

2/2 035

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0124705

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPECTRAL ANGULAR DISTRIBUTION OF N (FROM A WATER COOLED, WATER MODERATED REACTOR) REFLECTED FROM AL, TI AND POLYETHYLENE ARE PRESENTED. IN THE ENERGY RANGE GREATER THAN 2-3 MEV THE REFLECTED N SPECTRA (FROM ALL THOSE MATERIALS AND GRAPHITE) ARE MUCH SOFTER THAN THE INCIDENT N SPECTRA, AND AT ENERGIES SMALLER THAN 50 KEV THE SHAPE OF THE SPECTRA APPROACHES THAT OF THE I-E SPECTRUM. THE MAJOR CONTRIBUTION TO THE REFLECTED N SPECTRA IS MADE BY N WITH ENERGIES GREATER THAN 0.1 MEV. THE INTEGRATED DOSE ALBEDO OF N REFLECTED FROM TI IS SATISFACTORILY DESCRIBED BY THE EMPIRICAL EQUATION OF FRENCH (1964).

UNCLASSIFIED

1/2 CCS

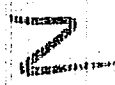
UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--ON THE REPRESENTATION OF THE JOST LEHMANN DYSON TYPE -U-

AUTHOR--(02)--VLADIMIROV, V.S., ZHARINOV, V.V.

COUNTRY OF INFO--USSR



SOURCE--TEKNETICHESKAYA I MATEMATICHESKAYA FIZIKA, 1970, VOL 3, NR 3, PP 305-319

DATE PUBLISHED-----70

SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--INTEGRAL FUNCTION, INTEGRAL TRANSFORM, LINEAR INTEGRAL EQUATION, CONE SHELL

CENTRCL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1261

STEP NO--UR/0646/70/003/003/0305/0319

CIRC ACCESSION NO--AP0124912

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124912

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTEGRAL REPRESENTATION IS OBTAINED FOR FUNCTIONS, HOLOMORPHIC IN TUBE DOMAINS OVER ARBITRARY PROPER CONES  $C$  AND  $MINUS C$  AND IN A NEIGHBORHOOD OF A REAL  $N$  DIVIDED OPEN SET  $SIGMA$  AND BELONGING TO ALGEBRAS  $H(C)$  AND  $H(MINUS C)$ . AS AN APPLICATION THE CORRESPONDING JOSEF LEHMANN DYSON TYPE REPRESENTATION IS DERIVED. FACILITY: MATEMATICHESKIY INSTITUT IMENI V. A. STEKLOVA, AKADEMII NAUK SSSR. FACILITY: MOSKOVSKIY FIZIKO-TEKHNICHESKIY INSTITUT.

UNCLASSIFIED

1/2 032 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--THERMODYNAMIC PROPERTIES OF THE HYDROGEN BONDING OF SOME ALCOHOLS  
WITH TERTIARY AMINES -U-  
AUTHOR--(02)-ZHARKOV, V.V., ZHITINKINA, A.V.  
COUNTRY OF INFO--USSR Z  
SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 223-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--THERMODYNAMIC PROPERTY, HYDROGEN BONDING, TERTIARY AMINE,  
PYRIDINE, MORPHOLINE, TRIETHYLAMINE, IR SPECTRUM, BUTANOL, PHENOL,  
CHLORINATED AROMATIC COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1989/C804 STEP NO--UR/0076/70/044/001/0223/0225  
CIRC ACCESSION NO--AP0107346  
UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107346

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

ABSTRACT. THE ASSOCN. CONSTS. OF SOME TERTIARY AMINES (PYRIDINE, 4-METHYLMORPHOLINE, DIAZABICYCLOOCTANE AND TRIETHYLAMINE) WITH BUTANOL, PHENOL, AND P-CHLOROPHENOL IN CCL SUB4 SOLN. WERE ESTD. BY USING IR SPECTROSCOPY. THE VALUES OF DELTA H, DELTA F AND DELTA S WERE CALCD. FROM THE TEMP. DEPENDENCE OF THE ASSOCN. CONSTS.

UNCLASSIFIED

Acc. Nr:

AP0049777

Abstracting Service:  
CHEMICAL ABST. 5-70

Ref. Code:

UR0191

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101972k Determination of acyl groups in cellulose acetate-butyrate. Mironov, D. P.; Grishin, E. P.; Zharkov, V. V.; Fogosov, Yu. L. (USSR). *Plast. Massy* 1970, (1), 61-5 (Russ). The total content of acyl groups in cellulose acetatebutyrate (I) was detd. by sapon., whereas the content of PrCO groups was detd. by ir spectroscopy at  $2970\text{ cm}^{-1}$ . Thus, I was placed in a conical flask and mixed with  $\text{Me}_2\text{CO}$  and set aside for 30-60 min. The mixt. was shaken, and 0.5N aq. MeOH soln. of NaOH was added; the mixt. was refluxed at  $65^\circ$  for 3 hr. The sapond. sample was neutralized with 0.5N HCl and titrated with 0.5N KOH. Optical d. of I was measured at  $2970\text{ cm}^{-1}$  and of a std. at  $1430\text{ cm}^{-1}$ . The content of PrCO groups was detd. from the ratio  $D_{2970}/D_{1470}$  and from the corresponding adsorption coeffs. The content of Ac groups was calcd. from a general equation. CKJR ✓

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REEL/FRA  
19801695

Acc. Nr. **0053780**

Abstracting Service:  
CHEMICAL ABST. 5-70

Ref. Code:  
**UR0366**

*2*

110975r New reaction of acetylsalicylic acid chloride:  
Mikhailopulo, I. A.; Zharkov, N. I. (USSR). *Zh. Org. Khim.*  
1970, 6(2), 400-1 (Russ). The reaction of 2-AcOC<sub>6</sub>H<sub>4</sub>COCl with  
HOCHRCHR'OH in C<sub>6</sub>H<sub>6</sub> soln. gave 60-91% 2-HOC<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>H  
+ ClCHRCHR'OAc (R and R' given): H, H; Me, H; Me,  
Me. The reaction mechanism is discussed. CPJR ]

*sw*

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REEL/FRA  
**19830843**

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USSR

UDC 577.11

SAYENKO, A. S., and ZHARKOV, YU. A., Institute of Medical Radiology, USSR Academy of Medical Sciences, Olninsk

"Investigation of Heterogeneity of Nuclear RNA of the Liver in Irradiated Rats by the Method of DNA-RNA Hybridization"

Moscow, Biokhimiya, Vol 36, No 3, May/Jun 71, pp 545-550

Abstract: Since exposure of animals to ionizing radiation stimulates the incorporation of precursors into RNA in liver cells, the authors undertook to elucidate the causes of this altered metabolism. It was especially important to establish whether irradiation modifies DNA chains or sections thereof, resulting in the formation of new messenger RNA molecules. The study was performed on intact Wistar rats and rats exposed to 5,000 r of gamma irradiation delivered at a rate of 60 r/sec. The total amount and the composition of RNA synthesized in the liver of these rats were determined by the DNA-RNA hybridization method on nitrocellulose filters. Preliminary saturation of DNA with nonlabeled RNA obtained from the liver of intact rats markedly inhibited the hybridization of P<sup>32</sup>-labeled nuclear RNA in the liver of intact and irradiated rats. The degree of inhibition was the same in both groups. The results suggest that the enhanced incorporation of precursors into RNA in the liver of

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USSR

SAYENKO, A. S., and ZHARKOV, YU. A., *Biokhimiya*, Vol 36, No 3, May/June 71,  
pp 545-550

irradiated animals is probably due to an increased rate of nuclear RNA metabolism rather than to a stimulation of DNA molecules. The hybridization method used was not adequately sensitive to detect either a stimulation or a depression of repeatedly recurring DNA segments. If the method is made several times more sensitive, this problem can be resolved.

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1/2 018

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--A METHOD OF MEASURING THE VELOCITY OF CHARGED PARTICLES -U-

AUTHOR--(03)-DMITRIYEV, B.S., ZHARKOV, YU.D., RACHKOV, V.A.

COUNTRY OF INFO--USSR



SOURCE--MOSCOW, OTKRYTIYA, IZVRETIENIYA, NO 7, 4 FEB 70, P 62, PATENT NO 263047

DATE PUBLISHED--04FEB70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CHARGED PARTICLE, VELOCITY MEASURING INSTRUMENT, AUTHOR CERTIFICATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1992/1116

STEP NO--UR70482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0112238

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AA0112238

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS AUTHOR'S CERTIFICATE INTRODUCES A METHOD OF MEASURING THE VELOCITY OF CHARGED PARTICLES WHICH INVOLVES PASSING THE CHARGED PARTICLES THROUGH A MODERATING STRUCTURE WITH A KNOWN DISPERSION (PHASE VELOCITY). THE UNIT DIFFERS BECAUSE IT IS DESIGNED FOR IMPROVED ACCURACY AND SIMPLIFIED MEASUREMENT. THE NO EFFECT MODE IS SET BY SELECTING THE FREQUENCY OF THE HIGH FREQUENCY SIGNAL APPLIED TO THE MODULATING STRUCTURE. THIS MODE IS CHARACTERIZED BY THE ABSENCE OF INTERACTION BETWEEN THE MOVING FLUX OF THE CHARGED PARTICLES AND THE MODERATED ELECTROMAGNETIC WAVE AND BY EQUALITY OF THE PARTICLE VELOCITIES AND THE PHASE VELOCITY OF THE WAVE. THEN THE PHASE VELOCITY OF THE WAVE ON THE GIVEN FREQUENCY IS DETERMINED AS EQUAL TO THE MEASURED PARTICLE VELOCITY.

UNCLASSIFIED

USSR

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UDC 621.385.6.083.9

DMITRIYEV, B. S., ZHARKOV, Yu. D., RACHKOV, V. A.

"A Method of Measuring the Velocity of Charged Particles"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 7, 4 Feb 70, p 62, Patent No 263047, Filed 14 Jan 67

Translation: This Author's Certificate introduces a method of measuring the velocity of charged particles which involves passing the charged particles through a moderating structure with a known dispersion (phase velocity). The unit differs because it is designed for improved accuracy and simplified measurement. The no-effect mode is set by selecting the frequency of the high-frequency signal applied to the modulating structure. This mode is characterized by the absence of interaction between the moving flux of the charged particles and the moderated electromagnetic wave and by equality of the particle velocities and the phase velocity of the wave. Then the phase velocity of the wave on the given frequency is determined as equal to the measured particle velocity.

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USSR

UDC: 621.317.3

RACHKOV, V. A., ZHARKOV, Yu. D., DMITRIYEV, B. S.

"On the Effect Which the Input Signal Level has on the Results of Electron Probe Measurements of the Dispersion and Resistance of Coupling of Decelerating Systems"

Elektron. tekhnika. Nauchno-tekhn. sb. Kontrol'no-izmerit. apparatura (Electronic Technology. Scientific and Technical Collection. Monitoring and Measuring Equipment), 1970, vyp. 2 (20), pp 27-33 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A302)

Translation: The authors analyze the effect which the input signal level has on measuring the coupling resistance and dispersion of decelerating systems by using an electron probe. A relationship is found which can be used to evaluate the input signal power at which relationships of linear theory may still be used. Resumé.

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USSR

UDC 621.382.2

BILENKO, D. I., ZHARKOVA, E. A., KHASINA, YE. I., Saratov State University imeni  
N. G. Chernyshevskiy

"Transmission of Infrared Radiation by Diodes Based on Silicon Alloyed with  
Gold"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 5, 1972, pp 948-950

Abstract: A study was made of the results observed when passing infrared radiation to diodes manufactured from n-type silicon alloyed with gold with a specific resistance of  $\sim 10^4$  ohms-cm and an au concentration of  $\sim 10^{15}$  cm<sup>-3</sup>. Coherent radiation with a wave length of 1.15, 3.39 and 10.6 microns was used. A study was made of the effect of a magnetic field parallel to the infrared radiation and perpendicular to the current lines on the relative variation of the diode transmission. For currents larger than the cutoff current, the magnetic field essentially changes the nature of transmission of the infrared radiation at each point of the specimen. Therefore, the observed optical inhomogeneity of the diodes can be connected with the effect of the free charge carriers. On the other hand, measurements of the current functions of transmission of the infrared radiation with a decrease in the specimen size in the

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USSR

UDC 621.382.2

BILENKO, D. I., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 5, 1972, pp 948-950

direction of displacement of the light probe demonstrated that the dependence of  $\delta T$  on the position of the infrared probe for identical currents is fully retained for the given section of the specimen. The observed decrease in transmission of the diodes cannot be explained by nonselective absorption by free carriers since the studies performed did not demonstrate the dependence on wave lengths characteristic of this type of infrared absorption. The increase in transmitted power cannot be connected with recombination radiation, for the effect of the latter was entirely excluded under the experimental conditions. The most probable explanation of the observed phenomena can be nonuniform variation of the fraction index of the semiconductor material with deep impurities on passage of the current.

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USSR

UDC 621.385.032.269 + 621.385.032.24

ZPASKOVA, G.I., MEDOVIKOV, V.S.

"Triode Gun With Counterclockwise Anode-Grid Pattern"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 7, pp 154-156 (from RZh—Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11A95)

Translation: A triode electron gun is described. The gun uses a mesh grid curtain of tungsten wire 30 micrometer in diameter, with a square mesh and a spacing of 0.5 mm. Summary.

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USSR

UDC: [548-14+532.783]:533

ZHARKOVA, G. M., KAPUSTIN, A. P., Institute of Theoretical and Applied  
Mechanics, Siberian Department, Academy of Sciences of the USSR

"Characteristics of Some Liquid Crystals for Aerodynamic Research"

Novosibirsk, Izvestiya SO AN SSSR, Ser. tekhn. nauk, No 13, (178), VYP, 3,  
Oct 70, pp 65-68

Abstract: The authors discuss the use of liquid crystals for studying temperature distribution and heat flux on the surface of an aerodynamic model. The proposed method can be used for experiments at temperatures from 40 to 60°C. Two types of mixtures were used: 1) 90% cholesteryl nonanoate and 10% cholesteryl chloride; 2) 80% cholesteryl nonanoate and 20% cholesteryl propanoate. A comparison of the experimental data on the color of these mixtures as a function of temperature with the data in the literature shows that the maximum deviation for the first mixture is 4%, and for the second -- 1% at wavelengths of 6300-4570 Å. Preliminary experiments in wind tunnels show satisfactory results.

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1/2 018

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--ELECTROKINETIC POTENTIAL OF A POLYACRYLONITRILE FIBER MODIFIED WITH HYDRAZINE HYDRATE -U-

AUTHOR--(05)--ANDROSOV, V.F., ANDREYEVA, K.I., BONDARENKO, V.S., ZHARKOVA, M.A., ROMANOVA, T.A.

COUNTRY OF INFO--USSR

SOURCE--KHM. VOLOKNA 1970, (2), 28-30

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--POLYACRYLONITRILE FIBER, HYDRAZINE HYDRATE, PHYSICAL CHEMISTRY PROPERTY, TRANSITION TEMPERATURE, ELECTRIC POTENTIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0043

STEP NO--UR/0183/70/000/002/0028/0030

CIRC ACCESSION NO--AP0132338

UNCLASSIFIED

2/2 018

CIRC ACCESSION NO--AP0132338  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT. POLYACRYLONITRILE (I) FIBERS,  
TREATED WITH AQ. N SUB2 H SUB4 H SUB2 O SOLN., FOLLOWED BY HEAT  
TREATMENT UNDER N, ACQUIRED NEW PHYSICO-CHEM. PROPERTIES. THE  
ELECTROKINETIC POTENTIAL (ZETA) AND GLASS TRANSITION TEMP. OF THE  
MODIFIED I FIBERS WERE PROPORTIONAL TO THE HEAT TREATMENT TEMP. A  
METHOD WAS PROPOSED FOR THE DETM. OF THE DEGREE OF CROSSLINKING FROM THE  
RELATIVE CHANGE IN ZETA.  
USSR.  
FACILITY: LITL IM. KIROVA, LENINGRAD,

UNCLASSIFIED

USSR

UDC: 539.4:624.012

ZHARKOVA, N. N.

"Bendable Structures Made From Concrete on a Carbonate-Silicide Binder"

Tr. Dal'nevost. politekhn. in-ta (Works of the Far Eastern Polytechnical Institute), 1971, 72, No 2, pp 76-86 (from RZh-Mekhanika, No 9, Sep 72, Abstract No 9V759)

Translation: The paper presents the results of an experimental study of the strength and deformation properties of bendable elements made of concrete based on a carbonate-silicide binder with properties similar to those of silicate binders. Three series of girders with three girders in each series were tested. The series of girders differed with respect to the grade of concrete and the percent of reinforcement. Concrete composition: 30% carbonate-silicide binder and 70% sand filler. The load was applied in thirds of the span.

The experimental studies showed: 1) the experimental specimens satisfy the requirements for strength, rigidity and cracking resistance, the actual breaking load being more than 95% of the theoretical value, the actual flexure coinciding satisfactorily with the theoretical value, and the

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USSR

ZHARKOVA, N. N., Tr. Dal'nevost. politekhn. in-ta, 1971, 72, No 2, pp 76-86

width of opening of a crack being less than the limiting value (0.2 mm), and amounting to 0.1-0.11 mm; 2) the reinforcement adheres with sufficient reliability to the concrete; 3) concrete on a carbonate-silicide binder can be used for producing bendable structures with high carrying capacity, rigidity and crack resistance; 4) bendable elements of concrete on carbonate-silicide binder operate similarly to structural elements of silicate concrete; 5) the calculation and design of such structures may be done in conformity with the norms for silicate concrete. Z. L. Gil'gur.

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USSR

UDC: 621.385.6

ZHARNENKOV, S. V., ZAKHAROV, V. P., POPOV, A. N., MARIN, V. P.

"A Magnetron Converter Which Changes Microwave Power to DC Power"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 17, Jun 72, Author's Certificate No 328805, Division H, filed 7 Jan 70, published 24 May 72, p 249

Translation: This Author's Certificate introduces: 1. A magnetron converter which changes microwave power to DC power. The device contains an electron source, and an interaction space which is closed in the azimuthal direction and houses a positive electrode. As a distinguishing feature of the patent, in order to improve the efficiency of microwave energy conversion, the source of electrons is closed with respect to the azimuth, and is located outside the interaction space coaxially with the central electrode. 2. A modification of the converter distinguished by the fact that the electron source is made in the form of a magnetron end gun of inverted design. 3. A modification of the converter described in point 1 distinguished by the fact that the electron source is made in the form of two magnetron end guns of inverted design.

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Power

USSR

UDC (621.311.25:621.039)47+57)

BORONIN, L. M., and ZHARKOVSKIY, Yu. V.

"USSR Atomic Electric Power Development During the Ninth Five-Year Plan"  
Energ. str-vo (Electric Power Facility Construction), No 10-11 (124-125)  
Moscow, 1971, pp 56-60 (from RZh: Elektrotehnika i yeye primeneniye, No 3,  
March 1972, Abstract No 3U24)

Translation: This item discusses USSR atomic electric power station (AES) construction from 1971 through 1975. AES are able to compete economically with TES [Thermal Electric Power Stations] which operate on costly imported extractive fuels. Each newly operational AES reduces the overall reserve of nuclear fuel (Uranium), as a consequence of which a more efficient utilization of nuclear fuel has become one of the most important tasks of the atomic power industry. 4 ill., 2 ref.

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USSR

UDC 595.771-19

ZHAROV, A. A., Institute of Medical Parasitology and Tropical Medicine imeni Ye. I. Martsinovskiy, Ministry of Health USSR, Moscow

"The Geographic Distribution of the Mosquitoes *Aedes vexans* Meigen (Diptera; Culicidae)"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 42, No 1, Jan/Feb 73, pp 11-16

Abstract: On the basis of data given in the literature, a map showing the world distribution of the three known subspecies of *Aedes vexans* Meigen (*Aedes vexans vexans* Meig., *Ae. vexans nipponii* Theob., and *Ae. vexans nocturnus* Theob.) has been compiled. It is pointed out that the territory on which *Ae. vexans nipponii* occurs coincides to a considerable extent with that on which *Ae. v. vexans* is present, so that the conditions required by these two subspecies for their existence must be similar. However, the data on the distribution of *Ae. v. nipponii* are uncertain, because one has begun only rather recently to differentiate this subspecies from *Ae. v. vexans*. A photograph of the tergite pattern of the abdominal part of an *Ae. vexans* female published by W. J. Crans and L. J. Grandek (*Mosquito News*, Vol 28, p 235, 1968) gives reasons

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USSR

ZHAROV, A. A., *Meditinskaya Parazitologiya i Parazitarnyye Bolezni*, Vol 42, No 1, Jan/Feb 73, pp 11-16

to believe, in the opinion of the author of the present article, that *Ae. v. nipponii* also occurs in the eastern US and consequently has a much wider distribution than had been assumed hitherto. The distribution of *Ae. v. nocturnus* (23°N-23°S, 115-155°E) is different from that of the other two subspecies, so that the conditions required for its survival must differ. *Ae. arabiensis*, *Ae. dentatus*, and *Ae. stenoctrus*, which have been regarded as separate species, resemble *Ae. vexans* in their morphological characteristics to such an extent that they will presumably be classified as subspecies of the latter in the future.

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1/2 031  
UNCLASSIFIED  
TITLE—POLYMERIZATION OF BENZENE UNDER ULTRAHIGH PRESSURE CONDITIONS  
COMBINED WITH SHEAR STRAIN -U-  
AUTHOR—(04)—CHISTOTINA, N.P., ZHAROV, A.A., KISSIN, YU.V., YENIKOLOPYAN,  
N.S.  
COUNTRY OF INFO—USSR  
SOURCE—DOKL. AKAD. NAUK SSSR 1970, 191(3), 632-4 (PHYS CHEM)  
DATE PUBLISHED—70  
SUBJECT AREAS—CHEMISTRY  
TOPIC TAGS—POLYMERIZATION, ULTRAHIGH PRESSURE, SHEAR STRESS, BENZENE,  
POLYMER STRUCTURE  
CONTROL MARKING—NO RESTRICTIONS  
DOCUMENT CLASS—UNCLASSIFIED  
PROXY REEL/FRAE—2000/0726  
STEP NO—UR/0020/70/191/003/0632/0634  
CIRC ACCESSION NO—AT0124396  
UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124396

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

ABSTRACT.

PURIFIED C SUB6 H SUB6 WAS POLYMD.

IN A BRIDGEMAN ANVIL LIKE APP. UNDER A PRESSURE OF 85,000 ATM AT TEMPS.

OF 0 TO MINUS 5 DEGREES AND AT A SHEAR OF 75 DEGREES (UNDER AR OR AIR).

SPECTRAL DATA REVEALED THAT THE BROWN PRODUCTS HAD A POLYENE STRUCTURE.

FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

1/2 007 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--ROLE OF ELECTRICAL DOUBLE LAYER IN THE SETTING OF SLAG PORTLAND  
CEMENT -U-  
AUTHOR--(05)-VED, E.I., BAKLANOV, G.M., ZHAROV, E.F., NITCHENKO, V.S.,  
SIDOROVA, T.A.  
COUNTRY OF INFO--USSR  
SOURCE--BUDICEL'NI MATER. KONSTR. 1970, (1), 31-2  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--CEMENT, CALCIUM CHLORIDE, COHESION STRENGTH  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1995/1478 STEP NO--UR/0635/70/000/001/0031/0032  
CIRC ACCESSION NO--AP0116915  
UNCLASSIFIED

2/2 007

CIRC ACCESSION NO--AP0116915

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SETTING PROCESS IS EXPLAINED IN  
TERMS OF THE SHAPE OF THE ZETA POTENTIAL CURVES. ADDN. OF SMALL AMTS.  
OF CACL SUB2 CAUSES SHARP DROP IN ZETA POTENTIAL, INDICATING COMPRESSION  
OF ELEC. DOUBLE LAYER AND LIMITED MIGRATION OF NEG. CHARGED OH AND CL  
IONS. RISE IN ZETA POTENTIAL WITH INCREASING ADDN. OF CACL SUB2  
INCREASES IN DIFFUSION REGION OF ELEC. DOUBLE LAYER OF NEG. CHARGED OH  
AND CL IONS AND ACCELERATION IN SETTING. COHESION FORCES RISE AND  
STRENGTH INCREASES.

UNCLASSIFIED

Turbine and Engine Design

USSR

UDC:621.438-71.001.5

Z  
ZHAROV, G. G., Doctor of Technical Sciences, Professor, VENTSYULIS, L. S.,  
PETUKHOV, V. G., Candidates of Technical Sciences

"Promising System for Cooling High Temperature Gas Turbines"  
Leningrad, Energomashinostroyeniye, No 8, 1970, pp 10-13

Abstract: A relatively simple, reliable and economical method of cooling the stressed parts of gas turbines is the use of a closed system of air cooling (with the cooling medium exhausted away from the turbine). An analysis of the cooling conditions of a turbine with this type of cooling system is presented. Blade designs suitable for this type of turbine are described, and the temperature distribution around the profiles of three types of blades with this type of cooling are noted. On the basis of the calculated analysis of temperature around the profile of a cooled blade, it is concluded that the temperature difference with a constant clearance for passage of cooling air with an initial gas temperature of 1200°C will not exceed 80-100°C, even as the cooling air flow is varied from 1 to 4% of the gas flow. The blade edges are at the same temperature level as the central portion of the blade, with a

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UDC:621.438-71.001.5

USSR

ZHAROV, G. G., Doctor of Technical Sciences, Professor, VENTSYULIS, L. S.,  
PETUKHOV, V. G., Candidates of Technical Sciences, Leningrad, Energomashinostroy-  
eniye, No 8, 1970, pp 10-13

local cool spot near the bent portion of the blade up to 100° cooler. Increasing the cooling air clearance increases the wall temperature. Changing the cooling air temperature at the input to the blade with unchanged air flow rate has little influence on blade temperature.

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ZHAROV, L. V.

Sov. Science of Science, Aspects of Biochemistry

Article by V. Ye. Pavlovich, M. V. Zhurav (Ponov-na-Donu); Moscow, Vestnik Akademii Meditsinskikh Nauk SSSR, Moscow, No. 3, 1972, pp. 60-63

JPRS 56019  
17 MAY 72  
UDC: 577.1

The mighty scientific and technological revolution that is taking place in our times has no equal in the history of human society with respect to the depth and scope of socioeconomic changes that it is causing. The ingenious prediction of Marx, that science will be transformed into a direct productive force of society has now become the barrier of scientific-technological progress. Biological science is undergoing profound changes; in the words of M. V. Keldysh, "With this transition to research on the molecular level, it is experiencing just as profound a revolution as chemistry experienced with the shift to the study of molecular structure and physics when it penetrated into the structure of the atom, the atomic nucleus, and elementary particles. Discovery of the genetic code, determination of the complete chemical structure and spatial configuration of many proteins, artificial synthesis of enzymes, and, finally, the recently completed complete synthesis of the gene are among the greatest achievements in world science. These discoveries have the greatest philosophical importance and will leave a deep impression on many aspects of practical activity."

The significance of philosophical and general methodological principles increases in periods of revolutionary breakthrough and distinctive "crises" in science.

The recently observed 150th anniversary of the birthday of Engels stimulated the interest of philosophers and natural scientists in the process of delimitation of natural science, its recognition of the patterns of development of science as a specific integral system, which is particularly needed by the art of medical-biological sciences (G. I. Tarasovtsev and P. V. Alksheyev). Theoretical approaches on the plans of metastemata analysis to one of the youngest and most revolutionary sciences, biochemistry, are dominating in the enormous mass of empirical data. This is not a random

M. V. Keldysh, Izvestiya, 21 February 1970, p. 5.



1/2 010 UNCLASSIFIED  
TITLE--PHASE DIAGRAMS OF TERNARY SYSTEMS -U- PROCESSING DATE--13NOV70  
AUTHOR--(02)-ZHAROV, V.T., STORONKIN, A.V.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 687-92  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--PHASE DIAGRAM, SODIUM COMPOUND, FLUORIDE, SULFATE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1999/1103 STEP NO--UR/0076/70/044/003/0687/0692  
CIRC ACCESSION NO--AP0123095  
UNCLASSIFIED

2/2 010

CIRC ACCESSION NO--AP0123095  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT. THE PRINCIPLES UNDERLYING THE  
SINGULAR POINTS ON TERNARY PHASE DIAGRAMS ARE EXAMD. EXPRESSIONS ARE  
DERIVED WHICH SHOW THAT FOR REAL PHASE DIAGRAMS, THERE ARE DEFINITE  
RELATIONSHIPS BETWEEN THE SINGULAR POINTS FOR DIFFERENT TYPES OF  
DIAGRAMS. THE NACLNA SUB2 SD SUB4 NAF AND NA SUB2 SD SUB4 NABR-NACL  
SYSTEMS ARE USED AS EXAMPLES.  
IM. ZHDANOVA, LENINGRAD, USSR. FACILITY: LENINGRAD. GDS. UNIV.

UNCLASSIFIED

USSR

UDC: 659.017:539.219.3

GRUZIN, P. L., ZHAROV, YU. D., MACHURIN, YE. S.

"Interaction of Interstitial Atoms and Vacancies with Dislocations in Copper Single Crystals"

V sb. Vzaimodevstviye mezhdu dislokatsiyami i atomami primesei v met. i splavakh  
 (Interaction between Dislocations and Impurity Atoms in Metals and Alloys--  
 collection of works), Tula, 1969, 114-120 (from RZh-Metallurgiya, No 1, Jan 70,  
 Abstract No 11177)

Translation: The authors determine the activation energies for migration of point defects toward dislocations. It is shown that various annealing stages are determined by the migration of interstitial atoms and vacancies, which cause climbing of dislocations by settling on them. Authors' abstract.

1/1

Acc. Nr. #0055910 - Abstracting Service: CHEMICAL ABST. Ref. Code 6-70 UR0076

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002203810004-1"

115392h Thermodynamics of multicomponent heterogeneous systems. X. Variance of partially closed systems with chemical transformations: Storonkin, A. V.; Marinichev, A. N.; Zharov, V. T. (Leningrad. Gos. Univ. im. Zhdanova, Leningrad, USSR). Zh. Fiz. Khim. 1970, 44(1), 83-7 (Russ). The rule for finding the no. of degrees of freedom (variance) in the title systems is  $f = n - k - 2 - r$ , where  $n$ ,  $k$ , and  $r$  are the nos. of components, linearly independent reversible chem. reactions, and of phases present in the system, resp. In case of any further conditions limiting the change of intensive properties,  $f = n - k + 2 - r - \beta$ , where  $\beta$  is the no. of relations causing the limitation. These equations are discussed for various types of thermodynamic equil. including the case of material isolation.

J. Mala

C.K.

REEL/FRA  
 19841237

1/2 015  
 UNCLASSIFIED  
 TITLE--EFFECT OF THE VITAL ACTIVITY PRODUCTS OF ACCOMPANYING BACTERIA ON  
 THE GROWTH OF SOME CHLORELLA STRAINS -U-  
 AUTHOR--(03)-LENOVA, L.I., SHEVCHENKO, N.S., ZHAROVA, L.H.  
 COUNTRY OF INFO--USSR  
 SOURCE--MIKROBIOL ZH (KYYIV) 32(1): 111-115. 1970  
 DATE PUBLISHED-----70  
 SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
 TOPIC TAGS--CHLORELLA, BACTERIA, PLANT GROWTH REGULATOR  
 CONTROL MARKING--NO RESTRICTIONS  
 DOCUMENT CLASS--UNCLASSIFIED  
 PROXY FICHE NO----FD70/605001/F01 STEP NO--UR/0438/70/032/001/0111/0115  
 CIRC ACCESSION NO--AP0139387  
 UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139387

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF 417 STRAINS OF BACTERIA ON CHLORELLA VULGARIS WAS INVESTIGATED. MOST OF THE BACTERIA DO NOT AFFECT THE GROWTH OF ALGAE. A SMALLER AMOUNT OF THE ACCOMPANYING BACTERIA (24-27-40PERCENT) EXCRETE STIMULATING SUBSTANCES. A NEGLIGIBLE AMOUNT OF THE ACCOMPANYING BACTERIA (0-3-9PERCENT) EXCRETE SUBSTANCES INHIBITING THE GROWTH OF THE ALGAE. FACILITY: INST. MICROBIOL. VIROL., ACAD. SCI. UKR. SSR, KIEV, USSR.

UNCLASSIFIED

USSR

UDC 577.17:576.8+582.26

LENOVA, L. Y., SHEVCHENKO, N. S., and ZHAROVA, L. H., Institute of Microbiology and Virology, Academy of Sciences, Ukrainian SSR

"Effect of the Products of Life Processes of Accompanying Bacteria on the Growth of Some *Chlorella* Strains"

Kiev, *Mikrobiologichnyy Zhurnal*, Vol 32, No 1, Jan/Feb 70, pp 111-115

Abstract: The effect of 417 associated strains of bacteria on *Chlorella vulgaris* strains 62, 9 and PPG was investigated. Most of the associated bacteria had no effect on algae growth. Some strains had a stimulating effect 24%, 27% and 40% with respect to strains 62, 9 and PPG and some an inhibiting effect none, 3% and 9% respectively. The most active stimulators of algae are: *Bacterium candicans*, *Bact. nitrificans*, *Bact. centro-sporus*, *Micrococcus luteus*, *Pseudomonas Liquefaciens*, *Ps. sinuosa*, *Ps. virescens*, *Sarcina subflava*, *Sarcina lutea*, *Bacillus natans*, and *Chromobacterium aurantiacum*. *Bacterium candicans* and *Bact. nitrificans* were also the strongest bacterial antagonists. It was noted that some bacteria are capable of undergoing laboratory mutation, so that some stimulators lose their property, and the antagonists may even begin to stimulate growth.

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1/2 035

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--POWER PLANT USE OF SULFUR CONTAINING PETROLEUM RESIDUES -U-

AUTHOR--(05)-KOLODIYEVA, YE.V., KUROCHKIN, A.I., ZHAROVA, M.N.,  
KASHURICHEV, A.P., CHUKHANOV, Z.F.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, ENERG. TRANSP. 1970, (1), 85-93

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PROPULSION AND FUELS, EARTH SCIENCES AND  
OCEANOGRAPHY  
TOPIC TAGS--PYROLYSIS, PETROLEUM DEPOSIT, GEOGRAPHIC LOCATION, CHEMICAL  
COMPOSITION, ECONOMICS, FUEL CONSUMPTION, STEAM BOILER, BENZENE,  
TOLUENE, NAPHTHALENE, ETHYLENE, COKE, SULFUR, POWER PLANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1544

STEP NO--UR/0281/70/000/001/0085/0093

CIRC ACCESSION NO--AP0118527

UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118527

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POWER PLANT PYROLYSIS OF S CONTG. MAZUT (PETROLEUM RESIDUES) FROM ROMANSHKINO AND ARLANSK CRUDE OILS AT RATES OF 1.3-4.7 G-SEC YIELDED ACCORDING TO CALCNS. BASED ON A SINGLE PYROLYSIS CYCLE 57-78 AND 55-78PERCENT GAS AND 31-40 AND 27-38PERCENT LIQ. PRODUCTS, OF WHICH 7-11 AND 9-12PERCENT B. SMALLER THAN OR EQUAL TO 230DEGREES WERE RECOVERED BEFORE RECYCLING. OPTIMAL CONDITIONS FOR MAX. C SUB2 H SUB4 YIELDS (22.8 AND 17.5PERCENT) WERE 0.02 AND 0.08 SEC AT 945 AND 930DEGREES WITH STEAM, MAZUT RATIOS B OF 0.66 AND 0.49 KG-KG, RESP. FOR ARLAN MAZUT-C SUB6 H SUB6, PHME, ME SUB2 C SUB6 H SUB4 PLUS PHET, AND NAPHTHALENE, YIELDS WERE MAX. (6.0, 1.6, 0.2, AND 1.4PERCENT, RESP.) AT AN C SUB2 H SUB4 YIELD OF 13.8PERCENT WHEN THE CONDITIONS WERE 0.24 SEC AT 960DEGREES WITH B EQUALS 0.51, WHEREAS THESE YIELDS WERE 3.5, 2.1, 0.5, AND 0.5PERCENT AT AN CL SUB2 H SUB4 YIELD OF 17.5PERCENT WHEN THE CONDITIONS WERE 0.07-0.09 SEC AT 920-50DEGREES WITH B EQUALS 0.5 AND THE FRACTION OF THE ORIGINAL S LEFT IN THE COKE WAS SIMILAR TO 30PERCENT. THIS FRACTION WAS MIN. (SIMILAR TO 11 AND 25PERCENT) AND C SUB2 H SUB4 YIELDS WERE HIGH (27.6 AND 17.6PERCENT) WHEN THE RESP. MAZUTS WERE PYROLYZED FOR 0.03 AND 0.06 SEC AT 915 AND 945DEGREES WITH B EQUALS 0.75 AND 1.0, BUT AROMATIC HYDROCARBON YIELDS WERE REDUCED BY SIMILAR TO 33PERCENT AND POWER EFFICIENCY BY SIMILAR TO 3.5-4.0PERCENT. IN COMPARISON WITH SEP. PRODUCTION OF POWER AND PETROLEUM PRODUCTS, POWER PLANT PYROLYSIS UNDER OPTIMAL CONDITIONS REDUCED BOILER FUEL CONSUMPTION BY SIMILAR TO 20PERCENT AND POWER COSTS BY SIMILAR TO 50PERCENT.

UNCLASSIFIED



USSR

UDC 623.983:621.395

DZERZHINSKIY, I.V., ZHAROVA, N.A., PRIMCHOD'KO, V.P., FOMINA, I.P., FURDUEV, A.V.

"Deep-Water Nine-Channel System Of Hydrophones"

Tr. Akust. in-ta (Works Of The Institute Of Acoustics), 1971, No 16, pp 5-15  
(from RZh:Elektronika i yeye primeneniye, No 1, Jan 72, Abstract No 1A541)

Translation: A deep-water system of hydrophones is described which assures simultaneous reception of acoustic signals at nine levels at depths up to 1.5 km in the frequency range from 2 hz to 6 khz with a dynamic range of 50 db. With the object of increasing the reliability and simplifying the transmitting device, a system of frequency modulation is used with an uncontrolled center band. Automatic frequency control of the oscillators is incorporated in the receiving device. The lowering devices are distinguished only by the central frequencies and the frequencies of the remote control of the attenuators. A nondirectional cylindrical hydrophone of barium titanate with self-capacitance of 680 picofarad and a sensitivity of 80 microvolt/bar is used as the signal source. Connection of the signal sources is accomplished by a generator circuit. The noise level in the line because of discontinuities does not exceed that permissible. In the system of hydrophones a type KML-7 cable-hawser is used which has three high-frequency coaxial cores with a wave impedance of 50 ohm and four insulated steel hawsers. 6 ill. 4 ref. L.K.  
1/1

USSR

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UDC 616.988.6-097

GURTSEVICH, V. E., MAZURENKO, N. P., ZHAROVA, Ye. I., PRIBATOVA, N. A., and STEPANOVA, G. N., Laboratory of the Virology of Leucoses, Laboratory of Systemic Blood Diseases, and Division of Pathological Anatomy of Human Tumors, Institute of Experimental and Clinical Oncology, Academy of Sciences USSR, Moscow

"Specific Surface Leukosis Antigen and Cellular Malignancy in Mice of the CC57BR Line Infected with Mazurenko Virus"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 3, 1970, pp 100-104

Abstract: Mice of the CC57RB line were injected with Mazurenko virus. The time needed for appearance of specific antigen in cells of various organs and tissues was compared with the appearance of malignant cell transformation, detected morphologically and by transplantation. Using the immunofluorescence method, specific surface antigen was detected before the histological diagnosis of leukemia was made and before the cells became transplantable. This antigen was found in spleen, thymus, lymph nodes, and bone marrow at about the same time. A direct relationship was detected between the quantity of fluorescent cells and the degree of morphological change.

1/1

Acc. Nr:

AP0051972

Ref. Code:

UR0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 3, pp 100-104

SPECIFIC SURFACE LEUKEMIC ANTIGEN AND CELLULAR MALIGNIZATION IN MICE OF THE CC57BR LINE INFECTED WITH MAZURENKO'S VIRUS

V. E. Gurtsevich, N. P. Mazurenko, Ye. I. Zharova, N. A. Probatova, G. N. Stepanova

Institute of Experimental and Clinical Oncology of the Academy of Medical Sciences, of the USSR, Moscow

A specific surface antigen, detected by means of immunofluorescence in mice of the CC57BR line infected with Mazurenko's virus, was revealed before establishing the cytohistological diagnosis of leukemia and before the cells acquired the capacity to transplantation. The referred to antigen was determined in injected mice approximately at the same periods in the spleen, thymus, lymph nodes and bone marrow, this may be interpreted in favor of the autochthonous origin of the leukemia studied. There was established a direct relation between increase of the quantity of fluorescent cells in the organ investigated and intensification therein of morphological changes accompanied by the development of leukemia.

REEL/F.RAME...  
19820459

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1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--EXTRACTION AND PHOTOMETRIC DETERMINATION OF 5,7  
DIBROMO,8, HYDROXYQUINOLINE USING VANADIUM V -U-  
AUTHOR--(02)-ZHAROVSKIY, F.G., NGUYEN, C.S.  
COUNTRY OF INFO--USSR  
SOURCE--UKR. KHIM. ZH. 1970, 36(4), 390-3  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--BROMINATED ORGANIC COMPOUND, HYDROXYL RADICAL, QUINOLINE,  
PHOTOMETRIC ANALYSIS, VANADIUM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3008/0888 STEP NO--UR/0073/70/036/004/0390/0393  
CIRC ACCESSION NO--AP0137916  
UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70  
CIRC ACCESSION NO--AP0137916  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXT. A SOLN. CONTG. IN 10 ML 7-150  
MU G 5,7-DIBROMO-8-HYDROXYQUINOLINE, 1 ML 0.5PERCENT NH SUB4 VO SUB3,  
AND ENOUGH NH SUB4 OH TO MAKE THE PH EQUAL TO 2 WITH 10 ML BUOH. FILTER  
THE EXT. AND MEASURE THE ABSORBANCE AT 410 NM. THE MOLAR ABSORPTIVITY  
IS 6.9 TIMES 10 PRIME3. ALKALI AND ALK. EARTH METALS, AL, GA, IN, TL,  
CR(III), FE, H SUB2 SO SUB4, H SUB3 PO SUB4, AND CITRIC ACID DO NOT  
INTERFERE. FACILITY: KIEV. GOS. UNIV. IM. SHEVCHENKO, KIEV,  
USSR.

UNCLASSIFIED

USSR

UDC 612.53

MAYSTRAKH, YE. V., KHARSKAYA, V. D., KARLOV, V. A., and SEMENOV, P. P., Chair of General Clinical Pathology, State Institute for Advanced Training of Physicians imeni S. M. Kirov

"The Participation of Nuclei of the Anterior Hypothalamus in Temperature Regulation During Cooling and Hypothermia in Nonanesthetized Rats"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, No 1, 1970, pp 32-37

Abstract: In control rats with implanted electrodes but an otherwise intact brain, no significant changes took place in body temperature, gas exchange, or nature of the thermoregulatory response to external chilling. After destruction of the presynaptic hypothalamus, indices of gas exchange, skin temperature, and behavior remained unchanged, but the rectal temperature decreased markedly. During moderate hypothermia (25° rectal temperature), comparatively weak functional shifts took place in the neurons of the preoptic region (swelling of the cytoplasm and nucleus, vacuolation of the

USSR

MYSTRAKH, YE. V., et al., Leningrad, Fiziologicheskii Zhurnal  
SSR imeni I. M. Sechenov, No. 1, 1970, pp 32-37

cytoplasm, hyperchromatosis, etc.). The most significant changes  
were observed in these neurons (especially in the medial nuclei)  
after the rats were allowed to warm themselves up after hypothermia,  
an indication that the anterior hypothalamus plays a role in tem-  
perature homeostasis.

2/2

JDG 621.385.623.4

USSR

BORISOV, L.M., ZAKHAROVA, A.N., YEVTUSHENKO, O.V., ZHARYI, YE. V., KAUFMAN, G.M.,  
PETROV, D.M., SAMORCDOVA, G.A.

"Experimental Television Klystron With High Efficiency"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology.  
Scientific-Technical Collection. Microwave Electronics), 1970, No 7, pp 160-162  
(from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11A136)

Translation: The development is reported of an experimental klystron, the parameters of which were optimized for a specified current and voltage with the aid of an electronic computer. The electronic efficiency of the klystron produced amounts to 70 percent. With an amplification band of 1.3 percent and a shift of the maximum amplitude-frequency characteristic to the low-frequency side, the maximum efficiency (with respect to power in the load) exceeds 60 percent with an amplification factor of 40 db. Summary.

1/1



Acc. Nr: AP0044212

2

Ref. Code: UR 0239

PRIMARY SOURCE: Fiziologicheskiy Zhurnal, 1970, Vol 56,  
Nr 1, pp 32-37

ON THE ROLE OF ANTERIOR HYPOTHALAMUS NUCLEI  
IN THERMOREGULATION UNDER COOLING AND HYPOTHERMIA IN RATS

Maystrakh, Ye. V.; Zharskaya, V. D.; Karlov, V. A.; Semenov, P. P.

From the Departm. of Clinical Pathology S. M. Kirov Postgraduate Medical Institute,  
Leningrad

Experiments in rats applying the method of electrolytic lesions, histological and histo-chemical study of nuclei of the anterior hypothalamus revealed their participation in the thermoregulating reaction under cooling and hypothermia of un-anaesthetized animals. A comparatively weak regulating influence of this area upon the processes maintaining temperature homeostasis and participation of the medial nucleus of the preoptic region into this reaction during the period of hypothermal self-restoration have been established.

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MIT

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REEL/FRA  
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UNCLASSIFIED

PROCESSING DATE--09OCT70

1/2 016

TITLE--BEHAVIOR OF CHLORINE IN THE ELECTROLYSIS OF COPPER AND INSOLUBLE ANODES AND AIR AGITATION OF THE ELECTROLYTE AT HIGH CURRENT DENSITIES  
AUTHOR--(05)--BUZHINSKAYA, A.V., MIGINA, A.I., ZHATKINA, T.F., MIKHAYLOVA, D.I., BOBROV, A.B.  
COUNTRY OF INFO--USSR

SOURCE--ELEKTROKIMIYA 1970, 6(3), 315-17

DATE PUBLISHED--70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--COPPER ELECTROLYTIC REFINING, ELECTROLYTE, ELECTRODEPOSITION, EXTRACTIVE METALLURGY, CHLORINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FKAME--1995/1382

STEP NO--UR/0364/70/006/003/0315/0317

CIRC ACCESSION NO--AP0116831

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--09OCT70

2/2 016

CIRC ACCESSION NO--AP0116831

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

CONTR. GU 45-50, H SUB2 SO SUB4 90-100, NISO SUB4 SMALLER THAN OR EQUAL TO 20, AND CL NEGATIVE (AS NA<sub>2</sub>CO<sub>3</sub>) 50-500 G-DM PRIME3 AT 50 DEGREES. THE ELECTROLYTE WAS AGITATED BY AN AIR FLOW OF 10 L-CM PRIME2 OF INTERELECTRODE CROSS SECTION PER HR. THE RATIO OF CL IN THE ATM. TO THAT IN SOLN. DOES NOT CHANGE WHEN THE C.D. IS INCREASED FROM 1000 TO 2500 A-M PRIME2. A CONC. OF 0.5-1.5 G FECL SUB3-DM PRIME3 IS SUFFICIENT IN THE HYDROMETALLURGICAL TREATMENT OF CEMENT CU AND SUBSEQUENT ELECTRODEPOSITION OF CU FROM SOLN. FACILITY: GOS. NAUCH. ISSLED. INST. TSVET. METAL., MOSCOW, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--BEHAVIOR OF CHLORINE IN THE ELECTROLYSIS OF COPPER AND INSOLUBLE  
ANODES AND AIR AGITATION OF THE ELECTROLYTE AT HIGH CURRENT DENSITIES  
AUTHOR--(05)-BUZHINSKAYA, A.V., MIGINA, A.I., ZHATKINA, T.F., MIKHAYLOVA,  
D.I., BOBROV, A.B.  
COUNTRY OF INFO--USSR

SOURCE--ELEKTROKIMIYA 1970, 6(3), 315-17

DATE PUBLISHED--70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--COPPER ELECTROLYTIC REFINING, ELECTROLYTE, ELECTRODEPOSITION,  
EXTRACTIVE METALLURGY, CHLORINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1382

STEP NO--UR/0364/70/006/003/0315/0317

CIRC ACCESSION NO--AP0116831

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--0900T70

CIRC ACCESSION NO--AP0116831

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE ELECTROLYSIS OF A SOLN. CONTG. CU 45-50, H SUB2 SO SUB4 90-100, NISO SUB4 SMALLER THAN OR EQUAL TO 20, AND CL NEGATIVE (AS NA CL) 50-500 G-DM PRIME3 AT 50DEGREES, THE ELECTROLYTE WAS AGITATED BY AN AIR FLOW OF 10 L.-CM PRIME2 OF INTERELECTRODE CROSS SECTION PER HR. THE RATIO OF CL IN THE ATM. TO THAT IN SOLN. DOES NOT CHANGE WHEN THE C.D. IS INCREASED FROM 1000 TO 2500 A-M PRIME2. A CONCEN. OF 0.5-1.5 G FECL SUB3-DM PRIME3 IS SUFFICIENT IN THE HYDROMETALLURGICAL TREATMENT OF CEMENT CU AND SUBSEQUENT ELECTRODEPOSITION OF CU FROM SOLN. FACILITY: GOS. NAUCH. ISSLED. INST. TSVET. METAL., MOSCOW, USSR.

UNCLASSIFIED

Veterinary Medicine

USSR

UDC: 619.614.94:612.014.464

ABRAMOV, S. S. and ZHAVNENKO, V. M., Vitebsk Veterinary Institute

"Effect of Hydroaeroions on Aerial Microflora in Farm Buildings"

Moscow, Veterinariya, No 2, 1971, pp 34-35

Abstract: Petri dishes were exposed in stalls where sick animals were kept and in a passageway between the stalls. The dishes were then subjected to hydroaeroionization for 30 minutes (the concentration of hydroaeroions ranged from  $150 \cdot 10^3$  to  $250 \cdot 10^3$ ). The microflora were inoculated onto a new series of dishes and transferred one hour after hydroaeroionization to still another series of dishes, incubated at  $37^\circ$  for 24 hours, and kept for 48 more hours at room temperature after which the colonies were counted. The number of microorganisms (mainly *S. albus*, *S. citreus*, *Proteus vulgaris*, *E. coli*, *Penicillium*, and *Aspergillus*) in the air of the stalls after 30 minutes' hydroaeroionization decreased more than 4-fold. An hour later the number increased but was less than before exposure. In the passageway between the stalls, the changes were less pronounced because of the greater velocity of the air flow and because the concentration of hydroaeroions was much lower.

I/2 011 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--SYNTHESIS AND DETERMINATION OF THE LATTICE PARAMETERS OF NEW OXIDES  
OF COMPLEX COMPOSITION WITH PEROVSKITE STRUCTURE -U-  
AUTHOR--(05)-FILIPYEV, V.S., FESENKO, YE.G., DEVLIKANOVA, R.U., ZHAVORONKO,  
G.P., SHVOM, YE.A. Z  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1), 179-81  
DATE PUBLISHED-----70  
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY  
TOPIC TAGS--MINERAL, OXIDE, CRYSTAL LATTICE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1984/0148 STEP NO--UR/0363/70/005/001/0179/0181  
CIRC ACCESSION NO--A0054944  
UNCLASSIFIED

272 011

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054944

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE COMPS, CA SUB3 TA SUB2 CDD  
SUB9 AND CA SUB3 TA SUB2 CAD SUB9 (CA SUB4 TA SUB2 O SUB9), A NEW TYPE  
OF PEROVSKITE LATTICE DISTORTION WAS OBSD. IN CONTRAST TO THE KNOWN  
TRICLINIC DISTORTION, THE PEROVSKITE LATTICE OF THESE COMPS. IS  
OBTAINED FROM A SUPPLEMENTARY MONOCLINIC DISPLACEMENT ALONG THE LONG  
DIAGONAL OF THE BASE.

UNCLASSIFIED



ZHAVORONKOV, A. A.

CHRONIC PROGRESSIVE LUNG DISEASE AS A REGIONAL PATHOLOGY IN SOME NORTH-EASTERN PARTS OF THE USSR

Articles by A. A. Zavoronkov, B. I. Baranova, I. K. Belyantsev, A. A. Zavoronkov, E. E. Kozlov, A. G. Kuznetsov, V. S. Gromov, Institute of Human Morphology of the USSR Academy of Medical Sciences, Moscow; Nagadnenskaya Oblast Hospital; Moscow; Venerik Akademii Meditsinskikh Nauk SSSR, Ruzhitsk. No. 10, 1971, pp 3-14]

SO:JPRS 54539

23 NOV 71

UDC: 616.13-036.12:036.21(470.1)

At the present time, the attention of pathologists and clinicians is being drawn more and more to chronic progressive diseases of the lungs resulting in fibrosis and emphysema. For many years, chiefly in England, they were called chronic bronchitis which, since the times of Rodham (1806), has been considered practically a traditional English disease. It is not by chance that Stokes (1837) in his classical textbook on thoracic pathology devoted much more attention to it than to tuberculosis. English researchers have authored many works dealing with the symptomatology, x-ray diagnosis, and possible etiology of chronic bronchitis. Its traditional link with the humid climate of the British Isles, exacerbation of the disease during the cold season have become firmly fixed in the consciousness of many physicians.

A comprehensive monograph dealing with chronic bronchitis has been published by a team of English physicians and edited by Oswald (1958). This author demonstrated, in particular, that in England and Wales, 30,000 people died of bronchitis in 1957, which constitutes 7 percent of all causes of death. To this we should add 21,000 deaths due to pneumonia, 2,000 deaths due to bronchiectasis, and 3,000 deaths because of asthma. It is not by chance that we compare these indices, since bronchitis, asthma, bronchiectasis, and emphysema are often combined, and it is only the chief clinical syndrome that makes it possible to separate them into different categories.

The incidence of chronic bronchitis is described in contradictory ways. However, there is no doubt that under specific climate conditions this disease could be one of the chief causes of disability. Evidently, the sickness begins at an early age (20-30 years), but most deaths are referable to the elderly and aged (Oswald). Among its victims there is prevalence of individuals in specific professions, but metallurgical, transportation, and communication workers are stricken particularly often. In England, bronchitis does not spare agricultural workers, unskilled laborers, and representatives of other occupational groups.

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--ON THE HISTOMORPHOLOGICAL CHARACTERISTICS OF SOME INCRETORY GLANDS  
OF RATS IN FLUORINE INTOXICATION -U-  
AUTHOR-(02)-ZHAYDRONKOV, A.A., ODINOKOVA, V.A.  
COUNTRY OF INFO--USSR  
SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 49,  
NR 6, PP 107-110  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SODIUM COMPOUND, FLUORIDE, FLUOROSIS, THYROID GLAND,  
PARATHYROID GLAND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3004/0573

STEP NO--UR/0219/70/049/006/0107/0110

CIRC ACCESSION NO--AP0131196

UNCLASSIFIED

272 022

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0131196

ABSTRACT/EXTRACT--(U) GP-Q- ABSTRACT. A SOLUTION OF SODIUM FLUORIDE IN DOSES OF 0.03, 0.1 AND 1.2 MGPER 100 OF BODY WEIGHT WAS DAILY INTRODUCED SUBCUTANEOUSLY TO 179 ALBINO RATS; AS CONTROL SERVED 26 RATS TO WHOM A SOLUTION OF SODIUM FLUORIDE WAS NOT INTRODUCED. THE AUTHORS INVESTIGATED THE THYROID AND PARATHYROID GLANDS DURING THE PERIOD OF INTOXICATION UP TO 206 DAYS IN THE FIRST TWO GROUPS AND UP TO 60 DAYS, IN THE THIRD GROUP AFTER THE SOLUTION ADMINISTRATION UP TO THE 135TH AND 123RD DAY IN RESPECTIVE GROUPS. IT WAS ESTABLISHED THAT FLUORINE IS ENDOWED WITH AN INSIGNIFICANTLY MARKED THYROSTATIC EFFECT. EXPERIMENTAL FLUOROSIS IN RATS IS ACCOMPANIED BY SECONDARY HYPERPARATHYROSIS AND INCREASE IN THE NUMBER OF SPECIFIC LUCID THYROID CELLS PRODUCING THYROIDCALCITONIN. FACILITY: SCIENTIFIC RESEARCH INSTITUTE OF HUMAN MORPHOLOGY OF THE ACADEMY OF MEDICAL SCIENCES OF THE USSR, MOSCOW.

UNCLASSIFIED

USSR

UDC 669.187.2

KUZNETSOV, L. K., Candidate of Technical Sciences, TULIN, N. A., Candidate of Technical Sciences, ZHAYORONKOV, K. P., Engineer, LABUNOVICH, O. A., Engineer, and ZINUROV, I. YU., Engineer

"Working Experience of a 100-ton Electric Furnace with Up-rated Transformer and Improved Short Mains"

Moscow, Stal', No 3, Mar 73, pp 236-238

Abstract: Transformers of 29, 15 and 32 kv-amp up-rated nominal power, permitting temporary overloading up to 45 kv-amp, were installed on two 100-ton electric furnaces at the Chelyabinsk Metallurgical Plant. Modernization of short mains ensured a more uniform power distribution by phases and decreased induction losses. The conditions of melting stainless and structural steels are discussed. For greater effectiveness, further modernization measures must be carried out. One figure, four bibliographic references.

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1/2 010 UNCLASSIFIED PROCESSING DATE--02 OCT 70  
TITLE--CATALYTIC PROPERTIES OF YTTRIUM DECATIONIZED ZEOLITES -U-  
AUTHOR--(04)--RUSOLOVSKAYA, YE.N., TOPCHIEVA, K.V., ZHAVORONKOV, M.N.,  
ROZANOVA, O.N.  
COUNTRY OF INFO--USSR  
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(3), 610-12  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CATALYST ACTIVITY, YTTRIUM, ZEOLITE, ISOPROPYL BENZENE,  
CATALYTIC CRACKING  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1992/1906 STEP NO--UR/0020/70/190/003/0610/0612  
CIRC ACCESSION NO--AT0112883  
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AT0112883

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CATALYTIC PROPERTIES OF TYPE Y, Y DECATIONIZED ZEOLITES, USED IN ISOPROPYLBENZENE CRACKING AT 280-450DEGREES WERE INVESTIGATED BY USING THE IMPULSE METHOD. CATION DECATIONIZED SAMPLES, CONTAINING VARIOUS PROPORTIONS OF Y, NA, AND DECATIONIZED RESIDUES, WERE OBTAINED IN 2 WAYS: (1) THE NA-NH SUB4 FORM OF THE ZEOLITE WAS TAKEN AND THEN Y WAS INTRODUCED BY ION EXCHANGE, (2) THE INITIAL FORM WAS NA-Y ZEOLITE, INTO WHICH NH SUB4 IONS WERE INTRODUCED. AN AMORPHOUS HOUDRY ALUMINOSILICATE WAS ALSO EXAMD. FOR COMPARISON. CELL PARAMETERS OF CRYST. SAMPLES WERE DETD. BY USING X RAY METHODS. CELL PARAMETERS, REACTION RATE CONSTS. AT 400DEGREES, AND ACTIVATION ENERGIES FOR 8 CATALYSTS ARE TABULATED. THE RATES DIFFER CONSIDERABLY (BY A FACTOR OF 20), BUT ACTIVATION ENERGIES ARE SIMILAR, SIMILAR TO 17 KCAL-MOLE. FOR A HIGH CATALYTIC ACTIVITY, THE RATIO OF ALL 3 COMPONENTS, DECATIONIZED RESIDUES, INTRODUCED CATION, AND REMAINING NA, IS IMPORTANT. FOR INCREASED ACTIVITY, THE LOWERING OF THE NA CONTENT BECAUSE OF AN INCREASE OF DECATIONIZED PARTS IS MORE EFFECTIVE THAN THAT BECAUSE OF AN INCREASE OF TRIVALENT CATION. THE MOST CATALYTICALLY ACTIVE SAMPLE CONTAINED THE SMALLEST AMT. OF NA. THE ORDER OF INTRODUCTION OF CATIONS WAS OF GREAT IMPORTANCE FOR STABILIZATION OF THE ACTIVE STRUCTURE OF THE CATALYST: BETTER CATALYSTS WERE OBTAINED BY 1ST TAKING NA ZEOLITE, INTRODUCING THE TRIVALENT CATION, AND THEN REPLACING NA BY NH SUB4. Y DECATIONIZED ZEOLITES ARE HIGHLY EFFECTIVE CATALYSTS FOR THE CRACKING REACTION. A COMPLEX INTERACTION OF COMPONENTS WITH THE ZEOLITE LATTICE ACCOUNTS FOR THIS HIGH AND STABLE CATALYTIC ACTIVITY.

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2. HAVO... KDU, N.

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PRIMARY SOURCE: FBIS Daily Report, Soviet Union, 9 Feb 70, Vol XII, N# 27, P D1 USSR

MOSCOW ACADEMY OF SCIENCES MEETING CONCLUDES

Moscow TASS International Service in English 1753 GMT 6 Feb 70 L

[Text] Moscow, February 6, TASS--Intensification of production on the basis of the latest achievements of science was the topic of discussion at the general meeting of the Academy of Sciences of the USSR which ended its work today. Taking part in the discussion were scientists, and representatives of the industry.

"It is shown by statistical data, science is the most advantageous sphere of capital investments," said Academician Vadim Trapeznikov. Analysing the problem "Economic Management and Scientific-Technical Progress", he reported that the increment of the national income from allocations into science is several-fold higher than that received as a result of direct investment into production.

Further technical progress, Academician Boris Piton believes, depends in many respects upon the development of metallurgy. "Despite the rapid growth of production of synthetic materials, metal will remain the principal construction material in the foreseeable future," the scientist said at the meeting.

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Summing up the results of the discussion, Academician Nikolai Zhavoronkov has said that development of scientific foundations of chemical technology is one of the most important tasks of chemists, in particular. He recalled that over 600 big scientific and technical estimates were put into effect in the chemical industry in the recent decade.

Academician, Nobel Prize winner, Nikolai Basov believes it necessary to establish scientific laboratories at all institutes under different branches of industry and plants scientists are cooperating with. He believes that this will speed up introduction of discoveries into production.

The general meeting massed a decision on the tasks of the Academy of Sciences of the USSR, linked with technical progress. The decision determines priority research in power engineering, control and automation, radio electronics and the other spheres of science.

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USSR

UDC 632.95

MANEVICH, ZH. I., MOLOCHNIKOV, YE. V., and ZHAVORONKOV, N. I.

"Comparative Evaluation of Methods for Gas Chromatographic Determination of Carbamate Pesticide Residues"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryazneniya imi produktov pitaniya, kormov i vneshn. sredy (Transactions 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 77-80 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13R444 by T. A. Belyayeva)

Translation: Survey. Comparison of VPC carbamate determination methods. The most promising area is the detection of carbamate pesticides in the form of brominated derivatives with the use of an electron capture detector.

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USSR:

UDC 543.8:632.93

Candidates of Biological Sciences MOLOCHNIKOV, V. V., and ZHAVORONKOV, N. I.,  
Candidate of Technological Sciences POLYAKOVA, V. N., and MOCHALOV, V. I.,  
All-Union Institute of Experimental Veterinary Sciences

"Investigation of Solvents' Distillation Methods for the Purpose of Determining Certain Pesticides With the Use of Gas Chromatography"

Moscow, Doklady Vsesoyuznoy Ordena Lenina Akademii Sel'skokhozyaystvennykh Nauk imeni V. I. Lenin, No 7, July 1971, pp. 32-33

Abstract: The ever increasing use of chemical pesticides in agriculture necessitates the development of analytical methods which make it possible to determine the residue content of these chemicals in food products, water, soil, stock feed, and so on in quantities as small as 0.001 to 1.000 micrograms per kilogram. Among such methods is gas chromatography. For this purpose processes which make it possible to distil and evaporate solvents containing the pesticides to lowest concentration volumes are required.

The object of the investigations described in the article was to determine the efficacy of different distillation methods when applied for the

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USSR:

MOLOCHNIKOV, V. V., et al., Doklady Vsesoyuznoy Ordena Lenina Akademii Sél'skokhozyaystvennykh Nauk imeni V. I. Lenin, No 7, July 1971, pp 32-33

preparation of four of the most widely used pesticides -- 4,4'-dichlorodiphenyltrichloroethane (DDT); 4,4'-dichlorodiphenyltrichloroethylene (DDE); trichlorometaphos-3 (TKhM-3); the gamma-isomer of hexachlorocyclohexane (lindane) for gas chromatography. One milliliter of a standard mixture containing 10 micrograms of each of the pesticides was dissolved in 100 milliliters of a mixture of benzene and hexane in a ratio of 3:8. Distillation was carried out in a 500 milliliter round-bottom retort (retort 1); 500 milliliter flat-bottom retort (retort 2); 120 milliliter round-bottom retort (retort 3); Petri dish; and 250 milliliter round-bottom retort on an IR-1 evaporator.

The contents of retorts 1, 2, and 3 were distilled as follows: on a boiling water bath for 12 minutes; on a water bath at 80 degrees Centigrade (C) for 40-60 minutes; on a water bath at 45-50 degrees C in an air current for 20-40 minutes. The contents of retort 3 were also distilled on a water bath

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USSR

MOLOCHNIKOV, V. V., et al., Doklady Vsesoyuznoy Ordena Lenina Akademii Sél'skokhozyaystvennykh Nauk imeni V. I. Lenin, No 7, July 1971, pp 32-33

at 45-50 degrees under vacuum for 25-30 minutes; of Petri dish in an air current at room temperature for 45-50 minutes; of the 250 milliliter round-bottom retort on a water bath of an IR-1 evaporator at a temperature of 45-50 degrees C. Distillation was continued until volumes of 0.2-0.4 milliliters were obtained. The residue was washed with 10 milliliters of hexane and analyzed. Optimal results were obtained in distillation under vacuum at 45-50 degrees C. Only about 0.5 percent of the lindane was lost, while the other pesticides were determined without loss.

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USSR

UDC 532.516

KHOLPANOV, L. P., SHKADOV, V. Ya., MALYUSOV, V. A., ZHAVORONKOV, N. M.

"A Theoretical Study of Gravitational Runoff of Thin Layers of Liquid Under Wave Formation"

V sb. Teplo- i massopereenos. T. 1 (Heat and Mass Transfer. Vol. 1 -- Collection of Works), Minsk, 1972, pp 186-197 (from RZh-Mekhanika, No 8, Aug 72, Abstract No 8B741)

Translation: The problem of the flow of a thin liquid film over a vertical plane in the absence of gas flow and the analogous problem of a film in the presence of a gas flow washing the film are solved in the nonlinear approximation. To solve the first problem the flow function and the variable thickness of the film are expanded in series in terms of harmonics. Equations for the expansion coefficients obtained after substituting expansions into the Navier-Stokes equations and the boundary conditions are solved by computers. Figures are given showing the lines of flow and the ratio of the surface velocity to the average (with respect to the film thickness) for two values of the Galilean number  $G = gh^3/\nu^2$ . It is pointed

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KHOLPANOV, L. P., et al, Teplo- i massopereenos. T. 1, Minsk, 1972,  
pp 186-197

that the flow function and the tangential stress at the wall take on negative values at the valleys of the waves for  $G > 45$ . The second problem of a film interacting with a gas is solved under the assumption of a parabolic velocity profile of the liquid in the film (the Kapitza assumption). The problem of the motion of the gas is not solved but the interaction of the film with the gas is taken into account by assigning some constant tangential stress on the surface. The equation of the surface in this problem is also sought in the form of an expansion in terms of harmonics and the authors restrict themselves to the second approximation in terms of the amplitude. The value of the square of the amplitude is given for the case of downward flow  $\alpha^2 = R/g(1-T/2) - 1/3/2 + R/4G \cdot T$ , where  $T$  is the dimensionless tangential stress. 14 ref. L. N. Maurin.

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ZHAVORONKOV N.M

Chemistry

INORGANIC CHEMISTRY AND PROGRESS OF THE CHEMICAL INDUSTRY

Report of Academician N. M. Zhavoronkov; Moscow; Vestnik Akademi Nauk SSSR, Russian, Vol. 41, No. 8, August 1971, pp. 14-17

SPR 5435  
94 Jul 71

The specific effects of the contemporary chemical industry consist in the fact that its progress depends on the development of basic scientific research to a greater degree than in many other branches. The progress of the chemical industry, which has permitted overcoming its lag behind machine-building, also was a result of the development in chemistry of basic research connected with knowledge of the electronic structure of chemical compounds, the nature of the chemical bond, reactivity, the mechanisms of various chemical reactions, etc.

Of paramount importance for the use of the achievements of chemical science in industrial practice is technology -- the science of the most economical methods and processes for processing raw materials into objects of consumption and means of production.

Modern chemical engineering, using the methods of chemistry, physics, mathematics and a number of engineering and economic disciplines, works out and studies a technology of physical and chemical processes and optimal paths of their implementation and control in the industrial production of various products under concrete technical and economic conditions.

The development of basic research in the areas of chemistry and chemical engineering has been the result of the activity of many generations of people of special perspicacity and intuition, armed with profound and broad scientific knowledge.

USSR

UDC: 532.72

BABAK, V. N., KHOLPANOV, L. P., MALYUSOV, V. A., ZHAVORONKOV, N. M.

"Steady-State Mass Exchange in a Liquid-Gas System Under Conditions of Laminar Opposed Motion of the Phases"

Teor. osnovy khim. tekhnol. (Theoretical Principles of Chemical Technology), 1971, 5, No 2, pp 179-186 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7B832)

Translation: This paper deals with the problem of redistribution of matter between the gas and liquid phases in the case of laminar film run-off of a liquid along the walls of vertical plates under counterflow conditions. The equations of diffusion in the liquid and gas phases respectively are written in the form

$$v_x \frac{dc_x}{dx} = D_x \frac{d^2c_x}{dy^2}, \quad v_r \frac{dc_r}{dx} = D_r \frac{d^2c_r}{dy^2}$$

The boundary conditions are set up in the following manner:  $c_x = kc_r$ ,  $D_x \frac{dc_x}{dy} = D_r \frac{dc_r}{dy}$  on the phase interface,  $\frac{dc_r}{dy} = 0$  on the axis of the channel

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BABAK, V. N. et al., Teor. osnovy khim. tekhnol., 1971, 5, No 2, pp 179-186

formed by the vertical plates  $\partial c_{\kappa} / \partial y = 0$  on the surface of the plates. [Translator's note: the subscripts  $\kappa$  and  $\Gamma$  in these expressions stand for liquid and gas respectively]. The concentration of transferred matter in the gas phase at the time of gas input into the system is  $c_0$ , while the concentration of transferred matter in the liquid phase at the time of liquid input into the system is zero. For different values of the dimensionless parameters  $\epsilon$  and  $\beta^2$ , assuming a flat velocity profile in the liquid and gas phases, viz.  $\bar{v}_{\Gamma} = \bar{v}_{\Gamma}$ ,  $\bar{v}_{\kappa} = \bar{v}_{\kappa}$ , where  $\bar{v}_{\Gamma}$ ,  $\bar{v}_{\kappa}$  are the average velocities of the gas and liquid phases respectively, formulas are derived for the average concentrations of liquid and gas at the output. It is shown that when the inequalities  $|\beta^2| \ll 1$ ,  $|\epsilon| \ll 1$  are simultaneously satisfied, resistance to mass transfer is concentrated only in the liquid phase, and when the inverse inequalities  $|\beta^2| \gg 1$ ,  $|\epsilon| \gg 1$  are simultaneously satisfied, the problem can be solved only in the gas phase, assuming that the concentration is equal to zero on the phase interface. Authors' abstract.

1/2 017 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--GOLD METAL TO ACADEMICIAN NIKOLAY MIHKAYLOVICH ZHAVURONKOV -U-  
AUTHOR--ZHAVURONKOV, N.M.  
COUNTRY OF INFO--USSR  
SOURCE--MOSCOW, PRIRODA, NO 8, P. 107  
DATE PUBLISHED-----70  
SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES  
TOPIC TAGS--NONECONOMIC INCENTIVE, ISOTOPE SEPARATION, HEAVY WATER,  
CHEMICAL PERSONNEL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1992/1175 STEP NO--UR/0026/70/000/008/0107/0107  
CIRC ACCESSION NO--AP0112275  
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0112275

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRESIDUM OF THE USSR ACADEMY OF SCIENCES AND PRESIDUM OF THE CENTRAL BOARD OF THE ALL UNION CHEMICAL SOCIETY IMENI D. I. MENDELEYEV AWARDED THE 1969 GOLD MEDAL IMENI D. I. MENDELEYEV TO ACADEMICIAN NIKOLAY MIHKAYLOVICH ZHAVORONKOV IN RECOGNITION OF HIS INVESTIGATIONS IN THE FIELD OF THE CHEMISTRY AND TECHNOLOGY OF STABLE ISOTOPES OF LIGHT ELEMENTS (HYDROGEN, LITHIUM, BORON, CARBON, NITROGEN, OXYGEN, AND OTHERS). IN A WHOLE SERIES OF ARTICLES, N. M. ZHAVORONKOV PROVIDED THE CLASSIFICATION AND A TECHNICOECONOMIC COMPARISON OF DIFFERENT METHOD OF STABLE ISOTOPES SEPARATION, AND ANALYZED THE BASIC TRENDS OF THE DEVELOPMENT OF THESE METHODS. THESE ARTICLES WERE OF PROGRAMMING SIGNIFICANCE FOR THE DEVELOPMENT OF INVESTIGATIONS IN THE FIELD OF STABLE ISOTOPES IN OUR COUNTRY, AND THE SELECTION OF MORE ECONOMIC METHODS OF THEIR PRODUCTION, PARTICULARLY THE PRODUCTION OF HEAVY WATER.

UNCLASSIFIED

Miscellaneous

USSR

UDC 532.573

MYASNIKOV, S. K., KULOV, N. N., MALYUSOV, V. A., and ZHAVORONKOV, N. M.,  
Institute of General and Inorganic Chemistry Imeni N. S. Kurnakov, Acad. Sc.  
USSR

"Effective Velocity of the Free Surface of a Flowing Liquid Film"

Moscow, Teoreticheskiye Osnovy Khimicheskoy Tekhnologii, Vol 6, No 6, Nov-Dec  
72, pp 393-899

Abstract: A method was developed for the determination of the effective rate of movement of a free surface of a flowing liquid film  $\bar{w}_L$ . On the basis of the experimental data obtained, equations have been derived for the calculation of  $\bar{w}_L$  for four conditions of flowing: transitional flow ( $35 \leq Re_L \leq 80$ ), first wave laminar flow ( $80 \leq Re_L \leq 280$ ), second wave laminar flow ( $280 \leq Re_L \leq 1600$ ), and turbulent flow ( $Re_L > 1600$ ). It has been shown that the ratio of  $\bar{w}_L$  to the average liquid velocity  $\bar{v}_L$  in the range of laminar flow conditions is less than  $3/2$ . The velocity on the liquid film surface has also been determined in presence of surface active materials and dilute aqueous solutions of polymers.

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UDC: 621.3171.35

USSR

ZHAVORONKOV, V. I.

"Oscillographic Recording of Microwave Oscillations in Semiconductor Devices"  
Moscow, Pribory i Tekhnika Eksperimenta, No 3, May/June 72, pp 132-134

Abstract: The paper describes a method of high-speed oscillographic recording on superhigh frequencies using the 10L0101M traveling-wave CRT. A combination of high deflection sensitivity (approximately 0.1 V/mm), a broad frequency passband (several GHz) and a high recording speed (more than  $5 \cdot 10^4$  km/s) makes this method applicable for measuring isolated radio pulses from Gunn generators with a carrier frequency in the 1 GHz range. Examples are presented of photo-oscillograms of the waveforms from Gunn pulse diodes, parametric diodes, and tunnel diodes. The possibilities for further use of high-speed oscillographic recording in semiconductor microwave electronics are discussed. In conclusion the author thanks V. S. Etkin, for his advice and constant discussion in the course of the experimental work, as well as P. I. Chimkin and S. I. Zhavoronkov for assistance in preparing the oscillograph.

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USSR

UDC: 621.375.146.6

ZHAYORONKOV, V. I., IZGAGIN, L. N., SHVARTS, N. Z., Moscow State Pedagogical Institute

"A Transistorized Microwave Amplifier With 1-1000 MHz Passband"

Moscow, Pribory i Tekhnika Eksperimenta, No 3, May/June 72, pp 134-135

Abstract: The article describes a transistorized microwave amplifier with a passband of 1-1000 MHz and output amplitude of the order of several volts. A schematic diagram of one stage is presented. The stage contains a GT612 transistor connected in a common-emitter circuit, and also an interstage circuit for matching the low input impedance of the transistor to the relatively higher output impedance, and for leveling out the amplitude-frequency response over a broad frequency range. The SWR at input and output increases with a reduction in frequency, with a value no greater than 3 throughout the passband. The gain of a four-stage amplifier is 22 dB with nonuniformity of  $\pm 1.5$  dB. The amplifier has a linear amplitude characteristic up to output powers of 12 mW, as well as linear phase response. Combining the four-stage amplifier with a two-stage input amplifier increases the gain to  $33 \pm 3$  dB without narrowing the passband. The described four-stage amplifier was used as a preamplifier for the vertical deflec-

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USSR

ZHAVORONKOV, V. I. et al., Pribory i Tekhnika Eksperimenta, No 3, May/Jun 72, pp 134-135

tion channel of a superhigh-frequency oscilloscope with 10L0101M traveling wave CRT having a sensitivity of 0.7 V/cm in the passband of 0-1.5 GHz. By increasing the sensitivity of the oscilloscopic unit by a factor of 12-15, this made it possible to study continuous signals with frequencies of 1-1000 MHz and power of the order of 0.01 mW, as well as video pulses with an amplitude as low as 0.1 V and less with a duration of 1 ns with a rise time of 0.2-0.4 ns.

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USSR

UDC 621.376.5

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ZHAVORONKOV, V. M., MANSUROV, N. A., MANSUROV, Yu. A., SOKOLOV, A. V.

"Powerful High-Voltage Pulse Modulator Made of Channelless Elements"

Elektrofiz. apparatura i elektr. izolyatsiya (Electrophysics Equipment and Electrical Insulation), Moscow, Energiya Press, 1970, pp 75-82 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8 D298)

Translation: This article contains a description of the operating principle and schematic of a pulse modulator made of magnetic elements and thyristors. The modulator consists of an output pulse transformer, a shaping cascade and a pulse compression cascade, a step-up pulse transformer, a reservoir capacitor, a switching device, a starting module, a charge circuit, and a power rectifier. A brief engineering description of the modulator is presented. The basic parameters of the modulator are the following: pulse power 50 megawatts with a pulse length of 1-10 microseconds, voltage amplitude to 50 kilovolts and pulse repetition rate of 1-200 hertz. The total commuting current passing through the switching device reaches 20 kiloamperes. The modulator is fed directly from a three phase AC network via an electromechanical converter. There are three illustrations and a five-entry bibliography.

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1/2 027 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--VULCANIZATION OF BUTADIENE STYRENE AND BUTADIENE NITRILE RUBBERS BY  
P QUINONE DIOXIME -U-  
AUTHOR-(02)-ANTONOV, B.N., ZHAVORONOK, S.G.  
COUNTRY OF INFO--USSR  
SOURCE--KAUCH, REZINA 1970, 29(5), 13-15  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--VULCANIZATION, BUTADIENE STYRENE RESIN, NITRILE RUBBER, CARBON  
BLACK, OXIME, VULCANIZATE, TENSILE STRENGTH, ELONGATION, PHTHALIC  
ANHYDRIDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3008/0978 STEP NO--UR/0138/70/029/005/0013/0015  
CIRC ACCESSION NO--AP0138006  
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138006

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VULCANIZATION OF BUTADIENE STYRENE RUBBERS OR BUTADIENE NITRILE RUBBERS CONTG. 50 WT. PARTS CARBON BLACK WITH P QUINONE DIOXIME (I) INSTEAD OF S GAVE IMPROVED VULCANIZATES. THE TENSILE STRENGTH AT BREAK (SIGMA) OF SUCH RUBBERS IS SMALLER THAN OR EQUAL TO 400 KG-CM PRIME2 AND THE ELONGATION AT BREAK (EPSILON) IS SMALLER THAN OR EQUAL TO 600PERCENT. WHILE THE RUBBERS VULCANIZED WITH S HAVE SIGMA AND EPSILON 270 KG-CM PRIME2 AND 550PERCENT RESP. I TENDS TO INCREASE SCORCHING, BUT THE ADDN. OF PHTHALIC ANHYDRIDE SOFTENERS ALLEVIATED THE PROBLEM. FACILITY: LENINGRAD. FILIAL NAUCH.-ISSLED. INST. REZIN. PROM. LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC: 681.3

GUSHCHENSKOV, V. N., ZHAVRID, L. M., KAZUSHCHIK, V. A., KOSAREV, Yu. G.,  
SAVIK, N. P.

"Updating the Command System of the 'Minsk-222' Computer System"

V sb. Vychisl. sistemy (Computer Systems--collection of works), vyp.  
42, Novosibirsk, 1970, pp 74-80 (from RZh-Kibernetika, No 9, Sep 71,  
Abstract No 9V548)

[No abstract]

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USSR

UDC 669.295.472

GOPIYENKO, V. G., PAVLOVA, L. A., BAYMAKOV, Yu. V., ZHAYLO, V. A.

"Influence of Current Density and Temperature on Anode Dissolution of Metallic Titanium in Melts"

Tr. Vses. N.-i. i Proekt. In-ta Alyumin., Magn. i Elektrod. Prom-sti [Works of All-Union Scientific Research and Planning Institute for the Aluminum, Magnesium and Electrode Industry], No 79, 1971, pp 127-136, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G262 by G. Svodtseva).

Translation: Studies performed over a broad range of temperatures (150-750°) and electrolyte compositions (NaCl-KCl, NaCl-MgCl<sub>2</sub>, NaCl-AlCl<sub>3</sub>) have shown that in all cases, the anode yield per current decreases with increasing current density and decreasing temperature. The main factor determining the quantitative aspect of anodic dissolution of Ti is the change in the type of electrode reaction. Certain reasons for the deviation of anode yields per current from the theoretical quantities are suggested. 6 Figures; 7 Biblio. Refs.

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USSR

UDC: 669.781.053.4.068

ZHAYMINA, R. Ye., FILIPPOVA, Z. O., MUN, A. I.

"Absorption of Boron by AV-17 and EDE-10 Anionites from Aqueous Salt Solutions"

Tr. In-ta Khim. Nauk. An KazSSR [Works of Institute of Chemical Sciences, Academy of Sciences, KazSSR], 1972, No 36, pp 76-81 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G195, by the authors).

Translation: The influence of various salts on the adsorption of borate ions by the anionites AV-17 and EDE-10 is studied. The increase in the competing influence of ions in the sequence  $K^+ < Na^+ < Li^+ < Ba^{2+} < Ca^{2+} < Mg^{2+}$  and  $F^- < CH_3COO^- < Cl^- < NO_3^- < Br^- < J^-$ , is probably related to the varying facility for hydration. When  $F^-$ ,  $PO_4^{3-}$ , or particularly  $H_2PO_4^-$ ,  $HPO_4^{2-}$  and  $C_2O_4^{2-}$  are added to the solution, the nature of absorption of B changes, resulting from the chemical interaction between the boric acid and these anions. An increase in the concentration of the chlorides of Na, K and Li has practically no influence on the absorption of B from boric acid solutions. An increase in the concentration of  $CaCl_2$  and  $MgCl_2$ , however, facilitates transition of B to

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Zhaymina, R. Ye., Filipova, Z. O., Mun, A. I., Tr. In-ta Khim. Nauk. An KazSSR, 1972, No 36, pp 76-81.

the solid phase, which is explained by the influence of the  $\text{Ca}^{2+}$  and  $\text{Mg}^{2+}$  ions on the state of the boric acid in the solution. 7 figures, 2 tables, 13 biblio. refs.

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USSR

UDC 537.52

ZHAYNAKOV, A.

"On the Relationship of Magnetic and Thermal Forces in an Electric Arc"

Tr. Kirg. un-ta. Ser. fiz. n. (Works of Kirgiz University. Physical Sciences Series), 1972, No 1, pp 55-58 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G123)

Translation: Forces act on the column of an electric arc that are caused by the intrinsic magnetic field and the reaction to the conductive transfer of heat. Expressions for excess pressures caused by magnetic and thermal forces are obtained for the case of a cylindrical arc. Thermal and magnetic forces and pressures are calculated for an electric arc in argon, heated at a pressure of 1 atm in tubes with radii of 0.05 and 0.1 cm, assuming a parabolic temperature profile. It is shown that thermal forces and the excess pressure caused by them are considerably higher than magnetic forces. Attention is given to the specific distribution of thermal forces over the radius of the cross section of the arc: cross-section zones exist where thermal forces are directed from the axis of the arc and the excess pressure is negative. V. L. Martsynk'yan.

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1/2 017 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--INFRARED SPECTROSCOPIC STUDY OF 5,6,CELLULOSENE ACETATES -U-  
AUTHOR--KOMAR, V.P., ZHBANKOV, R.G., DIMITROV, D.G., GALBRAYKH, L.S.,  
ROGOVIN, Z.A.  
COUNTRY OF INFO--USSR Z  
SOURCE--VYSOKOMOL. SOEDIN, SER. B 1970, 12(1), 77-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--CELLULOSE RESIN, ACETATE, IR SPECTRUM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1989/0228 STEP NO--UR/0460/70/012/001/0077/0079  
CIRC ACCESSION NO--AP0106884  
UNCLASSIFIED



2/2 017

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105984

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURES OF 5,6,CELLULOSENE (I) ACETATES CONTG. OAC GROUPS AT C-5, C-2, C-3, AND C-5; AND AT C-2, C-3, C-5, AND C-6, WERE STUDIED BY IR SPECTROSCOPY AT 400-3800CM PRIME NEGATIVE1. SEVERAL ABSORPTION BANDS AT 1730, 1240, 1060, AND 600CM PRIME NEGATIVE1 SUGGESTED THAT I ACETATE RESULTED FROM THE IONIC ADDN. OF ACOH TO THE DOUBLE BOND. THE DIFFERENCE BETWEEN THE SPECTRA OF I ACETATE (CONTG. AN OAC GROUP AT C-5) AND I TRIACETATE (CONTG. OAC GROUPS AT C-5, C-2, AND C-3) INDICATED THAT THE FREQUENCIES AND VIBRATION INTENSITIES OF OAC GROUPS WERE SENSITIVE TO THE SPATIAL ORIENTATION. ABSORPTION BANDS AT 600 AND 900CM PRIME NEGATIVE1 WERE ESP. SENSITIVE TO A CHANGE IN THE RELATIVE ORIENTATION OF OAC GROUPS, A PROPERTY TO BE UTILIZED FOR REFINED STRUCTURAL ANAL.

UNCLASSIFIED

AP 0011797

CHEMICAL ABST.

12/69

UR 0460

126199f Infrared spectroscopy of groundwood and its components grafted with methyl methacrylate. Garbuz, N. I.; Mikhalov, G. S.; Zhibankov, R. G.; Livshits, R. M. (Mosk. Tekst. Inst., Moscow, USSR). *Fysikal. Soedin., Ser. B* 1969, 11(7), 533-6 (Russ). Groundwood (I) and its components, holocellulose, xylan, and dioxane, H<sub>2</sub>SO<sub>4</sub>, and hydrolysis lignins were grafted with H<sub>2</sub>C=C(Me)CO<sub>2</sub>Me (II) by a chain-transfer mechanism in the presence of H<sub>2</sub>O<sub>2</sub>. The ir spectra of the products show that I and its components react with II. In the case of lignin, however, grafting takes place only when lignin is included in the wood complex. Isolated lignins do not react with II.

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Acc. Nr.

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Abstracting Service:  
CHEMICAL ABST.

Ref. Code  
U1R0153

3-70

44373c Structure and properties of cellulose and its derivatives. CCLXXIX. Products of the graft copolymerization of flax fibers with polyacrylonitrile studied by an ir-spectroscopic method. Shekhterman, E. I.; Garbuz, N. I.; Zbbankov, R. G.; Livshits, R. M.; Rogovin, Z. A. (Mosk. Tekst. Inst., Moscow, USSR). *Izv. Vyssh. Ucheb. Zaved., Khim. Khim. Tekhnol.* 1969, 12(9), 1269-71 (Russ). From ir studies (400-3800  $\text{cm}^{-1}$ ) of graft polymers of polyacrylonitrile (II) with rough flax fiber, and with sepd. flax fiber components (pectins, pentosans, and lignin), it is concluded that certain characteristic absorption bands of flax are apparent in the graft products. Particular bands are noted at 2245 and 1460  $\text{cm}^{-1}$ . Grafts of I with dioxane ligands are affected only with pure I monomer with the use of  $(\text{NH}_4)_2\text{S}_2\text{O}_8$ . The product has an intense band at 2245  $\text{cm}^{-1}$ , characteristic of C:N valence oscillations.  
C. E. Stevenson

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19660480

Acc. Nr.

110050765

Abstracting Service:

CHEMICAL ABST. 5/70

Ref. Code

4R0368

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105401w Infrared spectra of insoluble products of  $\gamma$ -irradiated starch. Zhdankov, M. G.; Komar, V. P.; Korotchenko K. A. (USSR). *Zh. Prikl. Spektrosk.* 1970, 12(1), 149-50 (Russ). The ir spectra (600-3800  $\text{cm}^{-1}$ ) of insol. particles isolated from corn starch  $\gamma$ -irradiated with 15-800 megarad dose (300 R/sec) were studied. In the regions of CH stretching and deformation vibrations, the spectra of the particles coincide with those of albumin and  $\gamma$ -globulin and are very similar to the spectrum of *Escherichia coli* bacterium. A relatively intense band at  $\sim 1100 \text{ cm}^{-1}$ , characteristic of sugars, was obsd. The N content in the materials studied was 5.0-10.6%.  
Vaclav Sani

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19810765

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UNCLASSIFIED

PROCESSING DATE--16OCT70  
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TITLE--ON THE ANALYSIS OF THERMOSTIMULATED EXCITATION CURVES

AUTHOR--(02)-SANDOMIRSKIY, V.B., ZHDAN, A.G.

COUNTRY OF INFO--USSR

SOURCE--SOLID STATE ELECTRONICS (GB), VOL. 13, NO. 1, P. 69-73 (JAN. 1970)

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRON TRAP, THERMAL EXCITATION, CALCULATION, NUMERIC SOLUTION, TEMPERATURE DEPENDENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0092

STEP NO--UK/0000/70/013/001/0069/0073

CIRC ACCESSION NO--APG102182

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UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NU--AP0102182

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS SHOWN THAT GROSSWEINER  
 EXPRESSION (1953) FREQUENTLY USED FOR THE EVALUATION OF TRAP DEPTHS (E  
 SUBT) BY MEANS OF THERMOSTIMULATED EXCITATION (TSE) CURVES (GLOW CURVES)  
 DOES NOT COVER ALL POSSIBLE EXPERIMENTAL CASES. MOREOVER EVEN WITHIN  
 THE LIMITS OF ITS APPLICABILITY THIS FORMULA IS LESS ACCURATE THAN  
 ASSUMED BY GROSSWEINER. THE AUTHORS SHOW THAT THE NUMERICAL SOLUTION OF  
 THE EQUATION, WHEREFROM GROSSWEINER FORMULA WAS DERIVED, RESULTS IN THE  
 EVALUATION OF E SUBT WITH ANY DESIRABLE ACCURACY FOR A LARGE RANGE OF  
 EXPERIMENTAL CONDITIONS. FOR THIS PURPOSE A NUMERICAL UNIVERSAL CURVE X  
 SUBC(P) IS USED WHERE X SUBC(P) EQUALS E SUBT-KT SUBM, P EQUALS T SUBM-T  
 PRIME, T SUBM IS THE TEMPERATURE OF TSE MAXIMUM AND T IS THE TEMPERATURE  
 AT WHICH THE LOW TEMPERATURE SIDE OF THE TSE CURVE ATTAINS ONE HALF OF  
 ITS MAXIMUM HEIGHT. A SIMPLE ANALYTICAL EXPRESSION IS DERIVED FOR THE  
 UNIVERSAL CURVE X SUBC(P) WITH AN ACCURACY OF BETTER THAN PLUS OR MINUS  
 0.6 PER CENT.  
 MOSCOW, USSR. FACILITY: INST. RADIOTECHNICS ELECTRONICS,

UNCLASSIFIED

USSR

UDC 518.90

YEVTUSHENKO, YU. G., and ZHADAN, V. G. (Moscow)

"Numerical Methods for the Solution of Some Operations Research Problems"

Moscow, Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, Vol 13,  
No 3, May-Jun 73, pp 583-598

Abstract: The article suggests methods for searching for the minimum of convex functions subject to resource-type constraints on the range of the argument. Calculations of a number of problems at the Computer Center of the USSR Academy of Sciences have shown the methods to be effective. A method for the minimization of nonsmooth functions which is close to the generalized gradient descent method is given. A numerical method is used to solve continuous games and to find saddle points.

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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 pneumonia. 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 breathe 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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USSR

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 serious 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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USSR

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 dioxedrol 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 corglycon 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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