., vyp. 2, Moscow, 1970, pp 148-170

mation to the requirements of users of the United Scientific and Technical Publishers. The optimization problem is solved within the framework of filtration theory. An approximate search algorithm is proposed for optimizing the selected criterion. Illustrative examples are given. V. Mikheyev.

Rumyantsev, Yu. M.

JPRS 59908
6-73

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SESSION X

X-1. STUDY OF THE MICROMORPHOLOGY AND DISTRIBUTION OF ADMIXTURES IN EPITAX-
TAL AND GALLIUM ARSENIDE AS A FUNCTION OF THE GROWTH TIME

[Article by L. G. Lavrent'yeva, M. D. Vilisova, I. V. Ivonin, D. M. Krasil'-
nikova, F. A. Kuznetsov, Yu. M. Rumyantsev, M. P. Yakubenya, Tomsk, Novosibirsk;
Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh
Kristallov i Plenok, Russian, 12-17 June 1972, p [illegible]]

A study was made of the epitaxial layers of gallium arsenide grown in
an open iodide system on substrates deflection by 2degrees from (111)A in the
(110) direction. The growth time varied from one minute to three hours.

It was demonstrated that for all growth times beginning with one min-
ute, the growth of the layers of the given orientation takes place by shifting
of the parallel steps. There are a number of growth defects leading to dis-
turbance in the ordered motion of the steps. These are the growth holes, the
growth hills and some centers of retardation of the steps in which the steps
form local pileups and loops. There is a significant rearrangement of the
surface of the growing layer with growth time -- the growth hills and holes
disappear, the density of the centers of retardation of the steps decrease,
and the configuration of the steps changes. The rearrangement of the surface
of the layers is accompanied by variation in alloying level. A clear correla-
tion has been established between the electron concentration in the layer and
the density of the centers of retardation of the steps. The observed correla-
tion indicates that the nonuniformity of alloying and the formation of the
transition layer can be connected with growth defects and their affect on the
motion of the growth steps.

RUMYANTSEV, Yu. M.

JPRS 59265
6-73

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XIV-6. EFFECT OF THE CRYSTALLIZATION TEMPERATURE ON THE ELECTROPHYSICAL PROPERTIES AND MORPHOLOGY OF EPITAXIAL GALLIUM ARSENIDE

[Article by L. G. Lavrent'yeva, I. V. Ivonin, Yu. G. Katayev, L. M. Krasil'nikova, F. A. Kuznetsov, Yu. M. Rumyantsev, A. V. Chukov, M. P. Yakubenya, Tomsk, Novosibirsk; Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 198]

Studies were made of the micromorphology and the distribution of the admixture with respect to thickness of the autoepitaxial layers of gallium arsenide with the (1.075; 1, 1) A orientation as a function of the crystallization temperature in the GaAs-HI-H_2 system. The epitaxy temperature varied within the range of 600-750° C; here, the thermodynamic supersaturation was kept constant.

For the stationary section, the optimal temperature range (675-700° C) is observed at which the layers grow more perfect with respect to structure, with the greatest clarity, irregular system of growth stages on the surface, and with maximum admixture concentration and maximum electron mobility. In the case of a reduction in the crystallization temperature from optimal, the growth stages are exhibited more weakly, the growth rate drops, and the alloying level increases. The increase in temperature above optimal leads to local isolation of the second phase, inhibition of the growth stages in these sections and destruction of the regularity. Here, the growth rate decreases, and the alloying metal increases.

Thus, an analysis of the results shows that the clear correlation is observed between the investigated characteristics. One of the important regulators of capture of the admixture by the growing layer is the surface microstructure and the mechanism of its growth.

USSR

UDC 681.32:31

ANILOV, V. M., BORISOV, M. S., VLASOV, F. S., YEREMIN, A. T., MONAKHOV, G. D., and RUMYANTSEV, V. I.

"Computer Complex"

USSR Authors' Certificate No 305430, Cl. G 06 f 15/16, filed 20 Apr 70, published 12 Aug 71 (Referativnyy zhurnal, Tekhnicheskaya kibernetika, Telemekhanika i Vychislitel'naya Tekhnika, No 5, May 72, Abstract No 5B302)

Translation: Special-purpose computer complexes are known which contain a set of digital computers with interlinking units, with synchronization of synchro-series of machines and coupling lines between the digital computers of the complex, which assure correction of data errors occurring as a result of machine malfunctions. However, the amount of time and hardware redundancy used for increasing reliability and for organization of input data averagings in these complexes is considerable. In addition, parallel operation of the machines of the complex in the event that it is necessary to raise the productivity of the computer complex by lowering its reliability. The unique feature of the proposed special-purpose complex is that the output data, address, and control lines of each machine into which each computer of the complex is divided are connected in each machine via assembly circuits into data, address, and control [illegible], which are connected to the inputs of the

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OV, V. M., et al., USSR Authors' Certificate No 308430

tersectional coupling units of all machines of the set; the output data, ddress, and control lines of the intersectional coupling unit of each machine of the complex are connected to the data, address, and control inputs of the functional sections of the corresponding computer of the complex. Another unique feature of the special-purpose computer complex is the fact that the intersectional coupling unit of each machine of the complex contains "m" out of "n" (where $n > m$) majority circuits, majorizing inhibit gates, by-pass gates, assembly circuits, and a control register with a control signal generating circuit: the mainline of each machine of the complex being connected to the majority circuit input, through the majorizing inhibit gate to the first assembly input, and through the by-pass gate to the additional assembly input, the control inputs of the gates coupled by control lines to the corresponding outputs of the control circuit, which is connected to the control register output. This makes it possible to reduce the time and hardware redundancy for increasing reliability, provide averaging of input data, and organize parallel operation of the machines of the complex.

USSR

UDC: 519.217

RUMYANTSEV, V. P., SUMAROKOV, L. N., TIMOKHIN, S. G.

"Some Problems of Analysis of Linear Stochastic Nets"

V sb. Inzh.-mat. metody v fiz. i kibernet. (Engineering and Mathematical Methods in Physics and Cybernetics--collection of works), Moscow, Atomizdat, 1971, pp 44-62 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V142)

[No abstract]

1/1

1/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--FACTOR ANALYSIS OF THE MECHANICAL CHARACTERISTICS OF STEELS -U-

AUTHOR-(02)-MATSEGORIN, I.V., RUMYANTSEV, V.P.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB., 1970, 26, (1), 55-60

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MEASUREMENT, STEEL PROPERTY, IMPACT STRENGTH, HARDNESS, DUCTILITY, ELONGATION, YOUNG MODULUS, TENSILE STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0244 STEP NO--UR/0032/70/026/001/0055/0060

CIRC ACCESSION NO--AP0124006

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124006

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE QUESTION OF IMPROVING THE EFFICIENCY OF EXPERIMENTS DESIGNED TO DETERMINED THE PHYSICAL AND MECHANICAL PROPERTIES OF STEELS AND OTHER METALS BY MEASURING A RESTRICTED NUMBER OF COMPOSITE PARAMETERS CONTG. THE SAME INFORMATION AS THAT CONTAINED BY THE WIDE SET OF PARAMETERS CONVENTIONALLY MEASURED IS DISCUSSED. THUS, FOR EXAMPLE, THE SIX MECHANICAL PARAMETERS OF STEEL USUALLY MEASURED (UTS, YS, HARDNESS, IMPACT STRENGTH, RELATIVE ELONGATION, RELATIVE TRANSVERSE CONTRACTION) MAY BE REDUCED TO TWO 'EFFECTIVE' STRENGTH AND DUCTILITY CHARACTERISTICS. THE EFFECT OF THIS IS THAT ALL THE REQUIRED INFORMATION MAY BE SECURED BY MEASURING TWO PARAMETERS ONLY.

UNCLASSIFIED

USSR

UDC 531.36

MOROZOV, V. M., RUBANOVSKIY, V. N., RUMYANTSEV, V. V., SAMSONOV, V. A., Moscow

"Bifurcation and Stability of the Steady-State Movements of Complex Mechanical Systems"

Moscow, Prikladnaya Matematika i Mekhanika, Vol 37, No 3, 1973, pp 387-399

Abstract: In many cases it is possible to simulate modern equipment such as rockets, spacecraft, gyros, and so on by mechanical systems comprising absolutely solid-states and particles and the deformable (liquid and elastic) bodies connected with them. A study is made of the steady-state movements of complex systems -- mechanical systems containing subsystems with a finite number of degrees of freedom and elements with distributed parameters, that is, continuous media. The steady-state movements correspond to the stationary values of the potential energy V or variable potential energy W of the system. The problem of stability of the steady-state movements is reduced to investigating the nature of the extremum of the potential energy V or W. Minimum potential energy corresponds to stable movement. The stability (instability) conditions of the steady-state movements can be obtained as conditions of defined positiveness (sign variability together with certain additional conditions) of the secondary variation of the potential energy δ^2V or δ^2W in many important cases. These general results are applied to the solution of a number of specific problems

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USSR

MOROZOV, V. M., ET AL., Prikladnaya Matematika i Mekhanika, Vol 37, No 3, 1973, pp 387-399

of the stability of steady-state movements of complex systems, and the conditions of stability of the movement of a solid-state with liquid and elastic parts in different force fields are discussed.

Thus, the investigation includes complex systems constrained by holonomic relations, movement of a solid-state having a cavity partially filled with a liquid of density ρ the surface tension of which is negligible around a stationary point O, the construction of a complete picture of the distribution of the positions of equilibrium of a complex system, their evolution and bifurcation on variation of the system parameters, the problem of stability of uniform vertical rotation around a stationary point of a solid-state with a thin, rectilinear, nonextensible elastic rod in a uniform field of gravitational force rigidly fastened to it, and the movement of a solid-state in a central newtonian force field bearing thin or thin-walled inextensible elastic rods each of which has 2 planes of symmetry.

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USSR

UDC: 621.317.39: 543.275.3.08

TURUBAROV, V.I., PODOL'SKIY, A.A., KALAKUTSKIY, L.I., LOGVINOV, L.M., POPOV, B.I., RUMYANTSEV, V.V. and VORONOV, A.F.

"High-Sensitivity Device for Continuous Measurement of Dust Concentration in Biosphere"

Sb. Fiz. metody i vopr. metrol. biomed. izmereniy (Symposium on Physics Methods and Biomedical Metrology Problems) Moscow, 1972, pp 288-289 (from Referativnyy Zhurnal-Metrologiya i Izmeritel'naya Tekhnika, No 8, 1972, Abstract No. 8.32.1007 by V.S.K.)

Translation: The design and operating principle are described of a continuous-action, electronic, induction dustmeter, developed by the Leningrad Aviation Instrument Building Institute jointly with the Kuybyshev Aviation Institute. The dust concentration measurement method is based on the relation between the size of aerosol particles and their charges received in the corona discharge field. This type

USSR

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TURUBAROV, V. I., et al., Sb. Fiz. metody i vopr. metrol. biomed. izmereniy, 1972, pp 288-289

dustmeter measures the surface concentration, therefore the change in dispersion concentration does not cause errors in dust concentration count. The dustmeter can be also calibrated by the weighing method with constant dispersion concentration and variation of weight concentration. Several modifications of electronic dustmeters characterized by sensitivity and range have been developed. The technical characteristics of EIP-3 dustmeter are: sensitivity, 10^{-2} mg/m^3; weight, 5 kg; power consumption, 10 w; dynamic concentration range, -10^3; overall dimensions, 280 x 190 x 80 mm. Test results of electronic induction dustmeters are presented.

2/2

USSR

UDC: 531.36+62-50

RUMYANTSEV, V. V.

"Controlling and Stabilizing Systems With Cyclical Coordinates"

Moscow, Prikladnaya matematika i mekhanika, vol 36, No 6, 1972, pp 966-976

Abstract: The system considered in this paper is holonomic and mechanical, with generalized coordinates and momenta represented by q_i and p_i respectively, $i = 1,\ldots,n$. The equation of motion of the system is given by the Hamilton canonical equations

$$\frac{dq_i}{dt} = \frac{\partial H}{\partial p_i}, \quad \frac{dp_i}{dt} = -\frac{\partial H}{\partial q_i} + Q_i \qquad (i = 1,\ldots,n)$$

where $H = H(t,q_i,p_i)$ is the Hamilton function and $Q_i = Q_i(t,q_j,p_j)$ are generalized nonpotential forces. The following identities are assumed:

$$\frac{\partial H}{\partial q_\alpha} \equiv 0, \quad \frac{\partial Q_i}{\partial q_{\alpha\alpha}} \equiv 0 \quad (i = 1,\ldots,n;\ \alpha = k+1,\ldots,n),$$

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USSR

UDC: 531.36+62-50

RUMYANTSEV, V. V., Prikladnaya matematika i mekhanika, vol 36, No 6, 1972, pp 966-976

where the q_α are said to be cyclical coordinates. With these relationships as background, the particular problem of the application of the controlling forces to the mechanical system through the cyclical coordinates is considered in detail. Two examples are studied: one, of a heavy point in a material circle of specified dimensions in the vertical plane, rotating without friction around the vertical diameter; the other, the motion of a heavy gyroscope in a Cardan suspension.

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RUMYANTSEV V.V.

Acc. Nr.: AN0104123 Ref. Code: UR9003

49

TITLE-- ANNOUNCEMENT OF THE COMMITTEE ON LENIN AND STATE PRIZES, U.S.S.R.

NEWSPAPER-- IZVESTIYA, MAY 28, 1970, P 4, COLS 1-5

ABSTRACT-- NINETY ONE BASIC AND APPLIED RESEARCH WORKS HAVE BEEN NOMINATED FOR THE STATE PRIZES. TWO OF THESE, "THE MULTI-PURPOSE INDUSTRIAL HELICOPTER KA-26", BY N. I. KAMOV, V. B. AL.PEROVICH, V. B. BARSHEVSKIY, A. A. DMITRIYEV, G. I. IOFFE, M. A. KUPFER, L. A. POTASHNIK, N. N. PRIOROV, A. G. SATAROV, I. M. VEDENEYEV, S. B. BREN, AND V. A. NAZAROV, AND "THE DEVELOPMENT OF TURBOFAN JET ENGINES NK-8 AND NK-8-4, AND THE DEVELOPMENT AND REDUCTION TO SERIAL PRODUCTION A SYSTEM OF TECHNOLOGICAL PROCESSES WHICH ASSURED WIDE USES FOR TITANIUM ALLOYS", BY N. D. KUZNETSOV, M. T. VASILISHIN, V. A. KURGANOV, P. M. MARKIN, V. D. RADCHENKO, P. A. SUKHOV, A. A. MUKHIN, V. G. SHITOV, G. I. MUSHENKO, L. A. SHKODO, AND G. P. DOLGOLENKO, HAVE BEEN SUBMITTED BY THE MINISTRY OF THE AVIATION INDUSTRY.

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Reel/Frame
19870555

Acc. Nr.: AN0104123

"A SERIES OF INVESTIGATIONS INTO THE DYNAMICS OF A BODY WITH FLUID-FILLED CAVITIES", /65-68/, BY N. N. MOISEYEV, A. A. PETROV, V. V. RUMYANTSEV AND F. L. CHERNOUS'KO AND "ULTRA HIGH PRECISION JIG BORING MILLS WITH 1,000 X 1,600 AND 1,400 X 2,240 MM PLATENS", BY A. I. KIR'YANOV, V. G. ABRAMOVICH, I. V. GUTKIN, A. S. ALIMPIYEV, G. B. PAUKOV, AND A. S. YEGUDKIN, HAVE BEEN SUBMITTED BY THE COMPUTATION CENTER OF THE ACADEMY OF SCIENCES AND THE MINISTRY OF THE MACHINE TOOL CONSTRUCTION AND TOOL INDUSTRY, RESPECTIVELY.

"THE RADICALLY IMPROVED MELTING TECHNOLOGY OF CRITICAL-PURPOSE HIGH-ALLOY STEELS AND ALLOYS OF IMPROVED QUALITY ACHIEVED BY THE INERT GAS TREATMENT OUTSIDE THE FURNACE", BY YU. V. GERASIMOV, O. M. CHEKHOMOV, N. V. SIDOROV, S. K. FILATOV, B. A. CHEREMNYKH, R. M. KHAYRUTDINOV, I. P. BARMOTIN, L. K. KOSYREV, K. P. BAKANOV, N. N. VLASOV, P. I. MELIKHOV, AND N. A. TULIN, HAS BEEN SUBMITTED BY THE ZLATOUST METALLURGICAL PLANT.

KZ

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Reel/Frame
19870556

AP9053072

UR 0289

PRIMARY SOURCE: Izvestiya Sibirskogo Otdeleniya, AN SSSR, Seriya Khimicheskikh Nauk, Nr 12(162), Nr 5, pp 66-72

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21

Yu. M. Rumyantsev, F. A. Kuznetsov

TEMPERATURE DEPENDENCE OF EPITAXIAL DEPOSITION RATE IN GaAs—J—H SYSTEM

Factors contributing to temperature dependence of chemical vapor processes rate are considered. The maximum on the temperature dependence of the open process rate in GaAs—J—H system has been explained by surface catalytic activity changing resulting crystal phase composition changing.

Kinetic equastions are derived for GaAs crystallisation on GaAs A(III) and B(III) substrates. Activation energy of the process has been obtained as equal to 32±1 and 34±1 *kcal/mol* for A and B orientation respectively.

etc

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1/2 030 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--FUSED OHMIC CONTACT FOR ZINC SELENIDE -U-

AUTHOR-(03)-DUBENSKIY, K.K., RUMYANTSEVA, A.V., RYZHKIN, YU.S.

COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, 1, 227-8

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SINGLE CRYSTAL, GRAPHITE, ELECTRIC CONDUCTIVITY, ZINC SELENIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1711 STEP NO--UR/0120/70/001/000/0227/0228

CIRC ACCESSION NO--AP0115540

UNCLASSIFIED

2/2 030 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0115540

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS DESCRIBED FOR OBTAINING AN OHMIC CONTACT TO ZNSE BY ALLOYING IN INTO THE SINGLE CRYSTAL PLATELET OF ZNSE. THE ZNSE, AFTER POLISHING, IS ETCHED IN A FRESHLY PREPD. HOT SOLN. OF 6 PARTS K SUB2 CR SUB2 O SUB4 PLUS 4 PARTS H SUB2 SO SUB4 WITH SUBSEQUENT WASHING IN 25PERCENT NAOH. THE ALLOYING TIME (40-60 SEC) IS DETD. BY THE TIME NEEDED TO HEAT THE GRAPHITE COAT FROM 300 TO 540DEGREES AND TO COOL IT TO 300DEGREES. ALLOYING WAS DONE IN H. THE TOTAL RESISTANCE OF THE CONTACT IS APPROXIMATELY EQUAL TO 10 PRIME NEGATIVE2 OHM-CM PRIME2.

UNCLASSIFIED

USSR

RUMYANTSEVA, G., Central Scientific Research Institute of Sanitary Education

"News About the Virus, Science Expands Its Horizons"

Frunze, Sovetskaya Kirgiziya, 11 Feb 70, p 4

Abstract: Many living organisms assume the shape and color most suitable for living under particular conditions. The chameleon exemplifies that capacity to adapt to its background. On the bark of a tree it is brown, on leafy branches it turns green. These changes are his protective mechanism. The tiny virus is clever that way too. It changes its clothing - the capsule - to fit in with the organism which it attacks. When a foreign protein enters the organism it stimulates the formation of antibodies, which neutralize, digest or destroy the invader. The invading virus makes itself a capsule from the protein of its host; it seems to "belong." Thus outwardly it acts as if compatible until, by its inner enzymes, it destroys its host.

Candidates of Medical Sciences, Academicians Chepulis and Zhdanov, working with chickens and mice, have shown that virus taken

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USSR

RUMYANTSEVA, G., et al., Frunze, Sovetskaya Kirgiziya, 11 Feb 70, p 4

from a chicken cell and transferred to a mouse casts off its cloaking and makes itself a new capsule of mouse protein. Since it becomes compatible it does not provoke formation of antibodies. To protect the mouse from those impostor-cheaters, a vaccine prepared from attenuated virus obtained from a recovered animal overcomes the false barrier of the virus. These discoveries are significant in protecting human beings from disease.

2/2

USSR

UDC 8.74

1.

AYNBERG, V. D., KONOVODCHENKO, I. G., MOLOSTVOVA, L. V., RUMYANTSEVA, G. D., SABSOVICH, L. L.

"Expansion of the Library of Standard Procedures of the TA-1M Translator"

Tr. TsNII stroit. konstruktsiy (Works of the Scientific Research Institute of Structural Parts), 1971, vyp. 20, pp 5-7 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V616)

Translation: A list of developed standard procedures of the TA-1M translator is presented for: 1) formation of matrices and algebraic operations on them; 2) printout of files using the alphanumeric printer; 3) exchange offiles in ready-access memory with the external memory of the computer. It is noted that reference to all the developed procedures is made using the standard procedure operator $pN(q_1, q_2, \ldots, q_n)$ where N is the library number of the standard procedure, and $q_1, q_2, \ldots, q_n$ are its actual parameters in place of which the identifiers of the variables and files, the numbers and arithmetic expressions can be substituted. All of these described procedures are formulated as standard programs in the IS-2 system, and the TA-1M translator is used without auxiliary shaping subprograms. They are written on the magnetic tape of the translator library and find broad application, increasing the volume of the ready-acces and external memories used, facilitating the programming process in ALGOL and reducing the solution time of the problems.

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RUMYANTSEVA, G. M.

SO: JPRS 53378
16 June 71

UDC: 616.895.8-091-02:615.214

SOME PROBLEMS DEALING WITH PATHOMORPHOSIS OF SCHIZOPHRENIA AS RELATED TO ADMINISTRATION OF PSYCHOTROPIC DRUGS

[Article by A.B. Smulevich, F.Ye. Vartanyan, G.M. Zavidovskaya, G.M. Rumyantseva, Institute of Psychiatry, USSR Academy of Medical Sciences, Moscow; Vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No 5, May 1971, pp 79-83]

Problems dealing with therapeutically determined alteration (pathomorphosis) of clinical manifestations and patterns of development of psychoses considered within the framework of schizophrenia are the subject of numerous investigations pertaining mainly to therapeutic pathomorphosis, as well as to the concept of target symptoms, provocation symptoms, intermediate syndromes, etc. One of the most popular pathogenetic conceptions interpreting the heterogeneity of reactions to drugs is the effort to relate the differences in influence of psychotropic agents to the degree of activity of the pathological process (Petrilowitsch; Janzarik; Heinrich, and others). According to this view, pharmacogenic pathomorphosis can occur only during activation of the moving forces of the disease, and is almost never observed with a chronic malignant course or at the stabilization stage. In the latter cases, according to this view (Janzarik; Huber; Kranz) psychotropic drugs have only a symptomatic action, i.e. their influence consists only of reducing manifestations of the disease.

Studies pursued at the Institute of Psychiatry, USSR AMS, are indicative of the existence of some bias in this point of view. And we take the liberty to voice the following positions, but strictly in the nature of hypotheses.

Onset of therapeutic pathomorphosis is possible during rational administration of pharmacological agents not only during a period of exacerbation but also during other phases of the pathological process. However, the nature and severity of therapy-related changes in the clinical findings are related to 1) severity of brain function damage; 2) degree of activity or, on the contrary, stabilization of the process.

To substantiate these positions we had to compare the results of prolonged administration of psychotropic agents to at least three groups of

USSR

UDC 612.822.3+612.821.6

MONAKHOV, K. K., RUMYANTSEVA, L. K., and LOBACHEVA, V. P., Laboratory of Neurophysiology, Institute of Psychiatry, Academy of Medical Sciences USSR, Moscow

"Spacial-Temporal Systems of Connections Between Evoked Activities in Conditioned Reactions in Man"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23, No 2, Mar/Apr 73, pp 366-374

Abstract: The feasibility of investigating complex forms of conditioned activity according to the principle of systemic organization of electrical activity in the human brain is analyzed. Determinations of correlation connections (Cc) between evoked activities in different functional cortical areas during elaboration of a trace motor conditioned reflex (stimulation with light followed by verbal confirmation) revealed generation of high Cc between motor and visual areas at the beginning and at the end of the trace pause and a marked decrease in Cc in the middle of the pause. By means of a special computer algorithm, models of spatial-temporal systems were designed for Cc forming between the different cortical areas during the action of a non-signal stimulus and trace conditioning with a 5-sec delay. In this system, principal Cc exist between background activity and evoked activity in the first second after stimulation.

USSR

MONAKHOV, K. K., et al., Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23, No 2, Mar/Apr 73, pp 366-374

During conditioned activity, a Cc system is formed throughout the whole trace pause, with especially pronounced Cc appearing in the first and fifth second. When such a system is formed, motor reactions appear. The model is considered useful for defining systemic cerebral activity and the participation of individual functional areas.

2/2

1/2 025 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--USE OF EMULSIONS OF SILICO ORGANIC COMPOUNDS IN VIROLOGICAL PRACTICE -U-

AUTHOR-(04)-KRISTAPSON, M.ZH., RUMYANTSEVA, N.P., REZNIYEKS, A.A., ATRENA, A.K.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 1, PP 116-120

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TISSUE CULTURE, VIROLOGY, ORGANOSILICON COMPOUND, WHOLE BLOOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0065 STEP NO--UR/0402/70/000/001/0116/0120

CIRC ACCESSION NO--AP0103745

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0103745

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER PRESENTS THE RESULTS OF TESTS OF NATIONAL SILICO ORGANIC COMPOUNDS OR CILOVANES FOR PRODUCTION OF NATIVE PLASMA FROM THE WHOLE BLOOD AND TESTS OF THEIR TOXICITY FOR TISSUE CULTURES.

UNCLASSIFIED

USSR

UDC 576.858.093.1:547.1.128

KRISTAPSON, M. EH., RUNYANTSEVA, N. P., REZNIYEKS, A. A., and ATRENA, A. K., Institute of Microbiology imeni Avgust Kirkhenshteyn, Academy of Sciences, Latvian SSR

"Use of Emulsions of Organosilicon Compounds in Virological Practice"

Moscow, Voprosy Virusologii, No 1, 1970, pp 116-118

Abstract: A transparent, rapidly coagulating plasma was obtained from the blood of humans and some animals (horses, rams) using a variety of siloxane emulsions. In some cases horse's blood separated the plasma without centrifugation, simply by being allowed to stand in a refrigerator at 4° C. The plasma coagulated and acquired a jelly-like consistency. Clotting time in test tubes with a siloxane coating was considerably longer as compared with the control (10-15, 8-10, and more than 30 min for human, ram's and horse's blood, respectively). In toxicity tests, plasma obtained with the use of siliconec was added to cultures of human embryonic fibroblasts and chick embryos. In some cases cell suspensions were added directly to test tubes treated with silicones. No signs of degeneration or other significant changes were noted in the tissue cultures.
1/1

USSR

UDC 669.295.015.3:543.42

GRIKIT, I. A., and RUMYANTSEVA, T. I.

"Spectral Determination of Oxygen in Powder and Sponge Titanium and Titanium Alloys With Preliminary Extraction"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 146-149

Translation: A description is given of a methodology for spectral determination of the oxygen in powder and sponge titanium and in secondary titanium with extraction of it by carbon and agitating in an argon medium with a direct current arc using a nickel bath. A theoretical evaluation and experimental check of the possibility of restoring titanium oxides and alloying elements with carbon in the direct current arc showed that the oxygen is extracted from the fused, alloyed specimen of secondary titanium at a slowed rate in comparison with specimens of non-alloyed titanium. A recording of the analytic lines of oxygen 7,771.9 Å and argon 7,030.2 Å on an ISP-51 spectrograph with a chamber with a focusing distance of 270 mm on Infra-760 photoplates. The coefficient of variation for oxygen concentrations in the interval 0.1-0.5% is 10-15%. Three illustrations, one table, and two bibliographic entries.
1/1

USSR

UDC 669.295.015.3:543.42

GRIKIT, I. A., RUMYANTSEVA, T. I., and RYS'YEVA, Yu. I.

"On the Dependency of the Erosion of Titanium-Nickel Alloys and the Intensity of the Arc and Spark Spectrums on the Nature of Interatomic Links"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 149-154

Translation: A study is made of erosion and spectrum intensity in binary alloys with certain structural states (hard solutions, eutectics, and intermetallides). Manufactured alloys were studied in the arc and spark modes with coal and copper antielectrodes. A certain dependency was established between the intensity of the spectrum and the phase diagram, solid substance-liquid. In the arc discharge, the erosion mechanism has a warming nature. In the high-voltage spark discharge, erosion also occurs due to mechanical destruction of structural components. It is demonstrated that erosion is determined by the stability of structural components, which are characterized by heat features which depend on interatomic links in the crystalline lattice. Three illustrations, one table, and 30 bibliographic entries.

1/1

1/2 036 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--SPECTROGRAPHIC DETERMINATION OF OXYGEN IN SECONDARY TITANIUM AND TITANIUM ALLOYS WITH PRELIMINARY EXTRACTION -U-

AUTHOR-(02)-GRIKIT, I.A., RUMYANTSEVA, T.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(4), 602-5

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--METAL DEOXIDATION, TITANIUM, TITANIUM ALLOY, LIQUID METAL PROPERTY, CARBON, ELECTRIC ARC, SPECTROGRAPHIC ANALYSIS, OXYGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1224 STEP NO--UR/0368/70/012/004/0602/0605

CIRC ACCESSION NO--AP0136635

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720006-0"

2/2 036 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136635

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TOTAL EXTN. OF O BY C FROM TI SAMPLES INTO A NI MELT IN AN AR ATM. BY USKNG A D.C. ARC WAS DESCRIBED. O WAS COMPLETELY EXTD. FROM TI SPONGE AND FROM NON ALLOYED TI POWDER IN 90 SEC., WHICH WAS THE SAME AS FROM METALLIC TI. THUS, O CONTENT IN THESE CASES COULD BE DETD. UNDER THE SAME CONDITIONS. IN SECONDARY TI ALLOYED BY AL, SI, MN, MO, ETC., IN TI PLUS AL PLUS ZR, AND IN TI PLUS AL PLUS C ALLOYS, THE TOTAL EXTN. WAS REACHED AFTER 120 SEC. ALLOYED TI MUST BE EXTD. GREATER THAN OR EQUAL TO 120 SEC. AND TEMP. OF THE LIQ. METAL BOTH MUST BE GREATER THAN 2000DEGREESK. THE RELATIVE STD. DEVIATION WAS 10-15PERCENT FOR O CONCNS. OF 0.1-0.5PERCENT.

UNCLASSIFIED

USSR UDC 621.385.832.032.36.002.237(088.8)-(47) :621.397,62:621.397.132

ALEKSEYEV, I. A., ZHUKOVSKAYA, E. I., GLINKA, A. P., MOROZOVA, A. V., and RUMYANTSEVA, T. Ya.

"Luminous Coating for Screens of Cathode-Ray Tubes"

USSR Author's Certificate No 275240, filed 7 Mar 69, published 18 Nov 70 (from RZh-Elektronika i yeye primeneniye, No 7, July 1971, Abstract No 7A284P)

Translation: The proposed luminophor covering consists of 2-component ($Y_3Al_5O_{12}:Ce$---60--70 percent, $Sr_3(PO_4)_2$ • Eu---30---40 percent) or 3-component ($Y_3Al_5O_{12}$:Ce--- 60 to 70 percent, $Sr_3(PO_4)_2$ • Eu--20 to 15 percent, $Y_2SiO_5:Ce$---20 to 15 percent) mixture of luminophors. The high efficiency and short time of afterglow, amounting to 0.15--0.20 microsecond at a level of five percent from the brightness at the moment of cessation of excitation, makes it possible to increase the signal-to-noise ratio in all the color channels of a television picture tube and to improve the quality of the image. The method of precipitation in water of a solution of a silicate of K and $Sr(NO_3)_2$ is used for deposition of the luminophor covering.

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USSR

UDC: 621.385.832.032.36

ALEKSEYEV, I. A., ZHUKOVSKAYA, E. I., GLINKA, A. P., MOROZOVA, A. V., RUMYANTSEVA, T. Ya.

"A Luminescent Coating for the Screens of Cathode Ray Tubes"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 22, 1970, Soviet Patent No 275240, Class 21, filed 7 Mar 69, p 58

Abstract: This Author's Certificate introduces: 1. A luminescent coating for the screens of cathode ray tubes based on cerium-activated yttrium aluminate $Y_3Al_5O_{12}$·Ce. As a distinguishing feature of the patent, the effectiveness of screen emission in the blue region of the spectrum is improved and the time of afterglow is reduced by introducing the phosphor $Sr_3(PO_4)_2$·Eu into the composition of the coating. 2. A modification of this coating distinguished by the fact that color saturation is increased by additional introduction of the phosphor Y_2SiO_5·Ce. 3. A modification of coating No 1 distinguished by the fact that its ingredients are taken in the following proportions (in percent by weight): $Y_3Al_5O_{12}$·Ce--60-70; $Sr_3(PO_4)_2$·Eu--30-40. 4. A modification of coating No 2 distinguished by the fact that the ingredients are taken in the following proportions (in percent by weight): $Y_3Al_5O_{12}$·Ce--60-70; $Sr_3(PO_4)_2$·Eu --20-15; Y_2SiO_5·Ce--20-15.

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UDC 546.257'6+620.181

USSR

TRAVKIN, N. N., GRIBOV, B. G., RUMYANTSEVA, V. P., KOZYRKIN, B. I., and SALAMATIN, B. A.

"A Thermographic Study of Organometallic Compounds. I. Thermal Dissociation of Bis-Arene Compounds of Chromium"

Leningrad, Zhurnal Obshchey Khimii, Vol XL, No 12, Dec 70, pp 2677-2679

Abstract: Bis-Arene π-complexes of chromium are a prominent and increasingly important source of pure chromium, low-resistance film-type resistors, and other products; but the decomposition of these compounds has not been thoroughly studied, and this impedes their effective utilization.

Heat resistance of several of these compounds was determined experimentally; they can be arranged in the following order of increasing resistance: $(C_6H_6)_2Cr < (CH_3C_6H_5)_2Cr < (C_2H_5C_6H_5)Cr < [(CH_3)_3C_6H_3]_2Cr$. It was shown in addition that decomposition of bis-Arene chromium compounds proceeds according to the general formula $(Ar)_2Cr \rightarrow 2Ar + Cr$.

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UDC 547.1'13 + 621.793.1

USSR

GRIBOV, B. G., RUMYANTSEVA, V. P., TRAVKIN, N. N., PASHINKIN, A. S., KOZYRKIN, B. I., and SALAMATIN, B. A.

"Study of Metallic Films Obtained by Pyrolysis of Chromium and Molybdenum π-Complexes in the Gas Phase"

Moscow, Doklady Akademii Nauk SSSR, Vol 194, No 3, 1970, pp 580-582

Abstract: The article describes results of a study of the properties of metallic chromium and molybdenum films obtained by the pyrolysis of organic chromium and molybdenum compounds. The organometallics used were bis-benzene-, bis-toluene-, bis-ethylbenzene-, bis-xylene-, bis-mesitylene-, bis-diphenylchromium, their iodides, aniline-, dimethyl-aniline- and mesitylenechromium tricarbonyl, mesitylenemolybdenum tricarbonyl and bis-ethyl-benzenemolybdenum. The resultant metallic films possess considerable mechanical strength and hardness, elevated corrosion and acid resistance, and high adhesion. In order to study the properties of the pyrolytic chromium and molybdenum films, electro-

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GRIBOV, B. G., et al., Doklady Akademii Nauk SSSR, Vol 194, No 3, 1970, pp 580-582

physical parameters were measured and the structure and properties of the films determined by the electron diffraction method and electron microscopy. The results indicate that a number of peculiarities in metallic films obtained by the pyrolysis of organometallics are explained by the character of their formation during thermal decomposition, and their composition and properties depend on the conditions under which the thermal decomposition is carried out, as well as on the initial organometallics.

2/2

USSR

UDC 616.988.73-036.2(470.44)

RUMYANTSEVA, Ye. V., ZHELYABOVSKAYA, K. G., and DRANKIN, D. I., Saratovskaya Oblast Sanitary Epidemiological Station, Saratov Medical Institute

"Ornithosis in Saratovskaya Oblast"

Moscow, Sovetskaya Meditsina, No 9, Sep 70, pp 150-151

Abstract: No case of laboratory-confirmed ornithosis in humans was reported in Saratovskaya Oblast before 1967. As part of an epidemiological study conducted in the oblast from October 1966 to June 1967, 75 hospital patients whose symptoms suggested ornithosis were given serological and skin tests. The 75 subjects had been admitted with tentative diagnoses of typhoid, paratyphoid, pneumonia, influenza, and inflammation of the upper respiratory tract. Eight were diagnosed as having ornithosis (1 with the pneumonic form, 1 with the influenza type). Four of the eight had had occupational or other contacts with birds.

1/1

USSR

UDC 619:616.986.7:636.8(470.44)

MALAFEYEVA, L. S., RUMYANTSEVA, Ye. V., and ABRAMSON, L. A., Saratov Medical Institute and Saratovskaya Oblast Sanitary Epidemiological Station

"Infection of Cats With Leptospira in the Town of Saratov"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 11, 1971, p 147

Abstract: Eleven of 118 cats caught in the central area of Saratov and investigated for 13 types of Leptospirae by the agglutination-lysis reaction yielded positive results. Antibodies to L. icterohaemorrhagiae were found in seven cats, L. pomona in four, L. tarassowi in one, L. grippotyphosa in one, and L. australis in one. One of these had antibodies to two serotypes and another one to three serotypes. The titers ranged from 1:100 to 1:160. Although no quantitative evaluation of the epidemiological significance of this relatively high frequency of leptospirosis among cats can be made, it is believed that diseased household pets may well be the cause of sporadic leptospirosis in man. While 28 cases were recorded in Saratov in 1958-1965, other cases might have occurred without being properly diagnosed. It is therefore recommended tests for Leptospirae be performed routinely in patients with fever.

1/1

USSR

LEBEDEV, I.V., RUNKEVICHYUS, B.S., YASTREBOVA, YE.V. (Moscow)

"Investigation of the Boundary Layer by Means of a Laser"

Moscow, Zhurnal Prikladnoy Mekhanicheski i Tekhnicheskoy Fiziki, No 1, 1971, pp 150-152

Abstract: The article deals with special features of velocity measurement in boundary layers by means of a laser Doppler shift velocity meter. The results are presented for boundary layers of streams rotating in two-dimensional vortex chambers. 3 figures, 5 bibliographic entries.

1/1

USSR

UDC: 621.649

DMITRUK, M. I., RUNOV, A. D., Institute of Atomic Energy, Moscow

"A Vacuum Lock"

Moscow, Pribory i Tekhnika Eksperimenta, No 2, Mar/Apr 72, pp 154-156

Abstract: The article describes a vacuum lock covered by USSR Author's Certificate No 229901 (Byull. izobret., 1968, No 33). The lock is designed for use with the N20T vapor-oil pump. The feed-through opening is 900 mm in diameter with a vertical axis. As a distinguishing feature of the lock, the cover plate is held against the seal by its own weight. In opening and closing the lock, the plate is raised and lowered in a vacuum by a compact hoist connected to the plate through two cables. The hoist and shaft seal are described. The lock is good for approximately three years of operation (more than 3000 opening and closing cycles) and is recommended for extensive use in vacuum technology. The device can be used in conjunction with pumps operating at speeds of 50 000-100 000 l/s. The authors thank G. Ya. Shchepkin for interest in the work. Three figures, one table, bibliography of three titles.

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USSR

UDC 621.165.251:534.1.001.5

RUNOV, B. T., DON, E. A., MEYEROVICH, L. B., SELYUGIN, B. S., and KOVAL', G. S.

"Vibration Condition of Bloc-Type Turbo-Units"

"Kotel'n. i turbin. ustanovki energ. blokov" (Boiler and Turbine Installations of Power Units) Moscow "Energiya", 1971, pp 192-201 (from Referativnyy Zhurnal-Turbostroyeniye, No 10, Oct 71, Abstract 10.49.46)

Abstract: It is suggested, on the basis of data from vibration studies carried out by the All-Union Institute of Heat Engineering im. F. E. Dzerzhinskiy, on more than 120 turbo-units with evalution of vibration parameters, to use the effective value of vibration speed as a criterion for evaluating the state of vibration of a turbo-unit. In accordance with developed GOST project, evaluation of vibration should be made by the largest measured value of the effective vibration speed of a bearing in accordance with the following scale: excellent - not higher than 1.8 mm/sec, good - not higher than 2.8 mm/sec, satisfactory - not higher than 4.5 mm/sec. 14 figures, 1 table.

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USSR UDC 633.51:581.2

RUNOV, V. I., and BORODIN, G. I., Academy of Sciences Uzbek SSR, Department of Microbiology

Tashkent, Fiziologiya i Biokhimiya Vozbuditeley Vilta Khlopchatnika (Physiology and Biochemistry of the Agent of Cotton Wilt), Tashkent, "Fan," 1970, 182 pp

Translation: Annotation: The physiological and biochemical characteristics of pathogenic and non-pathogenic species of Verticillium and Fusarium are given in the monograph. Results of study of the respiratory pigments, enzymes, free amino acids, and proteins are cited.

Considerable attention is given to the nature of the toxic substances of the mycelium and culture fluid, and the effect of these substances on some physiological and biochemical processes in cotton. Considerable space is taken up with the effect of chemical substances, light, and temperature on the physiological-biochemical and pathogenic properties of Verticillium dahliae. The division of Verticillium dahliae into groups differing in their pathogenesis is substantiated.

The book is intended for general microbiologists, and also for instructors and students of soil biology faculties of universities.

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USSR

RUNOV, V. I., and BORODIN, G. I., Physiology and Biochemistry of the Agent of Cotton Wilt, Tashkent, "Fan," 1970, 182 pp

Foreward: Wilt is one of the most dangerous cotton diseases and is well-known in all of the cotton-growing regions of the world. Verticillium and Fusarium wilt have been particularly widespread in Central Asia during the past few years (Firsov, 1964; Popov, 1965). Data provided by the Institute of Plant Protection report that in the years 1960-1961 in Uzbek SSR, 66% of the cotton area in Andizhan oblast, 61% in Fergana oblast, 80% in Bukhara oblast, and 59% in Tashkent oblast were affected by Verticillium wilt. At the same time 99% of the cotton plants on the individual farms of Andishan oblast, 86% in Fergana oblast, 49% in Bukhara oblast, and 60% in Tashkent oblast were affected by the disease. In the Turkmen SSR, more than half of the fine-fibered cotton plants in the Mariysk group of rayons were infected with Fusarium wilt.

The intensive development of the parasite in the plant cells disturbs the normal growth and development of cotton, the ovaries and pods drop off, and the yield is reduced. The fibers of diseased plants are decreased in strength and are of low industrial grade (Malinin and Korol', 1964; Sauquil and Roch, 1964).

The agents of Verticillium and Fusarium wilt are Verticillium and Fusarium species of fungi. The representatives of Fusarium are typical facultative

USSR

RUNOV, V. I., and BORODIN, G. I., Physiology and Biochemistry of the Agent of Cotton Wilt, Tashkent, "Fan," 1970, 182 pp

parasites. When interacting with soil microflora and plants, they act as para sites, antagonists, symbionts, and metabionts (Bekker, $1967_{1,2}$). The representatives of Verticillium are characterized by a more vividly expressed parasitism; the pathogenic forms (Verticillium dahliae) are preserved mainly on the vegetative residue in the oil (Verner, Malyshkin, and Kvint, 1941; Benken, 1963_2; Fedotova et al, 1963; Benken and Khakimov, 1964).

The ability of the fungi to penetrate into and affect the plant depends on the aggressiveness of the fungus, the cotton variety, the phase of the plant's development, chemical composition of the soil, moisture, temperatures, and so on (Ioffe and Askarova, 1964; Urunov, 1964; Askarova and Manadaliyev, 1966; Viytenok, 1966; Sadasivan, 1950). It is known that different varieties of cotton are not similarly affected by wilt and that externally the disease is most perceptible at certain phases of the plant's development. Phosphorus-potassium fertilizers help in reducing the number of wilt-affected plants and increasing the quantity of Acetinomyces -- antagonists of Verticillium dahliae in the soil. Nitrogen fertilizers, to the contrary, increase the percentange of diseased plants and the number of fungi and bacteria in the cotton

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USSR

RUNOV, V. I., and BORODIN, G. I.; Physiology and Biochemistry of the Agent of Cotton Wilt, Tashkent, "Fan," 1970, 182 pp

rhizosphere (Uzenbayev, 1964; Tupenevich and Kenlikiyev, 1964; Tupenevich and Egamov, 1964; Kuznetsov, 1964; Isayev, 1964; Bekker, 1967$_1$).

The biochemical and particularly the pathogenic lability of the agents of wilt are of considerable interest. When new and highly resistant varieties of cotton are introduced, almost no wilt can be noted during the first year of the plant's cultivation. Within a few years, however, this variety begins to lose its resistant qualities, and just as the susceptible varieties of the plant, is affected by the disease (Solov'yeva and Mukhamedova, 1964). Such accommodation to new conditions of existence and the appearance of certain new mutual relationships with the plant-host are linked with metabolic changes in the parasite, and first of all its enzyme systems. There is no doubt that the struggle against cotton wilt as against any other disease will be successful with increase in the knowledge of the physiological and biochemical characteristics of the agent and the toxic substances which determine the pathogenesis.

The work was carried out at the Laboratory of Biochemistry and Microorganisms of the Microbiology Section of the Academy of Sciences Uzbek SSR. Results of investigations on the biochemistry and physiology of the agent of wilt con-

USSR

RUNOV, V. I., and BORODIN, G. I., Physiology and Biochemistry of the Agent of Cotton Wilt, Tashkent, "Fan," 1970, 182 pp

ducted in the period 1962 through 1969 and literature data are included.

Table of Contents

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USSR

RUNOV, V. I., and BORODIN, G. I., Physiology and Biochemistry of the Agent of Cotton Wilt, Tashkent, "Fan," 1970, 182 pp

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USSR UDC 582.288:616.9-098:581.12:633.51

SALIKHOVA, B. S., BORODIN, G. I., RUNOV, V. I., and CHERPENKO, L. I., Microbiology Division, Academy of Sciences Uzbek SSR

"The Effect of the Toxic Compounds of Verticillium dahliae Mycelium on Gas Exchange in Cotton Leaves"

Tashkent, Uzbekskiy Biologicheskiy Zhurnal, No 5, 1970, pp 28-31

Abstract: The mycelium and culture fluid of V. dahliae contain a group of toxic substances that appear to play a major role in the wilting of cotton plants. When these substances are applied to the plants, the leaves show signs of Verticillium wilt (loss of turgor; appearance and luminescence of yellow spots), suggesting that the mechanism of action of the toxic substances produces changes in the chloroplasts and, consequently, in the gas exchange of the leaves. Changes in the intensity of respiration and photosynthesis in cotton leaves following application of the toxic substance of V. dahliae (yellow pigment) were studied using a gas analyzer. The yellow pigment markedly increased respiration, which reached a peak after 20 hours. Exposure of the leaves to light or addition of ADP or NAD resulted in secondary activation of respiration. After 72 hours the rate of respiration decreased; after 96 hours it was below that of the controls.

USSR

SALIKHOVA, B. S., et al, Uzbekskiy Biologicheskiy Zhurnal, No 5, 1970, pp 28-31

Photosynthesis was simultaneously suppressed. The yellow pigment impaired the regulatory mechanism of the cells by disrupting phosphorylation in the mitochondria and chloroplasts. Thus, cotton plants affected with Verticillium wilt are apparently killed as a result of impairment of gas exchange in the leaves.

2/2

USSR

UDC: 582.288.581.19

GUSEINOV, V. A. and RUNOV, V. I., Microbiology Division, Academy of Sciences Uzbek SSR

"Some Characteristics of Nucleic Acids in Verticillium Fungi"

Tashkent, Uzbekskiy Biologicheskiy Zhurnal, No 1, 1971, pp 20-22

Abstract: Differences in nucleic acid content and nucleotide composition (guanine, cytosine, adenine, thymine) of DNA in pathogenic fungus (V. dahliae Kleb.) and nonpthogenic fungus (V. lateritium Berkel) were studied. Determination of DNA and RNA in mycelia by the Zsanev and Markov method and determination of nucleotide composition according to the Vanyushin method showed that in V. dahliae, a slow increase in DNA and a fast increase in RNA take place within 10-14 days. In addition, RNA content decreased by the 20th day, while the DNA content remained unchanged. In the case of V. lateritium, no change was observed in DNA content with aging of the culture, whereas the RNA content was slightly larger than in V. dahliae. Nevertheless, the character of the change in RNA content was the same for both fungi. In DNA of V. dahliae, guanine and cytosine are predominant, while all nucleotides exist in equimolar quantities in the DNA of V. lateritium. The ratio of purines to pyrimidines in DNA of both fungal species is close to one.

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1/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--ISOLATING TOXIC SUBSTANCES FROM VERTICILLIUM DAHLIAE -U-

AUTHOR-(04)-CHEPENKO, L.I., SALIKHOVA, B.S., BORODIN, G.I., RUNOV, V.I.

COUNTRY OF INFO--USSR

SOURCE--UZB. BIOL. ZH. 1970, 14(2), 71-2

DATE PUBLISHED-------70

R

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROCESSED PLANT PRODUCT, PLANT TOXIN, FILTRATION, CENTRIFUGATION, ELECTROPHORESIS, PAPER CHROMATOGRAPHY, THIN LAYER CHROMATOGRAPHY, BIOLOGIC PIGMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0018 STEP NO--UR/9079/70/014/002/0071/0072

CIRC ACCESSION NO--AP0137217

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137217

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO METHODS WERE USED TO EXT. TOXIC SUBSTANCES FROM V. DAHLIAE IN AMTS. SUFFICIENT FOR ANAL. (1) V. DAHLIAE MYCELIA WERE HOMOGENIZED REPEATEDLY IN DISTD. WATER AND FILTERED. AFTER SATN. WITH (NH SUB4) SUB2 SO SUB4, THE FILTRATE AND CULTURE FLUID WERE EXTD. WITH BENZYL ALC. (2) AQ. EXTS. OF MYCELIA AND CULTURE FLUID WERE MIXED WITH NACL AND EXTD. SEVERAL TIMES WITH PHOH-CHCL SUB3 (1:1). IN EACH CASE, AFTER ADDN. OF 3 VOLS. OF ET SUB2 O, THE ORG. PHASE WAS EXTD. WITH WATER. THE AQ. EXTS. WERE CONCD. AT ROOM TEMP., AND ANY EMULSION WAS REMOVED BY FILTRATION OR CENTRIFUGATION. THE ISOLATED SUBSTANCES WERE SEPD. BY HORIZONTAL PAPER ELECTROPHORESIS INTO YELLOW AND RED PIGMENTS AND SUBSTANCES WHICH FLUORESCED IN UV LIGHT. PAPER, THIN LAYER, AND DEAE-CELLULOSE CHROMATOG. REVEALED 2 YELLOW, 3 RED, AND 3 FLUORESCENT COMPONENTS. SPECTRAL ANAL. WAS ALSO PERFORMED IN THE UV AND VISIBLE REGIONS. BOTH EXTN. PROCEDURES YIELDED THE SAME GROUPS OF TOXIC SUBSTANCES, IN PURER FORM AND IN SHORTER TIME THAN WAS PREVIOUSLY POSSIBLE. THE PHOH-CHCL SUB3 METHOD IS PREFERRED SINCE LESS EMULSION FORMS.

UNCLASSIFIED

USSR

UDC 669.14.018.45.621.438

TERESHKOVICH, A. S., Engineer, RUNOVA, A. YE., Candidate of Technical Sciences, ZHAKOVSKAYA, I. S., GONSEROVSKAYA, T. S., Engineers, Central Scientific Research Institute of Machine Building Technology, Leningrad Metal Plant

"Heat-Resistant Steel TsZhl3 for Cast Parts of Gas Turbines"

Teploenergetika, No 5, 1970, pp 23-25

Abstract: On the basis of the investigation of a series of experimental variants of alloys for cast parts of gas turbines, the composition of steel 3Kh16N22V6B (TsZhl3) was selected as the optimal one from the point of view of surface properties and weldability: 0.25-0.30% C, 15-17% Cr, 21-23% Ni, 5.5-6.5% W, 0.8-1.2% Nb. Details on the production and application of the steel are presented. The steel is recommended for the production of profile castings of the guiding units of gas turbines and other similar subassemblies with a working temperature of up 750° C.

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USSR

UDC 616.9-036.21-084.4

TER-KARAPETYAN, A. Z., RUNOVA, G. A., and YASHKOVA, S. A., Central Institute of Epidemiology, Moscow

"Indices of Epidemiological Service Rendered to the Population According to Reports of Sanitary Epidemiological Stations"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, Jul 70, pp 39-44

Abstract: Form 36, routinely filled out by all Soviet sanitary epidemiological stations, provides detailed information on a great variety of infectious diseases, especially on trends over a period of years and in different parts of the country. It is helpful in assessing the health status at a given time and in planning preventive measures. Form 36 has three sets of indices. The first applies to individual patients and covers completeness of hospitalization, timeliness of hospitalization, laboratory tests, confirmation of diagnoses, etc. The second set of indices concerns activity in epidemic foci, including frequency of detecting a source of infection, completeness of epidemiological inspection of foci, bacteriological examination of individuals who had contact with sick persons, etc. The third set involves systematic bacteriological examinations of mandatory groups (food handlers, workers in central water supply installations, institutionalized

USSR

TER-KARAPETYAN, A. Z., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, Jul 70, pp 39-44

children). The shortcomings of Form 36 are analyzed, and some suggestions for improvement are made.

USSR

UDC 615.214.32.099

MITROFANOV, V. S., RUNOVA, M. F., UL'YANOVA, O. V., and PORFIR'YEVA, R. P., Institute of Pharmacology, USSR Academy of Medical Sciences, Moscow

"Evaluation of the Toxicity of Fluoracisine"

Moscow, Farmakologiya i Toksikologiya, No 5, Vol XXXIV, Sep-Oct 71, pp 540-542

Abstract: Fluoracisine (hydrochloride 10 (β -diethylaminopropionil)-2-trifluoromethylphenothiasine) is an antidepressant whose possible undesirable side-effects is of medical interest.

Heart action, respiration, liver function and blood sugar were tested in groups of dogs administered 2.5 mg/kg fluoracisine daily for 30-45 days followed by an increase to 5.0 mg/kg for the next 25-35 days. A group of rats was also tested.

No effect on the cardiovascular system or liver was observed. However, skin lesions and a tendency to weight loss, as well as increased excitability, were produced. It is concluded that long-term administration of fluoracisine in effective dosages produces little or no toxic effect.

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USSR

UDC 576.311.1

MAKSIMOVA, G. A., and RUNOVA, V. F., Biochemistry Laboratory, State Control Institutes of Medical Biological Preparations imeni L. A. Tarasevich, Ministry of Health USSR

"Kinetics of the Reaction of Anthrax Allergen and Nitrous Acid"

Moscow, Biokhimiya, No 5, 1971, pp 965-169

Abstract: Treatment of anthrax allergen with nitrous acid resulted in the diazotization of tyrosine and tryptophan and deamination of free NH_2 groups. The rate of both reactions varied with the concentration of HNO_2. 0.56 M nitrous acid quickly inactivated (within 5 min) the allergen (by 40%) while sharply decreasing the concentration of the phenol, indole, and NH_2 groups. Treatment of the allergen with 0.11 M HNO_2 inactivated the allergen more slowly (40% within 48 hours) and gradually decreased the concentration of the above-mentioned groups. The rate of the deamination reaction was higher than the rate of diazotization of tyrosine. Since the rate of inactivation of the allergen was equal to that of the diazotization of tyrosine, there would appear to be a relationship between the specific activity of the anthrax allergen and the phenol groups. The phenol groups may be the

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USSR

MAKSIMOVA, G. A., and RUNOVA, V. F., Biokhimiya, No 5, 1971, pp 965-969

determinant of the allergen or may perform a structural function by creating a definite conformation in the region of the determinant. The amino and indole groups are an insignificant factor in the allergen's activity.

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USSR UDC 576.311.1

MAKSIMOVA, G. A., and RUNOVA, V. F., Laboratory of Biochemistry, State Control Institute of Medical Biological Preparations imeni L. A. Tarasevich, Ministry of Health USSR, Moscow

"Investigation of the Kinetics of Reaction Between Anthrax Allergen and Nitrous Acid"

Moscow, Biokhimiya, Vol 36, No 5, 1971, pp 965-969

Abstract: When nitrous acid is added to a solution of anthrax allergen and the mixture is kept in an ice bath under constant stirring, two reactions take place: diazotization of tyrosine and tryptophan and deamination of free NH_2 groups. The rate of both reactions depends on the concentration of nitrous acid. With a final 0.56 M nitrous acid in the mixture, the allergen is inactivated 40% during the first 5 minutes and, at the same time, the concentration of phenol, indole, and amino groups markedly decreases. With a final 0.11 M nitrous acid in the mixture, it takes 48 hours for the allergen to be 40% inactivated, and the concentration of the above-mentioned groups decreases less rapidly. Since the rate of allergen inactivation is the same as the rate of tyrosine diazotization, it was concluded that the toxicity of anthrax allergen is determined by phenol groups, while indole and amino groups are of no significance.

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USSR

UDC 576.851.511.097.207

MAKSIMOVA, G. A. and RUNOVA, V. F., Control Institute for Biomedical Preparations imeni Tarasevich

"N-Acetylation of Anthrax Allergen"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, 1971, p 144

Abstract: The NH_2 groups of anthrax allergen were blocked and the relationship of these groups to the biological activity of the preparation was studied. N-acetylation was carried out with acetic anhydride. The activity of the modified allergen was found in bioassays on guinea pigs to be virtually the same as that of crude and control allergens. Since the specific activity of anthrax vaccine did not change after acetylation, although about 70% of the NH_2 groups were blocked and about 40% of the indole groups were modified, it was concluded that the activity of the allergen was not attributable to the amino or indole groups.

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USSR UDC 620.193.4:669.24'28

SVISTUNOVA, T. V., RUNOVA, Z. K., and SAKHAROV, A. A., Central Scientific Research Institute of Ferrous Metallurgy

"Knife-Line Corrosion in Ni-Mo Alloys"

Moscow, Metallovedeniye, No 5, May 70, pp 2-6

Abstract: An investigation was made of the specific and combined effect of carbon (0.02 and 0.04%) and iron (5% max) on the degree of knife-line corrosion in N70M27 and N70M27F (1.45-1.65% V) alloys and of their crystal structure and phase composition after heating to 1150-1300°C.

Sheets 3 mm thick were water quenched from 1150°C after furnace heating, and then quenched after induction heating at 1000-1300°C and after welding. Welding was done on sheet measuring 3 x 100 x 150 mm using the TIG method.

Analysis of the obtained data revealed that in the process of superheating the heat-affected zone of welds (above 1250°C), structural changes take place that promote knife-line corrosion in the N70M27F alloy with 0.04% C and 1.5-2% Fe. Dissolving of the M_6C carbides and redistribution of the alloying elements begins with carbon, which is concentrated in the grain boundaries and causes the formation of eutectic dendritic carbides M_6C and Mo_2C, which leads to the formation of

USSR

SVISTUNOVA, T. V., et al., Metallovedeniye, No 5, May 70, pp 2-6

molybdenum-enriched boundary zones.

To inhibit knife-line corrosion in the N70M27F alloy, the carbon and iron content should not exceed 0.02 and 1%, respectively. Emergence of knife-line corrosion in the superheated zone of N70M27F weld samples with an increased iron and carbon content causes the formation of a solid matrix of M_6C and Mo_2C dendritic carbides in the grain boundaries.

Knife-line corrosion in Ni-Mo alloys can be eliminated by heat treating the weld joints at 1050-1100°C with subsequent air or water quenching.

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Acc. Nr. AP0053887 Abstracting Service: CHEMICAL ABST. 6-70 Ref. Code: 4P0078

117300a Reaction of vanadium bromide with hydrogen, oxygen, and water vapor. Amirova, S. A.; Rupcheva, V. A.; Romanová, T. V. (USSR). *Zh. Neorg. Khim.* 15(2), 330–4 (Russ). Dehydration of $VBr_3.6H_2O$ is accompanied by the hydrolysis of VBr_3 with the intermediate reaction products being $VOBr_2$ and $VOBr_1$. In H atm, VBr_3 was reduced to VBr_2. The latter was stable up to 1000°. VBr_3 and VBr_2 were oxidized with O at 345° to V_2O_5. VBr_2 reacted with steam at 180° and VBr_3 at 420° to form V_2O_3. HMJR

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REEL/FRAME 19830964

18

Acc. Nr: AP0053886 Abstracting Service: CHEMICAL ABST. 6-70 Ref. Code: UR 0078

117295c Thermochemical transformations of chromium and manganese bromides. Rupcheva, V. A.; Romanova, T. V.; Amirova, S. A. (USSR). *Zh. Neorg. Khim.* 1970, 15(2), 324-9 (Russ). Reactions of $CrBr_3.6H_2O$ and $MnBr_2.4H_2O$ in N, oxidizing, or reducing atms. at elevated temps. were detd. by thermogravimetry and anal. of reaction products chem. or by x-ray diffraction. In inert atm. the reactions proceeded according to: $CrBr_3.6H_2O_{(s)} \xrightarrow{120^\circ} CrBr_3.5H_2O_{(l)} \xrightarrow{160^\circ} CrBr_3.4H_2O \xrightarrow{400^\circ} CrBr_3 + Cr_2O_3 \xrightarrow{830^\circ} CrBr_2 + Cr_2O_3$; and $MnBr_2.4H_2O_{(s)} \xrightarrow{87^\circ} MnBr_2.4H_2O_{(l)} \xrightarrow{145^\circ} MnBr_2.H_2O \xrightarrow{190^\circ} MnBr_2 \xrightarrow{678^\circ} MnBr_2$. ΔH of oxidn. of $CrBr_2$ and $CrBr_3$ to Cr_2O_3 is −55,400 and −66,600 cal/mole, resp., and that of $MnBr_2$ to Mn_3O_4 or Mn_2O_3 is −28,070 and −32,300 cal/mole, resp. Anhyd. $CrBr_3$ and $CrBr_2$ reacted with steam to form Cr_2O_3 and ΔH of these reactions is 16,900 and 10,500 cal/mole, resp. Reaction of $MnBr_2$ with steam gave MnO and Mn_3O_4, with ΔH 35,860 and 39,400 cal/mole, resp. $CrBr_3$, $CrBr_2$, and $MnBr_2$ were reduced by H to $CrBr_2$, Cr, and Mn, resp., and ΔH of these reactions are 8340, 56,580 and 72,800 cal/mole, resp.

HMJR

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REEL/FRAME
19830963

18

USSR

UDC 621.313.333:538.4

KALNYN', A. Ya., NIKRYUKOV, Ch. K., PETROVICHA, R. A., RUPENEYT, V. A., and ULMANIS, L. Ya.

"Flat Induction Pump Characteristics With Heterogeneous Electromagnetic Force Distribution Along the Channel Width"

Riga, Magnitnaya Gidrodinamika, No 4, Oct-Dec 71, pp 94 -98

Abstract : Velocity profiles and p(Q)-characteristics of magnetohydrodynamic (MHD) machines with accounting for local slipping along the channel width with non-uniform distribution of electromagnetic forces are calculated and compared with experimentally derived results. The latter comply satisfactorily with theoretical calculations. The velocity profiles calculated for various flow rates Q and a current load of $A=0.27 \times 10^5$ A/m show that at pumping conditions a reverse flow exists on channel borders. The investigation revealed that the calculation of MHD-machines by simultaneous accounting for electromagnetic and hydraulic processes results in more precise conformity of theoretical and experimental data. Five illustr., four formulas, six biblio. refs.

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USSR

UDC: 69.058.5

RUPPENEYT, K. V., DENISOV, V. N., TARASOVA, I. V., GOLUBEV, A. V., Scientific Research Institute of Foundations and Subterranean Structures

"A Method of Studying Rock Masses and Liners of Subterranean Structures"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7, Mar 72, Author's Certificate No 329417, Division G, filed 26 Jun 70, published 9 Feb 72, p 163

Translation: This Author's Certificate introduces a method of studying rock masses and liners of subterranean structures by measuring stresses in a drilled shaft. As a distinguishing feature of the patent, accuracy is improved by returning the rock mass to its initial position after measuring the stresses in the drilled shaft, using pickups to register the pressure in the rock mass.

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1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ADSORPTION PROPERTIES OF CRYSTALLINE MODIFICATIONS OF IRON HYDROXIDES AND OXIDES. III. CHEMISORPTION OF WATER VAPOR -U-
AUTHOR-(02)-LIEPINA, L., RUPLIS, A.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SER. 1970, (1), 33-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ADSORPTION, ISOTHERM, CHEMISORPTION, WATER, IRON COMPOUND, IRON OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0679 STEP NO--UR/0464/70/000/001/0033/0037

CIRC ACCESSION NO--AP0119587
UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119587

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADSORPTION ISOTHERMS OF WATER VAPOR WERE MEASURED ON THE SURFACE OF ALPHA AND GAMMA FE(OH) SUB3 TREATED AT 25-300DEGREES. CHANGES IN THE EXTENT OF CHEMISORPTION CHARACTERIZED BY A DECREASE OF THE AREA OCCUPIED BY A SINGLE WATER MOL. (SIMILAR TO 20-30 TO SIMILAR TO 10 ANGSTROM PRIME2) INDICATE THAT THE TRANSITIONS, ALPHA FE(OH) SUB3 YIELDS GAMMA FE SUB2 O SUB3 AND GAMMA FE(OH) SUB3 YIELDS GAMMA FE SUB2 O SUB3, OCCUR AT 200-50DEGREES AND 200-25DEGREES, RESP. CHEMISORPTION TAKES PLACE ONLY ON THE DEHYDROXYLATED SURFACE OF THE SAMPLES. FACILITY: RIZH. POLITEKH. INST., RIGA, USSR.

UNCLASSIFIED

USSR

UDC: 621.374.5

YAKIMENKO, V. I., IVANOV, V. I., RUSAK, Yu. M.

"A Device for Delaying Radio Pulse Signals"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 32, Nov 71, Author's Certificate No 319060, Division H, filed 5 Feb 70, published 28 Oct 71, p 173

Translation: This Author's Certificate introduces a device for delaying radio pulses. The unit contains a control signal oscillator, a controlling signal pickup and a multistage delay channel where each stage consists of a delay line with uniformly distributed taps, a tap commutator, a memory unit and multichannel analyzer controller. As a distinguishing feature of the patent, the precision and stability of delay are improved by connecting the inputs of the analyzers for all stages of the channel through switches gated by the controlling signal pickup to the corresponding inputs of the tap commutators, the inputs of the reference channels being connected through a switch gated by the controlling signal pickup to the control signal oscillator. The outputs of the analyzer channels are connected

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USSR

YAKIMENKO, V. I. et al., Soviet Patent No 319060

through the corresponding junctions of the memory and controller module to the appropriate inputs of the tap commutators.

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1/2 015 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--ALKYLATION OF BENZENE BY A PROPANE PROPYLENE FRACTION ON ALUMINUM OXIDE PROMOTED BY BORON FLUORIDE -U-

AUTHOR-(02)-KOZOREZOV, YU.I., RUSAKOV, A.P.

R

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (2), 42

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZENE, ALKYLATION, ISOPROPYL BENZENE, BORON FLUORIDE, ALUMINUM OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1881 STEP NO--UR/0318/70/000/002/0042/0042

CIRC ACCESSION NO--AP0112861

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--09OCT70
CIRC ACCESSION NO--AP0112861
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OPTIMUM ALKYLATION CONDITIONS WERE AT 75-100DEGREES, 5 ATM, C SUB6 H SUB6 VOL. VELOCITY 1.0-1.5 HR PRIME NEGATIVE1, 5-7:1 C SUB6 H SUB6-C SUB3 H SUB6. WITH 0.2PERCENT BF SUB3 BASED ON C SUB6 H SUB6. THE CONVERSION OF C SUB3 H SUB6 IN 1 PASS ATTAINED 97PERCENT TO YIELD ALKYLATE BASED ON C SUB3 H SUB6 INCLUDING ISO-PRPH. FACILITY: KRASNODAR. FILIAL VSES. NAUCH. ISSLED. INST. NEFTEKHIM., KRASNODAR, USSR.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--20NOVTO

1/3 018

TITLE--HETEROCYCLIC SEMICARBAZONES AND THIOSEMICARBAZONES. IX. CYCLIZATION OF N,METHYLISATIN BETA,2,METHYLTHIOSEMICARBAZONE -U-

AUTHOR-(03)-IOFFE, I.S., TOMCHIN, A.B., RUSAKOV, E.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 682-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CYCLIZATION, KETONE, BROMINATED ORGANIC COMPOUND, BENZENE DERIVATIVE, CHEMICAL SYNTHESIS, TRIAZINE, MERCAPTAN, PHOTOEFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1181 STEP NO--UR/0079/70/040/003/0682/0689

CIRC ACCESSION NO--AP0128602

UNCLASSIFIED

2/3 018 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128602

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO 96.5 G O,BRC SUB6 H SUB4 ME WAS ADDED OVER 2 HR AT 90DEGREES UNDER UV LIGHT 29 ML BR TO YIELD O,BRC SUB6 H SUB4 CH SUB2 BR, WHILE FURTHER ADDN. OF 29 ML BR IN 4 HR, HEATING TO 150DEGREES AND REFLUXING THE PRODUCT WITH H SUB2 O AND CACL SUB3 8 HR GAVE 34.5PERCENT O,BRC SUB6 H SUB4 CHO, B SUB9 99.5DEGREES. O,BROMOMANDELIC ACID OXIDIZED WITH KMNO SUB4 IN AQ. NAOH AT 10DEGREE GAVE 23PERCENT O,BRC SUB6 H SUB4 CO SUB2 H AND 43.6PERCENT O,BROMOPHENYLGLYOXYLIC ACID (I), M. 97-102DEGREES. O,BRC SUB6 H SUB4 COCN, M. 64DEGREES, FAILED TO REACT SATISFACTORILY WITH CU SUB2 (CN) SUB2 BUT, KEPT WITH CONCD. HCL 1 DAY THEN HEATED 1 HR, GAVE 42.8PERCENT I; THIOSEMICARBAZONE M. 219DEGREES. THE ACID AND 2,METHYLTHIOSEMICARBAZIDE GAVE THE 2,METHYLTHIOSEMICARBAZONE (II), M. 156DEGREES; SIMILAR DERIV. OF O,NITROPHENYLGLYOXYLIC ACID M. 145DEGREES. II AND M NACH, REFLUXED 10 MIN, GAVE 83PERCENT 2,METHYL,3,MERCAPTO,5,HYDROXY,6,(2,BROMOPHENYL),1,2,4,TRIAZINE, M. 235.5DEGREES, WHICH DID NOT REACT WITH MENH SUB2 ALONE, WHILE WITH CU CATALYST REACTIONS OTHER THAN SUBSTITUTION TOOK PLACE. SIMILARLY WAS PREPD. 55PERCENT 2,METHYL,3,MERCAPTO,5,HYDROXY,6,(2,NITROPHENYL),1,2,4,TRIAZINE, M. 247.5DEGREES, WHICH WITH POWD. FE IN ALC. AQ. HCL GAVE 97.5PERCENT 2,METHYL,3,MERCAPTO,5,HYDROXY,6,(2,AMINOPHENYL),1,2,4,TRIAZINE, M. LARGER THAN 330DEGREES. SIMILARLY WAS PREPD. 3,MERCAPTO,5,HYDROXY,6,(2,AMINOPHENYL),1,2,4,TRIAZINE, M. ABOVE 300DEGREES.

UNCLASSIFIED

3/3 016 UNCLASSIFIED

CIRC ACCESSION NO--AP0128602 PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--TREATMENT OF N,METHYLISATIN BETA,(2,METHYLTHIOSEMICARBAZONE) WITH ALKALI GAVE NOT ONLY 3,9,DIMETHYL,2,3,DEHYDRO,1,3,4,TRIAZACARBAZOLE,2,THIONE, BUT ALSO 2,METHYL,3,MERCAPTO,5,HYDROXY,6,(2,(METHYLAMINO)PHENYL),1,2,4,TRIAZINE, M. 211DEGREES.

UNCLASSIFIED

USSR

UDC 535.243.25

GRISHIN, V. G., Candidate of Technical Sciences, and RUSAKOV, L. A., Engineer

"Automatic Series-Connected Dynamic Spectrograph"

Moscow, Pribory i Sistemy Upravleniya, No 8, Aug 70, pp 19-21

Abstract: The described spectrograph applies the method of dynamic spectroscopy based on the production of a three-dimensional intense contour which is close to the contour of the amplitude momentary signal spectrum in time -- frequency -- intensity coordinates. In comparison with visual oscillographic and spectrographic methods, the described method is characterized by a more extensive applicability and improved quality in distinguishing complex acoustic signals. The resonance frequency and the damping of the filter, in the capacity of which is employed an analog model of oscillating circuit (AMOC), can be varied by simple means and according to any rule within a wide range. The selection of one of the spectrograph's seven frequency ranges (1—125; 2—250; 4—500; 8—1000; 16—2000; 32—4000; and 64—8000 hz) is realized through a change-over switch at the expense of variation of the amounts of two capacitances. An equal mean density of details on all parts of the representation is attained by equalizing the filter transmission band for all frequencies. The working principle of the

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720006-0"

USSR

GRISHIN, V. G., and RUSAKOV, L. A., Pribory i Sistemy Upravleniya, No 8, Aug 70, pp 19-21

spectrograph is illustrated in the flow sheet and the AMOC and transmitter diagrams. Numerical characteristics of the four AMOC amplifiers, developed by the Physics Faculty at Moscow State University, and the function of their voltage output variations are presented. The transmitter block serves as recipient of the signal modulating the beam brightness of the oscilloscope which is provided with a darkening system of the beam's backward run. The amplitude-frequency characteristic of the signal analyzer, that is to say, the dependence of the continuous voltage output on the frequency with constant signal amplitude at the input of the AMOC, represents a straight line outgoing from the origin of coordinates, as the quality factor of the contour increases linearly in relation to frequency. The dynamic amplitude characteristic of the spectrograph's through channel is practically linear in the range of 46 db; the dynamic range of the AMOC amounts to 70 db. The time required to get the dynamic spectrogram of a signal is $T = (t_s + t_d) \cdot n$, where t_s = signal duration, t_d = damping time of transients when switching the contour ($t_d \approx 1$ sec), and n = 125 (number of lines). The device can be used to analyze heart defects by sound. Phonocardiagrams and dynamic spectrograms of heart sounds in mitral and aortic stenosis are shown.

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USSR

UDC 576.851.511.097.2.095.18:547.281.1

MAKSIMOVA, G. A., and RUNOVA, V. F., State Control Institute of Medical Biological Preparations imeni Tarasevich

"Effect of Formaldehyde on the Activity of Anthrax Allergen"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 10, Oct 70, pp 59-62

Abstract: The anthrax allergen is a protein-polysaccharide-nuclein complex containing 80-86 percent protein. The protein fraction represents the active component. Formaldehyde, which reduces the activity of the allergen, interacts with amino, phenol, and indole groups of the allergen protein, forming methyl bridges between them. The present study was conducted to establish which of these groups represent the active component of the anthrax allergen. The method described previously by Takeya and Mifuchi was used, in which the anthrax allergen was allowed to interact with 1.5 percent and 20 percent formaldehyde solutions at pH 9.1. The activity of all samples decreased about 50 percent, regardless of the formaldehyde concentration. Tyrosine and tryptophan concentrations were reduced 30 percent and 70 percent, respectively; the concentration of free amino groups decreased with increasing formaldehyde concentration. After the samples were heated to 100°C for 30

USSR

MAKSIMOVA, G. A., and RUNOVA, V. F., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 10, Oct 70, pp 59-62

minutes, the biological activity of the allergen was completely restored. At the same time, the concentration of phenol groups returned to normal while that of amino groups and tryptophan remained 50-60 percent below the initial level. On the basis of these results, it was concluded that the activity of the anthrax allergen was associated with the phenol groups, while the amino and indole groups were apparently of no significance in this activity.

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UDC 669.552

USSR

GOROKH, A. V., and RUSAKOV, L. N.,

Petrograficheskiy Analiz Protsessov v Metallurgii (Petrographic Analysis of Processes in Metallurgy), Moscow, "Metallurgiya," 1973, 288 pp

Translation of Annotation: This book reviews the many years of petrographic study of the authors in the area of high-temperature reduction of metals. For example, studies of the features of the behavior of mineral compounds during electro- and metallo thermal treatment together with phenomena occurring during the melting of metals related to scum formation and the reforming and destruction of refractory materials in metallurgical furnaces show the possibility of using petrographic methods in the study of mechanisms of different metallurgical processes. The basic thrust of this book is directed toward the elucidation of principles of the evolution of mineral compounds in reducing conditions.

The book is intended for specialists working in areas of metallurgy, chemical technology, experimental technology, mineralogy, and petrology, and also for teachers and students in universities. 126 illustrations, 41 tables, 284 references

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USSR

GOROKH, A. V., and RUSAKOV, L. N., "Metallurgiya," 1973, 288 pp

USSR

GOROKH, A. V., and RUSAKOV, L. N., "Metallurgiya," 1973, 283 pp

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UDC: 669.162.12:622.782.004.12

USSR

OSTROUKHOV, M. Ya., RUSKOVA, A. G., PERMINOV, N. I., RUSAKOV, L. N., VYATKIN, G. P., and ABROSIMOV, A. S.

"Structural Specifics and Metallurgical Properties of Pellets Made of Titanium-Magnetite Ore Concentrates. Report 1"

Izv. VUZ, Chernaya Metallurgiya, No 6, 1970, pp 33-37

Abstract: Pellets made of ilmenite-titano-magnetite ores from the southern Urals (60.87% Fe; 10.14% TiO_2) with basicity (CaO: SiO_2) 0.40-1.38, roasted under isothermal conditions in a current of air (60 l/hr) for 30 minutes were studied. The composition and structure of the pellets were determined by the roasting temperature. With low-temperature roasting (1150-1220° C), the processes of sintering and recrystalization occur in parallel with oxidation of the ore grains, and highly porous, but low-strength pellets are produced consisting of hematite, pseudobrookite, calcium ferrites (influxed pellets) and silicate glass. With high-temperature roasting (1250-1300° C), oxidation precedes the recrystallization and sintering processes of the titano magnetite. These pellets have increased strength but low porosity, and consist of hematite (solid solution) and silicate binder; the predominate mass of the titanium oxides is present as a solid solution consisting of hematite. Two illustrations; one table; three biblio. refs.

1/1

UDC 534.222.2

USSR

LEBEDEV, M. A. and RUSAKOV, M. M. (Chelyabinsk)

"Obtaining an Explosion With a High Concentration of Energy"

Moscow, Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 1, 1973, pp 168-170

Abstract: Results are described of experiments on the head-on collision of clusters of tungsten particles with a density of approximately 1 g/cm^3, moving at a speed of 24 km/sec. As a result of the collision, there takes place an explosion with an energy concentration which is more than 50 times greater than the energy concentration in high explosives. 2 figures. 4 references.

1/1

UNCLASSIFIED PROCESSING DATE--23OCT70

1/2 025

TITLE--USE OF A BOLOMETRIC METHOD TO MEASURE RADIANT LOSSES IN AN IMPLUSE PLASMA ACCELERATOR -U-

AUTHOR-(02)-DEREVSHCHIKOV, V.A., RUSAKOV, N.V.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, TEPLOFIZIKA VYSOKIKH TEMPERATUR, VOL 8, NO 1, JAN-FEB 70, PP 17-21

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PLASMA ACCELERATOR, BOLOMETER, RADIATION RECEIVER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0294/70/008/001/0017/0021

PROXY REEL/FRAME--1997/1803

CIRC ACCESSION NO--AP0120494

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--23OCT70

2/2 025
CIRC ACCESSION NO--AP0120494
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. A PROCEDURE IS PROPOSED FOR MEASURING RADIANT LOSSES IN AN EROSION IMPLUSE PLASMA ACCELERATOR BY USING RAPID RESPONSE RADIATION RECEIVERS PLACED A CONSIDERABLE DISTANCE FROM THE RADIATING VOLUME OF THE PLASMA TO ISOLATE THE EFFECT OF BOMBARDMENT BY PLASMA PARTICLES FROM THE EFFECT OF RADIATION. LOSSES OF ENERGY TO RADIATION ARE MEASURED IN END TYPE AND COAXIAL ACCELERATOR MODELS. DIAGRAMS OF THE ACCELERATOR MODELS ARE SHOWN IN THE FIGURE. IN THE END TYPE MODEL, LOSSES ARE 16-24PERCENT FOR AN ALUMINUM CENTRAL ELECTRODE AND 7-10PERCENT FOR A LITHIUM ELECTRODE. LOSSES COME TO 3-5PERCENT FOR THE COAXIAL MODEL. MOST OF THE RADIANT LOSSES FALL INTO THE VACUUM ULTRAVIOLET SPECTRAL REGION, WHICH POINTS UP THE UNDESIRABILITY OF USING OPTICAL FILTERS IN SUCH MEASUREMENTS. THE AUTHORS THANK YU. P. RYLOV FOR INTEREST IN THE WORK AND DISCUSSION OF THE RESULTS, AND I. N. POPOV FOR ASSISTANCE IN MAKING THE BOLOMETER. 1 INITIATING ELECTRODE; 2 EXTERNAL ELECTRODE; 3 INSULATOR; 4 CENTRAL ELECTRODE. FACILITY: ALL-UNION SCIENTIFIC RESEARCH INSTITUTE OF ELECTROMECHANICS.

UNCLASSIFIED

UDC 621.397.332.2:621.317.799:531.71

USSR

ANISKOVICH, A. G., RUSAKOV, V. I.

"Selecting the Type of Scanning for Television Measuring and Control Devices"

Nekotoryye vopr. teorii i proyektir. televizionno-vychisl. sistem — V sb. (Some Problems of Theory and Design of Television Computing Systems — collection of works), Tula, 1970, pp 21-30 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4G187)

Translation: It is demonstrated that the accuracy of TV-instruments for controlling the dimensions of parts can be increased by replacing the ordinarily used line scanning by driven sweep exponential or continuous sinusoidal scanning. There are 6 illustrations and a 4-entry bibliography.

1/1

Acc. Nr: AP0040328 R Ref. Code: UR 0481

PRIMARY SOURCE: Eksperimental'naya Khirurgiya i Anesteziologiya, 1970, Nr 1 , pp 22-27

EXPERIMENTAL USE OF METHYLURACYL IN GASTRIC RESECTION

V. I. Rusakov, Kh. K. Vishagurov

The authors reports on dynamic studies of morphological changes in the wall of gastro-intestinal anastomosis, in the duodenal stump, the liver and the pancreas at different dates following gastric resection in experiment with and without the use of methyluracyl. 42 adult mongrel dogs were used. Studies showed that combined use of methyluracyl and penicillin was accompanied by clear-cut morphological changes: decrease of inflammatory infiltration in the anastomosis and in other internal organs early efter operation. By the 30th day with methyluracyl inflammatory reaction disappeared entirely.

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REEL/FRAME
19741759

USSR

UDC: 621.373.42

ARTEM'YEV, S. M., ZYRIN, S. S., RUSAKOV, V. N.

"Qualitative Comparison of Different Multiple-Tank Drift Type Self-Excited Oscillator Circuits From the Standpoint of the Possibility for Stabilization and Frequency Tuning"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron SVCh (Electronic Technology. Scientific and Technical Collection. SHF Electronics), 1970, 13, No 7, pp 805-816 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12D374)

Translation: The results of a steady-state analysis are taken as the basis for giving the characteristics of various multiple-tank drift type self-excited oscillator circuits from the standpoint of stabilization and frequency tuning. Resumé.

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UDC 681.325

USSR

RUSAKOV, V. V.

"A Converter for Changing Time Intervals to Parallel Binary Code"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 4, Feb 72, Author's Certificate No 326730, Division H, filed 21 May 70, published 19 Feb 72, p 214

Translation: This Author's Certificate introduces a converter for changing time intervals to binary parallel code. The device contains a sequential-action counter whose digital-place outputs are connected to one series of inputs of corresponding coincidence gates. As a distinguishing feature of the patent, the other inputs of the coincidence gates are interconnected by pairs through delay elements. The input of the delay element for the first digital place is connected to the output of a timing circuit whose inputs are connected to the input of the device. The outputs of the coincidence gates are connected through output delay elements to the outputs of the device.

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AA0044298

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

243099 WAVEGUIDE FILTER is a half-wave resonator in the shape of a metallised dielectric parallel-epiped which has a length of half the resonant wavelength and the same cross section as the waveguide in which it is to be installed. The coupling apertures at the resonator input and output faces are produced by removal of the metal coating along a slit-like area. 18.10.67. as 1191528/26-9 Yu.S.BONDARTSEV et al. (16.9.69.) Bul.16/5.5.69. Class 21g. Int.Cl. H03h.

AUTHORS: Bondartsev, Yu. S., Pogorelov, Ye. A., Rusakov, Yu. V.

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19770852

USSR

UDC 613.632:661.631

OZEROVA, V. V., RUSAKOVA, G. S., and KORENEVSKAYA, S. P., Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR

"The Effect of Yellow Phosphorus on the Human Organism Under Conditions of Present-Day Production of Phosphorus and of Salts Derived From It"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, Vol 15, No 11, Nov 71, pp 19-21

Abstract: A total of 337 workers exposed for 3-5 years to work in the production of yellow phosphorus were examined. They had been exposed to low concentrations of P at the maximum permissible level or slightly above it. Of the workers examined, 119 were evidently in good health, while the rest complained of headaches, pain in the region of the heart, low appetite, and recurrent pain in the region of the epigastrium and on the right side below the ribs. Disturbances of the functional state of the liver with respect to the pigment and/or protein function were found in a large number of cases, while marked symptoms of toxic hepatitis were generally absent. Densitographic investigation of the bone structure disclosed some changes in it that could be ascribed to the action of phosphorus. Determinations of Ca and phosphoric acid in the blood serum indicated that the content of Ca was normal in every case, while that of P in the blood serum was above normal in 38 cases.

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1/2 030 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--KINETICS OF THE SETTING OF LOW MOLECULAR WEIGHT ISOPRENE NITRILE COPOLYMERS STUDIED BY A SPECTRAL TECHNIQUE -U-

AUTHOR-(02)-RUSAKOVA, K.A., MARGARITOVA, M.F.

COUNTRY OF INFO--USSR

SOURCE--VVSOKOMOL. SOEDIN., SER. A. 1970, 12(3), 520-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--MOLECULAR WEIGHT, ISOPRENE, NITRILE, COPOLYMER, ACRYLONITRILE, BENZOYL PEROXIDE, TRIETHYLAMINE, HARDNESS, ACTIVATION ENERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1187 STEP NO--UR/0459/70/012/003/0520/0527

CIRC ACCESSION NO--AP0116652

UNCLASSIFIED

2/2 030 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0116652

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HARDENING KINETICS OF ISOPRENE NITRILE COPOLYMERS (I) (PREPD, BY TELOMERIZATION IN CCI SUB4 SOLN.) WITH CH SUB2:CHCN (II) IN THE PRESENCE OF BZ SUB2 O SUB2-PHNME SUB2, BZ SUB2 O SUB2-ET SUB3 N, AND (HOCH SUB2 CH SUB2) SUB3 N-BZ SUB2 O SUB2 SYSTEMS WAS STUDIED BY IR SPECTROSCOPY AT 2238 MINUS 283 CM PRIMENEGATIVE1. THE HARDENING RATES OF I WERE DETD. AS A FUNCTION OF INITIATOR CONCN. AND ITS CHEM. STRUCTURE, AND OF II CONTENT IN I. THE ACTIVATION ENERGY OF HARDENING IN THE PRESENCE OF BZ SUB2 O SUB2 AND BZ SUB2 O SUB2-ET SUB3 N WAS 9.8 AND 5.4 KCAL-MOLE, RESP. THE HARDENING RATE AND THE DEGREE OF HARDENING DEPENDED ON THE LOCATION AND LENGTH OF II UNITS.

FACILITY: MOSK. TONKOI KHIM. TEKHNOL. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED