

USSR

UDC 548.52

BEREZHKOVA, G. V., TSVETKOVA, I. N., ZAKHAROV, N. D., ROZHANSKIY, V. N.,
and KORYUKIN, V. I., Institute of Crystallography, Academy of Sciences USSR

"Growth Mechanisms of AlN Whiskers"

Moscow, Kristallografiya, Vol 16, No 5, Sep-Oct 71, pp 978-981

Abstract: The article describes results of a study of AlN whisker growth under isothermal conditions during the reduction of aluminum oxide with simultaneous nitration. The whiskers were grown in a horizontal graphite furnace in a flow of commercial nitrogen from an Al_2O_3 charge at 1950-1980° C. The resultant specimens were studied in a scanning and a transmission electron microscope and their brittle strength measured at room temperature. The results indicate both top growth from the vapor phase and bottom growth from the melt. In neither case is the presence of an axial screw dislocation a necessary condition for crystallization in whisker form. The article discusses possible growth mechanisms.

1/1

...SKY, V.N.

electron
Microscopy

Коллекция, V.N.

Электронная микроскопия

QUESTIONS OF ELECTRON MICROSCOPY
Lecture by Doctor of Physical and Mathematical Sciences V.N. Koshchikov, Moscow, U.S.S.R. (Submitted March 1974, pp 55-57)

The Seventh International Congress on Electron Microscopy was held in Grenoble, France, from 30 August to 5 September 1970. Participating in it were over 2000 delegates from 62 countries. About 1500 reports were read on questions of theory and technique of electron microscopy and its applications; 1000 abstracts, cytology, molecular biology and its applications. There also was discussion of a number of new developments of electron microscopic instrument building. An extensive group of reports, which aroused much interest and numerous discussions, was presented by the Soviet delegation.

Since one of the main parameters of an electron microscope is its resolution, much attention was given to methods of improving it, increasing resolution was given to methods being undertaken to increase contrast in the presence of high defocusing. The greatest resolution achieved in a scanning electron microscope is 5.5 Å (A. Crew and co-workers - USA) and is approaching the level of the best transmission microscope of ordinary design. In several reports (F. von and D. Villash, L. Payson and H. Bald - West Germany) there was discussion of the possibilities of increasing resolution by using special diaphragms and angular plates with a radial distribution of density.

The reports of A. Crew and J. Wall (USA), J. Sharp and S. Burrey (England), and others, were devoted to the study of the nature of the contrast obtained in scanning electron microscopy. Expansion of the volume of information about the object was achieved by the investigators by means of multipurpose

ВЕСТНИК АН УРСР Академия наук СССР - 128 -
№ 10, № 3, 1971
Журн. 55-57, 25 10/04/71

USSR

UDC 548.537.22

ROZHANSKIY, V. N., TOT, A., and LE KUANG, Institute of Crystallography,
Academy of Sciences USSR

"Electrorelaxation 'Effect' in Alkali Halide Whiskers Grown From Aqueous Solu-
tion With Addition of Polyvinyl Alcohol"

Moscow, Kristallografiya, Vol 16, No 5, Sep-Oct 71, pp 986-988

Abstract: The article describes results of a study of electrorelaxation phe-
nomena in alkali halide whiskers by the bending vibration method. NaCl and
KBr whiskers grown from aqueous solution with the addition of polyvinyl alco-
hol, as well as on cellophane and silica gel, were used for the measurements.
It was found that the electric field parallel to the crystal vibration plane
causes a significant increase in the internal friction of polyvinyl alcohol. The field
component perpendicular to the vibration plane has no effect on internal fric-
tion. The influence of the electric field on internal friction -- the elec-
trorelaxation effect -- rises with a decrease in the vibration frequency.

1/2

USSR

ROZHANSKIY, V. N., et al., Kristallografiya, Vol 16, No 5, Sep-Oct 71, pp 986-988

NaCl and KBr whiskers grown on cellophane and silica gel show no electrorelaxation effect in fields with a strength of 0-600 v.cm⁻¹. The effect is the result of polyvinyl alcohol trapped by whiskers during their growth. Polyvinyl alcohol can be eliminated by vacuum heating of the crystals, which leads to a decrease or the complete disappearance of the electrorelaxation effect. Observation of the electrorelaxation effect can be a convenient technique for detecting the trapping of some organic impurities in whisker growth.

The authors thank G. V. BEREZHKOVA, I. N. TSVETKOV, and other coworkers who helped stage the experiments.

2/2

- 95 -

UNCLASSIFIED

PROCESSING DATE--20R0V70

1/2 018
TITLE--KINETICS OF THE DECOMPOSITION OF SOLID SOLUTION OF ARSENIC IN GERMANIUM -U-
AUTHOR--(05)-ARSENTYEVA, I.P., GRINSHTEYN, P.M., LIDER, V.V., MURAVLEV, YU.B., RCZHANSKIY, V.N.
~~COUNTRY OF INFO--USSR~~

SOURCE--FIZ. TVERD. TELA 1970, 12(4), 1260-1

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL KINETICS, SOLID SOLUTION, ARSENIC ALLOY, GERMANIUM ALLOY, SINGLE CRYSTAL, HALL CONSTANT

CENTRAL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0373

STEP NO--UR/0181/70/012/004/1260/1261

CIRC ACCESSION NO--AP0126128

UNCLASSIFIED

2/2 018

CIRC ACCESSION NU--AP0126128
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT. SINGLE CRYSTALS OF GE WERE INVESTIGATED WHICH CONTAINED 3.6 TIMES 10 PRIME19 ATOMS AS-CM PRIME3. THE CONCN. OF CURRENT CARRIERS WAS CALCD. FROM THE HALL COEFF. MEASURED BY THE COMPENSATION METHOD AT CONST. CURRENT. A KINETIC CURVE IS GIVEN OF THE DECCMPN. OF THE SOLID SOLN. OF AS IN GE AT 550DEGREES. IT WAS OBTAINED FROM THE DATA ON THE CONCN. OF CURRENT CARRIERS AS A FUNCTION OF THE TIME OF ANNEALING. THE CURVE CONSISTS OF 3 LINEAR SECTIONS. IN THE 1ST SECTION NUCLEI ARE FORMED AND THEIR NO. INCREASES WITH TIME, SECTION 2 REPRESENTS A DIFFUSION LIMITING PROCESS OF GROWTH OF PLATELIKE SEPN., AND IN SECTION 3 THE PROCESS OF SEPN. IS SLOWED DOWN BECAUSE OF COALESCENCE OF THE PARTICLES. FACILITY: GOS. NAUCH. ISSLED. PROEKT. INST. REDKOMETAL. PROM., MOSCOW, USSR.

UNCLASSIFIED

Rozhdestvenskaya, L.N.

JPRS 50288
16 June 1972

Doc: 621.1 8.152
PURIFICATION OF CONDENSATE WITH EXTREMELY SENSITIZING
ION-EXCHANGER FILTERS AT THE VR-50 ATOMIC ELECTRIC POWER PLANT

Article by Candidates of Technical Sciences A.M. Budei', Z.F. Vesilov,
and Yu. V. Chelobokin, Engineer I.I.P. Soshin, Candidate of Chemical
Sciences A.I. Zhelezin, and engineers Yu. P. Burmestov, L.K. Kozlovskan-
skaya, and I.N. Chernykh; Moscow, Tekhnicheskii, Russian, No 3, May
1972, pp 13-15

Experience in the operation of thermal and atomic electric power
plants has shown that purification of the entire stream of condensate of
dissolved and mechanical impurities is a necessary condition for reliable
functioning of the plant [1,2].

To investigate the functioning of ion-exchange resins in the puri-
fication of the condensate of an atomic electric power plant from dissolved
and suspended impurities, and also to verify the design of individual ele-
ments of an ion-exchanger filter, a semi-work installation with separate
functioning ion-exchanger filters (two mixers in disambiguation with separate
exchanger and ion-exchanger resins, connected in series), with N-cation-
and tested on the bypass of the condensate loop of the VR-50 Atomic Electric
Power Plant.

The filters were identical in their design. The drainage and dis-
tribution systems of the filters were of the siphon type. The silt in-
terior of the system were formed of a coil of circular wire with a dia-
meter of 0.8 mm. The coil was so made that the width of the gap was 0.1 mm
on the radii of the lower system and 0.2 mm on those of the upper system.

During the test the filters functioned the following thermodynamic
indicators were monitored (the flow rate of the condensate, the exact ro-
tations of the filters, and the resistance of the drainage systems) and
also the physicochemical composition of the condensate (the pH value, elec-
trical conductivity, hardness, and the content of elements of corrosion products,
and the total beta-activity). The chemical composition of the condensate
was stable during the entire course of functioning of the filters, except
during the start-up period of the reactor (0.02-0.04 mg/liter of Fe (total)),

1/2 038 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ELECTRICAL AND OPTICAL PROPERTIES OF STRONTIUM TITANATE
SEMICONDUCTOR SINGLE CRYSTALS -U-
AUTHOR--(05)-ROZHDESTVENSKAYA, M.V., SHEFTEL, I.T., STOGOVA, V.A.,
KOZYREVA, M.S., KRAYUKHINA, E.K.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(3), 873-8
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--SEMICONDUCTOR SINGLE CRYSTAL, STRONTIUM COMPOUND, TITANATE,
SEMICONDUCTOR CONDUCTIVITY, TEMPERATURE DEPENDENCE, ELECTRON MOBILITY,
PHASE TRANSITION, HALL EFFECT, IMPURITY LEVEL, CERIUM, NIOBIUM,
PEROVSKITE, ABSORPTION SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1987/1994 STEP NO--UR/0181/70/012/003/0873/0878
CIRC ACCESSION NO---AP0105068
UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105068

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS ARE GIVEN OF THE MEASUREMENTS OF THE TEMP. DEPENDENCE OF ELEC. COND. (SIGMA) AT 300-78DEGREEK FOR SRTIO SUB3 CRYSTALS DOPED WITH VARIOUS AMTS. OF CE AND NB AND ALSO REDUCED IN H. FOR CRYSTALS DOPED WITH CE, THE TEMP. DEPENDENCE OF MOBILITY IS GIVEN. DECREASE IN SIGMA WITH INCREASING TEMP. IS A RESULT OF DECREASED MOBILITY OF CHARGE CARRIERS. THE PRESENCE OF BREAKS IN THE TEMP. DEPENDENCE OF SIGMA IS RELATED TO THE DISTORTION OF THE LATTICE OF SRTIO SUB3 ON COOLING AND TO THE PHASE TRANSITION AT 110DEGREEK. MEASUREMENTS OF THE HALL EFFECT AT ROOM TEMP. SHOWED THAT THE HALL CONCN. OF CHARGE CARRIERS IN CRYSTALS WITH VARIOUS CONTENTS OF CE AND NB PRACTICALLY COINCIDES WITH THE IMPURITY CONCN. DETD. BY SPECTRAL ANAL. IT IS ASSUMED THAT CE PRIME3 POSITIVE REPLACES SR PRIME2 POSITIVE AND NB PRIME5 POSITIVE REPLACES TI PRIME4 POSITIVE IN THE PEROVSKITE LATTICE, THUS CREATING 1 FREE ELECTRON. FOR THIS SERIES OF CRYSTALS, ABSORPTION SPECTRA WERE INVESTIGATED. IN THE CASE OF DOPING WITH CE, THE ABSORPTION COEFF. DEPENDS ON THE CONTENT OF THE DOPING IMPURITY. AT THE ABSORPTION MAX. AT WAVELENGTHS OF 0.5 AND 1.2 MU, THE ABSORPTION COEFF. DEPENDS LINEARLY ON THE CONCN.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--STRUCTURE OF THE SPECTRUM OF THE ANISOTROPIC FRACTION OF SCATTERED
LIGHT IN ALPHA CHLORONAPHTHALENE -U-
AUTHOR--(021)ROZHDESTVENSKAYA, N.B., ZUBKOV, L.A.
COUNTRY OF INFO--USSR
SOURCE--OPT. SPEKTROSK. 1970, 28(3), 599-600
DATE PUBLISHED--70
SUBJECT AREAS--PHYSICS, CHEMISTRY
TOPIC TAGS--SPECTRUM, CHLORINATED AROMATIC COMPOUND, NAPHTHALENE, FLUID
VISCOSITY, SPECIFIC DENSITY, HELIUM NEON LASER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1103 STEP NO--UR/0051/70/028/003/0599/0600
CIRC ACCESSION NO--AP0128530
UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--13NOV70

GIRC ACCESSION NO--AP0128530

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISTANCE BETWEEN THE COMPONENTS OF A DOUBLET IN THE I SUBZX COMPONENT OF THE SCATTERED LIGHT ($2\Delta V$) AND THE VISCOSITY AND THE D. OF ALPHA CHLORONAPHTHALENE WERE MEASURED AS AFFECTED BY TEMP. AT 1-50DEGREES. A HE-NE LASER (WAVE LENGTH EQUALS 6328 ANGSTROM) WAS USED AS THE LIGHT SOURCE. THE $2\Delta V$ VALUE CHANGED FROM 0.044 TO 0.077 CM PRIME NEGATIVE:1 ON GOING FROM 1 TO 45DEGREES. THE APPEARANCE OF THE DOUBLET IS DISCUSSED IN TERMS OF THE LEONTOVICH THEORY.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--MECHANISM OF CARBON DIOXIDE FORMATION IN THE OXIDATIVE
DEHYDROGENATION OF ETHYLBENZENE TO STYRENE -U-
AUTHOR--(04)-ISAGULYANTS, G.V., BOGDANOVA, O.K., BELDMESTNYKH, I.P.,
ROZHDESTVENSKAYA, N.N.
COUNTRY OF INFO--USSR
SOURCE--NEFTEKHIMIYA 1970, 10(2), 174-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--CARBON DIOXIDE, DEHYDROGENATION, ETHYLEBENZENE, STYRENE,
CARBON ISOTOPE, OXIDATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/0959 STEP NO--UR/0204/70/010/002/0174/0177
CIRC ACCESSION NO--AP0134677
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0134677

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

ABSTRACT. THE TITLE MECHANISM WAS STUDIED BY THE KINETIC ISOTOPE METHOD, USING STYRENE (I), PRIME14 C. I WAS THE ONLY PRECURSOR OF CO SUB2. THE CATALYST MGO, (NH SUB4) SUB2, MOO SUB4 HAD HIGH SELECTIVITY FOR THYOXIDATIVE DEHYDROGENATION OF ETPH TO I. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 621.315.592

VUL, B. M., ZAVARITSKAYA, E. I., VORONOVA, I. D., and ROZHDESTVEN-
SKAYA, N. V.

"Hot Electrons at Low Temperatures in Compensated Gallium Arsenide"
Leningrad, Fizika i Tekhnika Poluprovodnikov, No 9, September 1973,
pp 1766-1770

Abstract: This paper is a continuation of an earlier article by the same authors and published in the same journal noted above (5, 1971, p 943) investigating the electrical conductivity of compensated GaAs at low temperatures, in a weak electric field with a maximum intensity of 10^{-2} v/cm, when the electron temperature was practically the same as the crystal temperature. The present paper describes experiments designed to broaden this early research to cover stronger electric fields and to clarify the effects of heating up the electrons under conditions of energy boundary distortions. The measurements in this work were conducted at temperatures of 290, 77, 20.4, 4.2, and 1.8° K. To avoid heating the crystal, it was given square pulses of 20 μ s duration with a repetition rate of 100-200 pps. The results are given in the form of curves
1/2

USSR

UDC: 621.315.592

VUL, B. M., et al, Fizika i tehnika poluprovodnikov, No. 9, September 1973, pp 1766-1770

of the current density as a function of the electric field intensity for various temperatures, of the electron mobility as a function of the square of the electric field intensity, and of the electron temperature as a function of the square of the electric field intensity. It is found that the described phenomena can be explained by the Boltzmann kinetic energy equation on the assumption that the electrons are scattered in dipoles.

2/2

USSR

UDC: 621.315.592

ZAVARITSKAYA, E. I., VORONOVA, I. D., and ROZEDESTVENSKAYA, N. V.

"Negative Reluctance in Compensated Gallium Arsenide at Low Temperatures"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1945-1953

Abstract: This paper is the continuation of an earlier paper (B. M. Vul, et al, FTP, 5, 1971, p 943) in which it was shown that the distortion of the floor relief of the conductivity zone in heavily doped and compensated GaAs at helium temperatures is sufficient to localize the conductivity electrons. The purpose of the present article is to examine the reluctance of the same GaAs specimens used in the earlier paper's experiments. These specimens had full impurity concentrations of about $5 \cdot 10^{17}/\text{cm}^3$ and an electron concentration of from $6 \cdot 10^{15}$ to $5 \cdot 10^{16}$ per cm^3 . Specimens with impurity concentrations varying from $2 \cdot 10^{17}$ to $1.5 \cdot 10^{18}/\text{cm}^3$ and a constant electron concentration of $1.5 \cdot 10^{16}/\text{cm}^3$ served as controls in the measurements, which were conducted in longitudinal and transverse magnetic fields of up to 50 kOe in intensity, in the 0.6-4.2° K temperature interval. The authors promise to process the results

1/2

USSR

UDC: 621.315.592

ZAVARITSKAYA, E. I., et al, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1945-1953

of the measurements and interpret them in a future paper. They thank B. M. Vul, L. V. Keldysh, and D. I. Khomskiy for their interest in the work and their discussion of the results.

2/2

USSR

UDC: 621.317.32.023

AKNAYEV, R. F., ROZHDESTVENSKAYA, T. B.

"New Equipment for Measuring Effective Voltage over a Broad Frequency Range"

Moscow, Izmeritel'naya Tekhnika, No 5, May 70, pp 55-59

Abstract: The authors consider the basic principles of design of wide-range thermal converters developed for precision measurement of the effective AC voltage by the method of comparison with a DC voltage. This equipment can be used to measure voltage in the range from 0.1 to 150 volts at frequencies of 20 Hz to 30 MHz with an accuracy of 0.01-0.2%.

1/1

USSR

UDC: 621.317.72

ROZHDESTVENSKAYA, T. B., KHACHATUROV, B. M.

"A Wide-Band Phase Shifter of the Tracking Type"

Tr. Metrol. in-tov SSSR (Works of Metrology Institutes of the USSR), 1970, vyp. 117 (177), pp 29-37 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2A323)

Translation: The principle of construction of a wide-band phase shifter of the tracking type is considered and theoretical and experimental data are given. It is shown that the use of a controllable thermistor in the phase shifting circuit expands the frequency range of the phase shifter. The amplitude and phase errors of the phase shifter are experimentally determined, and methods are proposed for reducing these errors. It is concluded on the basis of experimental studies that the proposed phase shifter can provide automatic equality of voltage quadrature vectors within 0.1-0.3 percent with equal phase shift between them within 3-15° over a wide frequency range. Five illustrations, bibliography of eleven titles. Resumé.

1/1

USSR

UDC: 621.375.127(088.8)

BUJUZOV, Yu. A., ROZHDESTVENSKIY, A. N., SMOL'KOV, V. V., UCHAYEV, A. L.

"A Protection Device for a Low-Frequency Amplifier"

USSR Author's Certificate No 278771, filed 29 May 69, published 3 Dec 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D128 P)

Translation: A device is proposed for protecting an audio frequency amplifier under overloads. The device contains preamplification stages, a push-pull output, and a feedback circuit with transformer. To improve the reliability and speed of the protector, the base of the transistor in the feedback circuit is loaded by a diode bridge connected to the transformer, and the collector is loaded by a voltage divider. Connected between the resistors of the voltage divider is the controlling electrode of a protection thyristor. The cathode of this thyristor, the collector of the input transistor and the emitter of the output transistor (of different polarity) in the preamplifier are connected to the negative terminal of the power supply through a current-limiting resistor.

1/1

- 1 -

USSR

UDC 517.9:533.7

GOL'DIN, V. Ya., KALITKIN, N. N., LEVITAN, Yu. L., and ROZHDESTVENSKIY,
B. L.

"Computing Two-Dimensional Flows from Detonations"

Moscow, Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, No 6,
1972, pp 1606-1611

Abstract: Under the assumption that the explosion of each element of a space in an explosive material occurs instantaneously, a difference method for calculating the two-dimensional gas dynamics resulting from a detonation is developed. It is noted that there is a difficulty in the two-dimensional case that does not exist in the unidimensional case: the strong distortion in the Lagrangian grid occurring in the computation. As a result, only the regions with an axis of symmetry are considered, with the explosion originating at a point on the axis. Three grid configurations spherical, rectangular, and triangular are described. A system of equations for the two-dimensional gas dynamics is given in terms of Lagrange variables, and the structure of the difference system using the quadrangular grid as an example is developed. The results obtained were compared with a known self-modeling solution, and a close agreement between the two was shown.

1/2

USSR

GOL'DIN, V. Ya., et al., Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, No 6, 1972, pp 1606-1611

The authors express their appreciation to B. D. Moiseyenko for his discussion of the work and to I. A. Govorukhin for his assistance with its formulation.

2/2

- 74 -

ROZHDESTVENSKIY, B. L.

Bellevue

JPRS 55699
10 APR 11 1973

UDC: 517.9:531.1
CALCULATION OF TWO-DIMENSIONAL FLOWS WITH DETONATION

Article by V. Ya. Gal'din, H.N. Kalitkin, Yu. I. Levin, N.S. Zhuravskiy, A.S. Zhuravskiy, Kozhdestvenkiy, Journal of Applied Mathematics and Mechanics, Vol. 12, No. 6, November-December 1972, signed to press 25 January 1972, pp 1696-1911

A difference method is developed for calculation of two-dimensional gas-dynamics problems with detonation, using the Lagrange variables. Three versions of difference plans are studied, corresponding to various configurations of the squares of a grid. A comparison is presented with the self-similar solution of the problem of a point explosion, showing the satisfactory accuracy of the calculations.

1. Detonation Model

Two-dimensional detonation develops in a number of problems, for example the explosion of a nonspherical charge, the initiation of an explosion on the surface of a charge, explosion in a compact, limited medium. As we know, detonation is a complex phenomenon [1]. A strong shock wave travels through the explosive. The heating of the explosive in the shock wave causes through chemical reactions liberating large quantities of energy. This energy sustains the process of propagation of the shock wave.

Accurate calculation of chemical reactions is necessary in problems concerning failure of detonation; we note, however, that the reactions themselves and their constants are generally unknown. When commercial charges of high energy explosives detonate, we can limit ourselves to a simple gas-dynamic model of detonation [2]. In this model, the equation of state of the explosive in front of the shock wave has no influence on the parameters of the explosion wave (velocity, pressure, etc.). For definition, we will describe the explosive by its shock adiabatic curve:

$$p \sim \rho^{1/(n+1)} = A/\rho^n$$

- 1 -

[1 - USSR - 1]

where the values of the coefficients c_1 and n may not agree with the actual values and change over broad limits. We will assume that the explosion of each element of volume of the explosive (cell) occurs instantaneously at a certain moment in time. The condition of explosion of a cell is an increase in the density in the cell. If the value of density ρ reaches a certain critical value (ρ_{cr}), the cell explodes.

In most problems, strong shock waves do not move through the explosion products (P_1). In these problems, entropy can be considered practically constant and we can take the true isentrope as the equation of state of the EP:

$$P = \rho^{\gamma} = P_0 \rho^{\gamma_0}$$

defined experimentally and theoretically. Thus, we write the equation of state as

$$P = (1 - \beta) P_0 + \beta P_1$$

where the explosion corresponds to a transition from $\beta = 0$ to $\beta = 1$ (assuming that $\rho = \rho_0$).

This model of detonation is convenient for use in gas-dynamic calculation plans, based on spreading of strong explosions by introducing mathematical viscosity. It is natural to select plans based on Lagrange coordinates in order to avoid spreading of contact surfaces. The difference plan is constructed as was done in [5]. Similar difference plans for two-dimensional gas dynamics problems were also studied by other authors, for example Schmidt, Kildin, N. A. Giltizer, I. D. Sidorov and Ye. V. Malinovsky. In the two-dimensional case, a difficulty in principle arises which does not arise in the one-dimensional case. This difficulty is the strong distortion of the Lagrange grid during the course of calculation. This fact forced us to use different versions of grids in calculation. In the following, we will study only areas which have an axis of symmetry, when the explosion is initiated at one of the points on this axis, to initiate an explosion, at the initial moment we will assume increased density in several cells near the point of the explosion and, consequently, increased pressure in these cells.

1.2. Difference Grids

Let us describe three configurations of grids, which we will arbitrarily call spherical, rectangular and triangular.

1. Spherical grid. If an explosion is initiated at an internal point in the explosive, the detonation wave is at first an expanding sphere. It is natural to use this symmetry to construct the difference grid.

USSR

R UDC 621.039.623 13

ALEK SIN, V. F., BIRYUKOV, O. V., GEORGIYEVSKIY, A. V., KITAYEVSKIY, L. KH., KOMAR, YE. G., LUGINOV, A. S., MALYSHEV, I. F., MOROSZOV, N. A., POBKOVICH, A. V., ROZHDESTVENSKIY, B. V., SAKSAGANSKIY, G. L., SINEL'NIKOV, the late K. D., SOKOLOV, YU. A., SUPRUNENKO, V. A., TOLOK, V. T., CHURAKOV, G. F., and SHABEL'NIKOV, L. A.

"The Experimental Thermonuclear Device 'Uragan'"

Moscow, Atomnaya Energiya, Vol 28, No 1, Jan 70, pp 22-28

Abstract: An urgent task of stellarator research is a definitive elucidation of the reasons for anomalous diffusion in a stellarator, as well as the effect of the shear and magnetic well on the confinement of a hot and dense plasma. These questions will be studied on the "Uragan" stellarator. Construction of the "Uragan" stellarator was begun at the suggestion of I. V. KURCHATOV and completed in 1967. The physical substantiation and technical assignment of developing and constructing the complex were developed at the Physicotechnical

1/3

USSR

ALEKSIN, V. F., et al., Atomnaya Energiya, Vol 28, No 1, Jan 70, pp 22-28

Institute of the Academy of Sciences Ukrainian SSR under the direction of K. D. SINEL'NIKOV, who took an active part in the solution of theoretical and technical questions. Organizations taking part in the development of the project and the construction of the complex included the Scientific Research Institute of Electrophysical Equipment imeni D. V. Yefremov, the Elektrosila Electrical Engineering Combine, the Khar'kov Polytechnic Institute imeni V. I. Lenin, the Electromechanical Plant and NIElektroapparat [Scientific Research Institute of Electrical Equipment] in Khar'kov. A considerable amount of work on the development, manufacture, and adjustment of the systems and components of the "Uragan" was done at the Physicotechnical Institute of the Academy of Sciences Ukrainian SSR.

The principal feature of the "Uragan" is high shear (of the order of 0.02 and 0.1) at a high level of magnetic field strength

2/3

USSR

ALEKSIN, V. F., et al., Atomnaya Energiya, Vol 28, No 1, Jan 70, pp 22-28

H_0 (35 and 10 koe respectively). The stellarator is in the shape of a racetrack and uses a high-shear triplex helical field. The vacuum chamber of the trap consists of two semi-tori with an average radius $R = 1100$ mm and two rectilinear sectors, each 1725 mm long. The internal diameter of the chamber is 200 mm. On the outside of the chamber on the toroidal sectors are two helical windings and longitudinal magnetic field coils, distributed evenly along the device. The maximum strength of the magnetic field is 10 koe under steady-state conditions and 35 koe under pulsed conditions. Three windings are used; viz., longitudinal magnetic field, helical, and transverse magnetic field. All metallic elements are made of low-magnet steel 1Kh18N9T. The toroidal sectors of the vacuum chamber and part of the rectilinear sectors are made of stainless nonmagnetic alloy EP-125. The article gives a detailed description of the windings, cooling system, electric power supply system, vacuum system, and plasma diagnostic and heating system.

3/3

14

USSR

UDC: 621.384.639

ABROSIMOV, N. K., ALKHAZOV, D. G., DMITRIYEV, S. P., YELISEYEV, V. A.,
KAMINKER, D. M., KULIKOV, A. V., MIRONOV, Yu. T., MIKHEYEV, G. F.,
RYABOV, G. A., CHERNOV, N. N., SHALMANOV, V. I., KOMAR, Ye. G., MALY-
SHEV, I. F., MONOSZON, I. A., PEREGUD, V. I., ROZHDESTVENSKIY, B. V.,
ROYFE, I. M., SEREDENKO, Ye. V., Physicotechnical Institute imeni A. F.
Ioffe, Academy of Sciences of the USSR, Leningrad, Scientific Research
Institute of Electrophysical Equipment imeni D. V. Yefremov, Leningrad

"The Leningrad Synchrocyclotron for a Proton Energy of 1 GeV"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 41, No 9, Sep 71, pp 1769-1775

Abstract: The paper describes the synchrocyclotron at the Physicotechnical Institute imeni A. F. Ioffe of the Academy of Sciences of the USSR for a proton energy of 1 GeV. Proton beam parameters as well as the characteristics of the main systems of the accelerator are presented. The beam channels are described, and the layout of the accelerator building is given. The installation has been in successful operation since 1970. Three tables, two figures, bibliography of twelve titles.

1/1

- 83 -

USSR

UDC 537:226:537:311:33]:538

KRYLOV, Ye. I., ROZHDESTVENSKIY, F. A., PILIPENKO, G. I., DVOYNIK, V. I.

"Magnetic Properties of Orthotantalates of Transition Metals in 3d-Series"

Tr. In-ta khimii. Ural'skiy fil. AN SSSR, [Works of the Institute of Chemistry, Urals Affiliate, Academy of Sciences, USSR], No 17, 1970, pp 68-71, (Translated from Referativnyy Zhurnal Fizika, No 10, 1970, Abstract No 10 Ye 1131, from the resume).

Translation: The magnetic susceptibility of titanium and vanadium orthotantalates is measured in the 90-300°K temperature interval. EPR spectra of polycrystalline specimens of orthotantalates of titanium, vanadium, chromium, and iron are measured. Values of g-factors are also determined. Suggestions are made concerning the valence states of ions of the transition metals in the 3d-series forming compounds such as $MeTaO_4$.

1/1

USSR

R
UDC 546.883.5.825:538.113

YASINOV, G. G., ROZDESTVENSKIY, F. A., KRYLOV, YE. I., FILIPENKO, G. I., and
SOLODOV, V. F.

"Magnetic Properties of Titanium, Vanadium, Chromium, and Iron Orthotantalates"

Moscow, Neorganicheskiye Materialy, Vol 6, No 1, Jan 70, p 186

Abstract: An investigation was made of the magnetic properties of $TiTaO_4$, $VTaO_4$, $CrTaO_4$, and $FeTaO_4$ by the methods of magnetostatics and electron parametric resonance in a broad temperature range. The studies made it possible to obtain new data. The anomalous behavior of $FeTaO_4$ at low temperatures is explained by the phase transition at $223^{\circ}K$ as a result of which the spin-lattice relaxation time decreases (the width of the electron paramagnetic resonance line increases sharply), and the intensity of the electron paramagnetic resonance spectrum becomes insignificant at nitrogen temperature. The magnetic susceptibility of the remaining orthotantalates varies according to the Curie-Weiss law. The negative value of the constant Θ permits the assumption of the presence of antiferromagnetism in the investigated compounds.

1/1

1/2 016 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--MAGNETIC PROPERTIES OF TITANIUM, VANADIUM, CHROMIUM, AND IRON
ORTHOTANTALATES -U-
AUTHOR--(05)-KASIMOV, G.G., ROZHDESTVENSKIY, F.A., KRYLOV, YE.I.,
PILIPENKO, G.I., SOLODOV, V.P. *R*
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSR, NEORG. MATER. 1970, 6(1), 186
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--TITANIUM COMPOUND, VANADIUM COMPOUND, CHROMIUM COMPOUND,
TANTALATE, EPR SPECTRUM, MAGNETIC SUSCEPTIBILITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1984/0146 STEP NO--UR/0363/70/006/001/0186/0186
CIRC ACCESSION NO--AP0054942
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054942

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. MAGNETIC PROPERTIES OF TITAO SUB4, CRTAO SUB4, AND FETAO SUB4 WERE INVESTIGATED BY MAGNETOSTATIC AND EPR METHODS WITHIN A WIDE TEMP. RANGE, WHICH MADE IT POSSIBLE TO OBTAIN NEW DATA AS COMPARED TO THE KNOWN ONES. THE ANOMALOUS BEHAVIOR OF FETAO SUB4 AT LOW TEMPS. IS EXPLAINED BY THE PHASE TRANSITION AT 223DEGREES K, AS A RESULT OF WHICH THE TIME OF THE SPIN LATTICE RELAXATION DECREASES AND THE INTENSITY OF THE EPR SPECTRUM BECOMES INSIGNIFICANT AT THE N TEMP. THE MAGNETIC SUSCEPTIBILITY OF THE REMAINING ORTHUTANTALATES VARIES ACCORDING TO THE CURIE WEISS LAW. THE NEG. VALUE OF THE CONST. THETA ALLOWS THE ASSUMPTION OF THE PRESENCE OF ANTIFERROMAGNETISM IN THE COMPS. INVESTIGATED.

UNCLASSIFIED

Acc. Nr:

AP0042494

Abstracting Service: 4-76
CHEMICAL ABST. R

Ref. Code:

UR0096

84231y Isentropic expansion characteristics of combustion products of Stavropol natural gas-gaseous oxygen-potassium carbonate additive system. ~~Bozhdestvenskii, I. B.; Olevinskii, K. K.; Shevelev, V. P. (USSR). Teploenergetika 1970, 17(2), 67-9 (Russ).~~ The thermodynamics of the title process is discussed in relation to the usefulness of natural gas for magneto-hydrodynamic power generation. Phase, chem., and energy equil. are considered, and literature equations are used in calcg. a series of thermodynamic parameters for max. combustor gas temps. Dissocn., chem. reactions, and formation of pos. and neg. ions in the K_2CO_3 -contg. system were included in the calcns. Combustor gas temps., pressures, ds., flow rates, sound velocity, and the isentropic index (n) are given as functions of Mach no. for combustor pressures of 5-50 kg/cm², using 1-1.5 X theoretically required O. Then $n = \ln(p_1/p) / \ln(\rho_1/\rho)$ (where p and ρ are pressure and d., resp., and the subscripts refer to combustor conditions). DPJR

REEL/FRA
19760459

USSR

UDC 532.516

KOROTKIN, A. I., ROZHDESTVENSKIY, K. V.

"Experimental Study of Supercritical Flow Over a Circular Cylinder"

Tr. Leningr. korablestroit. in-ta (Works of Leningrad Shipbuilding Institute),
1970, No. 69, pp 57-63 (from RZh-Mekhanika, No 9, Sep 71, Abstract No 9B567)

Translation: The hydrodynamic characteristics of the transverse flow over a cylinder of circular cross section with relative dimensions $L/d = 5$ with straight discs at Reynolds numbers $R = Vd/\nu = 5 \cdot 10^5 - 2 \cdot 10^6$ were investigated. The tests were conducted in a wind tunnel with a degree of turbulence $\epsilon = 0.4\%$. It was shown that the coefficient of frontal resistance determined by integrating the pressure diagram in several cross sections changes along the span with a certain periodicity. The presence of periodicity along the span is confirmed also in the visualization of flow with the aid of long silky fibers fastened to the cylinder at its leading critical line so that the longitudinal dimension of a cell is 1-1.5 the diameter of the cylinder. The three-dimensional character of flow over the cylinder is explained by the authors by the periodic nonuniformity of turbulent separation along the span which is a consequence of the three-dimen-

1/2

USSR

KOROTKIN, A. I., ROZHDESTVENSKIY, K. V., Tr. Leningr. korablistroit. in-ta, 1970, No. 69, pp 57-63

sionality of the transition region of the laminar layer into a turbulent layer. It is hypothesized on this basis that the three-dimensional effects should disappear with a shortening of the length of the transition zone (with an increase in the Reynolds number, the initial turbulence of the flow or the roughness of the cylinder surface). Measurements of pressure pulsations in a median cross section on the surface of the cylinder showed that characteristic frequencies corresponding to $S = 0.2$ occur in hypercritical flow regimes of the cylinder at the end portion of the surface of the cylinder in the laminar section and higher frequencies occur in the zone of transition and the turbulent regime in the boundary layer, where the Strouhal number reaches the value $S = 0.4$. A. S. Ginevskiy.

2/2

- 97 -

1/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--CALCULATION OF TEMPERATURE ON THE SURFACE AND IN THE CENTER OF
EXTRUDED RUBBER GOODS DURING FLUIDIZED BED VULCANIZATION -U-
AUTHOR--(03)-GALLE, A.R., KONGAROV, G.S., ROZHDESTVENDKIY, O.I.

COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA 1970, 29(2), 23-5

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FLUIDIZED BED, CRYSTALLIZATION, CALCULATION, TEMPERATURE,
RUBBER, VULCANIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0458

STEP NO--UR/0138/70/029/002/0023/0025

CIRC ACCESSION NO--AP0119394

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119394

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD WAS PROPOSED FOR CALCG. THE TEMP. CHANGES (DELTA T) ON THE SURFACE AND IN THE CENTER OF AN EXTRUDED RUBBER CORD (DURING THERMAL VULCANIZATION IN A FLUIDIZED BED) AS A FUNCTION OF THE VULCANIZATION TIME. THE CALCD. DELTA T AGREED WITH THE LITERATURE DATA. FACILITY: NAUCH.-ISSLED. INST. REZ. PROM., USSR.

UNCLASSIFIED

ELECTRICAL ENGINEERING
Circuit Elements

UDC 621.318.43

USSR

BESEDIN, A. I., GAYDOV, N. T., ROZHDESTVENSKIY, V. F., YAKOVLEV, G. M.

"A Choke"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 22, 1970, Soviet Patent No 275188, Class No 21, filed 11 Nov 68, p 45

Abstract: This Author's Certificate introduces a choke which contains a ribbon core, fitted with a winding and located in a hermetically sealed container made from a nonmagnetic heat-conducting material and filled with grease. As a distinguishing feature of the patent, heat removal from the choke is improved by placing the choke winding inside a core made in the form of two tubes helically formed from tape of a magnetically soft material such as iron-nickel alloy. This core is mounted together with insulating sleeves inside the container which is used as the heat-removing radiator and the housing for the choke.

1/1

USSR

UDC 612.821

ROZHDESTVENSKAYA, V. I.

"Evaluating the Strength of the Human Nervous System by Characteristics of Irradiation and Concentration of Stimulation in the Visual Analyser"

Leningrad, Metodiki Otsenki Svoystv Vysshey Nervnoy Deyatel'nosti, "Nauka," 1971, pp 102-111

Abstract: Using photometric techniques, it was demonstrated that it is possible to evaluate the strength of a subject's nervous system by the threshold of irradiation stimulation under conditions of significant fatigue. Two illustrations and nine bibliographic entries.

1/1

- 76 -

USSR

UDC 621.385.032.21 (098.8)

SAVITSKIY, YE. M., MOROZOV, A. V., IVANOVA, K. N., ~~ELLOUSOV, A. I.~~, BARON, V. V., ROZHDESTVENSKIY, V. M., OVCHINNIKOV, M. A.

"Alloy For The Production Of Components Of The Cathode Unit Of Electronic Devices"

USSR Author's Certificate No. 304642, filed 14 August 1969, published 15 September 1971 (from RZh--Elektronika i yeye primeneniye, No 3, March 1972, Abstract No 3A49)

Translation: A cathode-heating unit is proposed by which, with the object of increasing the stability, reliability, and longevity of a component, the cathode holder, screens, and pistons are produced from RN-6 or RN-8 alloys based on niobium. The RN-6 alloy contains (percent by weight): tungsten 5-7, molybdenum 4-6, zirconium 2-2.5, remainder niobium. The cost of the proposed alloy is considerably less than the cost of tantalum. The alloys are characterized by highly stable properties and sufficient plasticity, which makes it possible to produce tubes, wire, sheets, and foil 1-0.1 mm thick, from them under industrial conditions by the method of processing various semifinished products by pressure. Use of the electron-beam method of smelting considerably reduces the content of gaseous impurities, and a three-fold remelting is used for a more uniform composition of ingots. Sheets 0.5--0.1 mm thick are obtained by the hot forging method and cold rolling with intermediate recrystallization annealings.

1/1

- 202 -

Materials

USSR

UDC 621.385.032.213.6

SAVITSKIY, YE. M., MOROZOV, A. V., IVANOVA, K. N., BELOUSOV, A. I., BARON, V. V.,
ROZHDESTVENSKIY, V. M., OVCHINNIKOV, N. A.

"Alloy for Manufacturing the Parts of the Cathode Junction of Electronic Devices"

USSR Author's Certificate No 304642, filed 14 August 1969, published 25 May 1971
(from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 17,
1971, No H 01j 1/20)

Translation: 1. An alloy for manufacturing the parts of the cathode junction of electronic devices based on niobium is introduced. It is distinguished by the fact that in order to improve strength and stability of shape of the parts, the alloy contains tungsten and zirconium additives.

2. The alloy according to item 1 distinguished by the fact that it contains 7-9% tungsten and 2-2.5% zirconium is introduced.

3. The alloy according to item 1 distinguished by the fact that it contains molybdenum is introduced.

4. The alloy according to item 3 distinguished by the fact that it contains 5-7% tungsten, 1-1.5% zirconium and 4-6% molybdenum is introduced.

1/1

V.N. ROZHDESTVENSKIY

Acc. Nr:

AP0047607

Abstracting Service:

CHEMICAL ABST. 5/70

Ref. Code:

UR 5057 3

105059 Breakdown of dielectric reflecting coatings under the influence of laser radiation. Kuznetsov, A. Ya.; Poplavskii, A. A.; Bonch-Bruевич, A. M.; Imas, Ya. A.; Rozhdestvenskii, V. N.; Tikhomirov, G. P.; Fudcheva, E. I. (USSR). *Zh. Tekh. Fiz.* 1970, 40(1), 170-2 (Russ). The threshold of breakdown of coatings was measured as a function of the direction of the effect, the no. of coating layers, the temp. of the base during the application, the purity and structure of the starting materials, the degree of orientation of microcrystals in the layer, the presence of defects, and the structure of the layer. The breakdown threshold of vacuum dielec. coatings on K-8 glass depended on the degree of orientation and the structure of crystals in the ZnS layer, and on the comp. of the surface of the coatings. M. Tichy

1/

REEL/FRAME
19791173

4/1

USSR

UDC 621.318.435:621.391.822

KOLACHEVSKAYA, V. V., KOLACHEVSKIY, N. N., ROZHDESTVENSKIY, V. V., STRYGIN,
L. V.

"Spectral Distribution of Magnetic Noise Close to Harmonics of the Frequency
of Magnetic Alternation"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 7, Jul 71, pp 1211-1215

Abstract: The authors consider one of the possible mechanisms which may result in flicker of susceptibility. It is assumed that a specimen is placed in an external sinusoidal field with amplitude H_0 and magnetic alternation in some special cycle. In addition, a random field $h(t)$ is applied to the specimen with zero average value. Phenomenologically, this field describes additive magnetic noises such as Barkhausen noise, external fields of random type, etc. It is assumed that the interval of correlation of additive noise is much shorter than the period of magnetic alternation, and that its distribution function at fairly large h falls as $\exp(-h^m)$. It is shown that such an "inoculation" additive noise can generate flicker noise in susceptibility. The theory is experimentally verified by a study of the spectral distribution of excess magnetic noise in thin Permalloy films. The proposed theory can also be used to explain the experimental results of works where excess noise has been observed at a magnetic alternation frequency of several megahertz.

1/1

USSR

UDC 621.791.011.08:621.642.669.14

LIVSHITS, L. S., Doctor of Technical Sciences, RAKHMANOV, A. S., Candidate of Technical Sciences, and ROZHDESTVENSKIY, V. V., Candidate of Technical Sciences, All-Union Scientific Research Institute of Main Pipeline Construction

"Brittle-Rupture Stability of Welded Vessels Operating Under Pressure"

Moscow, Svarochnoye Proizvodstvo, No 10, Oct 70, pp 12-13

Abstract: The quantity a_p (kg/cm²) of steel, the energy index of resistance to development of brittle rupture, is suggested as a basis for a calculation method for determination of conditions controlling the stability of welded vessels operating under pressure to brittle rupture. The method is based on the correspondence of the potential energy of elastic deformation of the walls of the vessel to the energy index of the resistance of steel to development of rupture.

1/1

- 72 -

Am0006534

ANATOLIY

VLAZIMIR

UR0000

14
5
20

Kamarshteyn, A.G.; Rozhdestvenskiy, V.V.; Ruchimskiy, M.N.

Designing Pipe-lines for Durability (Raschet truboprovodov na prochnost') Manual. 2-nd ed. Rev. and Supplem. Moscow. Nedra. 1969. 440 pp. (Kay)

TABLE OF CONTENTS:

Preface		3
Chapter I	Main Aspects of Design on Limiting States	7
II	Calculating Individual Elements of Pipe-lines	22
III	Calculating Temperature Effects on Pipe-lines	75
IV	Calculation of Pipe-lines Installed on Supports	214

1/2

19540693

18

AM0006584

V	Designing Underground Main Pipe-lines	285
VI	Designing Above Ground Main Pipe-lines	324
VII	Designing Underground Pipe-lines in Regions of Mountain Mining	354
VIII	Accounting for Vibrations of Pipe-lines	379
	Addenda	395
	Literature	434

The book contains many calculation formulae, graphs and tables which systematize and facilitate designing; it is intended for engineers and technologists working in this field.

mk

19540004

1/2 036 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--EFFECT OF CORROSIVE MEDIA ON THE MECHANICAL PROPERTIES OF BORING
STEELS AS USED IN THE OIL INDUSTRY -U-
AUTHOR-(02)-TVERITINOV, G.I., ROZHDESTVENSKY, YU.G.
COUNTRY OF INFO--USSR
SOURCE--FIZ. KHIM. MEKHAN. MAT., 1970, 6, (2), 105-107
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--TENSILE STRENGTH, MECHANICAL PROPERTY, CRYSTAL LATTICE
STRUCTURE, HYDROGEN, SULFURIC ACID, AQUEOUS SOLUTION, HYDROGEN SULFIDE,
IMPACT RESISTANCE, SODIUM CHLORIDE, PETROLEUM INDUSTRY, BORIDE,
CORROSION R AND O
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0197 STEP NO--UR/0369/70/006/002/0105/0107
CIRC ACCESSION NO--AP0129453
UNCLASSIFIED

2/2 036

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--A0129453

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESULTS OF MECHANICAL TESTS ON A NUMBER OF C AND ALLOY STEELS USED IN THE OIL INDUSTRY BEFORE AND AFTER PROLONGED CONTACT WITH CORROSIVE MEDIA, SUCH AS SEA WATER AND MEDIA CAUSING H ABSORPTION IN THE MATERIAL, ARE PRESENTED, THE UTS, FATIGUE STRENGTH, IMPACT RESISTANCE, AND HARDNESS BEING MEASURED. THUS THE TENSILE STRENGTH FALLS SLIGHTLY AND THE FATIGUE STRENGTH VERY SUBSTANTIALLY AFTER CONTACT WITH NA₂CO₃ OR H₂SO₄ SOLUTIONS. THE MECHANICAL PROPERTIES ARE SERIOUSLY AFFECTED BY H₂S, WHICH INTRODUCES H INTO THE LATTICE OF THE STEEL MATRIX.

UNCLASSIFIED

USSR

UDC: 622.316.722.1

BELOGORSKIY, A. L., NASIBULLIN, I. A., ROZHENTSEV, Ye. D.

"A Switching Stabilizer"

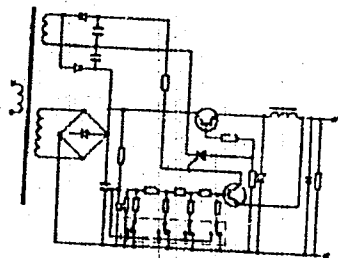
Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 11, Apr 72, Author's Certificate No 333661, Division H, filed 20 Jul 70, published 21 Mar 72, p217

Translation: This Author's Certificate introduces a switching stabilizer which contains a reference voltage source, and measuring and control elements. As a distinguishing feature of the patent, in order to automate control of the change in output voltage in accordance with a given program, the base of the transistor in the measuring element is connected to a resistive code-to-voltage converter, which is connected in turn through controlling switches in the program unit to the tie-point between a resistor and stabilitron (which is the reference voltage source). The resistor is connected to the collector of the transistor in the regulating element, and the stabilitron is connected through a resistive divider to the base of this same transistor, and to the anode of a thyristor in the measuring element.

1/2

USSR

BELOGORSKIY, A. L., USSR Author's Certificate No 333661, Division H



2/2

- 93 -

USSR

UDC 681.2.002.56:661.92

KIKIY, B. F., IVASHCHENKO, B. P., ROZHENTSEVA, S. A., Odessa Technological
Institute of the Refrigeration Industry

"Semiconductor Low-Temperature Hygrometer"

Moscow, Kholodil'naya Tekhnika, No 7, 1971, pp 22-23

Abstract: The new GTA-70 automatic thermoelectric hygrometer developed by the Odessa Technological Institute of the Refrigeration Industry is described, and test results are presented. The new hygrometer permits determination of the dew point to -70°C at an ambient temperature of $20-30^{\circ}$. The operation of the optical system and other units of the hygrometer are described in detail. Operation of the instrument under laboratory and production conditions revealed that it requires a warm-up time of 1.5-2 hours for accumulation of cold in the intermediate tank with the water-alcohol solution. By leaving the auxiliary thermopile with an intake of no more than 100 volt-amperes on the warm-up time can be avoided. The reproducibility of the measurements is within the limits of 1° . At a dew point of -70°C , 20-30 measurements per hour can be obtained, and at a dew point of -40°C , 50-60 measurements per hour are possible.

1/1

- 163 -

~~TITLE~~—GIL EMULSION COOLANTS FOR ENGINES —U—

AUTHOR—(05)—BUTKOV, N.A., OSIPOVA, L.M., VOLKOV, A.S., DRESKOV, A.A.,
NOZHIN, V.P.
COUNTRY OF INFO—USSR

SOURCE—U.S.S.R. 264,585
REFERENCE—UTKHYTIYA, IZOBRET., PROM. OBRÁZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED—03MAR70

SUBJECT AREAS—MECH., IND., CIVIL AND MARINE ENGR, PROPULSION AND FUELS

TOPIC TAGS—EMULSION, CHEMICAL PATENT, HEAT TRANSFER FLUID, THIOL,
MERCAPTAN, BENZENE DERIVATIVE, ORGANIC AZOLE COMPOUND, PHOSPHATE ESTER,
ANTICORROSION AGENT, MARINE ENGINE

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/0088

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0127715

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AA0127715

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN OIL EMULSION FOR COOLING SHIP ENGINES, HAVING IMPROVED ANTICORROSION AND ANTICAVITATION PROPERTIES AND IMPROVED HEAT TRANSFER, CONTAINS H SUB2 O 98-9, ARUMATIZED OIL 0.712-1.424, NA SULFONATE 0.070-0.140, K NAPHTHENATE 0.180-0.360, 1,4 BUTYNEIOL 0.010-0.020, MERCAPTOBENZOTHIAZOLE 0.003-0.006, CR STEARATE 0.005-0.0010, AND ALKYLZINC DITHIOPHOSPHATE 0.020-0.040PERCENT.

UNCLASSIFIED

USSR

UDC: 535.39:537.311.33

KURIK, M. V., ROZHKO, A. Kh.

"On the Determination of Optical Density of Semiconductor Layers on Transparent Substrates"

Leningrad, Optika i Spektroskopiya, Vol 34, No 3, Mar 73, pp 532-534

Abstract: The authors investigate a method of determining the optical density of a semiconductive film on a substrate which is transparent in the region of absorption of the film. The procedure is based on evaluating the expression $(R-R')/T$, where R and R' are experimentally determined values of reflection from the film and from the substrate respectively, and T is the transmission of the film. This eliminates the effect of interference due to repeated reflection from the boundary regions of the film. An analysis is made of the possible errors of the method when different measurement procedures are used. The authors thank M. P. Lisitsa and all participants in the Seminar of the Optics Department of the Institute of Semiconductors of the Ukrainian Academy of Sciences for constructive criticism.

1/1

USSR

UDC: 621.372.826

USIK, V. Ya., ROZHKO, A. V., MIKHAYLOVSKIY, S. A., MARCHENKO, P. I.,
BURLAKOV, O. V., POLISHCHUK, Ya. L.

"A Single-Conductor Transmission Line"

USSR Author's Certificate No 259195, filed 19 Aug 68, published 28 Apr 70
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12B151 P)

Translation: The proposed single-conductor transmission line consists of a section of metal wire with a dielectric coating, two coaxial-horn surface-wave exciters and a tension device of the winch type. To simplify connection of reception and transmitting equipment to the transmission line and ensure tightening of the wire, this wire is seated loosely in a cylindrical hole made through one of the exciters in the central conductor of the branch of the angle connector which is coaxial with the horn. In the tension device, the winding drum is connected to a hand crank through a slip clutch. Five illustrations.

1/1

= 130 =

R
Antennas

USSR

UDC 621.372.626:621.372.633.1(088.8)

ROSHKO, A. V., MIKHAYLOVSKIY, S. A.

"A Protective Cover for a Horn Exciter"

USSR Author's Certificate No 255374, Filed 15 Jul 68, Published 8 Apr 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10812E P)

Translation: The proposed protective cover for a horn exciter on a single-conductor transmission line is made in the form of a thin-walled dielectric cone where the incident wave hits the surface at the Brewster angle. To reduce overall dimensions and increase reliability, the cone section has a base radius smaller than the aperture radius of the horn, and equal to $2/3$ the aperture radius. At the vertex of the cone is a sleeve whose length is equal to half the length of a wave in the dielectric. One illustration.

1/1

7

UDC 911.3.616.981.452(574)

USSR

LAVROVSKIY, A. A., KUCHEROV, P. M., OPTYAKOVA, A. F., ~~ROZHKOV, A. A.~~,
DEREVYANCHENKO, K. I., MATSUGA, V. G., BAKHTIGOZIN, I. A., ROZHKOV, A. A.,
CHIKRIZOV, F. D., KARUSHIN, P. A., and DUBYAGIN, P. S.

"Survival of Plague Bacteria During Interepizootic Years in the Sands Focus Area
Between the Volga and Ural River"

V sb. Probl. osobo opasn. infektsiy (Problems of Especially Dangerous In-
fections — collection of works) Vyp. 4 (14). Saratov, 1970, pp 94-104
(from RZh-Meditsinskaya Geografiya, Separate Issue, No 4, Abstract No
4.36.93)

Translation: A list is presented of reasons for the abrupt decrease in
epizootic activity in the sands plague focus between the Volga and Ural
Rivers. Plague bacteria, however, did not disappear from the biocenotic
focus system, as evidenced by the epizootics of 1962-1963 and 1966 and the
isolated cases of isolation of bacterial cultures from gerbils during de-
pressed phases of focus life. It becomes more and more evident that the
phenomenon of microfocality is an indispensable attribute of existence of
plague bacteria in the biocenosis. Materials on landscape adjustment of
particularly stable plague epizootics facilitate the definition, in the

1/2

USSR

LAVROVSKIY, A. A., et al., Probl. osobo opash. infektsiy (Problems of Especially Dangerous Infections -- collection of Works) Vyp. 4 (14). Saratov, 1970, pp 94-104 (from RZh-Meditsinskaya Geografiya, Separate Issue, No 4, Abstract No 4.36.93)

Volga-Ural sands area, of several more significant regions where the plague pathogen apparently survives even during depressed phases of focus activity.

1/1

2/2

- 46 -

7

UDC 911.3.616.981.452(574)

USSR

LAVROVSKIY, A. A., KUCHEROV, P. M., OPTYAKOVA, A. F., ROZHKOV, A. A.,
DEREVYANCHENKO, K. I., MATSUGA, V. G., BAKHTIGOZIN, I. A., ROZHKOV, A. A.,
CHIKRIZOV, F. D., KARUSHIN, P. A., and DUBYAGIN, P. S.

"Survival of Plague Bacteria During Interepizootic Years in the Sands Focus Area
Between the Volga and Ural River"

V sb. Probl. osobo opasn. infektsiy (Problems of Especially Dangerous In-
fections — collection of works) Vyp. 4 (14). Saratov, 1970, pp 94-104
(from RZh-Meditsinskaya Geografiya, Separate Issue, No 4, Abstract No
4.36.93)

Translation: A list is presented of reasons for the abrupt decrease in
epizootic activity in the sands plague focus between the Volga and Ural
Rivers. Plague bacteria, however, did not disappear from the biocenotic
focus system, as evidenced by the epizootics of 1962-1963 and 1966 and the
isolated cases of isolation of bacterial cultures from gerbils during de-
pressed phases of focus life. It becomes more and more evident that the
phenomenon of microfocality is an indispensable attribute of existence of
plague bacteria in the biocenosis. Materials on landscape adjustment of
particularly stable plague epizootics facilitate the definition, in the

1/2

JSR

LAVROVSKIY, A. A., et al., Probl. osobo opash. infektsiy (Problems of Especially Dangerous Infections -- collection of Works) Vyp. 4 (14). Saratov, 1970, pp 94-104 (from RZh-Meditsinskaya Geografiya, Separate Issue, No 4, Abstract No 4.36.93)

Volga-Ural sands area, of several more significant regions where the plague pathogen apparently survives even during depressed phases of focus activity.

1/1

2/2

- 46 -

USSR

UDC 533.916

ROZHKOV, A. M., STEPANOV, K. N., SUPRUNENKO, V. A., FARENIK, V. I.,
VLASOV, V. V.

"Resonance Cyclotron Instability in a Rotating Plasma"

Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb.
(Plasma Physics and Problems of the Controlled Thermonuclear Fusion.
Republic Interdepartmental Collection), 1972, No. 3, pp 193-202 (from
RZh-Fizika, No 11, Nov 72, Abstract No 11G178)

Translation: Resonance excitation of ion-cyclotron oscillations in a plasma in crossed electric and magnetic fields was investigated experimentally. It was shown that if the frequency of the drift rotation of a plasma cloud in crossed fields is a multiple of the gyrofrequency of the ions, a resonance cyclotron instability develops in the discharge which is accompanied by continuous generation of ion-cyclotron oscillations of high amplitude, due to the energy of the external source of direct current. The increment of this instability is on the order of the gyrofrequency of the ions.

1/1

USSR

UDC 533.916

ROZHKOV, A. M., STEPANOV, K. N., SUPRUNENKO, V. A., FARENK, V. I.

"Investigating the Excitation of Ion-Cyclotron Oscillations in a Plasma in Crossed Electric and Magnetic Fields"

Kiev, Fizika plazmy i problemy upravlyayemogo termoyadernogo sinteza, 1971, Naukova dumka, pp 14-18

Abstract: A description is given of experiments detecting unstable ion-cyclotron oscillations with a frequency of the order of the plasma rotational velocity. As a result of the development of the oscillations, high-energy ions with an energy of the order of 1 keV and a velocity direction along the magnetic field appear. The longitudinal and transverse wavelengths of the cyclotronic oscillations are of the order of 1 cm. At the beginning of the instability development, when the Larmor radius of the ions is much less than the radius of the plasma cylinder, the oscillations can be identified as longitudinal cyclotronic with a phase velocity along the magnetic field much less than the electron thermal velocity.

1/2

- 82 -

USSR

ROZHKOV, A. M. et al, Fizika plazmy i problemy upravlyayemogo termoyadernogo sinteza, 1971, Naukova dumka; pp 14-18

As the plasma heats up due to the increasing instability, the Larmor radius increases to the point where it is commensurate with the system dimensions. A diagram of the experimental setup is presented along with an explanation of its operation. The authors suggest that study of this new type of plasma instability may be useful for understanding experimental results in the heating of the ionic plasma component, in which the radial electric field is either created deliberately or is spontaneously generated.

2/2

1/2 016

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--ASSESSMENT OF SOME ROENTGENOTOMOGRAPHIC SIGNS OF MITRAL STENOSIS AND MITRAL INCOMPETENCE -U-

AUTHOR--(05)--PUTOV, N.V., KOBLENTSHISHKE, A.I., GUDIMLEVKOVICH, V.N., ROZHKOVA, A.S., POSEVIN, D.I.

R

COUNTRY OF INFO--USSR

SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 1, PP 26-32

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEART DISEASE, HEART SURGERY, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1999/0126

STEP NO--UR/0497/70/048/001/0026/0032

CIRC ACCESSION NO--AP0122392

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0122392

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN 100 PATIENTS SUBJECTED TO MITRAL COMMISSUROTOMY THE DEGREE OF STENOSIS OF THE LEFT ANTRIOVENTRICULAR ORIFICE AND MITRAL INCOMPETENCE WAS COMPARED WITH TOMOGRAPHIC SIZES OF THE LEFT BRANCH OF THE PULMONARY ARTERY AND LEFT ATRIUM. IT WAS FOUND THAT SIGNIFICANT INCREASE (OVER 10.5 CM) OF THE LEFT ATRIUM DOES NOT CONTRADICT THE DIAGNOSIS OF TIGHT MITRAL STENOSIS AND INSIGNIFICANT MITRAL INCOMPETENCE, BUT THE ABSENCE OF SUCH AN INCREASE TESTIFIES, AS A RULE, AGAINST IMPORTANT MITRAL INCOMPETENCE. A MARKED DILATATION OF THE PULMONARY ARTERY IS CHARACTERISTIC FOR TIGHT MITRAL STENOSIS, AN ABSENCE OF SUCH A DILATATION DOES NOT CONTRADICT THE DIAGNOSIS OF TIGHT MITRAL STENOSIS. THERE WAS REVEALED A DISTINCT RELATION IN CONJOINT EVALUATION OF THE SIZES OF THE LEFT ATRIUM AND PULMONARY ARTERY.

UNCLASSIFIED

USSR

UDC 621.3.049:75

SOLIN, Yu. V., ODINOKOV, V. G., ROZHKOV, B. G., TSVELEV, E. A., MOROZOV,
K. K.

"A Method of Applying the Drawing of a Printed Circuit"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
1970, No 25, Soviet Patent No 277897, class 21, filed 19 Nov 68, published
5 Aug 70, p 54

Translation: This Author's Certificate introduces a method of applying
the drawing of a printed circuit to a light-sensitive layer. The method
is implemented by a device which utilizes a light pipe for image trans-
mission. As a distinguishing feature of the patent, manufacturing is
simplified, image quality is improved and provision is made for making
images of any configuration. Light flux acts on the various input ends of
the light pipe in accordance with a predetermined program, resulting in
formation of the necessary elements of the printed-circuit module on the
outlet end of the light pipe which has a special configuration.

1/1

USSR

UDC: 539.4.015.1

SOLIN, Yu. V., ROZHKOVA, B. G., and TSVELEV, E. A., Engineers

"Controlling Layer Shifts in the Manufacture of Multilayer Printed Circuit Plates by the Open Contact Area Process"

Moscow, Pribory i sistemy upravleniya, No. 10, 1970, p 54

Abstract: The open contact area method is now used in many enterprises in the Soviet Union. Since the printed circuit layers are glued together in manufacture, one above the other, open areas must be allowed between layers for the insertion of leads to contact points within the printed circuit block. The purpose of this article is to present information on the electrical requirements this type of construction involves. Such requirements also involve specifications in the amount of tolerable shifts in the layers to avoid arcing between leads or between layer components. A table of the recommended dimensions of the various structural characteristics of the layer blocks is given together with a second table listing the minimum distances required to separate leads carrying different voltages. A photomicrograph of a section of the multilayer printed-circuit block is reproduced.

1/1

USSR

UDC 621.372.326

ROZHKOV, G. D., BELANOV, A. S., VZYATYSHEV, V. F.

"Calculation of a Multilayered Dielectric Wave Guide"

Tr. Mosk. energ. in-ta (Works of Moscow Power Engineering Institute), 1972,
vyp. 100, pp 102-114 (from RZh-Radiotekhnika, No 7, Jul 72, Abstract No 7384)

Translation: It is demonstrated that one of the possibilities for decreasing the damping in dielectric wave guides for submillimeter waves is the conversion to multilayered wave guides. The advantages and disadvantages of these wave guides are noted. A study is made of the so-called "compositional" wave guide with a nonuniform shell; its advantage is the possibility of controlling its parameters by varying the dimensions and material parameters of the individual parts of the shell. There are 4 illustrations.

1/1

- 104 -

USSR

UDC 621.373

KATAYEV, I.G., LIPATOV, N.F., MESHKOV, A.N., ROZHKOV, I.I.

"Generator Of Nanosecond Pulse Power On Nonlinear Transmission Lines With Ferrite"

Moscow, Pribory i Tekhnika Eksperimenta, No 5, Sept-Oct 1971, pp 126-130

Abstract: The paper describes in detail the generator circuit and the construction, operation, and characteristics of a generator of nanosecond pulses for supply of injection lasers and other electron-optical devices. The power of output pulses as high as 500 kw permits operation with an unmatched load. The duration of pulses of every polarity is from 2 to 30 nanosecond. The amplitude of the current with a low-resistance load is as high as 800 a; the voltage with a capacitive load is as much as 10 kv. The generator is constructed on the principle of forming electromagnetic shock waves in a transmission line with a ferrite. Received by editors 15 March 71. 7 ref. 3 fig. 1 tab. [Gor'kiy Polytechnical Institute]

1/1

USSR

UDC 51

LITVIN, I. Z., ROZHKOV, I. M., SAKYAN, M. A.

"A Problem of Optimal Servicing in an Open-Hearth Shop"

V sb. Mat. vopr. upr. proiz-vom (Mathematical Problems of Production Control--
collection of works), Moscow, vyp. 3, 1971, pp 15-21 (from RZh-Kibernetika, No
12, Dec 72, Abstract No 12V402)

No abstract

1/1

- 41 -

1/3 015 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--IRREGULARITY IN THE DISTRIBUTION OF GOLD IN ROCKS AND MINERALS,
ILLUSTRATED BY RADIOACTIVATION ANALYSIS DATA -U-
AUTHOR--(05)--ROZHKOV, I.S., RAKOVSKIY, E.YE., BERENSHTEYN, L.YE.,
SEREBRYANYI, B.L., SHILIN, N.L.
COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(4), 927-30

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GOLD, ROCK, MINERAL, GEOCHEMISTRY, RADIOACTIVITY MEASUREMENT,
NEUTRON ACTIVATION ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0569

STEP NO--UR/0020/70/191/004/0927/0930

CIRC ACCESSION NO--AT0126315
UNCLASSIFIED

2/3 015

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0126315

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RADIOACTIVATION SAMPLING FOR AU IN ROCKS AND MINERALS BY USING SUBSTOICHIOMETRIC SEPN. IS VERY RELIABLE AND HAS A VERY GOOD REPRODUCIBILITY (SCATTERING OF PARALLEL DETNS. SMALLER THAN 20PERCENT). IT REQUIRES, HOWEVER, A SAMPLE WEIGHING LARGER THAN OR EQUAL TO 100 MG. THE EFFECT OF NATURAL SCATTERING OF AU ON THE REPRODUCIBILITY OF RESULTS OF RADIOACTIVATION ANAL. WAS INVESTIGATED. THE SCATTERING OF AU DISTRIBUTION IN ROCKS AND MINERALS DEPENDED ON NUMEROUS FACTORS; FORM OF AU OCCURRENCES IN THE MINERAL, STRUCTURAL AND TEXTURAL CHARACTERISTICS OF ROCKS, AND INTENSITY OF SECONDARY ALTERATIONS. THE ERROR OF AN ANAL. DETN. CONSISTS OF 2 COMPONENTS: ERROR RELATED TO THE REPRODUCIBILITY OF THE METHOD (SIGMA SUBR) AND ERROR RELATED TO HETEROGENEITY OF AN ANALYZED SAMPLE (SIGMA SUBH). THE SUMMARY ERROR (SIGMA SIGMA) IN DETG. THE AV. CONTENT OF AN ELEMENT IN AN ANALYZED SAMPLE IS, SIGMA SIGMA PRIME2 EQUALS SIGMA SUBR PRIME2 PLUS SIGMA SUBH PRIME2. THE RESULTS OF LARGER THAN 200 NEUTRON ACTIVATION DETNS. OF AU IN ROCKS AND MINERALS, PROCESSED STATISTICALLY, SHOWED THAT THE NATURAL HETEROGENEITY IN AU CONTENTS IN AMPHIBOLE GABBRO, BIOTITE AMPHIBOLE DIORITE, BIOTITE AMPHIBOLE GRANODIORITE, GRANITE VEIN IN GRANODIORITE, APLITE VEIN IN GRANODIORITE, AND APLITE VEIN IN GABBRO IS MUCH HIGHER THAN THE ERROR OF REPRODUCIBILITY OF THE METHOD (SIGMA SUBR SIMILAR TO 20PERCENT). NATURAL HETEROGENEITY WAS SO HIGH THAT THE AU CONTENTS IN INDIVIDUAL BATCHES OF THE SAME SAMPLE DIFFERED FROM EACH OTHER BY LARGER THAN 5 TIMES.

UNCLASSIFIED

3/3 015

CIRC ACCESSION NO--A70126315

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--THEREFORE, IF SIGMA SUBR IS SMALL, THERE ARE REASONS TO
 USE THE MOST ACCURATE METHODS OF DETN.; BUT IF SIGMA SUBH IS MUCH HIGHER
 THAN SIGMA SUBR, THEN THE USE OF ACCURATE AND USUALLY EXPENSIVE ANAL.
 METHODS IS SENSELESS IF DETN. IS MADE FROM SMALL SAMPLES
 NONREPRESENTATIVE WITH RESPECT TO THE INITIAL OBJECT.
 TSENT. NAUCH. ISSLED. GORNORAZVED. INST. TSVET. REDK. BLAGO ROD. METAL.,
 MOSCOW, USSR.

FACILITY:

UNCLASSIFIED

Pathology

USSR

UDC 616.153.1-092

KRUPENINA, V. I., NIKIFOROV, V. N., and ROZHKOV, K. K., Rostov-na-Donu Scientific Research Antiplague Institute, Central Clinical Hospital of the Fourth Main Administration, Ministry of Health USSR, Moscow

"Mechanism of Change in the Level of Enzymatic Activity of Blood Serum in Different Pathological Processes"

Moscow, Sovetskaya Meditsina, No 11, 1971, pp 23-29

Abstract: Experiments were conducted with animals infected with plague toxin, cholera toxin or typhoid bacteria. Serum levels of alanine- and aspartate-aminotransferase, alkaline phosphatase, acid phosphatase, and fructose diphosphate aldolase showed that the mechanism regulating enzymatic activity involves shifts in the quaternary structure of these enzymes. The actual process involves polymeric molecules found in the heavier enzyme molecules, and these polymers are capable of dissociation and reassociation under certain conditions. This enzymatic activity was studied in white rats with acute and chronic lesions of the liver caused by carbon tetrachloride as well as in animals poisoned with plague and cholera toxins, and in human subjects suffering from infectious hepatitis, myocardial infarction, and other diseases.

1/1

ROZNOVA, L. N.

JPRS 58318
26 February 1973

THE INFLUENCE OF AN ATMOSPHERE OF MOLECULAR HYDROGEN UPON THE
EVOLUTION OF OXYGEN BY LEAVES OF TRIDASCANTIA PLUMIFERENS VAIL.
BHC 581.132

Article by G.A. Sviridovskiy and L.N. Roznova, Institute of Photosynthesis,
USSR Academy of Sciences, Pushchino, and V.K. Yermolov, Institute of Geo-
chemistry and Analytical Chemistry, USSR Academy of Sciences, Moscow,
Floriadskaya Street, Kussien, No. 6, Vol. 19, 1972, submitted 28 April 1972,
signed to press 9 November 1972, pp 1199-1203.

The effect of atmosphere of H₂ and of He on the evolu-
tion of O₂ by leaves of *Tridascantia plumifera* Vail was compar-
ed. It was shown that the function of evolution of O₂ is much
more sensitive to dark preincubation in an H₂ atmosphere than the
fixation of C₁₄O₂. After prolonged stay of the leaves in the
dark in an atmosphere of H₂ (18 hours) the absorption of carbon
dioxide may be realized in general, without the evolution of carbon
the gaseous phase of free oxygen. Helium does not have a
similar effect. On the contrary, the replacement of an atmos-
phere of H₂ by He leads to reactivation of the oxygen-evolving
system of photosynthesis.

One of the approaches during investigation of the mechanism of bio-
logical oxidation of water up to molecular oxygen may be the study of pecu-
liarities of the gaseous exchange in macrobiologically shaped plants. It
was shown earlier that the leaves of certain higher plants possess the
capacity for fixation of carbon dioxide after prolonged incubation of them
in the dark in an atmosphere of molecular hydrogen, 1/2%. At a rate
of 80-250 and a light intensity of 2.4-10⁴ ergs/cm² they fix C₁₄O₂ at a rate
comparable to that in photosynthesis under aerobic conditions. Thus, for
example, a 15-hour stay of *Tridascantia* leaves in the dark in an ordinary
atmosphere reduces the intensity of subsequent photosynthesis by an average
of 10 percent and preliminary incubation of the leaves in the dark in an
atmosphere of hydrogen reduces the intensity of light fixation of C₁₄O₂ in
an atmosphere of this same gas by approximately 20 percent (Figure 1).

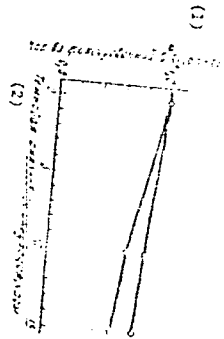


Figure 1. The intensity of light fixation of CO_2 by *Trapaena* leaves in an ordinary atmosphere and in an atmosphere of CO_2 in dependence upon the duration of dark incubation of the leaves. (1) Quantity of fixed CO_2 (1 = 1.00 mg under 1) Dark anaerobic incubation, hours; 2) relative

some peculiarities of the process studied are: sensitivity to temperature, active assimilation of carbon dioxide in the long-wave region of the spectrum and others, and these distinguish it from photosynthesis under ordinary conditions [2,4]. At the same time, the suppression of fixation of carbon dioxide by manure [3] indicated the functioning of the II photochemical system of chloroplasts, which indicated the fundamental nature of the phenomenon observed from the photo-reduction by algae of the case of photo-reduction by algae, as is well known, the process of assimilation of carbon dioxide is not inhibited by manure [3,6], indirect effect observed earlier [3], indicated the fact that *Trapaena* leaves, after their prolonged incubation in an atmosphere of hydrogen, may be reduced by carbon dioxide without formation of free oxygen.

Naturally, the question arose as to whether hydrogen under these conditions is a competitor of water or whether it reduces the hydroxyl radical (or other form) which is obtained as the result of oxidation of bound water) and thereby impedes the formation of molecular hydrogen of these alternatives were discussed in the literature in connection with the mechanism of photo-reduction [1], during which hydrogenase, localized in the I photochemical system of the chloroplasts is functioning. This question was not posed in respect to the II photochemical system.

It was necessary, in connection with this, to study, as the first stage of the investigation, the effect of prolonged incubation of leaves of higher plants in an atmosphere of hydrogen of helium (control experiments on the effect of anaerobiosis) on the intensity of evolution of oxygen.

USSR

UDC 533.92.621.039.61

FARENIK, V. I., VLASOV, V. V., ROZHKOVA, A. M., STEPANOV, K. N.,
SUPRUNENKO, V. A., and YAKIMCHUK, YU. V.

"Study of the Radial Structures in the Oscillations of a Plasma
Column in Crossed Fields With Cyclotron Resonance Instabilities"

Kiev, Ukrainskiy Fizicheskiy zhurnal, No 3, 1973, pp 394-396

Abstract: Experimental results are given for the investigation of cyclotron resonance instabilities in a collisionless rotating plasma in a uniform, longitudinal magnetic field. The basic experimental equipment is the same as that described in an earlier article (A. M. Rozhkov, et al, UFZh, 14, 1969, p 1856) except that this earlier equipment used crossed electric and magnetic fields. Experiments with the equipment of the present paper were conducted at a gas pressure of 10^{-5} mm Hg. The curve plotted for the amplitude of the ionic cyclotron oscillations as a function of the uniform magnetic field intensity differs essentially from that for the nonuniform field. It was also found that oscillations of various frequencies were localized in different radial layers and that the oscillation intensity was of a resonance nature. The authors thank V. L. Sizonenko and V. T. Tolok for their comments.

1/1

USSR

ROZHKOV, L. I.

UDC 621.391.3

"A Remote-Control Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Ohratzy, Tovarnyye Znaki,
No 5, Feb 72, Author's Certificate No 327623, Division H, filed 1 Dec 69,
published 26 Jan 72, p 175

Translation: This Author's Certificate introduces a device for remote control of parallel operating binary channels in a data transmission line. The device contains switch blocks, a unit for monitoring the state of the equipment, and a remote-control channel. As a distinguishing feature of the patent, command transmission time is reduced by connecting the outputs of the binary channels of the line through a decoding block together with the outputs of the monitoring equipment for the states of the channels and the outputs of the switch block to the control module, which is connected in turn to the commutation inputs of the switching block and the input lines of the module for improving the reliability of digital data transmission.

1/1

USSR

UDC 621.396:621.391.84

ROZHKOV, M. M., Active Member of the Scientific and Technical Society of Radio Engineering, Electronics and Communications

"Transmission of Selective Call Signals for Radio Communications"
Moscow, Radiotekhnika, Vol 26, No 10, 1971, pp 101-103

Abstract: A study was made of the basic principles of shaping call signals. A block diagram of the modem and the decoder designed for call signal transmission in a single sideband radio channel is presented. The call signal transmission and reception processes are described in detail on the basis of the block diagrams of the transmitting and receiving parts of the selective call equipment. The entire selective call apparatus can be executed from capital circuit elements. An experimental test demonstrated the high effectiveness of this principle of shaping the call signal in communications channels with a high noise level.

1/1

USSR

UDC 620.194

ALYAB'YEV, A. Ya., SHEVELYA, V. V., and ROZHKOVA, M. N., Kiev Institute of
Civil Air Fleet Engineers

"Electron Microscope Study of the Mechanism of Fretting Corrosion"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 6, 1970, pp 24-28

Abstract: This work reports on a systematic electron microscope analysis of the actual contact zones and zones of primary influence in which fatigue-oxidative processes facilitating active development of fretting corrosion occur. Layer-by-layer study of the damaged material using electronography to evaluate the state of the crystalline structure and determine the nature of the fretting corrosion products produced new data on the structural changes in the surface layers of type 1Kh18N9T steel. Analysis showed that during fretting corrosion the cyclical contact loads prepare the near-surface layers of the metal for intensive oxidation. The amorphous state of the surface volumes of metal in the contact zone causes increased chemical activity of the surface during fretting corrosion. The formation of volumes of metal with differing degrees of hardness during fretting corrosion indicates that processes of hardening and softening occur simultaneously in the surface layers.

1/1

USSR

R

POLIYEVSKIY, G. A., ROZHKOVA, M. M.

UDC 621.394

"Phasing Device"

USSR Author's Certificate No 253121, Filed 1 March 68, Published 23 January 70 (from RZh--Elektrosvyaz, No 9, September 1970, Abstract No 9.64.217P)

Translation: A phasing device is patented, which contains a quartz-crystal oscillator, a limiter with a pulse shaper, a phase discriminator, a reversible counter, a unit for formation of twin alternating pulses (AP), an amplitude modulator of the degree of asymmetry of the twin AP, and a resonance circuit. With the object of simplifying the apparatus, reducing the frequency of the quartz-crystal oscillator, and obtaining an automatically varying capture band, the series-connected unit for formation of the twin AP and the resonance circuit are connected between the output of the quartz-crystal oscillator and the limiter with a pulse shaper, while the control input of the amplitude modulator of the degree of asymmetry of the twin AP is connected with the output of the digital-code-to-voltage converter, whose inputs are connected to the reversible counter. Between the phase discriminator and reverse counter mentioned, two "AND" circuits are connected, the control inputs of which are combined with a generator of time pulses whose frequency is determined by the minimum compensation interval.

1/1

1/2 017

TITLE--STRUCTURAL CHANGES DURING FRETTING CORROSION -U-

UNCLASSIFIED

PROCESSING DATE--11SEP70

AUTHOR--ALYABYEV, A.YA., SHEVELYA, V.V., ROZHKOV, M.N.

COUNTRY OF INFO--USSR

SOURCE--FIZ.-KHIM. MEKH. MATER. 1970, 5(6), 650-5

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--METAL CRACKING, CRYSTAL DISLOCATION, FRETTING CORROSION,
MATERIAL FATIGUE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0663

STEP NO--UR/0369/70/005/006/0550/0555

CIRC ACCESSION NO--AP0105640

UNCLASSIFIED

2/2 017

CIRC ACCESSION NO--AP0105640
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT. THE EFFECTS OF FRETTING CORROSION WERE STUDIED BY RUBBING 2 PIECES OF STEEL AGAINST EACH OTHER. THE RESULTS OF THE FRETTING CORROSION CAN BE DIVIDED INTO 3 ZONES: (1) THE ZONE OF CONTACT, (2) THE ZONE OF PRIMARY EFFECT LYING IMMEDIATELY BELOW THE ZONE OF CONTACT, AND (3) THE ZONE OF SECONDARY EFFECT BELOW THAT. IN ZONE (1) WERE FOUND ELEMENTS OF THE DEFECTIVE STRUCTURE ALONG WITH TRACES OF SLIPPAGE APPEARING AS GROUPS OF PACKETS DISSECTING THE STRUCTURE GRAINS IN ONE OR MORE DIRECTIONS AND FORMING ORTHORHOMBIC CELLS. ZONE (2) DOES NOT PARTICIPATE IN THE CONTACT BUT IS SUBJECT TO CONSIDERABLE STRAINS AND STRESSES. THE STRUCTURE OF THIS ZONE IS SUBJECT TO ALTERNATING TANGENTIAL STRESSES WHICH CAUSES SLIPPAGE IN FAVORABLY ORIENTED GRAINS, DEFECTS IN PACKING, AND TWINNING. IN ZONE (3) THERE WAS NO TRANSCRYST. SLIPPAGE AND THERE WAS ONLY DISLOCATION OF STRUCTURE FREQUENTLY FOUND IN AREAS OF MODERATE DEFORMATION. THE WEAKENING OF METAL SUBJECT TO FRETTING CORROSION PROCEEDS IN THE FOLLOWING STEPS: THE PROCESSES OF EXTRUSION AND INTRUSION CHARACTERISTIC FOR ALTERNATING SIGN LOADS CAUSE THE APPEARANCE OF NEW DEFECTIVE SURFACES AND GRADUALLY PENETRATE INTO THE CRYSTALS. OXIDES FORM WITHIN THE CRYSTALS AND INTERFERE WITH DISLOCATION SLIPPAGE CAUSING MICROCRACKS. FATIGUE CAUSES THE APPEARANCE OF VACANCIES WHICH COALESCE FORMING PORES; O PENETRATING THE PORES OXIDIZES THEIR SURFACES LEADING TO FORMATION OF MICROCRACKS.

UNCLASSIFIED

USSR

KNORRING, V. G., ROZHKOVA, N. F., Candidates of Technical Sciences, and
KREMLEVSKIY, N. P., Engineer

UDC 531.7.08

"A Digital Instrument for the Measurement and Analysis of Vibration Parameters"
Moscow, Pribory i Sistemy Upravleniya, No 5, May 1973, pp 25-27

Abstract: A description is given of a digital vibration-measurement instrument intended for measurement and recording of the first and second harmonic components of vibrations that originate during the acceleration and coasting of large electrical machines, as well as during their balancing. The instrument works on the principle of digital integration of the pulse frequency modulation of the signal. The manner of operation of the instrument is described. The distinguishing feature of this instrument is the fact that switching of the measurement limits takes place not on the basis of the final result (the number of the meter pulses), but on the basis of the output frequency of the voltage-to-frequency converter, since the voltage-to-frequency converter is the only component of the instrument that is sensitive to overloading: it functions linearly only at input voltages not exceeding 100 mv. Since the output voltage of the sensor unit can be considerably higher, a voltage divider is included

1/2

- 106 -

USSR

KNORRING, V. G., et al., *Pribory i Sistemy Upravleniya*, No 5, May 1973, pp 25-27

between the sensor unit and the voltage-to-frequency converter. The procedure is described, whereby the voltage divider acts to keep the input of the voltage-to-frequency converter within the range of its linear functioning. 3 figures. 2 references.

2/2

ROZHKOV, V. A.

"Regression Analysis of Two Random Quantities (the "rag" program)"

Tr. Gl. Geofiz. Observ. [Works of Main Geophysical Observatory], No 289, 1971, pp 51-63, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V566 by the author).

Translation: An algorithm and program (in TA-1M translator input language) are presented for regression analysis of two random quantities. The program is designed for calculation of the parameters of equations of linear and curved regression of random quantities, and also for calculation of the values of conditional distributions and their moments.

1/1

- 74 -

APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002202710015-1^{317 335 2}

USSR

ROZHKOV, V. A., PANFILOV, B. A., SVERDLOVA, A. M.

"Measuring the Volt-Capacitive and Transfer Characteristics of Metal-Dielectric-Semiconductor Structures"

Moscow, Pribory i Tekhnika Eksperimenta, No 6, 1971, pp 127-129

Abstract: The volt-capacitive characteristics are used to investigate the electric properties of metal-dielectric-semiconductor (MDS) structures. In a number of cases it is useful to know the time behavior of the capacitance. Accordingly, an all-purpose scheme has been developed for investigating the time behavior of the capacitance $C(t)$ and automatic recording of the volt-capacitive $C(V)$ -characteristics of MDS structures. The proposed device permits: 1) recording of the $C(V)$ -characteristic under equilibrium (quasiequilibrium) conditions by taking measurements with respect to points; 2) recording the $C(V)$ -characteristics on a pen recorder where it is possible to isolate the hysteresis phenomena in the MDS structures; 3) measurement of the instantaneous capacitance at any point in time, which permits calculation of the effective lifetime of the minority carriers τ and the surface generation speed S in the semiconductor. The schematic of the measuring apparatus is presented, and its operating characteristics are discussed. An example oscillogram of the capacitance relaxation of the $Si-SiO_2-Al$ structure shifted to the inversion region is presented.

1/1

- 153 -

USSR

UDC 533.916

POLOVIN, R. V. et al, Fizika plasmy i problemy upravlyvayemogo termoyadernogo sinteza, 1971, Naukova dumka, pp 91-98.

Problem of Controlled Thermonuclear Reactions) Part 1, 1958, 77, the two approaches themselves are essentially different. While Davydov did not take into account particle collisions, the present authors do.

2/2

033R.

UDC 533.916

ROZHKOV, V. V. and KOZEL, V. A.

"Motion of Charged Particles in a Random Electric Field"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, vol. 16, No. 6, June 1971,
pp 1033-1034

Abstract: The problem of the motion of charged particles in stochastic electric fields is pertinent to several branches of physics such as astrophysics, plasma physics, and electronics. In this short theoretical study, the particles are assumed to have the same charge, the same mass, and to move under the influence of a random electric field and in a constant magnetic field at right angles to the particle motion. The analysis begins with a presentation of the equations for the orthogonal components of the electric field with the simplifying assumption that the nonrandom component is zero and that the electric field is a function of time only. Since this problem is connected with the problem of the emission of thermoelectrons from a plasma-beam system, the authors use the method developed by V. V. Rozhkov and given in earlier articles by him (ZhTF -- Journal of Theoretical Physics -- 39, 1969, p 1360; UFZh -- Ukrainian Journal of Physics -- 13, 1968, p 1713). Noting that the asymptotic value of the average $1/2$

USSR

ROZHKOV, V. V. et al, Ukrainskiy Fizicheskiy Zhurnal, vol. 16, No. 6, June 1971, pp 1033-1034

energy of a particle, as $t \rightarrow \infty$, and the diffusion coefficient of the particles across the external magnetic field are of interest, the authors derive the equation for each. They express their gratitude to A. I. Akhiezer and R. V. Polovin for their interest in the work. They are connected with the Physico-Technical Institute of the Ukrainian Academy of Sciences at Kharkov.

2/2

- 72 -

USSR

UDC 533.916

POLOVIN, R. V., ROZHKOV, V. V.

"Mathematical Problems of Stochastic Processes in Plasma"

Fiz. plazmy i probl. upravl. termovader. sinteza. Resp. mezhved. sb.
(Plasma Physics and Problems of the Controlled Thermonuclear Fusion.
Republic Interdepartmental Collection), 1972, No. 3, pp 67-69 (from
RZh-Fizika, No 11, Nov 72, Abstract No 11G200)

Translation: It is shown that the partial differential equations with random characteristics describing stochastic processes in a plasma should be replaced by determinate equations for the distribution functions. The latter, as a rule, belong to the parabolic type.

1/1

- 48 -

USSR

ROZHNOV, V. Ye., Director, Department of Psychotherapy, Institute of Advanced Training for Physicians, and ANISIMOV, V., Special Correspondent

"In the World of Hypnosis"

Moscow, Sotsialisticheskaya Industriya, 18 Jun 72, p 4

Abstract: The ancient Egyptians are known to have used hypnosis, but it did not become a science until the 1840's. F. A. Mesmer (1733-1815) established the influence of psychological factors on functional nervous disorders. Many of the seemingly supernatural phenomena of hypnosis were given scientific explanation in the early 1900's by I. P. Pavlov. The psychotherapeutic method of autogenic conditioning for muscle relaxation was developed, in the 1930's, from the close relationship between yoga and self-induced hypnosis. In modified form, autogenic conditioning can be used for self-relaxation and normalization of nervous-psychic functions in treatment of insomnia, hyperirritability, etc. Soviet psychotherapists use yoga asanas to help restore nerve-muscle tone in the treatment of certain illnesses. Laboratory and clinical experiments are being conducted to develop a more thorough understanding of hypnotic phenomena and factors which increase the effectiveness of oral suggestion, and to study the mechanisms of various forms of interaction between the

1/2

- 61 -

USSR

ROZHNOV, V. Ye., Sotsialisticheskaya Industriya, 18 Jun 72, p 4

conscious and unconscious components of psychic activity in normal and pathological human beings. Hypnotic suggestion is used in the treatment of neuroses such as hypochondria, alcoholism and other forms of drug addiction, and as an anesthetic in surgery. Applications of hypnosis in psychology, teaching, industry, sports, and theatre are being studied. Psychoregulatory conditioning, which includes the practice of autogenic conditioning, is used to increase an athlete's psychological readiness. Psychotherapeutic methods for increasing human psychic potential have application in other fields, such as science and art. These methods can also be used in the treatment of social problems.

2/2

R
USSR

KARTUSHINA, L. I., ROZHKOVA, A. M., DAVRONOVA, A. M., SAMSONOVA, Z. F., and YAKUBOVA, M. YA., Uzbek Scientific Research Institute of Epidemiology, Microbiology, and Infectious Diseases, and Bacteriological Department, Children's Railroad Hospital No 3, Tashkent

"A Placenta and Yeast Hydrolysate as the Basis for a Nutrient Medium for Growing Pathogenic Microbes"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, 1970, pp 81-83

Abstract: Numerous substitutes for nutrient materials also include placental fluid hydrolyzed with yeast. In this investigation, we determined the feasibility of using placental tissue as nutrient material, by hydrolyzing it with brewer's yeast. A mixture of 1 kg of ground placenta 2 l of brewer's yeast, and 2 l of tap water was kept at 50° C for 6 days, with periodic stirring. Then, the supernatant fluid was decanted. This placenta and yeast hydrolysate, with a high amine nitrogen (400-420 mg%) and peptone (2.3-2.5%) content, was inactivated at 80° C. To prepare nutrient media, the hydrolysate was appropriately diluted, the pH was adjusted, and either salt or glucose was added. Control media were made from the 1/2

- 23 -

USSR

KARTUSHINA, L. I., et al., Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, 1970, pp 81-83

Khottinger's broth. Various strains of Shigella, Salmonella, Escherichia, and Staphylococcus were cultured in sugar media, totaling 225 cultures. In 24 hours, the yields from the experimental and control cultures were equal. Salt media were used as elective nutrients to isolate Staphylococci from feces and vomitus of patients with acute gastrointestinal disorders. Sixty-five parallel tests were carried out. In 24 cases, the Staphylococci were simultaneously isolated from the experimental and the control cultures. This indicates that salt-containing nutrient media made from a placenta and yeast broth have elective properties matching those of media made from the Khottinger's broth.

2/2

USSR

UDC: 616.981.452-092.9-085.371-091

TERNOVOY, V.I., ZAPILATINA, S.I., KHOKHLOVA, A.I., and ROZHKOVA, G.F., Rostov-na-Donu Scientific Research Antiplague Institute

"Morphological Shifts in Guinea Pigs Following Enteral Immunization With EV Plague Vaccine"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 2, 1970, pp 18-21

Abstract: Enteral inoculation of guinea pigs with EV plague vaccine (250 million and 20 billion microbial cells) stimulated the proliferation of reticuloendothelial elements in the mesenteric lymph nodes, with the formation of epithelial cell granulomas, a distinct macrophage reaction, and the appearance of numerous pyroninophilic cells. These shifts were less pronounced in the spleen and absent in the remote lymph nodes. Productive lymphadenitis and formation of microscopic granulomas (with central necrosis) developed in the acute stage of the vaccinal process, especially after the 20 billion cell dose was used, but disappeared within 18 days of immunization.

1/1

Acc. Nr: **AP0043935**

R

Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 2, pp 18-21

MORPHOLOGICAL CHANGES IN GUINEA PIGS
IN ENTERAL IMMUNIZATION WITH PLAGUE EV VACCINE

V. I. Ternovoy, S. I. Zaplatina, A. I. Khokhlova, G. E. Rozhkova

The authors studied the structural changes in the organism of guinea pigs enterally immunized with plague EV vaccine in a dose of 250 million and 20 milliard microbial cells. Immunomorphological changes in the form of proliferation of lymphoidal and reticular tissues with formation of epithelioid-cellular granulomas, macrophagic reaction and hyperplasia of pyroninophilic elements developed in the mesenteric lymph nodes. Changes in the spleen and remote lymph nodes were insignificant. Productive mesenterial lymphadenitis with granulomatosis resolved by the 18th day from the time of immunization of guinea pigs, even when massive doses were used.

//

REEL/F
FRAME
19770361

6 PI

1/2 033 UNCLASSIFIED
TITLE--INTERNAL STRESSES IN LATEX COATINGS -U-

PROCESSING DATE--11SEP70

AUTHOR--ROZHKOVA, G.A., KHRULEV, V.M.

COUNTRY OF INFO--USSR

SOURCE--STROIT. MATER. 1970, (1), 31-2

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--VULCANIZATION, INTERNAL STRESS, BUTADIENE STYRENE RESIN,
CONCRETE, ADHESION, POLYMER CROSSLINKING, FILLER, TENSILE
STRENGTH/(U)SKS65 BUTADIENE STYRENE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1987/1665

STEP NO--UR/0228/70/000/001/0031/0032

CIRC ACCESSION NO--AP0104887

UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104887
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE EFFECTS OF PRELIMINARY VULCANIZATION ON THE STRENGTH OF FILLED BUTADIENE STYRENE SKS-65 RUBBER (I) LATEX, ITS ADHESION TO CONCRETE, AND INTERNAL STRESSES WERE STUDIED. I LATEX WAS FILLED WITH MARSHALITE CONTG. 95.4PERCENT SILICA AND THEN VULCANIZED WITH 3PERCENT OF FINELY DIVIDED S, 1PERCENT, ZNO, AND NiCH SUB2 CH SUB2 OH) SUB3. INTERNAL STRESSES IN I FILMS PASSED THROUGH A MAX., WHEREAS STRESSES IN NONVULCANIZED FILMS APPROACHED THE MAX. ASYMPTOTICALLY. THERE WERE NO STRESSES IN UNFILLED I COATINGS. THUS, INTERNAL STRESSES REACHED THEIR MAX. AT THE VERY ONSET OF CROSSLINKING, AND WERE A FUNCTION OF THE CROSSLINKING KINETICS. AT THE FINAL STAGE OF CROSSLINKING, THE STRESSES WERE CONSIDERABLY SMALLER THAN THE TENSILE STRENGTH OF THE FILMS, THUS ENSURING THE FORMATION OF STRONG ADHESIVE BONDS WITH THE CONCRETE.

UNCLASSIFIED

USSR

UDC 614.777: [615.277.4:547.53

IL'NITSKIY, A. P., YERSHOVA, K. P., KHESINA, A. YA., ROZHKOVA, J. G., KLUBKOV, V. G., and KOROLEV, A. A., Institute of Experimental and Clinical Oncology, Academy of Medical Sciences USSR, Institute of General and Communal Hygiene imeni A. N. Sysin, Academy of Medical Sciences USSR, and First Moscow Medical Institute imeni I. M. Sechenov

"Stability of Carcinogens in Water and Effectiveness of Decontamination Methods"

Moscow, Gigiyena i Sanitariya, No 4, 1971, pp 8-12

Abstract: Polycyclic aromatic hydrocarbons, especially benzpyrene, can remain active in water a long time and spread to considerable distances from the source of contamination. The wide distribution of these carcinogens in water is promoted by the presence of certain substances that help them to dissolve, e.g., surfactants which at concentrations of 10 to 50 ng/l can increase the solubility of benzpyrene as much as 10-fold. Certain purification methods (ultraviolet irradiation, chlorination, ozonization, gamma irradiation) decrease the concentration of the carcinogens in varying degrees. Ozonization is the most effective, gamma irradiation the least effective.

1/2

-- 88 --

USSR

IL'NITSKIY, A. P., et al., Gigiyena i Sanitariya, No 4, 1971, pp B-12

Experiments showed that bacteriological indicators (e.g., the coli titer) following the use of ultraviolet or gamma rays reveal little about the presence or absence of carcinogenic hydrocarbons. Sixty minutes' boiling of water containing benzopyrene at a concentration of 0.002 to 0.002 μ g/L neutralized most of the compound.

2/2