

USSR

UDC 536.46

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POKHIL, P. F., LOGACHEV, V. S., MAL'TSEV, V. M., SELEZNEV, V. A.

"Spectral and Photometric Research on the Flame Jet in Model Fuel-Oxidizer-Metal Systems"

Novosibirsk, Fizika Goreniya i Vzryva, No 2, June 1970, pp 143-152

Abstract: The equipment used for spectral research on the flame jet in the combustion of fuel-oxidizer-metal systems is described, and its operation is explained. Spectral flame-jet research by means of this installation permitted the photometric method to be used for temperature measurement; this method permitted the shape of the flame of individual metal particles in the combustion products of the charge to be locally determined. Evaluation of the combustion temperature of aluminum and magnesium particles in the flame jet of model systems by the spectral and the photometric method is discussed.

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Acc. Nr:

NP0044477

Abstracting Service:  
CHEMICAL ABST.

4-70

Ref. Code:  
US0000

L

84563h Theory of the shift of F-absorption band in mixed crystals KCl(Na). Logachev, Yu. A.; Evarestov, R. A. (Inst. Semicond., Leningrad, USSR). *Solid State Commun.* 1970, 8(4), 275-7 (Eng). A more accurate treatment of the shift of the F band in mixed alkali halides is offered, based on other than the usual approxns. The 'local' concn. of the impurity cations near F-like centers is obtained as a function of the vol. concn.  $k_v$ . The transition energies of  $F_i$  centers ( $i = 0, 1, \dots, 6$ ) are calcd. in the model potential approxn. and the peak position of the F band in KCl(Na) is obtained at  $k_v = 0.5$ .

RCVZ

1.0

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REEL/FRAME  
19771100

18

Nuclear Physics

USSR

UDC 537.591.1

VERNOV, S. N., GRIGOROV, N. L., LIKIN, O. B., LOGACHEV, Yu. I., PISARENKO, N.F.,  
SAVENKO, I. A., VOLODICHEV, N. N., and SUSLOV, A. A., Scientific Research  
Institute of Nuclear Physics, Moscow State University.

"Studies of Cosmic Radiation Aboard the Prognoz Satellites"

Moscow, Izvestiya Akademii Nauk SSSR, Fizika; Vol 37, No 6, 1973, pp 1138-1143

Abstract: Two Prognoz satellites were launched in April and June of 1972 into orbits with the following parameters: apogee -- 200,000 kilometers, perigee -- 950 kilometers, angle of inclination  $65^{\circ}$ . The satellites were launched toward the sun, the angles between projections of the apsides and the orbit through the plane of the ecliptic and the direction of the sun being 22 and 23 degrees, respectively. The angle between projections of the apsides of the two satellites was  $77^{\circ}$  in July 1972. The satellites served about six months each. Although they were in orbit during the decline in the 11-year solar cycle, their first months of observation coincide with an anomalous increase in solar activity. Background radiation was almost never recorded in these months. From April through September 1972, interplanetary space was filled with intensive streams of solar protons at energies of about 1 Mev. Higher energy protons were observed only during the August flares. The electron flow

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VERNOV, S. N., et al., Izvestiya Akademii Nauk SSSR, Fizika; Vol 37, No 6, 1973, pp 1138-1143

was well correlated with the protons. Absorbed radiation dose during this interval, except for 2-7 August, was steady at approximately 24 mrad per day.

Calculations from the uniform nature of the declines in intensity of solar proton activity indicate that the absorbing layer is at a distance of approximately two astronomical units from the sun. It is remarkable that the state of interplanetary space remained the same over a long interval, in spite of substantial manifestations of solar activity; when perturbed, it recovered rapidly.

Increases in electron flow were observed several times without any corresponding increase in proton output, but every increase in proton output from the sun was accompanied by an increase in electron flow.

During intervals of low solar activity, the detectors which determined these correlations established a strong negative correlation between the counts of extra-solar protons at over 30 Mev and electrons under 500 kev.

The satellites recorded the intense solar activity of early August. An interesting phenomenon was the sharp increase in the flow of particles at all energies over the course of 2.5 hours early on 5 August. The peaks in the curves had particularly steep leading and trailing edges. It is theorized

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VERNOV, S. N., et al., Izvestiya Akademii Nauk SSSR, Fizika; Vol 37, No 6,  
pp 1138-1143

that this represented a magnetic "trap" with dimensions of approximately 0.1 au, traveling at approximately 2500 kilometers per second; the absence of any nucleons with  $Z \geq 6$  indicates that the particles must all have been of solar origin.

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UDC 621.357.7.035.4:669.738.7(088.8)

AZHOGIN, F. F., LOGACHEVA, Z. V., PRIBYLOVA, L. I., VLASOVA, L. P., and AGEYEVA, N. I.

## "An Electrolyte for Cadmium Plating"

Author's Certificate No 346390, filed 10 Sep 70, published 22 Aug 72 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L307F)

Translation: An ammonium chloride electrolyte is patented for cadmium plating. It is improved in that in order to prevent the hydrogenation of the base metal, ethylene glycol is added, resulting in the following composition, in g/liter:  $\text{CdCl}_2$ , 40-50;  $\text{NH}_4\text{Cl}$ , 230-280; ethylene glycol, 30-40, carpenter's glue, 1-2; an optimum pH of the electrolyte of 2.5-3.5;  $D_k$  less than 2 amps/decimeter<sup>2</sup>, and a theoretical yield of 100%. For example, samples from the steel EI-643 having a notch  $r=0.1$  mm is plated with cadmium in our electrolyte having the following composition, in g/liter:  $\text{CdSO}_4$ , 50;  $\text{NH}_4\text{Cl}$ , 250; ethylene glycol, 30; carpenter's glue, 2; at pH of 3.0 and a  $D_k$  2 amps/decimeter<sup>2</sup> for a thickness of 10 microns. Without subsequent heating at a tension equal to 90% of the strength of the notched sample (the Stress equals 216 kg/m<sup>2</sup>), the plated sample did not fracture after 200 hours.

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LOGAK, L. G., ROZENBERG, G. I., KUSNETSOV-FETISOV, L. I.

"Study of the Mechanism of Adsorption of Nitrogen Dioxide on Silica Gel by IR Spectroscopy. Report III. Desorption of Nitrogen Dioxide Adsorbed by Synthetic Zeolites"

Tr. Kazan. Khim.-tekhrol. In-ta [Works of Kazan Institute of Chemical Technology], No 46, 1971, pp 136-140 (Translated from Referativnyy Zhurnal, Khimiya, No 2, 1972, Abstract No 2 B1389 from the Resume).

Translation: The process of isothermal desorption of  $\text{NO}_2$  adsorbed by cylindrical granules of acid-resistant zeolites such as H-mordenite is studied. Only the first portions of adsorbate are easily removed; evacuation for two hours leaves 20-25 mg/g  $\text{NO}_2$  on the surface of the adsorbent; this figure is independent of the degree of preceding adsorption. The rate of desorption increases with dealumination of the specimens.

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LOGAK, L. G., ROZENBERG, T. I., KUZNETSOV-FETISOV, L. I.

"Study of the Mechanism of Adsorption of Nitrogen Dioxide on Silica Gel by IR Spectroscopy. Report II. Kinetics of Adsorption of Nitrogen Dioxide on Synthetic Mordenite at Low Adsorbate Pressures"

Tr. Kazan. Khim.-tekhnol. In-ta [Works of Kazan Institute of Chemical Technology], No 46, 1971, pp 131-135 (Translated from Referativnyy Zhurnal, Khimiya, No 2, 1972, Abstract No 2 B1388 from the Resume).

Translation: The effective diffusion coefficients  $D$  of nitrogen dioxide during its adsorption by H-mordenites are determined at low adsorbate pressures. It is established that  $D$  increases with increasing adsorption. It is demonstrated that diffusion is activated, and that high values of activation energy indicate high bond strength of the first portions of adsorbate with the surface of the adsorbent.

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UNCLASSIFIED

PROCESSING DATE--11SEP70

1/2 012  
TITLE--EFFECT OF KILLING TECHNOLOGY ON THE PROPERTIES OF A STEEL WITH  
REDUCED HARDENABILITY -U-

AUTHOR--ASTROV, YE.I., LOGANOV, M.I., URAZOVA, V.A., CHICKHANOV, A.I.

COUNTRY OF INFO--USSR

SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (2) 55-7

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--NONMETALLIC INCLUSION, KILLED STEEL, ALUMINUM CONTAINING  
STEEL, STEEL MANUFACTURE PROCESS, STEEL HARDENING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1291

STEP NO--UR/0129/70/000/002/0055/0057

CIRC ACCESSION NO--AP0106072

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106072

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO METHODS OF KILLING WERE USED: (1) DEEP KILLING IN THE FURNACE WITH FERROSILICON, FERROTITANIUM, AND AL; (2) DEEP KILLING IN THE FURNACE WITHOUT SI, BUT WITH AL AND FERROTITANIUM. SI, WITH ADDNL. PORTIONS OF AL, WERE INTRODUCED INTO THE LADLE THE STEEL WAS KILLED. TO EXCLUDE THE EFFECT OF CHEM. COMPN. OF THE STEELS ON HARDENABILITY, ALL OF THE EXPTL. MELTS WERE COMPOSED OF SINGLE CHEM. COMPNS. HARDENABILITY WAS DETD. BY ROCKWELL HARDNESS ALONG END QUENCHED CYLINDRICAL SPECIMENS. MELTS, DEEP KILLED WITHOUT SI, WITH SI ADDED TO THE LIQ. STEEL FOLLOWED BY AL AND FERROTITANIUM, SHOW LOWER HARDENABILITY AND CONTAIN LESS AMTS. OF  $\sigma$  AND NONMETALLIC INCLUSIONS.

UNCLASSIFIED

1/2 037

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--CLINICO ROENTGENOLOGICAL CHARACTERISTICS, CLASSIFICATION AND  
TREATMENT OF CHILDREN SUFFERING FROM MANDIBULAR OSTEDMYELITIS. -U-  
AUTHOR--(02)-BERNADSKIY, YU.I., LOGANOVSKAYA, YE.N.

COUNTRY OF INFO--USSR

SOURCE--STOMATOLOGIYA, 1970, VOL 49, NR 3, PP 69-71

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PEDIATRICS, BONE DISEASE, JAW, ETIOLOGY, RADIOGRAPHY, TOOTH,  
DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0068

STEP NO--UR/0511/70/049/003/0069/0071

CIRC ACCESSION NO--AP0120768

UNCLASSIFIED

2/2 037

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--A0120768

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUMMARY. ON THE BASIS OF ANALYSIS OF 385 CHILDREN WITH MANDIBULAR OSTEOMYELITIS (311, WITH ACUTE AND 74, WITH CHRONIC) THE AUTHORS PROPOSE A CLINICO ROENTGENOLOGICAL CLASSIFICATION OF THIS DISEASE. THE CLINICAL PICTURE WAS STUDIED WITH DUE REGARD OF THE CHILD'S AGE. THE CLASSIFICATION INCLUDES THE ETIOLOGY OF THE DISEASE, SEVERITY OF ACUTE AND CHRONIC PROCESSES (MILD, MODERATE AND SEVERE) AND ITS LOCALIZATION IN THE MANDIBLE. TO MILD FORMS OF CHRONIC OSTEOMYELITIS THE AUTHORS REFER THE FOLLOWING: INVOLVEMENT OF THE ALVEOLAR PROCESS, BODY OF THE JAW AND SECONDARY OSTEOMYELITIS; TO SEVERE, AFFECTION OF ONE HALF OF THE MANDIBLE AND THE WHOLE BRANCH; TO MODERATE OSTEOMYELITIS, AFFECTION OF THE ANGLE, CORONARY PROCESS AND NEST LIKE INVOLVEMENT OF THE BRANCH. FRONTAL PERMANENT TEETH WERE SUCCESSFULLY PRESERVED DURING THE TREATMENT; IN DIFFUSE FORMS OF CHRONIC OSTEOMYELITIS THE AUTHORS RESORTED TO SEQUESTRATION WITHOUT SCRAPING OF THE SEQUESTRAL CAVITY AND WITH PRESERVATION OF LIVE (UNCHANGED IN COLOR) DENTAL REMNENTS. CONSERVATIVE METHODS WERE USED ONLY IN THE TREATMENT OF RESTRICTED OSTEOMYELITIS RUNNING A COURSE WITHOUT THE FORMATION OF NOTICABLE (ON ROENTGENOGRAMS) SEQUESTRAE. FACILITY: KAFEDRA KHIRURGICHESKOY STOMATOLOGII KIEVSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

## Public Health, Hygiene and Sanitation

USSR

UDC 621.373.826.57

KIRICHINSKIY, B. R., SHEPELEV, V. N., MEDVEDOVSKAYA, TS. P., LYSINA, G. G.,  
LOGANOVSKIY, H. G., SOLETSKAYA, A. S., VGL'FOVSKAYA, R. KH.

"Effect of Laser Emission on the Organism of Industrial Workers"

V sb. Ispol'z. optich. kvant. generatorov v sovrem. tekhn. i med. Ch. 2-3  
(Utilization of Lasers in Modern Engineering and Medicine. Parts 2-3 -- collec-  
of works), Leningrad, 1971, pp 108-110 (from RZh-Radiotekhnika, No 1, 1972,  
Abstract No 10651)

Translation: A report is presented on examination of 40 people working 3.4 years on the average with laser emission (200-300 bursts per week with a pulse duration of 20-40 nanoseconds and an energy of 1-10 joules and up to 1 joule in the continuous mode). It was calculated that the radiation level on the cornea was  $5 \cdot 10^{-8}$ - $5 \cdot 10^{-7}$  joules, which is approximately 2 orders higher than the levels which the majority of authors recommend as the maximum allowable and approaches the threshold values (causing minor damage to the retina). For people with low controllability, pronounced shifts in autonomic-vascular regulation, and a decrease in the efficiency of visual function and in the rate of adaptation to the environment, the nature of func-

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USSR

UDC 621.357.7.035.14(088.8)

NEVSKIY, O. B., LOGASHEV, V. V., and BARANOVSKAYA, I. N.

"Galvanic Bath for Producing Cylindrical Magnetic Films"

USSR Author's Certificate No 324309, Filed 16 Jan 70, Published 25 Feb 72  
(from Referativnyy Zhurnal -- Khimiya, No 21(II), 1972, Abstract No 21L318P by  
E. Z. Napukh)

Translation: The patented design of the electrolyzer is intended for preparation of cylindrical magnetic films with a uniform chemical composition. Its feed and pouring chambers are formed by the electrolyzer wall and the anode container, and the cylindrical element with anodes on its external surface is made of hydrophilic material.

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UDC: 621.373.826

USSR

YELISEYEV, P. G., IVANOV, L. P., LOGGINOV, A. S., SENATOROV, K. Ya.

"Frequency Self-Modulation of Emission in an Injection Laser"

Kratkiye soobshch. po fiz. (Brief Reports on Physics), 1972, No 6, pp 53-55  
(from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12D148 by A. K.)

Translation: Spectral chronograms with a resolution of  $3 \cdot 10^{-11}$ - $10^{-10}$  s are obtained for an isolated emission channel in a strip laser based on a double heterostructure at 300°K. It is evident from these chronograms that frequency self-modulation indicates instability of single-mode emission, and that this self-modulation accompanies buildup of pulsations and cutoff of single-mode emission with a transition to nonstationary (spike) multimode emission. Frequency self-modulation leads to considerable broadening of the individual excited modes, and to blurring of the spectrum. The influence of the frequency self-modulation on the emission spectrum increases with an increase in pumping.

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UDC 621.373.3

USSR

IVANOV, L.P., LOGGINOV, A.S., SAMOYLOV, V.P., SENATOROV, K.YA.

"Self-Modulation Of Radiation Of Injection Lasers With A Single Heterojunction"

Kvantovaya elektronika (Quantum Electronics), Moscow, No 5(11), 1972, pp 92-94

Abstract: The results are presented of an experimental study of the dynamics of radiation of injection lasers, undertaken with the object of detecting pulsations connected with the spreading out of radiation across the plane of a p-n junction. A comparative study was made of GaAs lasers produced by various methods: diffusion and epitaxial-diffusion with single and double heterojunctions. The specimens studied had a resonator length of 300-800 microns and operated in a pulsed regime at temperatures from 100 to 350° K. The magnitude of the pumping current could be varied in the limits zero to 350 amp and the pulse duration in the 50-500 nanosec range. The radiation dynamics were studied by the electron-optical chronography method. It is shown that in diffusion and epitaxial-diffusion lasers, as well as in double heterolasers, the configuration of the radiation region is not changed in the process of generation of continuous pulses of radiation. In single  $Al_xGa_{1-x}As$ -GaAs lasers operating at a temperature close to critical a regime of continuous pulses of radiation develops at once at the

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IVANOV, L. P., et al., *Kvantovaya elektronika*, No 5(11), 1972, pp 92-94

threshold of generation. One of the special features of operation is the penetration of radiation into the passive n-region of the laser and deflection of the directivity pattern of radiation from the resonator mirror normal. The authors thank P.G. Yeliseyev for discussion of the results of the work and N.A. Ambartsuzyan and V.G. Karnaukhov for giving specimens of lasers. 3 fig. 11 ref. Received by editors, 9 March 1972; after revision, 5 Sept. 1972.

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UDC 621.039.623

USSR

ALEKSIN, V. F., BIRYUKOV, O. V., GEORGIYEVSKIY, A. V., KITAYEVSKIY, L. KH., KOMAR, YE. G., LOGINOV, A. S., MALYSHEV, I. P., MOROSZON, N. A., POPKOVICH, A. V., ROZHDESTVENSKIY, B. V., SAKSAGANSKIY, G. L., SINEL'NIKOV, the late K. D., SOKOLOV, YU. A., SUPRUNENKO, V. A., TOLOK, V. T., CHURAKOV, G. F., and SHABEL'NIKOV, L. A.

"The Experimental Thermonuclear Device 'Uragan'"

Moscow, Atomnaya Energiya, Vol 28, No 1, Jan 70, pp 22-28

Abstract: An urgent task of stellarator research is a definitive elucidation of the reasons for anomalous diffusion in a stellarator, as well as the effect of the shear and magnetic well on the confinement of a hot and dense plasma. These questions will be studied on the "Uragan" stellarator. Construction of the "Uragan" stellarator was begun at the suggestion of I. V. KURCHATOV and completed in 1967. The physical substantiation and technical assignment of developing and constructing the complex were developed at the Physicotechnical

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ALEKSIN, V. F., et al., Atomnaya Energiya, Vol 28, No 1, Jan 70, pp 22-28

Institute of the Academy of Sciences Ukrainian SSR under the direction of K. D. SINEL'NIKOV, who took an active part in the solution of theoretical and technical questions. Organizations taking part in the development of the project and the construction of the complex included the Scientific Research Institute of Electrophysical Equipment imeni D. V. Yefremov, the Elektrosila Electrical Engineering Combine, the Khar'kov Polytechnic Institute imeni V. I. Lenin, the Electromechanical Plant and NIIElektroapparat [Scientific Research Institute of Electrical Equipment] in Khar'kov. A considerable amount of work on the development, manufacture, and adjustment of the systems and components of the "Uragan" was done at the Physicotechnical Institute of the Academy of Sciences Ukrainian SSR.

The principal feature of the "Uragan" is high shear (of the order of 0.02 and 0.1) at a high level of magnetic field strength

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ALEKSIN, V. F., et al., Atomnaya Energiya, Vol 28, No 1, Jan 70, pp 22-28

$H_0$  (35 and 10 koe respectively). The stellarator is in the shape of a racetrack and uses a high-shear triplex helical field. The vacuum chamber of the trap consists of two semi-tori with an average radius  $R = 1100$  mm and two rectilinear sectors, each 1725 mm long. The internal diameter of the chamber is 200 mm. On the outside of the chamber on the toroidal sectors are two helical windings and longitudinal magnetic field coils, distributed evenly along the device. The maximum strength of the magnetic field is 10 koe under steady-state conditions and 35 koe under pulsed conditions. Three windings are used; viz., longitudinal magnetic field, helical, and transverse magnetic field. All metallic elements are made of low-magnet steel 1Kh18N9T. The toroidal sectors of the vacuum chamber and part of the rectilinear sectors are made of stainless nonmagnetic alloy EP-125. The article gives a detailed description of the windings, cooling system, electric power supply system, vacuum system, and plasma diagnostic and heating system.

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1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--DIAGNOSTIC SIGNIFICANCE OF CYTO HISTOLOGICAL STUDIES OF THE  
BIOPSIED LIVER IN COMBINATION WITH THE TISSUE CULTURE IN VITRO +U-  
AUTHOR--(02)--LOGINOV, A.S., BLOK, YU.YE

COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 4, PP 44-50

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LIVER, TISSUE CULTURE, BIOPSY, TISSUE REGENERATION, CANCER,  
METASTASIS, LARGE INTESTINE, CIRRHOSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1990/0626

STEP NO--UR/0504/70/042/004/0044/0050

CIRC ACCESSION NO--AP0108841

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0108841

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS DESCRIBE THE METHOD OF INVESTIGATING THE BIOPSIED LIVER TISSUE AND GIVE THE RESULTS OF COMPARISON BETWEEN MORPHOLOGICAL PECULIARITIES OF CYTOLOGICAL AND HISTOLOGICAL PREPARATIONS, AS WELL AS THE CULTURE OF THE LIVER TISSUE IN 12 PATIENTS AT THE AGE OF 17-57 YEARS OLD. THE IMMEDIATE CYTOLOGICAL STUDY OF THE BIOPSIED MATERIAL MADE IT POSSIBLE TO HAVE A PRELIMINARY IDEA OF THE NATURE OF THE DYSTROPHIC CHANGES IN THE RENAL EPITHELIUM, EXTENT OF CELLULAR ATYPIA, MANIFESTATIONS OF THE INFLAMMATORY AND REPARATIVE PROCESSES IN THE LIVER. IN CULTIVATING THE RENAL TISSUE IN VITRO IN PATIENTS WITH CIRRHOSIS OF THE LIVER MARKED PROLIFERATION OF THE CONNECTIVE TISSUE CELLS AND DEVELOPMENT OF ACUTE DYSTROPHIC CHANGES OF THE EPITHELIAL CELLS WERE OBSERVED. IN CHRONIC HEPATITIS PROLIFERATION OF THE EPITHELIAL ELEMENTS PREVAILED. IN A FEMAL PATIENT SUSPECTED OF CANCER MATHASTASES OF THE COLON INTO THE LIVER WITH A NEGATIVE RESULT OF THE HISTOLOGICAL ANALYSIS OF THE BIOPSIED TISSUE ON A CYTOLOGICAL PREPARATION, THE AUTHORS FOUND ATYPICAL CELLS AND IN VITRO CULTIVATION OF THE TISSUE PROLIFERATION OF THE CANCER CELL COMPLEXES WERE OBSERVED. A SIMILAR RESULT WAS OBTAINED IN CYTOLOGICAL INVESTIGATION OF THE BIOPSIED TISSUE OF THE LIVER INCLUDING CULTIVATION OF THE TISSUE IN VITRO, AND IN A PATIENT WITH A MIXED LIVER CIRRHOSIS AND SUSPECTED OF CIRRHOSIS, CANCER OF THE LIVER. FACILITY:  
VSESOYUZHNY N-I INSTITUT RASTROENTEROLOGII MINISTERSTVA  
ZDRAVOOKHRANENIYA SSSR, MOSCOW.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--HEMODYNAMIC INDICES IN PATIENTS WITH CHRONIC HEPATITIS AND  
CIRRHOSIS OF THE LIVER -U-  
AUTHOR-(02)-LOGINOV, A.S., BELYAYEVA, V.S.  
COUNTRY OF INFO--USSR  
SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 4, PP 70-75  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--HEPATITIS, CIRRHOSIS, LIVER FUNCTION, HEMODYNAMICS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3004/0735 STEP NO--UR/0497/70/043/004/0070/0075  
CIRC ACCESSION NO--AP0131330

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UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0131330

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY MEANS OF THE DYE DILUTION TECHNIQUE THE HEMODYNAMIC INDICES WERE STUDIED IN 41 PATIENTS WITH CHRONIC HEPATITIS AND 61 PATIENTS WITH DIFFERENT MORPHOLOGICAL FORMS OF LIVER CIRRHOSIS (43 POSTNECROTIC, 13 PORTAL, 5 PRIMARY BILIARY CIRRHOSIS OF THE LIVER). IN PATIENTS WITH CHRONIC HEPATITIS THERE WAS NOTED A TENDENCY TOWARDS AN INCREASED CARDIAC EJECTION AND REDUCTION OF THE GENERAL PERIPHERAL RESISTANCE, AS WELL AS A DECREASE OF THE MEAN ARTERIAL PRESSURE. IN CIRRHOSIS OF THE LIVER THERE WERE SIGNIFICANT CHANGES IN HEMODYNAMIC INDICES OF THE TYPE OF HYPERKINETIC STATE OF CIRCULATION, AN INCREASE OF THE CARDIAC OUTPUT, CARDIAC AND SYSTOLIC INDICES, A DECREASE OF THE GENERAL PERIPHERAL RESISTANCE AND MEAN ARTERIAL PRESSURE, RISE OF THE MASS OF CIRCULATING BLOOD AND INTRATHORACIC VOLUME OF THE BLOOD, AND AN ACCELERATED CIRCULATION RATE. CHANGES OF MOST HEMODYNAMIC INDICES WERE MOST MARKED IN POSTNECROTIC CIRRHOSIS OF THE LIVER. FACILITY: VSESOUZNYI N-I INSTITUT GASTROENTEROLOGII MZ SSSR.

UNCLASSIFIED



1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--WF TEST FOR INVESTIGATING THE ABSORBTIVE EXCRETORY FUNCTION OF THE  
LIVER -U-  
AUTHOR--(02)--LOGINOV, A.S., KONDASHOVA, Z.D.  
COUNTRY OF INFO--USSR  
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 6, PP 101-103  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--LIVER FUNCTION TEST, LIVER DISEASE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3002/1919 STEP NO--UR/0504/70/042/006/0101/0103  
CIRC ACCESSION NO--AP0129268  
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129268

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE ARTICLE PRESENTS DATA OF INVESTIGATION OF THE ABSORBTIVE EXCRETORY FUNCTION OF THE LIVER USING A WF TEST IN 63 PATIENTS WITH DISEASES OF THE LIVER. SENSITIVITY OF THIS METHOD IN THE DIAGNOSIS OF EARLY FUNCTIONAL DISORDERS OF THE LIVER IS NOTED, IT HAS A DIFFERENTIAL DIAGNOSTIC SIGNIFICANCE IN THE ASSESSMENT OF THE SEVERITY OF FUNCTIONAL DISORDERS. THE MAXIMUM DEGREE OF THE CHANGES OF THE WF TESTS WAS OBSERVED IN PATIENTS WITH LIVER CIRRHOSIS, MIANLY BILLIARY, AND MODERATE, IN CHRONIC HEPATITIS. FACILITY: VSESOYUZNYI NII GASTRCENTEROLOGII MZ SSSR, MOSKVA.

UNCLASSIFIED

USSR

UDC: 621.378.3

VASIL'YEV, A. M., DE, S. T., and LOGINOV, A. V.

"Laboratory Argon Laser With a Discharge Channel of Beryllium Oxide"

Novosibirsk, Avtometriya, No 5, 1972, pp 125-126

Abstract: Details are given of an argon ion laser, developed by the authors, which is capable of standing up under long use in the laboratory. A photograph of the laser is shown. The discharge channel of the device is a beryllium oxide tube 350 mm long and 3 mm in diameter. The choice of this material was dictated by the fact that it has the highest heat conductivity of all the insulating ceramics and can stand thermal shock. The optical resonator consists of a spherical mirror and a plane mirror from which the radiation emerges. Oscillation occurs in six lines in the 4579-5145 Å range, with a total power of five watts. It is noted that most industrially produced ion lasers in the Soviet Union have quartz discharge channels. This is a mistake, in the authors' opinion, since quartz has low heat conductivity and consequent high inner wall temperatures, with resultant shorter life. They express  
1/2

USSR

UDC: 621.378.3

VASIL'YEV, A. M., et al, Avtometriya, No 5, 1972, pp 125-126

their gratitude to Yu. Ye. Nesterekhin and A. G. Kozachok for their attention to the work.

2/2

- 31 -

1/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--INFRARED SPECTROSCOPIC AND ELECTRICAL CONDUCTIVITY STUDIES ON THE  
FORMS OF FORMIC ACID, WATER, AND METHANOL ADSORPTION ON YTTRIUM OXIDE  
AUTHOR--(03)-TOPCHIYEVA, K.V., LOGINOV, A.YU., IVANKDYSKIY, V.E.

COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL. 1970, 11(1), 193-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--FORMIC ACID, METHANOL, ADSORPTION, HYDROGEN BONDING, CHEMICAL  
DECOMPOSITION, YTTRIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1997/0527

STEP NO--UR/0195/70/011/001/0193/0199

CIRC ACCESSION NO--AP0119446

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119446

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO FORMS OF ADSORPTION WERE OBSD.  
MOLS. OF THE ADSORBED COMPO. FORM H BONDS WITH THE SURFACE OF Y OXIDE  
AND CAUSE A STRONGLY POS. CHARGE ON THE SURFACE. THE LATTER OCCURS DUE  
TO DONOR ACCEPTOR INTERACTIONS. A DISSOCIATIVE FORM OF ADSORPTION TAKES  
PLACE DUE TO BOND REDISTRIBUTION OF THE ADSORBED SPECIES. HCO SUB2 H  
DECOMP. ON Y OXIDE VIA THE DISSOCIATIVE FORM OF THE ADSORPTION, FORMING  
Y FORMATES AS INTERMEDIATE REACTION PRODUCTS. FACILITY: KHIM.  
FAK., MOSK, GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 621.372.54

LOGINOV, B. N.

"On Calculating an Active Low-Frequency Filter With a Uniform RC Line"

V sb. Vopr. elektrosvyazi (Problems of Electrical Communications--collection of works), Kiev, "Tekhnika", 1970, pp 31-34 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11A152)

Translation: Some critical remarks are given relative to the method proposed by Rarkin (Bell System Techn. J., 1968, No 5) for calculating an active low-frequency filter which consists of a uniform RC line loaded by negative conductance and capacitance. It is shown that the computational procedure may be considerably simplified by using the relationship between the cutoff steepness and nonuniformity of damping in the passband. An expression is found for the principal filter characteristics as a function of the load parameters. Three illustrations, bibliography of one title. N. S.

1/1

Higher Algebra & Geometry and Topology

USSR

UDC 512.831

ARZHANYKH, I. S., GUCNINA, V. K., and LOGINOV, B. V. Institute of Mathematics imeni V. I. Romanovskiy, Academy of Sciences Uzbek SSR

"On a Generalization of the Hamilton-Cayley Theorem for Multiparameter Matrices and on Root Vectors of Polynomial Matrices"

Tashkent, Izvestiya Akademii Nauk Uzbekskoy SSR, Seriya Fiziko-Matematicheskikh Nauk, No 5, 1971, pp 3-8

Abstract: Previous articles by the authors proved the Hamilton-Cayley theorem for polynomial matrices of the type  $\phi(\lambda) = \lambda^s I - \lambda^{s-1} A_1 - \dots - \lambda A_{s-1} - A_s$  where  $A_1, \dots, A_s$  are square matrices of order  $n$ ;  $I$  is an identity matrix;  $\lambda$  is a parameter. The present article generalizes this result for the case of several parameters  $\lambda_1, \lambda_2, \dots, \lambda_m$ , then gives a natural definition of root vectors of polynomial matrices.

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USSR

UDC 517.93+513.881

LOGINOV, B. V., Tashkent, and TRENOGIN, V. A., Moscow

"The Use of Group Properties for Determining Multiparametric Families of Solutions to Nonlinear Equations"

Moscow, Matematicheskiiy Sbornik, Vol 85, No 3, Jul 71, pp 440-454

Abstract: The authors examine a nonlinear equation in Banach space that is invariant relative to the continuous group. They give the conditions that permit reducing the equations of the Lyapunov-Schmidt branching both by number of equations and by number of unknowns, thus making it possible to greatly simplify finding the multiparametric families of solutions to this problem.

Instances are often encountered in which the solution to a nonlinear problem depends on one or more free numerical parameters. Included here are problems concerning long and isolated waves having a finite number of solutions. Such a situation exists in the problem of secondary stationary flows of a viscous fluid between cylinders rotating on one side and the problem, which is similar, concerning free convection, especially convection in the horizontal layer of a fluid heated from below.

If the problem is invariant relative to a certain group of transformations, then either all or part of the free parameters have a group connotation

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USSR

LOGINOV, B. V. and TRENOGIN, V. A., Matematicheskiy Sbornik, Vol 85, No 3, Jul 71, pp 440-454

thus permitting the problem to be simplified in a number of instances by seeking a solution which belongs to a certain subspace. The authors carry out a detailed analysis of the possibilities available for the general equation in a Banach space.

Theorems are stated, and detailed mathematical proof is offered to support the authors' position. The article contains a bibliography of 15 titles.

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Acc. Nr:

AP0048297

Abstracting Service:  
CHEMICAL ABST. 5-170

Ref. Code:

4R0181

94652a Magnetic properties of gadolinium, neodymium, and praseodymium aluminates with perovskite structure. ~~Sturovskiy, A. T.; Ozhogin, V. I.; Bokov, V. A.; Zann, Z. N.; Lavitskiy, G. M. (Inst. Poluprov., Leningrad, USSR). Fiz. Tverd. Tela 1970, 12(1), 301-3 (Russ).~~ Results are given of the measurements of the temp. dependences of inverse susceptibility in static fields and the magnetization curves in pulsed fields of  $\leq 230$  kOe at 4.2 and 1.7°K of single-crystal aluminates of Gd, Nd, and Pr. GdAlO<sub>3</sub> is an antiferromagnet with Neel temp.

$T_N = 3.87^\circ\text{K}$  and the axis of antiferromagnetism directed along the orthorhombic axis [010]. Satn. of the magnetization curve of GdAlO<sub>3</sub> in a field of 42 kOe at 1.7°K corresponds to disruption of antiferromagnetic ordering. The ferromagnetic moment of Gd<sup>3+</sup> is 6.57  $\mu\text{B}$ . The magnetic susceptibility of NdAlO<sub>3</sub> at 80-300°K follows the Curie-Weiss law and antiferromagnetic ordering is present. For PrAlO<sub>3</sub>, the susceptibility depends on temp. in a complex manner. A. Libickyj

EB

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REEL/FRAME  
19792019

USSR

UDC: 621.396.677.833(088.8)

DEMENT'YEV, V. P., KUZ'MIN, I. V., and LOGINOV, I. V.

"Passive Relay"

Avt. sv. SSSR (Author's Certificate USSR) Class 21a<sup>4</sup>, 46/01,  
(H 01 o 15/00), No. 275171, Application 19.02.69, Publication  
12.10.70 (from RZh-radiotekhnika, No. 3, March 71, Abstract No.  
3B62P)

Translation: The proposed device consists of a reflecting array  
with curvilinear edges. The upper and lower edges are made in  
different parabolic curves with a common focal axis.

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USSR

UDC: 621.396.677.833

DEMENT'YEV, V. F., KUZ'MIN, I. V., LOGINOV, I. V., LOKSHIN, V. L., YAMPOL'SKIY, V. G.

"A Passive Radio Relay Unit"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 22, 1970, Soviet Patent No 275171, Class 21, filed 19 Feb 69, p 42

Abstract: This Author's Certificate introduces a passive radio relay unit made up of a reflecting array with curvilinear edges. As a distinguishing feature of the patent, the mean effectiveness of the unit is increased, and especially the effectiveness in the case of subrefraction by making the upper and lower edges of the array conform to different parabolic curves with a common focal axis and a high ratio of the focal parameters of the parabolic curves, which may, for instance, be equal to one hundred.

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USSR

UDC 629.78.002.3

LOGINOV, N. Z., IL'CHENKO, A. M.

"Probability Estimate of the Dispersion of the Fracture Coordinate and the Fatigue Limits in Connection with the Technological Process for Treating Specimens"

Tr. Kazan. avats. in-ta (Works of the Kazan' Aviation Institute), 1972, vyp. 141. pp 40-46 (from RZh-Raketostroyeniya, otdel'nyy vypusk, No 12, Dec 72, Abstract No 12.41.242)

Translation: The basic principles of the procedure for joint statistical and functional analysis of fatigue laws are presented. A study is made of the application of this method for comparing the effect of various progressive technological processes on strength under sign-variable loads. It is demonstrated that the least diameter of the toroidal specimens is not the dangerous cross section but the most probable fracture point. An estimate is made of the fracture coordinate and the relation of this variable to the fatigue characteristics of the material. Examples are also presented of the structure of the fatigue curve with the fracture probability equal to zero with respect to a small sample of specimens using equidistant transfer of the experimental points and analysis of the fracture coordinates. There are 4 illustrations, 2 tables and a 7-entry bibliography.  
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USSR

LOGINOV, N. Z., SHKANOV, I. N.

"Improvement of Method of Testing with Separation of Process of Fatigue Rupture into the Stage of Microdamage and Final Rupture"

Tr. Kazan. Aviats. In-ta [Works of Kazan Aviation Institute], No 136, 1971, pp 25-33, (Translated from Referativnyy Zhurnal, Mekhanika, No 4, 1972, Abstract No 4 V1272 by L. M. Shkol'nik).

Translation: A series-produced machine for fatigue testing with pure bending and rotation is redesigned so that the stretched fibers of the specimen are in the upper portion. A stroboscopic effect produced by illumination of the rotating specimen with a type ISSh-15 flash lamp is used to observe the moment of appearance of a macrocrack. When notched specimens of VT-8 titanium alloy were studied, data were produced showing that the viability factor of the specimen is 0.6 with respect to the mean probability of rupture at variable stress level  $28 \text{ kg/mm}^2$ .

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USSR

UDC 539.4

BRAGIN, D. YA., LOGINOV, N. Z., SHKANOV, I. N., Kazan' Aviation Institute, Kazan'

"Effect of Certain Engineering Factors on the Fatigue Strength of Titanium Alloys"

Kiev, Problemy prochnosti, No. 8, Aug 71, pp 78-82

Abstract: Fatigue tests were conducted on circular samples of titanium alloys widely used in the aviation industry. It is noted that despite the extensive use these alloys have several considerable shortcomings, including great inhomogeneity in the micro- and macrostructure, high sensitivity to stress concentration under variable loads, and considerable variability of mechanical properties as a result of working processes. The test samples had a diameter of 5 and 7.5 mm under pure bending with a frequency of rotation of 50 Hz. Tests based on statistical data showed several features in the behavior of titanium alloys under cold working which lead to a low value of the fatigue limit at the extreme boundary of the dispersion region. It is shown that the application of electrochemical working, electric polishing, and protective media in mechanical working lowers the cold working layer and stabilizes the

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BRAGIN, D. YA., et al, Problemy prochnosti, No. 8, Aug. 71, pp 78-82

mechanical properties of the alloys. It is concluded that the process of electrochemical working at the present level of its technological development should be applied as a final operation in fabricating titanium alloy parts.

2/2

USSR

UDC 621.762.002.5(088.8)

KABEL'SKIY, I. M., LOGINOV, P. I., SOKOLOVSKIY, A. B.

"Metal Die Pressure Cast Mold for Molding Annular Products"

USSR Author's Certificate No 268880, filed 20 Oct 66, published 4 Aug 70 (from RZh-Metallurgiya, No 7, Jul 1971, Abstract No 7G479P)

Translation: A metal die pressure cast mold for molding annular products from powders using electric discharge in a liquid medium with coaxially arranged electrodes, a tubular elastic molding shell, and a die attached to the crossbar which moves relative to the pressure die casting mold and interacting with the casting nozzle is proposed. In order to insure free removal of the molded product and the required seal of the cavity filled with the liquid, a moving nozzle with a beveled inside surface is placed in the annular cavity of the die so as to block it. This nozzle is equipped with stepped spring-loaded pins passing through the holes in the crossbar and the housing of the mold. In order to insure automatic simultaneous movement of the die and the beveled electrode and subsequent advance of the blocking nozzle after removal of the die from the molded part, a beveled electrode is attached to the moving crossbar, and slides designed to hold the step pins and controlled by means of wedges attached to the moving crossbar are placed on the housing of the pressure die casting mold.

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USSR

UDC 542.91:547.1'118

MUSLINKIN, A. A., NEKLESOVA, I. D., KUDRINA, M. A., YEGOROVA, N. V., IRAIDOVA, I. S., and ~~LOGINOV, V. B.~~, Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Acad. Sc. USSR

"Synthesis and Some Properties of Acrylic and Methacrylic Derivatives of Chlorophos and Its Analogues"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 73, pp 883-886

Abstract: Reaction of chlorophos and its analogues with acid chlorides of acrylic, methacrylic and  $\alpha$ -fluoroacrylic acids gave new products with fungicidal activity: O,O-diphenyl-, O,O-di-n-butyl-, and O,O-dimethyl-(1-acroyloxy-2,2,2-trichloroethyl)phosphonate, di-n-butyl-(1-methacryloxy-2,2,2-trichloroethyl)phosphonate and O,O-d-n-butyl-(1- $\alpha$ -fluoroacroyloxy-2,2,2-trichloroethyl)phosphonate. Using O,O-di-methyl ether of 1-acetoxy-2,2,2-trichloroethylphosphonic acid as control, it has been established that replacement of the acetyl group by an acroyl or methacroyl radical increases the fungicidal activity and toxicity. Introduction of a chlorine atom onto an alkoxy group has a similar effect. Elongation of an alkoxy chain at the phosphorus atom decreases the toxicity.

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Acc. Nr:

AP0043799

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy  
Fiziki, 1970, Vol 58, Nr 2, pp 747-750

EVEN GALVANOMAGNETIC EFFECT IN ANTIFERROMAGNETIC  
MnAu<sub>2</sub> IN THE PARAMAGNETIC TEMPERATURE REGION

V. G. Loginov, V. L. Nikolayev

Results of investigation of the even galvanomagnetic effect in the antiferromagnetic compound MnAu<sub>2</sub> at paramagnetic temperatures are reported. It is shown that for  $T > T_N$  the magnetic resistance of MnAu<sub>2</sub> depends on the magnetic moment in the same way as in ferromagnetic substances. The results show that in the paramagnetic temperature region the even galvanomagnetic regularities previously established for ferromagnetic substances are also applicable to antiferromagnetic compounds.

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REEL/FRAME  
19770208

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1/2 034 UNCLASSIFIED  
TITLE--SLAG SYSTEMS OF BLAST FURNACES -U-

PROCESSING DATE--04DEC70

AUTHOR--LOGINOV, V.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHBE. ZAVED., CHERN. MET. 1970, 13(4), 55-60

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--BLAST FURNACE SLAG, PHASE EQUILIBRIUM, SILICA, ALUMINA,  
CALCIUM OXIDE, MELTING POINT, PHASE COMPOSITION, FLUID VISCOSITY,  
DESULFURIZATION, GAS JET, OXYGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3005/0834

STEP NO--UR/0148/70/013/004/0055/0060

CIRC ACCESSION NO--AT0132924

UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132924

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BASED ON THE ABAILABLE RESULTS FOR THE SIO SUB2,AL SUB2 O SUB3,CAO SYSTEM, THE DIAGRAM FOR THE CHANGE IN THE PROPERTIES OF THE SLAGS AS DEPENDENT ON THEIR BASICITY WAS CONSTRUCTED AT 10PERCENT ALS UB2 O SUB3, MAKING IT POSSIBLE TO DET. APPROX. THE OPTIMUM AND LIMITING VALUES FOR THE BASICITY OF THE SLAGS. AT A BASICITY OF THE SLAG OF GREATER THAN 1.25, THE CRYSTN. TEMP., THE FUSIBILITY, AND THE HEAT CONTENT INCREASE. TO IMPART TO SUCH SLAGS THE NECESSARY MOBILITY AND STABILITY, THEY SHOULD BE HEATED TO GREATER THAN 1500-1600DEGREES. THE UPPER LIMIT JOF THE BASICITY OF SLAG ALLOWED IN A BLAST FURNACE IS LIMITED BY THE POSSIBILITY OF MELTING NAD HEATING IT TO THE TEMP. OF FLUIDITY. UNDER CONVENTIONAL ATM. BLOWING, HEATED TO 1000DEGREES, THE ACTUAL AV. COMBUSTION TEMP. OF THE GASES IN THE FURNACE FLUCTUATES AROUND 1700DEGREES. THE LIMITING ALLOWABLE BASICITY OF THE SLAG THEREBY IS APPROX. 1.6. THE OPERATION OF FURNACES ON SLAGS OF SUCH A BASICITY IS NOT EXPEDIENT. WITH INCREASED BLOWING TEMP. AND WITH O ENRICHMENT, THE THEORETICALLY ALLOWABLE BASICITYLIMIT OF THE SLAG INCREASES. WITH DECREASED BASICITY OW THE SLGAS TO A GIVEN LIMIT, THEIR PHYS. PROPERTIES IMPROVE, BUT THEIR DESULFURIZATION CAPABILITY DECREASES. ON LESS BASIC SLAGS, THE FURNACES OPERATE MORE ECONOMICALLY. THE RESULTS OF FURNACES OPERATING ON ACIDIC SLAGS ARE ALSO PRESENTED.

FACILITY: DNEPRODZERZHINSK. IND. INST., DNEPRODZERZHINSK, USSR.

UNCLASSIFIED

USSR

UDC 541.515:547.785.1

TIKHONOVA, L. G., TANASEYCHUK, B. S., and LOGINOV, V. S., Mordavsk State University Imeni N. P. Ogarev, Saransk

"Investigation in the Area of Nitrogen-Containing Heterocyclic Free Radicals. XIX. 2-Aryl-4,5-(p-bromophenyl)imidazolyl Radicals and Their Dimers"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 1, Jan 73, pp 96-98

Abstract: Dimers of 2-aryl-4,5-di(p-bromophenyl)imidazolyls have been synthesized and the relationship between the rate of dissociation of the dimers into radicals and the nature of substituents in the 2-phenyl ring has been investigated. The effect of the substituents on the rate of dimer dissociation can be described by Hammett's equation. The presence of bromine atoms in p-positions of the 4- and 5-phenyl rings increases the contribution of the mesomeric component to the stabilization of the transition state of the dimer dissociation process in comparison to bis(triphenylimidazolyls).

1/1

USSR

UDC 533.9:538.566

LOGINOV, V. V.

"Quasilinear Approximation for Low-Frequency Waves in a Plasma in a Constant Electric Field"

Minsk, Kolebaniya i Volny v Plazme. (Oscillations and Waves in a Plasma), "Nauka i Tekhnika," 1971, pp 3-5

Abstract: On the basis of the equations of quasilinear approximation, the author examines the stationary state of a spatially homogeneous plasma in a permanent electric field. He finds the equations of balance of momentum and energy of each component of the plasma and determines the nonlinear dependence of the energy of the plasma oscillations on their frequency. The results obtained are compared with experiment. The author solves the problem for low-frequency waves excited by a constant current in a weakly-ionized non-isothermic plasma. He examines a simple model of a quasiequilibrium plasma when the distribution function of the ions is Maxwellian and that of the electrons is Maxwellian with the current. The extrinsic electric field is assumed to be sufficiently small so as to neglect the effects of "escape" of the electrons. The attenuation and spectrum of oscillations are determined by the formulas of linear theory by allowing for the inverse influence of the

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USSR

LOGINOV, V. V., Oscillations and Waves in a Plasma, "Nauka i Tekhnika,"  
1971, pp 3-5

oscillations on the temperature and the current in the plasma; the oscillations themselves in the form of plane waves that do not interact with one another were examined. This type of model permits the author to determine the energy of the low-frequency waves as a function of their frequency as well as of the magnitude of the extrinsic field, the frequency of collisions, and the degree of nonisothermicity of the plasma which influences the Landau ion attenuation. The computational scheme used here can also be used for completely ionized plasma. The article contains 1 illustration and 4 bibliographic entries.

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USSR

UDC: 621.391:519.2

LOGINOV, V. V.

"Effect of Low Harmonic Noise on a Synchronous Phase Demodulator"

Tr. NII radio (Transactions of the Scientific Research Institute of Radio) 1970, No. 2, pp 54-59 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3A48)

Translation: The action of low harmonic noise on a synchronous phase demodulator with no modulation of the input signal is considered. Results are given of an accurate and approximate solution for the differential equation of the synchronous phase demodulator.

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USSR

UDC: 621.391.27:621.376.32

OKHTYARKIN, Ye. G. and LOGINOV, V. V.

"Analyzing the Threshold Characteristics of Synchronous Phase Demodulators"

Moscow, Elektrosvyaz', No. 12, 1970, pp 8-11

Abstract: The synchronous phase demodulator is defined as the phase AFC system used as a frequency demodulator in artificial satellite and tropospheric communication lines, and to improve the noise immunity of the receiving equipment in the Soviet "Orbita" television system. This article is evidently the continuation of an earlier one (Devels, Porogovyy kriteriy dlya sinkhronnoy demodulatsii, TIIBR -- Threshold Criterion for Synchronous Demodulation /expansion of TIIBR unknown/ -- 1963, No. 2) which determined the threshold characteristics of the synchronous phase demodulator and found the threshold signal-to-noise threshold ratio for the optimal transfer function and second order systems. By using the results of this and other earlier papers, the authors of the present article determine the moment at which the threshold sets in.

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USSR

OKHTYARKIN, Ye. G. and LOGINOV, V. V., Elektrosvyaz', No 12, 1970, pp 8-11

The threshold characteristics of the SPD with and without a proportionally integrating filter are compared, and it is shown that use of the filter substantially improves the gain in a shift of the threshold for high modulation indices.

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- 16 -

LOGINOV, V.V.

electronics

JPRS 55281

28 February 1972

SO: JPRS 55281  
28 FEB 72

UDC 621.391.27:621.376.32

ANALYSIS OF THRESHOLD CHARACTERISTICS OF THE  
SYNCHRONOUS-PHASE DEMODULATOR

(Article by Ye. G. Chvyarkin and V. V. Loginov) Moscow, Elektronovuz, Russian, 1970, No 12, pp 8-11

Introduction

On satellite and tropospheric lines of communication, the system of phase automatic frequency control (PAFC) is applied in the capacity of frequency demodulator. Such a demodulator (we shall call it synchronous-phase demodulator--SPD) is used to improve noise elimination at the receiving end of the "Orbits" national television system.

Threshold characteristics of the SPD is a basic indicator at the comparison of demodulators, which, to a considerable degree, determine the qualitative characteristics of the receiver. In the first work [2] devoted to the determination of the threshold properties of the SPD, the old ratio signal/noise for the optimum transfer function and for the system of the second order was found on the basis of the criterion for the minimum dispersion of phase error. However, without sufficient justification the moment when the phase error exceeds 1 radian is accepted as the threshold point. The results in [2] differ substantially from the results of experimental verification [3]. Making use of the results in [2] and of the known statistical characteristics of the system obtained on the basis of nonlinear analysis [4, 5], we shall determine the moment of approach of the threshold.

Threshold Characteristics of Demodulator

The basic idea [1] consists of making use of the jump of phase by  $2\pi$  of the resultant vector of signal and

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USSR

UDC 543.422.23.546.1'118

NURETDINOV, I. A., NEGREBETSKIY, V. V., YANKELEVICH, A. Z., KESSENIKH, A. Y.,  
 NIKONOROVA, L. K., and LOGINOVA, E. I., Institute of Organic and Physical  
 Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR, and Institute of  
 Organic Chemistry imeni N. D. Zelenskiy, Academy of Sciences USSR

"NMR- $H^1$ , NMR- $P^{31}$  and INDOR- $H^1$  -  $\{P^{31}\}$  Spectra of Compounds Containing  
 $=P(X) - N - P(Y)=$  Group"

$$\begin{array}{c} CH_3 \\ | \\ N \end{array}$$

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, no 11, Nov 71,  
 pp 2589-2591

Abstract: For purposes of studying the spin-spin interaction in compounds with  
 fragments of the type  $=P(X) - \underset{|}{N} - P(X)=$  and  $=P(X) - \underset{|}{N} - P(Y)=$ , the authors stud-

ied the NMR- $H^1$ , NMR- $P^{31}$  and INDOR- $H^1 - \{P^{31}\}$  spectra of the following compounds:

$(CH_3O)_2P_I(O)N(CH_3)P_{II}(OCH_3)_2$ ,  $(CH_3O)_2P_I(O)N(CH_3)P_{II}(Se)(OCH_3)_2$ ,  $(CH_3O)_2P_I(O)N-$

$(CH_3)P_{II}(Se)(OC_4H_9 - i)_2$ ,  $(CH_3O)_2P_I(S)N(CH_3)P_{II}(Se) \begin{array}{l} \swarrow OC_3H_7 - i \\ \searrow N(CH_3)_2 \end{array}$ . The values and  
 $1/2$

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NURETDINOV, O. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 11, Nov 71, pp 2589-2591

signs of the constants  ${}^2J_{PP}$ ,  ${}^3J_{PNCH}$  were determined. The series of compounds studied display a decrease in the value of  ${}^2J_{PP}$  with a change in its sign.

2/2

USSR

UDC 542.91 + 661.718.1

NURETDINOV, I. A., BUINA, N. A., GRECHKIN, N. P., and LOGINOVA, E. I.,  
Institute of Organic and Physical Chemistry imeni A. Ye. Arbutov, Academy  
of Sciences USSR

"Diphenyl- and Phenyl-diethylamidosele-nophosphoric Acid Esters"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 1, Jan 71,  
pp 131-136

Abstract: A series of alkyl esters of diphenyl- and phenyl-diethylamido-  
selenophosphoric acid was synthesized. Selenium was added to ethyl diphenyl  
phosphite and after the initial exothermic reaction subsided, the mixture was  
heated for 1 hr at 100°, filtered and distilled under vacuum yielding ethyl  
diphenyl selenophosphate (I), b.p. 133-134°/0.02 mm,  $d_4^{20}$  1.3709,  $n_D^{20}$  1.5765.  
(I) was also obtained from the reaction of diphenyl selenochlorophosphate  
with  $(C_2H_5)_3N$  and ethanol in benzene at 10-15°. The solid  $(C_2H_5)_3N \cdot nCl$   
formed was removed by filtration and (I) distilled in vacuum; both methods  
gave the identical product. Following compounds were obtained by the second  
reaction: ethyl phenyl diethylamidosele-nophosphate, b. p. 109-111°/0.001 mm,  
 $d_4^{20}$  1.2707,  $n_D^{20}$  1.5369; propyl diphenyl amidosele-nophosphate, b.p. 141-143°/

1/2



USSR

NURETDINOV, I. A., et al, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 1, Jan 71, pp 131-136

/0.002mm,  $d_4^{20}$  1.3354,  $n_D^{20}$  1.5703; and propyl phenyl diethylamidosenophosphate, b.p. 120-120.5°/0.001 mm,  $d_4^{20}$  1.2423,  $n_D^{20}$  1.5368. It was determined that methyl esters of diphenyl- and phenyldiethylamidosenophosphoric acids obtained analogously to the ethyl esters isomerize on heating to methyl-selenium esters of respective phosphoric acids.

2/2

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1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--THIOL ESTERS OF SELENOPHOSPHORIC ACIDS -U-  
AUTHOR--(04)--NURETDINOV, I.A., BUINA, N.A., GRECHKIN, N.P., LOGINOVA, E.I.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 708-10  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--THIOL, ORGANIC PHOSPHORUS COMPOUND, ORGANOSELENIUM COMPOUND,  
TRIETHYLAMINE, NMR SPECTRUM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1999/1780 STEP NO--UR/0052/70/000/003/0708/0710  
CIRC ACCESSION NO--AP0123577

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--300C170

CIRC ACCESSION NO--APO123577

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF 3 G ETSH AND 4.9 G ET  
SUB3 N IN C SUB6 H SUB6 WITH 15 G PHOP (SE) (NET SUB2) CL, FINALLY 1.9  
HR AT 35DEGREES, GAVE 63.4PERCENT PHOP (SE) (NET SUB2) (SET, B SUB0.002  
121-3DEGREES, D PRIME20 1.3011, N PRIME20 SUBD 1.5840; SIMILARLY WERE  
PREPD. THE ANALOGS. 65.8PERCENT BUS, B SUB0.001 140 MINUS 1PERCENT,  
1.2468, 1.5710; AND 53.8PERCENT PHS, M. 32-3DEGREES. EXCESS ETSHA IN  
ET SUB2 G TREATED WITH (PHO) SUB2 P (SE) CL GAVE AFTER REFLUXING 5 HR  
30PERCENT (PHO) SUB2 P (SE) SET, B SUB0.005 152-3DEGREES, 1.3986,  
1.6223; SIMILAR REACTION WITH STOICHIOMETRIC RATIO OF REACTANTS AND RUN  
IN C SUB6 H SUB6 2 HR AT 13-20DEGREES GAVE 37PERCENT SIMILAR PRODUCT, B  
SUB0.002 146-7DEGREES, 1.3874, 1.6125. BOTH HAD SIMILAR NMR SPECTRA.  
REACTION OF (PHO) SUB2 P (SE) CL WITH RSH AND ET SUB3 N GAVE (PHO) SUB2  
P (SE) SR (R SHOWN): 71.6PERCENT ET, B SUB0.002 144-6DEGREES, 1.3876,  
1.6180; 72.3PERCENT BU, B SUB0.001 151-2DEGREES, 1.3347, 1.6050;  
58.2PERCENT PH, AND B SUB0.002 166-7DEGREES, 1.3744, 1.6490. THESE HAD  
PHYS. CONSTS. VERY DIFFERENT FROM THOSE REPORTED PREVIOUSLY BY N. I.  
ZEMLYANSKII ET AL. (1965, 1967); THOSE COMPS. MAY HAVE BEEN PRODUCTS  
OF REACTION OF THESE WITH EXCESS RSNA. FACILITY: INST. ORG.  
FIZ. KHIM. IM. ARBUZOVA, KAZAN, USSR.

UNCLASSIFIED

USSR

UDC 547.26'118:541.49

PUDOVIK, A. N., MURATOVA, A. A., MEDVEDEVA, M. D., YARKOVA, E. T., and  
LOGINOVA, E. I., Kazan' State University imeni V. I. Ul'yanov-Lenin

"Investigation of the Reaction of Diethylphosphinous Acid Esters With  
Trialkyl and Dialkyl Halides of Tin"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 327-333

Abstract: The authors study reactions of methyl, ethyl, n-propyl, isopropyl, n-butyl and n-hexyl esters of diethylphosphinous acid with triethyl and diethyl chlorides, bromides and iodides of tin. It was found that diethylphosphinous acid esters react with trialkyl and dialkyl halides of tin to form stable complexes containing trialkylphosphine oxide and an alkyl halide of tin. As the radical of the alkoxy group increases, the reactivity of the phosphinite in these reactions decreases. The activity of alkyl halides of tin drops with a transition from dialkyl to trialkyl halides, and also with a transition from iodine to chlorine derivatives of tin.

1/1

USSR

UDC 542.91.661.718.1

NURETDINOV, I. A., NIKONOROVA, L. K., ~~LOGINOVA, E. I.~~, and GRECHKIN, N. P.,  
Institute of Organic and Physical Chemistry imeni A. Ye. Arbusov, Academy  
of Sciences USSR

"Amidesters of Selenophosphoric Acid"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 9, Sep 71,  
pp 2095-2097

Abstract: For purposes of studying the effect of the amide and ester group structure on the physical and biological properties of alkylselenophosphoric acid amides, the authors synthesized a series of new amidesters of selenophosphoric acid by the addition of elemental selenium to corresponding trivalent phosphorus acid amides. The NMR- $P^{31}$  and IR spectra of the resultant compounds were studied. It was found that the electron effects of the phosphorus substituents in amidesters of selenophosphoric acid have little influence on the shielding of the phosphorus nucleus. A separate article will report the results of a study of insecticidal and fungicidal properties of the compounds.

1/1

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USSR

UDC 542.91 + 538.113 + 661.718.1

NURETDINOV, I. A., LOGINOVA, E. I., NIKONOROVA, L. K., and GRECHKIN, N. P., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Kazan, Academy of Sciences USSR

"Synthesis and NMR Spectra of Compounds Containing the :P(S)-N-P: Group"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, Vol 4, Apr 70, pp 914-916

Abstract: Mixed amides of dimethylthiophosphoric acid and trivalent phosphorus acids were obtained by reacting the methylamide of dimethylphosphoric acid with trivalent phosphoric acid chloride in the presence of triethylamine or by the reaction of N-dimethylthiophosphane-N-dichlorophosphine-N-methylamine with the dimethylamine in ether solution. Since the two phosphorus atoms are not equivalent -- PIV-N-PIII -- their respective signals were found to be split in doublets. Chemical shifts of the nuclei of tetracoordinated phosphorus are not affected by substituents on the tricoordinated P,

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USSR

NURETDINOV, I. A., et al, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, Vol 4, Apr 70, pp 914-916

while the shifts of nuclei on tricoordinated P behave analogously to monophosphoric compounds. The constants of spin-spin interaction  $J_{PP}$  depend on the electron donating power of the substituents on tricoordinated phosphorus.

2/2

" 50 "

USSR

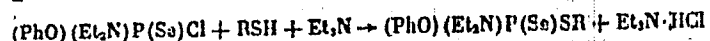
L UDC: 542.91-661.718.1

HURETDINOV, I.A., BUINA, N.A., GRECHKIN, N.P., LOGINOVA, E.F., Institute of Organic and Physical Chemistry imeni A. Ye. Arbutov, Academy of Sciences USSR

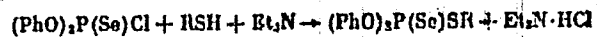
"Thiol Esters of Selenophosphorus Acids"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, Mar 70, pp 708-710

Abstract: Phenyl-diethylamido-selenochlorophosphate reacts with mercaptans and thiophenol in the presence of triethylamine to produce the corresponding thiol esters.



The ethyl- and butylthiol esters of phenyl-diethylamido-selenophosphoric acid are liquids, while the phenylthiol ester of this acid is a crystalline substance. Thiol esters of diphenylselenophosphoric acid are produced by a similar reaction.



The resultant products have a considerably higher boiling point than thiol esters of phenyl-diethylamido-selenophosphoric acid. The properties of eight esters of selenophosphorus acids are tabulated.

1/1



USSR

UDC 621.382.2

AGEYEVA, L. A., KOVALEVA, N. K., and LOGINOVA, L. B.

"Production and Study of Planar Contacts in Gunn Diodes"

Izv. Leningr. elektrotekhn. in-ta (Bulletin of the Leningrad Electrical Engineering Institute), 1970, Issue 96, pp 60-63 (from RZh-Elektronika i yeye primeneniye, No 8, August 1971, Abstract No 8B134)

Translation: The results are presented of an experimental study of the resistance of contacts for coplanar Gunn-effect diodes. Alloys of Ag<sub>3</sub>Sn, NiIn, and Ag<sub>3</sub>GeIn were used as material for the contacts. The resistance of GaAs contacts with an electron concentration of  $\sim 10^{15} \text{ cm}^{-3}$  amounted to  $\sim 5 \cdot 10^{-2} \text{ ohm.cm}^2$ . A. Ye.

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USSR

UDC 576.809.5

LOGINOVA, L. G.

"Physiological Characteristics of Thermophilic Microorganisms"

Uspekhi mikrobiologii (Advances in Microbiology), No 7, 1971

Abstract: The survey contains data on some physiological characteristics of thermophilic bacteria. It is known, for example, that at high temperatures their respiration is intensified markedly, a phenomenon consistent with the large cytochrome content of their cells. Spore-forming thermophilic bacteria are most demanding of the composition of the nutrient medium, i.e., of a larger quantity of vitamins than mesophilic forms. The factors that enable thermophiles to exist and develop at high temperatures are revealed. There is a discussion of the possibility of using thermophilic microorganisms for practical purposes.

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1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--THE EFFECT OF GROWTH CONDITIONS OF THERMOGENESIS IN CANDIDA  
TROPICALIS -U-  
AUTHOR--(03)-PLATONOV, A.L., POZMOGOVA, I.N., LOGINOVA, L.G.  
COUNTRY OF INFO--USSR  
SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 1, PP 47-54  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--YEAST, FUNGUS, GLUCOSE, CULTURE MEDIUM, NITROGEN, PHOSPHORUS,  
CALORIMETER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1996/0484 STEP NO--UR/0220/70/039/001/0047/0054  
CIRC ACCESSION NO--AP0117720  
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0117720

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. YEAST GROWTH WAS ACCOMPLISHED WITH AN INTENSIVE HEAT OUTPUT WHICH WAS REGISTERED JUST AFTER CELL INOCULATION IN THE CHAMBER OF MICROCALORIMETER. DURING THE FIRST SIX HOURS OF THE YEAST GROWTH THE BULK OF ENERGY (60-70PERCENT), RELEASED AS A RESULT OF GLUCOSE OXIDATION BY THE CULTURE, WAS CONTAINED IN THE PRODUCTS OF GLUCOSE INCOMPLETE OXIDATION. THERMOGENESIS DECREASED DURING THE YEAST GROWTH ON MEDIA WITHOUT A NITROGEN OR PHOSPHORUS SOURCE. HOWEVER, RECALCULATION OF THE ENERGY RELEASED AS HEAT PER 1 MG OF UTILIZED GLUCOSE HAS SHOWN THAT IT WAS 1.5-2 TIMES HIGHER THAN IN THE CASE OF THE YEAST GROWTH ON THE COMPLETE MEDIUM. HENCE, UNCOUPLING BETWEEN THE RATE OF ENERGY ACCUMULATION AND THE YEAST GROWTH TOOK PLACE ON THE MEDIUM WITHOUT N OR P. INTENSIVE AERATION DURING THE YEAST GROWTH ON THE PHOSPHORUSLESS MEDIUM RESULTED IN AN INCREASE OF GLUCOSE UTILIZATION, BIOMASS YIELD AND THERMOGENESIS. THE VALUE OF ENERGY COEFFICIENT REMAINED THE SAME UP TO A CERTAIN LIMIT OF AERATION; IF IT BECAME HIGHER THE ENERGY COEFFICIENT DECREASED, PROBABLY, DUE TO A FALL PH PHOSPHORUS CONTENT DOWN TO PHYSIOLOGICAL THRESHOLD CONCENTRATION.

UNCLASSIFIED

USSR

UDO 621.315.592:546.19'681

SOKOLOV, YE.B., BOL'SHEVA, YU.N., LOGINOVA, L.V., MIL'VIDSKIY, M.G.

"Behavior Of Copper During Melting Of Gallium Arsenide To A Flux"

Sb.nauch.tr. po probl. mikroelektron. Mosk. in-t elektron.tukhn. (Collection Of Scientific Works On Problems Of Microelectronics. Moscow Institute Of Electronics Technology), 1972, Issue 8, pp 109-112 (from RZh:Elektronika i yeye primen-  
iye, No 9, Sept 1972, Abstract No 9B106)

Translation: The behavior is considered of one of the most studied impurities--  
copper at the boundary of melts of gallium arsenide--boric anhydride. It is  
assumed that with equilibrium of these two melts it is possible for extraction  
of the impurities in the flux to take place. It is shown that with high concen-  
trations of copper (and copper oxide) in the melt, it is possible to disregard  
extraction of boric anhydride in the melt. 4 ref. Summary.

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USSR

UDC 547.341 (2)

RAZUMOV, A. I., SOKOLOV, M. P., LIONEER, B. G., MOSKVA, V. V., SAZONOVA, Z. YA.,  
and LOGINOVA, N. G., Kazan' Chemical-Technological Institute Imeni S. M. Kirov

"Synthesis and Properties of Phosphorylated Imines and Enamines"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 5, May 73, pp 1019-1026

Abstract: Several methods exist for the synthesis of phosphorylated secondary and tertiary enamines and imines: direct reaction of primary amines with aldehydes, reaction of secondary enamines with phosphorylated aldehydes in presence of p-toluenesulfonic acid, reaction of the diamides of allylphosphorous acid with aldehydes, and transamination of enamines. Imine-enamine tautomerism of these products was studied showing that the position of tautomeric equilibrium depends principally on the nature of substituents at the nitrogen atom and on the type of solvent used. Hydrogen bonding of the enamine forms depends mainly on the substituents at nitrogen and phosphorus atoms and on the steric distribution of proton acceptors.

1/1

1/2 009 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--AL'FIYA, A NEW HIGH QUALITY LIQUID SYNTHETIC DETERGENT -U-

AUTHOR--(05)-BULYANOVSKIY, D.M., GETMANSKIY, I.K., LOGIINOVA, N.I.,  
NAYMUSHINA, A.A., KUDYASHOV, A.I.  
CCOUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970; (3), 34-5

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, MATERIALS

TOPIC TAGS--BIODEGRADABLE DETERGENT, AMIDE, FATTY ACID, PHOSPHATE, UREA,  
BLEACHING AGENT/(U)ALFIYA DETERGENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3002/0441

STEP NO--UR/0318/70/000/003/0034/0035

CIRC ACCESSION NO--A0128011

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--A0128011

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPONENTS OF AL'FIYA ARE  
PRIMARY ALKYL SULFATES 8-13. SEC-ALKYL SULFATES 3-8, SYNTHONAL DT-7 (A  
PRODUCT OF OXYETHYLATION OF C SUB10 NEGATIVE13 PRIMARY ALCS.) 0-3,  
SYNTHAMID,5 (MONOETHANCLAMIDES OF SYNTHETIC FATTY ACIDS) 4, NA  
HEXANETAPHOSPHATE 4, UREA 13, ISO-PRCH 1, BLEACHING AGENT 0.15, PERFUME  
0.1, AND H SUB2 0 TO 100PERCENT. ALL THE COMPONENTS OF AL'FIYA ARE  
BIODEGRADABLE. THE WASHING POWER OF A 0.125PERCENT SOLN. OF AL'FIYA IN  
HARD WATER (15DEGREES) AT 50DEGREES WITH WOOL IS 124-130PERCENT OF THAT  
OF NA LAURYL SULFATE. AL'FIYA CAN BE USED EFFECTIVELY ALSO FOR SILK AND  
SYNTHETIC FABRICS. THE STABILITY OF AL'FIYA AGAINST TURBIDITY AT  
10DEGREES LASTS GREATER THAN 24 HRS.

UNCLASSIFIED



USSR

UDC 576.858.25.097.2.083.3

LOGINOVA, N. V., NARODITSKIY, B. S., and GAVRILOV, V. I., Institute of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow

"A Simple Method for the Concentration of Tissue Culture Antigen of Japanese Encephalitis"

Moscow, Voprosy Virusologii, B No 4, 1973, pp 494-496

Abstract: Tests were conducted on the feasibility of using polyethylene glycol (PEG) to concentrate Japanese encephalitis (JBE) and West Nile Fever viruses. The viruses were grown in chick embryo cells maintained in medium 199 containing 10% bovine serum. The culture fluid was centrifuged for 1 h at 10,000 g at 4°C to remove cellular detritus. The pH of the supernatant liquid was adjusted to 7.8 with sodium bicarbonate and NaCl was added to 0.5 M concentration. This was followed by the addition of 6,000 MW PEG to 8-9% and storage at 4°C for 1 to 24 h. Centrifugation for 1 h at 10,000 g yielded a sediment which was dissolved in 1-2 ml borate buffer, pH 9.0, containing 0.4% BSA and tested for hemagglutination. JBE was found to be concentrated 50-70-fold after storage at 24 h; significant concentration was also evident after 1 h. Concentration of West Nile virus was less effective and amounted to 8-16-fold concentration, presumably due to aggregation of the virus. PEG thus offers an easy method for concentrating JBE in tissue culture supernatants.

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USSR

VASHKOVA, V. V., LOGINOVA, N. V., and L'VOV, D. K., Institute of Virology  
imeni D. I. Ivanovskiy, Academy of Medical Sciences, USSR

"A Comparative Study of the Effects of Two Varieties of Japanese Encephalitis  
Virus on Chromosomes and Mitotic Activity of Cells"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, pp 494

Translation: The effects of two varieties of Japanese encephalitis virus  
(Nakayama strain and clone No 33), differing from each other in neuropatho-  
genicity with regard to white mice and in certain other genetic properties, on  
the chromosome apparatus in cells and on the mitotic activity of tissue cultures  
were studied. The Nakayama strain had no effect on the mitotic activity of  
tissue cultures. Clone No 33 suppressed mitotic activity, beginning with the  
14th hour after inoculation. Forty-three hours after inoculation, cultures  
infected with the Nakayama strain had 17.2% chromosome rearrangements and those  
infected with clone No 33 had 11.7% of rearrangements.

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USSR

UDC 613(075.8)

ZIL'BER, D. A., (DECEASED), LOGINOVA, R. A., NOVIKOVA, I. M., OLEKHOVICH,  
A. I., OSTROVSKIY, M. M., and RAZUMOVSKIY, M. D.,

Gigiyena (Hygiene), Moscow, "Meditsina," 1970, 384 pp

Translation: Annotation: This textbook has been compiled for students of pharmaceutical institutes and pharmaceutical faculties of medical institutes in accordance with the hygiene teaching program. It contains materials corresponding to the nature of their future work. Such materials concern problems of hygiene in pharmacies, labor hygiene in galenical and chemicopharmaceutical enterprises, foundations of epidemiology and organization of antiepidemic measures, and sanitary education.

The indicated subjects are completely lacking in hygiene textbooks issued for students of therapeutic, sanitary, and other faculties of medical institutes.

Some facets of general hygiene are elucidated also in this textbook without which it is impossible for students to learn certain hygienic problems which are specific for them as future specialist pharmacists.

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LOGINOVA, R. G.

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SESSION XVI

XVI-1. EPITAXIAL MULTILAYERED SILICON STRUCTURES OBTAINED BY SUBLIMATION IN A VACUUM

Article by R. G. Lognova, N. I. Ovsyannikov, Yu. A. Reemov, G. M. Y. Hovoditskiy, III Simposium po protsesam kont. i sinteza poluprovodnikovkh kristallov i plazmy, Tomsk, 12-17 June 1972, p. 207

1. The method of silicon sublimation in a vacuum was used to obtain epitaxial multilayered structures comprising p-n type layers with a number of layers to 30. The thickness of the layers varied from 100 Å to 1 micron.
2. Electron diffraction and electron microscope studies of the structures obtained were performed.
3. Studies were made of the nucleation and distribution of growth defects in multilayered silicon structures. As a rule, the nucleation of the defects take place at the interfaces of the layers. The causes of the given phenomena are discussed.
4. The mechanism of the discovery of individual layers in epitaxial multilayered structures by the etching method is discussed.

USSR

UDC: 621.314.652

BELYAYEV, V. B., ~~LOGINOVA, T. A.~~, TSINMAN, I. M.

"A Device for Igniting Gas-Discharge Tubes With Liquid Cathode"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrabotsy, Tovarnyye Znaki, No 7, Mar 72, Author's Certificate No 329594, Division G, filed 24 Aug 70, published 9 Feb 72, p 208

Translation: This Author's Certificate introduces a device for igniting gas-discharge tubes with liquid cathode. The device contains two coaxially arranged igniting electrodes, one of which is made in the form of a rod. These electrodes are accommodated in a branch of the tube. The device also contains a pulse transformer. As a distinguishing feature of the patent, the reliability is increased, the design is simplified, and the ignition voltage is reduced by placing the primary winding of the pulse transformer on the branch of the tube, the secondary winding being the second ignition electrode which is made in the form of a helix with the end on the side furthest from the cathode being electrically connected to the rod electrode, while the other end of the helix forms with the rod electrode a discharge gap close to the cathode.

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1/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--OSMOTIC STABILITY OF LEUKOCYTES UNDER NORMAL CONDITIONS AND DURING  
EXPERIMENTAL RADIATION INJURY -U-  
AUTHOR--LOGINOVA, T.G.  
COUNTRY OF INFO--USSR  
SOURCE--RADIOBIOLOGIYA 1970, 19(1), 70-3  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--X RAY RADIATION BIOLOGIC EFFECT, LEUKOCYTE, OSMOSIS, SEASONAL  
VARIATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1997/0235 STEP NO--UR/0205/70/010/001/0070/0073  
CIRC ACCESSION NO--AP0119231  
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119231

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MALE RATS WERE IRRADIATED WITH 200 R X RAYS. EXPTS. WERE PERFORMED IN SUMMER AND IN WINTER TO DET. A SEASONAL INFLUENCE. THE OSMOTIC STABILITY OF LEUKOCYTES FROM INTACT RATS IN WINTER DIFFERED FROM THAT OBSD. IN THE SUMMER (THE LATTER BEING HIGHER). NO SIGNIFICANT CHANGES OCCURRED ONE DAY AFTER THE IRRADN. AFTER THREE DAYS THE OSMOTIC STABILITY OF THE LEUKOCYTES WAS MARKEDLY DECREASED. TWO MONTHS AFTER THE IRRADN, THE OSMOTIC STABILITY WAS STILL NOT RECOVERED AND SHOWED A TENDENCE TO LOWER VALUES. FACILITY: VOENNO-MED. AKAU. IM. KIROVA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 621.382.322

ZAGORSKIY, YA.T., LOGINOVA, T.I.

"Investigation Of Low-Frequency Amplifying Parameters Of Field-Effect Transistors"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 3  
(Proceedings Of The All-Union Scientific-Technical Conference On Radio Engineering Measurements. Vol. 3), Novosibirsk, 1970, pp 102-106 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No. 2B240)

Translation: The dependences of the h-parameters of field-effect transistors on the current of the source and the voltage source-drain are investigated. In order to assure open circuit conditions at the input, a dynamic load was applied, in the capacity of which the transistor was used. Standard dependences are presented. 11 ref. I.M.

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USSR

UDC 547.75'821.07:541.69

URITSKAYA, M. Ya., LOGINOVA, V. A., and YAHONTOV, L. N., USSR Institute of Chemical-Pharmaceutical Scientific Research imeni S. Ordzhonikidze, Moscow

"Azaindole Derivatives XLIII: Synthesis of 1-acetyl-4-methyl-7-azatriptamines"

Riga, Akademiya Nauk Latviiskoy SSR, Himiya Geterotsiklicheskih Soedinenii, No 10, Oct 73, pp 1370-1373

Abstract: The synthesis of 1-acetyl-4-methyl-7-azatriptamine from the ethyl ester of (4-methyl-7-azaindolyl-3)acetic acid by way of the 3-( $\beta$ -chloroethyl)-4-methyl-7-azaindole, followed by replacement of the halogen by a nitro group and reduction of the nitro group to the amine is shown. An alternate method is to remove the halogen by reacting 1-acetyl-3-( $\beta$ -chloroethyl)-4-methyl-7-azaindole with ammonium hydroxide, potassium bis-(dimethylmethoxysilyl)amide and potassium phthalimide (followed by removal of the phthalimide protector). The IR spectrum was used to determine the final structure.

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LOGINOVA, Ye. A.

So: JPRS 54019  
9 SEP 71

UDC: 362.11(47-21)

LEVEL, STRUCTURE, AND DISTINCTIVE FEATURES OF EMERGENCY HOSPITAL CARE IN DIFFERENT TYPES OF CITIES

Article by Ye. A. Lognova, V. V. Zhigarska, I. S. Belyakova, N. I. Trubilin, I. K. Seolovik, L. P. Burdina, V. P. Lyasunov, A. F. Tarantukov, A. P. Kravtsov, Ye. L. Bakhinov, All-Union Scientific Research Institute of Social Hygiene and Public Health Organization Imeni N. A. Semashko, Rostovskaya, Ulyanovskaya and Kurskaya Oblast Health Departments; Moscow, Sovetskoye Zdravookhraneniye, Bulletin, No 7, 1971, submitted 16 February 1971, pp 13-25

In spite of the know-how accumulated by Soviet public health in the area of planning and developing norms for medical care in hospitals, still unstudied is the matter of bed requirements referable to emergency hospitalization of patients and the structure of such requirements. Of special interest is the development and improvement of the network and structure of the beds allocated for emergency hospitalization in view of the specialized emergency hospitals founded on the basis of Decree No 517 dated 5 July 1968 issued by the Central Committee of the CPSU and USSR Council of Ministers, "on Measures for Further Improvement of Public Health and Development of Medical Science in the Nation," as well as integration of emergency stations and hospitals, as reflected in order No 608, dated 6 August 1968, issued by the USSR Minister of Health.

In resolving planning and organizational problems pertaining to emergency hospital care it is not deemed possible to be governed by official reports, since the statistics on hospitalized patients include data on emergency hospitalization only referable to surgical emergencies whereas a considerable place is occupied by emergency hospitalization of therapeutic, obstetric-gynecological, infectious, and other patients.

For the purpose of substantiating the structure of the beds allocated for emergency hospitalization, the All-Union Scientific Research Institute of Social Hygiene and Public Health Organizational Dept. N. A. Semashko, jointly with the oblast health departments of Kostanovskaya, Ulyanovskaya, Kurskaya, Kaliningradskaya, and Volopodskaya oblasts and the Ministry of Health of Bashkir ASSR, conducted a complex study to determine the level, scope, and nature of emergency hospital care in different types of cities.

LOGINOVA, Ye. A.

SO: JPRS 55015  
25 Jan 72

45

UDC: 362.11(47-21:47-22)

DISTINCTIONS IN LEVEL AND STRUCTURE OF HOSPITAL CARE FOR RURAL PATIENTS IN DIFFERENT TYPES OF CITIES

Article by Ye. A. Loginova, M.V. Potekhina, V.M. Shipova, N.T. Trubilin, I.K. Smolev, L.A. Bogdan, A.K. Pryanov, Z.L. Juranenko, Ye. P. Kolesnikova, A.P. Novikova, L.I. Baybakov. All-Union Scientific Research Institute of Social Hygiene and Public Health Organization (Imeni N.A. Semashko, Kostovskaya, U'yanovskaya, and Kurskaya oblast health departments; Moscow, Zvezdnoye Zdravookhraneniye, Russian, No 12, 1971, submitted 24 March 1971, pp 16-31)

Urban therapeutic institutions play an important role in rendering qualified and particularly specialized care for the rural population. It is a known fact that the volume of medical care rendered to the rural population by urban institutions is increasing annually, however, to date this is not taken into consideration in planning urban public health care. In addition, there are still insufficient special investigations to substantiate the rural residents demand for specialized hospitals and ~~specialized~~ care at different stages of organization of rural public health.

The absence of differentiated standards of the demands of the rural population with regard to special forms of medical care makes it imperative to pursue in-depth investigations of the level and distinctions of the demand for different forms of therapeutic and prophylactic care in concrete institutions of different types of cities.

For this purpose, the ~~Scientific~~ Scientific Research Institute of Social Hygiene and Public Health ~~Organization~~ ~~Imeni N.A. Semashko~~, jointly with the ~~most~~ public health departments of Kostovskaya, U'yanovskaya, Kurskaya, Vologodskaya oblasts and the ~~Health~~ Ministry of Health conducted a complex study of the level and structure of hospital, polyclinic, and visiting consultation services offered to rural residents in the different cities.

In this article we submit the results of a study of the level and structure of hospital care rendered to the rural population in different types of cities in Kostovskaya, U'yanovskaya, and Kurskaya oblasts; data pertaining to other bases are undergoing statistical processing.

USSR

UDC 577.4

MEYERSON, F. Z., MALKIN, V. B., ANNANUROVA, L. A., LOGINOVA, YE. V., and MAYZELIS, M. YA., Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR

"Effect of RNA Synthesis Inhibitor on the Development of Adaptation to High-Altitude Hypoxia"

Moscow, Izvestiya Akademii Nauk SSSSR, Seriya Biologicheskaya, No 3, May/Jun 72, pp 405-412

Abstract: The importance of increased nucleic acid and protein production in adaptation to high-altitude hypoxia was evaluated by administering actinomycin 2703 -- an RNA synthesis inhibitor -- to rats raised in 500 meter increments to 7,000 meters over a 25-day period in an altitude chamber (6 hrs/day exposure). Experiment variations included rats unadapted to hypoxia (control) (1), adapted over 25 days (2), unadapted and given actinomycin for 5 days (3), and adapted over 25 days and given actinomycin from the 20-25th days (4). Weight gain rate decreased in group 2 as compared to controls, weight decreased 7% in group 3, while weight decreased 16% in group 4 and 63% of the animals died during acute hypoxia generated by raising them to 11,000 meters at 80-100 meters/sec. Protein synthesis in the

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USSR

MEYERSON, F. Z., et al., Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 3, May/Jun 72, pp 405-412

heart and cerebral cortex increased in group 2, remained normal in group 3, but decreased in group 4, indicating that actinomycin is inhibitory only during adaptation to hypoxia. While  $O_2$  consumption decreased 30% in group 1 at 7,000 meters, by the 25th day of adaptation the decrease diminished to 10% in group 2. Actinomycin produced no significant changes in group 3 as compared to controls. In group 4 however, actinomycin caused  $O_2$  consumption to decrease 20-25%. Moreover the consumption decreased 22% at sea level for this group, indicating that something other than the  $O_2$  transport system had been affected, since  $O_2$  is readily available and there is no stress on the transport system. This idea is further supported by the fact that while the breathing rate decreased over the adaptation period, actinomycin caused it to rise again. Nor did the drug cause abnormal changes in erythrocyte and hemoglobin counts. Finally, animals given actinomycin and exposed to acute hypoxia died not during exposure but on the following day in an abundance of  $O_2$ . Thus it is suggested that actinomycin disrupts  $O_2$  utilization -- i.e., mitochondrial function, rather than  $O_2$  transport. The increased protein and nucleic acid production detected is a necessary part of adaptation to hypoxia, and it is inhibited by suppression of mitochondrial activity.

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- 47 -

LOGINOVA, Ye. V.

SO:JPRS 54435  
9 NOV 71

UDC: 612.766.2.014.464

THE EFFECT OF AN ALTERED GAS ENVIRONMENT ON SOME PHYSIOLOGICAL EFFECTS OF  
PROLONGED HYPOKINESIA (EXPERIMENTS ON ANIMALS)

(Article by P. V. Vasil'yev, V. B. Malkin, A. I. Voloshin, Ye. V. Loginova, V. Ye.  
Petrokin, N. A. Soshchina, K. N. P. Slova, Moscow, vestnik akademii nauk sssr  
USSR, Russian, No. 9, 1971, pp 78-83)

In the course of investigating the effect on the organism of prolonged hypokinesia the conception of a hypodynamic syndrome was formed which is characterized by specific functional disturbances which diminish the organism's adaptive capabilities (A. B. Kozlovskaya et al., 1964; L. I. Kakurin et al., 1966; L. I. Kakurin, 1968; Miller and Laverett, and others).

Various measures have been proposed to prevent development of the hypodynamic syndrome: physical exercise (A. V. Yerebin et al., 1969; V. I. Stepanov and A. V. Yerebin; Bronnon et al., Miller et al., and others), use of arm and leg cuffs (I. B. Pestov, Vost; Stevens et al., and others), use of arm and hand preparations (P. V. Vasil'yev and B. Yu. Lapinskaya; Mohr et al.; McCally et al.) and, finally, use of an "oxygen" gas environment. The purposefulness of special stages as a means of preventing development of deconditioning phenomena was theoretically substantiated in the works of Soviet and foreign researchers (V. B. Malkin et al.; P. V. Vasil'yev and N. N. Uglava, and others).

These studies are indicative of the effectiveness of using "hypoxic" gas environments, and our authors called serious attention to a regimen of "hypoxic" training. Their studies established that optimum effectiveness is observed with step-by-step elevation to increasing altitudes, staying there for 2-3 hours and descending for 2-16 hours every day (sic). Such a regimen of training for hypoxia is most effective for development of compensatory reorganization on the molecular and cellular levels (F. Z. Mayerson et al.).

The purpose of the present work was to investigate the possibility of using various gas environment receptors as a means of preventing development of the hypodynamic syndrome.

Method. The investigations were conducted in four series of experiments on 300 mongrel albino male rats, weighing 120 to 200 grams. The distribution of animals in groups and experimental conditions are shown in Table 1.

LOGNITNOV V.

Acc. Nr.: AN0051327

Ref. Code: UR 9012

FROM: FBIS, Daily Report, Soviet Union, 20 March 1970,  
Vol III, No 55, p a 27

USSR

POLAR INSTITUTE SHIPS AID POLISH FISHERMEN

Moscow PRAVDA 16 Mar 70 p 4 L

[V. Lognitnov report: "Persey-3' Helps the Fishermen"]

[Text] A telegram has recently reached the Polar Institute from the scientific research ship "Persey-3" which is now in the South Labrador area. It says that the "Persey-3" which is now research work with practical assistance to Polish fishermen.

North Atlantic Polar Institute laboratories head K. G. Konstantinov has commented on this telegram:

"Close cooperation has long been organized between the ichthyologists of Bulgaria, the GDR, Poland, Romania, and the Soviet Union. We meet each other every year at Murmansk, Gdynia, Rostok, or Constantza and exchange scientific information. But more frequently

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the meetings take place at sea, in the regions of the fisheries, where dispatcher conferences are held by radio. The fishermen report on the situation in the industry. There is now a very complex ice situation in the South Labrador area, where a large group of Soviet and Polish ships is located. The Polar Institute's scientific workers are carrying out research on the nature of the ice distribution, giving forecasts of its movement, searching for fish shoals in the most advantageous and secure fishery areas, and are reporting this information to the Polish ships' captains.

AB

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USSR

UDC 591.1.05

AKHVLEDIANI, K. S., LOGUA, G. SH., KERENADZE, L. V., and LOMOURI, I. D.  
Tbilisi State University

"A Method of Direct Microdetermination of Phosphorylcholine and Some Other Esters of Phosphoric Acid"

Tbilisi, Bulletin of the Academy of Sciences of the Georgian SSR, Vol 66, No 2, May 72, pp 437-439

Abstract: A new method of direct microchemical determination of phosphorylcholine based on a change in the optical density of a phosphomolybdate solution has been developed. A phosphorylcholine solution (0-240  $\mu$ g/ml) is added to a reagent solution containing 2% phosphomolybdic acid acidified with 0.1 N HCl to pH 5.3 $\pm$ 0.1. Optical density is measured at  $\lambda = 358$  m $\mu$  and the level of phosphorylcholine is determined from a calibrated titration curve. This method is suitable for determination of other phosphate and pyrophosphate esters.

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Pharmacology and Toxicology

UDC: 66.703

USSR

AKHVELDIANI, K. S., LOZAN, G. Sh., LOMURI, I. D., Tbilisi State University

"Synthesis and Acetylcholine-Like Activity of Acetylphosphorylcholine"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol. 66, No 2, 1972,  
pp 465-467

Abstract: Acetylphosphorylcholine was synthesized by treating phosphorylcholine with acetic anhydride. Acetylphosphorylcholine and phosphorylcholine were separated by electrophoresis (ammonia-acetic acid buffer, pH = 8.0) and also by paper chromatography in various solvents. The best solvent was butanol-ethanol-acetic acid-water (8:2:1:3) in which the R<sub>F</sub> is 0.25 for acetylphosphorylcholine, 0.15 for phosphorylcholine, 0.45 for acetylcholine, and 0.35 for acetylcholine. Biological tests indicate that acetylphosphorylcholine behaves like acetylcholine in muscle cells.

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UDC 662.766

USSR

AKHVLEDIANI, K. S., LOGUA, G. SH., LOMOURI, I. D., Tbilisi State University

"Synthesis of Acetylphosphorylcholine and Its Acetylcholine-like Activity"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, No 2, 1972, pp 465-467

Abstract: Acetylphosphorylcholine was synthesized to check the proposition that in the case of fermentative acetylation of phosphorylcholine, not acetylcholine but acetylphosphorylcholine is formed which has acetylcholine-like biological activity. The acetylphosphorylcholine and phosphorylcholine were analyzed by radio activity. The substances were separated by paper chromatography and electrophoresis. The acetylcholine activity was tested on the musculus rectus abdominis of a frog. The proposition was proved correct.

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ANO023162

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AUTHOR-- LOGUNOV, A., DIRECTOR, INSTITUTE OF HIGH ENERGY PHYSICS,  
CORRESPONDING MEMBER OF THE ACADEMY OF SCIENCES,  
U. S. S. R.

TITLE-- A STEP TOWARD THE COMPREHENSION OF ANTIMATTER

NEWSPAPER-- PRAVDA, FEBRUARY 14, 1970, P 3, COLS 1-3

ABSTRACT-- IT IS REPORTED THAT A TEAM OF PHYSICISTS AT THE INSTITUTE OF HIGH ENERGY PHYSICS, CONSISTING OF YU. M. ANTIPOV, N. K. VISHNEVSKIY, YU. P. GORIN, S. P. DENISOV, S. V. DONSKOV, F. A. YECH, G. D. ZHIL, CHENKOVA, A. M. ZAYTSEV, V. A. KACHANOV, V. M. KUT, IN, L. G. LANDSBERG, V. G. LAPSHIN, A. A. LEBEDEV, A. G. MOROZOV, A. I. PETRUKHIN, YE. A. RAZUVAYEV, V. I. RYKALIN, V. I. SOLYANIK, D. H. STOYANOVA, V. P. KHROMOV, AND R. S. SHUVALOV HAS DISCOVERED THE NUCLEI OF ANTIHELIUM. THE EXPERIMENTAL PROCEDURE IS DESCRIBED.

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USSR

LOGUNOV, A. A. et al, Teoreticheskaya i Matematicheskaya Fizika,  
Vol 9, No 2, Nov 71, pp 153-189

integral representation, inverse integral representation, the upper bound of the amplitude of the inelastic process with fixed projection of moment, the upper bound of the decrease in the differential inelastic cross-section in the wide-angle region at high energies, the sensitivity of the bounds of the multiple-production cross-section to the dimensions of the analyticity region for variables  $\cos \theta$  and  $\omega$ , the Kinoshita-Loeffell-Martin representation, and the evaluation of the differential elastic back-scattering cross-section.

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USSR

~~LOGUNOV, A. A.~~, MESTVIRISHVILI, M. A., and KHRUSTALEV, O. A., Institute of  
High-Energy Physics

"Restrictions on the Behavior of the Elastic and Inelastic Cross-Sections at High Energies. II"

Moscow, Teoreticheskaya i Matematicheskaya Fizika, Vol 9, No 2, Nov 71, pp  
153-189

**Abstract:** The first part of the article, dealing with the short-range action of nuclear forces and restrictions on the behavior of the elastic and inelastic cross-sections, considers the effective interaction radius, restrictions on the behavior of the cross-sections, the equality of the total interaction cross-sections of particles and antiparticles at high energies, and restrictions on the behavior of the total interaction cross-sections at high energies. The second part of the article, on the basis of the condition of unitarity and analyticity, obtains conclusions regarding the behavior of the differential multiple-production cross-section with energy growth in the wide production angle region. Topics covered in the second part include the

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