USSR

UDC 621.396.676

VERSHKOV, MARAT VLADIMIROVICH

"Ship Antennas"

Sudovyye antenny (cf. English above), Leningrad, Izd. "Sudostroyeniye," 1972.
424 pp. ill. 45 ref. 1 r 53 k.

Abstract: In the books methods are considered of investigation, design, and measurement, and problems of operation, prospects, and growth trends of ship antenna-feeder radiocommunication devices. The results are also presented of investigations and development of new types of ship antenna radiocommunication devices conducted in recent years, a considerable part of which was fulfilled with the direct participation of the author. The principles of construction of the antennas under consideration, the principal technical indices, design methods, and experimental data are stated. The book is intended for engineer-technical workers occupied with the development of ship antennas and radio apparatus, workers of planning organizations and steamship units, and it can also be of assistance in courses of antennas for students of higher educational institutions.

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VERSHKOV, MARAT VLADIMIROVICH, Sudovyye antenny, Leningrad, Izd. "Sudostroyeniye,"
1972. 424 pp. ill. 45 ref. 1 r 53 k.

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1972. 424 pp. ill. 45 ref. 1 r 53 k.

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VERSHKOV, MARAT VLADIMIROVICH, Sudovyye antenny, Leningrad, Izd. "Sudostroyeniye,"
1972. 424 pp. ill. 45 ref. 1 r 53 k.

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VERSHKOV, MARAT VLADIMIROVICH, Sudovyye antenny, Leningrad, Izd. "Sudostroyeniye,"
1972.   424 pp. ill. 45 ref. 1 r 53 k.

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VERSHKOV, MARAT VLADIMIROVICH, Sudovyye antenny, Leningrad, Izd. "Sudostroyeniye,"
1972.   424 pp. ill. 45 ref. 1 r 53 k.

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USSR

VERSHKOV, MARAT VLADIMIROVICH, Sudovyye antenny, Leningrad, Izd. "Sudostroyeniye,"
1972. 424 pp. ill. 45 ref. 1 r 53 k.

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VERSHKOV, MARAT VLADIMIROVICH, Sudovyye antenny, Leningrad, Izd. "Sudostroyeniye,"
1972. 424 pp. ill. 45 ref. 1 r 53 k.

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USSR

VERSHKOV, M. V., LEVIN, B. M.

"Effect of Masts on the Operating Efficiency of Primary Ship's Antennas"

Translation: A study is made of the effect of a grounded mast on the radiation resistance of radiation fed to the base of a conductor in direct proximity to a mast. There are 4 illustrations and a 3-entry bibliography.

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USSR

VERSHTEYN, M. F.

UDC: 661.143

"Conditions of Binding Luminescent Compositions to a Substrate"

V sb. Sintez, ochistka i analiz neorgan. materialov (Synthesis, Purification and Analysis of Inorganic Materials--collection of works), Novosibirsk, "Nauka", 1971, pp 218-224 (from RZh-Khimiya, No 7, Apr 72, Abstract No 7L180)

Translation: The author studies the conditions of formation of luminescent deposits from silicate suspensions when the concentration of SiO_2 in the suspension is approximately 0.05%. Fairly strong deposits with excellent structure are produced by using silicates with a modulus of 4 when the temperature of the suspension is about 20°C. The rate of polymerization of silicon dioxide in the working solutions increases with the modulus of the initial silicate. The rate of polymerization by strontium nitrate is a complex function of temperature. This is attributed to the effect of two opposing processes of depolymerization-polymerization of silicon dioxide in dilute alkaline solutions. Predominance of the first or second process depends on temperature. A relation is observed between the structure of a deposit of luminescent composition and the degree of polymerization of silicon dioxide in the working suspension before adding $Sr(NO_3)_2$ to the suspension. Resumé.

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USSR   UDC: 536.212.2

KUTATELADZE, S. S., Corresponding Member of the USSR Academy of
Sciences; RUBTSOV, N. A.; and VERTE, A. E.

"Nonstationary Interaction of Thermal Radiation and the Surface
of Pure Metals"

Abstract: Two pieces of experimental equipment for verifying the
experimentally demonstrated temperature anomaly in the surface
layers of metals subjected to sudden heating by a constant-
density thermal flux are described. This anomaly is here defined
as the deviation between the experimentally determined tempera-
ture of the surface and the theoretically determined value as ob-
tained through the solution of the equation of thermoconductivity
with limiting conditions of the second kind. One of these de-
vices realizes the sudden heating under vacuum conditions of
$6 \cdot 10^{-5}$ to $5 \cdot 10^{-6}$ mm Hg, while the other realizes the heating in
air. The densities of the absorbed heat fluxes were varied from
$5 \cdot 10^3$ to $6 \cdot 10^4$ w/m^2 and from $3 \cdot 10^3$ to $5 \cdot 10^4$ for the two devices
respectively. From their work with this equipment, the authors
conclude that the anomaly is confirmed and that its dimensions
are determined by the state of the surface and the microstructure
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USSR

KUTATELADZE, S. S., et al, Doklady Akademii Nauk SSSR, vol 206,
No 1, 1972, pp 71-73

of the metal.   They are members of the Institute of Thermal
Physics, Siberian Division of the USSR Academy of Sciences, at
Novosibirsk.

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USSR

VERTEBNYY, V. P.; KAL'CHENKO, A. I.; PASECHNIK, M. V. (Institute of Nuclear Research, Ukrainian Academy of Sciences)

"Level Density of Compound Nuclei in the Region $A = 130-200$ and Other Nuclear Properties"

Moscow, Yadernaya Fizika; July, 1972; pp 38-41

ABSTRACT: Recently at the WR-M reactor of the Institute of Nuclear Research of the Ukrainian Academy of Sciences some data on neutron resonance for a considerable number of nuclei over the range of mass numbers $A = 130-192$ were obtained by the time-of-flight method. These data were used to calculate the level density of compound nuclei close to the excitation energy equal to the binding energy. This paper presents data on the dependence of the mean distance between levels for a fixed excitation energy as a function of the number of neutrons in a nucleus.

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USSR   UDC 621.317.7.029.65/66-5

VERTIN, A. A., PETRUSHIN, A. A., SUSLOV, N. N., SHESTOPALOV, V. P.,
KOLOSOV, S. S., LEONOV, Yu. I., and LITVINENKO, L. N.

"Automation of Experimental Research in the Millimeter and Sub-
millimeter Wavelength Ranges"

Translation: The proposed research method is based on the visuali-
zation of the field distribution in open structures (resonators,
for example) by introducing into their space a test body which,
entering a region of greater or lesser intensity in its motion
along a specified trajectory, varies to some extent the parameters
of the structures. The trajectory of the test body is traced by a
beam on the screen of a cathode-ray tube. The brightness of the
beam is proportional to the signal taken from the open structure.
A. K.
1/1

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USSR   UDC: 669.245:620.183

KALININA, Z. M., VERTIY, I. G., KHISMATULLINA, N. S., LONGINOV, M. F.,
SERGEYEVA, L. V., FILATOV, B. A., ARTEMOVA, S. P., Chelyabinsk

"Influence of Magnesium on the Structure of Heat-Resistant Nickel-Based
Alloys"

Abstract: The influence of magnesium on the structure of nickel alloys was
studied under the assumption that magnesium is concentrated primarily along
the grain boundaries and in areas of other defects of the crystalline lattice.
Assuming that a very slight concentration of magnesium could produce an excess
of magnesium at these defect locations and thus hinder the separation of car-
bides and other excessive phases in these locations, facilitating their more
even distribution through the entire volume of the alloy, the authors
turned primary attention to the study of the influence of magnesium on the
form, dispersion and nature of distribution of excess phases in the solid
solution. It was found that the optimal addition of magnesium to heat
resistant nickel-based alloys decreases dendritic liquation, makes the
excess phases finer and facilitates their more even distribution. This

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USSR

Kalinina, Z. M., Vertiy, I. G., Khismatullina, N. S., Longinov, M. F.,
Sergeyeva, L. V., Filatov, B. A., Artemova, S. P., Izvestiya Akademii Nauk
SSSR, Metally, No 4, Jul-Aug 73, pp 193-196.

increases the technological plasticity and long-term strength of the metal.
Excess alloying or enrichment of alloys with magnesium from the slag and
lining in the furnace cause an increase in local chemical heterogeneity, in
turn causing the appearance of new excess phases, decreasing the melting point
of the metal in the area of these phases and reducing technological plasticity.

USSR

UDC: 536.46:533.6

VERTLIB, I. L., ARUTYUNOV, V. A.

"Experimental Study and Calculation of a Turbulent Gas Flame"

V sb. Vopr. teorii goreniya (Problems of Combustion Theory--collection of works), Moscow, "Nauka", 1970, pp 51-70 (from RZh-Mekhanika, No 4, Apr 71, Abstract No 4B790)

Translation: An approximate method of calculating a free diffusion flame with separate concentric feed of fuel and oxidant is constructed on the basis of the method of the "equivalent problem of heat conductivity theory" (Vulik, L. A., Kashkarov, V. P., Teoriya struy vyazkoy zhidkosti [Theory of Viscous Liquid Jets], Moscow, "Nauka", 1965; RZh-Mekh, 1966, 5B508K). From the experimentally known drop in dynamic head along the axis of the flame and the predetermined value of the turbulent Prandtl number, the distribution of all parameters in the flame may be determined. An analytical solution is obtained with certain assumptions which are not later confirmed. The authors present the results of an experimental study of a diffusion flame formed by coaxial jets. The dynamic head, temperature and

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VERTLIB, I. L., ARUTYUNOV, V. A., Vopr. teorii goreniya, Moscow, "Nauka", 1970, pp 51-70

concentration of reagents are measured in the flame field, and oscillograms of the ionization current are analyzed. The results of exact numerical calculation did not agree as well with the experimental data as did the approximate analytical relationships. The nature of the effect of certain initial conditions with respect to the data of calculations is not always in accord with the experimentally determined effect. V. A. Frost.

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USSR   UDC 536.46:533.6

VERTLIB, I. L., ARUTYUNOV, V. A.

"Experimental Study and Calculation of a Turbulent Jet Formed by Coaxial
Jets of a Gas and an Oxidizer"

V sb. Protsessy v plameni prom. pechey (Processes in the Flame of Indus-
trial Furnaces -- Collection of Works), Moscow Institute of Steel and
Alloys, Vol 58, Moscow, 1969, pp 21-36 (from RZh-Mekhanika, No 5, May 70,
Abstract No 5B982)

Translation: The results of a detailed experimental and computational-theo-
retical study of a free turbulent diffusion jet formed by coaxial jets of a
hot gas in air are presented. The method of the "equivalent problem of the
theory of heat conductivity" is used as a computational method in the paper
and reduces to a calculation of continuous velocity profiles, temperature
and reagent concentrations and also of the coordinates of the flame front
by integrating the linear equations. The empirical relationship of the
reduced ψ and the actual x of the longitudinal coordinate was borrowed from
experiment by comparing theoretical and experimental curves for the change

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in the characteristic values on the axis of the jet. The feature of the singularity of the solution (permitting, apparently, the authors to obtain good agreement between computation and experiment) reduces to the computer solution of a transcendental equation for the coordinates of the flame front. The experiments were conducted on a coaxial burner (d_{in} = 18 mm, d_{ext} = 26, 30 or 34 mm); a mixture of the hot gas with its combustion products in air was placed in the inner tube and air was placed in the outer tube. The values of the dynamical pressure, concentrations, temperature and electrical conductivity were measured; the two latter measurements gave practically identical values for the coordinates of the flame front; photographs were also taken of the jet with different exposures. The initial conditions were varied: the methane concentration in the fuel flow, flow rate, etc. It was evident from the experiments that other conditions being equal the maximum length of the jet corresponds to equality of the values ρu^2 at the output for both flows; the minimum value of the length corresponded to a flow of gas in motionless air. The results of the experiment agree with the calculation so that for the experimental conditions a single graph is shown for the relationship $\psi(x)$, the computational "key" and the equivalent problem method. 11 references. L. A. Vulis.

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USSR   UDC: 621.391.833

VERTLIB, M. Ya., GORDON, F. G.

"A Device for Suppressing Signals of One Frequency"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 12, Apr 71, Author's Certificate No 299974, Division H, filed 5 Aug 68,
published 26 Mar 71, p 214

Translation: This Author's Certificate introduces a device which suppresses
signals of one frequency in a signal transmission channel. The device con-
tains a transformer, resonance circuit and balance resistor. As a distin-
guishing feature of the patent, the unit is designed to give a high base
signal transmission ratio, reduce nonuniformity of the frequency response of
the channel, and narrow the suppression frequency band while achieving a high
coefficient of suppression and weakening the relationship between the trans-
mission ratios and coefficient of suppression on the one hand and load im-
pedances on the other combined with simplification of the suppression circuit.
The transformer contains an additional winding which is symmetric with the
main winding and has a common point with the main winding, the outer ends
of the auxiliary and main windings being interconnected through the above
mentioned resonance circuit and balance resistor. The input of the circuit

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VERTLIB, M. Ya., GORDON, F. G., USSR Author's Certificate No 299974

is the common point of the main and auxiliary windings and the point where the resonance circuit is connected to the balance resistor. The load resistor is connected to the output winding of the transformer.

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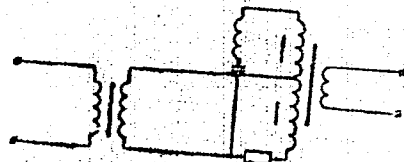
1/2   024   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--FORMATION OF PRODUCTS OF IRON DEOXIDATION BY ALUMINUM -U-

AUTHOR-(04)-VERTMAN, A.A., GONGADZE, G.A., MEHEDLISHVILI, V.A., SAMARIN,
A.M.
COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, METAL. 1970, (1), 17-22

DATE PUBLISHED-------70

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

TOPIC TAGS--IRON, STEEL DEOXIDATION, ALUMINUM CONTAINING STEEL,
NONMETALLIC INCLUSION, ALUMINUM OXIDE, METALLOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0167   STEP NO--UR/0370/70/000/001/0017/0022

CIRC ACCESSION NO--AP0054963
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0054963   UNCLASSIFIED   PROCESSING DATE--18SEP70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ARMCO FE, CONTG. C 0.008, SI 0.001, MN 0.04, AND O 0.18PERCENT AND AL IN BARS WERE USED. THE SPECIMENS WERE MELTED IN A FURNACE WITH AR ATM. AT THE WORKING TEMP. 1600DEGREES A PIECE OF PURE AL (0.4 G) WAS ADDED TO THE SURFACE OF MOLTEN IRON. THE DURATION OF HEAT AND TEMP. WAS CHANGED DURING THE TESTS. THE CRUCIBLE WITH METAL WAS COOLED IN THE AR. SECTIONS OF THE INGOTS WERE STUDIED BY MICROANAL. WITH THE AIM TO DET. THE AL DISTRIBUTION ALONG THE HEIGHT OF THE SPECIMEN, THE REACTION DEPTHS BETWEEN THE DIFFUSING AL AND THE O IN THE METAL, AND FOR THE DETN. OF THE CONTENT OF NONMETALLIC INCLUSIONS. METALLOGRAPHIC STUDIES WERE ALSO CARRIED OUT. SEVERAL TYPES OF INCLUSIONS WERE STUDIED: LARGE LIQ. INCLUSIONS OF GLOBULAR FORM, COMPOSED OF MGAL$_2$O$_4$, AL$_2$O$_3$, DENDRITES AND FINE GRAINS OF ALUMINUM OXIDE. THE FORMATION OF GLOBULAR INCLUSIONS OF AL$_2$O$_3$ WAS CAUSED BY THE EFFECT OF LIQ. PRODUCTS OF DEOXION. ON AL RESULTING IN THE FORMATION OF HARD SURFACE LAYER OF AL$_2$O$_3$.

UNCLASSIFIED

UDC 532.74

USSR

VERTMAN, A. A., IZMAYLOV, V. A. and SAMARIN, A. M., Academician

"Centrifuging of Siluminum in the Liquid State"

Moscow, Doklady Akademii Nauk SSSR, Vol. 190, No. 2, 1970, pp 313-314

Abstract: An alloy of aluminum and silicon was centrifuged in a high-tem-
perature vacuum device in order to obtain information on the structure of
the alloy. The siluminum samples were centrifuged at temperatures of 700
and 850°C. The samples were analyzed for silicon content by a weighing
method along the longitudinal axis. The distribution of silicon in the
samples of both series is graphed. Analysis shows that the effect of crystal-
lization on the separation of the components of the alloy in the centrifuged
field was slight under these experimental conditions. Increasing the tem-
perature from 700 to 850° reduced the degree of separation of the components
of the luminum-silicon system. It is concluded that this effect is possible
only if one assumes the presence in the Al-Si system of dynamic subgroups
enriched by one of the components of dimension $r = 10-50$ Å. These results
should be considered in studying the modification and crystallization of
silumins.

AT0033239

UR 0020

USSR

JPRS 50083
UDC 532.74

VERTMAN, A. A., IZMAYLOV, V. A. and SAMARIN, A. M., Academician

"Centrifuging of Siluminum in the Liquid State"

Abstract: An alloy of aluminum and silicon was centrifuged in a high-tem-
perature vacuum device in order to obtain information on the structure of
the alloy. The siluminum samples were centrifuged at temperatures of 700
and 850°C. The samples were analyzed for silicon content by a weighing
method along the longitudinal axis. The distribution of silicon in the
samples of both series is graphed. Analysis shows that the effect of crystal-
lization on the separation of the components of the alloy in the centrifuged
field was slight under these experimental conditions. Increasing the tem-
perature from 700 to 850° reduced the degree of separation of the components

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AT0033239

of the luminum-silicon system. It is concluded that this effect is possible only if one assumes the presence in the Al-Si system of dynamic subgroups enriched by one of the components of dimension $r = 10-50$ Å. These results should be considered in studying the modification and crystallization of silumins.

19701693

1/2   027
TITLE--NEW ANTIDEPRESSANT AZAPHENE -U-   UNCLASSIFIED   PROCESSING DATE--23OCT70

AUTHOR-(03)-POLEZHAYEVA, A.I., VERTOGRADOVA, O.P., BAGREYEVA, M.R.

COUNTRY OF INFO--USSR

SOURCE--KHIM.-FARM. ZH. 1970, 4(2), 59-61

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PSYCHOTHERAPEUTIC DRUG, TOXICITY, CHOLINOLYTIC, QUANTITATIVE
ANALYSIS, DRUG TESTING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0048
STEP NO--UR/0450/70/004/002/0059/0061
CIRC ACCESSION NO--AP0119044
UNCLASSIFIED

UNCLASSIFIED

CIRC ACCESSION NO--AP0119044   PROCESSING DATE--23OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHARMACOL., CLIN., AND CHEM.
CHARACTERISTICS OF THE TITLE COMPD. (DI-HCL SALT OF
2,(4,METHYL,1,PIPERAZINYL),10,METHYL,3,4,DIAZAPHENOXAZINE) (I), ARE
GIVEN. I IS A LOW TOXIC COMPD., LD SUB50 VALUES FOR MICE BEING 64, 390,
AND 700 MG-KG (I.V., S.C., AND ORAL, RESP.), AND PHARMACOL. EFFECTS
RESEMBLING THOSE OF TRICYCLIC ANTIDEPRESSANTS. I DID NOT SHOW
CHOLINOLYTIC ACTIVITY AND WAS LESS TOXIC THAN IMIZINE. IN CLINICAL
TESTS, INITIAL DOSES WERE 25-50 MG-24 HR, MEDIUM 150-200, AND MAX.
500-600 MG-24 HR. A THERAPEUTIC EFFECT WAS OBSD. AFTER 1 WEEK AND
INVOLVED TIMIDD ANALEPTIC AND SEDATIVE ACTION. I GAVE COLOR REACTIONS
WITH CITRIC ACID IN AC SUB2 0 (VIOLET COLOR WHEN HEATED), AND FORMED AN
ORANGE PPT. WITH TROPAEOLIN 000-P. THE FOLLOWING PROCEDURE WAS
RECOMMENDED FOR QUANT. DETN. OF I: DISSOLVE 0.1-0.15-G SAMPLE IN 1-1.5
ML HCO SUB2 H, ADD 30 ML AC SUB2 0, AND TITRATE WITH 0.1M HCLO SUB4
USING CRYSTAL VIOLET AS INDICATOR; 1 ML 0.1M HCLO SUB4 CORRESPONDS
0.01851 G I.   FACILITY: VSES. NAUCH.-ISSLED. KHIM.-FARM. INST.
IM. ORDZHONIKIDZE, MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr.: ЯP0029570

Ref. Code: UR 0297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 1, pp 59-63

ANTITUMOR ANTIBIOTIC TAVROMYCETIN, ITS EFFECT ON ORGANS AND BLOOD OF EXPERIMENTAL ANIMALS, DISTRIBUTION AND EXCRETION

Vertogradova, T.P.; Kunrat, I.A.; Muraveyskaya, V.S.

Institute for New Antibiotics, Academy of Midical Sciences of the USSR, Moscow

The paper presents data on the effect of tavromycetin on the organs and blood of experimental animals, its distribution in tissues and excretion. It was found that tavromycetin used in toxic doses affected the liver and the kidneys of the animals, decreased the erythrocyte and hemoglobin counts in the peripheral blood and induced trombocytopenia. After intravenous administration 0.5 per cent of the antibiotic was excreted with urine and 4—5 per cent with bile. After oral administration 0.8—1 per cent of the antibiotic was excreted with bile and no antibiotic was detected in urine.

REEL/FRAME

19681200

Powder Metallurgy

VERTOGRADSKIY, V. A. and CHEKHOVSKOY, V. YA., All-Union Institute of Aviation Materials and Institute of High Temperatures, Academy of Sciences USSR

"Electrical Resistance of Powder Metal Tungsten-Rhenium Alloys"

Abstract: The concentration and temperature relationships of electrical resistance were investigated for W-Re alloys within the limits of the tungsten solid solution. Powder metal alloys containing 5, 10, 19, 20, 21, and 27% Re were used in the 1200-3000°C temperature interval. Analysis of measurement data shows that the relationship of electrical resistance for W-Re alloys in the investigated range of compositions basically conforms to the Nordheim law, i.e., electrical resistance has a linear function to the product of atomic concentrations. Alloys with 20 and 21% Re deviate from the general principle, starting at approximately 1700°C. The formation of intermediate phases is assumed to be the cause of this anomaly.

The authors thank V. M. AMOSOV and Ye. I. PAVLOVA for useful observations during the discussion of the results obtained. 3 figures, 12 bibliographic references.

1/1

USSR   UDC: 536.212.2

VERTOGRADSKIY, V. A., Moscow

"Thermal and Electric Conductivity of Tantalum at High Temperatures"

Moscow, Teplofizika Vysokikh Temperatur, Vol 10, No 1, Jan-Feb 1972, pp 77-81 .

Abstract: The author studies the thermal and electric conductivity of tantalum
at high temperatures.   The thermal conductivity of tantalum was measured at 1400-
3000°K with an error of less than 2.5-4.5 percent.   Its electrical resistance was
measured at 1200-3000°K with an error of less than 1 percent.   A deviation is de-
termined from the monotony of the second derivative of electrical resistance with
respect to temperature in the 2100°K range.   The author uses data from existing
literature to calculate the most probable values of thermal conductivity and elec-
trical resistance.   Original article: six formulas, five figures, one table, and
20 bibliographic entries.

1/1

1/2   022   UNCLASSIFIED   PROCESSING DATE--02OCT70
TITLE--TUNGSTEN THERMAL CONDUCTIVITY AS MEASURED BY MODIFIED METHOD OF
  EXPONENTIAL TEMPERATURE DISTRIBUTION -U-
AUTHOR-(02)-CHECHOVSKOI, V.YA., VERTOGRADSKIY, V.A.

COUNTRY OF INFO--USSR

SOURCE--CONF-691002 PP 300-6

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--THERMAL CONDUCTIVITY, TUNGSTEN, ELECTRIC RESISTANCE, WIRE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0296   STEP NO--UR/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AT0108594
                  UNCLASSIFIED

272   022

CIRC ACCESSION NO--AT0108594   UNCLASSIFIED   PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MEASUREMENTS HAVE BEEN PERFORMED ON WIRE SPECIMENS HEATED BY PASSING ELECTRICAL CURRENT IN VACUUM. USE HAS BEEN MADE OF EXPONENTIAL TEMPERATURE DISTRIBUTION GRADUALLY DISPLACED ALONG THE SPECIMEN DUE TO THE RIDER TEMPERATURE VARIATION. THE EXPONENT HAS BEEN DETERMINED FROM THE COMPARISON OF THE RESISTIVITY CHANGE OF TWO SPECIMEN SECTIONS WITHOUT USING THE TEMPERATURE COEFFICIENT OF ELECTRICAL RESISTIVITY. RESISTANCE BRIDGE HAS ALSO BEEN USED. TUNGSTEN THERMAL CONDUCTIVITY HAS BEEN DETERMINED FOR THE TEMPERATURE INTERVAL OF 1300 TO 2500DEGREESK ON THE SPECIMENS OF 99.9PERCENT PURITY WITH 0.1PERCENT ADDITION OF MO. THE CALCULATED MAXIMUM RANDOM ERROR OF A SINGLE MEASUREMENT DOES NOT EXCEED 6PERCENT.

UNCLASSIFIED

VERTO PRAKHOV, V.N.

So:JPRS 59279
14 June 73

GROWTH KINETICS AND MORPHOLOGY OF AUTOEPITAXIAL GERMANIUM FILMS IN THE
CHLORIDE METHOD

All-sravanucho(?) Aritikals

Article by V. S. Kravchenko, A. A. Andreyeva, V. N. Petrezhnikov, P. A. Kuz-
netsov; Novosibirsk, Protsessy Rosta i Struktura Monokristallicheskikh Sloyev
Poluprovodnikov -- Trudy Simpoziuma, Russian, Part 2, 1969, pp 165-186]

The quantitative results of experimental studies of the growth of auto-
epitaxial layers of germanium by the chloride method [1-4] cannot be used for
other setups without preliminary analysis which must include the investigation
of mass transfer phenomena, reaction equilibrium and kinetics. In the given
case this analysis is complicated by the fact that along with heterogeneous
reactions intermediate reactions take place in the gas phase with heterogeneous
degree of the occurrence of which essentially affects the growth processes and,
in turn, depends on many parameters and structural elements of the reactor.
Therefore, the necessary condition of the optimal process and the de-
are a further experimental study of the chemical system Ge-Cl-H. This study,
in addition, can permit an approach to the discovery of the mechanism of the
reactions on the surface and the growth mechanism under different conditions,
and, perhaps, it will offer the possibility of more purposeful utilization of
the growth process of the autoepitaxial layers.

In this paper a study was made of the effect of the temperature, the
flow velocity and the concentration of the germanium tetrachloride in the
vapor-gas mixture on the growth kinetics and morphology of the films. A ver-
tical reactor 72 mm in diameter was used. The heating was realized by high
frequency induction currents. The temperature was measured by a platinum-
platinorhodium thermocouple, and it was kept constant (variations within the
limits of ±2 degrees). The substrates with (111) orientation were used.

Just as any heterogeneous process realized in the flow, the growth
process of the germanium films from the gas phase as a function of the growth
lating stage can be divided into several regions.

For very small flows where the equilibrium can be established on the
surface and in the gas phase or under the conditions of complete mixing the
process takes place in the so-called quasiequilibrium range [8]. In this
case the growth rate is the linear function of the flow velocity and can be
calculated by the formula [9]

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(4)

VERTOPRAKHOV, V.N.

SPRS 57208
6-73

3

XV-1. STUDY OF THE REAL MICROSTRUCTURE OF GROWTH AND SOLUTION SURFACES BY
THE LIGHT CONFIGURATION METHOD

[Article by V. N. Vertoprakhov, V. D. Ignatovskiy, V. P. Zinov'yeva, Novosibirsk,
Novosibirsk, III Simposium po Protsessam Rosta i Sinteza Poluprovodnikovykh
Kristallov i Plenok, Russian, 12-17 June 1972, p 214]

The method of light configuration was at the present time to orient
crystals along the principal crystallographic axes can in reality size richer
information about the growth or solution surfaces. The lines and bands on the
light configurations are diffraction spectrum systems and bear information
about the series of growth and solution steps.

In the case of layered growth of the crystain on the facein frequently
vicinal forms occur which are deflected by a fraction of an angular degree
from the basic facet. By using a laser beam it is possible to determine the
angles of vicinal forms with an accuracy to several seconds. Thus, it is
possible to determine the angles of disorientation of individual blocks reach-
ing the surface.

In the case of complex structure of the surface, the light configura-
tions are frequently strongly diffuse, and it is difficult to determine the
exact angular value of one facet or another by them. In this case a good re-
sult is obtained by the office of overexposure of the photographic screen
known by the name of the solarization phenomenon.

What has been discussed is illustrated in an example of semiconductor
crystals with a structure of the type of diamond, sphalerite or garnet.

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VERTOPRAKHOV, V.N.

SPRS 59505
6-73

3

XIV-4. DEGREES OF GROWTH AS THE FACTOR DEFINING THE MORPHOLOGY OF EPITAXIAL LAYERS AND CRYSTALS WITH THE STRUCTURE OF DIAMOND AND SPHALERITE

[Article by V. D. Zlomsinsky, V. N. Vertoprakhov, Novosibirsk; Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 101]

An analysis was made of the morphology of the crystals with the structure of diamond and sphalerite) in terms of elementary layers and structural series. It is demonstrated that the density of the elementary layers and the structural series decrease in the series 111-100-110-311-210-531-... and 110-111-100-211-311-... respectively.

The calculation data obtained permit the explanation of the occurrence of certain faces from the point of view of active participation in the growth processes of different structural series (growth steps), use of the latter to set the faces inclined to the layered growth and predict which of them will appear in the growth forms of the crystals and epitaxial layers.

It has been demonstrated that the experimental data on the study of the growth steps in diamond crystals and epitaxial layers of germanium and gallium arsenide agree satisfactorily with the results of the theoretical analysis.

- 201 -

1/2   024
TITLE--A PARAMETRIC AMPLIFIER -U-   UNCLASSIFIED   PROCESSING DATE--11SEP70

AUTHOR--SHEREMETYEV, E.V., VERTOPRAKHOVA, L.S.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 262982
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI NR 7, 4 FEB
DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--PARAMETRIC AMPLIFIER, PATENT, DIODE CIRCUIT, CAPACITOR,
   ELECTRIC INDUCTANCE, THERMAL STABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1090
                                        STEP NO--UR/0482/69/000/000/0000/0000

CIRC ACCESSION NO--AA0112213
ZZZZZZZZZZZZ
                        UNCLASSIFIED

CIRC ACCESSION NO--AA0112213   UNCLASSIFIED   PROCESSING DATE--11SEP70
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THIS AUTHOR'S CERTIFICATE
INTRODUCES A PARAMETRIC AMPLIFIER WHICH CONTAINS A BALANCED CAPACITANCE
MODULATOR BASED ON FOUR BLOCKED DIODES, A PUMPING OSCILLATOR WITH MASTER
CIRCUIT, A SELECTIVE AMPLIFIER AND AN AMPLITUDE DETECTOR.   IT DIFFERS
BECAUSE TO INCREASE THERMAL STABILITY AND SIMPLIFY TUNING, THE
CAPACITANCE MODULATOR IS CONNECTED THROUGH ITS INPUT DIAGONAL INTO THE
INDUCTANCE CAPACITANCE RESONANCE CIRCUIT OF THE AMPLIFIER, AND AT THE
SAME TIME IS CONNECTED THROUGH ITS FEED DIAGONAL TO THE TANK OF THE
PUMPING OSCILLATOR.   THE INDUCTANCE AND CAPACITANCE OF THIS TANK ARE
EQUAL IN AMPLITUDE TO THE ANALOGOUS ELEMENTS OF THE AMPLIFIER TANK
CIRCUIT.

ZZZZZZZZZZZZ   UNCLASSIFIED

Amplifiers

USSR

UDC: 621.375.8

SHEREMET'YEV, E. V., VERTOPRAKHOVA, L. S., Institute of Automation and
Electrometry, Siberian Department of the Academy of Sciences of the USSR

"A Parametric Amplifier"

USSR Author's Certificate No 262982, filed 4 Nov 68, published 2 Jun 70
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12D344 P)

Translation: This Author's Certificate introduces a parametric amplifier
which contains a capacitive balanced modulator on four blocked diodes, a
pumping oscillator with master circuit, a selective amplifier and an ampli-
tude detector. To increase thermal stability and simplify tuning, the
above-mentioned capacitive modulator has its input diagonal connected in a
resonance capacitance-inductance tank in the amplifier, and the feed diago-
nal is connected in the resonance tank of the pumping oscillator; the in-
ductances and capacitances in the amplifier and oscillator tank circuits are
equal in value.

1/1

USSR

UDC 621.375.8

SHEREMET'YEV, E. V., VERTOPRAKHOVA, L. S.

"Parametric Low-Frequency Resonance Amplifiers, A Survey"

V sb. Entsiklopediya izmereniy kontrolya i avtomatiz. (Encyclopedia of Monitoring and Automation Measurements--collection of works), Vyp. 14, Moscow, "Energiya", 1970, pp 27-30 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10D290)

Translation: The authors present a survey of works on the most promising low-noise, low-frequency amplifiers -- parametric resonance amplifiers. Low-frequency parametric resonance amplifiers of the capacitive type (based on blocked PN junctions) and the inductive type (based on ferrites and thin films with orthogonal magnetic control) are discussed. Expressions are given for the gain, passband and noise factor of the amplifiers. The basic problems of developing low-frequency parametric amplifiers are considered: selection of reactive elements, pumping oscillator, means of pre-venting the effect of the second harmonic, change in reactance, etc. Five illustrations, bibliography of thirty titles. Resumé.

1/1

ELECTRONICS

Amplifiers

UDC 621.375.124:621.375.9

USSR

SHEREMET'YEV, E. V., VERTOPRAKHOVA, L. S., Institute of Automation and Elec-
trometry, Siberian Department of the Academy of Sciences of the USSR

"A Parametric Amplifier"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 7, 4 Feb 70, p 46, Patent No 262982, Filed 4 Nov 68

Translation: This Author's Certificate introduces a parametric amplifier
which contains a balanced capacitance modulator based on four blocked diodes,
a pumping oscillator with master circuit, a selective amplifier and an ampli-
tude detector. It differs because to increase thermal stability and simplify
tuning, the capacitance modulator is connected through its input diagonal
into the inductance-capacitance resonance circuit of the amplifier, and at
the same time is connected through its feed diagonal to the tank of the
pumping oscillator. The inductance and capacitance of this tank are equal
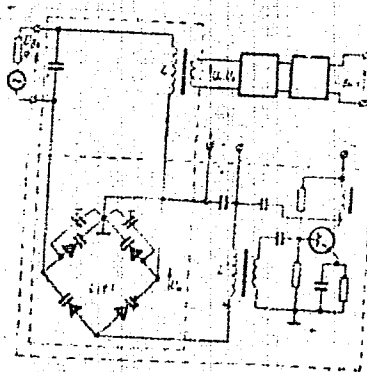in amplitude to the analogous elements of the amplifier tank circuit.

1/2

USSR

SHEREMET'YEV, E. V., et al., Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7, 4 Feb 70, p 46, Patent No 262982, Filed 4 Nov 68

2/2

USSR

ZHDANOV, Gl. S., and VERTSNER, V. N.

"High-Temperature Electron Microscopy"

UDC 537.533.35/536.45

Abstract: The article shows that high-temperature studies can be performed in an electron microscope by using the electron beam of the microscope to heat objects. The specimen support is an apertured disk made of tungsten foil, mounted in a socket covered with a heat-insulating layer of aluminum oxide. The heating of the disk is accomplished by a defocused electron beam, a slight portion of which passes through a hole in the disk and creates an image of the object. The temperature is measured by means of an optical pyrometer, focused on a mirror replacing the intermediate screen of the microscope. The principal difficulty in measuring temperatures above 1000° C is that the temperature is not the same for various sections of the disk due to nonuniformity of the current density. At temperatures ranging from room temperature to 2000° C the temperature measurement error does not exceed several dozen degrees. The maximum heating temperature depends on the properties of the disk material and object and can exceed 3000° C.

1/1

- 68 -

USSR

UDC: 621.398.694.3:538.652

ABRAMOV, V. M., BARSKIY, B. R., VERTUSHKIN, B. A., GOLOVIN, V. V.,
ZORIN, V. M., KRINKIN, A. A.

"A Pneumatic Computer"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 8, Mar 71, Author's Certificate No 296091, division G, filed 17 Oct 68,
published 12 Feb 71, p 148

Translation: This Author's Certificate introduces a pneumatic computer
which contains a single-diaphragm element with two nozzles which are coaxial
with each other in the flow chamber of the element. The dead-end chamber
of the element is connected to a multiplicand pressure source, and the inner
nozzle is connected through a choke to a multiplier pressure source and
directly to the output channel of the device, the annular channel formed
by the nozzles being open to the atmosphere. As a distinguishing feature
of the patent, the functional possibilities of the computer are extended
by connecting the flow chamber of the element through a choke to a divisor
pressure source.

1/1

USSR

VERULAVA, O. G., Academy of Sciences Georgian SSR, Institute of Control Sys-
tems

"One Possibility of Error-Free Recognition of a Limited Setup of Commands"

Abstract: A two-step algorithm is proposed for the recognition of a limited
setup of commands.   The logic algorithm proposed for the first step uses
so-called MINI- and MAXI-portraits as standards, while for the second recogni-
tion step there is a scalar product algorithm with a heuristic standard. The
first-step algorithm permits error-free recognition of about 70 percent of
the realizations presented for recognition, while the remaining realizations
are also recognized without error by the second-step algorithm.

1/1

USSR

VERULAVA, Yu. Sh.

UDC: 519.3:62-50

"Optimal Process With Delay for Partial Differential Equations of the Parabolic Type"

Tr. XV Nauchno-tekhn. konferentsii prof.-prepodavat. sostava i nauchn. rabotn. probl. i otrasl. labor. Gruz. politekhn. in-t. Vyp. 17 (Transactions of the Fifteenth Scientific-Technical Conference of the Professorial-Instructor Staff and Science Workers' Problems, and Laboratory Divisions, Georgian Polytechnical Institute, No. 17) Tbilisi, 1970, pp 5-16 (from RZh-Matematika, No. 3, March 71, Abstract No. 3B560)

Translation: The problem of optimal control is considered for the case in which the process is described by a partial differential equation of the parabolic type, the optimalits criterion being a functional depending on some previously specified parameter and on the solution of the differential equation.

1/1

- 7 -

USSR

SHPIRT, V.A., VERVEL'SKIY, A.A.

UDC 621.382.2.029.64

"Recovery Time Of A Limiting Diode And The Method Of Its Determination"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their Application--Collection Of Works), No 23, Moscow, "Sov. radio," 1970, pp 192-197 (from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11B94)

Translation: A calculation is conducted of the recovery time of a limiting semi-conductor diode, on the basis of an analysis of the change of the stored charge. The measurements, done by two methods (directly at microwave frequency and by determination of the recovery time through the stored charge), show that the theoretical value of the recovery time ($\approx 10^{-7}$ sec) is close to the experimental. Conclusions are drawn concerning the advisibality of measuring the stored charge instead of directly determining the recovery time. 3 ill. 1 tab. 2 ref. Summary.

1/1

UDC 621.385.64

USSR

VERYASKIN, V.S., KISHINEVSKIY, L.I., TIKTIN, S.A.

"Continuous-Action Magnetron With Evaporative Cooling For Microwave Heating Units"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 7, pp 114-119 (from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11A123)

Translation: The results are presented of the development of a continuous-action centimeter-band magnetron of average power for domestic and industrial microwave heating units. A distinctive characteristic of the magnetron developed is the evaporative cooling of the anode unit [blok], which has a number of advantages in comparison with other methods of cooling. As a boiling-water heat-transfer agent, it is possible to use both industrial water and water solutions of ethyleneglycol with a freezing point to minus 70° C.

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USSR

UDC [537.226+537.311.33]:[537+535]

VERZHBITSKIY, F. R., VASILEVSKAYA, M. M., BUROV, G. V., and SMIRNOV, M. V.

"High-Frequency Noncontact Study of Temperature Dependence of Electrical Properties of Ionic Crystals"

Tr. In-ta elektrokhimii. Ural'sk. nauch. tsentr AN SSSR (Works of Electrochemistry Institute, Ural Scientific Center of Academy of Sciences USSR), 1971, vyp. 17, pp 7-10 (from RZh-Fizika, No 1, Jan 72, Abstract No 1YE1226 from summary)

Translation: The authors study the electrical properties of NaCl, KCl, CsCl, KBr, and KI crystals by the noncontact HF method. It is established that on the curve for the temperature dependence of the tangent of the angle of dielectric loss in the crystals studied there is a maximum near the melting points. In the case of CsCl a maximum is found also in the region of polymorphous $\alpha \rightarrow \beta$ transformation at $475°$ C. The presence of a maximum on the tan δ curve is due to mutually opposed processes: an increase in the concentration of defects and a decrease in their mobility. The tan δ temperature dependence can be regarded as characteristic of temperature variations in the structure of ionic crystals.

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USSR

UDC 621.039.524.034.3

NESTERENKO, V. B., LOMASHEV, B. I., VERZHINSKAYA A. B., KOZLOVSKIY, V. G.,
SAKOVICH, A. T.

"First Experience in Realizing Thermal Cycles in a Dissociating Gas $NO_4 \rightleftarrows 2NO_2 \rightleftarrows 2NO + O_2$"

Dissotsiiruyushch. gazy kak teplonositeli i rab. tela energ. ustanovok -- V sb.
(Dissociating Gases as Heat Transfer Agents and the Working Medium of Power
Plants -- Collection of Works), Minsk, Nauka i Tekhn. Press, 1970, pp 95-104
(from RZh-Elektrotekhnika i Energetika, No 5, May 1971, Abstract No 5U183)

Translation: The experimental testing units (the thermal D-50 and the power
Vulkan) and the experience accumulated during operation of them in a dissociating
medium $N_2O_4 \rightleftarrows 2NO_2 \rightleftarrows 2NO + O_2$ are presented for operation by a closed gas-
liquid cycle scheme with the following parameters: 1) p = 10-60 absolute atmos-
pheres, T = 25-600° C; 2) p = 3-15 absolute atmospheres, T = 25-500° C. The
first operating experience in N_2O_4 confirmed the reversibility of the chemical
reaction of dissociation of the system $N_2O_4 \rightleftarrows 2NO_2 \rightleftarrows 2NO + O_2$. Methods of
measuring all the necessary values -- temperature, pressure, flow rate and so
on -- are developed. This method of operation permits an approach to the
1/2

USSR

NESTERENKO, V. B. et al., Dissotsiiruyushchigazy kak teplonositeli i rab. tela energ. ustanovok, Minsk, Nauka i Tekhn. Press, 1970, pp 95-104

operation of more powerful heat and power plants. There are 2 illustrations and 1 table.

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USSR

VERZILIN, N. N., ANAN'YEVA, T. I., and MUKHINA, K. M.

UDC 582.26

"The Effect of Protracted Darkness on the Metabolism and Viability of Chlorella Sp. K."

Leningrad, Vestnik Leningradskogo Universiteta, No 21, Biologiya, No 4, 1970, pp 121-129

Abstract: Metabolic shifts in Chlorella sp. K. cultured on a medium deficient in organic nutrients and kept in the dark for a period of two months were studied. Before the beginning of the experiment, algae in suspension were cultured on a mineral medium under luminescent lamps, and continuously aerated by air containing 5% CO_2. The biomass was then centrifuged, resuspended on a culture medium deprived of KNO_3, poured into 3-liter conical glass vessels and placed in the dark. The suspension was aerated at the rate of 0.8 l/min. Samples for analysis and determination of the cell content in millions per milliliters, dry matter in grams per liter, and the chemical composition of the biomass were periodically obtained. The data obtained revealed that Chlorella sp. K. cells are highly resistant to dark conditions. Despite the deficiency of organic nutrients
1/2

in the medium, viability is maintained through the consumption of carbo-
hydrates in the form of starches. No changes occur in the content of
other carbohydrate fractions and lipids, and no decomposition or loss of
cells takes place. The algae, when transplanted to normal medium and under
normal light conditions develop as rapidly as algae grown under conditions
of uninterrupted light.

2/2

- 10 -

TITLE--NUCLEASES OF ACTINOMYCETES BELONGING TO THE BLUE GROUP -U-
UNCLASSIFIED   PROCESSING DATE--17JUL70

AUTHOR--VERZILOZ, V.V., TATARSKAYA, R.I., KRASILNIKOV, N.A.

CCUNTRY OF INFC--USSR

SCURCE--IZVESTIYA AKDEMII NAUK SSSR, SERIYA BIGLOGICHESKAYA, 1970, NR 1,
PP 133-136

DATE PUBLISHED------70

SUBJECT AREAS--BICLCGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ACTINOMYCES, MICRCBIOLOGY, ENZYME

CCNTRCL MARKIAC--NC RESTRICTICNS

DCCUMENT CLASS--UNCLASSIFIED

PRCXY REEL/FRAME--1579/0728

CIRC ACCESSICN NC--AP0C47226

STEP NC--UR/C216/70/0C0/C01/0133/0136

UNCLASSIFIED

Acc. Nr:

AP0047226

Ref. Code: UR 0216

Verzilov, V. V.; Tatarskaya, R. I.; Krasil'nikov, N. A.

NUCLEASES OF ACTINOMYCETES BELONGING TO THE BLUE GROUP

Institute Microbiology, Academy of Sciences USSR

Investigations of the blue group actinomycetes has shown that the cultural fluid of the strains pertaining to this group displays nuclease activity which differs in the case of different strains. Some strains produce a thermostable nuclease which retains its activity after heating in an acid medium.

The enzime produced by other strains is destroyed by heating and may be regarded as a phosphodiestherase. Many other strains displayed a partial activity decrease following heating suggesting that these strains produce several different nucleases.

All strains chequed with respect to their DNA activity have shown their ability to split this compound.

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REEL/FRAME
19790728

USSR

VERZIN, I. I., PAYKIN, I. M., POPOV, N. R., SUYETIN, O. N., FURMAN, B. A.

UDC 621.315.592(088.8)

"Device for Compensation of Axial Play of the Priming Rod of Furnaces for Growing Single Crystals"

USSR Author's Certificate No 275412, Filed 1 Dec 67, Published 14 Oct 70 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G479P)

Translation: A device for compensation for axial play of the priming rod of furnaces for growing single crystals contains a system for regulating the speed of the drive which displaces the priming rod. To decrease the axial play in the translational motion of the priming rod occurring during its rotation, an inductive displacement transducer is introduced, the moving part of which is rigidly connected to the priming rod. The stationary part is connected to the carriage on which the inoculation rod is mounted, and the output of which is connected to the input of the speed regulator of the drive for displacing the priming rod.

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Acc. Nr: AP0047296

PRIMARY SOURCE: Vestnik Dermatologii i Venerologii, 1970,
Nr 1 , pp 63-66

Ref. Code: UR0206

QUANTITATIVE PROCEDURE FOR TREPONEMA PALLIDUM IMMOBILIZATION TEST

L. V. Sazonova, L. D. Verzilina

Summary

A method of quantitative Treponema pallidum immobilization test has been developed using increasing amounts of the serum to be examined (0.05—0.1—0.15—0.2 ml) with appropriate controls. The other components of the test are used in conventional amounts of the qualitative T. pallidum immobilization test. The experience with the new method indicates that increasing the amount of the inactivated serum under study does not produce immobilization of T. pallidum.

For more accurate serodiagnosis of syphilis and in differentiation of false positive results of standard serological tests it is necessary to examine larger amounts of sera by the quantitative method of T. pallidum immobilization test. Increased amounts of inactivated serum from subjects with questionable results produces more complete immobilization of T. pallidum and more definite results of T. pallidum immobilization test.

19790814

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USSR

MASLENKOV, S. B., VERZINA, V. K., GEVELING, N. N., and BUROVA, N. N., Central
Scientific Research Institute of Ferrous Metallurgy

UDC 620.186.2:669.14.018.44

"Segregation Microheterogeneity in 4Kh12N8G8MFB (E1481) Heat-Resistant,
Electroslag-Remelted Steel"

Moscow, Metallovedeniye, No 9, Sep 72, pp 70-72

Abstract: A comparative analysis was made of intracrystalline segregation in
ingots of a 13-8-8 austenitic steel (E1481) produced by open-arc melting fol-
lowed by electro-slag remelting. The composition of the remelted steel was
(in %): 0.39 C, 0.41 Si, 13.4 Cr, 8.2 Mn, 8.0Ni, 1.4 V, 1.3 Mo, and 0.45 Nb.
The degree of dendritic heterogeneity was evaluated by the coefficient of
segregation K_s, which is the ratio of maximum concentration of an element to
the minimum concentration of the element in a dendritic cell. The steel was
made at the Elektrostal' Plant in a 20-ton electrical furnace. The resulting
electroslag remelted ingot weighed 3200 kg. It was found that E1481 steel,
alloyed with strong carbide-forming elements and carbon, experiences inter-
axial segregation of the basic components. The segregation heterogeneity is
determined by the nature of the macrostructure, and the maximum heterogeneity
was the same for both the open-arc and electroslag melted steel. 1 figure, 1
table, 5 bibliographic references.

1/1

1/2   021

TITLE--DETERMINATION OF INDIUM IN SEMICONDUCTING MATERIALS ON AN A.C.
POLAROGRAPH -U-

UNCLASSIFIED

PROCESSING DATE--18SEP70

AUTHOR---VESELAGO, L.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(1), 72-5

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--INDIUM COMPOUND, SEMICONDUCTOR MATERIAL, LEAD COMPOUND,
TELLURIDE, METAL CHEMICAL ANALYSIS, DROPPING MERCURY ELECTRODE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1741

CIRC ACCESSION NO--AP0108108

STEP NO--UR/0075/70/025/001/0072/0075

UNCLASSIFIED

2/2   021
CIRC ACCESSION NO--AP0108108   UNCLASSIFIED   PROCESSING DATE--18SEP70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INDIUM, 0.1-0.001PERCENT, WAS
DETD. IN SEMICONDUCTING MATERIALS AND METALS BY USING MIXTS. OF HCL AND
TARTARIC ACID AND H SUB3 PO SUB4 AND HBR AS SUPPORTING ELECTROLYTES AT
MINUS 0.7 V. THE INDICATOR ELECTRODE IS A DROPPING HG ELECTRODE. A M
HBR PLUS 1.5M H SUB3 PO SUB4 MEDIUM IS USED FOR THE DETN. OF IN IN THE
PRESENCE OF PB, TE, GA, SB, V, NB, FE, AND SN AND 2.5M HCL AND 0.7M
TARTARIC ACID IS USED TO DET. IN IN PB TELLURIDE AND IN FE. H SUB2 SO
SUB4 DOES NOT INTERFER. THE RELATIVE ERROR IS 2.5-10PERCENT FOR
0.2-0.004PERCENT IN AND LESS THAN 17PERCENT FOR 0.002 PERCENT IN.

UNCLASSIFIED

USSR

BOLDYREV, G. N., VESELKIN, A. P., YEGOROV, Yu. A., YEMEL'YANOV, I. Ya.,
ZHIRNOV, A. D., ORLOV, Yu. V., KONSTANTINOV, L. V.

UDC 621.039.538

"Study of the Shielding Problems on Water Cooled - Water Moderated Research
Reactors"

V sb. Vopr. fiz. zashchity reaktorov (Problems in Reactor Safety Physics --
Collection of Works), No. 5, Moscow, Atomizdat, 1972, pp 235-250 (from
RZh-50. Yadernyye reaktory, No 5, May 72, Abstract No 5.50.62)

Translation: Several special installations were constructed to study shield-
ing. The BSF and GTR installations were swimming pool reactors employing
1 and 3 Mw neutrons, respectively, placed on moving bridges in large water
pools. The B-2 device on the BR-5 reactor was developed to study the laws
of the attenuation of γ-quanta and reactor neutrons in the geometry of a
unidirectional beam; the materials to be studied or models of the shielding
were placed in a niche in the reactor shielding. A zero-power reactor was
intended for studying processes in the shield directly adjacent to the
reactor core. The reactor was equipped with filters in one of the directions
making it possible to obtain an optimal relationship between the neutron

USSR

BOLDYREV, G. N., et al, Vopr. fiz. zashchity reaktorov, No. 5, Moscow,
Atomizdat, 1972, pp 235-250

γ-quanta fluxes. The OR-M experimental device is also intended for studying
problems in reactor shielding. The 50-kw water cooled - water moderated
research reactor is also equipped with devices for conducting experiments
on shielding. Various studies associated with the radiation problems of
shielding are carried out on this reactor. A description of the reactors,
experimental devices, and characteristics of the devices and methods used in
the research are given.

USSR

VASIL'YEV, G. A., VESELKIN, A. P., YEGOROV, Yu. A., ORLOV, Yu. V.,
PANKRAT'YEV, Yu. V., PISKUNOV, V. I.

UDC 621.039.538:539.125.5

"Space-Energy Distribution of Reactor Neutrons in Metal Hydrides"

V sb. Vopr. fiz. zashchity reaktorov (Problems in Reactor Safety Physics --
Collection of Works), No. 5, Moscow, Atomizdat, 1972, pp 91-105 (from
RZh-50. Yadernyye reaktory, No 5, May 72, Abstract No 5.50.58)

Translation: Current designs of the shielding of nuclear reactors include
hydrogen-containing materials, the presence of which in the shield makes it
possible to shorten the size of the shielding and reduce the contribution
to the power of the dose from neutrons of intermediate energies. Various
hydrogen-containing materials are used in the shield: water, polyethylene,
paraffin, concretes with an increased concentration of hydrogen such as
Serpentinite concrete, etc. Metal hydrides may also be included in such
materials. Metal hydrides have a high nuclear density of hydrogen, in some
cases exceeding the nuclear density of hydrogen water. In studying the
passage of neutrons through metal hydrides, one can show the perturbing

1/2

USSR

VASIL'YEV, G. A., et al, Vopr. fiz. zashchity reaktorov, No. 5, Moscow,
Atomizdat, 1972, pp 91-105

effect of the metal nuclei on the form of the attenuation function or the
form of the energy distribution of neutrons, and he can also show the role of the
metal in the accumulation of moderating neutrons. The problem of the pas-
sage of neutrons through lithium, magnesium, titanium, and zirconium hydrides
was investigated. The experiments were conducted on a water cooled - water
moderated research reactor. 8 ill., 8 tables, 37 ref.

2/2

- 44 -

1/2   012
TITLE--ROASTING METATITANIC ACID IN A HOFMANN KILN -U-

UNCLASSIFIED

PROCESSING DATE--11SEP70

AUTHOR--VESELKOV, E.A.

COUNTRY OF INFO--USSR

SOURCE--LAKOKRASOCH. MATER. IKH PRIMEN. 1970, (1) 14-16

DATE PUBLISHED-------70

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

TOPIC TAGS--TITANIUM OXIDE, INDUSTRIAL FURNACE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1315

CIRC ACCESSION NO--AP0106092

STEP NO--UR/0303/70/000/001/0014/0016

UNCLASSIFIED

CIRC ACCESSION NO--AP0106092   UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   METATITANIC ACID (I) WAS ROASTED
IN A HOFMANN KILN TO PRODUCE A SATISFACTORY TIO SUB2 PIGMENT.   THE
OPTIMUM OPERATING TEMP. AND TIME IN THE ZONE OF THERMOCHEM. REACTION
WERE 860DEGREES AND 2 HR, RESP.   THE I WAS CHARGED INTO THE FURNACE IN
POWDER FORM AND THE THICKNESS OF THE LAYER OF I IN THE FURNACE WAS
MAINTAINED AT 20-30 MM.   HEAT WAS FURNISHED BY A KEROSINE O MIST. CONTG.
SIMILAR TO 15PERCENT O.   A RADIATION PYROMETER CONTROLLED THE TEMP.
SOME CHARACTERISTICS OF THE TIO SUB2 PREPD. WERE 38 G-100 G. TIO SUB2
OIL CAPACITY, 79PERCENT TIO SUB2 PARTICLE SIZE SMALLER THAN 1 MU, 35
G-M. PRIME2 COVERING POWER, AND PH 6.9.

PROCESSING DATE--11SEP70

UNCLASSIFIED

USSR

TRUSOV, A. S. and VESELKOV, N. A.

UDC: 621.165

"Problem Associated With the Effect of Operational Factors on the Economy of Steam Turbine Installations"

Sudovyye silovyye ustanovki. Nauch.-tekhn. sb. (Marine Power Installations. Scientific-Technical Collected Works), 1973, vyp.10, pp 64-69 (from RZh-Turbostroyeniye, No 5, 1973, Abstract No 5.49.18)

Translation: The authors study the reasons responsible for pressure devi- ation in the condenser p_x. It is shown that the accuracy and measurement control quality of the instrument are insufficient for disclosing the rea- sons responsible for the deviation of p_x. The presented graphs descriptively show the effect of pressure deviation in the condenser on the economy of GTZA /expansion unknown/. The obtained relationships: delta $N = f(p_x)$ and $p_x = f(G_b, t_1, k)$ make it possible for the user not only to set the optimal operating regimen of the circulation pump, but also to determine the techni- cal state of the condensation installation. Original article: 2 illus., 1 table, 4 bibl. entries.

1/1

USSR

Engineers VESELKOVA, V.N., KOROTKOVA, T.G.

UDC 621.318.5:621.318.1

"Magnetic Materials For Sealed Magneto-Controlled Contacts"

Moscow, Pribory i sistemy upravleniya, No 11, Nov 1971, pp 37-38

Abstract: The paper lists the requirements imposed on the contact springs of magneto-controlled contacts (MC) and discusses the alloys (47NK, 47ND, 35NK) for MC developed at the Institute Of Precision Alloys of the Central Scientific-Research Institute Of Ferrous Metallurgy (TsNIIChM), with an increased value of the induction in a 640 a/m field, which assures high-speed operation of such MC and increases their sensitivity. These alloys assure a vacuum-tight durable seal with glass and a coefficient of thermal expansion close to that of glass in the interval from 20 to 500° C. The binary alloy 52N can also be used for MC. The magnetic and mechanical properties of the new alloys developed at TsNIIChM are shown as well as those of 52N. 3 ref. 2 fig. 2 tab.

1/1

Acc. Nr: AP0044614

PRIMARY SOURCE: Klinicheskaya Meditsina, 1970, Vol 48,
Nr 2, pp 29-33

Ref. Code: UR 0497

ELECTROCARDIOGRAPHIC SIGNS OF PULMONARY HYPERTENSION

L. V. Veselnikov

Summary

An attempt is made to evaluate the informative significance of electrocardiographic signs of hyperfunction of the right ventricle in the diagnosis and cardiogenic pulmonary hypertension. In 70 per cent of observations these tests are of diagnostic importance, including quantitative. Of the greatest value is the ratio between the factual values of R/Sv_1 and the ratio of their maximal values exceeding one (a sign proposed by the author).

REEL/FRAME
1977/1291

DI 02

UDC 576.851.48/.49.078

USSR

VESELOV, A. Ya., Leninogorsk Municipal Sanitary Epidemiological Station,
Eastern Kazakhstan Oblast

"Efficient Identification of Pathogenic Intestinal Microbes"

Moscow, Laboratornoye Delo, No 9, 1971, pp 542-543

Abstract: "Suspicious" colonies are cultured on Glycerin-bile agar to which
dysentery, typhoid, and Salmonella bacteriophages are added. A positive
identification can be made immediately in the case of Sh flexneri or sonnei
cultures provided that all the typical characteristics are present. Both
strains make up the majority of the Shigellas and E. coli. All the S.
flexneri strains are lysed by the dysentery bacteriophages and somewhat
fewer by the typhoid bacteriophages. Sh. sonnei is lysed by the same phages
in about 85% and 60% of the cases. The identification of Sh sonnei cultures
is facilitated by the fact that when grown on glycerin-bile agar, the R-form
appears.

1/1

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UDC 576.851.252.097.29.077.34

USSR

VESELOV, A. YA., Leningrad Municipal Sanitary Epidemiological Station, Eastern Kazakhstan Oblast

"Study of Staphylococcus Toxigenicity by the Diffusion Precipitation Method"

Moscow, Laboratornoye Delo, No 3, 1971, pp 178-180

Abstract: Instead of the cumbersome test-tube method, the author proposes the use of a special agar medium developed by the Dagestan Institute of Culture Media. The agar is poured onto 20-ml dishes and allowed to congeal, after which sterile filter paper moistened with antistaphylococcus serum is applied to the surface. Then four of the Staphylococcus strains under study are inoculated onto each dish, alternating them with a standard Staphylococcus culture. Most of the pathogenic strains tested formed precipitation lines, whereas none of the nonpathogenic strains did. Coagulase was found in all of the pathogenic strains, toxigenicity in 94.1%, and hemolysis in 87.8%, i.e., toxin formation was most frequently associated with coagulase activity. Th three main characteristics of pathogenicity - presence of coagulase, toxin, and hemolysin - were combined in 83.4% of the pathogenic strains. The diffusion precipitation method was successfully used to establish the "antigenic identity of Staphylococcus strains isolated during an outbreak of Staphylococcus poisoning in a restaurant.

1/1

USSR   UDC 621.372.826

VESELOV, G. I., VORONINA, G. G.

"Calculation of an Open Dielectric Wave Guide of Rectangular Cross Section"

Gor'kiy, Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XIV, No 12, 1971, pp 1891-1901

Abstract: The method of partial regions is used to solve the problem of propagation of electromagnetic waves along a regular rectangular dielectric wave guide in an unlimited homogeneous medium. The dispersion equations are obtained which determine the propagation constants of all types of surface waves that can exist in the investigated system. The dispersion curves for the even wave of the dipole type $(HE)_{11}^{even}$ are calculated on the basis of the approximate equations. A comparison is made with the results obtained by other methods [Goell, Bell System Technical Journal, Vol 48, No 7, 2133, 1969]. Tables of special auxiliary functions simplifying the practical calculations on the basis of the dispersion equation of the first approximation are presented. The possibility of calculating the parameters of a rectangular dielectric wave guide by the proposed equations is proved.

1/1

USSR

UDC: 621.372.829

VESELOV, G. I. and GAYDAR, V. I.

"Designing a Circular Waveguide with an Inner Cruciform Conductor"

Moscow, Radiotekhnika, Vol. 25, No. 11, 1970, pp 102-104

Abstract: The inner conductor of this waveguide, which is asserted to be practically useful because of its favorable range and directional characteristics, extends the length of the guide and has a cross section in the shape of a plus sign. Under the assumption that all conductors are ideally conductive and that the thickness of the inner conductor cross arms is infinitely small, the authors of this brief communication find the critical H and E conditions of the system through the method of partial regions. Curves are plotted for the critical frequency reduction factor and for the relative error in that factor as functions of the ratio a/b, where a is half the length of the cross arm and b is the inner radius of the waveguide.

1/1

VESELOV, G. I., KREKHTUNOV, V. M.

"Characteristic Oscillations in an Infinite System of Open Dielectric Wave-guides"

Abstract: Open dielectric waveguides have received wide attention in antenna-waveguide technique for use as smooth delay systems. The purpose of this paper is to obtain a rigorous solution to the problem of an infinite system of equi-distant and coplanar waveguides of this type. The authors consider the system cross section involving the following parameters: the waveguide radius, the distance between the axes of neighboring waveguides, the parameters of the waveguide material, and the parameters of the surrounding medium. Finding the components of the electromagnetic field in the waveguides, they derive the expressions for the field and obtain the dispersion equation determining the propagation constants of the characteristic oscillations. They show that, with an increase in the distance between the waveguides, the dispersion equa-tion transforms to an equation for various types of waves in a uniform open dielectric waveguide. The relationships and dispersion characteristics they obtain for the fundamental asymmetrical wave through an approximation equation may be useful for determining the electrodynamic characteristics of a system of closely spaced waveguides. 1/1

UDC 621.372.826

USSR

VESELOV, G. I., PLATONOV, N. I.

"Determining Critical Parameters and Dispersion Properties of Shielded and Open Dielectric Waveguides of Round and Elliptical Cross Sections"

Doklady Nauchno-tekhn. konferentsii po intogam nauchno-issled. rabot za 1968-1969 gg. (Apr. 1970 g.). Sekts. Radiotekhnicheskaya. Podsekts. Liniy peredachi volnovodn. ustroystv (Reports of the Scientific and Technical Conference on Results of Scientific-Research Work for 1968-1969 (April 1970). Radio Technical Section. Transmission and Waveguide Channel Subsection), Moscow, 1969, pp 38-43 (from RZh-Radiotekhnika, No 1, Jan 70, Abstract No 1B85, Resume)

Translation: The critical and dispersion equations of regular waveguide systems containing dielectric inserts of round and elliptical cross sections are obtained by means of the strict boundary method of partial domains. The convergence of the approximations is estimated.

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USSR

UDC 621.372.826

VESELOV, G. I., KREKHTUNOV, V. M.

"Electrodynamic Characteristics of Dielectric Waveguide Systems"

Doklady Nauchno-tekhn. konferentsii po intogam nauchno-issled. rabot za 1968-1969 gg. (Apr. 1970 g.). Sekts. Radiotekhnicheskaya. Podsekts. Liniy peredachi volnovodn. ustroystv (Reports of the Scientific and Technical Conference on Results of Scientific-Research Work for 1968-1969 (April 1970). Radio Technical Section. Transmission and Waveguide Channel Subsection), Moscow, 1969, pp 98-103 (from RZh-Radiotekhnika, No 1, Jan 70, Abstract No 1B91, A. M.)

Translation: A system of a finite number of parallel round dielectric waveguides with arbitrary arrangement of them in the transverse plane is investigated. The radii of the waveguides and the dielectric constants of their materials are unequal in the general case. The solution is found using the method of partial domains. The transverse cross section of the investigated transmission line is presented in the form of internal single-coupled partial domains corresponding to different dielectric waveguides and an external multiply-connected partial domain. In each of the partial domains the components of the electromagnetic field are represented in the form of series

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USSR

VESELOV, G. I., et al., Doklady Nauchno-tekhn. konferentsii po itogam nauchno-issled. rabot za 1968-1969 gg. (Apr. 1970 g.). Sekts. Radiotekhnicheskaya. Podsekts. Liniy peredachi volnovodn. ustroystv (Reports of the Scientific and Technical Conference on Results of Scientific-Research Work for 1968-1969 (April 1970). Radio Technical Section. Transmission and Waveguide Channel Subsection), Moscow, 1969, pp 98-103 (from RZh-Radiotekhnika, No 1, Jan 70, Abstract No 1B91, A. M.)

with respect to a complete system of scalar functions satisfying the wave equation in the cylindrical coordinate system, and for the external multiply-connected region, also the boundary conditions at infinity. Graphs are presented for the dependence of the delay factor on the distance between the axes of the dielectric waveguides in wave lengths for lower asymmetrical types of waves polarized in the vertical plane. The discussed method is used when solving the problem of characteristic oscillations of infinitely ordered systems of dielectric waveguides -- a two-dimensional-periodic grid. The calculational relations are presented for the wave delay factor of a system of equidistant dielectric waveguides arranged in a single plane as a function of the radius, distance between axes of adjacent dielectric waveguides and phase shifts. The case of lower asymmetrical waves of the HE$_{11}$ type is investigated. There are two illustrations.

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UDC 621.372.826

USSR

VESELOV, G. I., SEMENOV, S. G.

"Theory of Axially Symmetrical Waveguides of Round Cross Section"

Doklady Nauchno-tekhn. konferentsii po intogam nauchno-issled. rabot za 1968-1969 gg. (Apr. 1970 g.). Sekts. Radiotekhnicheskaya. Podsekts. Liniy peredachi volnovodn. ustroystv (Reports of the Scientific and Technical Conference on Results of Scientific-Research Work for 1968-1969 (April 1970). Radio Technical Section. Transmission and Waveguide Channel Subsection), Moscow, 1969, pp 43-49 (from RZh-Radiotekhnika, No 1, Jan 70, Abstract No 1B86, Resume)

Translation: A general expression is obtained for the dispersion equations determining the eigenvalues of the waves of an m-layer round waveguide with arbitrary dielectric constants of the layer material. The characteristic features of the dispersion characteristics of lower types of oscillations of a two-layer shielded dielectric waveguide are investigated (including consideration of losses in the dielectric).

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UDC 621.372.823

USSR

VESELOV, G. I., and SEMENOV, S. G., Academy of Sciences of the USSR in Moscow

"On the Theory of a Round Wave Guide with an Eccentrically Placed Metal Conductor"

Moscow, Radiotekhnika i Elektronika, Vol. 15, No. 4, April 1970, pp. 815-818

Abstract: The authors apply the method of partial regions to derive expressions for the critical conditions of a coaxial transmission line with an off center central conductor. In these calculations they assume a metal conductor inside a metal screen, the space between them being filled by a uniform isotropic medium. The process of derivation is as follows:
  1) The longitudinal components of the electromagnetic field are expressed as series in complete systems of electrical and magnetic scalar functions; these involve linear combinations of Bessel and Neumann functions, taking into account the zero Dirichlet and Neumann boundary conditions at the surface of the central conductor, but not the screen.
  2) Apply the zero Dirichlet and Neumann conditions at the surface of the screen, using the orthogonal relationships for exponential functions to

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USSR

VESELOV, G. I., et al, Radiotekhnika i Elektronika, Vol. 15, No. 4, April 1970, pp. 815-818

determine the desired theoretical values in the form of infinite determinants.

3) Applying the supplementary boundary conditions in the plane of symmetry of a coordinate system centered in the conductor, determine the longitudinal components of the electromagnetic field for either an electrical wall or a magnetic wall.

4) Combining Bessel functions and applying the zero boundary conditions at the screen surface and in orthogonal relationships for trigonometric functions, determine the critical conditions for a circular wave guide with a metal conductor displaced in the plane of the electrical or magnetic wall.

All the expressions given are in the form of infinite series which converge fairly rapidly; the authors give an example in which they calculate the critical parameters of a circular wave guide with an eccentric internal conductor for oscillations of the kE_{01} type (displacement of the conductor in the plane of the magnetic wall) and the kE_{11} type (displacement of the conductor in the plane of the electrical wall). They found that the displacement of the internal metallic conductor leads to a substantial reduction in the critical frequency for kE_{01} and kE_{11} oscillations. An analysis of the convergence process indicates that the relative error of calculation in the

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USSR

second approximation is a few percent, and in the third approximation it does not exceed 0.5% over a wide range of system parameters.

USSR   UDC 771.531.37:778.35+778.681

VESELOV, I. O., Central Scientific Research Institute of Geodesy,
Aerial Surveying and Cartography

"Color Separation Tests on SN-6 Aerial Film"

Abstract: In the interpretation of aerial photographs obtained
on SN-6 spectralzone film, insufficiently clear color separation
of standing timber on the basis of species is observed; this
has to do with the nature of the aerial film. In order to as-
certain the color-separation potentialities of this film, color-
separation tests were undertaken. It was, however, impossible
to use the existing methods, since the procedure was complicated
by the fact that one of the layers of SN-6 film registers in-
frared radiation. Therefore a special procedure was worked out.
This procedure is described in the article. 5 figures. 7
bibliographic entries.

1/1

1/2   009   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--THE EFFECT OF TEMPERATURE OF FERMENTATION ON THE PRODUCTION OF
HIGHER ALCOHOLS BY THE YEAST SACCHAROMYCES CARLSBERGENSIS -U-
AUTHOR-(04)-GRACHEVA, I.M., VESELOV, I.YA., GAVRILOVA, N.N., KOVALEVICH,
L.S.
COUNTRY OF INFO--USSR

SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 2, PP 322-326

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FERMENTATION, ALCOHOL, YEAST, SACCHAROMYCES,   CARBOHYDRATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/1408   STEP NO--UR/0220/70/039/002/0322/0326

CIRC ACCESSION NO--AP0054271
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0054271

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TEMPERATURE WAS FOUND TO BE AN
IMPORTANT FACTOR IN THE PRODUCTION OF BY PRODUCTS BY SACCH.
CARLSBERGENSIS XI DURING FERMENTATION, E.G. ON ACCUMULATION OF HIGHER
ALCOHOLS, THE DEGREE OF CARBOHYDRATE FERMENTATION TO ETHANOL BEING
ALMOST THE SAME. THE TOTAL CONCENTRATION OF HIGHER ALCOHOLS RISED 1.95
FOLD WHEN TEMPERATURE OF FERMENTATION WAS INCREASED FROM 2DEGREES TO
20DEGREES. THE FOLLOWING INCREASE OF TEMPERATURE UP TO 30DEGREES
RESULTED IN A DECREASE OF HIGHER ALCOHOLS 3.6 FOLD, MAINLY AT THE
ACCOUNT OF ISOAMYL ALCOHOL. THE ACCUMULATION OF ISOBUTYL AND N-PROPYL
ALCOHOLS WAS NOT MUCH AFFECTED BY TEMPERATURE. THEIR MAXIMAL
CONCENTRATION WAS REGISTERED AT 23 TO 25DEGREES.

UNCLASSIFIED

UNCLASSIFIED

1/2   015
TITLE--USE OF CONVERSION GAS FOR REMOVAL OF METHANE HOMOLOGS FROM NATURAL
GAS BY HYDROGENATION -U-
AUTHOR-(05)-BERSHTEYN, A.YA., KHRULEV, V.L., MESHENKO, N.T., KOVALENKO,
N.A., VESELOV, V.V.
COUNTRY OF INFO--USSR

SOURCE--NEFT. GAZOV. PROM. 1970, (1), 45-6

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--METHANE, NATURAL GAS, HYDROGENATION, CARBON MONOXIDE, METAL
CATALYST, NICKEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1967   STEP NO--UR/0513/70/000/001/0045/0046

CIRC ACCESSION NO--AP0133811
                            UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133811
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.   A GAS MIXT. CONTG. 74.6PERCENT H
AND 20PERCENT CO, OBTAINED BY CATALYTIC CONVERSION OF NATURAL GAS AT
900DEGREES, WAS USED FOR THE DESTRUCTIVE HYDROGENATION OF CH SUB4
HOMOLOGS IN NATURAL GAS. A MIXT. OF 1 PART OF THE GAS MIXT. AND 3.5-5.6
PARTS NATURAL GAS WAS PASSED OVER A REDUCED NI CATALYST AT 300DEGREES.

UNCLASSIFIED

USSR

UDC: 660.985.061.4

VESELOV, V. V., Gas Institute, Academy of Sciences UkrSSR

"Adsorption Kinetics in a Stationary Wave"

Moscow, Teoreticheskiye Osnovy Khimicheskoy Tekhnologii, Vol 4, No 3, May-Jun 1970, pp 343-351

Abstract: Adsorption from a flowing fluid by a layer of motionless granulated adsorbent is a non-stationary diffusion process. However, an adsorption wave forms in which the rate of mass transfer at every level becomes stationary once the wave has become stabilized. One can therefore treat adsorption in the wave as a stationary mass-transfer process. A method has been developed for studying adsorption in a wave by applying this principle. Equations were derived for determining the coefficients of mass transfer in various sections of the adsorption wave. These equations were applied in studying changes in the resistance to mass transfer over the length of an adsorption wave formed in the separation of a liquid benzene - n-heptane mixture passed through a layer of silica gel. In the study conducted, data obtained in the experimental separation of this mixture on silica gel were used.

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- 3 -

Acc. Nr:
AP0100579

Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:
UR0065

102349z **Vapor conversion of a gasoline raffinate under pressure.** Veselov, V. Va.; Meshenko, N. T.; Tsimbalistaya, N. N. (Inst. Gaza, USSR). *Khim. Tekhnol. Topl. Masel* 1970, 15(2), 13-17 (Russ). During steam conversion of a dearomatized platformate gasoline, b. 43-136°, introduced as a 1:5 gasoline-steam mixt. at a vol. rate of 1 hr^{-1} onto a 1:1 Ni-Cr catalyst at 320°, an increase in pressure from 1 to 31 atm reduced H content in the product from 62.0 to 31.5% and raised CH_4 content from 15.2 to 43.1% without substantially changing CO_2 content. The limiting feed rate for complete gasification increased linearly from 1.7 to 4.4 hr^{-1} as the pressure was increased from 1 to 20 atm. At 20 atm and otherwise identical conditions, a change in input rate from 1 to 5 hr^{-1} did not appreciably affect product compn. At an input rate of 4.4 hr^{-1}, a temp. increase from 200 to 320° raised conversion from 20 to 100%. When H was the desired product, purer H and higher efficiency were attainable by carrying out the process in 2 stages, the first an adiabatic one at low temp. in a flow reactor and the second a H production process in a tube furnace, the first section of which was operable with the converted feed at 700-800° without carbonization of the catalyst.
Lucile S. Davison

REEL/FRAME
19842014

Adsorption

VESELOV, V. V.

"Maximal Dynamic Characteristics of an Adsorbent"

Abstract: In earlier papers the author covered the concept of the maximum values of dynamic characteristics of the separation power of an adsorbent. This concept was used in developing a qualitative basis for the theory of adsorption separation. The maximum value of dynamic separation is defined as the maximum quantity of a substance isolated from a mixture per 1 g of the adsorbent under ideal conditions of dynamic adsorption. Several questions were apparently left unanswered in the earlier papers, and in the present work the author aims to clarify them. The first concept considered by the author concerns the separation power of an adsorbent which normally can be determined experimentally or calculated from experimental data on static adsorption. This is a very practical consideration often missed by other investigators. Further, the author points out the obvious differences between the "separation power of an adsorbent" and "adsorption", which appear to be confused by many investigators. Finally an explanation is given why the separation power with respect to component A is smaller than the entire content of this component in the adsorption volume a.

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UNCLASSIFIED   PROCESSING DATE--23OCT70

TITLE--THE SEPARATION OF TWO PARTICLE COULOMB'S SINGULARITIES IN THE
    SYSTEM OF THREE CHARGED PARTICLES. -U-

AUTHOR--VESELOVA, A.M.

COUNTRY OF INFO--USSR

SOURCE--TEORETICHESKAYA I MATEMATICHESKAYA FIZIKA, 1970, VOL 3, NR 3, PP
    326-331

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, MATHEMATICAL SCIENCES

TOPIC TAGS--CHARGED PARTICLE, INTEGRAL EQUATION, COULOMB SCATTERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0994   STEP NO--UR/0646/70/003/003/0326/0331

CIRC ACCESSION NO--AP0124653
                    UNCLASSIFIED

2/2   016
CIRC ACCESSION NO--AP0124653
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SYSTEM CONSISTING OF THREE
CHARGED PARTICLES IS CONSIDERED. THE REGULAR SYSTEM OF INTEGRAL
EQUATIONS FOR THE BOUND STATE SCATTERING PROBLEM BELOW THE IONIZATION
THRESHOLD IS OBTAINED. THE KERNELS OF THESE INTEGRAL EQUATIONS ARE
EXPRESSED IN TERMS OF THE SOLUTIONS OF THE CORRESPONDING TWO BODY
PROBLEMS ONLY.   FACILITY: LENINGRADSKIY GOSUDARSTVENNYY
UNIVERSITET.

110522r Structure and reactivity of hydrazine derivatives. XXII. Kinetics of reactions of ethyl chloroformate with some nucleophilic reagents. Grekov, A. P.; Veselov, V. Ya. (Inst. Khim. Vysokomol. Soedin., Kiev, USSR). Zh. Org. Khim. 1970, 6(2), 201-6 (Russ). The reaction rates (in the 25-55° range), activation energies, Arrhenius frequency factors, and entropies were detd. for the reaction of ClCO₂Et with H₂NR (R is Ph, PhNH, PhNMe, PhO₂CNH, BzNH, BzNMe, PhCSNH, or PhCSNMe), which gives RNHCO₂Et. The high reactivity of the hydrazine derivs. is due to their intermol. H bonding and the formation of cyclic transition complexes with ClCO₂Et. These complexes cannot be formed by α,α-disubstituted hydrazines which thus have lower reactivity in respect to ClCO₂Et.

CPJR

1/1

REEL/FRAME
19830465

7

TITLE--ADSORPTION AND CATALYTIC PROPERTIES OF HEMIN ON CARBON BLACK AND
  PHOSPHOLIPID SURFACE -U-
AUTHOR-(03)-POLTORAK, O.M., CHUKHRAY, YE.S., VESELOVA, M.N.

COUNTRY OF INFO--USSR

SOURCE--VESTN. MOSK. UNIV., KHIM. 1970. 11(1), 14-17

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PHOSPHOLIPID, CARBON BLACK, ALUMINUM OXIDE, CATALYST ACTIVITY,
  IRON COMPOUND, ADSORPTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/0453   STEP NO--UR/0189/70/011/001/0014/0017

CIRC ACCESSION NO--AP0128023
                           UNCLASSIFIED

CIRC ACCESSION NO--AP0128023
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ABSORPTION AND CHANGE OF HEMIN
   CATALYTIC ACTIVITY ON CARBON BLACK AND CARBON BLACK,AL SUB2 O SUB3
   SURFACES COVERED PRELIMINARY BY LECITHIN MONOLAYER WERE STUDIED.
   COORDINATE BINDING OF 2 FE ATOMS RESULTED IN DESTRUCTION OF HEMIN
   CATALYTIC ACTIVITY. PROTECTION OF THE HEME GROUP BY NONPOLAR RESIDUES,
   NOT TAKING PART IN COORDINATE BINDING WITH FE ATOMS CAUSED ACTIVATION OF
   HEMIN.

UNCLASSIFIED

COMBINED EFFECT OF 5-BROMURACIL, STREPTOMYCIN AND CHLORTETRACYCLINE ON ACT. AUREOFACIENS

S. I. Veselova,

National Iistitute for Antibiotics, Moscow

The effect of 5-bromuracil, chlortetracycline, streptomycin and their combinations on variation of the antibiotic-production property in Act. aureofaciens was studied. The maximum rate of plus variants with respect to antibiotic production was observed on the use of 5-bromuracil combination with the antibiotics. The analysis of the date with the use of criterium X^2 allowed to conclude that increased rates of plus variants and decreased rates of minus variants on combined treatment of the cultures with 5-bromuracil and the antibiotics were due to the effects of both 5-bromuracil and the antibiotics.

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REEL/FRAME

19850756

1/2   018   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--EFFECT OF WATER AND OXYGEN IN NONPOLAR SOLVENTS ON THE LUMINESCENCE
   PROPERTIES OF PHTHALIMIDE DERIVATIVES -U-
AUTHOR-(04)-VESELOVA, T.V., REZNIKOVA, I.I., CHERKASOV, A.S., SHIROKOV,
   V.I.
COUNTRY OF INFO--USSR

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SUBJECT AREAS--CHEMISTRY, PHYSICS

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SIMILARLY TO PREVIOUS EXPTS. USING
   DEAERATED SOLNS. (V., R., C., AND S., 1968), ADDN. OF THE MAX. SOL.
   AMTS. OF WATER TO AIR CONTG. HEXANE AND PHME SOLNS. OF
   4,AMINOPHTHALIMIDES RESULTED IN A SHIFT OF THE FLUORESCENCE SPECTRUM
   TOWARDS LONGER WAVELENGTHS AND AN INCREASED AMT. OF FLUOROMETRIC PHASE
   (CHARACTERIZING THE DURATION OF LUMINESCENCE) ACROSS THE SPECTRUM. THE
   SPECTRAL AND PHASE CHARACTERISTICS OF ANHYD., DEAERATED NEUTRAL SOLNS.
   OF 4,AMINO,N,METHYLPHTHALIMIDE (I), 4,AMINO,N,CYCLOHEXYLPHTHALIMIDE
   (II), 4,ANILINO,N,METHYLPHTHALIMIDE, 3,AMINO,N,METHYLPHTHALIMIDE, AND
   3,(DIPHENYLAMINO),N,METHYLPHTHALIMIDE IN SEVERAL NON POLAR SOLVENTS ARE
   TABULATED.   THE REMOVAL OF WATER AND O SUB2 FROM THE SOLNS. RESULTED IN
   A REVERSE SHIFT OF THE FLUORESCENCE SPCTRA TOWARDS SHORTER WAVELENGTHS;
   THUS, IN PHME AND ME SUB2 CO SOLNS. OF I, LTHE SHIFT WAS 700 AND 500 CM
   PRIME NEGATIVE1, RESP. THE BAS. QUANTUM YIELD AND FLUORESCENCE LIFETIME
   OF COMPLETELY ANHYD., DEAERATED SOLNS. FO I AND II WERE CONST. IN A
   GAMMA SUBMAX. RANGE OF 21,000-24,500 CM PRIME NEGATIVE1. THE QUENCHING
   EFFECT OF O SUB2 DROPPED IN THE ORDER HEXANE GREATER THAN DECALIN
   GREATER THAN TOLUENE GREATER THAN DIOXANE, AND WAS ALMOST ABSENT IN BUOH
   AND ETOH. WATER IN THE CONCNS. THAT ARE USUALLY PRESENT IN PREVIOUSLY
   DRIED SOLVENTS WITH ACCESS OF AIR (E.G., 0.001-0.002 AND 0.01-0.015 VOL
   PERCNET IN HEXANE AND PHME, RESP.) CAUSED SIGNIFICANT ALTERATION IN THE
   FLUORESCENCE SPECTRA AND FLUOROMETRIC BEHAVIOR OF THE N SUBSTITUTED
   AMINOPHTHALIMIDES.

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TITLE--SYNTHESIS IN A SERIES OF PHTHALIMIDE DERIVATIVES. II. PREPARATION
 OF 3,6,DISUBSTITUTED N,METHYLPHTHALIMIDES -U-
AUTHOR-(02)-VESELOVA, T.V., REZNIKOVA, I.I.

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SERIES OF TITLE PHTHALIMIDES (I)
WAS PREPD. BY CONVENTIONAL TECHNIQUES. THE INTRODUCTION OF NAC GROUPS
INTO THE 3 AND (OR) 6 POSITION CAUSES A STRONG HYPSOCHROMIC SHIFT IN THE
ELECTRONIC SPECTRA OF I. THE INTRODUCTION OF BR OR IODINE INTO I
DEPRESSED THE LUMINESCENCE AT ROOM TEMP.

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