

VASIN, O.I.

IPPS 69208

6-73

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XVI-4. DYNAMICS OF CONDENSATION AND STRUCTURAL TRANSFORMATION OF THIN INSULATING FILMS

Article by P. G. Skripkin, O. I. Vasin, V. I. Felitskiy, S. I. Stetsko, Novosibirsk: Novosibirsk. Ill. State Univ. Zhurnal Fiziko-Matem. Nauk, 1977, p. 223

The method of impulsive evaporation and the study of the dynamics of the condensation process of insulating films by continuous measurement of the conductivity and reflection coefficient analysis are developed.

The process parameters such as the vapor dispersion rate ($v = 1/\text{sec}$), the time ($t_c = 0.2-0.8 \text{ sec}$) and the condensation temperature ($T_c = 400^\circ\text{C}$) were defined. The variation of the stoichiometric composition with respect to film thickness (10^{-10}) was observed during the deposition process.

The formation of the film structure from amorphous in the initial stages to polycrystalline or texture in the final stage takes place in the condensation process. The final stage depends sharply on the substrate temperature.

The film obtained had electric mobilities from 50 to $(1-3) \cdot 10^3 \text{ cm}^2/\text{v-sec}$ in the thickness range of 300-2,000 A. The correlation of the structural and electrophysical parameters is detected, and it is demonstrated that the scattering of the charge carriers takes place basically on the structural defects - the grain and dislocation boundaries.

Radar

USSR

VASIN, VLADIMIR VASIL'YEVICH, VLASOV, OLEG VALERIANOVICH, GRIGORIN-RYABOV, VIKTOR VALERIANOVICH, DUDNIK, PAVEL IVANOVICH DUDNIK, and STEPANOV, BORIS MIKHAYLOVICH

"Radar Equipment (Theory and Principles of Construction)" [Radiolokatsionnyye Ustroystva (Teoriya i Printsipy Postroyeniya)], Moscow, Izd-vo "Sovetskoye Radio," 1970, 18,500 copies, 680 pages

Abstract: The book presents radar principles, co-ordinate measurement methods, and scanning. Problems of radar signal detection, the accuracy in measuring their parameters, and solutions are examined. The principles for constructing radar equipment of different types are given, as well as their main characteristics are analyzed.

In conclusion, considerations for construction of radar systems, which are intended for solving concrete problems (aerial and marine target detection, radar observation of ground objects, etc.) are presented.

The book is intended for students of higher institutes of learning and may serve as a manual for specialists working in the field of radar. The book has two tables, 343 figures, and 69 citations.

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USSR

VASIN, VLADIMIR VASIL'YEVICH, et al., "Radar Equipment (Theory and Principles of Construction)" [Radiolokatsionnyye Ustroystva (Teoriya i Printsipy Postroyeniya)], Moscow, Izd-vo "Sovetskoye Radio," 1970, 18,500 copies, 680 pages

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VASIN, VLADIMIR VASIL'YEVICH, et al., "Radar Equipment (Theory and Principles of Construction)" [Radiolokatsionnyye Ustroystva (Teoriya i Printsipy Postroyeniya)], Moscow, Izd-vo "Sovetskoye Radio," 1970, 18,500 copies, 680 pages

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VASIN, VLADIMIR VASIL'YEVICH, et al., "Radar Equipment (Theory and Principles of Construction)" [Radiolokatsionnyye Ustroystva (Teoriya i Printsipy Postroyeniya)], Moscow, Izd-vo "Sovetskoye Radio," 1970, 18,500 copies, 680 pages

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USSR

51:155.001.57:681.3.06

NEYMARK, Yu. I., BATALOVA, Z. , VASIN, Yu. G.

"Pattern Recognition and Medical Diagnosis"

Tr. Mezhdunar. simpoziuma po tekhn. i biol. probl. upr., 1968. Respo-
zanvaniye obrazov. Adaptivn. sistemy (Works of the International Sym-
posium on Technical and Biological Problems of Control, 1968. Pattern
Recognition. Adaptive Systems), Moscow, "Nauka", 1971, pp 100-105 (from
RZh-Kibernetika, No 9, Sep 71, Abstract No 9V631)

Translation: Methods are proposed for initial information coding
together with algorithms for teaching recognition and algorithms for
selecting the most important characteristics developed for application
to problems of medical diagnosis and prognosis. The problem of medical
diagnosis and prognosis is formulated and its general characteristics
are given (large volume and variety of initial data, comparative inade-
quacy and inaccuracy of instructional material). The authors consider
optimization of the coding of characteristics by using inner dependences,
as well as the coding of electrocardiograms, and algorithms for recog-
nition and isolation of important characteristics. Results are given
for some specific problems of medical diagnosis and prognosis. V.
Mikheyev.

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USSR

VASINA, A.

"The Offensive Against Cancer"

Moscow, Sovetskiy Krasnyy Krest, Vol 21, No 4, Apr 71, pp 20-32

Abstract: Progress in the study and therapy of cancer was outlined in the course of an interview by N. N. Blokhin, Director of the Institute of Experimental and Clinical Oncology, Member of the Academy of Medical Sciences USSR. According to Blokhin, progress is being made in research on the causes of cancer. The association of lung cancer with smoking is now certain, also that of frequent abortions with development of breast cancer. Air pollution plays a considerable role in causing cancer. The role of viruses in the development of human cancer, although not directly proven, is supported by a number of facts. Healthy humans were found to be carriers of viruses that produce tumors in experiments on animals. There is no contradiction between the non-contagiousness of cancer and its causation by viruses. Animal tumors that are known to be caused by a virus are not transmitted from animal to animal by contact, but from parents to the progeny. The presence of the virus in the body does not then lead necessarily to the development of a tumor. In the treatment of malignant tumors,
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USSR

VASINA, A., Sovetskiy Krasnyy Krest, Vol 21, No 4, Apr 71, pp 20-32

surgery or irradiation has only a local effect. This is a disadvantage, as shown by the fact that the action of metastases is not prevented by surgical removal of a tumor. On the other hand, chemotherapeutic agents act on the entire organism. Scores of antitumor drugs have been developed, among which sarcolysin, dopan, colchamine, and others are being applied extensively in medical practice. While some anticancer drugs have only a temporary effect, their beneficial action cannot be doubted. The pessimism in regard to the possibility of applying drugs successfully in the therapy of cancer has been overcome. Patients who have been cured by chemotherapy alone have been under observation for 10-15 years. The possibilities of treatment of malignant tumors increase from year to year. Nobody any longer dies of cancer of the skin or of the lower lip. Many other types of cancer are likewise completely curable on timely medical intervention. Cancer never develops in healthy tissue; it is always preceded by a precancer condition which can be detected in medical examinations and treated before it gives rise to cancer.

2/2

USSR

UDC 616.2-022.12.12-097:543.426

MAKSIMOVICH, N. A.; BUZHIYEVSKAYA, T. I.; ~~VASINA, A. G.;~~
GILEVICH, E. V.; Kiev Scientific Research Institute of Infec-
tious Diseases, Ukrainian SSR Ministry of Public Health

"Experimental Use of Immunofluorescence in the Study and
Diagnosis of Respiratory Viral Infections"

Kiev, Vrachebnoye Delo, No 4, Apr 71, pp 143-147

Abstract: Data were collected on the use of immunofluorescence
in the etiological diagnosis of acute respiratory infections.
During 1964-1968, data from 4,035 patients and 101 autopsies
were collected (3,495 cases in the interepidemic period and
540 cases in influenza foci, foci of parainfluenza, and adeno-
virus diseases). The material chosen for the study must contain
a sufficient quantity of cells sensitive to the viruses to be
studied. Smears from the mucous membranes of the nose and from
nasopharyngeal washings were studied by phase-contrast and
luminescence microscopy. Some photomicrographs of cells of the
columnar epithelium are shown. Cells were treated with poly-
valent influenza and parainfluenza globulins labeled with
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USSR

MAKSIMOVICH, N. A., et al, Vrachebnoye Delo, No 4, Apr 71, pp 143-147

fluorescein isothiocyanate, with anti-adenovirus rabbit serum and with antirabbit globulin labeled with fluorescein isothiocyanate. The specific luminescence of the centrosphere, the nuclear membrane, and cytoplasm was studied. A tropism of influenza, parainfluenza virus and adenoviruses for epithelial cells of the human respiratory tract was found. A seasonal character of influenza and parainfluenza infections was observed: a certain rise in the incidence of infections was found in the January-March and October-December period. Sporadic outbreaks of acute respiratory diseases were relatively rare (up to 2%) during the summer months. Adenovirus infections, on the other hand, did not exhibit any pronounced seasonal character. In some cases, mixed influenza-adenovirus infections were observed. The virus was localized only in cells lining the trachea, the smaller branches of bronchi and bronchioles, or it was detected only in impressions from the lungs in cadavers.

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UDC 576.858.4.085.23

USSR

MAKSIMOVICH, N. O., GILEVICH, Ye. V., VASINA, A. G., PERVACHENKO, S. V., and RYBINSKAYA, L. N., Kiev Scientific Research Institute of Infectious Diseases

"Changes in Cells Induced by Certain Parainfluenza Viruses"

Kiev, Mikrobiologicheskii Zhurnal, Vol 32, No 4, Jul/Aug 70, pp 466-472

Abstract: The cytopathic effects of types I, II, and III parainfluenza viruses on primary trypsinized monkey kidney cultures were studied. Enlargement of the nuclei and nucleoli, accumulation of RNA protein in the nucleoli and cytoplasm, disintegration of the chromatin and further changes in the shape of the nucleus, and formation of symplasm (varying according to the infectious dose of virus per cell) were observed. Eosinophilic inclusions in the cytoplasm were common but are not specific to viral infection of cells, since they appear in noninfected cultures as well. Immunofluorescence revealed the presence of viral antigen in the infected cells only during the first 3 days following inoculation. In 1- and 2-day-old mice, the epithelial cells of the respiratory tract showed marked proliferation, desquamation, and formation of cells with 3 and 4 nuclei. The perinuclear part of the cytoplasm fluoresced during the first 3 days after infection. The prolonged survival of the culture after infection

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USSR

MAKSIMOVICH, N. O., et al, Mikrobiologicheskij Zhurnal, Vol 32, No 4, Jul/Aug 70, pp 466-472

was evidence of the weak cytotoxic effect of the parainfluenza viruses. This phenomenon was most pronounced in the symplasm, causing it to decrease and then disappear within 4 days.

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USSR

VASINA, A. N.

"Insecticidal Plants"

Moscow, Zashchita Rasteniy, No 8, 1970, p 40

Abstract: A description of henbane (Hyoscyamus niger) is given. Insecticidal spray may be obtained from this plant by extracting dried leaves or roots with water. The dried plant may also be powdered and the powder can be used as an insecticide. This material is effective against aphids, psyllas, cobweb mites, bugs, caterpillars of pierid butterfly, brown tail moth, and cabbage butterfly.

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USSR

UDC: 621.386.6.002(088.8)

VASINA, N. T., RASNETSOVA, B. Ye., KOLMAKOVA, G. Ya.

"A Method of Frosting the Surface of Quartz"

USSR Author's Certificate No 263045, filed 22 Mar 68, published 9 Jun 70
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V317)

Translation: The invention deals with treating the surface of quartz used in the electronics industry for making thin-film photoelectric beam receivers. The treatment consists in frosting the surface of the quartz in a mixture of saturated solutions of potassium fluoride in nitric acid and ammonium fluoride in nitric acid taken in the ratio of 1:1.2. Ye. M.

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USSR

UDC: 537.312..62

VASINA, N. T., RASNETSOVA, B. Ye., KOLMAKOVA, G. Ya.

"A Method of Photoengraving Lead Films"

USSR Author's Certificate No 261498, filed 15 Jul 68, published 27 May 70
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D643 P)

Translation: This Author's Certificate introduces a method of photoengraving lead films deposited on a dielectric substrate. The procedure is based on coating the lead film with acid resist, forming the copy layer and subsequent etching. As a distinguishing feature of the patent, packing density is increased and circuit quality is improved by placing the substrate in an etchant comprised of a formic acid solution at a distance of 3-4 mm from the etchant reflector and blowing compressed air on the surface of the substrate through a layer of etchant, alternating the action of the compressed air with the action of the etchant.

1/1

1/2 024 UNCLASSIFIED PROCESSING DATE--ZONOV70
TITLE--ADSORPTION OF PERCHLORATE ANIONS ON PLATINUM AND RHODIUM ELECTRODES
-U-
AUTHOR--(02)--VASINA, S.YA., PETRYI, O.A. ✓
COUNTRY OF INFO--USSR
SOURCE--ELEKTRIKHIMIYA, FEB. 1970, 6, (2), 242-246
DATE PUBLISHED--FEB70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PLATINUM, RHODIUM, PERCHLORATE, BIBLIOGRAPHY, METAL ELECTRODE,
ADSORPTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0302 STEP NO--UR/0364/70/006/002/0242/0246
CIRC ACCESSION NO--AP0124061
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124061

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADSORPTION OF PERCHLORATE ANIONS ON THE SURFACE OF PT-PT AND RH ELECTRODES WAS STUDIED BY PLOTTING THE CORRESPONDING CHARGING CURVES IN 0.1N-HClO₄ AND 0.1N-H₂SO₄ SOLUTIONS. EVEN THE SMALLEST QUANTITIES OF SO₄²⁻ IONS IN THE SOLUTION PREVENTED THE ADSORPTION OF ClO₄⁻ AS WELL AS ITS REDUCTION, NORMALLY REPRESENTED BY THE EQUATION ClO₄⁻ + 4H⁺ + 2e⁻ = Cl⁻ + 2H₂O. THERE WAS ALSO VERY LITTLE REDUCTION OF ClO₄⁻ IN HClO₄-HCl SOLUTIONS. THE NUMBER OF Cl⁻ PRESENT INCREASED WITH INCREASING HClO₄ CONCENTRATIONS. THE REDUCTION OF ClO₄⁻ TOOK PLACE MORE RAPIDLY ON RH THAN ON PT ELECTRODES.

UNCLASSIFIED

1/2 014

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--IN VITRO EFFECT OF SEMI SYNTHETIC PENICILLINS ON ORGANISMS CAUSING SURGICAL INFECTIONS -U-

AUTHOR--(05)-VASINA, T.A., FRISHMAN, YE.M., VEDMINA, YE.A., GAMALEYA, L.A., MIKHEYEVA, YE.V.

COUNTRY OF INFO--USSR

SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 6, PP 528-532

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PENICILLIN, STAPHYLOCOCCUS INFECTION, TETRACYCLINE, ANTIBIOTIC RESISTANCE/(U)AMPICILLIN ANTIBIOTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2002

STEP NO--UR/0297/70/015/006/0528/0532

CIRC ACCESSION NO--AP0125591

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSIGN NO--AP0125591

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NARROW AND BROAD SPECTRUM SEMISYNTHETIC PENICILLINS WERE STUDIED WITH RESPECT TO THEIR EFFECT ON STAPHYLOCOCCI CAUSING SURGICAL INFECTIONS. IT WAS SHOWN THAT MOST OF THE ISOLATES WERE MAINLY RESISTANT TO THE WIDELY USED ANTIBIOTICS (BENZYL PENICILLIN 87 PER CENT, TETRACYCLINES 56 TO 70 PER CENT). IN VITRO STUDIES ON THE EFFECT OF SEMISYNTHETIC PENICILLINS DEMONSTRATED THAT IN SPITE OF A SHORT PERIOD OF THEIR USE IN MEDICAL PRACTICE, STRAINS RESISTANT TO THE ANTIBIOTIC CONCENTRATIONS IN THE HOST OCCURRED ALONG WITH SENSITIVE CULTURES (NARROW SPECTRUM SEMI SYNTHETIC PENICILLINS 19.2 TO 28.4 PER CENT, PYG PEN 18 PER CENT, AMPICILLIN 39.5 PER CENT). FACILITY: INSTITUTE FOR CLINICAL AND EXPERIMENTAL SURGERY, CENTRAL POST GRADUATE MEDICAL INSTITUTE, MOSCOW.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ESTIMATION OF IN VITRO EFFECT OF COMBINATIONS OF SEMI SYNTHETIC
PENICILLINS ON PATHOGENIC STAPHYLOCOCCI -U-
AUTHOR-(02)-VEDMINA, YE.A., VASINA, T.A.
COUNTRY OF INFO--USSR
SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 6, PP 522-526
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PENICILLIN, STAPHYLOCOCCUS, ANTIBIOTIC
RESISTANCE/(U)METHICILLIN ANTIBIOTIC, (U)OXACILLIN ANTIBIOTIC,
(U)VERACILLIN ANTIBIOTIC
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1864 STEP NO--UR/0297/70/015/006/0522/0526
CIRC ACCESSION NO--AP0125475
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125475

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMBINATIONS OF BROAD SPECTRUM SEMI SYNTHETIC PENICILLINS, SUCH AS AMPICILLIN AND PYOPEN WITH SEMI SYNTHETIC PENICILLINS ACTIVE AGAINST GRAM POSITIVE ORGANISMS, SUCH AS METHICILLIN, OXACILLIN AND VERACILLIN WERE ESTIMATED WITH RESPECT TO THEIR IN VITRO EFFECT ON PATHOGENIC STAPHYLOCOCCI ISOLATED FROM SURGICAL CASES. ACCORDING TO SOME CRITERIA, I.E. SENSITIVITY LEVELS, MINIMUM INHIBITORY CONCENTRATIONS FOR MOST STRAINS AND NATURE OF THE COMPONENT ACTION, EFFICIENCY OF PYOPEN COMBINATION WITH VERACILLIN AND COMBINATION OF AMPICILLIN WITH VERACILLIN, AS WELL AS A SIGNIFICANT DECREASE IN THE EFFICIENCY OF AMPICILLIN USED IN COMBINATION WITH OXACILLIN WERE SHOWN. FACILITY: CENTRAL POST GRADUATE MEDICAL INSTITUTE AND INSTITUTE FOR CLINICAL AND EXPERIMENTAL SURGERY OF PUBLIC HEALTH MINISTRY OF THE USSR, MOSCOW.

UNCLASSIFIED

1/2 013
UNCLASSIFIED
TITLE--ANTIMICROBIAL ACTIVITY OF RIFOCIN AGAINST PATHOGENIC ORGANISMS OF
SURGICAL INFECTIONS -U-
AUTHOR--(02)-VASINA, T.A., VEDMINA, YE.A. ✓
COUNTRY OF INFO--USSR
SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 5, PP 418-421
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BACTERICIDE, STAPHYLOCOCCUS, ESCHERICHIA COLI, PROTEUS,
ANTIBIOTIC/(U)RIFOCIN ANTIBIOTIC
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1994/0156
STEP NO--UR/0297/70/015/005/0418/0421
CIRC ACCESSION NO--AP0114552
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0114552
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BACTERIOSTATIC AND BACTERICIDAL EFFECT OF RIFOCIN ON PATHOGENIC ORGANISMS OF SURGICAL INFECTIONS, I. E. STAPHYLOCOCCUS, COLI BACTERIA, PROTEUS, BACT. PYOCYANEUM WAS INVESTIGATED. HIGH EFFICACY OF RIFOCIN IN VITRO AGAINST STAPHYLOCOCCI WAS SHOWN. RIFOCIN ALSO INHIBITED THE MOST STRAINS OF PROTEUS, COLI BACTERIA, CERTAIN STRAINS OF BACT. PYOCYANEUM AT CONCENTRATIONS ATTAINED IN THE HOST. STUDIES ON THE DYNAMICS OF THE BACTERIAL POPULATION DEATH UNDER THE EFFECT OF RIFOCIN SHOWED THAT THE STERILIZING EFFECT OF THE ANTIBIOTIC ON STAPHYLOCOCCI AND BACT. PYOCYANEUM WAS MOST RAPID, WHILE THE EFFECT ON PROTEUS AND COLI BACTERIA WAS MOST PROLONG.
FACILITY: INSTITUTE FOR CLINICAL AND EXPERIMENTAL SURGERY, CENTRAL POST GRADUATE MEDICAL INSTITUTE, MOSCOW.

UNCLASSIFIED

Acc. Nr: AP0034678

✓

Ref. Code: UR 0297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 2, pp 116-120

REGULARITIES OF ABSORPTION AND DISTRIBUTION OF SEMI-SYNTHETIC
PENICILLINS—METHICILLIN AND OXACILLIN IN PATIENTS WITH CHRONIC
KIDNEY INSUFFICIENCY

Vasina, T. A.; Ved'mina, Ye. A.; Sagalovich, G. M.;
Mikheyeva, Ye. V.; Levitskiy, E. R.

Institute for Clinical and Experimental Surgery, Microbiology Department of Central
Post-Graduate Medical Institute, Moscow

The dynamics of methicillin and oxacillin distribution in the blood of patients with severe affections of the kidney function and impaired clearance for urea was significantly changed, resulting in very high blood levels of the antibiotics and their prolong circulation in the organism, which was parallel to the degree of the affection of the kidney excretion function. The process of hemodialysis favoured rapid excretion of the antibiotics and provided the dynamics of their levels close to that in patients with normal functions of the kidneys.

Dr.

Y

REEL/FRAME

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Acc. Nr: AP0101135

Ref. Code: UR297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 3, pp 267-271

EFFECT OF ANTIBIOTIC COMBINATIONS ON PATHOGENIC STAPHYLOCOCCI ISOLATED FROM SURGICAL CASES

Ye. M. Frishman, Ye. A. Vedmina, O. A. Fedorova, T. A. Vasina...

Microbiology Chair of Central Post-Graduate Medical Institute, Sanitary Epidemiological Station of the Kalinin Region, Moscow

The effect of 15 combinations of penicillin with other antibiotics on 50 strains of pathogenic staphylococci, isolated from surgical cases was studied in vitro. The analysis of the data obtained during the study of the combinations and their components with the use of various criteria, such as ranges of minimum inhibitory concentrations, bacteriostatic concentrations with respect to most strains, nature of the combined effect, showed 3 double combinations of penicillin with monomycin, chlortetracycline or dichlortetracycline, as well as 1 triple combination of penicillin with pasomycin and dichlortetracycline to be favourable with respect to their effect on pathogenic staphylococci. A significant decrease in the efficacy of penicillin used in combination with erythromycin, oleandomycin or ceporin was observed.

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19850760

1/2 011 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--PRECALCULATION OF THE DIFFERENCES IN THE BOILING POINTS OF
STEREoisomERIC 1,4,DIALKYLcyclohexanes -U-
AUTHOR--(03)-LIBERMAN, A.L., TYUNKINA, N.I., VASINA, T.V. ✓
COUNTRY OF INFO--USSR
SOURCE--HEFTEKHIMIYA 1970, 10(1), 158-60
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CALCULATION, CYCLOHEXANE, ALKYL RADICAL, ORGANIC SYNTHESIS,
DISTILLATION, ISOMER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAme--3006/0907 STEP NO--UR/0204/70/010/002/0158/0160
CIRC ACCESSION NO--AP0134636 UNCLASSIFIED

2/2 011

CIRC ACCESSION NO--A0134636

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRECALCN. WAS CARRIED OUT BY A SEMIEMPIRICAL EQUATION BASED ON THE RELATION BETWEEN THE B.P. OF THE COMPS. AND THEIR INTERNAL MOL. STRAIN, INCREASING WITH EACH SUCCESSION SUBSTITUTION OF A ALPHA-H ATOM. THE DIFFERENCE AND SUCCESSION WAS CALCD. FOR TITLE COMPS., CONTG. NO TERT, ALKYL GROUPS. THUS, PRIOR TO SYNTHESIS OF THE COMPS., IT WAS FORECASTED WHETHER THEY COULD BE SEPD. BY RECTIFICATION AND THE EFFICIENCY OF THE REQUIRED COLUMN.
FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

Beryllium

USSR

UDC 669.275'725

VASINA, YE. A., and PANOV, A. S., Moscow

"Interaction of Tungsten with Beryllium"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 1, Jan-Feb 74, pp 197-199

Abstract: The kinetics of W-Be interaction were studied over the 700-1200°C temperature interval using single-crystal tungsten and powder-metal beryllium. It was found that these two metals interact to form boundary layers comprised of W-Be compounds. At 700°C only one new phase was detected in the W-Be contact zone with a small growth rate. Between 800 and 1200°C, three W-Be compounds were formed: WBe_2 , adjacent to the tungsten, WBe_{22} , next to the beryllium, and an intermediate compound -- WBe_{12} . The growth rate of these layers was found to be a function of both time and temperature and an equation was empirically derived for the temperature relationship of phase growth rate. At 800-1200°C the WBe_{22} growth process occurs in a single kinetic stage while WBe_2 and WBe_{12} growth proceeds in two kinetic phases. Two figures, one table, 14 bibliographic references.

1/1

USSR

VASINA, Z. M.

"System for Making Changes to Information Files in the Subsystem of Norms of an Enterprise Automatic Control System"

Uch. Zap. Gor'kov. Un-t [Scientific Writings of Gor'kiy University], 1972, No 146, pp 67-75 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V679).

Translation: The norms subsystem of an enterprise control system is a dynamic information system; therefore, great attention must be given in its organization to methods of making changes. This work describes one possible system for making changes, which uses the method of construction of heuristic programs considering, on the one hand, the methods of working with changes currently in use and, on the other hand, capabilities for improvement of such systems.

1/1

USSR

UDC 621.385:530.145.6:62

BUYUKYAN, S. P., VASINYUK, I. YE.

"Transistorized Photomultiplier Signal Shaper"

Proyektirovaniye -- V sb. (Design -- collection of works), vyp. 2, Moscow, 1970, pp 98-105 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4D420)

Translation: A schematic of a shaper designed for operation in the photo-recording channel of a laser interference aligner is described. In the signal circuits direct couplings are used for best preservation of the shape of the video signal. The presence of a video signal level stabilization circuit insures reliable operation of the amplitude discriminator directly shaping the video signal.

1/1

USSR

UDC: 519.54

VASKAN, F. K., GREBENIKOV, Ye. A.

"Concerning the Existence of Conditionally Periodic Solutions of Systems of Ordinary Differential Equations With Slow and Fast Variables"

Kishinev, IAN Moldavskoy SSR: Seriya Fiziko-Tekhnicheskikh i Matematicheskikh Nauk, No 1, 1971, pp 3-12

Abstract: The authors study the existence of conditionally periodic or nearly conditionally periodic solutions of a system of differential equations of the form

$$\begin{aligned} \frac{dp}{dt} &= P(p, q), \\ \frac{dq}{dt} &= \omega(p) + Q(p, q), \end{aligned} \tag{1}$$

where the norms of functions P and Q are small quantities of the order of the small parameter μ ; $p = (p_1, p_2, \dots, p_m)$ is the m-dimensional vector of the slow variables; $q = (q_1, q_2, \dots, q_n)$ is the n-dimensional vector of the

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USSR

VASKAN, F. K., GREBENIKOV, Ye. A., IAN MoldSSR, Ser. Fiz-Tekhn. i Mat. Nauk, No 1, 1971, pp 3-12

fast variables; $\omega(p)$ is the n -dimensional vector of the frequencies; the vector functions $P(p, q)$ and $Q(p, q)$ are represented by the functions

$$\begin{aligned} P(p, q) &= \sum_{|k| > 0} P_k(p) e^{i(k, q)}, \\ Q(p, q) &= \sum_{|k| > 0} Q_k(p) e^{i(k, q)} \end{aligned} \quad (2)$$

$$(k, q) = \sum_{i=1}^n k_i q_i, \quad |k| = \sum_{i=1}^n |k_i|$$

and defined in the region $G_{m+n} = (|Imq| < \rho, p \in W)$. Following the methods of Kolmogorov, Bogolyubov, and Mitropol'skiy, the authors prove the reducibility of system (1) to some other system for which the existence of conditionally periodic solutions is obvious. The reducibility problem is defined as a problem of existence of a convergent iteration process which reduces system (1) to a limit system. The analysis is also extended to the case of rational frequency dependence. Bibliography of three titles.

2/2

1/2 003

TITLE--REDUCIBILITY OF MULTIFREQUENCY SYSTEMS OF DIFFERENTIAL EQUATIONS WITH SUMMABLE SERIES -U-
AUTHOR--(02)-GREBENIKOV, YE.A., VASKAN, F.K.

UNCLASSIFIED
PROCESSING DATE--27NOV70

COUNTRY OF INFO--USSR

SOURCE--MINSK, DIFFERENTSIAL'NYYE URAVNENIYA, MARCH 1970, PP 403-11
DATE PUBLISHED-----70

SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--PERIODIC SOLUTION, DIFFERENTIAL EQUATION SYSTEM, SERIES

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1427

STEP NO--UR/0376/70/000/000/0403/0411

CIRC ACCESSION NO--AP0125061

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125061

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS SHOWN THAT THE MULTIVARIATE SYSTEM DP DIVIDED BY DT EQUALS $P(P,Q)$, DQ DIVIDED BY DT EQUALS $\Omega(P)$ PLUS $Q(P,Q)$. WHERE P, Q IS THE SUM OF A SERIES SUMMABLE IN THE SCHWARZ SENSE, HAS A SOLUTION CLOSE TO CONDITIONALLY PERIODIC. THE INTERVAL OF TIME IN WHICH THE SOLUTION OF THE SYSTEM IS CLOSE TO CONDITIONALLY PERIODIC IS DETERMINED. THREE THEOREMS ARE PRESENTED. FACILITY:
LUMUMBA UNIVERSITY OF PEOPLES' FRIENDSHIP.

UNCLASSIFIED

MATHEMATICS

Differential & Integral Equations

USSR

GREBENIKOV, Ya. A.; VASKIN, V. K. (Luzhba University of Peoples' Friendship)

"Reducibility of Multifrequency Systems of Differential Equations with Summable Series"

Minsk, Differentsial'nyye Uravneniya; March, 1970; pp 403-11

Δ Δ Δ

ABSTRACT: It is shown that the multivariate system

$$\frac{dp}{dt} = P(p, q), \frac{dq}{dt} = \omega(p) + Q(p, q),$$

where P, Q is the sum of a series summable in the Schwarz sense, has a solution close to conditionally periodic. The interval of time in which the solution of the system is close to conditionally periodic is determined. Three theorems are presented.

The article includes 33 equations. There are 6 references.

1/1

1/2 029

UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--TREATMENT OF THE SURFACE OF TITANIUM ALLOYS -U-

AUTHOR--(04)-BTRAKOV, V.P., PIVOVAROVA, L.N., VASKAN, L.A., YEGOROVA, T.M.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 261,091

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970;

DATE PUBLISHED--06JAN70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--TITANIUM ALLOY, METALLURGIC PATENT, NITRIC ACID, HYDROFLUORIC ACID, SURFACE AREA, HYDROGENATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1990/1788

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

CIRC ACCESSION NO--AA0109749

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AA0109749

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SURFACE OF TI ALLOYS WAS TREATED IN A SOLN. OF HF AND HNO SUB3. TO REMOVE A HYDROGENATED LAYER FROM THE SURFACE, THE SOLN. CONSISTED OF: HNO SUB3 (SP. GR. 1.4) 62-83, HF (SP. GR. 1.13) 16-17 WT. PERCENT AND WATER THE REMAINDER, AND THE PROCESS TOOK PLACE AT ROOM TEMP. FOR 3-10 MIN.

UNCLASSIFIED

USSR

Phytology

UDC 633.16:581.51

PERESYPKIN, V. F., Corresponding Member, VASKHNIL, and REBENKO, V. P., Candidate of Biological Sciences, Donetsk State Agricultural Experimental Station

"The Mechanism of Increasing the Resistance of Barley to *Ustilago Hordei* Kell. et Sw. Under Conditions of Mineral Nutrition"

Moscow, Doklady Vsesoyuznoy Ordena Lenina Akademii Sel'skokhozyaystvennykh Nauk imeni V. I. Lenin, (All Union Order of Lenin Academy of Agricultural Sciences imeni V. I. Lenin, No. 7, Jul 70, pp 5-7

Abstract: Histological, biochemical, and field studies were made of Donetsk 576 barley and its the fungus pathogen *Ustilago hordei* Kell, et Sw. Infected barley grains were soaked in 0.1% CoSO_4 , 0.2% CuSO_4 , and water (control) before planting. Studies were made 18 hours after soaking, during growth and at harvest, and on reseedling and reharvesting for 4 years. The results showed that cobalt sulfate and copper sulfate are decidedly deleterious to the fungus, causing its disorganization, fragmentation, and ultimate lysis. Both compounds tested, especially the cobalt sulfate, enhance the natural enzyme activity, facilitating the combination of proteins, amino acids, and ascorbic acid. This action results in healthier growth of the plant, larger and fuller ears, heavier grain, and richer content in individual grains. In addition to raising the resistance of barley to disease,

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USSR

PERESYPKIN, V. F., et al, Doklady Vsesoyuznoy Ordena Lenina Akademii Sel'skokhozyaystvennykh Nauk imeni V. I. Lenin, No 7, Jul 70, pp 5-7

the sulfates act as natural mineral nutrients, increasing the productivity of the grain through the mechanism of zymogenic interaction. They also increase the immunity of subsequent generations of the crop by a factor of 3-12 over that of the controls.

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USSR

UDC 621.791.753.042.2:669.295

VAS'KIN, YU. V., and KULIKOV, F. R.

"Consumable Electrode Welding of Alpha-plus Beta-Alloys of Titanium"

Moscow, Svarochnoye Proizvodstvo, No. 9, Sep 70, pp 14-16

Abstract: A study of the consumable-electrode weldability of heavy-gage $\alpha + \beta$ -titanium alloys is described. The study involved an ADSP-2 automatic welder, an IPP-1000P welding source, and a rigid volt-ampere characteristic. The properties of the welds made by consumable-electrode welding were studied on VT6, VT14, and VT22 titanium two-phase alloys with various β -phase contents. Relationships were determined among for welding current, feed rate, and electrode projection for various wire diameters in gas-shielded consumable-electrode welding. The optimum shapes and dimensions for edges as a function of the thickness of components to be welded were also determined. Welding specifications were worked out for the jet transfer of metal with various electrode diameters. The mechanical properties of the welds were determined after annealing (heating at 750° C, holding for 1 hour, furnace cooling down to 450° C at a rate of 3 to 5 deg/min., and then open air cooling). SPT-2 consumable-electrode single-pass welding of heavy-gage $\alpha + \beta$ -titanium alloys produced weld joints featuring high strength and plastic characteristics as well as high efficiency in multiple tests under low-cycle loads.

USSR

UDC 621.791.039:62-78.069.245

KULIKOV, F. A., VAS'KIN, Yu. V., and KIRILLOV, Yu. G.

"Welding of Titanium Alloys in Local Protective Chambers"

Moscow, Svarechnoye Proizvodstvo, No 8, Aug 70, pp 16-18

Abstract: A major difficulty in welding titanium and its alloys is their high capacity with respect to harmful impurities, such as oxygen, hydrogen, nitrogen, and carbon. Saturation of the weld metal in the weld-affected zone with these impurities markedly impairs the mechanical (plastic) properties of the welds and sometimes bring about cracks and pores in them. This study deals with local protective chambers for welding circular and rectilinear welds of titanium and its alloys of more than 5 mm thick. The optimum conditions of blowing out the chambers prior to welding and before setting up the minimum oxygen content in the chamber have been determined. It was found that the content of harmful impurities (oxygen and hydrogen) in the metal of the welds performed in such a chamber was not above that in both the parent metal and filler-wire. The operational use of local protective chambers and tests of the properties of welds produced in them have shown the latter to insure high-quality protection of the weld and the weld-affected from interaction with air. It is pointed out that the replacement of conventional inert gas-filled chambers and controlled-atmosphere chambers with the newly designed protective chambers is economically advantageous.

USSR

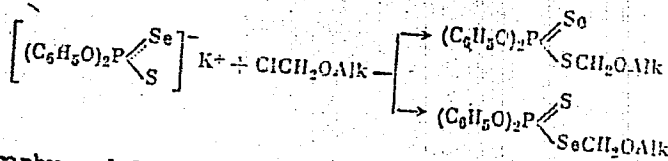
UDC 547.26'118

VATAMANYUK, N. M., TURKEVICH, V. V., and VAS'KIV, A. P., L'vov Forestry-Engineering Institute

"Esters of Selenothiophosphoric Acid. V. Alkoxymethyl Esters of O,O-Diphenylselenothiophosphoric Acid."

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 8, Aug 71, pp 1693-1695

Abstract: Continuing the study of the chemical properties of O,O-dialkyl-(aryl)selenothiophosphoric acids, the authors investigated the reaction of the potassium salt of O,O-diphenylselenothiophosphoric acid with some chloromethyl ethers. The reaction can proceed in two ways:



Chromatography and IR spectra indicate the presence of a thion and a thiol isomer.

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USSR

UDC 547.26'118

VATAMANYUK, N. M., TURKEVICH, V. V., GRITSAY, N. I., and VAS'KOV, A. P.,
Lvov Forestry Technology Institute and Lvov State University Imeni Ivan
Franko

"Selenothiophosphoric Acid Esters. VI. Alkylthiomethyl Esters of
0,0-Diphenylselenothiophosphoric Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 8, Aug 73, pp 1713-1715

Abstract: The reaction of the potassium salt of 0,0-diphenylselenothio-
phosphoric acid with α -chloromethylallylthioesters goes in two directions,
forming a mixture of thione and thiol isomers.

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1/2 012

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--VITAMIN B SUB12 CONTENT IN THE HUMAN MILK -U-
AUTHOR--(05)-DUMA, KH., VASKOV, B., PETKOV, G., PESHEVA, V., PETKOV, K.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY PITANIYA, 1970, NR 2, PP 54-57

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--VITAMIN B COMPLEX, ESCHERICHIA COLI, FOOD CHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1640

STEP NO--UR/0244/70/000/002/0054/0057

CIRC ACCESSION NO--AP0101695

UNCLASSIFIED

2/2 012

CIRC ACCESSION NO--AP0101695
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT. MILK OF 22 PARTURIENT WOMEN WAS ANALYZED STARTING FROM THE FIRST TILL THE SEVENTH LACTATION DAY. THE MILK WAS TAKEN EVERY DAY AT 9 A. M. N. V. BAKUNIN'S MICROBIOLOGICAL METHOD, AS MODIFIED BY LOGANOVSKY WAS USED TO DETERMINE THE VITAMIN B SUB12 CONTENT WITH THE AID OF ESCHERIHIA COLI, 113-3. AT THE TIME OF INVESTIGATION THE VITAMIN B SUB12 CONCENTRATION LEVEL TENDED TO DECLINE FROM 0.515 MUG. THE FIRST DOWN TO 0.252 MUG ON THE SEVENTH DAY. INDIVIDUAL FLUCTUATIONS OF THE VITAMIN CONCENTRATION WERE RECORDED. IT WAS LOW IN THE MILK OF PARTURIENT WOMEN WHOSE NUTRITION HAPPENED TO BE PROTEIN DEFICIENT AT THE TIME OF GESTATION.

UNCLASSIFIED

USSR

UDC 616.61-002.151

GRINSHPUN, O. Ya., Col Med Serv, Candidate of Medical Sciences;
VASIKOV, V. G., Lt Col Med Serv; MAKSIMOV, Ye. V., Lt Col Med
Serv; ANDRONOV, A. S., Capt Med Serv; MARAKUSHEV, M. I.;
KHOMENKO, L. M.; TSEY, A. L.

"Some Clinical Data on Hemorrhagic Nephrosonephritis"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 8, Sep 71, pp 50-51

Abstract: Observation of 17 cases of hemorrhagic nephrosonephritis (HNN) sporadically occurring in the Transcarpathian Region revealed a typical progress of this disease through three stages. In the first stage, lasting 2-4 days, body temperature rapidly rose to 38-40°C, the patients complained about headache, pain in muscles and joints, and general weakness: they were photophobic, had cutaneous hyperemia in the face and upper trunk, and some developed dry noises in their lungs. An incorrect diagnosis was made in all cases, partly because this disease is very rare in Transcarpathia. In the second stage, lasting 4-8 days, clinical signs characteristic of HNN developed

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USSR

GRINSHPUN, O. Ya., et al, Voyenno-Meditsinskiy Zhurnal, No 8, Sep 71, pp 50-51

in all patients, and the proper diagnosis was established in all. Only four patients had hemorrhagic conjunctiva or nosebleed. All suffered from gastrointestinal disorders and from oliguria (down to 200 ml per day) with hematuria and proteinuria. The third stage -- convalescence -- began on the 9th - 11th day with the onset of diuresis, which soon reached 6-8 liters per day. Hemorrhages, vomiting, fever, and other discomfort subsided, and the patients regained appetite and thirst. In the initial days of polyuria, concentration of gamma globulins in the protein fraction increased to 27.9%, while plasma potassium decreased to 9.3 mg% and plasma calcium to 6.8 mg%. The patients lost 5-8 kg body weight. The stage of convalescence lasted 2-3 weeks. The treatment was symptomatic, and all patients recovered without complications.

2/2

- 40 -

USSR

VAS'KOV, V. V. and KARPMAN, V. I.

UDC: 533.951

"Nonlinear Theory of Plasma Motion in a High-Frequency Electromagnetic Field"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, vol. 41, No. 4, April 1971, pp 676-679

Abstract: This theoretical article considers the nonlinear flow of a nonisothermal plasma in a high-frequency electromagnetic field in which the amplitudes of the electric and magnetic fields are slowly varying functions of time. The assumption is made that the plasma is collisionless, and the hydrodynamic equations of the plasma are considered in combination with the Maxwell equations to yield an expression for the dielectric permeability of the plasma. From equations they derive, the authors find a solution describing the isolated electrosonic waves known as solitons, as well as periodic solutions, which are generalized. They conclude by expressing their thanks to M. L. Levin and K. V. Khodatayev for their comments.

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USSR

UDC 632.952

VAS'KOVSKAYA, L. F., SAMOSVAT, L. S., ZAKORDONETS, V. A., BURSHTEYN, A. L., All-Union Scientific Research Institute of Hygiene and Toxicology of Pesticides, Polymer Materials and Plastics

"Determination of Residual Quantities of Keltane in Water, Fruit (Including Citrus) and Vegetables"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol. 8, No 10 (84), Oct 70, pp 44-46

Abstract: A method is proposed for determining residual quantities of keltane (4,4'-dichlorodiphenyltrichloromethylcarbional) in water and on plants. The procedure is based on thinlayer chromatography with appropriate selection of the mobile phase of distinguishing keltane from accompanying organochlorine poisons. The method is specific in the presence of DDT, DDE, DDD and hexachlorocyclohexane. The method is capable of a sensitivity of 1-2 μg in a sample, which is 0.05-0.1 mg/kg in analysis of fruits and vegetables, and 0.01-0.02 mg/liter in analysis of water.

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USSR

UDC: 621.392.24

BOROVSKIY, V. P., VAS'KOVSKIY, I. I., NIZHEGOL'SKIY, B. A., PARTALA, O. N., Kiev
Polytechnical Institute

"A Multiphase Amplitude-Modulated Very Low Frequency Voltage Oscillator"

Moscow, Pribory i Tekhnika Eksperimenta, No 2, Mar/Apr 70, pp 139-140

Abstract: The authors describe a multiphase generator of periodic signals of arbitrary form approximated by a step function. Provision is made for amplitude modulation of the output signal. A schematic diagram of the oscillator is given, as well as data on the nonlinearity of the modulation characteristics and the coefficient of nonlinear distortions for the case of a sinusoidal signal. The oscillator may be used for power supply to a three-phase synchronous motor as well as in other applications.

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1/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--DISTRIBUTION OF LAMINARINASES IN MARINE INVERTEBRATES -U-
AUTHOR--(03)-SDVA, V.V., ELYAKOVA, L.A., VASKOVSKI, V.E.
COUNTRY OF INFO--USSR
SOURCE--COMP. BIOCHEM. PHYSIOL. 1970, 32(3), 459-64
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--MARINE BIOLOGY, DIGESTIVE SYSTEM, ENZYME ACTIVITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1983/0725 STEP NO--UK/0000/70/032/003/0459/0464
CIRC ACCESSION NO--AP0053666
UNCLASSIFIED

2/2 022

CIRC ACCESSION NO--AP0053666
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT. FIFTY SPECIES OF MARINE INVERTEBRATES OF DIFFERENT SYSTEMATIC AND ECOL. POSITIONS WERE TESTED FOR QUANT. LAMINARINASE ACTIVITY IN THEIR DIGESTIVE SYSTEMS. LAMINARINASE ACTIVITY ESTD. BY THE INCREASE OF REDUCING SUGARS IN AN INCUBATED MIXT. WAS FOUND WITH THE MAJORITY OF THE ANIMALS STUDIED. THE CRYST. STYLES OF BIVALVIA, SUCH AS SPISULA SACHALINENSIS AND MACTRA SULCATARIA, AS WELL AS DIGESTIVE TRACTS OF SOME CRUSTACEA, SHOWED THE HIGHEST ENZYME ACTIVITY. LAMINARINASE ACTIVITY IS APPARENTLY MORE DEPENDENT UPON THE SYSTEMATIC POSITION OF THE INVERTEBRATES, THOUGH OTHER FACTORS LIKEWISE PLAY A NOTABLE ROLE.

UNCLASSIFIED

USSR

UDC 621.375.82

BAKEYEV, A. A., VAS'KOVSKIY, Yu. M., VOROB'YEVA, N. N., ORLOV, V. K., and ROVINSKIY, R. Ye.

"The Role of a Plasma Torch in the Energy Balance of the Process of the Action of Laser Emission on Materials"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No 2(14), Moscow, "Sov. Radio," 1973, pp 77-80 (English summary) (from RZh-Fizika, No 10, Oct 73, Abstract No 10D899 from authors' abstract)

Translation: The authors measured the energy reemitted by a plasma torch in a wide spectral interval (0.2-4 microns) during the action of laser emission on opaque obstructions. The power density of the incident beam was $\sim 10^6$ and $\sim 10^7$ w/sq cm with retention of the size of the spot on the target. The targets used were duralumin, ebonite, and graphite. It is shown that the energy reemitted by the plasma torch is from 20 to 50 percent of the energy of the laser beam, depending on the material and exposure conditions. The resultant experimental data are used as the basis for evaluating the role of other factors in the energy balance of the action of laser emission on materials. Bibliography with six titles.

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- 51 -

USSR

BASS, F. G., VATOVA, L. B., GUREVICH, Yu. G., Institute of Radio Physics and Electronics, UkrSSR Academy of Sciences, Khar'kov

"Propagation of Electromagnetic Waves in Conductors With Nonstandard Law of Electron Dispersion"

Leningrad, Fizika Tverdogo Tela, Vol 13, No 10, Oct 73, pp 3053-3061

Abstract: The authors investigate various types of waves which may propagate in semiconductors with a nonstandard law of dispersion. It is shown that under certain conditions deviation from the quadratic law of dispersion for certain incident wave amplitudes leads to a situation where the fundamental and harmonics propagate in the semiconductor at a velocity which coincides with that of the wave in the linear theory.

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- 20 -

172 017
 UNCLASSIFIED
 TITLE--TWO MECHANISMS OF ACYLATION -U- PROCESSING DATE--30OCT70
 AUTHOR--(03)--KORSHAK, V.V., VINOGRADOVA, S.V., VASNEV, V.A.
 COUNTRY OF INFO--USSR
 SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(3), 614-16, CHEM
 DATE PUBLISHED--70
 SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--CHEMICAL REACTION MECHANISM, ALKYLATION, ACETYLENE, PHENOL,
 METHYL ALCOHOL, TERTIARY AMINE, PYRIDINE, BENZENE, CHLORINATED ORGANIC
 COMPOUND, KETONE
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRA--3001/0537
 CIRC ACCESSIGN NO--AT0126284
 STEP NO--UR/0020/70/191/003/0614/0616
 UNCLASSIFIED

272 017

CIRC ACCESSION NO--AT0126284
ABSTRACT/EXTRACT--(U) GP-C-

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT. COMPETITIVE ACETYLATIONS WERE RUN OF MIXED PHOH AND MEOH WITH BZCL IN THE PRESENCE OF TERTIARY AMINES IN C SUB2 H SUB4 CL SUB2 AT 25DEGREES USING PYRIDINE, ET SUB3 N, OR BU SIB3 N. ALSO TESTED WERE QUINOLINE, ISOQUINOLINE, 2, METHYLPYRIDINE, GAMMA, COLLIDINE, 3, METHYLPYRIDIE, QUINALDIEN, ME SUB2 ETN, TRIALLYLAMINE, AND ME SUB2 NC SUB6 H SUB11. STRONGLY BASIC TERTIARY AMINES GAVE MUCH GREATER CONVERSION OF PHOH THAN OF MEOH (PKA LARGER THAN 10), WHILE FOR PYRIDINE (PKA 5.23) THE MECH CONVERSION PREDOMINATES, I.E. NUCLEOPHILIC CATALYSIS WAS OPERATIVE. THE RESULTS WERE GIVEN GRAPHICALLY FOR OTHER AMINES AND TABULARLY FOR ET SUB3 N AND PYRIDINE, IN SOLVENT SYSTEMS OF DIOXANE, C SUB6 H SUB6, C SUB2 H SUB4 CL SUB2, ME SUB2 CO-C SUB6 H SUB6, ME SUB2 CO, PHNO SUB2, AND MECN. WITH ET SUB3 N THE CONVERSION OF PHOH AMOUNTED TO 80-96PERCENT; IN DIOXANE ONLY IT WAS SMALLER THAN 30PERCENT IN ALL THESE SOLVENTS; IN DIOXANE ONLY 10PERCENT PHOH WAS CONVERTED, AND THE REACTION WITH MEOH WAS MOST PREDGMINANT.

FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

1/2 011

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--USE OF CHLORINE-35 NUCLEAR QUADRUPOLE RESONANCE TO STUDY THE
TRANSFER OF INFLUENCE THROUGH AN ESTER BOND. -U-
AUTHOR--(05)--KORSHAK, V.V., VINDGRADOVA, S.V., VASNEV, V.A., BRYUKHOVA,
YE.V., SEMIN, G.K.
COUNTRY OF INFO--USSR

SOURCE--IAV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 681-2
DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--CHLORINE ISOTOPE, NUCLEAR RESONANCE, SPECTUM, ESTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--1999/1904

STEP NO--UR/0062/70/000/003/0681/0682

CIRC ACCESSION NO--AP0123688

UNCLASSIFIED

2/2 011

CIRC ACCESSION NO--AP0123688

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE N.Q.R. SPECTRAL DATA WERE
 TABULATED FOR P-RC SUB6 H SUB4 O SUB2 CC SUB6 H SUB2 CL-P AND P-CLC SUB6
 H SUB4 O SUB2 CC SUB6 H SUB4 R-P IR EQUALS NO SUB2, F, CL, MEO, H, ME,
 AC). TRANSMISSION OF THE ELECTRONIC EFFECTS THROUGH THE ESTER LINK IS
 MUCH MORE FACILE IN THE DIRECTION YIELDS O-C(O) THAN IN YIELDS C(O)-O
 DIRECTION.
 FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

1/2 011

TITLE--SYNTHESIS OF POLYMERS BY LOW TEMPERATURE POLYCONDENSATION -U- UNCLASSIFIED PROCESSING DATE--04DEC70

AUTHOR--(04)--KORSHAK, V.V., VINOGRADOVA, S.V., VASNEV, V.A., MITAISHVILI, T.I. COUNTRY OF INFO--USSR .

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(5), 1113-17 ✓

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, CONDENSATION REACTION, POLYESTER RESIN, AMIDE, CHLORINATED ORGANIC COMPOUND, BENZENE DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1373

STEP NO--UR/0459/70/012/005/1113/1117

CIRC ACCESSION NO--AP0135047

UNCLASSIFIED

2/2 011

CIRC ACCESSION NO--AP0135047
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT. THE ADDN. OF ET SUB3 N TO MIXTS. OF CLCORCOCL (R IS P-C SUB6 H SUB4 OR (CH SUB2) SUB10) WITH ACCH SUB2 CO(CH SUB2) SUB8 COCH SUB2 AC, (P-ACCH SUB2 COC SUB6 H SUB4) SUB2 O, ACCH SUB2 CO SUB2 (CH SUB2) SUB6 O SUB2 CCH SUB2 AC, P-HOC SUB6 H SUB4 O SUB2 CCH SUB2 AC, OR P-HOC SUB6 H SUB4 NHCOCH SUB2 AC DISSOLVED IN DICHLOROETHANE, PHNO SUB2, OR ACETONE GAVE 44-90PERCENT YIELDS OF POLYESTERS OF GENERAL STRUCTURE (CORCO SUB2 CME DOUBLE BOND CHCOR PRIME1 COCH DOUBLE BOND CME) SUBN OR POLYESTER AMIDES OF STRUCTURE (CORCO SUB2 CME DOUBLE BOND CHCOXC SUB6 H SUB4 O) SUBN (X EQUALS O OR NH). POLYCONDENSATION OF BIS(4, (CHLOROCARBONYL)PHENYL)PHTHALIDE WITH BIS, (4, CARBOXYPHENYL)PHTHALIDE (I), H SUB2 O, OR P-C SUB5 H SUB4 (CO SUB2 H) SUB2, OR OF P-C SUB6 H SUB4 (COCL) SUB2 WITH I OR H SUB2 O, ALL IN THE PRESENCE OF ET SUB3 N, GAVE POLYANHYDRIDES OF GENERAL STRUCTURE (COR PRIME2 CO SUB2 COR PRIME3 CO SUB2) SUBN OR (COR PRIME2 CO SUB2) SUBN. THE REACTIONS WERE PERFORMED AT TEMPS. BELOW 40DEGREES. REDUCED VISCOSITIES OF THE POLYESTERS AND POLYESTER AMIDES WERE 0.06-0.33 DL-G AND OF THE POLYANHYDRIDES 0.08-0.42 DL-G. FACILITY: INST. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

USSR

Instrumentation and Equipment

UDC: 620.178.38.05

RIVKIN, Ye. Yu. and VASNIN, A. M.

"Machine for Fatigue Tests in Water and Steam at High Temperatures and Pressures"

Moscow, Zavodskaya laboratoriya, No. 5, 1971, pp 611-612.

Abstract: The machine described by this article was devised to study the resistance of a specimen to cyclical destruction in water and steam at temperatures of up to 400° C and pressures of up to 200 kg/cm². It permits tests involving repeated bending and twisting of the specimens. A cross-sectional diagram of the machine is shown, together with a curve giving the results of testing specimens of heat-resistant steel by repeated twisting at a temperature of 310° C and a pressure of 110 kg/cm², in water originally containing 0.06 mg/liter of chlorides and 0.2 mg/l of oxygen, as well as in air. These tests indicated that the water did not reduce the cyclical strength of the steel compared to its cyclical strength in air.

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1/2 011

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--EQUILIBRIUM IN, C SUB2 H SUB5, SUB2 NH, HCL, NAHCO SUB3 H SUB2 O SYSTEMS -U-
SUB5, SUB2 NH, HCL, NAHCO SUB3 H SUB2 O AND, C SUB2 H

AUTHOR--(02)-VASONG, T.M., SHOKIN, I.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(3), 326-8

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL-EQUILIBRIUM, DIETHYLAMINE, SODIUM CHLORIDE, HYDROGEN
CHLORIDE, CARBONATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3008/0840

STEP NO--UR/0153/70/013/003/0326/0328

CIRC ACCESSION NO--AT0137868

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 011

CIRC ACCESSION NO--AT0137868

ABSTRACT. TO EVALUATE THE ADVANTAGES OF REPLACING NH SUB3 WITH ET SUB2 NH IN THE PRODN. OF NAHCO SUB3 FROM NA CL, THE SOLY. OF NA CL IN AQ. SOLNS: CONTG. 2.4-5.1M ET SUB2 NH IS DETD., AND D PRIME20 FOR THE AMINE SOLNS. IS GIVEN. AT LARGER THAN 35DEGREES, THE SYSTEM NA CL, H SUB2 O ET SUB2 NH SEPS. INTO 2 PHASES; AT THE CRIT. POINT, THE COMPN. IS 13.5PERCENT NA CL, 66.5PERCENT H SUB2 O, 20PERCENT ET SUB2 NH. A TRIANGULAR EQUIL. DIAGRAM IS GIVEN FOR THIS SYSTEM AT 40DEGREES. THE EFFECT OF TREATING NA CL SOLNS. CONTG. 3.2-5.9M ET SUB2 NH WITH CO SUB2 (SMALLER THAN 85PERCENT SATN.) IS SHOWN. IT IS POSSIBLE TO ACHIEVE 95-98PERCENT UTILIZATION OF NA FOR THE PPTN. OF NAHCO SUB3 BY MEANS OF ET SUB2 NH.

FACILITY: MOSK. KHIM. TEKHNOL. INST. IM. MENDELEEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 617.711/.713-092-092.9-02:751.49

POLOTSKIY, YU. YE., VASSER, N. R., and DRAGUNSKAYA, YE. M., Institute of Experimental Medicine, Academy of Sciences USSR, and Institute of Epidemiology and Microbiology imeni Pasteur, Leningrad.

"Experimental Keratoconjunctivitis Caused by Enteropathogenic E. coli (0124, 0143, 028a28c, 0136, 0144), the Agents of Dysentery-like Diseases in Adults and Children "

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 12, 1971, pp 76-80

Abstract: Morphological study was conducted of the eyes of guinea pigs infected with cultures of pathogenic E. coli (0124, 0143, 028a28c, 0136, 0144) that cause dysentery-like diseases in adults and children as well as keratoconjunctivitis in guinea pigs. These bacilli differ in some respects from another group of E. coli (011, 055, 026, 0127, 0128, 044, 086, 0119, 0125, 0126, 020) which cause enterocolitis in young children but not keratoconjunctivitis in guinea pigs. Most of the 96 strains of microorganisms under study of induced a purulent keratoconjunctivitis within 48 hours of injection into the conjunctiva. Like Shigellae, these strains penetrated into the cytoplasm of the epithelial cells of the conjunctiva and cornea, where they produced and destroyed the cells. Infection of guinea pigs with avirulent strains resulted in a less pronounced and slower developing conjunctivitis and 1/2

USSR

POLOTSKIY, YU. YE., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 12, 1971, pp 76-80

keratitis. Infection with shigellae produced a more severe and persistent keratoconjunctivitis. These microbes are apparently more resistant to the phagocytic activity of polymorphonuclear leukocytes than the less virulent E.coli 0124, 0143, 028a28c, 0136, and 0144.

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USSR

UDC 621.396.4(088.8)

POLISHCHUK, YA. L., VASSER, V. F., OSTAPENKO, V. A.

"Service Channel for an FM Radio Relay Communications Line"

USSR Author's Certificate No 253180, Filed 15 Jul 68, Published 24 Feb 70
(from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D318P)

Translation: This author's certificate introduces a service channel for an FM radio relay line containing a frequency detector, a pilot signal receiver, a pilot signal generator, a service channel modulator and a demodulator. In order to improve the frequency characteristic and decrease the cross noise, an assembly containing series-connected selectors of the pilot signal shape and a pilot signal harmonic separator is connected to the basic channel on the service channel side with simultaneous simplification of the equipment between the pilot signal generator, the modulator and the demodulator of the service channel.

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Acc. Nr:

AP0051913

Ref. Code: UR0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 2, pp 20-23

EXPERIMENTAL INTESTINAL INFECTION INDUCED BY ENTEROPATHOGENIC E. COLI O124:K72 — AN AGENT OF DYSENTERY-LIKE DISEASES OF ADULTS AND CHILDREN

Yu. Ye. Polotskiy, N. R. Vasser

Institute of Experimental Medicine, Academy of Medical Sciences of the USSR, Leningrad

The data are reported on enteral infecting of fasted guinea pigs with enteropathogenic E. coli EEC O124, isolated from an adult patient during water cutburst of dysentery-like disease — enterocolitis O124. Guinea pigs developed enterocolitis resulting in the death of a part of the animals. The authors found marked multiplication of EEC O124 in the jejunum, ileum and caecum. In the convalescent animals from the 2nd day after infection, the infecting agent began to leave the intestine. As evidenced from histological examination, the infection resembles experimental dysentery in the guinea pig. The process shows focal character and is associated with focal lesions of the epithelial layer of the jejunum, ileum and caecum, apparently resulting from multiplication of the microbes into epithelial cells. At the same time, less virulent, compared to Shigella, EEC O124 are more readily destroyed by polymorphonuclear leukocytes.

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REEL/FRAME
19820396

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USSR

UDC 632.95

CHEKAREVA, T. G., VASSERMAN, A. M., VORONKOVA, V. V., UAKIMENKO, Ye. F., and BASKAKOV, Yu. A.

"Photochemical Decomposition of Meturin, Its Derivatives and Analogs"

V sb. Khim. sredstva zashchity rast. (Chemical Protection of Plants -- collection of words), No 2, Moscow, 1972, pp 285-291 (from RZh-Khimiya, No 22, 25 Nov 73, Abstract No 22N575 by G. A. Kosminskaya)

Translation: The photochemical decomposition of the herbicide meturin (I) and some of its derivatives and analogs following UV irradiation was studied. The end product of the photochemical decomposition of I is PhNHCONHMe (II). EPR-spectroscopy was used to show that the photochemical decomposition of I proceeds through the formation of the N-methylcarbamoyl-N-phenyl nitrate radical (III). Identical EPR spectra can be obtained by the oxidation of I by PbO_2 . I and II are found by thin-layer chromatography among the decomposition products of III. There is a direct relationship between the sensitivity of the derivatives and analogs of I to UV light and their herbicidal activity.

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USSR

UDC 546.21:546.821:543.25.062

SINYAYEVA, N. P., KUNIN, L. L., OLESOV, Yu. G., and
VASSERMAN, A. E.

"Determination of Oxygen in Electrolytic Powders of Titanium
and Titanate Alloys by Impulsive Heating"

Moscow, Zavodskaya Laboratoriya, Vol 37, No 12, 1971,
pp 1419--1420

Abstract : The possibility of using the quick method of impulsive heating for solving certain technological problems of powders of titanium and titanate alloys is investigated. The method consists in heating the specimen in a closed graphite capsule up to 3,000 °C for 3 sec. in argon atmosphere. Carbon monoxide, separated from specimens, mixes with argon and is determined by infrared absorption. The duration of a single determination is 7-10 min., the sensitivity is $10^{-2}\%$ by wt. by a weighed amount of 100 μg . The impulsive heating method was applied for the investigation of oxygen distribution in powders of titanium and titanium-aluminum alloy, depending on the size of powder particles. Tabulated investigation results show the dependence of oxygen content in powder of

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USSR

SINYAYEVA, N. P., et al., Zavodskaya Laboratoriya, Vol 37, No 12, 1971,
pp 1419-1420

unalloyed electrolytic titanium and in titanium-aluminum alloy and of mechanical properties on the fraction size. The mechanical properties measured on specimens produced by vacuum caking at 1,200-1,500°C are also shown. Four tables, ten biblio. refs.

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- 66 -

1/2 029 UNCLASSIFIED PROCESSING DATE--02 OCT 70
TITLE--KINETICS OF POLY(ETHYLENE TEREPHTHALATE) CRYSTALLIZATION STUDIED BY
A PARAMAGNETIC PROBE METHOD -U-
AUTHOR--(03)-KOVARSKIY, A.L., VASSERMAN, A.M., BUCHACHENKO, A.L.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(3), 211-14
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--POLYETHYLENE TEREPHTHALATE, CRYSTALLIZATION, REACTION
KINETICS, EPR, CALCULATION, ACTIVATION ENERGY, PLASTIC FILM, AMORPHOUS
POLYMER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0313 STEP NO--UR/0460/70/012/003/0211/0214
CIRC ACCESSION NO--AP0111507
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111507
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. CRYSTN. KINETICS, DETD. BY USE OF 4-HYDROXY, 2,2,6,6-TETRAMETHYLPYPERIDINOXY AS THE PARAMAGNETIC PROBE. WERE 1ST ORDER FOR AMORPHOUS POLY(ETHYLENE TEREPHTHALATE) (I). CRYSTN. RATES (THE TIME REQUIRED TO REACH THE GLASS TRANSITION) DETD. BY EPR WERE COMPARABLE TO THOSE DETD. BY D. CHANGES. THE CALCD. ACTIVATION ENERGIES OF CRYSTN. AND TEMP. RANGES STUDIED FOR UNORIENTED AND ORIENTED I WERE 20 PLUS OR MINUS 2 KCAL-MOLE AND 33 PLUS OR MINUS 2 KCAL-MOLE AND 110-25DEGREES AND 130-40DEGREES, RESP. PRELIMINARY COLD DRAWING (20DEGREES, 50PERCENT) OF AMORPHOUS I FILMS DECREASED RATE CONSTS. AND INCREASED CRYSTN. ACTIVATION ENERGIES.

UNCLASSIFIED

Acc. Nr. **APO102303**

Abstracting Service:
CHEMICAL ABST. **6-70**

Ref. Code
UR0460

- 112496j Structure and molecular motion in blended polymers studied by a paramagnetic probe method. Kovarskii, A. L.; Arkina, S. N.; Vasserman, A. M. (Inst. Khim. Fiz., Moscow, USSR). *Vysokomol. Soedin., Ser. B* 1970, 12(1), 38-41 (Russ). The addn. of triethylene glycol dimethacrylate (I) and cumene peroxide to butadiene-acrylonitrile rubber (II) and heating to achieve ~85% polymn. of I reduces the rotational mol. motion of II due to the formation of the crosslinked polymethacrylate structure. The degree of the mol. motion decrease was detd. by measuring the decrease of the rotational periods (τ) of 2,2,6,6-tetramethylpiperidinoxy or of its 4-hydroxy- or 4-oxo-derivs., added to II, by the paramagnetic probe method (A. M. Vasserman, *et al.*, 1967, 1968, 1969). The decrease of τ to 10^{-7} sec corresponding to "frozen" free radicals was not uniform at various II sample locations, indicating nonhomogeneity regions. CPJR

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19860253

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USSR

UDC 669.295

SINYAYEVA, N. P., VASSERMAN, A. M., and OLESOV, YU. G.

"Determination of Oxygen in Powdered Titanium Materials"

Moscow, Tsvetnyye Metally, No 6, 1972, p 80

Abstract: A method for determination of the oxygen in titanium powders, alloys, carbides, and hydrides is based on a pulsed heating principle developed at the Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy of the Academy of Sciences USSR. Details of the method were published in the Journal of Analytical Chemistry, Vol 20, 1965, p 1359. The lower limit for determination of the oxygen concentration is 10^{-2} weight %. The variation coefficient for powdered Ti, its alloys, and carbides is 10%, for titanium hydrides 20%, and cast titanium 5%. The whole procedure takes approximately 10 min. The concentration of oxygen in powdered titanium materials depends on granulometric composition. In powders with large particles (500-80 μ) the concentration of oxygen varies between 0.03-0.15 weight %, and in powders consisting of particles smaller than 80 μ it is 0.15-0.70 weight %. The latter is attributed to a larger specific surface of particles and to the presence of adsorbed moisture. This moisture can be eliminated by drying the powders under a vacuum of not less than $1 \cdot 10^{-2}$ mm Hg.

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USSR

UDC: 621.375.82

VASSERNIS, R. I., KIREYEVA, S. I., TOKMAKOVA, V. P., SAZONOVA, S. A., SKORO-
BOGATOV, B. S.

"Determining the Optical Power and Optical Nonhomogeneity of Active Elements
of Lasers by Line Test Patterns"

Khar'kov, Monokristally i tekhnika--sbornik (Single Crystals and Technology
--collection of works), vyp. 7, 1972, pp 77-82 (from RZh-Fizika, No 8, Aug
73, abstract No 8D1146 by the authors)

Translation: A method is proposed for determining the optical power of an
active laser element as a "pseudolens" and also the optical nonhomogeneity
of elements on a collimator instrument with the aid of line test patterns.
Correspondence is observed between the lenticularity measured on the instru-
ment and that calculated from an interference pattern. It is demonstrated
that elements can be presorted with respect to nonhomogeneity.

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- 29 -

Organophosphorus Compounds

USSR

UDC 546.562 - 386:543.253

VASSERSHTEYN, SH. YE., and NGUYEN VAN NAM

"Copper (II) Complexes with Hydroxyethylidenediphosphonic Acid"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 18, No 4, Apr 73, pp 1028-1032

Abstract: Complex formation of Cu (II) with hydroxyethylidenediphosphonic acid in pH 2-12 ($\mu = 1$) solutions has been studied by means of the polarographic method. In the pH range 2 to 8 formation of the complexes $[Cu(H_2A)]$ and $[Cu(H_2A)_2]$ has been established with $K_H = (3.5 \pm 2.8) \cdot 10^{-9}$ and $(9.5 \pm 1.2) \cdot 10^{-13}$ respectively. In the pH range 8-10 monoprotonated complexes of the composition $[Cu_2(HA)]$ and $[Cu(EA)]$ are formed. In the alkaline medium -- pH 10.5-12 -- the predominant complex is $[Cu(A)_2]$ with $K_H = (3.2 \pm 0.6) \cdot 10^{-16}$.

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Communications

USSR

UDC: 656.212.5
656.254.16

~~VASSILYEV, O. K.~~ Deputy Director of the Radio Communication Laboratory of TSNIIMPS. (Central Scientific Research Institute of the Ministry of Railroads)

"Prospects of Using Inductive Communications System at Classification Yards".
Moscow, Avtomatika, Telemekhanika; Svyaz, No 1, Jan 70, pp 11-13

Abstract: An investigation of the possibility of setting up channels of communications using the inductive communication system on railroad classification yards, which can ensure the high reliability of local communications is described. The basic element of the inductive communication system is a closed Π -shaped loop of unarmored cable covering the entire surface of the working section. The conductors are excited by high frequency currents (39kc) from a transmitter, while the reception is assured by a magnetic antenna (frame or ferrite). Investigation of inductive communications carried out by the Novosibirsk Institute of Communications showed, that in the active zone, a sufficiently uniform induction field

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USSR

VASSIL'YEV, O. K. Avtomatika, Telmekhanika, Svyaz, No 1, Jan 70, pp 11-13

is created (field nonuniformity does not exceed 30db); that the field is limited locally and practically by the loop surface; that the receiver equipment is simple and small, and that in the solid-state version the weight does not exceed 200 g. Investigations on setting up a communication channel in the remote controls of a hump locomotive are being carried out by the All-Union Scientific Research Institute of Railroad Transport. The problem of speed data transmission to the hump locomotive is considered under different soil conditions. Various applications of this method are considered. Orig. art. has: 5 figures and 2 tables.

2/2

1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--OIL AND GAS CONTENT IN LATE CAMBRIAN FORMATIONS -U-
AUTHOR--(04)-TARANENKO, YE.I., VASSOYEVICH, N.B., VYSOTSKIY, I.V., SOKOLOV,
B.A.
CCOUNTRY OF INFO--USSR
SOURCE--SOV. GEOL. 1970, 13(4), 66-79
DATE PUBLISHED--70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS
TOPIC TAGS--PETROLEUM DEPOSIT, GEOLOGY, CRUDE OIL, NATURAL GAS, GEOGRAPHIC
LOCATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1875 STEP NO--UR/0215/70/013/004/0066/0079
CIRC ACCESSION NO--AP0129235
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE—30OCT70

CIRC ACCESSION NO—AP0129235

ABSTRACT/EXTRACT--(U) GP-D- ABSTRACT. UPPER PROTEROZOIC NONMETAMORPHOSED MARINE FORMATIONS ARE WIDELY DISTRIBUTED IN ANCIENT PLATFORMS IN ALL CONTINENTS OF THE GLOBE. SCATTERED ORG. SUBSTANCE AND ACCUMULATIONS OF OIL IN GAS ARE PRESENT IN NOTICEABLY HIGH AMTS. IN THESE ANCIENT ROCKS. ALL THIS SUGGESTS THE POSSIBILITY OF DISCOVERING COM. OIL AND GAS DEPOSITS IN THE PROTEROZOIC FORMATION OF ANCIENT PLATFORMS.
FACILITY: MOSK. GOS. UNIV., MOSCOW, USSR.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--REACTIONS OF ETHYL AND ARYLALKOXYCHLOROPHOSPHINES WITH PROPIOLIC
ACID -U-
AUTHOR--(03)-VASVANINA, M.A., KHAYRULLIN, V.K., PUDOVNIK, A.N.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 452-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--HETEROCYCLIC BASE COMPOUND, ORGANIC PHOSPHORUS COMPOUND,
BENZENE DERIVATIVE, MERCAPTAN, IR SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0846 STEP NO--UR/0062/70/000/002/0452/0455
CIRC ACCESSION NO--AP0119750
UNCLASSIFIED

2/2 025

CIRC ACCESSION NO--AP0119750

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO 0.05 MOLE RP(O)R PRIME1)CL IN C
 SUB6 H SUB6 UNDER CO SUB2 WAS ADDED 0.05 MOLE PROPIOLIC ACID SMALLER
 THAN 30DEGREES, THE MIXT. KEPT 2 HR AT ROOM TEMP., AND 0.05 MOLE ABS.
 ETOH ADDED OVER 2 HR TO GIVE RP(O)R PRIME1)CH:CHCO SUB2 ET (R AND R
 PRIME1 SHOWN): ET, CCL SUB3 CME SUB3, 33PERCENT B SUB0.04 142-3DEGREES,
 D PRIME20 1.3039, N PRIME20 SUBD 1.4920; ET,
 1,TRICHLOROMETHYLCYCLOPENTYL, 40PERCENT, B SUB0.04 176-8DEGREES, 1.3108,
 1.5050; PH, CCL SUB3 CME SUB2, 29PERCENT, B SUB0.04 190-2DEGREES,
 1.3249, 1.5400; AND P,MEC SUB6 H SUB4, CCL SUB3 CME SUB2, 29PERCENT, B
 SUB0.04 192-4DEGREES, 1.3010, 1.5360. REACTION OF RP(O)CME SUB2 CCL
 SUB3)CL WITH PROPIOLIC ACID IN C SUB6 H SUB6 2 HR AT ROOM TEMP.,
 FOLLOWED BY 1 MOLE BUSH AND KEEPING THE WHOLE 3 HR GAVE THE FOLLOWING
 RP(O)CME SUB2 CCL SUB3)CH:CHCOSBU; ET, 30PERCENT, B SUB0.04
 177-9DEGREES, 1.2695, 1.5160; AND PH, 23PERCENT, B SUB0.04
 208-10DEGREES, 1.2931, 1.550. TO 16 G PHPCL(O)CME SUB2 CCL SUB3) IN C
 SUB6 H SUB6 UNDER CO SUB2 WAS ADDED 3.5 G PROPIOLIC ACID TO YIELD AFTER
 2 HR AT ROOM TEMP. 30PERCENT I, B SUB0.04 153-4DEGREES, 1.3454, 1.5700;
 IR SPECTRAL CURVES (3) ARE SHOWN. FACILITY: INST. ORG. FIZ.
 KHIM. IM. ARVUZOVA, KAZAN, USSR.

UNCLASSIFIED

USSR

UDC 547.341.26.'118.07

VASYANINA, M. A., KHAYRULLIN, V. K., Institute of Organic and Physical
Chemistry imeni A. Ye. Arbuzov

"A Method of Making Substituted 5-Thio-1,2-Oxaphospholenes-3"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki,
No 22, Aug 72, Author's Certificate No 345163, Div C, filed 5 Nov 70,
published 14 Jul 72, p 96

Translation: This author's Certificate introduces: 1. A method of making
substituted 5-thio-1,2-oxaphospholenes-3. As a distinguishing feature of
the patent, a substituted 2-thio-5-oxo-1,2-thiaphospholene-3 is reduced
by an agent such as triphenylphosphine with the application of heat, followed
by isolation of the goal product by conventional methods. 2. A modification
of this procedure distinguished by the fact that heating is done to 180°C.

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- 29 -

USSR

UDC 547.241 + 547.7 + 546.22

VASYANINA, M. A., and KHAYRULLIN, V. K., Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Reaction of 4-Methyl-2-ethyl-2,5-dioxo-1,2-oxaphospholane With Phosphorus Pentasulfide"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 12, Dec 72, pp 2644-2648

Abstract: The reaction of 4-methyl-2-ethyl-2,5-dioxo-1,2-oxaphospholane with phosphorus pentasulfide was investigated. The reaction is a complex one with many intermediate stages leading to a mixture of products and tars, the quantity of the latter increasing with rising temperature. In the process all oxygen atoms are replaced by sulfur atoms with concurrent dehydrogenation. The reduction of 4-methyl-2-ethyl-5-oxo-2-thio-1,2-thiaphospholene-3 with triphenylphosphine occurs via the thio-thione rearrangement leading to the formation of 4-methyl-2-ethyl-5-thio-1,2-oxaphospholene-3.

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USSR

UDC 547.241+547.391.1

GAZIZOV, T. Kh., VASYANINA, M. A., PASHINKIN, A. P., ANOSHINA, N. P.,
GOL'DFARB, Z. I., and PUDOVIK, A. N., Institute of Organic and Physical
Chemistry imeni A. Ye. Arbutov, Academy of Sciences USSR

"Mechanism of the Reaction of Diethyl Chlorophosphite With Acrylic Acid"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 1957-1961

Abstract: The study of the reaction of diethyl chlorophosphite with acrylic acid using P^{31} NMR and thermography gives rise to the conclusion that protonation of the phosphorus atom either completely initiates or predominates in the reaction which is followed by the addition of diethylphosphorus acid (an intermediate product formed in the early stage of the reaction) to the acrylic acid chloride. The experimental portion of the paper covers in detail the reactions of diethyl chlorophosphite with acrylic acid, diethyl acryloyl phosphite with hydrogen chloride and diethylphosphorous acid with acrylic acid chloride.

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USSR

UDC 542.91:661.718.1

VASYANINA, M. A., KHAYRULLIN, V. K., and PUDOVNIK, A. N., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Reaction of Substituted 2,5-Dioxo-1,2-oxaphospholanes With Mercaptans"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 8, Aug 71, pp 1722-1726

Abstract: The reactions of substituted 2,5-dioxo-1,2-oxaphospholanes with mercaptans give a mixture consisting of two isomers, viz. ethyl- or phenyl-(β -carbalkylthioalkyl)phosphinic acids and thioalkyl esters of ethyl- or phenyl- β -carboxyalkylphosphinic acids. The reactions to a significant extent proceed contrary to the principle of strong and mild acids and bases with attack on the carbonyl group by the mercaptan, probably because of steric hindrances.

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Organophosphorus Compounds

USSR

UDC 542.91 + 661.718.1

VASYANINA, M. A., KHAYRULLIN, V. K., and PUDOVIK, A. N., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Reactions of Ethyl- and Arylalkoxychlorophosphines With Propiolic Acid"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 2, Feb 70, pp 452-455

Abstract: Ethyl- and arylalkoxychlorophosphines react with propiolic acid to give esters of ethyl- or aryl- β -chloroformylvinylphosphinic acids (A). On distillation they eliminate alkyl chloride and convert to 2-ethyl- or 2-aryl-2,5-dioxo-1,2-oxa-3-phospholenes. Treatment of the undistilled products with alcohol gives esters of ethyl- or aryl- β -carbethoxyvinylphosphinic acids. The interaction of type A adducts with butyl mercaptan gives tert.-(1,1,1-trichloro)butyl esters of ethyl- and phenyl- β -carbobutylthiovinylphosphinic acids.

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USSR

UDC 547.241 + 547.298.1

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"Esters of Aryl (β -carbamoylalkyl)phosphinic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 5, May 70, pp 1030-1034

Abstract: Reactions of ethyl- and arylalkoxychlorophosphines with acrylamides and methacrylamides in the presence of acetic acid give ethyl- and aryl (β -carbamoylalkyl)phosphinic acid esters. The article considers the direction of the reactions.

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USSR

UDC 577.391

VASYL'CHENKO, V. M., TODOROV, I. M., DYACHENKO, A. H., and VASYL'YEVA, Ye. S.,
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Ukrainian SSR, Kiev

"Investigation of Spleen and Liver Polysomes of Nonimmunized and Immunized Rats
With Acute Radiation Damage"

Kiev, Ukrainskyy Biokhimicheskiy Zhurnal, Vol 42, No 4, 1970, pp 499-507

Abstract: The state of the spleen and liver polysomal apparatus was studied in vivo and in vitro in albino rats subjected to lethal doses of ionizing radiation and immunization. It was established that 24 hours after irradiation of the non-immunized animals, the protein-synthesizing activity of the liver polysomes increased while the spleen polysomes were simultaneously destroyed, resulting in a decrease in their synthetic activity. Immunization resulted in a considerable activation of protein synthesis in the liver and spleen. When the animals were irradiated 24 hours after immunization, no decrease in the functional activity of the polysomal apparatus in the spleen was noted. Polysome protein synthesis in the liver, on the other hand, decreased considerably under analogous conditions. It is assumed that an acute radiation damage the liver temporarily participates in compensatory immunogenesis. Possible reasons for the radioprotective effect of preliminary immunization on the polysomal apparatus of irradiated animal spleens are discussed.

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USSR

UDC 539.32+537.311.33

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Odessa State Pedagogical Institute; Chair of Physics.

"Texture and Anisotropy of Titanium Sheet Properties"

Ordzhonikidze, Tsvetnaya Metallurgiya, No 2, 1973, pp 161-163

Abstract: The correspondence between data of roentgenostructural analysis, the measuring of elastic properties, and the anisotropy of electric resistance was experimentally investigated on Ti sheet brand VTI-1. Ti sheet was found anisotropic both in relation to electric resistance and also in relation to Young modulus, while ρ and E have minimum values in the direction of rolling and maximum values in cross sectional direction. The experimentally determined dependences of Young modulus E and of the specific electric resistance on the direction in the sheet plane of titanium VTI-1 are in agreement with two functions, indicating that the curves $\rho(\beta)$ and $E(\beta)$, where β =angle between the projection of the [0001] axis on the investigated plane and the direction of measuring, change monotonously in simultaneously passing through maximum and minimum. The symmetry of $\rho(\beta)$ and $E(\beta)$ curves relative to the rolling direction of the Ti sheet indicates that the hexagonal prism of the crystal, during rolling, must incline to the right and to the left relative to the rolling direction. The measuring of anisotropy of the specific electric resistance and of the Young modulus more exactly defines the x-ray structural analysis results. One figure, three formulas, seven bibliographic references.

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USSR

UDC 577.391

VASYL'CHENKO, V. M., TODOROV, I. M., DYACHENKO, A. H., and VASYL'YEVA, Ye. S.,
Physico Technical Institute of Low Temperatures, Academy of Sciences Ukrainian
SSR, Kharkov, and Sector of Molecular Biology and Genetics, Academy of Sciences
Ukrainian SSR, Kiev

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Abstract: The state of the spleen and liver polysomal apparatus was studied in vivo and in vitro in albino rats subjected to lethal doses of ionizing radiation and immunization. It was established that 24 hours after irradiation of the non-immunized animals, the protein-synthesizing activity of the liver polysomes increased while the spleen polysomes were simultaneously destroyed, resulting in a decrease in their synthetic activity. Immunization resulted in a considerable activation of protein synthesis in the liver and spleen. When the animals were irradiated 24 hours after immunization, no decrease in the functional activity of the polysomal apparatus in the spleen was noted. Polysome protein synthesis in the liver, on the other hand, decreased considerably under analogous conditions. It is assumed that an acute radiation damage the liver temporarily participates in compensatory immunogenesis. Possible reasons for the radioprotective effect of preliminary immunization on the polysomal apparatus of irradiated animal spleens are discussed.

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VASYLYK, P. B.

Cybernetics

ON THE CHARGE OF AN INEX FUNCTION FOR LONG-TERM IRREDUCIBILITY OF THE DEVELOPMENT OF SCIENCE

Article by P. B. VASYLYK, Kiev, AVIOMATEKA, Ufa, 1971, No 6, pp 68-77.

SOL JPRS 56092
23 May 72

DDC 62-50

SECRET

Two hypotheses on the character of the future development of science have recently become widely known. According to one of them, science develops in an exponential law. A short view of these ideas is presented in the work of G. M. Balcer [1]. According to the second hypothesis, proposed by D. Pridv, science will develop along a so-called logistic curve [2].

But there exist data which are not included in either of the ideas of the exponential character of development nor in the idea of a logistic curve of the growth of science. Thus, the growth of the number of structural developments performed, by means of three-dimensional data is well approximated by a parabola. The completion of subjects studied in crystallography, that is, the increase of the number of complete parameters of deciphered crystallographic structures [3]. It is also approximated by a parabola. D. Pridv of a graph on which the ordinate axis is represented in the logarithmic scale [4]. The curve of growth on this graph is approximated by a straight line which corresponds to an exponent with a normal, not a logarithmic scale of ordinates. Data on the growth of scientific information show by means of a parabola that the processes of growth in science take place more rapidly than an exponential dependence would indicate and considerably more rapidly than supposed retardation according to a logistic curve would indicate. It follows that the existing ideas on the character of the growth of scientific knowledge are incomplete.

USSR

UDC 612.766.1:622.272.3

RESHETYUK, A. L., VANIN, L. G., ONISHCHENKO, L. P., TARASENKO, V. T., and
VASYL'KOV, V. M., Donetsk Institute of the Work Hygiene and Occupational
Diseases

"Physiological Function Stress of Miners' Organisms Under Conditions of the
Deep Donbas Mines"

Kiev, Fiziologichnyy Zhurnal, Vol. 18, No 4, Jul/Aug 72, pp 547-553

Abstract: Physiological and ergometric studies were carried out with experienced miners (15 years) during a full shift of manual work, or a combination of manual and machine work under different microclimatic conditions (70-95% humidity, 22-31°C). High temperature of deep mines (29-31°C) reduces the work productivity and increases the functional stresses of miners. A danger of heat stroke was observed with workers who worked previously in not too deep mines, and also in experienced miners after vacations. Adaptation of miners to working conditions at 29-31°C lasts for 1 month, and readaptation, for 15 days. After adaptation to heat the work productivity increases and the functional stress of the whole organism decreases, along with physiological effectiveness. In order to avoid chronic overstresses of miners in deep mines a vacation every 6 months is recommended. Some formulas are presented for description of the physiological conditions of miners and for proper scheduling of their work and rest periods.

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USSR

UDC 547.963.3

ZHIZHINA, G. P., VAYNSHTEYN, R. S., and BRAGINSKAYA, F. I., Institute of Chemical Physics, USSR Academy of Sciences, Moscow

"Study of Injury to DNA and DNP Caused by Ultrasound"

Moscow, Doklady Akademii nauk SSSR, No 5, 1973, pp 1193-1196

Abstract: Exposure of DNA to ultrasound for 1 to 10 minutes decreased the intensity of several absorption bands in the infrared spectra of the acid and resulted in the appearance of a new, unresolved band at 1190 cm^{-1} . It also decreased the intensity of the 1650 and 1590 cm^{-1} bands in the region of the oscillations of the double bonds of the bases as well as the intensity of the 1010 cm^{-1} and 960 cm^{-1} bands in the region of the oscillations of the sugar-phosphate skeleton of DNA. Deamination of the bases following slight prolongation of sonication did not occur because the intensities of the bands of oscillations of the amino groups of the bases (3350 , 3200 , and 1605 cm^{-1}) remained unchanged. Exposure of DNP to ultrasound decreased the intensity of several bands of the protein component: 3300 , 3200 , 2940 , 1450 , 1550 , and 1400 cm^{-1} . The authors conclude that DNA in the DNP complex is highly resistant and that ultrasonic degradation of the complex begins only after partial injury to the protein coat of DNP.

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USSR

UDC 547:754:04:541:138:2.547.759.3:543.253

PALANT, I. N., VAYNSHTEYN, Yu. I., KRASNOKUTSKAYA, D. M., and YAKHONTOV, L. N., All-Union Scientific Research Institute of Chemical Reagents and Chemicals of High Purity, Moscow, and All-Union Scientific Research Chemical-Pharmaceutical Institute imeni S. Ordzhonikidze, Moscow

"Derivatives of Azaindoles. XLII. Polarographic Oxidation and Dehydrogenation of 5-Azaindoles and 5,7-Diazaindoles"

Riga, Khimiya Geterotsiklicheskih Soyedineniy, No 6, Jun 73, pp 773-776

Abstract: Polarographic oxidation of 5-azaindoles, 7-azaindoles, and 5,7-diazaindoles (22 compounds listed in a table) was carried out on a rotating Pt anode, using the method described by T. K. Adler and A. Albert, J. Chem. Soc., 1794, 1960. The relative facility of oxidation corresponded to that of dehydrogenation by the action of quinones. $E_{1/2}$ increased on transition from 7-azaindoles to 5-azaindoles and further to 5,7-diazaindoles. The effect of substituents could be well described by cross-correlation equations (cf. Vaynshteyn et al, Khim. Geterotsikl. Soyed., 1106, 1969). Deviations from the correlation were associated with the lactam-lactim tautomeric equilibrium of 6-hydroxy 5- and 7-azaindoles.

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Acc. Nr:

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Abstracting Service: 5/70
INTERNAT. AEROSPACE ABST.

Ref. Code:
UR0198

A70-23295 # Determination of the vibration decrement of nonlinear systems of hysteresis type from the resonance curve (K opredeleniiu dekrementa kolebaniu nelineinykh sistem gisteriznogo tipa po rezonansnoi krivoi). V. V. Matveev, A. P. Iskovlev, and I. M. Vasniuk (Akademiia Nauk Ukrainiskoi SSR, Institut Problem Prochnosti, Kiev, Ukrainian SSR). *Prikladnaia Mekhanika*, vol. 6, Jan. 1970, p. 108-112. 6 refs. In Russian.

Study of the possibilities of a method of determining the vibration decrement of an elastic system from the width of the resonance peak of the amplitude curve of the displacement. It is shown that, in addition to the possibility of determining the vibration decrement when the displacement amplitude of the investigated specimen is commensurate with the gap between the electromagnet and the specimen, the proposed method also has the advantage that the formula for calculating the decrement is independent of the nonlinearity of the dissipative forces, owing to the fact that all points of the amplitude curve of the perturbing force correspond to one and the same displacement amplitude and, consequently, to one and the same decrement value for any dependence of the decrement on the amplitude.

A.B.K. }

ALB

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REEL / FRAME
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1/2 021 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--RESISTANCE OF HEATING SURFACES OF MAZUT BOILERS TO VANADIUM
CORROSION -U-
AUTHOR--ANTIKAYN, P.A., VASYUCHKOVA, K.I., GLEBOV, V.P. ✓
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, ELEKTRICHESKIYE STANTSII, NR 4, 1970, PP 34-38
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TOPIC TAGS--STEAM SUPERHEATER, VANADIUM CORROSION, BIBLIOGRAPHY,
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UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104725

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

ABSTRACT. RESULTS ARE QUOTED OF LABORATORY INVESTIGATIONS OF THE SPECIMENS OF STEAM SUPERHEATER PIPES FROM DIFFERENT STEELS OF PEARLITIC AND AUSTENITIC CLASSES. THE SPECIMENS WERE TESTED IN AN ARTIFICIAL MEDIUM CONTAINING 87PERCENT VANADIUM DIOXIDE AND IN DEPOSITS REMOVED FROM PIPES OF A CONVECTIVE STEAM SUPERHEATER OF THE PK-41 GAZ MAZUT BOILER. RECOMMENDATIONS ARE GIVEN FOR THE USE OF VARIOUS STEEL BRANDS.

UNCLASSIFIED

USSR

UDC 619:616.988.43-097.3

AMPITEATROV, F. Z. (deceased), GIZATULLINA, N. K., and VASYUNIN, V. M.,
Kazan' Veterinary Institute, Kazan', and Kursk Biologicals Factory, Kursk

"Inactivation of the Virus of Foot-and-Mouth Disease With Methylglyoxal"

Moscow, Veterinariya, No 5, May 73, pp 64-65

Abstract: In experiments on foot-and-mouth disease virus of types A and O, methylglyoxal had an inactivating effect on the virus without lowering significantly its antigen activity, as shown by tests on the immunization of rats, rabbits, and mice. The rate of inactivation of the virus increased with increasing concentrations of methylglyoxal (0.01-0.1% applied at 37°), on increasing the temperature of inactivation from 23 to 37°, and with an increasing pH (6.5-8.5). An experimental vaccine for tests was prepared by treating foot-and-mouth disease virus of subtype A22, strain 550, infectious titer $10^{6.5}$ LD₅₀/ml, with 0.05% methylglyoxal for 8 hrs at pH 7.6 and 37°C and then combining 70% of the inactivated virus suspension with 25% of a 6% suspension of Al(OH)₃, 5% glycerin, and 0.03% saponin.

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USSR

UDC 632.959:632.78

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"Sterilizing Activity of Phosphoethyleneimides with Respect to Injurious Lepidoptera"

Moscow, Khimiya v Selskom Khozyaystve, Vol 9, No 3, 1971, pp 45-50

Abstract: Field sterilization is in the opinion of many authors an effective means to liquidate many dangerous pests. The newly synthesized title compounds enter into alkylation reactions with various nucleophilic reagents, they are biologically extremely active. Their sterilizing activity against winter butterflies *Agrotis segetum* Schiff and the small species *Lophyrus exidna* H. b. which is injurious to cotton and other plants was studied. Some 31 compounds were included in the study, among them phosphonates, phosphates, diphosphonates, and diphosphates with C-P and O-P bonds. The data obtained are represented in tabular form. Compounds with sterilizing activity were found in all groups of phosphoethyleneimides. Most monoethyleneimidophosphonates and phosphates had a low activity. Only four compounds of this group exhibited a sufficient sterilizing activity. The activity of tetraethyleneimides of diphosphonic acid was sufficiently high. Since only two compounds of the limited number of tri- and tetraethyleneimides were studied,

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