

USSR

MOSKALENKO, Yu. Ye., IVANOVA, T. I., VAYNSHTEYN, G. B., ZELIKSON, B. B.,
KISLYAKOV, Yu. Ya., and KAS'YAN, I. I.

"Resistance of the Cerebrovascular System to Transverse Accelerations"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya No 1, 1973,
pp 37-46

Abstract: Histological examination of brain sections from dogs subjected to transverse accelerations of 15 g or more for 30 to 40 seconds revealed pronounced morphological changes in the blood vessels, including rupture of the walls with extensive hemorrhages into the brain tissue and ventricles. Intracranial cerebrospinal fluid pressure increased to 15 to 20 g and then stabilized while blood pressure continued to grow in proportion to the intensity of acceleration. Study of a mathematical model of the process showed that after acceleration of up to 15 g, transmural pressure in the cerebral vessels does not change significantly. However, acceleration of over 15 g increases transmural pressure beyond the tensile strength of the vascular walls and may cause them to rupture. Thus, the resistance of the cerebrovascular system to transverse accelerations is dependent on the relationship between the strength of the structural components of the vascular wall and the increase in transmural pressure.

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VAINSHTEYN, L. A.

WAVE Theory

SO: IPRS 55889
4 MAY 1972

GLORIA

THEORY OF ELECTROMAGNETIC WAVES (SYMPOSIUM IN TBILISI)

Article by Venior-Correspondent USSR Academy of Sciences L. A. Vainshtein, Moscow, Vestnik Akademii Nauk SSSR, Russian, No. 3, March 1972, pp. 1-10.

(U.S.S.R.)

Electromagnetic wave theory plays an important role in radiophysics and radioengineering, plasma physics, optics, holography and quantum electronics in plasma, etc. New problems related to the propagation of waves in plasmas, theory by space investigations, etc. have been placed before scientists in plasma, to International Symposium on the state of science in this field, held in Tbilisi on 9-15 September 1971 at the Institute of the Soviet national committee of USSR (expansion unknown) (International scientific radio union), attracted the attention of more than 300 scientists from 18 countries. Presented at the symposium were 134 reports. We will discuss the most noteworthy of them.

The asymptotic theory of waves in disperse, heterogeneous and non-stationary media (for instance in plasma) was the theme of a report by L. Feisen (U.S.), who investigated space-time rays with the corresponding characteristics and focal, making it possible, in particular, to examine the development of beam concepts, for instance the concepts of "beam optics" (complex beams of J. Keller). It was shown that these concepts make it possible to examine simply and elegantly the origin of wave beams through homogeneous and heterogeneous media and their diffraction on a half-plane and cylinder. There are not only the final equations, but also the intermediate calculations are quite elementary. In view of which the intermediate system to be viewed as rather simple devices.

The purpose of asymptotic methods is usually considered the derivation of analytical formulas with distinct physical meaning, whereas the purpose of numerical methods is, as a rule, the solution of problems for which characteristic. R. Mitya and T. Ch (U.S.) proposed a new method for

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UDC 518.1

VAYNSHTEYN, L. A., Corresponding Member of the Academy of Sciences USSR, and
BELKINA, M. G., Institute of Physical Problems imeni S. I. Vavilov of the Academy
of Sciences USSR, Moscow

"The Double Reduction Method and Infinite Systems of Linear Equations for the
Coefficients of an Expansion of a Required Function with Singularities"

Moscow, Doklady Akademii Nauk SSSR, Vol. 194, No 4, 1 Oct 70, pp 794-797

Abstract: A description is given of a double reduction method for the solution of
many boundary value problems in mathematical physics, in which the solution can
be reduced to the solution of an infinite system of linear equations

$$\sum_{r=0}^{\infty} A_{rr} X_r = C_r, \quad r = 0, 1, 2, \dots \quad (1)$$

where X_r are the coefficients of the expansion of the unknown function

$$X(x) = \sum_{r=0}^{\infty} X_r \psi_r(x) \quad (2)$$

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VAYNSHTEYN, L. A. and BELKINA, M. B., Doklady Akademii Nauk SSSR, Vol 194, No 4, 1 Oct 70, pp 794-797

in terms of the total system of functions $\psi_s(x)$. The unknown function $\Psi(x)$ can be, for example, the current density on an ideally conducting surface, the field components on a certain auxiliary surface which divides two regions of simple form, etc. In the double reduction method the first S coefficients X_s of the series (2) for $s = 0, 1, \dots, S-1$ are calculated exactly as in the ordinary reduction method, but the remaining coefficients are not put equal to zero but are replaced by the asymptotic expression

$$X_s = \sum_{j=0}^{J-1} \frac{\rho_j}{s^{2j}} \quad (3)$$

i.e., the first J terms of the series

$$X_s = \sum_{j=0}^{\infty} \frac{\rho_j}{s^{2j}} \quad (4)$$

where the coefficients ρ_0, ρ_1, \dots are unknown and the index $\gamma > 0$ is known a priori. One thus takes into account exactly S coefficients X_s of the series

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(2) and J coefficients ρ_j of the series (4); i.e., to carry out a double reduction, as it were. The system (1) then takes the form

$$\sum_{s=0}^{S-1} A_{rs} X_s + \sum_{j=0}^{J-1} B_{rj} \rho_j = C_r, \quad r = 0, 1, \dots, S+J-1,$$

where the elements of the additional matrix

$$B_{rj} = \sum_{s=0}^{\infty} \frac{A_{rs}}{s^{j+1}}, \quad r = 0, 1, \dots, S+J-1, \quad j = 0, 1, \dots, J-1,$$

consist of slowly converging series; since all terms of these series are known, they can be calculated. An example of the application of the method using the Ural-2 computer is given. It is noted that the ideas in this paper are closely related to those developed in an article by Neureuther and Zaki which came to the attention of the authors towards the end of work on this paper. (Radio Science, Vol. 3, No. 12, 1968, p 1158).

1/2 032
 UNCLASSIFIED
 TITLE--THERMAL MODEL OF THE ACTIVE REGION OF THE SOLAR CORONA --U-
 PROCESSING DATE--20NOV70
 AUTHOR--(02)-BEYGHAN, I.L., VAYNSHTEYN, L.A.
 COUNTRY OF INFO--USSR
 SOURCE--TRANSLATED FOR CULHAM LAB., ABINGDON, ENG., FROM PREPRINT NO. 94.
 26P. DEP. CFSTI CTO-705
 DATE PUBLISHED--70
 SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS
 TOPIC TAGS--SOLAR CORONA, X RAY, RESONANCE LINE, IONIZATION, MODEL, SOLAR ACTIVITY
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRA--3003/0844
 STEP NO--UR/0000/70/000/094/0026/0026
 CIRC ACCESSION NO--AT0129922
 UNCLASSIFIED

2/2 032

CIRC ACCESSION NO--AT0129922
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT. THE X RAY FLUXES IN THE RESONANCE LINES LAMBDA LESS THAN 25 ANGSTROM OF THE MOST ABUNDANT IONS IN THE SOLAR CORONA WERE CALCULATED FOR A WIDE RANGE OF TEMPERATURES (0.2 TO 18) TIMES 10 PRIME6 DEGREE SK. THE RATES OF EXCITATION, IONIZATION, AND RECOMBINATION (PHOTO AND DIELECTRONIC) OBTAINED PREVIOUSLY BY NUMERICAL METHODS WERE USED. THE CALCULATED FLUXES WERE USED TO ANALYZE EXPERIMENTAL DATA ON THE EMISSION OF THE ACTIVE REGIONS IN THE SPECTRAL RANGE LAMBDA LESS THAN 25 ANGSTROM. IT WAS ASSUMED THAT THE PHOTOSPHERIC ABUNDANCE OF C, N, AND O IN THE CORONA IS CORRECT AND THE ABUNDANCES OF NE, MG, AND FE WERE CALCULATED FROM EXPERIMENTAL DATA. THE ANALYSIS WAS BASED ON A THERMAL MODEL OF THE ACTIVE REGION. THE AVAILABLE DATA CAN BE DIVIDED INTO TWO GROUPS. IT IS SHOWN THAT ALL CASES CAN BE DESCRIBED BY A MODEL OF THE ACTIVE REGION WITH A TEMPERATURE T EQUALS 2.5 TO 3 (IN UNITS OF 10 PRIME6 DEGREE SK) THE ONLY DIFFERENCE BEING IN THE EMISSION MEASURE Y TRIPLE BOND OR NEGATIVE CHARGE N PRIME2 SUBE V-3.2 TIMES 10 PRIME49 CM PRIME NEGATIVE3 EQUALS 0.07 TO 0.10. TO DESCRIBE THE OBSERVATIONS ONE HAS TO ADOPT A SMOOTH VARIATION OF T UP TO T SUB1 AND THE ESTIMATE T EQUAL 4 IS OBTAINED FROM THE RELATIVE FLUXES FE XVII- FE XVIII. THE ABUNDANCES PROPOSED BY VARIOUS AUTHORS ARE COMPARED. THE TOTAL X RAY FLUXES IN THE INTERVALS LAMBDA MINUS LAMBDA PLUS DELTA LAMBDA FOR THE SPECTRAL RANGE LAMBDA LESS THAN 25 ANGSTROM ARE CALCULATED FOR THE DIFFERENT SETS OF ABUNDANCES AND TEMPERATURES AT DELTA LAMBDA EQUALS 0.2 AND 1 ANGSTROM.

FACILITY: AKADEMIYA NAUK SSSR, MOSCOW. INSTITUT FIZIKI.

UNCLASSIFIED

USSR

UDC 669.18:621.746.58

TULIN, N. A., Candidate of Technical Sciences, VAYNSHTEYN, O. Ya, Engineer,
KUZ'KINA, N. N., Engineer, KHUDEN'KIKH, A. A., Engineer, and SNEZHKO, B. Ya.,
Engineer, Chelyabinsk Metallurgical Plant

"The Use of Argon in the Production of Non-Aging Low-Carbon Steel"

Moscow, Stal', No 3, Mar 73, p 226

Abstract: Low-carbon non-aging steel at the Chelyabinsk Metallurgical Plant is melted by the scrap-ore process in 100-ton open-hearth furnaces with oxygen scavenging of the metal. Argon protects the metal flux against oxidation. This method makes it possible to lower the degree of contamination of 5.2-ton ingots by oxide aluminaceous impurities which give rise to laminations in sheet. Argon flux protection decreased sheet rejection by customers and plants by factors of 2.7-4.5 and 3-4, respectively, and increased annual output by 12%. Two figures.

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NIGMATULIN, R. I., VAYNSHTEYN, P. B.

UDC 536.46:533.6

"Flame Propagation in a Mixture of Gas and Particles"

V sb. Goreniye i vzryv (Combustion and Explosion -- Collection of Works),
Moscow, "Nauka", 1972, pp 182-185 (from RZh-Mekhanika, No 3, Mar 73, Abstract
No 3B966)

Translation: The particular features of the formulation of the problem on the steady-state propagation of a flame front in gaseous suspensions are discussed. In particular, the character of particular points corresponding to equilibrium conditions is investigated for the case of a purely heterogeneous combustion regime of the particles. It is shown that the asymptotic behavior of the particle parameters behind the flame front is a function of the composition of the fresh mixture. Authors' abstract.

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USSR

UDC 523.038

VAYNSHTEYN, S. I., ZEL'DOVICH, Ya. B., Siberian Institute of Earth Magnetism, the Ionosphere, and Propagation of Radio Waves of the Siberian Department of the Academy of Sciences USSR, Irkutsk; Institute of Applied Mathematics of the Academy of Sciences USSR

"On the Origin of Magnetic Fields in Astrophysics (Turbulent Mechanism of the 'Dynamo')"

Moscow, Uspekhi Fizicheskikh Nauk, No. 3, Mar 72, pp 431-457

Abstract: The generation of magnetic fields under astrophysical conditions is discussed. Particular attention is given to "dynamo" mechanisms; i.e., mechanisms in which the magnetic field energy is drawn from the kinetic energy of the plasma. The major role of turbulent mechanisms of the dynamo is emphasized. The problem of the dynamo is divided into two parts: (1) the generation of regular magnetic fields (i.e., a dynamo of fields of scales of the actual cosmic objects by turbulent pulsations) and (2) generation of chaotic fields. Existing theories on the generation of regular fields are surveyed, with emphasis on the works of Steenbeck and Parker, and the generalization of available results to large magnetic Reynolds numbers characteristic of cosmic plasma is discussed. Also surveyed are existing theories in the dynamics of chaotic fields, and results are derived

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VAYNSHTEYN, S. I., ZEL'DOVICH, Ya. B., Uspekhi Fizicheskikh Nauk, No 3, Mar 72, pp 431-457

concerning a turbulent dynamo in the presence of acoustical turbulence. An analogy is made with the problem of the excitation of vortices in the field of acoustical turbulence. The problem of dynamo turbulence in the field of "Kolmogorov" turbulence is discussed along with the problem of a steady-state field due to a nonlinear effect. It is shown that gyrotropy appears in the presence of a nonweak field, the action of which is opposite to the action of ordinary rotational gyrotropy. This gyrotropy is called magnetic and can cause nonlinear stabilization of the magnetic field. It is noted that many stars have convective nuclei or convective shells and that the material is fixed in the remaining parts of the stars: i.e., the turbulence is inhomogeneous, raising the problem of how the general field of the star will behave. If it is effectively damped in convective stars, it will rapidly be forced into nonfixed regions, and the lines of force will bypass the convective cores; consequently, the core will behave as a diamagnetic and can develop macroscopic electrodynamics: i.e., the electrodynamics of large-scale fields, where the magnetic permeability depends on the turbulent characteristics. The authors note that the theory of a turbulent dynamo is only beginning its development but it can nevertheless help to clarify the problem of the origin of enormous cosmic magnetic fields.

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Acc. Nr: **AP0038039**

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 1, pp 153-159

GENERATION OF A LARGE SCALE MAGNETIC FIELD BY A TURBULENT LIQUID

Vaynshteyn, S. I.

A magnetic field equation is derived for: the case of 1) gyrotropic turbulency and 2) anisotropic turbulency. The method of sample summation of the perturbation theory series is employed. Exact solutions of the problems are obtained for a certain turbulency model. The most important assumption which is made is that the correlation time of the velocities can be neglected. In the first case it follows from the equation that gyrotropic turbulency may produce a large scale magnetic field. Conditions for generation of the field are determined. Anisotropic turbulency does not generate a large scale field and on the contrary it results in anomalous anisotropic diffusion of the field. Isotropic turbulency also leads to anomalous field diffusion.

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REEL/FRAME
19731081

21

1/2 021

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--SOME PROBLEMS CONCERNED WITH THE PATHOGENESIS OF ACUTE PANCREATITIS

-U-

AUTHOR--(03)-ARUIN, L.I., VAYNSHTEYN, I.YA., ZHUK, YE.A.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69, NR 5, PP 42-46

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PANCREATITIS, EDEMA, HEMORRHAGE, TRYPSIN, CLINICAL MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0067

STEP NO--UR/0219/70/069/005/0042/0046

CIRC ACCESSION NO--AP0120767

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0120767

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UPON INTRODUCTION INTO THE PANCREATIC DUCT OF ALBINO RATS OF 1 ML OF A 0.001 N SOLUTION OF HYDROCHLORIC ACID, IRRESPECTIVE OF THE ADDITION OF CRYSTALLIC TRYPSIN INTO THE SOLUTION, A MORPHOLOGICAL PICTURE OF EDEMATOUS HEMORRHAGIC PANCREATITIS DEVELOPS. ADMINISTRATION INTO THE PANCREATIC DUCT OF CRYSTALLIC TRYPSIN, DISOLVED DIRECTLY PRIOR TO INTRODUCTION OF A 0.85PERCENT SOLUTION OF SODIUM CHLORIDE, DOES NOT LEAD TO THE DEVELOPMENT OF ACUTE PANCREATITIS. NOTWITHSTANDING THE VERY MARKED MORPHOLOGICAL PICTURE OF EDEMATOUS HEMORRHAGIC PANCREATITIS IN THE RAT PANCREATIC HOMOGENATE THERE IS REVEALED NO MEASURABLE ACTIVITY OF TRYPSIN AND TOTAL PROTEOLYTIC ACTIVITY. REDUCTION IN THE TRYPSINOGEN CONTENT IN THE PANCREATIC HOMOGENATE WAS NOT NOTED. THIS GIVES GROUNDS TO STATE THAT IN THE ABOVE MENTIONED MODEL TRYPSIN IS NOT THE PRIMARY CAUSE OF ACUTE EDEMATOUS HEMORRHAGIC PANCREATITIS. FACILITY: ALL UNION SCIENTIFIC RESEARCH INSTITUTE OF GASTROENTEROLOGY AND THE FIRST MOSCOW SECHENOV MEDICAL INSTITUTE.

UNCLASSIFIED

USSR

UDC 681.327.67'12

BRODOLIN, L. I., ~~VAYNSHTEYN, V. D.~~, DRACHEV, L. A., KAN, A. Z., KUZNETSOV,
B. A., MININ, Yu. P., and PETRUNICHEV, V. N.

"Long-Term Photoscopic Memory"

USSR Author's Certificate No 260926, filed 7 Oct 68, published 10 Jun 70
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 6,
Jun 71, Abstract No 6 B325 P)

Translation: A long-term photoscopic memory designed for storing, retrieving, and selecting a symbol image is proposed. The memory contains a light spot commutator -- for example, a cathode ray tube -- a projection objective with telecentric behavior of the beams in the image space, a lense raster information unit, a fast collective, a transmitting cathode ray tube with storage -- for example, the superorthicon type and digital and analog tracking systems for setting the spot on a given address. The memory is distinguished by the fact that to prevent charging the target when retrieving the required microframe, the device contains an electronic image modulator in the transfer section of the transmitting TV-tube. In order to insure a broad range of variation of the capacity of the TV frame and the selection rate, the target of the transmitting TV tube is executed in the form of a metal fiber disc with a coefficient of secondary emission

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BRODOLIN, L. I., et al., USSR Author's Certificate No 260926, filed 7 Oct 68, published 10 Jun 70 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 6, Jun 71, Abstract No 6 B325 P)

of the side turned toward the photocathode equal to one. In order to simplify the design and insure the possibility of recording the service information used during operation of the tracking systems in the microframe, the device contains a fiber, vacuum-tight coherent light guide with a cross section equal to the size of the symbol in the focal plane of the collective. The photocathode of the transmitting TV tube is applied to the output end of the light guide, and the input ends of the light guides connected with the photomultipliers of the tracking address system are arranged around the perimeter of the input end. In order to insure the required levels of light flux from the standing light spot, the light spot commutator executed in the form of a cathode ray tube contains a built-in screen which vibrates in its own plane. There is 1 illustration.

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USSR

UDC 621.373.826:53

GORDOV, Ye. P., VAYNSHTEYN, V. D., SOKOLOV, V. V., and
TVOROGOV, S. D.

"Some Problems in Quantum Statistical Optics and the Propagation of
Electromagnetic Waves"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl.
(Tenth All-Union Conference on the Propagation of Radio Waves;
Report Theses--collection of works) "Nauka," 1972, pp 184-186
(from RZh--Radiotekhnika, No 10, 1972, Abstract No 10D387)

Translation: Results are given of the authors' solution to a series
of problems in the use of quantum statistical optics in the area of
electromagnetic wave propagation. Eigenfunctions of the electro-
magnetic field vector potential are introduced. A method
is proposed of statistical computation for measuring the field
density matrix as the field is propagated in the medium. The re-
presentation of the electromagnetic field in the form of the quan-
tum average of purely field operators is advanced. The change in
photon statistics for light propagated in a medium of weak non-
linearity and low absorption is assumed connected with the solution
for the corresponding problem in classical electrodynamics. A. K.

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1/2 029

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--ELECTRONOGRAPHIC STUDY OF TRANSFORMATIONS OCCURRING ON FRICTION SURFACES OF A MOLYBDENUM DISULFIDE-STEEL SYSTEM -U-

AUTHOR--(03)-VAYNSHTEYN, V.E., SEMENOVA, M.V., SOLOVYEV, G.

COUNTRY OF INFO--USSR

SOURCE--FIZIKO KHIMICHESKAIA MEKhanIKA MATERIALOV, VOL. 5, NO. 1, 1970, P. 60-63

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FRICTION COEFFICIENT, MOLYBDENUM OXIDE, MOLYBDENUM DISULFIDE, ALLOY DESIGNATION, ALLOY PHASE TRANSFORMATION, CHROMIUM STEEL/(U)2KH13 CHROMIUM STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAme--1995/0935

STEP NO--UR/0369/70/006/001/0060/0063

CIRC ACCESSION NO--APC116444

UNCLASSIFIED

2/2 029

CIRC ACCESSION NO--APO116444

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE TRANSFORMATIONS
 OCCURRING ON THE SURFACES OF THE MOLYBDENUM DISULFIDE-STEEL 2KH13 SYSTEM
 DURING FRICTION IN AIR. IT IS FOUND THAT, DEPENDING ON THE TEST
 CONDITIONS, MOLYBDENUM OXIDES FORM ON THE FRICTION SURFACE AND INCREASE
 THE FRICTION COEFFICIENT. FACILITY: NAUCHNO-ISSLEDOVATEL'SKII
 INSTITUT, MASHINOVENIIA, MOSCOW, USSR.

UNCLASSIFIED

1/2 044

UNCLASSIFIED

PROCESSING DATE--13SEP70

TITLE--ANISTROPY OF THE ANTIFRICTION CERMENT MATERIALS WITH A SOLID LUBRICANT -U-

AUTHOR--(05)-ABRAMOVA, L.S., ALTMAN, A.B., VAYNSHTEYN, V.E., GLUSKIN, YA.A., MEMELOV, V.L.

COUNTRY OF INFO--USSR

SOURCE--POROSHKOVAIA METALLURGIIA, VOL. 10, FEB. 1970, P 85-89

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SOLID LUBRICANT, ANISOTROPY, CERMET, COMPOSITE MATERIAL, SILVER, MOLYBDENUM DISULFIDE, ANTIFRICTION MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0589

STEP NO--UR/0226/70/010/000/0085/0089

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2/2 044

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0107186
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. STUDY OF THE ANTIFRICTIONAL PROPERTIES OF A SYSTEM AG-MOS2 WITH A DIFFERENT CRYSTALLOGRAPHIC ORIENTATION OF THE MOS2 WITH RESPECT TO THE FRICTION SURFACE. IT IS FOUND THAT THIS COMPOSITE MATERIAL EXHIBITS AN ANISOTROPY OF ITS MECHANICAL AND ANTIFRICTIONAL PROPERTIES. IT IS SUGGESTED THAT IN THE FABRICATION OF ANTIFRICTION PARTS MADE OF THIS COMPOSITE, AN ATTENTION MUST BE GIVEN TO THE SELECTION OF THE MOST SUITABLE ORIENTATION OF THE SOLID LUBRICANT.

UNCLASSIFIED

USSR

UDC: 669.295:620.178.382

KUDRYAVTSEV, I. V. and VAYNSHTEYN, V. G.; Central Scientific Research
Institute of Heavy Machinery (TSNIITMASH)

"Effect of Surface Strain Hardening on the Fatigue Limits of Titanium Alloys
in Low-Cycle Loading"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 12, 1971,
pp 44-46

Abstract: This paper concerns the study of the effect of surface hardening of VT3-1 titanium alloy on fatigue strength in low-cycle loading. The testing procedure is detailed including the description of the test specimens, type of treatment, and data. Analysis of the fractures of the tested specimens permits their classification into two groups: fatigue-type fractures and those with a crystalline structure resembling brittle failure. The first type of fracture was observed in all specimens with stress concentrators. The second type was characteristic for smooth specimens; the specimens displayed no necking. The test shows that surface hardening effectively increases the fatigue strength of parts from VT3-1 titanium

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KUDRYAVTSEV, I. V., et al, Metallovedeniye i termicheskaya obrabotka
metallov, No 12, 1971, pp 44-46

alloy in low-cycle loading, specifically those weakened by stress concentrators. Peening stress concentrations significantly increases the fatigue limit at loading conforming to the yield point of the part and may eliminate completely the adverse effects of the concentrator. Hardening the concentrator area without hardening the notch bottom was of little significance. (1 table, 4 bibliographic references).

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USSR

UDC 621.791.72.001.5

V
BASHENKO, V. F., and VAYNSHTEYN, V. I., Leningrad Polytechnical Institute imeni
M. I. Kalinin; "Krasnaya Zarya" Plant

"Analysis of Forces Acting on the Welding Pool in Electron-Beam Welding"
Moscow, Svarochnoye Proizvodstvo, No 8, Aug 70, pp 1-2

Abstract: The formation of a crater in electron-beam welding with a high energy density (over 1 million w/cm²) may be explained thus: as the power is increased, the temperature in the center of the spot rises, leading to a higher metal vaporization rate and a greater area of molten metal. As the power is further increased, the vaporization rate rises to a point where the surface of the metal begins to give under recoil pressure; at first the depression is shallow since it must overcome the forces of surface tension. It is not until the radius attains its minimum value that the crater begins to deepen as a crater rate since there is now only the hydrostatic pressure that must be overcome. The high temperature in the center of the crater's bottom dissipates with the strong movement of the metal in the crater and its displacement toward the vertical wall.

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172 031

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--IODINATED PERFLUOROCARBONS -U-

AUTHOR--(031)-ZIMIN, A.V., VAYNSHTEYN, V.I., BUCHNEVA, A.P.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 173,213

REFERENCE--OTKRYTIYA, IZJBRET., PROM. OBRAZTSY, TOVARNYE ZNAKIL970, 47(9),

DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--IODINATED ORGANIC COMPOUND, IONIZING RADIATION, GAMMA RADIATION, X RAY, FLUORINATED ORGANIC COMPOUND, CHEMICAL PATENT, ORGANIC SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3007/0838

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

CIRC ACCESSION NO--AA0136272

UNCLASSIFIED

2/2 031

CIRC ACCESSION NO--AA0136272
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT. IODINATED PERFLUOROCARBONS ARE
PREPD. FROM CRYST. I AND LIQ. UNSATD. PERFLUOROCARBONS, IN A
PSEUDOBOILING CONDITION OR DURING INTENSIVE MIXING, WITH IONIZING
IRRADN., E.G. GAMMA NEGATIVE OR X RAYS.

UNCLASSIFIED

USSR

UDC: 621.396.6.002.72:621.757(088.8)

VAYNSHTEYN, V. M., ZHUKOVSKAYA, Ye. A.

"A Method of Connecting a Current Feeder"

USSR Author's Certificate No 259988, filed 30 Oct 67, published 7 May 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V329 P)

Translation: A method is proposed for connecting a current feeder to a conductive layer such as a silver-silicate layer applied to an inorganic dielectric. The current feeder is prelocated above the conductive layer and subjected to compressing force in the direction of this layer. To improve the reliability of contact, a metallic interlayer with a Brinell hardness of 0.7-2.0 and a melting point of 140-180°C is placed between the current feeder and the conductive layer. The compressing force should be at least 20 kg/cm².

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172 027

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--CONCERNING THE STATE OF FATTY LIPID METABOLISM IN ATHEROSCLEROTIC
PARKINSONISM OF OLD AGE, CLINICO BIOCHEMICAL CORRELATIONS -U-

AUTHOR--(03)--VAYNSHTOK, A.B., POLYUKHOV, A.M., OLEYNIK, L.I.

COUNTRY OF INFO--USSR

SOURCE--ZHURANL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,
VOL 70, NR 6, PP 828-834

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NERVOUS SYSTEM DISEASE, LIPID METABOLISM, ATHEROSCLEROSIS,
GERIATRICS, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3001/0232

STEP NO--UR/0246/70/070/006/0828/0834

CIRC ACCESSION NO--AP0126013

UNCLASSIFIED

2/2 027

CIRC ACCESSION NO--AP0126013
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT. THE AUTHORS STUDIED THE FATTY LIPID METABOLISM IN PATIENTS WITH ATHEROSCLEROTIC PARKINSONISM IN OLD AGE (60-74 YEARS). FOR COMPARATIVE PURPOSES THE FOLLOWING GROUPS OF INDIVIDUALS WERE STUDIED AS WELL: YOUNG NORMALS FROM 20-30 YEARS, OLD, PRACTICALLY NORMAL PEOPLE FROM 60-74 YEARS, PATIENTS WITH ATHEROSCLEROTIC PARKINSONISM OLDER THAN 80 YEARS. THE BIOCHEMICAL STUDIES WERE RELATED TO THE DETERMINATION OF THE GENERAL LIPIDS IN THE BLOOD SERUM, THE GENERAL CHOLESTEROL AND ITS FRACTIONS, LECITHIN, TRIGLYCERIDES, NONESTHERIFIED FATTY ACIDS, THEIR REACTION TO THE INTRODUCTION OF HEPARIN, THE ACTIVITY OF THE LIPOPROTEID LIPASE, BETA LIPOPROTEIDS, CHOLESTEROL CONNECTED WITH BETA LIPOPROTEIDS. THE AUTHORS STUDIED THE CORRELATIONS BETWEEN DISORDERS OF THE FATTY LIPID AND CARBOHYDRATE METABOLISM IN ATHEROSCLEROTIC PARKINSONISM AND THE DYNAMICS OF THESE INDICES AFTER A SUGAR LOADING. IT WAS POSSIBLE TO DISPLAY DISTURBANCES OF THE FATTY LIPID METABOLISM IN PATIENTS OF OLD AGE WITH ATHEROSCLEROTIC PARKINSONISM, AS WELL AS THEIR CONNECTION WITH THE PATHOLOGY OF THE CARBOHYDRATE METABOLISM. THE MOST EXPRESSED CHANGES WERE IN THE CONTENT OF THE NONESTHERIFIED FATTY ACIDS AND TRIGLYCERIDES. THERE WERE CERTAIN CORRELATIONS BETWEEN THE DISTRIBUTION OF CEREBRAL ATHEROSCLEROSIS, THE DEGREE OF ITS EXPRESSION AND THE STATE OF THE FATTY LIPID METABOLISM.

FACILITY: INSTITUTA GERONTOLOGII, AMN SSSR, KIYEV.

UNCLASSIFIED

USER

UDC 691.327:620.17

VAYNSHTOK, I. S., SHKOL'NIK, I. E., MIZROKHI, Yu. N., BEREZNITSKIY, L. V.,
Candidates of Technical Sciences, and TSINTSKILADZE, D. M., Engineer

"Something New in the Technique of Strength Determination of Concrete by
the Ultrasonic Pulse Method"

Moscow, Beton i Zhelezobeton, No 7, Jul 72, pp 15-17

Abstract: The All-Union Scientific Research Institute of Industrial Technology of Precast Reinforced Concrete Structural Parts and Products conducted investigations as an attempt to develop a physically well-founded method of determining the strength of concrete in products, structures, and buildings, with the use of a minimum quantity of calibration samples. The theoretical and experimental data discussed here can be used to simplify the factory control of concrete strength and to confirm the accuracy of the authors' computed relation between the strength, the propagation rate of ultrasonic pulses, and structural defects of concrete of the controlled composition. By the here-described ultrasonic device, which provides a computed time reading of the propagation of oscillations, the strength of concrete can also be determined in cases where a calibration curve can not be plotted on the base of a notable number of samples. Test results by the new method are presented. Two illustrations, three tables, three bibliographic references.

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- 90 -

172 020

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--PROCESS FOR INTRODUCING DIPHENYLAMINE INTO LITHIUM GREASES -U-

AUTHOR--(05)-SMIDTANKO, E.A., UVAROVA, E.M., FUKS, I.G., VAYNSKTOK, V.V., SHEKHTER, YU.I.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCO) 1970, (5) 23-5

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ANTIOXIDANT ADDITIVE, GREASE, LUBRICANT ADDITIVE, DIPHENYLAMINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1947

STEP NO--UR/0318/70/000/005/0023/0025

CIRC ACCESSION NO--AP0133791

UNCLASSIFIED

2/2 020

CIRC ACCESSION NO--AP0133791

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFICIENCY OF PH SUB2 NH, AND
OXIDN. INHIBITOR FOR GREASES, WAS NOT AFFECTED BY THE METHOD OF
INTRODUCING THE ADDITIVE. THE OPTIMUM CONC. WAS 0.3-0.6 WT. PERCENT
PH SUB2 NH.

FACILITY: MOSK. OPYT.-PROM. ZAVOO, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.892.9:661.183.7.063.94.001.5

VAYNSHTOK, V. V., LEVENTO, R. A., and BAKALEYNIKOV, M. B.

"The Thickening Capacity of Silica Gel in Plastic Lubricants"

Neftepererabotka i neftekhimiya. Nauchno-tekhn. sb., (Petroleum Processing and Petrochemistry. Scientific-Technical Collection), No 6, pp 20-24, 1969, (from Referativnyy Zhurnal Khimiya, No 3, Vol 2, 10 Feb 70, Abstract No 3 P264)

Translation: The influence of moisture chemically and physically bonded by silica gel on its thickening capacity and the stability of silica gel lubricants (SM) were studied. SM were prepared using specimens of silica gel esterified with C_4H_9OH and heat treated. Removal of adsorbed moisture from the surface of the silica gel led to an increase in its thickening effect, while removal of chemically bonded water decreased this effect.

From the conclusions

1/1

PROCESSING DATE--30OCT70

UNCLASSIFIED

1/2 026

TITLE--EFFECT OF SYNTHETIC FATTY ACID COMPOSITION ON THE PROPERTIES AND
STRUCTURE OF LITHIUM LUBRICANTS -U-

AUTHOR--(04)-GUSAROVA, M.S., VAYNSHTOK, V.V., KARAKASH, S.I., KARTININ,
B.N.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (3), 12-14

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FATTY ACID, ORGANLITHIUM COMPOUND, GREASE, FLUID VISCOSITY,
UREA, CHEMICAL STABILITY/(U)AU SPINDLE OIL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1517

STEP NO--UR/0318/70/000/003/0012/0014

CIRC ACCESSION NO--AP0118504

UNCLASSIFIED

PROCESSING DATE--30OCT70

UNCLASSIFIED

2/2 026
 CIRC ACCESSION NO--AP0118504
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUBSTITUTION OF LI SOAPS OF THE N- AND ISOALKANOIC ACIDS IN A C SUB17-20 FATTY ACID FRACTION FOR LI SOAPS OF THE ORIGINAL FRACTION IMPROVED AND WORSENER, RESP., THE CONSISTENCY OF LUBRICANTS PREPD. BY DISPERSING 9PERCENT OF THE SOAP IN AU SPINDLE OIL AS INDICATED IN THEIR RESP. DROP POINTS, 200 AND 130DEGREES; COLLOIDAL STABILITIES, 10.4 AND 13PERCENT; YIELD STRENGTHS, 14, 21.6, 55.6 AND 2.1, 7.8, 32.3 AT 50, 0, AND MINUS 40DEGREES; AND EFFECTIVE VISCOSITIES, 8.2, 37.6, 110, 122, 626, 1500 AND 4, 17.2, 46.6, 79, 234, 218 P AT 1260, 50, AND 10 SEC PRIME NEGATIVE1 AT 0DEGREES AND AT THE SAME SHEAR VALUES AT MINUS 40DEGREES, RESP. WHEN THE ISOALKANOIC ACIDS WERE SEPD. BY EXTN. WITH SELECTIVE SOLVENTS RATHER THAN BY COMPLEX FORMATION WITH UREA, REMOVAL OF UNSAPONIFIABLE COMPS. ALSO IMPROVED LUBRICANT QUALITY AND STABILITY. REMOVAL OF THE DICARBOXYLIC ACIDS PRESENT (2.8PERCENT) IN A C SUB10-16 FATTY ACID FRACTION BEFORE PREPN. OF THE LI SOAPS AFFECTED THE LUBRICANT PROPERTIES VERY LITTLE. LI SOAPS PREPD. FROM THE FORMER DISPERSED TOO POOKLY FOR LUBRICANT PREPN. FAICLITY: MIN-KHGP IM. GUBKINA, MOSCOW, USSR.

UNCLASSIFIED

PROCESSING DATE--23OCT70

UNCLASSIFIED

1/2 018

TITLE--EFFECT OF THE COMPOSITION OF THE DISPERSION MEDIUM ON THE PROPERTIES OF LUBRICANTS THICKENED WITH LITHIUM SOAPS OF SYNTHETIC FATTY

AUTHOR--(03)-GUSAROVA, M.S., VAYNSHTOK, V.V., CHERNOZHUKOV, N.T.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970; (2), 43

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FATTY ACID, GREASE, CHEMICAL COMPOSITION, ORGANOLITHIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1513

STEP NO--UR/0318/70/000/002/0043/0043

CIRC ACCESSION NO--AP0118500

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/2 018

CIRC ACCESSION NO--AP0118500
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE DISPERSION MEDIA WERE NAPHTHENIC AROMATIC AND PARAFFINIC SPINDLE OILS, THE SAME OILS DEAROMATIZED WITH OLEUM, AND HIGH VISCOSITY NAPHTHENIC PARAFFINIC OILS, USING 9PERCENT LI SOAPS OF C SUB10-12, C SUB12-14, C SUB14-16, AND C SUB17-19 FATTY ACIDS AS THICKENING AGENT. A SATISFACTORY GREASE WAS OBTAINED WITH NAPHTHENIC PARAFFINIC SPINDLE OIL ONLY WHEN THE LATTER WAS THICKENED WITH SOAP OF C SUB14-16 FATTY ACIDS. THE SOAPS OF ALL ACID FRACTIONS HAD LOW THICKENING EFFECTS IN HIGH VISCOSITY OILS. ADEQUATE LI GREASES WERE OBTAINED WHEN AROMATIZED OILS OR DISTILLATES WERE THICKENED WITH THE NARROW FRACTION OF FATTY ACID WHICH HAD THE OPTIMUM THICKENING EFFECT.

FACILITY: MINKHGP IM. GUBKINA, MOSCOW, USSR.

UNCLASSIFIED

UDC 632.95

USSR

VAYNTRAIK, F. P., and PATRASHKU, F. I.

"Concerning Isolation of Pesticides and Purification of Extracts in Determining Trace Quantities of Pesticides in Products Derived from Plants"

Tr. 2-g0 Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryazneniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on Investigation of Residues of Pesticides, and Prevention of Pesticide Contamination of Foodstuffs, Fodder and the External Environment), Tallinn, 1971, pp 337-344 (from RZh-Khimiya, No 11, Jun 72, Abstract No 111/412)

Translation: The nature of the substrate, the mechanism of action of the pesticide and the nature of the toxic residue determine the selection of the method of extracting a pesticide from plant matter. Steam distillation extraction in the Soxhlet apparatus, homogenization and cold agitation are used. The last method is recommended for organochlorine and organophosphorus compounds. Sublimation under vacuum and distribution between two solvents are used for purifying extracts.

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UDC 632.95

USSR

VAYNTRAUER, F. P., and SOROKSKAYA, L. B.

"Phthalophos Determination in Apples by Thin Layer Chromatography and Photo-colorimetry Methods"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryazneniya im produktov pitaniya, korov i vnesh. sredy (Transaction of the Second All-Union Conference on the Study of Pesticide Residues and Prevention of Their Contamination of Food Products, Fodder and the External Environment), Tallinn, 1971, pp 139-142 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N477 by T. A. Belyayeva)

Translation: Phthalophos (I) is extracted from 100-100 g of apples with C_6H_6 for 30 min. and for 15 min. with shaking, and the extracts are treated with 0.1 M HCl and boiled down at 50° . The residue is dissolved in 15 ml of ethyl alcohol with heating, 75 ml 0.1 HCl (45°) is added, filtered, the filtrate is washed with 5 ml HCl, the solution is extracted with $CHCl_3$ (100 and 50 ml), the extract is dried over Na_2SO_4 and concentrated. I is determined by TLC on silicic acid fixed with plaster of Paris in a cyclohexane- $CHCl_3$ acetone
1/2

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USSR

VAYNTRAUB, F. P., et al., Tr. 2-go Vses. soveshch. po issled. ostatkov i profilakt. zagryazneniya imi produktov pitaniya, kormov i vnesh. sredy, Tallinn, 1971, pp 139-142

system (50:10:5). Determination of I according to phosphorus is done with to phosphomolybdic blue after wet combustion of I. The colorimetric method is based on alkaline hydrolysis of I and determination of a yellow-stained complex obtained by the reaction of dimethyldithiophosphoric acid with CuSO_4 .

2/2

UDC 543.8:632.951

USSR

LYALIKOV, YU. S. (Editor-in-Chief), Academician of Academy of Sciences
Moldavian SSR, VAYNTRAUB, F. P., VYLEGZHANINA, G. F., Candidates of Agricultural
Sciences, SISTER, YU. D., Candidate of Chemical Sciences (Editors) *Metody*
Analiza Pestitsidov (Analysis Methods of Pesticides), Moscow, Izdatel'stvo
Nauka, 1972

Translation: Annotation: This book includes articles presented at the All-
Union Conference on Analysis Methods of Pesticides in Preparations, Food Products,
Soil, and Water.

Many analytical problems of pesticides in commercial products are consid-
ered, including the determination of their concentration in different objects.
The latter is of particular importance for the environment and food products
from the point of view of the sanitary and hygiene engineering.

Different analysis methods of pesticides are suggested, including gas and
thin-layer chromatography, spectrophotometry, and polarography.
The book is intended for researchers, personnel of industrial laboratories,
and sanitary-epidemiological stations.

Foreword: An intensive development of agriculture requires a maximal
decrease of losses caused by insects, diseases, and weeds. In order to meet
these requirements, chemical protection of plants is needed.

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USSR

LYALIKOV, YU. S., et al., *Metody Analiza Pestitsidov*, Izdatel'stvo Nauka, 1972

However, a wide application of pesticides and herbicides causes many unwanted aftereffects. Some compounds, chiefly the chlorine-containing organic compounds (DDT, HCCH [hexachlorocyclohexane], heptachlor, and others) are preserved for a long time in plants in a crop. They are also capable of accumulating in organisms of man and animals in quantities dangerous for health. Other compounds (derivatives of carbamic, thio- and dithiophosphoric acids) are highly toxic during their application and they are capable of penetrating the plant and animal organisms and migrate in plants.

Thorough studies must be conducted before wide application of effective compounds. Research scientists of ministries of agriculture, health, and chemical industry are working on problems to find new low-toxic and selective compounds, to establish acceptable residue doses of pesticides in different products of animal and plant origin, and to investigate their behavior in the biological materials.

Solution of the majority of these problems requires the use of highly sensitive and specific analytical methods.

A development of these methods is complicated by the presence of high amounts of the coextractive substances together with the micro-quantities of active substances in samples subjected to analysis. This requires the use of the newest analytical instruments.

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USSR

LYALIKOV, YU. S., et al., *Metody Analiza Pestitsidov*, Izdatel'stvo Nauka, 1972

This collection of conferences papers on analysis of pesticides is the first attempt to put together the most widely used methods for the analysis of insecticides, fungicides, and herbicides.

The authors of papers in this book have used extensively the thin-layer chromatography, colorimetry, spectrophotometry in visible, ultraviolet, and infrared spectral regions, polarography, and gas chromatography for the analysis of these compounds. Gas chromatography makes it possible to increase considerably the sensitivity of analytical methods.

Articles published in this book will be useful for many analytical chemists working in cooresponding laboratories.

The editors thank K. F. Novikova, S. V. Makarova, and G. S. Supin for their help during the collection of materials.

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USSR

LYALIKOV, YU. S., et al., *Metody Analiza Pestitsidov*, Izdatel'stvo Nauka, 1972

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USSR

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USSR

LYALIKOV, YU. S., et al., *Metody Analiza Pestitsidov*, Izdatel'stvo Nauka, 1972

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USSR

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USSR

LYALIKOV, YU. S., et al., Metody Analiza Pestitsidov, Izdatel'stvo Nauka, 1972

SIMONOV, V. D., MAMINA, F. A., GERASIMOV, A. I., ALYANKIN, YU. N., AKHUNOV, T. F., and VYAZOVKINA, G. I. "Determination of the Base Substance in Herbicidal Preparations of Yalan" 138

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8/8

USSR

RUBENCHIK, YU.I., KROSHKIN, V.A., MEDINSKAYA, I.P., PROLOV, O.F., ZHERDEV, A.V., and VAYNTRAUB, S.S., VNIIPKhimnefteapparatury and Kommunarsk Metallurgical Plant.

"High-Strength Sheet Steel 10G2FR"

Moscow, Metallurg, No 8, Aug 71, pp 25-26

Abstract: On the basis of investigating 09G2S and 16GS low-alloy steels, melted in 100-kg induction and 3-ton electric furnaces, the optimum composition of 10G2FR steel was established. At the Kommunarsk Metallurgical Plant two heats were melted in 300-ton open-hearth furnaces by conventional technology and deoxidized with ferrosilicon, silicomanganese, and aluminum. The resulting slabs were rolled into sheet and the mechanical properties of the sheet were determined. When the sheet was heat treated by heating to 930-950°C water quenching, and tempering at 660°C. In all cases the heat-treated sheet exhibited much greater mechanical properties for all thicknesses tested than were shown by the steel in the hot-rolled state. It was found that 10G2FR steel also possesses good weldability without pre-heating. At the Volgograd Petroleum Equipment Plant (Plant Petrov) the first batch of fabricated vessels were made of 10G2FR steel and are designated to be used under pressures of 8-55 kg/cm² at temperature down to -40°C.

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UDC 669.14.018.29-414

USSR

GOL'DSHTEYN, M. I., BLYUM, E. E., GRIN', A. V., SELETKOV, A. I., LITVINENKO, D. A., LEYKIN, I. M., RUDCHENKO, A. V., OREL, E. I., VAYNTRAUB, S. S., LOKTIONOV, P. Ya., LASHCHEV, V. Ya., MOSIOSHVILI, V. V., MIROSHNICHENKO, S. I., and KONDRASHOV, M. M., Ural Scientific Research Institute of Ferrous Metals, Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin, and Kommunarsk Metallurgical Plant

"Adoption of the Industrial Production of 15G2AF Sheet Steel"

Moscow, Stal', No 9, Sep 70, pp 828-830

Abstract: An investigation of the 15G2AF plate steel (10-25 mm), commercially produced at the Kommunarsk Metallurgical Plant, revealed that alloying of the manganous structural steel with nitrogen and vanadium increases the strength and plasticity properties of the normalized rolled steel. Normalizing of the metal effects a size reduction of the grain (to 10-12), which assures a low (-100°C to -120°C) cold brittleness threshold. The strength of the 15G2AF steel was found to be at least 60 kg/mm² and the yield stress at least 45 kg/mm². Use of 15G2AF steel for welded structures decreased weight, in comparison with steel 10G2S1, by 13.6%.

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1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--COMPOSITION OF PRODUCTS FROM THE OXIDATION OF THE METHYL ESTER OF
CYCLOHEXANECARBOXYLIC ACID -U-
AUTHOR-(02)-VAYNTRAUB, YU.YA., FREYDIN, B.G.
COUNTRY OF INFO--USSR
SOURCE--NEFTEKHIMIYA 1970, 10(1), 68-72
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CARBOXYLIC ACID ESTER, CYCLOHEXANE, OXIDATION, CHROMATOGRAPHY,
HYDROPEROXIDE, FREE RADICAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0575 STEP NO--UR/0204/70/010/001/0068/0072
CIRC ACCESSION NO--AP0119493
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/2 019

CIRC ACCESSION NO--AP0119493
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. ME CYCLOHEXANECARBOXYLATE (I) (60
G) WAS OXIDIZED WITHOUT CATALYST 34 HR AT 130DEGREES IN A GLASS COLUMN
BY O, INTRODUCED THROUGH A POROUS BOTTOM AT 8 L.-HR. BY CHROMATOGRAPHIC
ANAL. THE COMPN. OF THE REACTDN MIXT. WAS: I 50.2PERCENT; ME
1-HYDROXYCYCLOHEXANECARBOXYLATE 16.9PERCENT; 2-OXOHEPTANEDIOIC ACID, ITS
ENOLIC FORM (2-HYDROXY-2-HEPTENEDIOIC ACID) AND THE LACTONE OF THE
LATTER 6.3PERCENT; MONO-ME 1,2,4,BUTANETRICARBOXYLATE 7.8PERCENT;
HEPTANEDIOIC ACID 4.5PERCENT; AND OTHER COMPS. (CONTG. SOME
CYCLOHEXANONE) 14.3PERCENT. THE NATURE OF THE PRODUCTS SHOWS THAT THE
TERTIARY C-H BOND IS MOST VULNERABLE TO O ATTACK, TO FORM A
HYDROPERIOXIDE. SINCE THE TERTIARY C OF I IS IN THE ALPHA POSITION, THE
ALPHA FREE RADICALS, WHICH FORM ON DECOMPN. OF THE PEROXIDE, ARE
STABILIZED THROUGH CONJUGATION WITH THE PI ELECTRONS OF THE CARBOXYL
GROUP.

FACILITY: VSES. NAUCH.-ILLSED. INST. NEFTEKHIM.

PROTSESSOV, LENINGRAD.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--PREPARATION AND SOME PROPERTIES OF ZINC CYANAMIDE -U-
AUTHOR--(05)-GALOCHKINA, G.M., GORYUNOVA, N.A., SEYFER, G.B., VAYPOLIN,
A.A., KHARITONOV, YU.YA.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 486-92
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PHYSICAL CHEMISTRY PROPERTY, IR SPECTRUM, ABSORPTION SPECTRUM,
THERMAL DECOMPOSITION, CYANAMIDE, ZINC COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1994/1901 STEP NO--UR/0363/70/006/003/0486/0492
CIRC ACCESSION NO--AP0115720
UNCLASSIFIED

PROCESSING DATE--09OCT70

UNCLASSIFIED

2/2 025

CIRC ACCESSION NO--AP0115720

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

ABSTRACT. DURING INVESTIGATION OF THE ZN(GAC) SUB2 H SUB2 NCN SUB2 H SUB2 O NH SUB4 OH SYSTEM BY PHYS. CHEM. ANAL. METHODS, THE FORMATION OF ZNCN SUB2 AND BASIC (ZN(OH)) SUB2 CN SUB2 WAS ESTABLISHED. IN THE ABSENCE OF A CONST. GAS EXCHANGE THE THERMAL DECOMP. OF ZNCN SUB2 PROCEEDS AT GREATER THAN 824DEGREES WITH THE EVOLUTION OF N AND THE FORMATION OF METALLIC ZN AND FREE C. THE D. OF NORMAL ZNCN SUB2 WAS DETD. TO BE 2.825 G-CM PRIME3 AND THE WIDTH OF THE FORBIDDEN BAND WAS SIMILIAR TO 3.1 EV. THE IR ABSORPTION SPECTRA OF NORMAL CYANAMIDES OF ZN AND CD WERE STUDIED, ATTESTING TO THE SYM. STRUCTURE OF THE CYANAMIDE GROUP IN BOTH COMPS.

FACILITY: FIZ. TEK. INST. IM. IOFFE, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 53:07/.08

SERGINOV, M., GORYUNOVA, N. A., KRADINOVA, L. V., VAYPOLIN, A. A., PROCHUKHAN, V. D.

"Solid Solutions in the Zn-Cd-As-Te System"

Tr. Kishinevsk. politekhn. in-ta (Works of Kishinev Polytechnical Institute)
1969, vyp. 12, pp 16-19 (from RZh-Fizika, No 1, Jan 70, Abstract No 1A511)

Translation: Direct synthesis is used for producing solid solutions in the Zn-Cd-As-Te system in the $Zn_3As_2-2CdTe$ and $Cd_3As_2-2ZnTe$ cross sections. It is found that the range of solubility in the $Zn_3As_2-2CdTe$ cross section goes up to 20-25 mol.% $2CdTe$, and in the $Cd_3As_2-2ZnTe$ system -- up to 15-20 mol.% $2ZnTe$. Solid solutions of $Zn_3As_2-2CdTe$ with a wider concentration -- up to 35 mol.% $2CdTe$ -- were synthesized by the method of transport reactions in a closed system. The given method was used for producing single-crystal specimens on which physico-chemical measurements were made. Authors' abstract.

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- 109 -

E. Mathematical Modelling of Thought Processes

USSR

VAYRADYAN, A. S. and LAVRENT'YEV, V. S.

"Analysis of Three-Layer Perceptrons for Learning with Error Correction"

Inzh. Mat. Metody v Fiz. i Kibernet. [Engineering Mathematics Methods in Physics and Cybernetics -- Collection of Works], No 2, Moscow, Atomizdat Press, 1973, pp 70-79 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V773)

Translation: The behavior of a three-layer perceptron is studied with a simple R-element, the reaction of which to a stimulus is represented by ρ , while the true value of the output is represented by r^* . The correction of errors is fixed by the following relationships: $\eta = \Delta V$ if $\rho - r^* = 2$; $\eta = \alpha \Delta V$ if $\rho - r^* = 1$; $\eta = -\Delta V$ if $\rho - r^* = -2$; $\eta = -\alpha \Delta V$ if $\rho - r^* = -1$; $\eta = 0$ if $\rho - r^* = 0$, where $0 < \alpha < 1$, ΔV is the step of change of the weight of the perceptron, the initial values of which are equal to zero. The studies are performed for the case $\alpha = 1/2$. An analytic expression is produced for the sum of the inputs U_x to the R-element when the test stimulus S_x is presented after a fixed learning sequence has been presented. An approximate method is studied for determination of the mathematical expectation and dispersion of the value of U_x , based on approximation of the joint distribution rule of the num-

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USSR

VAYRADYAN, A. S. and LAVRENT'YEV, V. S., Inzh. Mat. Metody v Fiz. i Kibernet., No 2, Moscow, Atomizdat Press, 1973, pp 70-79

ber N_{ij} , N_{em} A-elements excited by the corresponding stimuli, and $f(U_{kt}) = \text{sign } U_{kt}$, the normal rule of joint distribution of these quantities. Block diagrams are presented for the programs for calculation of $E(U_x)$, $\sigma^2(U_x)$ and $E(U_{54})$. A method is also studied for precise determination of $E(U_x)$ and $\sigma^2(U_x)$ for the case when with a fixed learning sequence, correction in any perceptron of the fixed class is performed as in a full perceptron.

A. Doroshenko

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ELECTRONICS

Amplifiers

UDC 621.317.76:621.375

USSR

V
Vaysband, M.D.

"High-Resistance DC Instrumentation Amplifier with Semiconductor Pulse Modulator"

Tr. metrol. in-tov SSSR (Transactions of the Metrology Institutes of the USSR), 1969, vyp. 107 (167), pp 117-123 (from RZh-Radio-tekhnika, No 2, Feb 70, Abstract No 2A377)

Translation: The article describes a DC amplifier containing a modulator, an AC amplifier, and a demodulator. The modulator is made in the form of a gate using two opposed silicon transistors, to the midpoint of which there current gating pulses with a high pulse rate are applied, providing a high amplifier input resistance. To reduce the input current components resulting from the gating pulses, a current compensating circuit is introduced; and to exclude the influence of the transistor reverse current, an
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USSR

Vaysband, M. D., Tr. metrol. in-tov SSSR, 1969, vyp. 107 (167), pp 117-123 (from RZh-Radioteknika, No 2, Feb 70, Abstract No 2A377)

autocompensation metering scheme is used. The article examines the factors determining the amplifier input resistance and describes the measurement error. In this DC amplifier, the input current does not exceed 10^{-9} A, the input voltage drift is less than 2mV per hour, and the input voltage limits are ± 10 V. The possibility of reducing the input current to 10^{-11} A is indicated. Five illustrations. One Table. Two References. Resume.

2/2

-1-

UDC 621.791.75:621.397.13

USSR

VAYSBAND, YA. S., VOYTSEKHOVSKIY, A. B., ZHURISHKIN, A. P., Central Scientific Research Institute of Transportation Construction

"Television Scanning System for Automation Direction of the Electrode Along the Joint"

Kiev, Avtomaticheskaya Svarka, No 7, 1971, pp 49-52

Abstract: The television scanning system developed by the authors is described. It differs from the known systems [Dudenkov, Obmen opytom v radioelektronnoy proizvodstvo, No 7, Kiev, 1964; Demchenko, et al., Svarochnoye proizvodstvo, No 2, 1970 and Wall, et al., Welding Journal, No 9, 1969] both with respect to the principle of separation and processing of the information on the electrode position relative to the joint and their possibilities. When using the given scanning system it is possible automatically to guide both the tip of the welding unit and the end of the consumable electrode along the joint, and the welding process and position of the electrode can be observed remotely. The system developed for the Neptun automatic welding machine can be adapted to any machine designed for gas-blanketed welding of joints by a nonconsumable electrode. The operation of the device, its assembly, and technical specifications are discussed in detail. The results of testing the system demonstrated that it provides for automatic direction of the electrode along the joint with an

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USSR

VAYSBAND, YA. S., et al., Avtomaticheskaya Svarka, No 7, 1971, pp 49-52

accuracy no worse than 0.7 mm during single-pass welding of rectilinear and curvilinear joints without and with taper of the edges at speeds of 10-40 meters/hour.

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USSR

UDC: 621.396.67.012.12.095.111

VAYNER, Yu. A., VAYSBERG, A. I., LEONT'YEV, V. A., PODLIPALIN, V. I.

"On Changing the Radiation Pattern in the Horizontal Plane for Overhead Antennas"

Tr. Novosib. elektrotekhn. in-ta (Works of the Novosibirsk Electrical Engineering Institute), 1970, vyp. 2, kn. 1, pp 18-22 (from RZh-Radiotekhnika, No 6, Jun 70, Abstract No 6B5)

Translation: The authors consider the effect of the mirror image of an antenna on its radiation pattern above the plane of the uniform earth, and the errors introduced by this image in measurements of the radiation pattern. It is shown that distortions in the principal maximum may be slight; however, the side lobes may be subjected to considerable interference distortions since the amplitudes of the side lobes in the directional patterns of the forward and reflected beams are approximately identical. Therefore antennas should be raised to a sufficient height in measuring the level of the side lobes under free-space conditions, and the antenna and observation point should be separated by a known distance when measuring this level where the ground is present. Two illustrations, bibliography of one title. H. S.

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USSR

UDC 541.183.24

VAYSBERG, E. S., YAKHONTOVA, L. F., and BRUNS, B. P., All-Union Scientific Research Institute of Antibiotics

"Ion Exchange Kinetics of Large Organic Ions on Carboxylic Cationites. V. Resilient Properties of Cations with Different Degree of Substitution of Inorganic Sodium Anti-ions by the Streptomycin Ions"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 9, Sep 70, pp 2361-2363

Abstract: Resilient properties of the grains of Zerolite 226 cationite were studied under conditions of different degree of crosslinking of the sorbent as related to the ionite's content of organic anti-ions and temperature. With transition of the carboxyl cation from the sodium form to the organic form, the grain resilience decreases but only when the sorbent has a specific degree of crosslinking. Lower resilience of the ionite grains is evidently due to the fact that the triple charge streptomycin ions act in a way as an additional cross-linkage.

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USSR

UDC 615.331 (PRODIGIOSANUM).015.46

YERMOL'YEVA, Z. V., VAYSBERG, G. YE., BRAUDE, A. I., TARANENKO, L. A., LUSHINA, L. A., GIVENTAL', N. I., and SHCHERBAKOVA, E. G., Laboratory of Medical Pathology and Laboratory of New Antibiotics, Chair of Microbiology, TsIU [Central Institute for the Advanced Training of Physicians], Moscow

"The Effect of Prodigiozan Inhalation on the Immunological Reactivity of the Human Body"

Moscow, Antibiotiki, Vol 18, No 1, 1973, pp 76-79

Abstract: Inhalation of prodigiozan promotes immune reactions in the human body. Thus, in a group of 78 subjects aged 19 to 59, a single inhalation of 5 ml of a 0.04% prodigiozan aerosol (obtained under 0.5-0.8 atm at a rate of 12-15 l/min) increased the number of active neutrophils from 53 to 74% in 24 hrs in all subjects, and the increased phagocytic activity was maintained at least up to the 48th hr after inhalation. At the same time, the inhaled prodigiozan increased alkaline phosphatase activity in the neutrophils of peripheral blood from 42 to 115 conventional units in 35 out of 39 subjects, raised lysozyme concentration from 2.7 to 3.5 mcg/ml of blood serum in 12 out of 27 subjects, and induced formation of interferon in titers of 7-13 units/ml serum in 10 out of 10 subjects. It is concluded that a single inhalation of 1/2

USSR

YERMOL'YEVA, Z. V., et al., Antibiotiki, Vol 18, No 1, 1973, pp 76-79

prodigiozan aerosol significantly stimulates humoral and cellular components of human immunological reactivity.

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USSR

UDC 615.331(Prodigiosanum).015.46

YERMOL'YEVA, Z. V., VAYSBERG, G. YE., TARANENKO, L. A., EYDEL'SHTEYN, S. I.,
Laboratory of Medical Cytology, Chair of Microbiology, and PROKHOROVA, I. I.
Central Institute of Advanced Training of Physicians and Aerosol Laboratory,
All-Union Scientific Research Institute of Antibodies

"Effect of Experimental Inhalation of Prodigiosan Aerosols on Some Indices of
Immunobiological Reactivity"

Moscow, Antibiotiki, No 12, 1971, pp 1076-1081

Abstract: Inhalation of the bacterial polysaccharide prodigiosan (a stimulant of the reticuloendothelial system) resulted in satisfactory absorption of the substance and a pronounced systemic reaction in rabbits. A single inhalation (1 μ g/ml) caused the number of leukocytes in 1 mm of peripheral blood to double within 24 hours and remain at that level for 6 to 8 days. Single inhalation also greatly increased the number of neutrophils and stab cells for several days. Twenty-four hours after inhalation, serum opsonin-phagocytic activity increased almost 3-fold and did not return to the original level until day 10. Intramuscular injection of prodigiosan produced similar blood shifts. Inhalation of prodigiosan (50 to 200 μ g/ml) had no effect on the ciliated epithelium of isolated kitten and puppy tracheas. These results warrant clinical trials of prodigiosan as a prophylactic agent.

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USSR

UDC 541.632+538.113:661.718.1

MASTRYUKOVA, T. A., SHIPOV, A. E., VAYSBERG, M. S., PETROVSKIY, P. V., and
KABACHNIK, M. I., Institute of Heteroorganic Compounds, Academy of Sciences
USSR

"PMR Study of Diastereoisomerism of Substituted O-Ethyl Methylthiophos-
phonates"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 8, Aug 71, p
1841

Abstract: In compounds of the general formula $CH_3(C_2H_5O(P(S)SCH_2C(O)NHCH$
(R)-COOH [R = H (I), CH_3 (II) and $i-C_3H_7$ (III)], (II) and (III) contain two
asymmetric centers separated by five single bonds. Nevertheless, the PMR
spectra of the resultant mixture of diastereomers clearly shows two doublet
signals for the methyl protons corresponding to the two diastereomers. The
difference in chemical shifts varies according to compound and solvent from
0.06 to 0.1 p.p.m., with the maximum for compound (III) in benzene. This
difference is great for substances in which the asymmetric centers are far
removed from each other. Thus, it is shown that diastereomerism can be
found in the PMR spectra for molecules with separated asymmetric centers.
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USSR

UDC 678.743.22.01:537.311

SICHKAR', V. P., and VAYSBERG, S. E.

"Influence of Acceptor-Donor Impurities During the Radiation on the Electrical Conductivity of Polyvinylchloride"

Moscow, *Plasticheskiye Massy*, 7, 1973, pp 5-7

Abstract: A study was made of the relationship of the electrical conductivity (σ) to the dose (I) of γ -radiation from a Co^{60} source for polyvinylchloride (PVC) containing acceptor impurities (duroquinone, chloranil, and tetracyanodimethane) and donor impurities (tritoluene amine). The impurities (0.2 to 0.9 mol %) did not exert a significant influence on either σ or on the exponent Δ in the equation $\sigma \propto I^\Delta$. The conductivity $\sigma \times 10^{-15} \text{ ohm}^{-1} \cdot \text{cm}^{-1}$ varied from 3.5 for a Δ of 0.88 to 6.6 for a Δ of 0.92 (the maximum Δ was 1.00). The concentration (p) of the carrier current in the conducting zone can be expressed as $p = N_c e^{E_f/kT}$ where $N_c = 10^{19} \text{ cm}^{-3}$ is the effective density of the compound near the bottom of the conducting zone and E_f is the depth of the Fermi quasiplane which changes with T and I. Some values obtained were $p = 10^9 \text{ cm}^{-3}$ and 10^6 cm^{-3} for $E = 0.6 \text{ ev}$ and 0.8 ev respectively. Using $\sigma = pq\mu$, $\mu = 10^{-4} \text{ cm}^2/\text{volt} \cdot \text{sec}$ and $10^{-1} \text{ cm}^2/\text{volt} \cdot \text{sec}$ for the above values of E.

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USSR

UDC 537.342.5

VAYSBERG, S. B., SICHKAR', V. P. and KARPOV, V. L.; Scientific-Research Institute imeni L. Ya. Karpov

"A Study of Radiation-Induced Electric Conductivity in Polymers"

Moscow, Vysokomolekulyarnyye Soyedineniya, Vol XIII, No 11, 1971, pp 2502-2507

Abstract: As is known, the electric conductivity of polymers varies sharply in the presence of ionizing radiation, but returns to its original level after removal of the latter. Seven polymers were studied in this connection (high-pressure polyethylene, low-pressure polyethylene, etc.) and for these the relationship between radiation conductivity σ and dose rate j and temperature T was determined.

Definite linear portions of $\log \sigma = f(T)$ were found to agree among themselves for all the polymers studied, within the limits of the Rose-Fowler model (they had the same slope). Areas of temperatures with deviation from that required by the model were observed, this being explained on the basis of structural transitions in the polymers corresponding to change in the concentration of traps, a result of the presence of structural defects.

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Acc. Nr:

AP0052508

Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:

4R0460

101309z Dielectric properties of poly(tetrafluoroethylene) during irradiation with cobalt-60 γ -rays and with fast electrons. Matveev, V. K.; Valsberg, S. E.; Karpov, V. L. (Fiz.-Khim. Inst. im. Karpova, Moscow, USSR). *Vysokomol. Soedin., Ser. B* 1970, 12(1), 31-5 (Russ). The increase of \tan (dielec. loss angle) ($\tan \delta$) during the irradiation of poly(tetrafluoroethylene) (I) in air or in vacuum without previous degasification is due to the formation of peroxy radicals in the middle or at the ends of the I chain, i.e., $-\text{CF}_2\text{CF}(\text{OO}\cdot)\text{CF}_2-$ (II) or $-\text{CF}_2\text{CF}_2\text{OO}\cdot$ (III) groups. Heating the irradiated I to $\leq 150^\circ$ destroys III; II decomp. only at 250° . The rate of $\tan \delta$ increase is not limited by the diffusion rate of O into I when the radiation rate is 250 rads/sec. However, at 7.3×10^4 rads/sec, O diffusion controls the rate of $\tan \delta$ increase.

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19821149

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Aerosols

USSR

UDC 532.529.6

GOLUB, S. I., ROZEN, A. M., VAYSBLAT, M. B., and BOTINTSEVA, T. I.,

"The Height to Which Liquid Droplets are Raised in a Vertical Gas Flow"

Moscow, Teoreticheskiy Osnovy Khimicheskoy Tekhnologii, Vol 6, No 3,
May/June 72, pp 484-490

Abstract: Equations are derived for computing the height to which droplets formed in bubbling operations are raised in a vertical gas flow, and the effects of some parameters on this height are analyzed. The droplet path can be divided into two regions -- one in which the droplet moves faster than the gas flow and one in which its velocity is lower than the gas flow velocity. The equations relate droplet mass, the vertical component of the droplet's absolute velocity, resistance of the medium, droplet diameter, specific weights of liquid and vapor, relative drop velocity, hydraulic resistance, and gas flow velocity. The dependence of maximum height on droplet diameter is analyzed. Computer analysis of the equations demonstrated that when initial droplet velocity is higher than vapor velocity, the final height increases with increasing droplet diameter, while in the reverse case the final height increases with decreasing droplet diameter. Changes in medium density from 0.05 to 1.3 kg/m³ have little effect on height. The

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USSR

GOLUB, S. I., et al., Teoreticheskiy Osnovy Khimicheskoy Tekhnologii,
Vol 6, No 3, May/ Jun 72, pp 484-490

analysis assumes sphericity of the droplets and neglects the buoyancy of the carrier gas.

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USSR

UDC 577.4

VAYSBORD, E. M.

"Games of Automata With Linear Tactics With Different Memory Depths"

V sb. Izbr. tr. Vses. mezhvuz. simpoz. po prikl. mat. i kibernet., Gor'kiy, 1967 (Selected Works of the All-Union Inter-VUZ / Higher Educational Institution / Symposium on Applied Mathematics and Cybernetics, Gor'kiy, 1967 -- Collection of Works), Moscow, "Nauka," 1973, pp 150-152 (from RZh-Matematika, No 6, Jun 73, Abstract No 6V421 from author's abstract)

Translation: The article considers a game of two automata with linear tactics of the type Bk_1, m_1, k_1 (according to M. L. TSETLIN). Each of the automata can perform several different operations. If the memory depth is the same for the two automata, it is shown that most of the time the automaton performs an operation in which the penalty probability is minimal.

1/1

- 12 -

1/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SPECIFIC ULTRASTRUCTURAL FEATURES OF THE SMALL INTESTINE MUCOSA IN
PATIENTS WITH CHRONIC ENTEROCOLITIS -U-
AUTHOR--(04)-ZUFAROV, K.A., TASHKHODZHAYEV, P.I., SHISHOVA, YE.K.,
VAYSBROT, V.V.
COUNTRY OF INFO--USSR
SOURCE--ARKH PATOL 32(1): 45-52. ILLUS. 1970
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ENTEROCOLITIS, SMALL INTESTINE, BIOPSY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0237 STEP NO--UR/9056/70/032/001/0045/0052
CIRC ACCESSION NO--AP0134042
UNCLASSIFIED

2/2 017

CIRC ACCESSION NO--AP0134042

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SAMPLES OF THE SMALL INTESTINE MUCOSA WERE OBTAINED FROM PATIENTS SUFFERING CHRONIC ENTEROCOLITIS BY USING THE ASPIRATION BIOPSY METHOD. PRYSMATIC CELLS OF THE EPITHELIUM WERE STUDIED BY MEANS OF ELECTRON MICROSCOPY. A LARGE NUMBER OF PRYSMATIC ABSORBING CELLS WERE DEMONSTRATED WITH ACCUMULATED AND SECRETED MUCIGEN THUS CHANGING THEIR FUNCTION. THE EPITHELIAL CELLS ARE CONSIDERED PROTECTIVE. THIS REACTION MAY REPRESENT A MORPHOLOGIC BASIS OF THE MALABSORPTION SYNDROME IN PATIENTS SUFFERING FROM CHRONIC ENTEROCOLITIS.

FACILITY: TASHKENT MED. INST., TASHKENT, USSR.

UNCLASSIFIED

USSR

UDC 621.396.43

VAYSBERG, G.M., NEMIROVSKIY, A.S.

"Use Of Composite Signal On Lines Of Tropospheric Scattering Of USW"

Elektrosvyaz, No 3, Mar 1972, pp 40-47

Abstract: Parallel composite signals are considered, obtained by the method of complementary frequency modulation by a sinusoidal tone of a high-frequency signal already modulated with respect to frequency by a signal, as well as the statistical characteristics of the ratio of the signal power to the noise power at the output of a device for optimum joint processing of the elements of a composite signal during reception "as a whole." The optimum frequency modulation indices for a complementary tone are found as well as the statistical laws of distribution of the ratios of the signal and noise powers at the output of a system of optimum processing of a composite signal. 6 fig. 5 ref. Received 30 Apr 71.

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USSR

UDC 621.396.621.59:621.391.812.7(088.8)

VAYSBURG, G. M., GUSYATINSKIY, I. A., KOZLOV, V. V., NEMIROVSKIY, A. S., PLEKH-
ANOV, V. V., BERNOSKUNI, YU. V.

"Device for Signal Reception with Equivalent Frequency Spacing"

USSR Author's Certificate No 296221, filed 21 Jul 1969, published 8 Apr 1971
(from RZh-Radiotekhnika, No 1, 1972, Abstract No 1D78P)

Translation: A device is introduced for signal reception with equidistant frequency spacing containing heterodynes and two frequency converters connected in series to it, the input signal to the first of which is fed directly and the input signal to the second of which is fed via a delay line. The device also includes a phase detector one of the inputs of which is connected to the output of the first converter via a band filter. For reception of $N - 1$ signals with equidistant frequency spacing by one device, for a decrease in distortions, a phase modulator the control input of which is connected to the output of the phase detector is included between the output of the mentioned heterodyne and the other input of the phase detector. The delay of the delay line is selected equal to the inverse of the frequency separation, and the pass band of the band filter is selected not exceeding twice the magnitude of the frequency separation.

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Acc. Nr.: AP0046762

Ref. Code: UR0125

USSR

UDC 621.791.75

NIKHEINSON, YU. I., SUIYATIN, V. I., GOLEMO, S. B., SLOBIN, B. Z., GRUDO,
A. I., VAYSBURD, I. SH.

"Welding the Frame of the Self-Propelled Chassis T-16M"

Kiev, Avtomaticheskaya Svarka (Automatic Welding), No 1, 1970, pp 44-46
(from Avtomaticheskaya Svarka, No 1, 1970, p 80)

Translation: The results of selecting the technological process for
welding steel 45L with an increased carbon content are discussed. It is
recommended that the welding be performed in two layers without prelimin-
ary heating. There are 3 illustrations.

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di 18

Reel/Frame
19790066

USSR

UDC 621.3.049.75

NEFEDOV, V. S., YAKOVLEV, V. A., BOLOTOV, G. V., KIREYEV, I. V., UMOV, V. S.,
GRISHCHENKO, G. V., VAYSBERG, A. O.

"A Method of Making Multilayered Printed-Circuit Boards"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obratny, tovarnyye znaki,
No 2, Jan 71, Author's Certificate No 290492, division 2, filed 18 Dec 67,
published 22 Dec 70, pp 169-170

Translation: This Author's Certificate introduces a method of making multi-layered printed-circuit boards which is based on stacking the boards followed by interconnection of the current-conducting sections. As a distinguishing feature of the patent, the manufacturing technique is simplified and the resolving capacity of the boards is improved by connecting the outer current-conducting layers to the inner layers, and interconnecting the inner layers, the interlayer connections of the boards being made by current-conducting pins.

1/1

- 50 -

1/2 012
UNCLASSIFIED
PROCESSING DATE--04DEC70
TITLE--HIGH ENERGY PROTONS DURING THE ABSORPTION OF MUONS BY EMULSION
· NUCLEI -U-
AUTHOR--(03)-VAYSENBERG, A.O., KOLGANOVA, E.D., RABIN, N.V.
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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPECTRUM OF RHO WITH ENERGIES
 E SUBP GREATER THAN OR EQUALS TO 25 MEV WAS INVESTIGATED, THE RHO BEING
 EMITTED FROM HEAVY NUCLEI OF AG, BR EMULSION DURING THE ABSORPTION OF
 STOPPED NEG. MUONS. THE NOS. OF THE FAST SECONDARY RHO PER ONE
 ABSORPTION ACT WERE (3.16 PLUS OR MINUS 0.34) TIMES 10 PRIME NEGATIVE 4
 AND (4.7 PLUS OR MINUS 1.1) TIMES 10 PRIME NEGATIVE 5 FOR THE E SUBP
 VALUES GREATER THAN 25 AND GREATER THAN 40 MEV., RESP. THE BACKGROUND
 FROM THE PION STARS WAS CAREFULLY ANALYZED. THE BACKGROUND FROM 1 PRONG
 PION STARS WITH THE ENERGIES OF RHO GREATER THAN OR EQUALS TO 25 MEV AND
 GREATER THAN OR EQUAL TO 40 MEV DOES NOT EXCEED 8 AND 30PERCENT, RESP.
 FACILITY: INST. TEOR. EKSP. FIZ., MOSCOW, USSR.

UNCLASSIFIED

VAYSFEL'D, I. I.

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DURNAL NITEN OF THE CONCENT OF BIOGENOUS AMINES (HISTAMINE, SEROTONIN)
HUMAN BLOOD UNDER NORMAL CONDITIONS AND DURING ALTERED WORK-SLEEP CYCLES
Article by I. I. Vaytsel'd and R. F. Litvinov, Moscow, Vestnik Biologii i Meditsiny, Moscow, Vol. 6, No. 5, September-October 1972, pp 56-62, submitted for publication 6 July 1971

Abstract: It has been established that variations in the diurnal cycle of the histamine-diaminoxidase system in the blood of healthy subjects involve diaminoxidase activity. Its considerable decline in the evening and far greater decrease (to zero) at night indicates an enhanced influence of histamine at night. The blood serotonin content tends to decrease at night. Changes to work-sleep cycles give rise to noticeable qualitative and quantitative changes in the mentioned parameters. The disturbance becomes more distinct under hypokinetic conditions. Variations in the diurnal cycle of histamine-diaminoxidase and histamine-serotonin ratios are related not only to the stressor applied, but also to the initial state of the organism. The results of this study show the importance of taking the initial state of the organism into account when formulating work-sleep cycles.

A study of biogenous amines is of great importance in processes of regulation of the status of sleep and wakefulness.

The literature contains data indicating the participation of adrenaline (A. V. Tomkins; G. R. Kasell; and E. Jh. Kattina; Kh. A. Rosini; Kovalev, et al., and others), serotonin (Dobbertin, et al.; Reig; I. I. Vaytsel'd, 1969, 1970), and also histamine (Dobbertin; Kohnler, et al.; N. I. Goshchikov, et al.; I. I. Vaytsel'd, 1970) in regulating the sleep-wakefulness cycle.

This article gives the results of determinations of the content of histamine, the activity of diaminoxidase, the enzyme inactivating it, and the blood serotonin content in healthy human subjects. In some of them a

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BERLOVICH, E. Ye., BLINNIKOV, Yu. S., VAYSHNIS, P. P., VITMAN, V. D., YELKIN, Yu. V., IGNATENKO, Ye. I., PANTELEYEV, V. N., and TARASOV, V.K., B. P.
Konstantinov Nuclear Physics Institute

"Short-Lived Osmium Isotopes"

Moscow, Izvestiya Akademii Nauk SSSR -- Seriya Fizicheskaya, No 12, 1972, pp 2490-2498

Abstract: The purpose of the experiments described in this paper is to detect 175Os and to obtain information concerning gamma irradiation of this and lighter osmium isotopes. The short-lived isotopes were obtained in spallation reactions by irradiating mercury with 1-GeV protons in the synchro-cyclotron of the irradiation conditions vary, inasmuch as the proportion of the different Os isotopes in the specimens depends on the mode of proton bombardment. In the gamma irradiation, the gamma ray spectrum was measured by a Ge(Li) detector, with a resolution of 3.5 keV for a line of 662 keV, and the spectra were recorded by an electronic system including an AI-1024 analyzer, a control block with timer, and the Minsk-22 computer to measure half-lives. Isotopes

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BERLOVICH, E. Ye., Izvestiya Akademii Nauk SSSR -- Seriya Fizicheskaya,
No 12, 1972, pp 2490-2498

with half-lives of more than 2.5 minutes and less than 2.0 minutes were investigated, and tables of their gamma-radiation spectra are given. Results of the present paper are compared with those of earlier papers. An attempt was also made to find a genetic connection between short-lived osmium and rhenium isotopes, and a table for the gamma irradiation of ^{174}Re is also given.

* Leningrad Institute of Nuclear Physics;

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UDC 534.26

VAYSLEYB, YU. V., Leningrad Electrotechnical Communications Institute imeni
~~Prof. N. A. Bonch-Bruyevich~~

"Scattering of Sonic Waves on a Finite Cone"

Moscow, Akusticheskiy Zhurnal, Vol 27, vyp 1, 71, pp 33-42

Abstract: The diffraction of sonic and electromagnetic waves on finite bodies with conical and wedge-shaped boundaries continues to attract the attention of researchers in spite of the large number of papers devoted to this problem. This article examines the dynamic problem concerning the Green function for a finite absolutely rigid conical funnel.

In the region adjacent to the funnel, the solution is given in the form of a series of eight functions of the respective problem for a semi-finite cone; outside this region it is given in the form of a series of Legendre polynomials and Hankel functions with a half-integral index.

The coefficients of the series satisfy the infinite systems of linear algebraic equations, obtained by factoring, in conjunction with the integral Kontrovich-Lebedev transform. The properties of these systems are discussed in detail and an approximate solution is given in the case when the length of the incident wave significantly exceeds the length of the forming cone.

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VAYSLEYB, YU. V., Akusticheskiy Zhurnal, Vol 27, vyp 1, 71, pp 33-42

Thus, the method used in this paper resulted in an algebraization of the boundary problem, that is, in a transition from functional space to the space of infinite numerical sequences. However, this is not a purely numerical method, but rather one which allows finding analytical expressions as well.

This article contains three figures and one table; nine literature references are cited.

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CAUSES OF PRIMARY DISABILITY OF DRIVERS

UDC: 616-016.38-05+613.62:656.13

Article by A.I. Vayman, Candidate of Medical Sciences, M.Sh. Jidanchik, Laboratory of Hygiene, Physiology, and Occupational Psychology of Motor Vehicle Drivers (headed by A.I. Vayman, Candidate of Medical Sciences), Central Scientific Research Institute of Industrial Hygiene and Occupational Diseases, Moscow, Sovetskoye Stroitel'stvo, Russian, No. 11, 1972, subperiod 5 May 1972, pp 59-62.

The social, economic, and medical significance of disability is known to all. Of great practical interest are studies dealing with causes of disability in different occupational groups. They permit evaluation of the role of industrial factors in onset of disease leading to lasting disability in a given branch of the economy and working out concrete health-improving measures. However, there are only isolated reports on this subject (L.I. Yeliseon, 1970; Ye.G. Prosvak, 1970, and others) in the Soviet literature.

In view of the fact that drivers of modern vehicles perform work involving several adverse factors, the principal ones being high nervous and emotional stress, hypodynamia, intensive noise, vibrations, exposure to toxic substances including carbonic dust, and a far from optimum microclimate (A.I. Vayman, 1970; A. Babayev and Ya. Khudshidoyev, 1972; L. Klishyn, et al., 1970; A.I. Vayman et al., 1971), our objective was to investigate the cause of primary disability in this occupational group.

We excerpted data pertaining to men whose profession (at the time disability was determined) was that of chauffeur, from the records of Medical Expert Commission for Determination of Disability (VTRK). We did not take into consideration women drivers because of their small number. Our sample was collected on the basis of examining all current and past disability records of 1963-1969 in all VTRK of Gorky City.

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VAYSMAN, A. I.
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VAYSMAN, A. I., LASHCHENKO, N. S., IKSANOV, M. SH., DOROFYEVA, Ye. D.,
ROSTOVISEVA, G. G., GOLOVA, I. A., CHANDAYEV, A. K., VOL'PER, G. I., and
E. I. KOGAN

"Physiological Characteristics of the Work of Bus and Truck Drivers in a Large City"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 1, 1973, pp 13-16

Abstract: The results of various functional psychological and physiological tests (reflexes, reaction to a moving object, proof reading test, EKG, blood pressure, pulse, etc.) confirmed the conclusions drawn from questionnaires filled out by 8000 bus drivers that fatigue gradually sets in after 4 to 5 hours on the job and becomes pronounced after 7 to 8 hours of driving. Along with a deterioration in performance, many showed an "improvement" in some physiological indices at the end of the work shift (e.g., increase in number of correct reactions to a moving object, decrease in time of differential reactions). This "improvement" is regarded as the result of overstraining the compensatory mechanisms in order to preserve a level of activity sufficient to protect the life and health of the driver. The truck drivers, on the other hand, continued to function well even after 8 or 9 hours on the job because
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VAYSMAN, A. I., et al., Gigiyena Truda i Professional'nyye Zabolevaniya, No 1, 1973, pp 13-16

of the less strenuous nature of the work (less time spent in driving during the shift, fewer actions to control the vehicle per unit of time, and less emotional stress). Some suggestions are made for altering the work schedules of bus drivers to take into account the physiological factors uncovered in the study.

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UDC 616.013.01.42

VAYSMAN, I. SH., Perm'Scientific Research Institute of Vaccines and Sera

"Intracytoplasmatic Membrane Structures in Clostridium Perfringens"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 6, Nov/
Dec 71, pp 885-891

Abstract: Electron microscope studies of Clostridium perfringens strain A-28 revealed morphology characteristic of gram-positive microorganisms. The cells have a wall 200 A thick. A two-layer membrane, 85 A thick, with a clear space 25 A thick between the layers, separates the protoplast from the wall. The nucleoid contains vacuoles with filament structures 20 A thick. In addition to densely packed granular structures of the ribosome type, the cytoplasm contains various membranous structures: lamellar packages oriented parallel to and located near the cytoplasmatic membrane; glomerular balls located near the poles and containing a finely granulated mass of medium density; and reticular formations of anastomosing tubules located in the center of the cytoplasm. It is believed that these membranous structures are organoids responsible for the specific biological properties of Clostridium perfringens.

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Microbiology

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UDC 576.851.555

VAYSMAN, I. SH., Perm' Scientific Research Institute of Vaccines and Sera

"Investigation of the Fine Morphology of Spore Formation in *Clostridium septicum*"
Moscow, Doklady Akademii Nauk SSSR, Vol 201, No 4, 1971, pp 968-971

Abstract: According to the existing data, sporulation in a number of bacteria, basic stages of sporogenesis, and corresponding morphological changes appear to be of a similar character. There are, however, some significant specific differences requiring further investigation of the dynamics of the process. In the present paper results of electron-microscope studies of sporogenesis in *Clostridium septicum* are described. Forty-eight hour cultures of *Cl. septicum* type A, were studied. Conditions were selected in which sporulating cells predominated in the population, and the period was suitable for the observation of successive stages of sporogenesis. It was established that *Cl. septicum* possessed features common to the structure of all gram-positive bacteria. Various stages of development of bacterial cells were observed and are described. Sporogenesis in *Clostridium septicum* is a complex, multistage process, which occurs in a strict sequence. Sporogenesis can hardly be considered a special form of cell division. While in cell division, all systems of the bacterial cell work toward the formation of the two basically identical organisms, in sporogenesis, the entire activity is directed to development of one cell at the expense of the other. 1/1

USSR

UDC 615.916-057:661.992]-06:616.5-003-217

SMIRNOVA, N. A., ZHDANEYEVA, G. S., and VAYSMAN, V. D.

"A Case of Respiratory Poisoning with Phosgene Complicated by Subcutaneous Emphysema"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 9, Sep 71,
pp 46-48

Translation: Interstitial emphysema in the upper trunk, neck, and head is very rare in the absence of thoracic lesions and pneumothorax. We therefore want to report a case of acute respiratory poisoning with phosgene, complicated by subcutaneous emphysema.

Patient S, aged 21, was brought to the clinic 4 hours after poisoning. The accident occurred on the job, when a plug fell out of a phosgene line and a burst of liquid phosgene hit the face of a metal worker working nearby without a face shield. The immediate reaction was tickling in the throat, coughing, and a feeling of suffocation. These sensations quickly disappeared, and the worker felt fine. He took a shower, completed his work, and went home. On the way, he suddenly became very weak, began to breath fast, and felt pressure in his chest. With these symptoms, he reported to a medical station where he was given first aid.

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SMIRNOVA, N. A., et al., Gigiyana Truda i Professional'nyye Zabolevaniya, No 9, Sep 71, pp 46-48

He was brought to the clinic in seious condition, complaining of acute dyspnea and cough. His skin and mucous membranes were cyanotic and his pharynx hyperemic. His thorax was in the inspiratory position, and respiration was shallow and rapid (44 breaths per minute). Percussion sounds over the lungs were shallow; many dry whistling noises and wet, medium- and small-bubble noises were heard. The heart contour was normal, heart tones were muffled, pulse of 120 per minute was rhythmic and with good filling. Arterial pressure was 110/70. The abdomen was soft without tender areas. Neither the liver nor the spleen were enlarged.

Blood analysis yielded the following results: Hb 120 units (20 g%); RBCs 6,350,000; color index 0.95; WBCs 23,400 including lymphocytes 5%, juvenile neutrophils 1%, p 8%, and segmented neutrophils 86%; sed rate 1 mm per hour. ECG showed a marked sinus tachycardia and a dextrogram. There were signs of right atrial and ventricular overload.

Eighteen hours after intoxication, chest X-rays revealed spotty shadows of medium intensity with diffuse edges, resembling lumps of melting snow, present in all pulmonary areas. The outline of the lungs was diffuse and hardly discernible. The boundaries of the pulmonary roots were unclear and fusing with the spots. The pulmonary pleura in the right lung was enlarged.

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SMIRNOVA, N. A., et al., Gigiyena Truda i Professional'nyye Zabolevaniya, No 9, Sep 71, pp 46-48

Clinical diagnosis: severe acute intoxication with phosgene; preedematous stage; toxic pneumonia.

The patient was confined to bed. He was breathing oxygen with periodic additions of 30% alcohol vapor as a defoaming agent. He was given dimedrol in the inhalation mixture together with hydrocortisone and penicillin and codeine. To prevent pulmonary edema, 200 ml of blood was taken. The patient then received a 40% glucose solution with ascorbic acid, a 10% calcium chloride solution intravenously, novurit intramuscularly, cordiamine intravenously, and corglyson in a 40% glucose solution. At the same time, anti-inflammatory therapy was performed: sodium sulfapyridazine internally and penicillin and streptomycin intramuscularly.

During the first 4 days, the patient's condition remained very severe. His temperature was 37.9-38°. After the slightest physical exertion, his breathing became very labored. The number of small, wet and crepitant noises in his lungs periodically increased. On the second day, subcutaneous emphysema was diagnosed in the neck and shoulders. On the fifth day, the patient's condition improved, his temperature and breathing became normal, his cough was better, cyanosis disappeared, and his blood picture returned to normal. Because of his improved general condition, it was possible to perform a thorough X-ray

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examination (frontal and lateral chest x-ray pictures and tomograms: the median layer and layers 2 cm in front and behind it). An x-ray of the thorax 18 hrs after phosgene intoxication is shown.

The frontal x-ray picture had a shadow running parallel to and 2-8 mm away from the left heart contour. No other changes were found in the lungs. The heart boundary was normal. At that time, the x-ray picture taken 18 hours after the accident was reexamined: it also contained the linear shadow running parallel to the heart. It was assumed that a pneumomediastinum had developed. The linear shadow was believed to represent parietal pleura displaced by air. The picture corresponded to data described in literature (A. I. Dombrovskiy; G. A. Zedgenidze and L. P. Lindenbraten).

On the ninth day, the patient had no complaints, his cough subsided, dyspnea developed only during physical exertion, there were no pulmonary noises, and the subcutaneous emphysema was no longer felt. His pulse was unstable, fluctuating from 64 to 120 beats per minute. EKG was normal with no signs of right heart dilation. The linear shadow along the left heart edge was no longer present on x-ray pictures, which confirmed the previous diagnosis of pneumomediastinum.

On the 25th day, the patient was discharged from the hospital in good condition.

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VAYTEKUNAS, R., Leader of the Republic Water Management Inspection

"Water Must Be Preserved"

Vilnyus, Sovetskaya Litva, 10 Jul 70, p 2

Translation: There is a great deal of concern over the purity of the republic's water reservoirs. This is convincingly demonstrated by the inspection which was carried out in all rayons of Lithuania. It was particularly gratifying to see the excellently equipped and efficiently operated purification installations at the Vevis Poultry Plant and the Lithuanian State Regional Electric Power Station. Here there are special chemical laboratories to check water purification, and the working conditions for the personnel are good.

New highly efficient installations for mechanical purification of sewage, sedimentation tanks, have been installed at the Kaunas Paper Factory imeni Yu. Yanonis. The water management of the Shilute Order of the Red Banner of Labor Administration of Land Reclamation Construction is run in an exemplary manner. Within the area of the Vilnyus enterprises, the taxi depot, the motor vehicle repair plant, and Motor Vehicle Transport Office No 8, no petroleum waste can be seen; here the primary purification installations, the lubricant traps, are carefully maintained.

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VAYTEKUNAS, R., Sovetskaya Litva, 10 Jul 70, p 2

Unfortunately, there are also executives who do not sufficiently appreciate the importance of protecting water reservoirs from pollution. For example, in May the personnel of the inspectorate discovered serious damage to the purification installations in Alitus. The pipe leading to one of the sedimentation tanks burst, and the waste water poured on the ground and started eroding the slopes. However, the operating personnel did not take any measures to repair the damage. In the same town, repair of purification installations at the central oil mill was delayed. They are still not functioning, and industrial waste is pouring directly into the Neman.

The city sewage purification installations are in a poor condition in Skoudas, Prenay, Lentvaris, and Pasvalis. At the Kaunas Endocrine Preparations Plant and at the Fur Enterprise Association imeni K. Gedris, new purification installations have been set up, but they are being put into operation very slowly and are not used to full capacity.

This is typical: the negligent executives have been repeatedly fined by us, but this measure appears to be clearly inadequate. Here the public organizations of the enterprises and institutions had to help rectify the situation by supervising the regulation of all water management. After the community intervened, the purification installations of the Panevezhis Motor Vehicle Transportation Office No 1

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VAYTEKUNAS, R. , Sovetskaya Litva, 10 Jul 70, p 2

and the Shyauliyay Automobile Tire Repair Plant, in particular, were quickly put in working order.

The local Soviets must also intensify the fight against the pollution of our waters. It is true that they have already done a great deal in several rayons. For example in the early spring the Mazheykakiy Rayispolkom set up several inspection committees, whose members have gone to all apilinki and have studied in detail the state of water management at the enterprises and organizations. In May the rayispolkom heard reports from the inspectors, and concrete measures were worked out to eliminate the shortcomings that had been discovered. All of this found expression in a special decision. Concern about the purity of the water reservoirs permeates the daily activity of the ispolkoms of the Kel'meskiy, Utenskiy, and Gauragskiy Rayon Soviets of Workers Deputies. However, this cannot be said of several other ispolkoms. The local government agencies must demand more firmly that executives comply closely with the demands of our inspectorate. Only by combined efforts can we ensure careful use of such an invaluable gift of nature as water.

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