

USSR

SOKOLOV, G. P., et al., Khimiko-Farmatsevticheskiy Zhurnal, No 3, 1973,
pp 8-13

of action of these derivatives was also very short, presumably due to inactivation by pseudocholinesterase. Biological evaluation of the derivatives on cats showed that they possessed either depolarizing, antidepolarizing, or mixed type of curariform activities.

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USSR

UDC 616.932-08-036.8:612.013.1

NIKIFOROV, V. N., POKROVSKIY, V. I., BULYCHEV, V. V., MALEYEV, V. V.,
KUPRIYCHUK, A. B., KUCHEROVA, T. P., BALASHEV, V. I., KOL'YAKOVA, T. A.,
and VEZYUR, N. A., Scientific Research Institute of Epidemiology, Ministry
of Health USSR

"Restoration of Homeostasis in Cholera Patients Receiving Rehydration Therapy"

Moscow, Sovetskaya Meditsina, No 9, 1971, pp 114-120

Abstract: Normalization of disturbances of homeostasis in cholera patients is achieved by careful monitoring of the effects of rehydration therapy. Various indices of homeostasis -- physicochemical properties of the blood, acid-base equilibrium of arterial and venous blood, clotting, etc. -- were investigated in 58 patients with Asiatic cholera before and during rehydration with the standard No 1 solution (5 g NaCl, 4 g NaHCO₃, and 1 g KCl per liter of apyrogenic water). The disturbance of homeostasis before treatment was marked by increased specific gravity of plasma, viscosity, and hematocrit and decreased volume of circulating plasma. Changes in the acid-base equilibrium and blood gases were manifested by signs of compensated respiratory alkalosis, metabolic compensated acidosis, and stagnant hypoxemia. Disruption of the movement of blood electrolytes was accompanied by decreased concentration of potassium,
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USSR

NIKIFOROV, V. N., et al., Sovetskaya Meditsina, No 9, 1971, pp 114-120
sodium, and chlorine. Fibrinolysis, clotting, recalcification, and heparin
time increased while the prothrombin index and fibrinogen increased.

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USSR

UDC 576.851.31.06

MARAMOVICH, A. S., VEYDE, A. A., SARDAR, Ye. A., MAKAROVA, A. P., SHVETSOVA, R. I., and URBANOVICH, L. Ye., Irkutsk Antiplague Institute of Siberia and the Far East

"Determination of the Cholerogetic Properties of Vibrios in Newborn Rabbits"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1972, pp 59-64

Abstract: Study of 65 vibrio strains from different sources in newborn rabbits (considered a suitable model for testing the pathogenicity of a given cholera vibrio strain for man) showed that all the cholera strains could produce the typical syndrome of cholerogeticity, whereas the nonagglutinable vibrios could not do so except for occasional strains (Heiberg's group 1) isolated from human beings in cholera foci. The main signs of cholerogeticity are marked dilatation of the lumen of the large intestine filled with a light transparent fluid and marked hyperemia of the small intestine containing a viscous yellow fluid throughout. Cholerogeticity was regularly observed after intra-intestinal infection of 9-to 12-day-old rabbits with doses ranging from 10^3 to 10^6 vibrios/100 g of weight. Smaller doses generally failed to elicit any reaction.

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USSR

UDC 614.777-078:576.851.316

MARAMOVICH, A. S., SARDAR, Ye. A., and VEYDE, A. A., Irkutsk Scientific Research Antiplague Institute of Siberia and the Far East

"Possibility of Utilizing Moor Tampons to Isolate Cholera Vibrios from Water"

Moscow, Laboratornoye Delo, No 8, 71, pp 497-499

Abstract: The possibility of utilizing Moor tampons to detect the presence of cholera vibrios was tested in waters of the Irkutskaya Oblast irrigation system. The tampons (each a metal rod loosely wound with 15-20 layers of gauze forming a ball 15-20 cm in diameter, wrapped in paper, and sterilized) were suspended by a cord in the water to a depth of 10-15 cm, close to a metal net installed to prevent the entry of large particles into the water system. The tampons were left in the water for 24-48 hours, then taken to the laboratory, where their contents were squeezed into sterilized metal jars and alkalized to pH 8.0. The alkalized liquid was poured into a half-liter vessel, 40 ml of basic peptone was added, and the mixture was left standing at 37°C for 5-6 hours. The investigations established the presence of El Tor cholera vibrios with typical morphological, cultural, and biological properties, although water samples previously obtained from the same

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MARAMOVICH, A. S., et al., Laboratornoye Delo, No 8, 71, pp 497-499

waters without the use of tampons produced negative results. The tampon method can be used also in isolating cholera vibrios from waters of rivers, wastewaters of populated areas, and even homes and hostélries.

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USSR

UDC 773.9:681.41

VEYDENBAKH, V.A., VOYBYKOVA, Ye.D., and KOVAL', G.I.

"Possibility of Using Domestic Shellac in Precision Photography"

Moscow, Optiko-Mekhanicheskaya Promyshlennost', No 2, 1970, pp 44-45

Abstract: Two types of domestic shellac were investigated as possible material for making scales, grids and similar parts for optical devices. The first type was obtained at the Azerbaydzan experimental station as a mixture made from fig and acacia plants, and the second came from the Komarov Botanic Institute and was grown on a fig plant. The results show that scales and grids made by vacuum deposition of layers make it possible to produce strokes 1.25 micrometers wide and in photoetching 3.3 micrometers.

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USSR

UDC: 621.396.6.002:621.793

VEYKHERT, M. T.

"Brilliant Hard Silver Plate"

Obmen opytom v radioprom-sti (Experience Pooling in the Radio Industry),
Vyp. 10, Moscow, 1970, pp 23-25 (from RZh-Radiotekhnika, No 2, Feb 70,
Abstract No 2V349)

Translation: The author discusses factors which determine the wear resistance of a silver coating. Information is given on a newly developed method of brilliant hard silverplating based on the use of a silver-antimony alloy which is made from a cyanide electrolyte with a high concentration of silver and free cyanide. The electrolyte is made directly from $AgNO_3$. The method ensures not only a very tight coating, but also economizes on silver by reducing the thickness of the coating. Besides this, the production cycle is shortened since the operation of mechanical polishing of the coating is eliminated. N. S.

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1/2 039

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--STABILITY OF THE EMISSION POWER OF PULSED SOLID STATE LASERS -U-

AUTHOR--(02)-VEYKO, V.P., SUSLOV, G.P.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL PRIKLAADNOI SPEKTROSKOPII, VOL. 12, JAN. 1970, P. 41-44

DATE PUBLISHED---JAN70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SOLID STATE LASER, LASER EMISSION, LASER STABILITY, PULSE LASER, LASER POWER OUTPUT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FILE/FNAME--1979/1609

STEP NO--UR/0368/70/012/000/0041/0044

GIPC ACCESSION NO--AP0047931

UNCLASSIFIED

2/2 039

CIRC ACCESSION NO--AP0047931

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL AND EXPERIMENTAL STUDY OF THE POWER OUTPUT STABILITY IN PULSED SOLID STATE LASERS IN TERMS OF THE KINETIC THEORY, SHOWING THAT A SUFFICIENT MARGIN OVER THE LASER ACTION THRESHOLD IS BASIC IN OBTAINING A LASER ACTION STABILITY. AN ANALYSIS SHOWS THAT A LASER POWER OUTPUT MAY BE INDEFINITELY UNSTABLE AT THE LASER ACTION THRESHOLD AND THAT ITS INSTABILITY DECREASES WITH THE INCREASING MARGIN BUT CANNOT BECOME SMALLER THAN THE INSTABILITY OF PUMPING. IT IS ALSO SHOWN THAT THE STABILITY OF POWER OUTPUT PARAMETERS IN LASERS WITH ACTIVE MEDIA HAVING HIGHLY TEMPERATURE DEPENDENT LUMINESCENT AND SPECTRAL CHARACTERISTICS, SUCH AS THOSE OF A RUBY, IS HIGHLY DEPENDENT ON THE TEMPERATURE CONDITIONS OF THE ACTIVE MEDIUM AND INCREASES WHEN THE ABSOLUTE TEMPERATURE OF THE ACTIVE MEDIUM IS LOWER AND THE TEMPERATURE FLUCTUATIONS ARE SMALLER.

VEYL', I. G.

UDC 551.509.313
NUMERICAL EXPERIMENTS WITH RESPECT TO FOUR-DIMENSIONAL OBJECTIVE ANALYSIS ON
THE BASIS OF THE SPECTRAL FORECASTING MODEL

[Article by Professor S. A. Mashkevich, Candidate of Physical and Mathematical
Sciences I. G. Vayl', USSR Hydrometeorological Scientific Research Center;
1972, Метеорология и Гидрология, Russian, No 3, 1972, submitted 18 November
1972, pp 3-15]

A "continuous scheme" for mastery of synoptic data by means
of the barotropic spectral model is formulated. The calcu-
lations were performed for simulated data on the state of the
atmosphere. The experimental results indicate the expediency
of this approach to four-dimensional analysis.

The progress in the development of numerical models of general atmo-
spheric circulation and progress in applying hydrogenetic methods to the problem
of long-range forecasting indicate defined prospects for further improvement of
hydrodynamic numerical forecasts. However, on the basis of development of
the deficiency of information on the state of the atmosphere is highly signifi-
cant.

The research performed [5, 6, 9, and so on] shows that as a result of
unreliability of the initial data, for defined errors in it the forecast can
be essentially distorted for 1-3 weeks (depending on the properties of the
forecasting model).

The initial information encompassing the Northern Hemisphere of the
Earth is required for forecasts on the order of a week.

In addition, significant territories of the Northern Hemisphere are
poorly covered by observation data (a quantitative estimate of the data deficit
in the Northern Hemisphere can be found, for example, in [1]). In the Southern
Hemisphere, situation is more favorable. The studies of the required ex-
pansion of the aerological network [1, 7] show that for satisfactory ex-
tension of the field of such a comparatively smoothly varying meteorological
element in space has the geopotential of the isobaric surface it is desirable to
open tens and even hundreds of stations in the Northern Hemisphere. Of course,

*APR 55899-1-
5 May 72*

USSR

UDC 617-001.34-07:[616.839+616.45]-07

VEYN, A. M., MATLINA, E. Sh., and MURADKHANOV, M. A., Laboratory of Functional Control in Man and Animals imeni N. I. Grashchenkov, Academy of Sciences USSR

"Sympathoadrenal System in Patients With Vibration Sickness"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 10, 1971, pp 12-16

Abstract: Analysis of the excretion with urine of epinephrine, norepinephrine, dopa, and dopamine in 50 patients with vibration sickness at rest and after functional tests (immersion of hands in cold water and subcutaneous injection of insulin) was performed. The excretion of norepinephrine was lower in the patients than in healthy controls, and the daily rhythm of catecholamine excretion was impaired, as shown by a marked decrease at night. In response to cold, only the excretion of norepinephrine increased in the patients, whereas both norepinephrine and epinephrine increased in the control. The injection of insulin decreased the excretion of epinephrine, norepinephrine, dopamine, and dopa in the patients (i.e., it depressed the sympathoadrenal system) but increased that of epinephrine without affecting the other mediators.

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1/2 009

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--SYNTHESIS AND PROPERTIES OF GAMMA (S-(6, MERCAPTOPYRYL) ALPHA BENZYL
N BENZYLOXYCARBONYL GLUTAMIC ACID AND GAMMA (9, (6, METHYLTHIOPYRYL) ALPH
AUTHOR--(03)-VEYNBERG, A.YA., GRACHEVA, I.N., SAMOKHVALOV, G.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 484-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC ACID, GLUTAMIC ACID, BENZENE DERIVATIVE, CARBONYL
COMPOUND, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1597/2016

STEP NO--UR/0079/70/040/002/0484/0487

CIRC ACCESSION NO--AP0120659

UNCLASSIFIED

2/2 009
 CIRC ACCESSION NO--AP0120659 UNCLASSIFIED PROCESSING DATE--23OCT7
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TREATING 1 G
 1, BENZYL-N-BENZYLOXYCARBONYL L-GLUTAMIC ACID (I) IN ME SUB2 NCHO WITH
 0.4 G 6, MERCAPTOPYRINE AND 0.56 G N,N PRIME DICYCLOHEXYLCARBODIIMIDE
 GAVE IN 1 DAY AT 20DEGREES 57PERCENT 4, (S-(6, MERCAPTOPYRYL))
 ALPHA-BENZYL-N BENZYLOXYCARBONYL-L-GLUTAMIC ACID, DECOMP. 204-6DEGREES
 (ALPHA) PRIME20 SUBD MINUS 8.4DEGREES. TREATING I WITH ETO SUB2 CCL IN
 ME SUB2 NCHO-ET SUB3 N, FOLLOWED BY 6, (METHYLTHIO)PURINE AT MINUS 10 TO
 MINUS 15DEGREES INITIALLY, THEN 1 DAY AT MINUS 5DEGREES, GAVE 61PERCENT
 4, (9, (6, METHYLTHIOPURYL)), 1, BENZYL-N BENZYLOXYCARBONYL-L-GLUTAMIC ACID,
 M. 112-14DEGREES, (ALPHA) PRIME20 SUBD MINUS 6.1DEGREES. THE FORMER O
 THE LATTER TREATED WITH DIBENZYL L-GLUTAMATE IN MECN 5-8 HR GAVE DIBEZY
 1, BENZYL-N-BENZYLOXYCARBONYL-L-GLUTAMYL-L-GLUTAMATE, M. 238-9DEGREES,
 ALSO PREPD. IN 41PERCENT YIELD FROM I AND ETO SUB2 CCL IN ET SUB3
 N-P-DIOXANE TREATED WITH DIBENZYL GLUTATATE-HCL. FACILITY: VSES
 NAUCH.-ISSLED. VITAM. INST., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 615.779.932+541.697

PETERSON, I. O., KASTRON, Ya. A., WEYBERG, G. A., and KIMENIS, A. A., Order of Labor Red Banner Institute of Organic Synthesis, Academy of Sciences Latvian SSR

"Acute Toxicity of Some Semisynthetic Nitrofurans and Furan Penicillins"

Riga, Izvestiya Akademii Nauk Latvyskoy SSR, No 7(276), 1970, pp 111-114

Abstract: To determine their toxicity, 23 penicillins were administered intraperitoneally to white mice. With the exception of 2-furyl-penicillin and beta-(2-furyl) ethylene-penicillin, all of the compounds were 2-12 times more toxic than benzylpenicillin. Certain of the nitrofurans and furan compounds have a toxicity level comparable to that of furazolin, solafur, or furagin (furazidone). The other penicillins are less toxic than the nitrofurans derivatives. The presence of a nitro group appears to have only a slight effect on the toxicity of these compounds, however.

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USSR

VEYNEBERG, T. I.

UDC 666.11.01:535,343

"Light Absorption and Spectrophotometric Analysis of Optical Glass"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 2, Feb 73, pp 38-43

Abstract: It is demonstrated by spectrophotometric analysis of spectral absorption curves that the cause of optical glass light absorption is impurities of oxides of iron, chrome, cobalt, nickel and vanadium, with copper and manganese oxides rarely responsible. In order to lower the light absorption it is considered necessary to analyze the raw materials for the presence of not only iron, but also other metals, and to use materials with minimal concentration of all impurities. One must also combat contamination from preparative vessels, instruments and glass furnaces. The analysis of mark K3 glass is presented as an example.

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USSR

UDC: 621.373:530.145.6

VARGIN, V. V., KUZNETSOV, A. Ya., VEYNBERG, T. I., STEPANOV, S. A.,
TSEKHOMSKIY, V. A.

"Ferromagnetic Glass"

USSR Author's Certificate No 267032, filed 17 Jan 64, published 16 Jul 70,
(from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2D274 F)

Translation: This Author's Certificate introduces a ferromagnetic glass which includes SiO₂, Fe₂O₃, Al₂O₃, CaO, BaO, CdO, ZnO, PbO, TiO₂ and Na₂O. To increase the electrical resistance and softening temperature, the glass contains these components in the following amounts (mol.%): SiO₂ 40-60; Fe₂O₃ 7-20; Al₂O₃ 10-20; CaO up to 20; BaO up to 20; CdO up to 10; ZnO up to 10; PbO up to 10; TiO₂ up to 10; Na₂O up to 20.

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I/2 011

TITLE--ABSORPTION SPECTRUM OF A CHLORIDE COMPLEX OF COPPER (II) IN BOROSILICATE GLASS -U- UNCLASSIFIED PROCESSING DATE--18SEP70

AUTHOR--(02)--VEYNBERG, I.I., KAPLUN, V.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 450-1

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--COPPER COMPLEX, ABSORPTION SPECTRUM, OXIDE GLASS, BOROSILICATE GLASS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/0453

STEP NO--UR/0080/70/043/002/0450/0451

CIRC ACCESSION NO--AP0104066

UNCLASSIFIED

2/2 011

CIRC ACCESSION NO--AP0104066
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--18SEP70

0,8 SUB2 0 SUB3, SID SUB2 GLASSES CONTG. 0.1PERCENT CUO WERE OBTAINED. ABSTRACT. THE ABSORPTION SPECTRA OF K SUB2
ADDN. OF KCL TO THE GLASS LEADS TO THE APPEARANCE OF ABSORPTION PEAKS AT
235, 265, AND 380 NM; AT THE SAME TIME THE LONG WAVELENGTH PEAK SHIFTS
FROM 800 TO LONGER WAVELENGTHS. THESE RESULTS WERE EXPLAINED BY THE
FORMATION OF CUCL SUB4 PRIMEZ NEGATIVE. THE DECREASED ABSORPTIVITY AT
HIGHER KCL CONCNS. WAS CAUSED BY THE PARTIAL REDN. OF CU(II) TO CU(I).
E. BEN ZVI.

UNCLASSIFIED

029

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--STRUCTURE AND COLOR OF ALUMOCALCIUM TYPES OF GLASS -U-
AUTHOR--(04)-VEYNBERG, T.I., GALIMOV, D.G., LUNKIN, S.P., YUDIN, O.M.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, OPTIKO MEKHANICHESKAYA PROMYSHLENNOST', NO 1, 1970, PP
42-47

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--IR SPECTROSCOPY, GLASS STRUCTURE, ALUMINUM OXIDE, CALCIUM
GLASS, SILICATE GLASS, PHOSPHATE GLASS, CHROMIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1343

STEP NO--UR/0237/70/000/001/0042/0047

CIRC ACCESSION NO--AP0123301

UNCLASSIFIED

2/2 029

CIRC ACCESSION NO--AP0123301

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INFRARED SPECTROSCOPY, OPTICAL, AND PARAMAGNETIC INDICATOR METHODS ARE USED IN STUDYING THE STRUCTURE OF ALUMOCALCIUM TYPES OF GLASS. IT IS SHOWN THAT THE PRESENCE OF TWO TYPES OF STRUCTURAL UNITS CHARACTERIZE THE INVESTIGATED VITREOUS MATRIX: (ALD SUB) AND (ALD SUB6). ON THE BASIS OF RESULTS OBTAINED FROM STUDYING THE ABSORPTION SPECTRA OF ALUMOCALCIUM TYPES OF GLASS COLORED BY IONS OF RARE EARTH METALS AND VARIABLE VALENCY METALS, IT IS SHOWN THAT THE DEGREE OF COVALENCY OF THE CHEMICAL ACTIVATOR LIGAND BONDS AND FIELD FORCE ARE HIGHER FOR ALUMOCALCIUM TYPES OF GLASS THAN THEY ARE IN SILICATE AND PHOSPHATE GLASS. NEW VALENCE STATES ARE OBTAINED AND STUDIED FOR CHROMIUM (TETRAVALENT AND PENTAVALENT CHROMIUM).

UNCLASSIFIED

USSR

Immunology

UDC 576.851.45.097.2

VEYNELAT, V. I. and MARTENS, L. A., "Microb" Antiplague Institute

"Characteristics of the Structures Responsible for the Immunochemical Specificity of the "Main" Somatic Antigen of Pasteurella pestis and Its Capacity to Suppress Mitochondrial Respiration"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 5, 1973, pp 130-134

Abstract: Study of two structures forming part of the "main" somatic antigen of Pasteurella pestis, EV strain, isolated in a highly purified form by a special method. One determines the specificity of the polysaccharide of the antigen, while the other is responsible for virtually all the activity of the original preparation that inhibits mitochondrial respiration. A trichloroacetic acid extract of the microbe grown at 28°C yielded a purified specific polysaccharide-polypeptide complex with a molecular weight of 72,400±2000 and the hydrodynamic parameter of the molecule of 27.5 Å. A complex, which possessed amphoteric properties, contained galactose, glucose, arabinose, xylose, hexosamine, cystine, aspartic acid, serine, glycine, and alanine. The capacity of the "main" somatic antigen to inhibit mitochondrial respiration was derived from two fragments of the trichloroacetic acid complex. These fragments were thermostable, had a relatively low molecular weight, and consisted of protein and nucleic acids.

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USSR

UDC 576.851.49.097.22:615.332 (STREPTOMYCINUM)

TARANENKO, T. M., VEYNBLAT, V. I., BAKHRAKH, Ye. E., MALININA, Z. Ye.,
ORLOVA, L. S., and ANDREYEVA, I. P., All-Union Mikrob Antiplague Institute,
Saratov

"Comparative Characteristics of Somatic Polysaccharides Isolated From Strain
EV and Its Streptomycin-Resistant Variant"

Moscow, Antibiotiki, Vol 18, No 3, 1973, pp 213-216

Abstract: Chemical and immunochemical comparisons were made of the lipopoly-
saccharide (LPS) and the main somatic antigens (MSA) isolated from the vaccine
strain EV NIEG of the *P. pestis* (I), and its nonimmunogenic streptomycin
resistant variant EV Str^r61 (II). The cells were grown on a solid nutrient
medium for 48 h at 28°, and the antigenic preparations were obtained from
acetone-dried cells. MSA was obtained by extraction with trichloroacetic
acid, purified on a column of Biogel P-200, and MSA-containing fractions sel-
ected on the basis of serologic reactivity and absorption at 280 nm. LPS was
isolated by water-phenol extraction; phenol was removed by dialysis and MSA
and nucleic acids by gel filtration on a Sepharise 2B column. For sugar
analyses LPS and MSA were hydrolyzed with H₂SO₄, and the monosaccharides
identified by thin-layer chromatography on silica gel. Infrared (IR) spectra

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USSR

TARANENKO, T. M., Antibiotiki, Vol 18, No 3, 1973, pp 213-216

were used for the detection of lipids. MSA was found to be present in greater quantities in I than in II, and in both cases lipids were absent. MSA isolated from I and II contained glucose, galactose, and glucosamine; however, twice as much glucosamine was present in MSA derived from I than in that derived from II, while more galactose was present in the MSA derived from II than in that from I. In addition, MSA isolated from II also contained mannose, and a sugar with an R_f value close to that of fucose. Gel precipitation with equine antiplague serum and the first component of MSA showed that the titer of the preparation derived from I was 2.5 times as great as that of the preparation from II. No significant chemical differences were found between LPS derived from I and II; both preparations contained virtually identical amounts of reducing substances (about 19%), glucosamine (2-2.5%), and limited quantities of proteins and nucleic acids. IF spectra for both preparations were virtually indistinguishable. The obtained data indicate that streptomycin does not affect the LPS component of the *P. pestis* cell wall, but alters the metabolic processes involved in the formation of MSA.

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USSR

UDC 576.851.45.097.2

VEYNBLAT, V. I., and KUZ'MICHENKO, I. A., All-Union Antiplague Scientific
Research Institute Mikrob, Saratov

"The Mechanism of Accumulation and Excretion of Capsular Antigens by Pasteu-
rella pestis (the Role Played by the Cell Wall)"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 11, 1972,
pp 102-106

Abstract: The ability of plague microbes to accumulate and excrete the
capsular antigens in the presence of penicillin which is capable of damaging
the cell wall was studied. The effect of penicillin was compared with that
of chloramphenicol, actinomycin D, and glycolol. The strain EV (Ca-dependent)
and its Ca-independent variants, EV₁, EV₅, and EV₂₂ were used in experiments.
Penicillin in a concentration of 1 μ g/ml transformed the majority of the rod-
shaped plague cells into gigantic treadlike shapes. When its concentration
was increased to 10 μ g/ml the microbial population contained many sphere-
shaped cells, the amount of which increased with an increase in penicillin con-
centration. This was true for both the Ca-dependent and Ca-independent cells.
Penicillin in a concentration of 1 μ g/ml culture medium did not influence
noticeably the growth of plague cells, concentration of protein and RNA in them
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USSR

VEYNBLAT, V. I. and KUZ'MICHENKO, I. A., Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 11, 1972, pp 102-106

but decreased the amount of capsular antigen on the cell surfaces and in the cultivation medium (free fraction 1) compared with control (medium without antibiotics). There was more fraction 1 in suspensions of Ca-independent cells compared with Ca-dependent. Similar results were obtained with larger doses of penicillin. In the presence of chloramphenicol and especially of actinomycin D a definite suppression of cell growth was observed, as well as decreased amount of total protein. Actinomycin D inhibited the synthesis of RNA, as opposed to chloramphenicol. Both these antibiotics inhibited almost completely the synthesis of the capsular antigens in all cells, regardless of their relation to Ca. Cells grown in the presence of penicillin and destroyed by sodium dodecylsulfate (1%) showed much higher concentration of capsular antigen (general fraction 1) regardless of their relation to Ca. This means that the synthesis of capsular antigens was not inhibited by penicillin but their release from cells was dependent on the cell walls (damaged, undamaged, or completely destroyed). The amount of free fraction 1 and general fraction 1 differed very little in cells grown in the presence of chloramphenicol and actinomycin D and destroyed by sodium dodecylsulfate. Glycocol in a 10 mg/ml concentration medium influenced to some extent the synthesis of total protein and RNA but the synthesis of the capsular antigens was greatly reduced among Ca-dependent cells.

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USSR

UDC 576.851.45.097.2

BAKHRAKH, Ye. E., BOROVIKOVA, T. P., VEYNBLAT, V. I., DAL'VADYANTS, S. M., and
TARENENKO, T. M., All-Union "Mikrob" Plague Research Institute

"Characteristics of Somatic Antigens of Pasteurella pestis"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1972,
pp 101-105

Abstract: Chemical analysis of the main somatic antigen of Pasteurella pestis showed that it does not contain lipid A or the sugars characteristic of the central polysaccharide-aldoheptose and ketodesoxyoctanate. The monosaccharides present include galactose, glucose, glucosamine, mannose, and rhamnose. Fractionation of the main somatic antigen on Sephadex G-75 results in 2 components. One consists mostly of protein and a small quantity of nucleic acids and a polysaccharide. The other contains not only proteins but all the sugars present in the original antigen. The polysaccharide-containing haptene is regarded as the lateral O-specific chain of a liposaccharide.

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USSR

VEYNER, G. A.

UDC 577.4

"Approximating the Symmetric Reflexive Binary Ratio by the Equivalence Ratio"
Tr. Tallin. politekhn. in-ta (Works of Tallin Polytechnic Institute), 1971, A,
No 313, PP 45-49 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V391)

No abstract

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1/2 021

UNCLASSIFIED

PROCESSING DATE--16OCT70
PATIENTS WITH BASEN

TITLE--CHANGES IN OXYGEN TENSION IN HYPODERMIS OF
INDURATIVE ERYTHEMA IN OXYGEN INHALATION -U-
AUTHOR-(03)-VEYNEROV, I.B., SOKOLYANSKIY, I.F., RUDCHENKO, YU.A.

COUNTRY OF INFO--USSR

SOURCE--FIZIOLOGICHNIY ZHURNAL, 1970, VOL 16, NR 3, PP 369-373

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

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CIRC ACCESSION NO--AP0115329

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--160CI70

CIRC ACCESSION NO--AP0115329 ABSTRACT. THE INVESTIGATIONS WERE CONDUCTED
 ABSTRACT/EXTRACT--(U) GP-0- ON DETECTING THE PO SUB2 CHANGES IN HEALTHY HYPODERMIS AND IN THE NODES
 OF THE PATIENTS WITH THE BASEN INDURATIVE ERYTHEMA. IT IS SHOWN THAT
 WITH THE BEGINNING OF OXYGEN INHALATION PO SUB2 IN THE NODE OF THE BASEN
 INDURATIVE ERYTHEMA INCREASES INTENSIVELY DURING THE FIRST FIVE MINUTES.
 DURING THE FOLLOWING FIVE MINUTES THE INCREASE OF PO SUB2 IS
 COMPARATIVEY SMALL. THE INCREASE OF PO SUB2 IN HYPODERMIS DEPENDS ON
 THE PECULIARITIES OF THE LOCAL AFFECTION CLINICAL MANIFESTATION. THE
 HIGHEST (IS SIMILAR TO 450PERCENT WITH RESPECT TO THE INITIAL LEVEL) PO
 SUB2 WAS IN THE NODES OF THE MIDDLE SIZE REACHING THE DIMENSIONS OF A
 BIG PLUM. AFTER STOPPING OXYGEN INHALATION THE PO SUB2 INDICES LOWERED
 UP TO THE INITIAL LEVEL IN THE AFFECTED HYPODERMIS QUICKER THAN IN THE
 UNAFFECTED ONES. WITH RESOLVE OF THE NODE DURING THE PROCESS OF
 TREATMENT PO SUB2 DECREASES, APPROACHING THE LEVEL OF THE HEALTHY
 HYPODERMIS, BUT NOT REACHING IT EVEN WITH ITS COMPLETE RESOLVE
 DETERMINED VISUALLY AND PALPATORY. THE INVESTIGATION SHOWED, THAT THE
 DETERMINATION OF PO SUB2 DYNAMICS MAKES IT POSSIBLE TO JUDGE OF THE
 DISEASE PROCESS AS WELL AS TO CONTROL THE EFFICIENCY OF THE APPLIED
 THERAPEUTICS. FACILITY: THE A. A. BOGOMOLETZ INSTITUTE OF
 PHYSIOLOGY, ACADEMY OF SCIENCES, UKRAINIAN SSR, KIEV; INSTITUTE OF
 TUBERCULOSIS AND THORACIC SURGERY, KIEV.

UNCLASSIFIED

USSR

VEYNERT, V. A.

UDC 627.81:551.48(47+57)

"State of Hydrometeorological Servicing and Consideration of Runoff with Respect to the USSR Reservoir Cadaster Data"

Tr. koordinats. soveshchaniy po gidrotekhn. (Works of Coordinating Meetings on Hydroengineering), No 59, 1970, pp 169-171 (from RZh-Elektrotekhnika i Energetika, No 2, Feb 71, Abstract No 2 D52)

Translation: The first edition of the USSR Reservoir Cadaster included information on 200 reservoirs of which 184 have a volume greater than 50 million m³. The water conservancy balance is compiled with respect to 92 reservoirs including the data of the hydrometeorological observatories for 38 reservoirs. The fact that the state of the art with respect to considering runoff is not entirely satisfactory at the majority of hydroelectric power plants mainly as a result of absence of flow meters and reliable means of measuring the flow rate through the turbines under all their operating conditions and also the absence of consideration of water consumption for industrial and domestic water supplies and reception of tail water in the reservoirs are noted. The bibliography has 2 entries.

1/1

USSR

Corrosion

UDC 669.14.018.293:621.792,
.053:620.143

VEYNGARTEN, A. M., GOMAN, G. M., GOLOVCHENKO, V. S., KLIMOVA, V. A., and
SITALOV, V. P.

"Corrosion of Hull Steel Weldments"

Leningrad, Sudostroyeniye, No 6, Jun 73, pp 40-43

Abstract: The influence of the thermal cycle of weldments on the corrosion resistance of shipbuilding steels was investigated on butted specimens of 09G2, 10KhSND, and 4S standard hull steels in rapid-flowing sea water over a period of 1000 hrs. Various methods and welding practices were applied to determine the influence of the character of the thermal effect and of the cooling rate. The investigation results are discussed by reference to diagrams showing the heating and cooling curves in the thermal influence zone of 09G2 steel, the corrosion resistance dependence on the condition and the cooling rate, and the corrosion resistance dependence on the condition of the burning off beading weld. The main factors affecting the corrosion resistance are the cooling rate on welding (according to the running welding energy in cal/cm) and the character of structural conversion of steel. At 4500-5000 cal/cm running energy, the resistance of 09G2 steel

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USSR

VEYNGARTEN, A. N., et al., Sudostroyeniye, No 6, Jun 73, pp 40-43

and 4S steel in the thermal influence zone is the same as that of the initial material. To avoid the development of selective corrosion in the thermal influence zone, welding with higher running energies or the use of burning off beads is recommended. Four figures, one table, four bibliographic references.

2/2

USSR

UDC 621.81:621.78

VORONINA, L. V., SHPEYZMAN, V. M., BABEY, YU. I., and
VEYNGARTEN, A. M.

"Influence of Surface Hardening on Properties of Structural Steels"

Sudostroyeniye, No 2, Feb 71, pp 47-53

Abstract: Studies were performed to determine the influence of the form of microirregularities on the physical properties of surface-hardened steel specimens. Specimens of type 20 steel and type 12 KhN₃A steel were subjected to carburizing with surface rolling, while specimens of type 40 Kh steel were subjected to induction hardening. Microhardness and surface smoothness of the specimens were measured. Carburized type 20 steel was found to have a maximum microhardness of about 900 kg/mm² at 0.1-0.3 mm from the surface. Surface rolling was found to increase surface smoothness, increasing the radius of curvature of peaks and hollows, thus improving the operational properties of the metal. Fatigue tests were also performed in air and in a 3% aqueous solution of sodium chloride. The surface rolling increased 1/2

- USSR

VORONINA, L. V., et al., Sudostroyeniye, No 2, Feb 71, pp 47-53

fatigue strength, particularly in the salt solution. Type 20 steel carburized with subsequent surface rolling was found to be equal to alloy steels in fatigue strength. The fatigue strength of type 40 Kh steel was increased by almost 50% by induction hardening. The hardening processes were also found to decrease the coefficient of friction of the metal surfaces. Corrosion resistance was little changed by the treatment, however.

2/2

USSR

VEYNGAYARDEN, A. van.

"At the Boundary Between Natural and Artificial Languages"

VKP-2 Tr. 2-y Vses. Konf. po Programmir., 1970, Dokl. in. Uchastnikov
[VKP-2 Works of Second All-Union Conference on Programming, 1970, Reports
of Foreign Participants -- Collection of Works], Novosibirsk, 1971, pp 11-
23, (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract
No 2 V676 by V. Mikheyev).

Translation: A method is studied for describing the syntax for natural and
artificial languages. The following definitions are studied: a "protocon-
cept" -- any sequence of "small syntactical characters"; a "concept" -- a
protoconcept for which a "generating rule" has been given; a "metaconcept"
-- an empty sequence of "large syntactical units"; a "hyperrule" -- a rule
which is produced by substituting one or more metaconcepts into any generating
rule for a certain concept. A number of examples are used to show the results
of these definitions.

1/1

USSR

UDC: 621.315.592

VEYNGER, A. I., KRAMER, N. I., ABDINOV, A. Sh., and DADAMIRZAYEV, G., A. F. Ioffe Physico-Technical Institute, Leningrad

"Benedix Effect in the High-Frequency Heating of Unbalanced Carriers in Germanium"

Leningrad, Fizika i tekhnika poluprovodnikov, No 7, 1972, pp 1354-1358

Abstract: The authors define the Benedix effect as a thermoelectromotive force arising in a uniform semiconductor when the carriers are heated by powerful microwave pulses. They performed an experiment involving this effect and reported its results in an earlier paper published in this same journal (A. I. Veynger, et al, FTP, 6, 1972, p 916). The present paper proposes a revision of the earlier experiment which permits having the temperature and concentration gradients in the same region of the semiconductor specimen. A diagram of this revised apparatus is given. A formula for the thermoelectromotive force is theoretically derived on the assumption that the temperature of the carriers is proportional to the uhf power incident on the specimen. The curves for this formula and for the experimental data as obtained with the revised

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VEYNGER, A. I., et al, Fizika i tekhnika polunrovodnikov, No 7,
1972, pp 1354-1358

apparatus are plotted on the same axes (the thermoemf as a function of the uhf power) and are seen to have good agreement.

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USSR

VEYNIK, V. A., Engineer, D'YACHENKO, V. V., Candidate of Technical Sciences, and
CHUKANOV, A. P., Engineer

UDC: 621.791.72:669.293+669.292+669.14.018.8

"Electron-Beam Welding of Niobium Alloy and Stainless Steel Through a Vanadium Layer"
Moscow, Svarochnoye Proizvodstvo, No 5, May 73, pp 16-18

Abstract: The authors study the interaction kinetics of a solid niobium alloy and liquid stainless steel through a vanadium layer. The study was carried out in a chamber at a residual pressure of $5 \cdot 10^{-5}$ mm Hg. The vanadium was applied from a melt by the vacuum condensation method onto the niobium backing surface which was first prepared by a mixture of acids, 40 percent HF+60 percent HNO₃. This ensures the satisfactory adhesion of the condensate to the surface. The specimen, consisting of stainless steel, vanadium layer, and niobium backing, was heated by an electron beam in order to approximate as closely as possible electron beam welding conditions. The heating temperature of from 1400 to 1550°C was regulated either by focus or electron flux variation. The results show that vanadium should be used in the electron beam welding of VN-2AE vanadium alloy and Kh16N10T stainless steel 0.5mm thick with only the steel being melted. The vanadium prevents the formation of an intermetallide layer in the fusion zone. In welding the indicated materials, a three micron thick vanadium layer makes

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USSR

VEYNIK, V. A., et al, Svarochnoye Proizvodstvo, No 5, May 73, pp 16-18

it possible to expand the welding current by a factor of three in comparison to welding without vanadium. Barrier elements should be selected on the basis of graphs for mutual solubility of elements in the solid state. Such graphs should be constructed for the individual components of weldable alloys.

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USSR

UDC 620.164.1:669.15'74'192-194

RUBENCHIK, Yu. I., KROSHKIN, V. A., MEDINSKAYA, E. P., ZHERDEV, A. V., ~~VINIKOVAUS~~,
S. S., and SUKHOMLINA, A. G., VNIIPKhimmafteapparatury [Expansion unknown],
Kommunarsk Metallurgical Plant

"Work Hardening of 10G2FR Plate Steel"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 11, Nov 70, pp
55-57

Abstract: A study was made of the effect of thermal hardening and hot rolling of 10G2FR plate steel on its mechanical properties. In the thermally work hardened state at elevated temperatures the tensile strength of 10G2FR steel does not change up to 400° C, but thereafter decreases drastically, so that at 450° C the thermally work hardened metal does not differ from the hot rolled one. The mechanical properties of 10G2FR steel of different thickness in the hot rolled and thermally work hardened states are presented. Use of rare earth metals make it possible to produce a sulfurless metal with a uniform distribution of segregated units along the plate section, ensuring sufficient ductility and strength of the metal when it is made into plates of different thickness.

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VEYSFEYLER, Yu. K.

SO: JPRS 54539

23 NOV 71

UDC: 612.017.1.014.482

SPECIFIC IMMUNITY TO SMALL DOSES OF GAMMA RAYS IN DOGS AFTER 2-4-YEAR EXPOSURE (IMMUNOLOGICAL AND HISTOCYTOCHEMICAL ANALYSIS)

Article by I.V. Konstantinova, A.S. Skryabin, V.M. Zaslavskiy, Yu.K. Veysefeyler, I. (aka), I.S. Vasil'yev, N.A. Markelov, Moscow, Vestnik Akademii Nauk SSSR, Russkaya, No 10, 1971, pp 22-29

Galactic cosmic irradiation the cumulative dosage of which, according to estimates, could constitute 50-100 rem (röntgen equivalent man) over a one-year flight and recur recurrent exposure to solar corpuscular irradiation in a dosage of 3-50 rem per burst (V.G. Bobkov et al.; Schofer) are factors that are continuously present during prolonged space flights. The prognosis of man's condition under these conditions and substantiation of levels of permissible exposure of cosmonauts during prolonged space flights constitutes a rather complex problem.

The mechanisms of onset of radiation sickness after exposure to relatively large doses of ionizing radiation have been studied in subacute experiments. There are many works dealing with immunological reactions under such conditions, and they have been summarized in monographs and textbooks (R.V. Petrov; K.N. Klermanukaya et al.; V.L. Troitskiy et al., and others). Yet the changes in immunological processes in the organism referable to exposure to small doses of ionizing radiation have not been investigated sufficiently.

It has been demonstrated that 4-5 months after fractional or continuous exposure to 1.3-1.5 rem daily there is a significant decrease in immunity to infections (O.N. Nisolev and P.A. Ruzini; D.R. Kaulen; E.N. Dzhekifre).

In the present investigations, some manifestations of specific immunity were analyzed during a unique complex chronic experiment.

A large group of dogs has been continuously exposed to gamma rays (cobalt 60) for several years. For the first three years of the experiment the animals were exposed to radiation such as could be present for the crew of a spacecraft during a flight from the earth to Mars and back to earth, provided the radiation conditions are relatively stable ["chlam"] (Yu.G. Gripor'yev et al.)

USSR

UDC 621.771.08

ZASUKHA, P. F., KORSHCHIKOV, V. D., BUKHVALOV, O. B., and WEYSHOV, A. A.

"Bimetallic Rolled Products"

"Bimetallicheskiy Prokat" [English Version Above], Moscow, Metallurgiya Press, 1971, 264 pages

Translation of Annotation: This book presents the properties and area of application of bimetallic rolled products made from steel and non-ferrous metals.

The results of theoretical and experimental studies of the process of joint plastic deformation of dissimilar metals, the specifics of bonding of the metals, and the effect of technological factors on the bonding strength of the layers and the mechanical and operational properties of bimetals are studied. Parameters of the technology and equipment for production of bimetals by the packet and roll methods in the hot, warm, and cold states are presented. Methods of quality control of bimetallic rolled products are described.

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USSR

ZASUKHA, P. F., et al., "Bimetallicheskiy Prokat," Moscow, Metallurgiya Press, 1971, 264 pages

The book is designed for engineering and technical workers of plants and scientific research and planning institutes involved in the development, production, and application of bimetallic materials. It may be useful to students and graduate students of technical schools.

108 figures; 59 tables; 183 biblio. refs.

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ZASUKHA, P. F., et al., "Bimetallicheskiy Prokat," Moscow, Metallurgiya Press, 1971, 264 pages

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ZASUKHA, P. F., et al., "Bimetallicheskiy Prokat," Moscow, Metallurgiya Press, 1971, 264 pages

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USSR

ZASUKHA, P. F., et al., "Bimetallicheskiy Prokat," Moscow, Metallurgiya Press, 1971, 264 pages

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AN0012615



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AUTHOR-- PUSTYL, NIK, I., JUNIOR SCIENCE ASSOCIATE, THE INSTITUTE OF PHYSICS AND ASTRONOMY OF THE ESTONIAN ACADEMY OF SCIENCES /IPA/, CANDIDATE OF PHYSICAL-MATHEMATICAL SCIENCES

TITLE-- ELECTRONICS IN THE SERVICE OF ASTRONOMERS

NEWSPAPER-- SOVETSKAYA ESTONIYA, JANUARY 16, 1970, P 4, COLS 4-7

14
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10

ABSTRACT-- THE AUTHOR BRIEFLY REVIEWS THE ACTIVITIES OF THE ASTRO-PHYSICAL OBSERVATORY AT TYRAVERA. SEVERAL YEARS AGO, ITS ENGINEERS E. MAAZIK AND R. KOPPEL DESIGNED PHOTOELECTRIC PHOTOMETERS AND THE CONTROL PANEL FOR A DOUBLE TELESCOPE. THE PROJECT WAS DIRECTED BY U. VEYSMAN, JUNIOR SCIENCE ASSOCIATE.

YU. IBRUS, JUNIOR SCIENCE ASSOCIATE, SECTION OF THE EXPERIMENTAL PHYSICS OF THE IPA, AND L. UTTER, SENIOR ENGINEER, DESIGNED AN ELECTRO-SPECTROPHOTOMETER.

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AN0012615

YA. OYASTE, JUNIOR SCIENCE ASSOCIATE, AND R. LAYGO, SENIOR DESIGN ENGINEER, ARE ABOUT TO COMPLETE THE DESIGN OF A SPECTROGRAPH WITH AN ELECTRONIC-OPTICAL CONVERTER, WHICH IS KNOWN AS "OMIKRON".

THE TYRAVERA OBSERVATORY IS SLATED TO RECEIVE THE 1.5 METER AZT-12 TELESCOPE WHEN ITS CONSTRUCTION IS COMPLETED AT THE LENINGRAD OPTICAL-MECHANICAL PLANT.

THE INSTITUTE'S CALCULATIONS ARE MADE IN THE COMPUTER VNIEM-3.

THE SECTION OF EXPERIMENTAL ASTROPHYSICS, WHICH HAS BEEN RECENTLY FORMED AT THE IPA, IS HEADED BY L. LUUD, SENIOR SCIENCE ASSOCIATE, CANDIDATE OF PHYSICAL-MATHEMATICAL SCIENCES.

13571504

1/2 024 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--EFFECT OF DIVALENT IMPURITIES ON THE CONCENTRATION OF CATION
VACANCIES IN ALKALI HALIDE CRYSTALS -U-
AUTHOR--(02)-PERSHITS, YA.N., VEYSMAN, V.L. ✓
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(4), 1285-8
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, CHEMISTRY
TOPIC TAGS--SODIUM CHLORIDE, CADMIUM CHLORIDE, POTASSIUM CHLORIDE,
POTASSIUM BROMIDE, OPTIC PROPERTY, CRYSTAL IMPURITY, ADSORPTION,
ELECTROCHEMICAL PROPERTY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0152 STEP NO--UR/0181/70/012/004/1285/1288
CIRC ACCESSION NO--AP0129408
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0129408

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IONIC COND. OF THE CRYSTALS OF NaCl PLUS CdCl₂ SUB₂ AND KBr PLUS CdBr₂ SUB₂ WAS INVESTIGATED IN RELATION TO THE VARIATION OF OPTICAL ABSORPTION CAUSED BY ADDITIVE OR ELECTROCHEM. COLORING OF THESE CRYSTALS. THE CRYSTALS WERE GROWN FROM THE MELT. A DECREASE IN COND. OF THESE CRYSTALS WAS ACCOMPANIED BY THE APPEARANCE OF CHARACTERISTIC ABSORPTION BANDS. POSITIONS OF THE MAX. DEPEND ON THE CONDITIONS OF TREATMENT OF THE CRYSTALS. FOR NaCl AFTER COLORING AND BLEACHING, A COMPLEX BAND WAS OBSD. WITH 2 MAX., AT 280 AND 295 NM, CLOSE IN INTENSITY. IN KBr PLUS Cd PRIME₂ POSITIVE CRYSTALS COND. CEASES TO INCREASE EVEN AT VERY LOW CONCNS. (10 PRIME NEGATIVE₃ MOLE PERCENT). THE ABSORPTION COEFF. INCREASES LINEARLY WITH CONC. AT VERY LOW CONCNS. AND BECOMES CONST. AT 10 PRIME NEGATIVE₃ MOEL PERCENT. THIS INDICATES THAT THE ABSORPTION IS NOT BY THE IMPURITY BUT ONLY BY THE PART THAT PARTICIPATES IN THE FORMATION OF IMPURITY COND.
FACILITY: PSKOV. GOS. PEDAGOG. INST. IM. KIROVA, PSKOV, USSR.

UNCLASSIFIED

USSR

UDC 547.558.1.07

FCSS, V. L., VEYTS, YU. A., LUTSENKO, I. F., Moscow State University imeni
M. V. Lomonosov

"A Method of Making Dialkoxyposphines"

Moscow, Otkrytiya, Izobreneniya, Pr myshlennyye Obraztzy, Tovarnyye Znaki,
No 15, Apr 73, Author's Certificate No 374326, Div C, filed 9 Jul 71,
published 14 Jul 73, p 53

Translation: This Author's Certificate introduces: 1. A method of making
dialkoxyposphines by reducing dialkyl chlorophosphites with subsequent
recovery of the goal product by conventional methods. As a distinguishing
feature of the patent, the process is simplified by using a boric hydride
of an alkali metal as the reducing agent and carrying out the process in
the presence of a tertiary amine such as trimethylamine in an organic solvent.
2. A modification of this method distinguished by the fact that dimethoxy-
ethane or tetrahydrofuran is used as the organic solvent.

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USSR

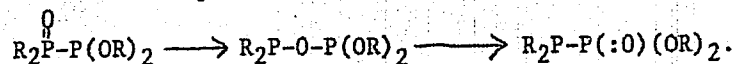
UDC 547.26'118

VEYTS, Yu. A., BORISENKO, A. A., FOSS, V. L., and LUTSENKO, I. F., Moscow State University Imeni M. V. Lomonosov

"A New Rearrangement Among Organophosphorus Compounds"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 2, Feb 73, pp 440-441

Abstract: Oxidation of 1,1-diisopropyl-2,2-dibutoxydiphosphine with HgO gives a single product 1,1-diisopropyl-2,2-dibutoxydiphosphine, whose structure was confirmed by NMR ^{31}P analysis. The assumption was made that this unexpected result -- oxidation of the less basic "phosphite" center of the diphosphine may be a result of a rearrangement of an intermediate, direct oxidation product:



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USSR

UDC 547.26'118

FOSS, V. L., VEYTS, YU. A., and LUTSENKO, I. F.

"New Method for Preparing Dialkoxiphosphines"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 4, 1972, p 954

Abstract: Dialkoxiphosphines can be prepared by reducing dialkyl chlorophosphite with lithium and sodium borohydrides. Dibutoxyphosphine was prepared in this manner and the structure verified. The advantages of this method are a reduction in reaction time from 2-6 days to 20-30 minutes and organic tin hydrides can be substituted for the lithium and sodium reagents.

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USSR

UDC 547.26'118

FOSS, V. L., VEYTS, YU. A., KUDINOVA, V. V., BORISENKO, A. A., and
LUTSENKO, I. F., Moscow State University Imeni M. V. Lomonosov

"Synthesis of Alkylalkoxydiphosphines"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 5, May 73, pp 1000-1006

Abstract: The synthesis of a new type of unsymmetric diphosphines containing alkyl(aryl) and alkoxy(aryloxy) groups was developed. The first method is based on the reaction of dialkoxyphosphines with dialkylchlorophosphines in organic solvents (petroleum ether, benzene, diethyl ether, dimethoxyethane) and in presence of tertiary amines. This is an exothermic reaction, completed in 2-3 hrs. The second method is much slower, requiring several days for completion. It is based on the reaction of dialkyl(aryl)phosphines with dialkyl(aryl) chlorophosphites under similar reaction conditions. Raising the reaction temperature does not help, since it leads to the formation of high-boiling by-products.

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USSR

UDC: 621.396.96:681.32

VEYTSSEL', V. A. (Editor)

"Problems of Data Processing in Phase Type Radio Measurement Systems"

Voprosy obrabotki informatsii v fazovykh izmeritel'nykh radiosistemakh
Tr. Mosk. aviats. in-ta, vyp. 201 (cf. English above. Works of the Moscow
Aviation Institute, No 201), Moscow, 1970, 154 pp, ill. 90 k. (from
RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1G21 K)

Translation: The collection contains nine articles dealing with the theory of phase type radio measurement systems (the term radio measurement systems covers a broad class of systems including radio navigation and radar systems in particular). Most of the articles deal with problems of digital isolation and processing of a radio signal. N. S.

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USSR

UDC 51:155.001.57:518.9

VEYTSENBAUM, Y."Comprehension of Coherent Text by a Computer"

Raspoznvaniye Obrazov [Pattern Recognition -- Collection of Works], Moscow, Mir Press, 1970, pp 214-244 (Translated from Referativnyy Zhurnal Kibernetika, No 3, 1971, Abstract No 3 V586 by E. Vagner).

Translation: A computer can be programmed to understand the person working with it. The information is input to the machine using a typewriter rather than speech. This problem should not be confused with the problem of analysis of contents, since in this case we are concerned with fragments of natural language, not complete texts. A set of programs called "Eliza" has been developed, allowing a machine to learn conversational speech by imitating the answers of a psychiatrist. The conversation with the psychiatrist has the advantage that the necessity of machine memorization of information concerning the surrounding world in explicit form is eliminated. The basic procedure of the program is quite simple: the machine reads texts and checks for the presence of a certain key word. If the word is present, the statement is converted according to certain rules related to the key word, and if not, any senseless comment is extracted from memory or under certain conditions the preceding conversion is used. The use of subcontexts

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USSR

UDC 51:155.001.57:518.9

VEYTSENBAUM, Y., Raspoznavaniye Obrazov, Moscow, Mir Press, 1970, pp 214-244.

facilitates improvement of the program. However, this program is capable only of maintaining the illusion of understanding by concealing its lack of understanding. A more perfected program includes an evaluation device capable of investigating expressions of any complexity, as well as several conversational "scenarios" rather than just one. This program no longer conceals its lack of understanding, but rather asks questions. Examples of conversation between man and machine are presented, indicating the ability of the machine to recognize textual patterns and understand statements made to it.

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USSR

UDC 771.537.33

VENDROVSKIY, K. V., VEYTSMAN, A. I., PTASHENCHUK, V. M.

"Signal/Noise Ratio and Quantum Effectiveness of Differentiation in Photographic Emulsion"

Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii, Vol 17, No. 6, Nov-Dec 72, pp 426-433.

Abstract: The quality of photographic materials of various sensitivities can be characterized by the quantum effectiveness of differentiation. This value compares the actual detector (its "signal/noise" ratio) to an ideal radiation detector, the accuracy of reproduction of which is limited only by photon noise resulting from the discrete nature of the light flux. The macroscopic quantum effectiveness, determining the effectiveness of recording of large parts, is distinguished from the microscopic quantum effectiveness, corresponding to the reproduction of small objects and considering the scattering of light in the light-sensitive emulsion. This work presents experimental results of determination of the signal/noise ratio and quantum effectiveness of films of varying sensitivities.

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USSR

UDC: 8.74

VEYTSMAN, I. N.

"Modeling Logic Circuits"

Minsk, Teoriya i primeneniye mat. mashin--sbornik (Theory and Application of Mathematical Machines--collection of works), Belorussian University, 1972, pp 100-108 (from RZh-Kibernetika, No 5, May 73, abstract No 5V739 by the author)

Translation: Methods of modeling the digital elements of computer technology on the level of functional and logic circuits are considered. A modeling algorithm is described, and a sub-program is developed for realizing the algorithm. The modeling system is calculated for an arbitrary system of elements and is equipped with an automatic debugging program.

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USSR

UDC: 539.385

IVANOVA, V. S. and VEYTSMAN, N. G., Institute of metallurgy
imeni A. A. Baykov, Academy of Sciences USSR

"Effect of Neoprene Coatings on the Cyclic Strength of Specimens
and Parts Affected by Fretting Corrosion"

Moscow, Sb. "Ustalost' metallov i splavov". "Nauka" Press,
1971, pp 103-108

Translation: The cyclic strength level of real structures
and parts is determined by a number of factors including
fretting corrosion. The presence of fretting corrosion
markedly reduces cyclic strength. This study concerns the
effect of neoprene coatings (synthetic rubber variety) on
the cyclic strength of 1Kh18N9 steel specimens and structural
parts under fretting corrosion conditions. Fatigue tests of
neoprene-coated specimens under contact friction conditions
indicate their fatigue limits to be by 60% higher than that
of uncoated specimens. Dynamic tests of real assemblies
protected with neoprene have shown a three-to four-fold
increase in service life as compared to similar unprotected
assemblies. (4 illustrations, 7 biblio. references; summary)

1/1

- 25 -

USSR

UDC: 539.385

FRIDMAN, Z. G. and VEYTSMAN, M. G., Institute of Metallurgy
imeni A. A. Baykov, Academy of sciences USSR

"Effect of Mechano-thermal Treatment of the Cyclic Strength
of 1Kh18N9 Steel Sheets"

Moscow, Sb. "Ustalost' metallov i splavov". "Nauka" Press,
1971, pp 97-102

Translation: The paper discusses the effect of single and fractional mechano-thermal treatments (MTT) combined with deformation at 10 and 20% under tensile and rolling conditions. As a result of this type of treatment the cyclic strength of 1Kh18N9 steel sheets increased by more than 30%. Fractional MTT appears to be more effective as compared to simple treatments for the same deformation ratios. The increase in cyclic strength following MTT is shown to be related to the decrease in surface strain and to the formation of a cellular structure. (3 illustrations, 2 tables, 5 bibliographic references; summary).

1/1

1/2 046 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--RAISING THE FATIGUE STRENGTH OF METALS BY MEANS OF NEOPRENE
COATINGS -U-
AUTHOR--(02)-IVANOV, V.S., WEITSMAN, M.G.
COUNTRY OF INFO--USSR WEITSMAN, M.G.
SOURCE--FIZ. KHIM. MEKHAN. MAT., 1970, 6, (2), 65-68
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--FATIGUE STRENGTH, PLASTIC COATING, OXIDATION INHIBITION,
CHROMIUM NICKEL STAINLESS STEEL, ALUMINUM ALLOY, CRYSTAL DISLOCATION,
CRACK THEORY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1815 STEP NO--UR/0369/70/006/002/0065/0068
CIRC ACCESSION NO--AP0129183
UNCLASSIFIED

2/2 046

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129183

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF NEOPRENE (NAIRIT) COATINGS ON THE FATIGUE STRENGTH OF CR,NI STAINLESS STEELS AND TWO AL ALLOYS WAS STUDIED. IN SAMPLES WITH NEOPRENE COATINGS THE FATIGUE STRENGTH WAS APPRECIABLY GREATER THAN IN THOSE LACKING SUCH COATINGS. THE POSITIVE INFLUENCE OF THE COATINGS LAY MAINLY IN PREVENTING OXIDIZING PROCESSES TAKING PLACE IN THE SLIP BANDS; THIS PROMOTED A MORE FAVOURABLE DISLOCATION ACTION AND RETARDED CRACK DEVELOPMENT.

UNCLASSIFIED

USSR

UDC: 621.376.54

KILNA, A. A., ZHUKAUSKAS, K. P., MASYULIS, I. I., VEYVERIS, G. P., Institute of Physics and Mathematics, Academy of Sciences of the Lithuanian SSR

"A Device for Discrete Demodulation of Duration-Modulated Pulses"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obratzsy, tovarnyye znaki, No 3, Jan 71, Author's Certificate No 291334, Division H, filed 27 Mar 68, published 6 Jan 71, p 151

Translation: This Author's Certificate introduces a device for discrete demodulation of duration-modulated pulses. The unit contains a scaling circuit, decoder, pulse shaper, diodes and coincidence circuit. As a distinguishing feature of the patent, in order to improve precision and resistance to interference in the demodulation process, the device is equipped with a cadence pulse time discriminator for the pulses from the output of the scaling circuit. The output of this discriminator is connected to the input of the scaling circuit through an oscillator made in the form of a feedback-covered series circuit comprised of a controllable delay line and a diode. The emission frequency of this oscillator is $2n$ times the frequency of the cadence signal, where n is the ratio of the cadence pulse period to the duration quantizing step for the pulses. The cadence signal line is connected to the set terminal of a flip-flop whose one-output terminal is connected to the controlling input of the above-mentioned delay line through the pulse shaper.

1/1

Converters

USSR

UDC 621.317.373

BINKAUSKAS, B. Yu. B., KILNA, A. A., and VEYVERIS, G. P., Institute of Physics and Mathematics, Academy of Sciences of the Lithuanian SSR

"A Converter Which Transforms Phase Shift to Digital Code"

Moscow, Otkryitya, izobreteniyе, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 35, Soviet Patent No 287194, class 21, filed 16 Jun 69, published 19 Nov 70, p 83

Translation: This Author's Certificate introduces a converter which transforms phase shift to digital code. The device contains reference and phase-keyed signal pulse shapers, flip-flops, diodes, a counter, a switch and an automatic frequency control circuit made up of a time discriminator, a controllable delay line, a diode and a scaling circuit. The output of the diode in the automatic frequency control circuit is connected to the input of the controllable delay line through an OR circuit. As a distinguishing feature of the patent, accuracy is improved by adding a second automatic frequency control circuit whose input is connected to the output of the phase-keyed signal pulse shaper, while the output of the extra AFC circuit is connected to the input of the switch.

1/1

USSR

UDC 532.517.4

VEZIROV, A. M., KHASAYEV, A. M., ALIYEV, Sh. N., ALIYEV, Ye. M.

"Study of the Rheology and the Effect of Polymer Additives on the Turbulent Flow of Two-Fluid Systems"

V sb. 3-y Simpoz. po primeneniyu nen'yutonovsk. sistem v neftedobyche, Krasnodar, 1972. Tezisy dokl. (Third Symposium on the Application of Non-Newtonian Systems in Oil Drilling, Krasnodar, 1972. Subjects of Papers -- Collection of Works), Moscow, 1972, pp 48-49 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B1067)

Translation: A description and the operating principle of a laboratory setup for studying the rheological behavior of two-phase mixing and nonmixing fluid systems with polymer additives in the velocity interval shifting from 0 to 1000 sec^{-1} are presented. The effect of phase concentration and polymer additives on the magnitude of the coefficient of hydraulic resistances under a turbulent regime of the motion of water and oil with polymer additives of the polyzobutylene type in the Reynolds numbers range 5000-40,000 is investigated. Experimental data are presented on operational wells supplying oil and water. I. G. Bulina.

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USSR

UDC 629.78.015:533.6.071.011.55.08

VEZMENOV, V. Ya., GORENBUKH, P. I.

"Application of the Unstable Analogy to the Study of the Effects of an Explosive Wave on a Barrier in a Hypersonic Tube"

Uch. zap. Tsentr. Aero-gidrodinam. In-ta [Scientific Writings of Central Aero-Hydrodynamics Institute], Vol 2, No 6, 1971, pp 48-54, (Translated from Referativnyy Zhurnal, Raketostroyeniye, No 4, 1972, Abstract No 4.41.157 from the Resume).

Translation: A method is described for applying the explosive analogy to the flow of a hypersonic gas stream around blunt bodies, for experimental investigation of the effects of the shockwave of a strong explosion on a flat barrier. The effect of the flat shockwave from a strong explosion of a flat charge on a flat barrier is modeled by the action of a shockwave departing from the nose of a blunted flat body on a flat plate. The results of measurement of the distribution of pressure along the plate beyond the falling pressure jump are presented, produced in a helium hypersonic wind tunnel. The plate is set both at zero angle of attack (nonmoving barrier) and at an angle of attack corresponding to the motion of the barrier as $V_w = 0.25$. The experimental results are compared with calculated data. 7 Figures; 4 Biblio. Refs.

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.. 16 ..

1/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--ADHESIVE TAPE --U-
AUTHOR--VEZAC, K.P. ✓
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 265,347
REFERENCE--LTKRYTIYA, IZOBRET., PROM. OBRKAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--C9MAR70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ADHESIVE, PATENT, MEDICAL EQUIPMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAKE--3C04/1081 STEP NO--UR/C482/70/000/000/0000/0000
CIRC ACCESSION NO--AAG131526

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AA0131628

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADHESIVE TAPE WITH MEDICINAL APPLICATION IS BASED ON GAUZE DOUBLED WITH POLYPROPYLENE FILM AND CONTAINS AN ADHESIVE LAYER.

UNCLASSIFIED

USSR

UDC 612.014.44

VIBE, K. G., ALEKSEYEV, V. I., and FAYTEL'BERG-BLANK, V. R., Tselinograd
Agricultural Institute and Odessa Agricultural Institute

"Effect of Short-Wave Ultraviolet Irradiation on Absorption Functions of the
Small Intestine"

Moscow, Doklady Akademii Nauk SSSR, Vol 199, No 6, 1971, pp 1,453-1,455

Abstract: Dogs with an isolated loop of small intestine were exposed to short-wave ultraviolet irradiation of the epigastric region with 1.5 and 3 biological doses. The absorption capacity of the intestine was determined by introducing into the organ 20 ml of a 7% sugar solution for periods of 30 minutes. The unabsorbed part of the solution was then extracted, and the loop washed with distilled water. The amount of sugar absorbed was determined on the basis of the difference between the quantity administered and that extracted, with allowance for secretion. The experiments established that ultraviolet rays in a 1.5 biological dose intensify sugar absorption in the small intestine, increasing it in some cases from the norm of 332.8 to 604 mg within 1.5 hours after the beginning of the experiments. It then begins to decline reaching the initial norm within 48 hours after the irradiation. Irradiation with 3 biological doses causes only a brief and slight elevation
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USSR

VIBE, K. G., et al., Doklady Akademii Nauk SSSR, Vol 199, No 6, 1971,
pp 1,453-1,455

of absorption capacity in the beginning; it then begins to decline, attaining its norm within 96 hours after the beginning of the experiment. The assumption is that the larger dose stimulates the inhibitory process, reduces the functional activity of the intestinal mucosa, thereby depressing the function of the digestive system.

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USSR

VIBE, K. G., and FAYTEL'BERG-BLANK, V. R.

"The Effect of High Frequency Currents of Diathermy on the Content of Nucleic Acids in the Internal Organs of Rabbits"

Tr. Tschinogr. S.- Kh. In-t. (Proceedings of the Tschinograd Agricultural Institute), 1973, Vol 9, No 5, pp 27-37 (from RZh-Biologicheskaya Khimiya, No 24, Dec 73, Abstract No 24F 1436)

Translation: The effect of high frequency currents of diathermy with varying force and duration was investigated in respect to the exchange of DNA and RNA in internal organs (liver, pancreas, stomach, small intestine, spleen, adrenals and lungs) of rabbits. It was shown that quantitative shifts in the content of NA can be determined from the force and duration of the action of diathermal current.

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USSR

UDC 612.015.348:547.965].014.426.014.45

VIBE, K. G., MIROYEDOVA, E. F., KULACHENKO, S. P., and FAYTEL'BERG-BLANK, V. R.,
Chair of Animal Physiology, Tselionograd Agricultural Institute, and Chair of
Pathophysiology, Tselinograd Medical Institute

"Changes in the Amino Acid Content in Internal Organs of Rabbits Exposed to
High-Frequency Electromagnetic and Ultrasound Oscillations"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 10, Oct 70, pp
47-48

Abstract: Experiments on rabbits showed that high-frequency electromagnetic
fields and ultrasound, like other physical agents, change physiological
processes according to dose rate and duration of exposure. For example expo-
sure to a SHF field (centimeter waves) of 30 or 50 w for 10 min did not signif-
icantly alter the free amino acid content of the liver, stomach, small in-
testine, lungs, spleen, and kidneys. After exposure to SHF field (centimeter
waves) of 75 w for the same length of time, however, the amino acid content
of the stomach increased, while that of the intestine, spleen, and kidneys
decreased. Ultrasound at 3 w/cm² for 5 min produced the greatest changes in
the organs studied. A weaker dose (0.3 w/cm²) had much less effect, even
when continued for a much longer period of time.

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1/2 033 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--NATURE OF RADIATION DEFECTS IN ROCHELLE SALT AND TRIGLYCINE SULFATE
CRYSTALS -U-
AUTHOR--(02)-VIBLYY, I.F., ROMANYUK, N.A. ✓
COUNTRY OF INFO--USSR
SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 329-33
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--SULFATE, CRYSTAL, GLYCINE, RADIATION DAMAGE, ABSORPTION
SPECTRUM, X RAY IRRADIATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1530 STEP NO--UR/0070/70/015/002/0329/0333
CIRC ACCESSION NO--AP0125158
UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NC--AP0125158

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ABSORPTION SPECTRA OF X RAY IRRADIATED (SIMILAR TO 10 PRIME6 ROENTGENS) ROCHELLE SALT AND TRIGLYCINE SULFATE CRYSTALS AND SATD. AQ. SOLNS. (BOTH PROTECTED AND KEPT IN O, H, CO, AND CH SUB4 ATM.) WERE STUDIED AT 220-1500 NM. DUE TO THE IRRADN., IN BOTH ROCHELLE SALT AND TRIGLYCINE SULFATE CRYSTALS, SOME PART OF THE MOL. DECCMPS., AND GAS IONS REACT WITH RADIOLYTIC DECCMPN. PRODUCTS. EXPTS. CARRIED OUT ON THE ROCHELLE SALT AND TRIGLYCINE SULFATE SATD. AQ. SOLNS. INDICATE THAT THE UV ABSORPTION IN IRRADIATED ROCHELLE SALT AND TRIGLYCINE SULFATE CRYSTALS HAVE TO BE CAUSED BY RADIOLYTIC DECCMPN. PRODUCTS CONTG. THE CO GROUP. FACILITY: L'VOV. GOS. UNIV., LVOV, USSR.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--17JUL70

TITLE--TEMPERATURE DEPENDENCE OF THE POSITION OF THE SELFABSORPTION EDGE OF SEIGNETTE SALT AND TRIGLYCINE SULFATE CRYSTALS -U-

AUTHOR--VIBLYI, I.F., ROMANYUK, N.A.

✓

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5
19

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTRCSK. 1970, 28(2), 307-10

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--TEMPERATURE DEPENDENCE, ABSORPTION EDGE, CRYSTAL ABSORPTION, PHASE TRANSITION, SULFATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1981/0421

STEP NO--UR/C051/TC/028/002/0307/0310

CIRC ACCESSION NO--AP0050442

UNCLASSIFIED

ACC. NO.

AP050442

Abstracting Service:
CHEMICAL ABST. 570

Ref. Code

4R0051

103566d Temperature dependence of the position of the self-absorption edge of Seignette salt and triglycine sulfate crystals. Viblyi, I. F.; Romanyuk, N. A. (USSR). *Opt. Spektrosk.* 1970, 28(2), 307-10 (Russ). The position of the self-absorption edge of samples X, Y, and Z cuts of Seignette salt and triglycine sulfate crystals in a natural and polarized light with variations in temp. over Curie points area is investigated. The curve $\lambda_e T$ was presented in 3 linear portions. The obsd. portion of the $\lambda_e T$ curve relates to temp. region 20-4° and -20-15°, for Seignette salt, and 35-55° for the glycine sulfate in the phase transition. The slope is smaller than that of two other portions for the former, and smaller or larger than the edge for the latter. The mentioned differences in temp. effect relate to the sharp change of a spontaneous polarization, and the distinctive features of a spontaneous deformation of the domains of these crystals. Luba Jirovcova

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19810421

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1/2 034

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--STATISTICAL VARIATION OF NUMBER OF ATMOSPHERICS PER UNIT TIME -U-

AUTHOR--(03)-REMIZOV, L.T., VICHROV, V.R., POTAPOV, A.V.

COUNTRY OF INFO--USSR

SOURCE--INSTITUTION OF ELECTRICAL ENGINEERS, PROCEEDINGS, VOL. 117, MAY 1970, P. 894-896

DATE PUBLISHED-----70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--ATMOSPHERICS, ELECTRIC FIELD, SIGNAL RECEPTION, VERY LOW FREQUENCY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/1113

STEP NO--UK/0000/70/117/000/0894/0896

CIRC ACCESSION NO--AP0124768

UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0124768

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

ABSTRACT. EXPERIMENTAL STUDY OF THE STATISTICAL VARIATION IN THE NUMBER OF ATMOSPHERICS PER UNIT TIME ABOVE A GIVEN THRESHOLD VALUE OF THE VERTICAL ELECTRIC FIELD STRENGTH. RESULTS ARE GIVEN FOR THE CASE WHERE RECEPTION IS AT VERY LOW FREQUENCIES IN A FREQUENCY BANDWIDTH GREATER THAN THE EFFECTIVE BANDWIDTH OF THE ATMOSPHERICS SPECTRUM. FACILITY: AKADEMIIA NAUK SSSR, INSTITUT RADIOTEKNIKI I ELEKTRONIKI, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 581.6:615.779.934:547.56

VICHKANOVA, S. A., RUBINCHIK, M. A., ADGINA, V. V., IZOSIMOVA, S. B.,
MAKAROVA, L. V., SHIPULINEA, L. D., and GORYUNOVA, L. V., All-Union
Institute of Medicinal Plants

"Antimicrobial and Antiviral Activity of Some Natural Coumarins"

Leningrad, Rastitel'nyye Resursy, No 3, 1973, pp 370-379

Abstract: The bacteriostatic, fungistatic, and protistostatic activity of 33 natural coumarins of plant origin was investigated by the method of serial dilutions of the compounds in appropriate nutrient media. The microorganisms studied were *Staphylococcus aureus*, *Escherichia coli*, *Mycobacterium tuberculosis*, *Microsporum lanosum*, *Candida albicans*, *Entamoeba histolytica*, and *Trichomonas vaginalis*. The activity of the coumarins against herpesvirus and influenza APR-8 virus was also investigated. Fourteen of the compounds were active against *M. tuberculosis*, parasitic protozoans, and gram-negative bacteria. None was effective against any of the viruses. The terpenoid and 3-alkyl-substituted coumarins offer the most promise as bacteriostatic and fungistatic agents.

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USSR

UDC 615.281.8:665.336.6

VICHKANOVA, S. A., DZHANASHIYA, N. M., and GORYUNOVA, L. V., All-Union
Institute of Medicinal Plants, Moscow

"Antiviral Activity of the Essential Oil of *E. viminalis* and Some Other
Hardy Eucalyptus

Moscow, *Farmakologiya, i Toksikologiya*, No 3, 1973, pp 339-341

Abstract: The antiviral action of essential oils obtained from 4 eucalyptus species - *E. viminalis*, *E. macarthuri*, *E. dalrympleana*, and the pharmacopoeial *E. cinerea* - was studied in two models of influenza (in vitro and in ovo). Mice were injected intranasally with a mixture of an essential oil (100 μ g/ml) and influenza virus. Chick embryos were injected with an essential oil and infected with virus 2 hours later. The virucidal effect of the essential oils was clearly manifested only at LD₁₀₀ (80 to 100% survival rate). The antiviral activity of the essential oil of *E. viminalis* (at LD₁₀₀) was higher than that of *E. cinerea* in the in vitro experiments but somewhat lower in the chick embryo model (3- to 11-fold decrease in hemagglutination titer compared with the control).

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USSR

UDC: 536.628.3

VICHUTINSKIY, A. A., SADOVSKIY, N. A., Institute of Chemistry of Natural Compounds, Academy of Sciences of the USSR

"A Continuous-Flow Microcalorimeter"

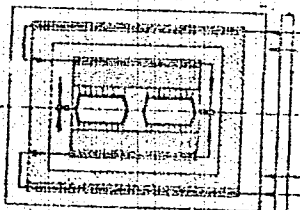
Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzy, Tovarnyye Znaki, No 7, Mar 72, Author's Certificate No 329416, Division G, filed 31 Jul 70, published 9 Feb 72, p 163

Translation: This Author's Certificate introduces a flow-through micro-calorimeter containing a detector within which a measurement cell is located with thermoelements. The calorimeter also contains a device for feeding in reagents. As a distinguishing feature of the patent, sensitivity and stability are improved by using an additional cell installed along the axis of the detector, which is made in the form of a thin-walled highly heat conductive cylinder equipped with a slot heat exchanger with symmetric input of reagents. This cylinder is placed inside a heat-compensating cylinder with high specific heat and thermal conductivity on which an additional symmetric slot heat exchanger is located. Each of the cells is equipped with radially arranged thermoelements of the semiconductor type connected differentially.

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USSR

VICHUTINSKIY, A. A., SADOVSKIY, N. A., USSR Author's Certificate No 329416



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1/2 . 011

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--INTERACTION OF LYSOZYME WITH LOW MOLECULAR WEIGHT INHIBITORS AND
MODIFIED SUBSTRATES CONTAINING BETA (1 TO 4) AND BETA (1 TO 6)

AUTHOR--(04)--SHASHKOVA, YE.A., VIKHA, I.V., VICHUTINSKIY, A.A., KHORLIN,
A.YA.

COUNTRY OF INFO--USSR

SOURCE--BIOKHIMIYA 1970, 35(1), 124-31

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AMINE DERIVATIVE, SACCHARIDE, BACTERIA, CELL PHYSIOLOGY,
ENZYME ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1984/0850

STEP NO--UR/0218/70/035/001/0124/0131

CIRC ACCESSION NO--AP005551

UNCLASSIFIED

2/2 011

CTRC ACCESSION NO--A0055551
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT. THE SPECIFICITY OF LYSOZYME WAS STUDIED IN RELATION TO THE POSITION OF THE GLYCOSAMINIDE LINKAGES BETWEEN THE MONOSACCHARIDE BONDS OF THE SUBSTRATE DURING INTERACTION OF THE ENZYME WITH THE FOLLOWING COMPS.: N ACETYLGLUCOSAMINE, N,N' DIACETYLCHITOBIOSE, N,N',N'' TRIACETYLCHITOTRIOSE, P NITROPHENYL BETA N,N' DIACETYLCHITOBIOSE (I), P NITROPHENYL O (2 ACETAMIDO, 2 DEOXY BETA D GLUCOPYRANOSYL), (1 YIELDS 6) 0 2 ACETAMIDO 2 DEOXY, BETA D GLUCOPYRANOSIDE (II), P NITROPHENYL O (2 BENZAMIDO, 2 DEOXY BETA D GLUCOPYRANOSYL), (1 YIELDS 6) 0 2 ACETAMIDO, 2 ACETAMIDO 2 DEOXY BETA D GLUCOPYRANOSIDE, AND P NITROPHENYL O (2 ACETAMIDO, 2 DEOXY BETA D GLUCOPYRANOSYL), (1 YIELDS 4) 0 2 ACETAMIDO 2 DEOXY BETA D GLUCOPYRANOSYL (III). THE CONCNS. OF THESE COMPS. REQUIRED TO INHIBIT BY 50PERCENT THE LYSIS OF MICROCOCCUS LYSODEIKTICUS BACTERIAL WALLS WAS DETD. THESE DATA PLUS LIT. CONSTS. OF DISSOCN. FOR THE LYSOZYME COMPLEXES OF THE 1ST 2 COMPS. (REPORTED ELSEWHERE) WERE USED TO CALC. THE K SUB1 VALUES FOR THE COMPS. STUDIED. THIS PERMITTED QUANT. CALCN. OF THE AFFINITY AT THE ACTIVE SITE OF THE ENZYME. FOR I AND II THE POSITION OF THE GLYCOSIDIC BONDS BETWEEN THE MONOSACCHARIDE UNITS DET. THE COMPLEMENTARITY OF THE SUBSTRATE AT THE ACTIVE SITE. III SHOWS STRONG AFFINITY TO THE ACTIVE SITE OF LYSOZYME AND CAN BE HYDROLYZED BY THIS COMPD. WITH SUBSEQUENT TRANSGLYCOSYLATION.

UNCLASSIFIED

USSR

UDC 577.842:595.79

VICTOROV, G. A., KOCHETOVA, N. I. (Institute of Evolutionary Morphology and Animal Ecology, USSR Academy of Sciences

"Role of Trace Pheromones in Regulation of the Sex Ratio in *Trissolcus grandis* (Hymenoptera, Scalionidae)"

Zhurnal Obshchei Biologii, 1973, Vol 34, No 4, pp 559-562

Abstract: The ratio of males to females in the offspring from 16 *T. grandis* females placed for a day in test tubes in which five specimens of the same species has been kept for 24 hr and then offered 14 eggs of *Graphosoma lineata* for 24 hr was almost three times that in the controls (37.5% vs 13.3%). The results indicate that the stimulus is chemical in nature and that traces of pheromones are an external factor affecting sex determination in parasitic hymenoptera.

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Acc. Nr:

AP0049911

Abstracting Service:
CHEMICAL ABST. 5/70

Ref. Code:

UR 0181

105171w Electrical properties of an organic phthalocyanine semiconductor in the ferroelectric state. Vidadi, Yu. A.; Rozenshtein, L. D.; Chistyakov, E. A. (Inst. Poluprov., Leningrad, USSR). *Fiz. Tverd. Tela* 1970, 12(2), 634-5 (Russ). Temp. dependences are given of the films. The cond. of phthalocyanine is characterized by an exponential dependence on temp. with an energy of activation of ~2.0 eV. After the phase-transition current across the specimen decreases in time as a result of its polarization as in other ferroelec. materials. Cond. in the ferroelec. state in the region of the transition is higher than in the initial state and has a max. Polarization of the specimen is such because of the fact that the phase transition is accompanied by formation of dipoles. This leads to the appearance of new intermol. interactions leading to increased cond. Current-voltage dependence close to the temp. of the phase transition in the ferroelec. state is different from similar dependence in the semiconducting state and exhibits sublinearity even at low field intensities.

A. Libackyj

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REEL/FRAME
19801847

9 17

USSR

VIDAL, P.

"Asymptotic Stability of Discrete Nonlinear Systems with Variable Quantization Period (bionic application)"

Tr. III Mezhdunar. Kongressa Mezhdunar. Federatsii po Avtomat. upr., 1966, Diskret., Samonastranv. i Obuch. Sistemy [Works of Third International Congress of International Federation of Automatic Control, 1966, Discrete, Self-Tuning and Teaching System], Moscow, Nauka Press, 1971, pp 236-242, (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V758 by the author).

Translation: A calculation method is suggested, related to the properties of an infinite sequence of vectors. The condition of asymptotic convergence to which it leads is a sufficient condition for asymptotic stability of a nonlinear discrete system. A second application is suggested. It consists in determination of the condition of asymptotic stability of an approximate model of biological control; the human operator is looked upon as a first or second order filter.

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USSR

UDC 546.791.6-536.66

SANTALOVA, N. A., VIDAVSKIY, L. M., DUNAYEVA, K. M., and IPPOLITOVA, YE. A.

"Enthalpy of Formation of Uranium Trioxide Semihydrate"

Leningrad, Radiokhimiya, Vol XIV, No 5, 1972, pp 721-726

Abstract: The calorimetric method was used to measure the enthalpy of the reaction of two specimens of uranium trioxide semihydrate with the composition $UO_3 \cdot 0.393H_2O$ and $UO_3 \cdot 0.648H_2O$ with a solution of hydrofluoric acid. At $298.15^\circ K$ this enthalpy was -21.76 ± 0.08 and -20.83 ± 0.110 kcal/g-atom of U respectively. The enthalpy of the formation of compounds belonging to the uranium trioxide semihydrate phase from uranium trioxide and water as a function of the composition is represented by a linear equation. For a stoichiometric compound this value is -3.19 ± 0.10 kcal/g-atom of U. The published data were used to calculate the standard enthalpy of formation of uranium trioxide semihydrate from the elements. This enthalpy at $298.15^\circ K$ was -333.15 ± 0.46 kcal/g-atom of U. The method used to synthesize the uranium trioxide semihydrate and the chemical and x-ray phase analysis data are presented in connection with the existence of several versions of the semihydrate.

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USSR

UDC 546.791.6'791.4

VIDAVSKIY, L. M., LAVUT, E. G., and IPPOLITOVA, YE. A.

"Conditions for the Formation of Uranium Trioxide"

Leningrad, Radiokhimiya, Vol 13, No 5, 1971, p 789

Abstract: Oxidation of mixed uranium oxides with oxygen at atmospheric pressure was studied. The reaction was carried out in a rotating oven - a quartz tube covered with a copper mantle. The oven temperature was maintained at 590-600°C. Only after 500 hrs traces of γ -UO₃ formation were observed. After 700 hrs the γ -UO₃ formed in more significant amounts. Lower uranium oxides may be oxidized to γ -UO₃ at 860-870°K and 1 atm oxygen pressure, but the reaction rate is still very low.

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USSR

UDC 546.791.6.546.66

SANTALOVA, N. A., VIDAVSKIY, I. M. DUNAYEVA, K. M., and IEPOLITOVA, Ye. A.

"Heat of Formation of Uranium Trioxide Dihydrate"

Leningrad, Radiokhimiya, Vol 13, No 4, 1971, pp 592-597

Abstract: An independent determination of the heat of formation of $UO_3 \cdot 2H_2O$ was carried out on the basis of the heat of formation of uranium hexafluoride in order to be able to compare the value obtained with that determined from the heat of the formation of a mixed uranium oxide. In the paper the experimental conditions are described in detail, followed by data of X-ray analysis and formulas used in calculation of the enthalpy. The value obtained differed from that based on mixed oxides. No systematic errors could be found, and the authors conclude that the discrepancy is due to the disagreement among the fluorine and oxygen calorimetry data.

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- 71 -

USSR

V UDC 678.5.06-419.8:66.085.3/5 BS

P'YANKOV, G. N., MOROZOV, A. V., OMEI'CHENKO, S. I., KABAKCHY, A. M., BESSONOV, V.G.,
CHERVETSOVA, I. N., VIDENINA, N. G., DYACHOK, V. T., and GOLODNYI, YU. F., Institute
of Physical Chemistry imeni L. V. Pisarzhevskiy, Kiev, Academy of Sciences
Ukrainian SSR, and Institute of Chemistry of High Molecular Compounds, Kiev,
Academy of Sciences Ukrainian SSR

"Radiation Technology of Manufacturing Glass-Plastics"

Kiev, Khimicheskaya Promyshlennost' Ukrainy, No 4, 1970, pp 8-10

Abstract: Production of glass plastics using electron accelerators as radiation sources is described. The operating principle is explained with an example of the manufacture of a cylindrical sheet of cross winding. The mandrel speed, feed pitch, and dose strength are selected so that during the time of passage of the winding section across beam cross-section the required degree of polymerization of the binder is attained. The degree of polymerization between layers wound on top of each other is regulated by the energy of the impinging radiation and beam current. The source of fast charged particles in the model setup is an accelerator with maximum electron energy of 0.4 Mev. Electrons at this energy ensure radiation polymerization of a 0.2-0.3 mm layer of glass-plastics. In this layer, when the density of the current of the beam is several tens of microamperes per square centimeter, dose strength of 10^6 - 10^7 rads/sec is produced.

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1/2 017 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--INFLUENCE OF STRUCTURE OF INITIAL COMPONENTS OF RADIATION CURING OF
UNSATURATED OLIGOESTERS AND OLIGOESTERURETHANES --U-
AUTHOR--(05)--CHELCHENKO, S.I., VIDENINA, N.G., MATYUSHOVA, V.G.,
CHERVETSOVA, I.N., PYANKOV, G.N.
COUNTRY OF INFO--USSR
SOURCE--IND. ENG. CHEM., PROD. RES. DEVELOP. 1970, 9(2), 143-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--RADIATION POLYMERIZATION, OLIGOMER, MALEIC ANHYDRIDE,
ETHYLENE, ETHYLENE GLYCOL, PHTHALIC ANHYDRIDE, ADIPIC ACID, SEBACIC
ACID, ETHYL CARBAMATE, THERMAL STABILITY, CHEMICAL RESISTANCE, POLYMER
STRUCTURE
CENTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1144 STEP NO--US/C000/70/C09/002/0143/0146
CIRC ACCESSION NO--AP0126566
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128566

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IRRADN. COPOLYMN. OF UNSATD. OLIGOESTERS AND OLIGOESTER URETHANES WAS INVESTIGATED. THE UNSATD. OLIGOESTERS WERE SYNTHESIZED FROM MALEIC ANHYDRIDE, C SUB2 H SUB4, AND DIETHYLENE GLYCOL, PHTHALIC ANHYDRIDE, AND ENDOMETHYLENTETRAHYDROPHTHALIC ANHYDRIDE, ADIPIC AND SEBACIC ACIDS BEING USED AS MODIFIERS. UNSATD. OLIGOESTER URETHANES OF VARIOUS FREE ISOCYANATE GROUP CONTENTS WERE PRODUCED BY INTERACTION OF OLIGOETHYLENE, OLIGODIETHYLENE, AND OLIGETRIETHYLENE MALEATES WITH TOLYLENE, DIPHENYLMETHANE, AND HEXAMETHYLENE DIISOCYANATES. THE RELATIVE CURING RATE DEPENDS ON THE STRUCTURE OF THE OLIGOMERS, ESP. THE MONOMERS. IN THE CASE OF UNSATD. OLIGOESTER URETHANES, ISOCYANATE GROUPS PARTICIPATE IN THE CURING REACTION. IN IRRADN. COPOLYMN., BOTH THE YIELD OF INSOL. FRACTION AND CONVERSION OF DOUBLE BONDS ARE HIGHER THAN IN THE PRESENCE OF PEROXIDES. PHYS. AND MECH. PROPERTIES, THERMAL STABILITY, AND H SUB2 O AND CHEM. RESISTANCE ARE, AS A RULE, HIGHER FOR POLYMERS OBTAINED DURING HIGH ENERGY IRRADN. FACILITY: INST. HIGH MOL. CHEM., KIEV, USSR.

UNCLASSIFIED

USSR

VIDENIYEKS, P. O., SVILANS, M. P.

V
UDC 62.372.852.3(088.8)

"High-Frequency Attenuator"

USSR Author's Certificate No 251033, Filed 17 May 68, Published 11 Feb 70 (from
RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8A370P)

Translation: High-frequency attenuators containing a set of resistors forming the links of Π -type 4-terminal circuits, a commutator with an index and a drive mechanism connected to the commutator exist. The purpose of the invention is improvement of the mutual decoupling between the links of the attenuator, increasing the stability of its parameters and improvement of the accuracy of setting the moving element of the commutator. The design is described.

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1/2 027

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--METHODS OF PROGRAMMATIC IRRADIATION OF MALIGNANT TUMORS IN MOBILE
TECHNIQUES OF TELEGAMMATHERAPY -U-

AUTHOR-(04)-YERMAKOV, V.I., VIDENSKIY, V.G., MARDYNSKIY, YU.S.,
GOLDOBENKO, G.V.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 5, PP 77-80

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GAMMA IRRADIATION, RADIATION BIOLOGIC EFFECT, TUMOR, MEDICAL
APPARATUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1961

STEP NO--UR/0241/70/015/005/0077/0080

CIRC ACCESSION NO--AP0120604

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120604

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBLE WAYS OF OPTIMIZATION OF CONDITIONS OF IRRADIATION OF MALIGNANT TUMORS WITH MOBILE TECHNIQUES OF TELEGAMMATHERAPY INVOLVING THE USE OF A TRACING SYSTEM ARE DISCUSSED. THE ELABORATION OF SUCH A SYSTEM IS BASED ON THE USE OF THE EFFECT OF SEPARATE PARAMETERS (ROTATION, SOURCE RATE, SOURCE FOCUS DISTANCE, DIMENSIONS OF THE AXIAL FIELD) ON THE FORMATION OF THE DOSE FIELD. IT IS EXPECTED THAT SUCH A SYSTEM WOULD MAKE IT POSSIBLE TO ACHIEVE AN OPTIMAL RATIO BETWEEN THE DOSE IN THE TUMOR AND THE DOSE OF WHOLEBODY IRRADIATION OF THE PATIENT.

FACILITY: INSTITUT MEDITSINSKOY

RADIOLOGII AMN SSSR.

UNCLASSIFIED

USSR

VIDENSKIY, V. S., Leningrad

UDC 517.512

"The Least Upper Bounds of Successive Derivatives of a Polynomial on a Segment"

Kazan', Izvestiya Vysshikh Uchebnykh Zavedeniy -- Matematika, No 3, Mar 71, pp 18-22

Abstract: The article considers evaluation of derivatives of the polynomial $P_n(x)$ on the assumption that

$$|P_n(x)| < |(x + \sqrt{1-x^2})^\alpha (x - \sqrt{1-x^2})^\beta| \quad (-1 \leq x \leq 1), \quad (2)$$

where $1 \leq \alpha \leq \beta$. It is assumed, given $-1 \leq x \leq 1$, that

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