

USSR

UDC 539.4.014

BELYAYEV, V. I., and ZINKEVICH, V. I.

"Mechanical Properties of Stainless Steel and of Titanium Alloy Revealed During Rapid Tension Tests"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 2, Mar/Apr 73, pp 153-156

Abstract: Results are presented (obtained with optical and electron microscopes) on the effect of structural and phase transformations on mechanical properties of stainless steel 1Kh18N9T (0.12% C, 1.52% Mn, 0.40% Si, 18% Cr, 9% Ni, 0.40% Ti) and of titanium alloy OT4 (0.064% C, 0.03% Si, 0.16% Fe, 2.97% Al, 1.23% Mn) subjected to impact loading at room temperature. Cylindrical samples were subjected to tension at rates of  $10^{-4}$  to 350 m/sec. Mechanical properties and structural changes of metals were studied after rupture of samples with various tensile force. Yield, strength, and resistance to rupture of stainless steel increased when static loading was substituted by dynamic loading. However, when the deformation rate exceeded 4.2 m/sec some of the strength characteristics decreased. The number of slip lines in grains decreased when the tension rate was 5.2 m/sec. The rupture surface of samples deformed at 4.2 m/sec was directed at  $45^{\circ}$  toward the sample axis, and it was in a shape of a cup when the sample was ruptured at 5.2 m/sec. Tensile

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BELYAYEV, V. I. and ZINKEVICH, V. I., Fizika i Khimiya Obrabotki Materialov, No 2, Mar/Apr 73, pp 153-156

stresses were responsible in the first case of rupture which proceeded along the grain boundaries in the second case. Deformation of the titanium alloy was much more complex compared with stainless steel. Plastic properties of this alloy reached a maximum at a 50-100 m/sec tension rate and it was due to disintegration of the  $\alpha'$  phase and formation of  $\alpha$ - and  $\beta$  phases. Deformation with a rate exceeding 100 m/sec decreased the alloy plasticity, as well as the disintegration of the metastable  $\alpha'$ -phase. It is concluded that disintegration of the metastable phases is responsible for deformation of metal subjected to high speed tension tests. The mechanism of microstructural changes for each individual material is different.

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UDC 539.4

BELYAYEV, V. I., ZINKEVICH, V. I., KOVALEVSKIY, V. N., SKOKOV, P. I.

"Behavior of Certain Metal Materials Under Dynamic Tension"

V sb. Vysokoskorostn. deformatsiya (High-Speed Deformation -- Collection of Works), Moscow, "Nauka", 1971, pp 54-56 (from RZh-Mekhanika, No 3, Mar 72, Abstract No 3V1460)

Translation: Results of tests for strain of cylindrical samples of diameter 6 mm made of AD1 and D16 aluminum alloys, 1Kh18N9T stainless steel, OT4 titanium alloy, and 40Kh, 40KhNMA and 20KhNZA alloyed structural steels are presented. The strain tests were conducted in the velocity range from  $10^{-4}$  to 650 m/sec. The velocity range in which the highest plasticity properties and also the velocity range with a zero value of the plasticity characteristics were determined. Authors abstract.

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UDC: 621.396.6.017.71(088.8)

MOCHALOV, V. D., BELYAYEV, V. M.

"A Device for Delivering Forced Heating Power"

USSR Author's Certificate No 267233, filed 13 Nov 68, published 7 Jul 70  
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V231 P)

Translation: The proposed device for delivering forced heating power contains a capacitor, a power supply and a control device. To increase the operating speed of the device, the capacitor is connected through the normally closed contacts of a relay in the control device in parallel with the power supply, and through normally open contacts in series with the power supply.

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USSR

B

UDC 629.735.764.5:621.313.322(088.8)

BELYAYEV, V. N.

"An AC Generator Drive"

USSR Author's Certificate No 254983, Filed 22 Jan 68, Published 13 Mar 70 (from RZh-Elektrotehnika i energetika, No 9, Sep 70, Abstract No 9L213)

Translation: The proposed AC generator drive is equipped with an intermediate shaft on which a centrifugal regulator is mounted. The mechanism for controlling the drive is made in the form of a differential with one of its sun wheels mounted on the drive shaft while the other is connected to the driven shaft, and the planet carrier is connected through the gear box actuated by the centrifugal regulator to the intermediate shaft. This drive arrangement considerably improves operational reliability. One illustration.

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USSR

UDC: 622.243.94

~~BELYAYEV, V. P.~~, VERCHEBA, A. O., MARTYNOV, V. F., PROTSVETOV, Yu. G.,  
SHCHENNIKOV, Ye. V., Moscow Geological Prospecting Institute imeni S.  
Ordzhonikidze

"Some Results of Modeling of the Process of Thermomechanical Destruction  
of Rocks, Using a Laser as the Heat Generator"

Moscow, IVUZ Geologiya i Razvedka, No 7, Jul.71, pp 125-126

Abstract: The authors discuss the feasibility of using lasers as the  
heat source for combination thermomechanical destruction of rocks.  
Research was done using a 30-watt continuous laser based on a mixture of  
CO<sub>2</sub>, N<sub>2</sub>, and He. The rock specimen was chucked up in a lathe with a special  
device for controlling tool pressure over a wide range. The laser beam  
was focused ahead of the tool into a spot with a diameter equal to the  
width of the tool. Spindle rotation was 18 rpm, and cutting was done  
for 3 minutes. The effectiveness of laser heating was determined by com-  
parison with rock destruction by cutting alone. The results show that  
heating increases cutting effectiveness by a factor of 2.25-3.5. One table.

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USSR

UDC: 621.396.679:621.372.837(088.8)

~~BELYAYEV, V. P.~~  
BELYAYEV, V. P.

"A Commutating Input Device for ATR Tubes"

USSR Author's Certificate No 240779, filed 9 Dec 58, published 9 Jun 70  
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11B79 P)

Translation: A commutating input device is proposed for ATR tubes with electrodeless gas-discharge insert filled with inert gases having electro-negative impurities, or an inert gas without impurities. To increase the commutated power and simplify manufacture of the device, the device utilizes dynamic inductor connections and housed inserts made in the form of  $\frac{1}{4}$ -wave sections of coaxial line, the central conductors serving as the ends of the insert which are filled during plasma discharge. One illustration. Resumé.

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Electromagnetic Wave Propagation

USSR

UDC: 621.396.677

ASHKONAZI, D. Ya., BELYAYEV, V. P., BRODULENKO, G. I., DOBANOV, N. P.,  
RULEV, S. O.

"Starting Losses in SHF Dischargers"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific and Technical Collection. SHF Electronics), 1970, vyp. 9, pp 123-124 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12B98)

Translation: An experimental study was made of the power dissipated in the discharge as a function of the transmitter pulse duration for an electrodeless discharger with double dielectric walls. Measurements were taken on two different wavelengths in the decimeter band; the dischargers had a different height in each of these cases. The dissipated power was measured with an air calorimeter. The results show a high proportion of starting losses (up to half the dissipated power). This means that the process of growing electron concentration in the discharge continues considerably longer than the process of growing current determined by the wave impedance of the waveguide channel. Three illustrations, bibliography of two titles, N. S.

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USSR

UDC: 621.372.530.145.6

ALEYNIKOV, V. S., BELYAYEV, V. P., YUKHEVIDIN, Ya. A.

"State and Developmental Prospects of Some Quantum Electronics Devices"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific and Technical Collection. SHF Electronics), 1970, vyp. 4, pp 52-73 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7D205)

Translation: A state-of-the-art survey is given on gas lasers, quantum frequency standards and atomic clocks. The prospects for development of these devices are considered. Their regions of application are indicated. Resumé.

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USSR

UDC 621.387

BELYAYEV, V.P., KUDYAN, N.F., ANIKINA, N.M., NEGIREVA, L.V.

"Recovery Time Of Discharger With Discharge Gap Shifted To The Wall Of A Waveguide"

Elektron.tekhnika. Nauch.-tekhn.sb. Elektron. SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1972, Issue 4, pp 108-109 (from RZh:Elektronika i yeye primeneniye, No 9, Sept 1972, Abstract No 9A153)

Translation: It is established that with the shift of the discharge gap of a discharger to the wide wall of a waveguide, the recovery time is decreased in the case where the discharger is filled with electrically negative gas and increased when it is filled with electrically positive gas. Summary.


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Receivers and Transmitters

USSR

UDC 621.372.837.22


  
BELYAYEV, V.P.

"A Commutating Input Device for Dischargers to Protect a Receiver and Block a Transmitter"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzy, Tovarnyye Znaki,  
No 6, 1970, p 216, patent No 240779, filed 9 Dec 58

Abstract: This Author's Certificate introduces a commutating input device for dischargers to protect a receiver and block a transmitter with electrodeless gas-discharger insert filled with inert gases containing electronegative impurities, or with a pure inert gas. As a distinguishing feature of the patent, the commutated power is increased and manufacture of the device is simplified by using dynamic throttling connections between the insert and the housing. These connections are made in the form of quarter-wave segments of coaxial line, the central conductors being the ends of the insert which are filled with plasma during discharge.

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1/2 022 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--SOME PROBLEMS OF REFRACTIONAL BREPHOPLASTY OF THE CORNEA -U-  
AUTHOR-(02)-BELYAYEV, V.S., VERETENNIKOVA, V.V.   
COUNTRY OF INFO--USSR  
SOURCE--VESTNIK OFTAL'MOLOGII, 1970, NR 2, PP 28-33  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--CORNEA, TISSUE TRANSPLANT, FETUS, SURGERY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1986/0837 STEP NO--UR/0357/70/000/002/0028/0033  
CIRC ACCESSION NO--AP0102799  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--02JCT70

CIRC ACCESSION NO--AP0102799

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS REPORT ON THE RESULTS OF EXPERIMENTAL AND MORPHOLOGICAL INVESTIGATIONS INTO INTRALAMELLAR GRAFTING OF THE FETAL CORNEA (BREPHOPLASTY). TAKING ACCOUNT OF PROLIFERATIVE POTENTIALITIES OF THE IMPLANT'S EPITHELIUM THEY RECOMMEND USING ONLY THE CONNECTIVE TISSUE PORTION OF THE DONOR'S CORNEA FOR GRAFTING. THE PAPER DESCRIBES OPERATIONAL TECHNIQUE AND THE RESULTS OF IMPLANTATIONS OF THE HUMAN FETUS CORNEA INTO THAT OF THE RABBIT. THESE HETEROPLASTIC OPERATIONS YIELDED 28 TRANSPARENT "TAKES" OF THE IMPLANT OUT OF THE TOTAL OF 42 GRAFTINGS. THE REFRACTION OF THE RECIPIENT'S CORNEA COULD BE CHANGED WITHIN THE RANGE OF 16.0 TO 32.0 D, DEPENDING UPON THE THICKNESS OF THE IMPLANT. THE REFRACTION DATA AVAILABLE DID NOT SHOW ANY ESSENTIAL CHANGES OVER THE PERIOD OF OBSERVATION (UP TO 1 YEAR). EXPERIMENTAL AND MORPHOLOGICAL INVESTIGATIONS, A CASE OF REFRACTIONAL GRAFTING OF THE FETAL CORNEA INTO AN APHAKIC HUMAN EYE, FOLLOWED UP BY THE AUTHORS OVER A PERIOD OF MORE THAN 5 YEARS, ALONG WITH THE RESULTS OF REFRACTIONAL INTERLAMELLAR HETEROPLASTIES OF THE HUMAN FETAL CORNEA ARE FACTORS PROMPTING FURTHER STUDIES OF THIS METHOD OF GRAFTING IN CLINICAL CONDITIONS.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--SOME CHARACTERISTICS OF TURBULENT ENERGY TRANSPORT AND  
TRANSFORMATION IN THE OCEAN -U-  
AUTHOR--(03)-OZMIDDV, R.V., BELYAYEV, V.S., YAMPOLSKIY, A.D.  
COUNTRY OF INFO--USSR  
SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK SSSR, FIZIKA ATMOSFERY I OKEANA,  
VOL VI, NO 3, 1970, PP285-291  
DATE PUBLISHED-----70  
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY  
TOPIC TAGS--OCEANOGRAPHIC BUOY, FLOW VELOCITY, OCEAN DEPTH, OCEAN  
CIRCULATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1996/1163 STEP NO--UR/0362/70/006/003/0285/0291  
CIRC ACCESSION NO--AP0118259  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0113259

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RECIPROCAL TRANSFORMATION OF THE ENERGY OF THE AVERAGED AND FLUCTUATING MOTIONS IN THE OCEAN  $A$  IS COMPUTED ON THE BASIS OF DATA ON VELOCITIES MEASURED DURING TWO MONTHS OF OBSERVATIONS IN THE ARABIAN SEA. THE MEASUREMENTS WERE MADE AT SEVEN BUOY STATIONS WITH 11 OBSERVATION HORIZONS. THE COMPUTATIONS GAVE VALUES  $A$  EQUALS  $0.5 \text{ MINUS } 2.5 \text{ TIMES } 10 \text{ PRIME NEGATIVE } 4 \text{ G-CM TIMES SEC PRIME } 3$  FOR THE UPPER LAYERS BUT IN THE DEEPER LAYERS  $A$  IS NEGATIVE. THE DEPENDENCE OF  $A$  ON DEPTH AND THE PERIOD FOR AVERAGING OF THE VELOCITY COMPONENTS WAS DETERMINED. THESE  $A$  VALUES MAKE IT POSSIBLE TO DETECT A NUMBER OF INTERESTING CHARACTERISTICS OF THE "INTERNAL STRUCTURE" OF THE VELOCITY FIELD IN THE OCEAN AND DETERMINE THE TRANSFORMATION OF ENERGY IN THE SPACE OF WAVE NUMBERS AND VERTICALLY. FOR EXAMPLE, IT WAS FOUND THAT WITH AN INCREASE IN DEPTH LARGESCALE MOTIONS ARE FILTERED OUT AND IN THE LOWER LYING LAYERS OF THE OCEAN ENERGY IS TRANSPORTED ONLY TO SMALLER AND SMALLER VELOCITY FORMATIONS. THE ABSOLUTE ENERGY FLUX CHANGES REGULARLY WITH DEPTH AND WITH THE SCALE USED IN SEPARATING THE VELOCITY FIELD INTO AVERAGED AND FLUCTUATING COMPONENTS. IT IS EMPHASIZED THAT THE DETERMINED VALUES CAN BE CHARACTERISTIC ONLY FOR THIS PARTICULAR OBSERVATION REGION AND IT IS RISKY TO APPLY THEM TO OTHER OCEAN AREAS.

FACILITY: INSTITUTE OF OCEANOLOGY.

UNCLASSIFIED

USSR

UDC 681.142.37

ANTONYUK, YE. M., BELYAYEV, V. YE., and SEMENOV, YE. I., Leningrad Electrical Engineering Institute imeni V. I. Ul'yanov (Lenin)

"One Method of Reducing Redundant Information in Measuring Systems"

Leningrad, Izvestiya Vysshikh Uchebnykh Zavedeniy, Priborostroyeniye, Vol 13, No 12, 1970, pp 11-14

Abstract: The introduction of approximation error computers in telemetry systems (TS) markedly complicates their design, reduces their operating reliability, and in many cases also reduces the interference resistance of the systems. A TS with the amount of information reduced not by preliminary calculation of the approximation error but by rational design of the telemetry frame is examined here. This TS permits transmission of the parametric code and the codes of the addresses of those transducers whose signals at a given instant are equivalent with an error that can be determined by quantizing the signal, levelwise, in a single telemetric frame. Two boundary value cases can be singled out in the operation of this system: 1) Instantaneous values of the transducer signals in the single telemetric frame are identical. The system will have the highest efficiency in this mode because all the transducer numbers and only one parameter will be transmitted. 2) Instantaneous values of transducer signals are distributed over all possible quantizing levels. The system efficiency in this case

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ANTONYUK, Ye. M., Izvestiya Vysshikh Uchebnykh Zavedeniy, Priborostroyeniye,  
Vol 13, No 12, 1970, pp 11-14

is minimal. In each of these boundary value cases system efficiency depends on the ratio of the number of transducers and the number of the quantizing levels, where it is obvious that for the case when the number of transducers is less than the number of quanta the secondary boundary value case coincides with the operating conditions of the existing cyclic TS and the measuring information compression factor is always unity.

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USSR

B  
UDC 621.397

AVDEYEV, B. YA., ANTONYUK, YE. M., BELYAYEV, V. YE., SEMENOV, YE I., FREMEKE, A. V., Leningrad Electrotechnical Institute imeni V. I. Ul'yanov (Lenin)

Leningrad, IVUZ Priborostroyeniye, Vol XIII, No 3, 1970, pp 60-62

Abstract: It is shown that the method of adaptive quantization can be used when signal characteristics are right in multichannel telemetry systems to narrow the frequency band in each channel without a buffer memory. Expressions are given for the coefficients of contraction of redundant information and frequency band compression for the case of independent signals. The proposed procedure can be used to advantage in simplifying multichannel telemetry systems, improving reliability, and providing readings in real time.

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1/2 035 UNCLASSIFIED B PROCESSING DATE--11SEP70  
TITLE--CARBOHYDRATE METABOLISM IN BURNS -U-

AUTHOR--SHURYGIN, D.YA., MOISEYEV, YE.A., KONSTANTINOVA, M., BELYAYEV,  
V.YE., ANTONOV, V.B.  
COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 3, PP  
75-80  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CARBOHYDRATE METABOLISM, BURN, TRAUMATIC SHOCK, ADRENAL  
CORTEX, CATECHOLAMINE, PANCREAS, BLOOD CHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY PEEL/FAME--1986/0639

STEP NO--UR/0589/70/104/003/0075/0083

CIRC ACCESSION NO--AP0102625

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC-ACCESSION NO--AP0102625

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS HAVE STUDIED CARBOHYDRATE METABOLISM IN VARIOUS PERIODS OF BURN DISEASE. IN THE FIRST PERIOD OF BURN DISEASE (BURN SHOCK) HYPERGLYCEMIA IS OBSERVED. IT CORRESPONDS TO GRAVITY OF THE AFFECT SN AND 60 RELATED WITH THE ENHANCED FUNCTIONING OF THE ADRENAL CORTEX. IN THE SECOND PERIOD (BURN INFECTION AND TOXICEMIA) THE REDUCTION IN BLOOD SUGAR LEVEL IS NOTED THAT COINCIDES IN TIME WITH THE REDUCTION OF CATECHOLAMINES EXCRETION, DECREASED GLUCOCORTICOID ACTIVITY OF THE ADRENAL CORTEX AND NORMALIZATION OF CORRELATION OF VARIOUS CELLS IN THE LANGERHANS ISLETS. IN BURN EMACIATION (III D PERIOD) FURTHER REDUCTION IN BLOOD SUGAR LEVEL IS OBSERVED. DURING THE PERIOD OF RECOVERY THE AMOUNT OF SUGAR IN BLOOD IS RESTORED UP TO ITS NORMAL VALUES AND IS ASSOCIATED IN MOST PATIENTS WITH NORMALIZATION OF THE ADRENAL GLUCOCORTICOID FUNCTION.

UNCLASSIFIED

USSR

BELYAYEV, Ye. I., KOROLEV, V. K.

"Analysis of an Integral Chain of Logic Invertors with Simple Correlation of Parameters"

Vychisl. Sistemy [Computer Systems -- Collection of Works], No 50, Novosibirsk, 1972, pp 30-43 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V293 by the authors).

Translation: The transmission of a signal in a circuit of logic invertors with positive correlation of parameters is studied. A method is suggested for machine calculation, the complexity and accuracy of which are independent of chain length.

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USSR

UDC 542.941:546.791.6

BELYAYEV, YU. I., VDOVENKO, V. M., SKOBLO, A. I., and SUGLOBOV, D. N.

"Reduction of Uranyl ion by Titanium (III) in Non-aqueous Media"

Leningrad, Radiokhimiya, Vol 13, No 1, 1971, pp 140-142

Abstract: The reaction of  $(C_{10}H_{21})_4NUO_2Cl_3$  with  $TiCl_3$  was studied in a series of solvents: dimethylformamide, methanol, TBF, acetone, acetonitrile; its stoichiometry was established for individual cases. In all media studied, a rapid reduction of  $UO_2^{2+}$  to  $U^{4+}$  occurs at  $20^\circ$  with formation of  $TiO^{2+}$  and  $UCl_5^-$  (dimethylformamide, acetonitrile),  $UCl_5^-$  (TBF, acetone),  $UCl_4$  (methanol). The high reaction rate and absence of solvent effect would indicate an intraspherical mechanism to be governing this reaction in which the coordinated spheres of  $U(VI)$  and  $Ti(III)$  are in direct contact during the transfer of oxygen and of the electron.

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Powder Metallurgy

USSR

UDC 621.762.669. 18.95

PALATNIK, L. S., KAGAN, YA. I., SHILOV, I. F., BELYAYEV, YU. I., BOGDANOVA, A. F., KOBYLEV, P. P., KOLESNIK, B. I., and KUDINOV, D. D., Khar'kov Polytechnic Institute imeni V. I. Lenin

"On the Micro- and Macroheterogeneity of the SAS-1 Alloy"

Kiev, Poroshkovaya Metallurgiya, No 4, Apr 73, pp 22-28

Abstract: A study was made of the physical and chemical heterogeneity of the SAS-1 aluminum sintered alloy. The luminescence method of flaw detection using metallography was employed in the investigation of the physical heterogeneity of the alloy. The nature, dimensions and statistical distribution of pores appearing in the alloy in the process of its production and subsequent treatment were determined. The parameters of the luminescence method were corrected for the purpose of obtaining maximum sensitivity during the investigation of alloy microporosity. It was shown that with selected optimal conditions local pores with dimensions  $10 \times 15 \times 25 \mu m$  can be reliably detected. The problems of the appearance of chemical heterogeneity of the alloy in micro- and macrovolumes were considered. Assumptions are advanced whose realization will result in a decreased number of macro- and micro-flaws in the SAS-1 alloy.

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USSR

UDC: 519.2

BELYAYEV, Yu. K., NOSKO, V. P., SVESHNIKOVA, A. A.

"Probabilistic Characteristics of Overshoots of a Two-Dimensional Random Field"

Teoriya veroyatnostey i mat. stat. Mezhd. nauch. sb. (Probability Theory and Mathematical Statistics. Interdepartmental Scientific Collection), 1972, vyp. 6, pp 24-31 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V124)

Translation: A bilateral estimate is obtained for the average number of overshoots of the random two-dimensional field  $z=z(x,y)$  beyond level  $a$ . The paper gives results relating to the characteristics of the contours and stationary points of the field, and revising the results of a section in a monograph by A. A. Sveshnikov (RZhMat, 1969, 3V141K) dealing with random functions of several variables. Authors' abstract.

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USSR

UDC: 621.378.3

BELYAYEV, Yu. N., KISELEV, A. M., and FREYDMAN, G. I.

"Laser with Two Interaction Regions"

Gor'kiy, Izvestiya VUZ--Radiofizika, vol. 14, No. 8, 1971, pp 1182-1186

Abstract: This article is a sequel of a letter written to the editor of the ZhETF (Journal of Experimental and Theoretical Physics, 9, 1969, p 441) by the three authors noted above, in which the possibility of designing a laser with a high transformation coefficient and high output power, using prismatic reflectors whose reflection factor is independent of the frequency within a broad range, was demonstrated. This laser, however, suffered from defects which were eliminated in a new version. The present article describes experiments performed with this second version, which permits a frequency tuning range of 4800 Å, from 9600 to 14,400 Å. A diagram of the experimental apparatus is provided and the experimental method explained. The pumping radiation was obtained from the second harmonic of a neodymium laser with a transparent gate, from which longitudinal or transverse modes could be obtained. A curve

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BELYAYEV, Yu. N., et al., Izvestiya VUZ--Radiofizika, Vol 14, No 8, 1971,  
pp 1182-1188

plotted for the efficiency of the laser under test showed it to reach a level of 12%. The authors are members of the Scientific Research Radiophysical Institute.

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USSR

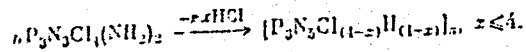
UDC 678.86

NIKOLAYEV, A. F., BONDARENKO, V. M. and BELYAYEV, Yu. P., Leningrad Technological Institute imeni Lensovet

"The Process of Thermal Conversion of 2,2-Diamino-4,4,6,6-tetrachlorotriphosphonitrile"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 5, May 1971, pp 1028-1032

Abstract: Using differential-thermal and thermogravimetric analysis, it was shown that 2,2-diamino-4,4,6,6-tetrachlorotriphosphonitrile is thermally stable to 140°. Higher temperatures (over 150°) cause decomposition with the continuous evolution of hydrogen chloride up to a temperature of 600°. IR spectrum and X-ray diffraction analysis of the title compound and the products of its thermal decomposition verified the process of thermal conversion of the bonds with intermolecular dehydrochlorination and the formation in the final step, of irregular spatial molecules of the general formula  $[P_3N_5]_M$ . The general reaction for the interval 150-600° can be expressed by the following equation:



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Acc. Nr: AP0043663

B

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 2, pp 475-485  
EXCITON AND EXCITON-MAGNON ABSORPTION  
IN ANTIFERROMAGNETIC CsMnF<sub>3</sub>

Belyayeva, A. I.; Yeremenko, V. V.;  
Silayev, V. I.; Petrov, S. V.

The absorption spectrum of antiferromagnetic CsMnF<sub>3</sub> is studied in detail in the C-group band region of the Mn<sup>2+</sup> ion shifted from the inversion center. The temperature was varied between 1.2 and 60°K and the external magnetic field between 0 and 25 kOe. Identification of the spectrum is performed within the framework of group theory analysis. It is shown that CsMnF<sub>3</sub> is an unusual crystal among antiferromagnetic substances. For the Mn<sup>2+</sup> ion in it pure exciton transitions are allowed in the electric dipole approximation. The main properties of pure exciton and exciton-magnon absorption bands are obtained in accordance with the Loudon scheme [?]. «Hot» and «cold» magnon satellites and also two-magnon satellites of pure exciton absorption bands are detected in the absorption spectrum and investigated. The maximal magnon frequency at the boundary of the Brillouin zone is determined,  $\Delta_2 = 38 \text{ cm}^{-1}$ . The problem of distortion of this quantity due to exciton—magnon interaction in processes induced by excitation of one or two magnons together with the exciton is discussed.

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Acc. Nr: AP0043591 - BELYAYEVA Ref. Code: AI UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 3, pp 800-809

FINE STRUCTURE OF EXCITON-MAGNON ABSORPTION OF LIGHT IN  $KMnF_3$   
Belyayeva, A. I.; Yeremenko, V. V.; Beznosikov, B. V.

Some peculiarities of the structure of pure exciton and exciton-magnon light absorption bands in the region of the  ${}^6A_{1g}({}^6S) \rightarrow {}^4A_{1g}{}^4E_g({}^4G)$  transition in weakly ferromagnetic  $KMnF_3$  are observed and analyzed. It is shown that splitting of pure exciton lines and variation of the magnon frequencies at points  $W$  and  $U$  in the Brillouin zone make an additive contribution to the change of the exciton-magnon absorption band in a magnetic field. This may be regarded as a proof of weakness of exciton-magnon interaction for the  ${}^6A_{1g}({}^6S) \rightarrow {}^4A_{1g}{}^4E_g({}^4G)$  transition in  $KMnF_3$ . The conclusions are valid for a similar transition in  $RbMnF_3$ .

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REEL/FRA  
19762063

22/ 13

USSR

UDC [621.357.7:669.295]:669.295

BELYAYEVA, G. I., ANFINOGENOV, A. I., ILYUSHCHENKO, N. G., FINKEL'SHTEYN,  
S. D.

"Influence of Melt Composition on Rate of Titanation of VN-2 Alloy"

Tr. In-ta Elektrokhemii. Ural'sk. Nauch. Tsentr. AN SSSR [Works of Institute of Electrochemistry, Ural's Scientific Center, Acad. Sci. USSR], No 17, 1971, pp 131-136 (Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No 3 L357 by A. V. Dribinskiy).

Translation: The influence of potassium fluorotitanate, time and temperature on the rate of titanation of Nb alloy in a chloride melt, phase composition and heat resistance of the diffusion coating is studied. It is demonstrated that the heat resistance of the titanated alloy is greater than the resistance of pure Nb.

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USSR

UDC 621.396.677

ASHKENAZI, D. YA., BRODULENKO, G. I., B BELYAYEVA, G. N., KALMYKOVA, T. A.

"Push-In Lightning Arrester with a Capillary"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Engineering. Scientific and Technical Collection. Superhigh Frequency Electronics), 1970, vyp. 6, pp 158-160 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9B79)

Translation: This article contains an investigation of the use of a capillary as one of the elements of a wide-band lightning arrester which is installed in a wave guide filter or resonator. The capillary is coupled to the wave guide via a cylindrical housing in which the capillary is fastened. The design of the discharger permits combination of small losses and small recovery time inherent to a capillary discharger with high mechanical strength and convenience of replacement during operation. There are two illustrations and a one-entry bibliography.

1/1

USSR

UDC: 533.652/.661.013

BELYAYEVA, G. S.

"On the Dynamics of Descent of a Vehicle of Variable Volume in the Range of Supersonic Velocities"

Uch. zap. Perm. un-t (Scientific Notes of Perm' University), 1971, No 239, pp 26-39 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7B334)

Translation: Equations of motion are derived for an inflated parachute (a vehicle of the "ballute" type) with variable volume during oblique descent in an atmosphere of variable density under the effect of the force of gravity, drag and lift. The difference between the force of gravity and the aerodynamic force arriving per unit of weight is treated as a controlling function. It is assumed that the drag of the vehicle is proportional to the product of its volume, the density of the air and velocity along the trajectory. The following special cases are considered for which analytical relationships are derived as a function of the time of pitching of the angle of descent, the controlling function, and the velocity along the trajectory: 1) constant ratio of first and second derivatives with respect to the time of pitching of the angle of descent; 2) constant vertical rate of descent. G. S. Aronin.

1/1

- 10 -



Acc. Nr: **AP0051973**

*B* Ref. Code: **UR0219**

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol **69**, Nr **3**, pp **105-107**

THE MITOTIC CYCLE OF CELLS OF RAT REGENERATING LIVER  
IN ACTINOMYCIN DISTURBED RNA SYNTHESIS IN THE G<sub>1</sub>-PERIOD

I. D. Belyayeva

Institute of Biological and Medical Chemistry of the Academy  
of Medical Sciences of the USSR, Moscow

Administration to rats of actinomycin-C (0.1 microgram/gm) directly after partial hepatectomy inhibits the cells in the interphase for 13 hours, whereas introduction of actinomycin 12 hours after the operation — for 10 hours. Thus, disturbance of RNA synthesis at the beginning and middle of the G<sub>1</sub>-period causes an approximately similar retention of cells of the regenerating liver in the interphase. Consequently, impairment of the continuity of the course of RNA synthesis (in the middle of G<sub>1</sub>-period) is not more significant for the cell than disturbance of RNA synthesis at the very beginning of mitotic cycle. Apparently, almost all cells, inhibited at the beginning of the G<sub>1</sub>-period, complete the preparation to mitosis and divide. The retention of cells at the beginning of the G<sub>1</sub>-period does not exert any essential influence on the duration of subsequent periods of the interphase.

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REEL/FRA  
**19820460**

*2 Ac*

USSR

UDC 616.61-002.151-02

AGAFONOV, V. I., Maj Gen Med Serv, Docent; LEV, M. I., Col Med Serv; NOSKOV, F. S., Lt Col Med Serv, Candidate of Medical Sciences; KONIKOVA, R. Ye., Candidate of Biological Sciences; YELIGULASHVILI, R. K., Candidate of Medical Sciences; GAVRILYUK, B. K., Doctor of Medical Sciences; KULIKOV, I. A., Lt Col Med Serv; YEFIMOV, L. S., Lt Col Med Serv; SERGEYCHIK, I. I., Capt Med Serv; BELYAYEVA, H. S.

"Etiological Decoding of an Outbreak of Hemorrhagic Fever With a Renal Syndrome"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 9, Sep 71, pp 46-49

Abstract: In June and July 1970, in the southern area of Khabarovskiy Kray, an outbreak of hemorrhagic fever with a renal syndrome (HFRS) occurred among workers employed on construction work and housed in a tent camp located on a hill surrounded by swampy meadows. Despite repeated rodent extermination, the camp area was infested with rodents and ticks. Relocation of the workers to a nearby village halted the outbreak. Only one of the 34 hospitalized workers died. The onset of the

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JSR

AGAFONOV, V. I., et al, Voyenno-Meditsinskiy Zhurnal, No 9,  
Sep 71, pp 46-49

disease was acute, and fever of 39-41°C lasted 3-15 days. Renal and cardiovascular insufficiency developed in five patients. The clinical picture was atypical, suggesting both HFRS and leptospirosis. After test for *Leptospira* proved negative in all patients, two types of tests for hemorrhagic fever antigens were performed: indirect hemagglutination inhibition and agglutination with fluorescent antibodies. In the indirect hemagglutination tests, sheep erythrocytes sensitized with antibodies against the 10-10 strain of hemorrhagic nephrosonephritis (HNN) were used. All tests were positive. The fluorescence tests yielded green granular fluorescence in spleen smears. It is concluded that the green granular fluorescence is specific for HNN, and that the granules represent areas of replication of the HNN virus.

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1/2 031 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--RESISTANCE OF THIN BANDS TO DEFORMATION IN IMPULSE LOADING -U-  
AUTHOR--(02)-BOLSHAKOV, G.P., BELYAYEVA, I.YE. **B**  
COUNTRY OF INFO--USSR  
SOURCE--MOSCOW, KUZNECHNO-SHTAMPOVOCHNOYE PROIZVODSTVO, NO. 2, 1970, PP  
10-11  
DATE PUBLISHED-----70  
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS  
TOPIC TAGS--BRASS, STEEL, ALLOY, MATERIAL DEFORMATION, ELECTRODYNAMICS,  
CYCLIC LOAD TEST, LONGITUDINAL WAVE, TRANSVERSE WAVE/(U)I62 BRASS,  
(U)KH18N9T STEEL, (U)AMTS ALLOY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1985/0262 STEP NO--UR/0182/70/000/002/0010/0011  
CIRC ACCESSION NO--AP0100773  
UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100773

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER DESCRIBES EXPERIMENTS PERFORMED TO TEST SOME ASPECTS OF PREVIOUS ARTICLES PROPOSING A METHOD OF DETERMINING THE DYNAMIC YIELD POINT THROUGH ELECTRODYNAMIC SHOCKS ON A METAL BAND FIXED AT BOTH ENDS. DETAILS OF THE EXPERIMENTS ARE GIVEN. AS A RESULT OF THESE SHOCKS, LONGITUDINAL PRESENT PAPER ARE CONCERNED WITH THE CASE IN WHICH THE VELOCITY OF THE LONGITUDINAL WAVE EXCEEDS THAT OF THE TRANSVERSE WAVE. THEY SHOW THAT FOR MANY MATERIALS IMPORTANT IN PRACTICE, THIS INEQUALITY OF LONGITUDINAL AND TRANSVERSE VELOCITIES OCCURS. RESULTS OF THOSE EXPERIMENTS ARE GIVEN. ALSO GIVEN IS A SYSTEM OF EQUATIONS DESCRIBING THE MOTION OF THE THIN BAND UNDER THE CONDITION OF THE ABOVE INEQUALITY IN VELOCITIES. THE METALS INVOLVED IN THE EXPERIMENTS WERE BRASS L62, STEEL KH19N9T, AND AN ALLOY IDENTIFIED AS AMTS.

UNCLASSIFIED

Nitrogen Compounds

USSR

UDC 547.754:543.422.4:541.67

GRANDBERG, I. I., BELYAYEVA, L. D., and DMITRIYEV, L. B., Moscow Agricultural Academy Imeni K. A. Timiryazev

"Indoles. XXXV. Preparation of 4-Nitro- and 6-Nitroindoles Forming During Cyclization of m-Nitrophenylhydrazones in Fischer Reaction"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 1, Jan 73, pp 37-39

Abstract: Cyclization of diethyl ketone m-nitrophenylhydrazone was studied under various conditions, always leading to a mixture of 4-nitro-3-methyl-2-ethylindole and 6-nitro-3-methyl-2-ethylindole, the first compound forming in slight excess. The ratio of the isomers depends on the catalyst used. In general, the results support the mechanism of intramolecular electrophilic substitution. The nitrogroup exhibits a strong I- and M-effects. The I-effect deactivates the ortho position, but the mesomeric polarization specifically deactivates the para-position. During the cyclization of the m-substituted phenylhydrazones, steric factors will always favor the formation of 6-isomer, regardless of the electronic nature of the substituent. For example, cyclization of the m-nitrophenylhydrazone of methylisopropyl ketone yields 6-nitro-2,3,3-trimethylindolenine exclusively.  
1/1

USSR

UDC 576.8.098:577.155.2

B  
BELYAYEVA, M. I., LESHCHINSKAYA, I. B., and TYRYGINA, G. I., Kazan State University

"The Nucleotide Composition of Nucleic Acids and Nucleodepolymerase Specificity in Microorganisms"

Moscow, Mikrobiologiya, No 6, pp 980-983

Abstract: Study of the nucleotide composition of DNA in various bacterial species and strains (*P. denitrificans*, *S. marcescens* 41K, *S. marcescens* 41, *B. amylozyma* 9a, *B. glutinosus* 7 E, *B. mesentericus* 19K, *M. pyogenes* 42E, and *B. subtilis* 13K) showed that DNA nucleotide composition is directly related to DNAses specific for the DNA bases. For example, *Micrococcus pyogenes* with respect to DNA belongs to the extreme AT type, with the coefficient of specificity 2.18. The DNase of this species has AT specificity. The two *Serratia marcescens* strains have the C type of DNA, a coefficient of specificity of 0.71-0.73, and DNase with preferential guanine specificity. The comparative uniformity of the nucleotide composition of RNA in the strains under study seems to be responsible for the similarity of the substrate specificity of their RNAses.

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ACC NR: AF7030038

(111)

SOURCE CODE: UR/0413/67/000/017/0178/0178

AUTHOR: Andreyev, A. A.; Gaponov, I. Ye.; Nikolayeva, A. P.; Saval'skaya, N. F.; Chekan, G. S.; Delyayeva, M. N.

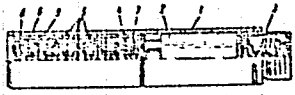
ORG: None

TITLE: A distress signal rocket. Class 72, No. 201165

SOURCE: Izobreteniya, promyshlennyye obrazitsy, tovarnyye znaki, no. 17, 1967, 178

TOPIC TAGS: nonelectric signal equipment, rocket, flare bomb, pyrotechnics

ABSTRACT: This Author's Certificate introduces a distress signal rocket which consists of a reaction engine with flint-and-steel ignition system and a signal unit installed in a common launching sleeve. To improve effectiveness and reliability of operation, the signal unit of the rocket is made from several (e. g. six) signal flares with a central channel placed sequentially in a metal shell. Pressed into a cap on each flare is a delay unit, with cutoff liners and knockout powder charges between flares. The basic pyrotechnic material for red signal flares has the following composition (in wt.%): strontium nitrate-43±2, MPF-3 magnesium powder-40±2, PVKh-S8 polyvinyl chloride suspension-10±1, phenol-aniline-formaldehyd resin 214 (added in the form of a 40% alcohol-acetone solution)-7±0.5. [Translation of patent abstract]



SUB CODE: 19, 17/ SUBM DATE: 25Mar66

Card 1/1

UDC: 623.454.443



USSR

UDC 616.2-036.11-022.14

IL'YENKO, V. I., PLATONOV, V. G., GORDON, M. A., ANTONOV, V. S., BELYAYEVA, N. M.  
and ANTIPOVA, M. R., All-Union Scientific Research Institute of Influenza,  
Ministry of Public Health USSR, Leningrad

"Frequency of Development of Associated Infections Accompanying Acute Respiratory Diseases"

Moscow, Voprosy Virusologii, No 1, 1973, pp 82-86

Abstract: Incidence and characteristics of multiple infections were studied among 4,256 patients with clinically diagnosed influenza or acute respiratory disease. Out of 40% of these, for which the etiology had been established, 12.6% had associated infections, the percentage being somewhat higher for hospitalized than for ambulatory patients, but no seasonal variation was found. Analysis of the incidence of associated infections with respect to disease caused by particular pathogens indicated that most (41.7%) associated infections occurred among patients with para-influenza type 2 and least (12%) with influenza type B. Most associated infections (83%) were caused by influenza virus, particularly during epidemics. When influenza virus was not involved, Mycoplasma pneumoniae was encountered most frequently (56.7%). Such multiple infections were normally found to produce more severe symptoms.

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1/2 018

UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--OBTAINING OF AND SOME PROPERTIES OF VIRULENT MUTANTS OF TEMPERATE PHAGES OF A POLYLYSOGENIC PROACTINOMYCES (NOCARDIA) FRUCTIFERI -U-

AUTHOR--(05)-RAUTENSHTEYN, YA.I., TIKHONENKO, A.S., SOLOVYEVA, N.YA., BELYAYEVA, N.N., FILATOVA, A.D.

COUNTRY OF INFO--USSR

B

SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA BIOLOGICHESKAYA, 1970, NR 2, PP 272-292

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PHAGE, ACTINOMYCES, ANTIBIOTIC, MICROORGANISM MUTATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1990/1376

STEP NO--UR/0216/70/000/002/0272/0282

CIRC ACCESSION NO--AP0109450

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0109450

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROACTINOMYCES (NOCARDIA) FRUCTIFERI 5339 CULTURE PROVED TO BE POLYLYSOGENIC. ALL THE TEMPERATE PHAGES PRESENT IN THIS CULTURE HAVE SHOWN HIGH SENSITIVITY TO THE ANTIBIOTIC RUBOMYCIN. AT A CONCENTRATION OF 140 GAMMA-ML OF A RUBOMYCIN A 100PERCENT INACTIVATION OF ALL THE PHAGE PARTICLES TAKES PLACE. TREATMENT WITH THIS ANTIBIOTIC AT CONCENTRATIONS EQUAL TO 0.25-20 GAMMA-ML ON FREE PHAGE PARTICLES OF THE EXPERIMENTAL CULTURE AND TREATMENT OF THE LYSOGENIC CULTURE WITH CONCENTRATIONS OF 0.15-100 GAMMA-ML CAUSED THE APPEARANCE OF VIRULENT MUTANTS, ABLE TO LYSE THE HOST CULTURE. SPONTANEOUS FORMATION OF VIRULENT MUTANTS WAS OBSERVED AS WELL. COMPARATIVE INVESTIGATION OF THE VIRULENT MUTANTS SHOWED THAT JUDGING BY THE MORPHOLOGY OF THE NEGATIVE COLONIES THEY MAY BE SUBDIVIDED INTO SIX TYPES WHEREAS ACCORDING TO THE SPECTRA OF LYTIC ACTION, ANTIGENIC PROPERTIES AND PHAGE MORPHOLOGY THEY FALL INTO THREE DISTINCT TYPES. THE PHAGES OF THE SAME SEROTYPE ARE IDENTICAL AS TO THE MORPHOLOGY OF THE PARTICLES. ON THE OTHER HAND IN SOME CASES VIRULENT MUTANTS BELONGING TO THE SAME SEROTYPE MAY DIFFER AMONG THEMSELVES WITH RESPECT TO NEGATIVE COLONIES MORPHOLOGY AND THE LYTYC SPECTRUM CHARACTERISTICS. THE FINE STRUCTURE AND SIZE OF VIRULENT MUTANTS PARTICLES ARE DESCRIBED ON THE BASIS OF RESPECTIVE ELECTRON MICROPHOTOGRAPHS.

OF SCIENCES USSR. FACILITY: INSTITUTE OF MICROBIOLOGY, ACADEMY OF SCIENCES USSR. FACILITY: INSTITUTE OF MOLECULAR BIOLOGY ACADEMY OF SCIENCES USSR.

UNCLASSIFIED

USSR

UDC 576.85(478)

NARITS, A. A., CHASHCHINA, I. N., CHERVINSKAYA, S. I., ELKIS, K. U., KORNES, R. V., BELYAYEVA, N. S., CHEBAN, Ye. D., KOTSEFAN, A. S., DOBRUSKINA, S. V., GURCHIOGLUYANTS, L. V., and MIKHAYLOVA, A. A., Moldavian Scientific Research Institute of Hygiene and Epidemiology and Kishinev Sanitary Epidemiological Station

"Fermentation Reaction Types and Colicinogenic Properties of Shigella Sonnei Circulating in the City of Kishinev, and Determining Their Sensitivity to Antibiotics"

Kishinev, Zdravookhraneniye, No 5, Sep/Oct 71, pp 7-9

Abstract: The Shigella sonnei strain accounted for 97.9-99 percent of the cases of dysentery in Kishinev in 1968-70. The object of this study was to identify the types of fermentation reactions of Shigella sonnei isolated in 1968-70 (4,507 cultures), and to study their colicinogenic properties and sensitivity to antibiotics. Shigella bacilli isolated from victims in 1968 were found to be primarily fermentation type II (71.4 percent); in 1969-70, type I bacilli predominated (66.4-94.1 percent); Shigella type III was most frequently isolated from the healthy. The results of studies on colicin production showed that, of 922 cultures, 842 were inactive with respect to E. coli K-12 and E. coli B and  $\phi$ ; 76 cultures were colicin type K-12; 4, colicin type  $\phi$ .

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USSR

MARITS, A. A., et al., Zdravookhraneniye, No 5, Sep/Oct 71, pp 7-9

Among the K-12 type cultures, 54 percent were fermentation type I; 44.8 percent were type II; and 1.2 percent were type III. The cultures isolated in 1969 exhibited a gradual decrease of strains sensitive to levomycetin, and a growing number of strains sensitive to neomycin and monomycin.

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USSR

UDC 616.935:576.3

MARITS, A. A., CHASHCHINA, I. N., CHERVINSKAYA, S. I., ~~STANIS, M. N., BELYAYEVA,~~  
N. S., CHEBAN Ye. D., KOTSEPAN, A. S., KORNES, R. B., ~~DOERUSKINA, S. V.,~~  
~~GURCHIOGLUYANIS, L. V., and MIKAYLOVA, A. A.,~~ Moldavian Scientific Research  
Institute of Hygiene and Epidemiology, and Kishinev Sanitary Epidemiological  
Station

"Enzymatic Types of Sonnei Dysentery Pathogens Circulating in Kishinev"

Kishinev, Zdravookhraneniye, No 3, May/June 1970, pp 48-49

Abstract: The number of *Sh. Sonnei* strains isolated in Kishinev in 1968 was more than four times greater than in 1959. Many healthy individuals are carriers of these bacteria. A total of 1,714 cultures of *Shigella Sonnei* were investigated to determine their morphological, peptolytic, antigenic, and other properties, including their ability to ferment sugars to acids. Pathogens were classified into three enzymatic types. Type I -- cultures ferment rhamnose within the first 24 hours of incubation at 37°C, but do not ferment xylose for a week; type II -- cultures ferment rhamnose with a delay (after three to four days), or do not ferment either rhamnose or xylose; type III -- cultures ferment both sugars within the first 24 hours. Of the 1,714 cultures investigated, 71.4% belonged to type II, 21.5% to type I, and 7.1% to type III. The tests are fairly easy and can be performed in routine clinical laboratories.

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USSR

UDC: 621.374.4

KOSTAREV, V. F., SOLOV'YEV, E. A., BELYAYEVA, T. A.

"A Pulse Repetition Frequency Multiplier"

Nauch. tr. Omsk. in-t inzh. zh.-d. transp. (Scientific Works of the Omsk Institute of Railway Transportation Engineers), 1970, 118, pp 3-9 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5G285)

Translation: The paper discusses a method of prf multiplication. Computational relationships are given for determining time parameters, and the error is analyzed. Design recommendations are given. Bibliography of three titles. Resumé.

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USSR

UDC 8.74

PAVLOV, P. G., BELYAYEVA, T. M.

"Two Procedures for Allocating the Transfer Graph of the Program Control Algorithm in the Digital Computer Memory"

V sb. Ekon.-mat. metody i programir. plan.-ekon. zadach (Mathematical Economic Methods and Programming Economic Planning Problems--collection of works), Moscow, 1972, pp 155-158 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V450)

No abstract

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USSR

UDC 669.18.001.51669.14.015.853

KOZLOVA, N. N., LYAPUNOV, A. I., MASLENKOV, S. B., and BELYAYEVA, V. A.

"Oxidation Resistance of Steels in the System Fe-Cr-Ni-Al as a Function of Relationship of Alloying Elements"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works], No 77, Metallurgiya Press, 1970, pp 27-32

Translation: Alloys in the system Fe-Cr-Ni-Al were studied in the 1000-1250°C temperature interval. The principal regularities of the influence of alloying elements on the oxidation resistance of the alloys were established, and the dependence of oxidation resistance and phase composition of scale on the relationships of alloying elements was demonstrated. 4 figures; 2 tables; 2 biblio. refs.

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USSR

UDC 77

GINZBURG, K. M., KOLESOVA, T. B., BELYAYEVA, V. A., GUTMAN, I. M.

"Aging of Photographic Papers"

Uspekhi nauchn. fotogr. (Advances in Scientific Photography), 1970, Vol. 14, pp 171-173 (from RZh-Fizika, No 12(I), Dec 70, Abstract No 12D1329)

Translation: The aging kinetics of AgBr-photographic papers of three gradations is compared: normal (No. 3), contrast (No. 4), and high contrast (No. 6). Aging of the normal type was observed for No. 3 and anomalous aging for Nos. 4 and 6 (with a rapid loss of sensitivity for No. 6). These differences are due to technological characteristics: degree of aging, etc. Certain characteristics of the behavior of No. 6 are associated with the presence of rhodium ions introduced to obtain high contrast. The protective layer which only No. 3 has slows down aging but the introduction of benzotriazole has little effect except to accelerate (thermostatic) aging. The latter should be avoided, however, since according to the data of the authors it distorts the nature of processes occurring in ordinary aging and produces a false picture of the tendency in the change

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USSR

GINZBURG, K. M., et al, Uspekhi nauchn. fotogr., 1970, Vol. 14, pp 171-173

of the photographic properties of the papers. Phenomena were observed indicating the course of redistribution aging in emulsion layers of Unibrom papers. Authors abstract.

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USSR

B

UDC 620.186.1:669.018.2.8

BELYAYEVA, V. A., FEL'DGANDLER, E. G., KAFUTKIN, I. I., and SAVKINA, L. YA.,  
Central Scientific Research Institute of Ferrous Metallurgy

"Phase Composition and Intercrystalline Corrosion in 000Kh16N15M3 (EI-844) Steel"

Moscow, Metallovedeniye, No 5, May 70, pp 6-8

Abstract: Phase composition and intercrystalline corrosion in EI-844 steel were studied after quenching samples from 1050°C and tempering between 550 and 750°C for periods ranging from 15 minutes to 1000 hours. Nominal composition of the steel was: 0.028% C, 16.04% Cr, 15.5% Ni, 2.84% Mo, 0.41% Si, and 0.003% N. (Two samples contained 0.12 and 0.13% N and one other sample contained 0.6% Mn).

Carbide precipitation was done by using an electrolyte consisting of 200 g KCl + 200 ml HCl (sp. wt. 1.19) + 50 g ammonium citrate in 1000 ml water at a current density of 0.05 a/cm<sup>2</sup>. Isolation of the excess phases in a sample with 0.006% C was done by using an electrolyte of 1150 ml CH<sub>3</sub>OH + 50 ml HCl + 30 g citric acid at a current density of 0.02 a/cm<sup>2</sup> and an exposure time of five hours. Separation of the M<sub>23</sub>C<sub>6</sub> and AB<sub>2</sub> phases was done by treating the anodic deposit with a mixture of hydrogen peroxide and HCl.

Experimental data revealed that upon tempering the steel at 650-750°C for 100 and 1000 hours the cubic carbide M<sub>23</sub>C<sub>6</sub> is the primary precipitate. By lowering  
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USSR

BELYAYEVA, V. A., et al., Metallovedeniye, No 5, May 70, pp 6-8

carbon content to less than 0.01% and alloying the steel with Si and Nb, the AB<sub>2</sub> hexagonal phase is formed. It was also noted that there is no relationship between the tendency toward intercrystalline corrosion of the steel and an increase in the Cr content of the carbide phase or the amount of Cr-containing phases.

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1/2 026 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--EFFECT OF ALUMINUM ON NITRIDING PROCESSES AND PHASE TRANSFORMATION  
IN THE NITRIDED LAYER DURING HEAT TREATMENT -U-  
AUTHOR-(02)-PERMYAKOV, V.G., BELYAYEVA, V.P. *B*  
COUNTRY OF INFO--USSR  
SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(2), 118-22  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--IRON ALLOY, ALUMINUM ALLOY, SILICON ALLOY, MANGANESE ALLOY, X  
RAY ANALYSIS, METAL HEAT TREATMENT, METAL PHASE TRANSFORMATION,  
NITRIDATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1994/1788 STEP NO--UR/0148/70/013/002/0118/0122  
CIRC ACCESSION NO--AT0115617  
UNCLASSIFIED

272 026

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AT0115617

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IRON ALLOYS CONTG. C 0.035, 0.027, 0.025, 0.027; AL, 0.45, 0.77, 1.20; SI 0.42, 0.40, 0.40, 0.37; MN 0.11, 0.10, 0.10, AND 0.08 WT. PERCENT WERE STUDIED. SPECIMENS WERE NITRIDED IN A VERTICAL TUBE FURNACE AT 550, 700, AND 750DEGREES FOR 2 AND 8 HR AFTER WHICH THEY WERE IMMEDIATELY QUENCHED IN OIL. SOME OF THE SPECIMENS WERE NITRIDED 25 HR AT 550DEGREES AND COOLED TOGETHER WITH THE FURNACE. THE PHASE COMPN. WAS DETD. LAYER BY LAYER BY MEANS OF X RAYS. THE SPECIMENS WERE THEN QUENCHED IN OIL FROM 700DEGREES AND SUBJECTED TO 1 HR TEMPERING AT 150, 250, 350, AND 550DEGREES. THE DECOMP. OF NITRIDED AUSTENITE AND MARTENSITE WAS FOLLOWED BY DIFFERENTIAL MAGNETIC AND X RAY METHODS. AT LOW TEMP. NITRIDING, THE INCREASE OF AL CONTENT TO 0.77PERCENT INCREASED THE THICKNESS OF GAMMA PRIME PHASE AND CONTRIBUTED TO THE INCREASED HARDNESS OF THIS PHASE AND OF THE NITRIDED AUSTENITE. AT HIGH TEMP. NITRIDING WITH SUBSEQUENT HEAT TREATMENT (QUENCHING FROM 700DEGREES AND TEMPERING AT 350DEGREES) ALLOYS CONTG. HIGHER AL CONC. HAD SHORTER PERIODS AND OBTAINED A HIGHER HARDNESS OF THE NITRIDED LAYER. FACILITY: KIEV. POLITEKH. INST., KIEV, USSR.

UNCLASSIFIED

B

ALUMINUM + ITS ALLOYS

USSR

UDC: 669.15:621.785.53

PERMYAKOV, V. G., and BELYAYEVA, V. P.

"Influence of Aluminum on the Process of Nitriding and Phase Conversions in the Layer during Heat Treatment"

Izv. VUZ, Chernaya Metallurgiya, No 2, 1970, pp 118-122

Abstract: This work presents a study of the process of nitriding of steels alloyed with aluminum, i.e., the element that has the strongest influence on this process and on conversions in the nitrided layer during subsequent heat treatment. The chemical compositions of the alloys, produced on the basis of armco iron, were as follows:

Alloy	C	Al	Si	MN
A	0.035	---	0.42	0.11
Yu4	0.027	0.45	0.40	0.10
Yu8	0.025	0.77	0.40	0.10
Yu12	0.027	1.20	0.37	0.08

1/2



USSR

PERMYAKOV, V. G. and BELYAYEVA, V. P., Izv. VUZ, Chernaya Metallurgiya, No 2, 1970, pp 118-122

Specimens in the form of cylinders 3 and 0.8 mm in diameter were nitrided in a vertical tubular furnace at 550-750°C for 2 and 8 hours, then immediately quenched in oil. For comparison, a portion of each melt was nitrided for 25 hours at 550°C with subsequent cooling together with the furnace. The study of the influence of aluminum on the structure, phase composition and properties of the layer showed the possibility of essentially accelerating the process of nitriding by increasing the temperature and subsequent heat treatment, providing high hardness of the diffusion layer of iron alloyed with aluminum. With low-temperature nitriding, an increase in aluminum content to 0.77% increases the thickness of the  $\gamma'$  phase and results in an increase in the hardness of this phase and the nitrided ferrite. Four illustrations; six biblio. refs.

2/2

- 1 -

2/2 016 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

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. **B**  
 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

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200330002-9"

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
 PROXY REEL/FRAE--3004/0735 STEP NO--UR/0497/70/048/004/0070/0075

CIRC ACCESSION NO--AP0131330  
 UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--ELECTROCHEMICAL PROCESS FOR REPROCESSING OFFSET BIMETALLIC FORMS  
-U-  
AUTHOR--(03)-SCLCKHINA, V.G., SAMOSHENKOVA, K.G., BELYAYEVA, YU.I.  
COUNTRY OF INFO--USSR  
SOURCE--POLIGRAFIYA 1970, (3), 41-3  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, MECH., IND., CIVIL AND MARINE ENGR.  
TOPIC TAGS--ELECTROCHEMICAL MACHINING, BIMETAL, COPPER, ZINC, CHROMIUM  
OXIDE, AMMONIUM SULFATE, CARBONATE, NITRIC ACID, ALUMINUM ALLOY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3006/0632 STEP NO--UR/0543/70/000/003/0041/0043  
CIRC ACCESSION NO--AP0134394  
UNCLASSIFIED

B

2/2 027

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134394

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. CU-ZN OFFSET FORMS ON AL SUPPORTS CAN BE REPROCESSED BY NEW PROCEDURES, ELIMINATING THE MECH, SURFACING STEPS. THE UPPER CU LAYER IS REMOVED BY ANODIC DISSOLN. IN CRO SUB3 AND (NH SUB4) SUB2 SO SUB4 OR (NH SUB4) SUB2 CO SUB3, IN BOTH CASES AT 5A-DM SUB2 AND 20-50DEGREES. BOTH CU AND ZN LAYERS ARE DISSOLVED IN 40PERCENT HNO SUB3 OR PREFERABLY ANODICALLY, IN 20PERCENT H SUB2 SO SUB4 AT 5 A-DM SUB2 AND 20-50DEGREES. IN BOTH CASES SMOOTH SURFACES ARE OBTAINED, READY FOR NEW COATING.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--PECULIARITIES OF FORMATION OF CARDIO VASCULAR CONDITIONED REFLEXES  
IN CHILDREN -U-  
AUTHOR--BELYAYEVA, Z.V. *B.*  
COUNTRY OF INFO--USSR  
SOURCE--ZHURNAL VYSSHEY NERVNOY DEYATEL'NOSTI, 1970, VOL 20, NR 3, PP  
467-473  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PEDIATRICS, CARDIOVASCULAR SYSTEM, CONDITIONED REFLEX

CONTROL MARKING--NO RESTRICTIONS,

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1998/0374

STEP NO--UR/0247/70/020/003/0467/0473

CIRC ACCESSION NO--AP0121062

UNCLASSIFIED

2/2 018  
CIRC ACCESSION NO--AP0121062

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AGE PECULIARITIES OF THE FORMATION OF CARDIO VASCULAR REFLEXES WERE STUDIED BY 18 PARAMETERS. IT HAS BEEN ESTABLISHED THAT AS THE CHILD GROWS AND THE VAGUS EFFECTS DEVELOP, GENERALIZED, NON DIFFERENTIATED REACTIONS OF THE CARDIO VASCULAR SYSTEM ARE REPLACED BY A MORE COORDINATED ACTIVITY OF THE APPARATUS CONTROLLING ITS ACTIVITY. THE PROCESS MAY BE REGARDED AS A MANIFESTATION OF MATURATION OF THE CARTICO SUBCORTICAL CONTROL MECHANISMS PROVIDING FOR COORDINATED ACTIVITY OF DIFFERENT FUNCTIONAL FORMATIONS OF THE CARDIO VASCULAR SYSTEM IN THE COURSE OF INDIVIDUAL DEVELOPMENT.  
FACILITY: LABORATORY OF DEVELOPMENT OF THE SECOND SIGNAL SYSTEM, PAVLOV INSTITUTE OF PHYSIOLOGY, USSR ACADEMY OF SCIENCES, LENINGRAD.

UNCLASSIFIED

USSR

UDC 661.143

BENDERSKAYA, L. P., KRAVCHENKO, M. D., TANANAYEV, A. N.

"Synthesis and Luminescent Properties of Yttrium Germanate Activated with Europium"

Sb. nauch. tr. VNI Lyuminoforov i osobo chist. veshchestv (Collection of Scientific Works of the All-Union Scientific Research Institute of Lumino-phors and Materials of Extreme Purity), 1972, vyp. 7, pp 69-71 (from RZh-Khimiya, No 6, (II), 1973, Abstract No 6L169)

Translation: The synthesis of yttrium germanate activated by  $\text{Eu}^{3+}$  is described. For the synthesis,  $\text{Y}_2\text{O}_3$  (of luminescent purity) and  $\text{GeO}_2$  (analytical purity) were used. They were mixed in the ratio of 1:1, 1:2, and 2:1. The powder mixture was ground in acetone; then it was dried, pulverized in an agate mortar and put in platinum crucibles. The calcining was carried out in a Silit furnace. The temperature was increased in 3 hours from 700 to 1,350°. Then the calcining was carried out at 1,350° with the same time interval. The  $\text{YGeO}_5$ ,  $\text{Y}_2\text{Ge}_2\text{O}_7$  and  $\text{Y}_4\text{GeO}_8$  were obtained with a ratio of  $\text{Y}_2\text{O}_3: \text{GeO}_2 = 1:1, 1:2, 2:1$  respectively.

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- 7 -

USSR

UDC 681.3.001:518.5

SOKOLOV, S.N., BELYAYEVSKAYA, L.V., KALINCHENKO, P.A., et al.

"Fortran and Monitor System"

Moscow, Statistika Press, 1970, 144 pp, ill., 65 kop. (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 2, Feb 71, Abstract No 2B70K)

Translation: This is a handbook of practical utilization of the programming automation system developed at the Institute of High Energy Physics for the Minsk-22 Computer using Fortran as the input language. The book comprises two parts and an appendix. The first part of the book contains a description of the input language constructed on the basis of the CDC Fortran language descriptions for the CDC-1604 and CDC-6600 and TsERN Fortran. The second part of the book is devoted to the monitor system and is actually a description of a language permitting programmers and operators to communicate quite conveniently with the computer via the monitor system. In the several years of development of this language, it has approached a degree of universality permitting its use almost without changes on other computers (M-220, BESM-4, Minsk-32, and so on).

1/1

- 64 -



BELYAYEVSKAYA L.V.

Acc. Nr:

AT0047577

Abstracting Service:

CHEMICAL ABST. 4/70

Ref. Code:

UR0149

81734d Decomposition of molybdenite by nitric acid. Zelik-  
 man, A. N.; Belyaevskaya, L. V.; Prosenkova, T. E. (Mosk.  
 Inst. Stali Splyavov, Moscow, USSR). *Izv. Vyssh. Ucheb. Zaved.,  
 Tsel. Met.* 1969, 12(6), 43-8 (Russ). The interaction of molyb-  
 denite with HNO<sub>3</sub> follows the equation  $MoS_2 + 6HNO_3 = H_2MoO_4 + 2H_2SO_4 + 6NO$ . With increasing HNO<sub>3</sub> concn. from  
 10 to 64% and temp. from 20 to 90°, the rate of oxidn. increases  
 sharply and the amt. of Mo passing into HNO<sub>3</sub> soln. declines.  
 Increased concn. of Fe in the acid soln. promotes the passage of  
 Mo into soln. The presence of Fe<sup>3+</sup> does not affect the oxidn. of  
 molybdenite. Acid in amts. 80-90% of the stoichiometric value  
 provides practically total decompn. of molybdenite if circulation  
 of N oxides and input of O are provided. Evan N. Davidenko

87

1/1

REEL/FRAME

19791143

18

1/2 041 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--PERTURBED TOTAL INTERNAL REFLECTION SPECTRA OF LIQUID CRYSTALS -U-  
AUTHOR--(03)-ZGLOTAREV, V.M., BELYAYEVSKAYA, N.M., BOBOVICH, YA.S.  
COUNTRY OF INFO--USSR  
SOURCE--OPT. SPEKTRCSK. 1970, 28(1), 195-7  
DATE PUBLISHED--70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--IR REFLECTANCE, PERTURBATION, LIQUID CRYSTAL, LIGHT REFRACTION, LIGHT REFLECTION, AMINE DERIVATIVE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1992/1784 STEP NO--UR/0051/70/028/001/0195/0197  
CIRC ACCESSION NO--AP0112770  
UNCLASSIFIED

B

2/2 041

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0112770

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INFRARED MULTIPLY PERTURBED TOTAL INTERNAL REFLECTION (MPTIR) WAS USED TO STUDY THE LIQ. CRYSTAL STATE. THE MPTIR METHOD DEPENDS ON THE PENETRATION OF A LIGHT RAY INTO AN OPTICALLY LESS DENSE MEDIUM DURING REFLECTION AT A 2 PHASE BOUNDARY AT INCIDENT ANGLES LARGER THAN THE CRIT. ANGLE. AN EXPT. WITH 6, (PHENYLAZO), N, ANISAL, 1, NAPHTHYLAMINE IS GIVEN AS AN EXAMPLE OF SUCH A MEASUREMENT.

UNCLASSIFIED

1/2 044 UNCLASSIFIED PROCESSING DATE--3000170  
TITLE—LINE STRUCTURE OF THE SECONDARY LUMINESCENCE SPECTRUM OF VITRIFIED  
CRYPTOCYANINE SOLUTIONS -U-  
AUTHOR—(03)—BORTKEVICH, A.V., BOBOVICH, YA.S., BELYAYEVSKAYA, N.M.  
COUNTRY OF INFO—USSR  
SOURCE—OPT. SPEKTRISK. 1970, 28(4), 688-94  
DATE PUBLISHED—70  
SUBJECT AREAS—MATERIALS, PHYSICS, METHODS AND EQUIPMENT  
TOPIC TAGS—LUMINESCENCE SPECTRUM, GLYCEROL, IR SPECTRUM, LASER  
EXCITATION, RAMAN SPECTRUM, PHOTOGRAPHIC CHEMICAL, IODINATED ORGANIC  
COMPOUND  
CONTROL MARKING—NO RESTRICTIONS  
DOCUMENT CLASS—UNCLASSIFIED  
PROXY REEL/FRAME—2000/0846 STEP NO--UR/0051/70/028/004/0688/0694  
CIRC ACCESSION NO--AP0124511  
UNCLASSIFIED

B

2/2 044

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124511

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISCRETE SPECTRA OF SECONDARY LUMINESCENCE OF CRYPTOCYANINE (I) IN VITRIFIED GLYCEROL MATRICES WERE STUDIED AT THE LIQ. N TEMP. AT GREAT DISPERSION. THE IR ABSORPTION SPECTRUM OF I WAS OBTAINED BY PRESSING THE SUBSTANCE IN KBR. BY COMPARING THESE 2 SPECTRA AND ALSO THE RESULTS OF EXPERIENCES IN WHICH THE POSITION OF THE EXCITED LINE OF THE LASER WAS CHANGED BY VARYING THE TEMP. OF THE ROD, THE DISCRETE PART OF THE LUMINESCENCE SPECTRA BELONGED TO THE RESGNANCE STIMULATED RAMAN SPECTRA ACCORDING TO THE SCHEME UPPER TO LOWER TRANSITIONS.

UNCLASSIFIED

BELYAYEVSKIY A.I.

Acc. Nr.: ARO107374

Ref. Code: UR0000  
JPRS 49937

Selection of Factors in Regression Analysis

(Abstract: "Selection of Factors in Regression Analysis," by A. I. Belyayevskiy and I. Ye. Ziber; --, Sbornik Trudov po Agronomicheskoy Fiziki, No 20, 1969, pp 143-150)  
[From: Moscow, Referativnyy Zhurnal, Geofizika, Svodnyy Tom, No 1, 1970 1B325]

A study has been made of the problem of obtaining an optimum set of factors serving as arguments of a linear regression equation employed for predicting any meteorological index. These factors are the result of a linear transformation of the space of initial meteorological factors and are determined in such a way that they will be uncorrelated and at the same time ordered in accordance with a stipulated sequence from their significance for forecasting. These two conditions ensure the possibility of obtaining the required number of factors explaining the dispersion of the predicted value. Bibliography of 3 items.

Reel/Frame  
1/2

USSR

UDC 621.375.2

BELYAYEVSKIY, L. S., NAGORNYI, L. Ya.

"Algorithms for Analyzing the Stability of Electronic Circuits in the Case of Small Deviations of Element Parameters"

Avtomatiz. proyektir. v elektron. Resp. mezhved. nauch.-tekhn. sb. (Design Automation in Electronics. Republic Interdepartmental Scientific and Technical Collection), vyp. 2, Kiev, "Tekhnika", 1970, pp 107-114

Abstract: The paper deals with problems of analyzing the stability of electronic circuits with regard to deviations in the parameters of elements. Algorithms are proposed for analyzing the stability of electronic circuits when there are small deviations of the parameters of the elements. These algorithms are derived on the basis of frequency criteria of stability as well as on the use of the methods of sensitivity theory. The language of generalized numbers is used to record the algorithms. Three illustrations, bibliography of eight titles.

1/1

AA0043434- Belyagevskiy, V.V.

UR 0482

1-70

Soviet Inventions Illustrated, Section I Chemical, Derwent,

228264 TYRE MANUFACTURE machine for examination, cutting, and buffing, of tyre treads that have been subjected to localised damage, consists of a body section which incorporates the worm gear (1), nut (2) and screw (3). The upper end of the screw connects with the carrier (4) on which the levers (5) are hinge-mounted the levers also having the rocker arms (6) connected. The table (7) fits on top of the carrier. A second set of levers (8) are connected to (5) in such a way that, as they move they are guided by the slots: a special fixing device is used. A ratchet wheel (10) terminates levers (8) on each side, and these in turn support the grippers (11) which can be held in any position by the pawls (12). The tyre is loaded into the machine, held by the grippers, and has the cover (13) put over it. The tyre is free to rotate during the inspection, and then the fixing is done by raising the table (7). Repairs are then carried out whilst the tyre is securely held.

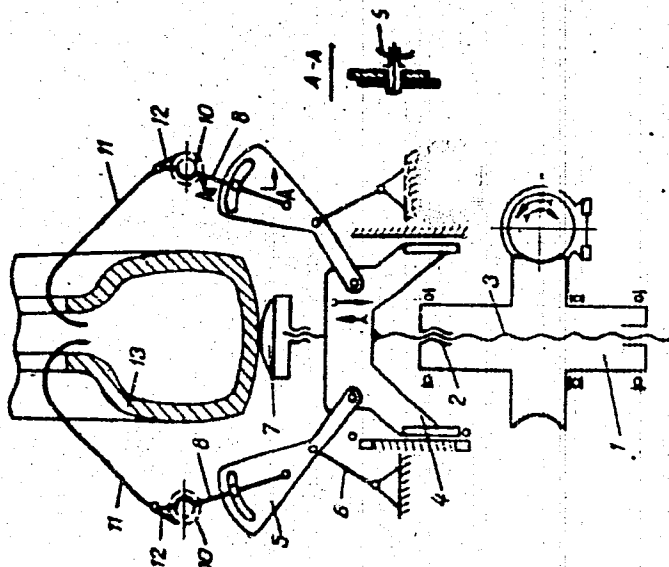
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19761759



AA0043434



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19761760

AA0043434

1.6.67. as 1160377/23-5, MIRONOV, B.A. and others  
Tyre Ind. Equipment Res. & Design Inst. (3.6.69)  
Bul. 31/8.10.68. Class 39a<sup>6</sup> Int. Cl. B 29h.

AUTHORS: Mironov, B. A.; Torgovtsev, G. G.; LD  
Sal'nikov, A.M.; Belyayevskiy, V. V.

Vsesoyuznyy Nauchno - Issledovatel'skiy i Konstruktorskiy  
Institut po Oborudovaniyu dlya Shinnoy Promyshlennosti

3/3

19761761

1/1

USSR

UDC 518.5:681.3.06

ARONOV, V. I., BELYAYKOV, N. Ye., GORDIN, V. M., LANDA, T. I., SHIRGINOVA, A. I.

"System for Automatic Processing of Anomalies in Three Dimensional Potential Fields Fixed in a Plane or Nonhorizontal Surface"

Tr. Vses. n.-i Geologorazved. Neft. in-t [Works of All-Union Scientific Research Institute for Geological Prospecting and Petroleum], No 103, 1971, pp 161-180, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V819 by the author's).

Translation: A description is presented of the algorithm and system of programs entitled "Reduction -- perpendicular" for the BESM-4 computer, designed to solve a broad range of problems in prospecting gravimetry and magnetometry: interpolation of observations from an arbitrary network of points to units in a right network, reduction of anomalies on external planes, filtration of random errors and calculation of various transformants of three dimensional potential fields. The technological characteristics of a system of programs and results of experimental calculations of three dimensional theoretical models are presented.

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- 50 -

BELYKH, A.D.

MHD

HIGHLY EFFICIENT SUPERSONIC NONEQUILIBRIUM MHD GENERATOR

Article by A. D. Belykh, V. A. Gerasimov, X. S. Galibayev, Moscow, Topofizika (USSR), Vol. 11, No. 6, 1973, signed to press 6 June 1973, pp. 1289-1291

(5)

JPRS 61637

2 April 1974

Biblic

The purpose of this article is to prove experimentally the feasibility of effective MHD-deceleration of plasma with nonequilibrium conductivity and high output power ( $\sim 10^6$  W).

Similar investigations are also being conducted in the U.S. [1, 2], where it has been shown that up to 10% of the enthalpy of plasma flow can be drawn off as electricity. The release of 20-30% enthalpy should trigger physical limitations (formation of shock waves, internal shorts in the MHD channel, boundary layer separation near the cathode wall, etc.).

In this connection an extensive arsenal of the tools of diagnosis (high-speed photography of the entire field of flow through completely transparent channel walls, measurement of the distribution pattern of potentials and currents in the channel, spectroscopic measurements of plasma parameters, measurement of static pressure distribution in the channel) was used in this work for complete explanation of the physical pattern of MHD-deceleration.

The studies were conducted in the "ultravacuum tube" [shock tube] installation using a medium (Ar + 0.1% Cs) with the following deceleration parameters: temperature from 5,000 to 7,500°K, pressure from 10 to 20 atm, mass flow rate from 1.5 to kg/s, and flow duration of 1.5-2 ms.

The MHD channel was attached to the end of a low-pressure chamber with a diameter of 15 cm and had a critical cross section of  $4.6 \times 4$  cm<sup>2</sup>, so that the gas flowed into the channel from the region behind the reflected shock wave. The channel expanded in one plane (the height along the magnetic field was 4 cm), entrance width was 10 cm, exit width was 17 cm and the length was 60 cm. The insulation walls were made of organic glass. The magnetic field for these channel dimensions was homogeneous in space with an accuracy of up to 5%; the time variation of the field

USSR

UDC 619:616.988.23:616.831.8:636.4(478)

BELYKH, G. V., Veterinary Administration, Ministry of Agriculture, Moldavian  
SSR

"Aujeszky's Disease of Swine in Moldavia"

Moscow, Veterinariya, No 10, Oct 70, p 62

Abstract: The incidence of Aujeszky's disease among swine in Moldavia has been steadily rising since sporadic cases were first reported in 1948. The number of sick and dead animals in 1969 was over three times that in 1967. Aujeszky's disease was responsible for 16.3% of the total number of swine deaths from infectious and parasitic diseases in 1966, 31.8% in 1967, and over 70% in 1968-1969. The disease occurs at any time of the year but is most prevalent in the winter and spring. Sick and convalescent animals are the main source of infection. Convalescent animals may be virus carriers for over a year. Rodents and other wild animals (foxes, wolves) are other disease vectors.

1/1

1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--GAMMA RAY SPECTRA RESULTING FROM THE CAPTURE OF THERMAL NEUTRONS BY  
ZINC 64, ZINC 66, ZINC 67, AND ZINC 68 -U-  
AUTHOR--(05)--BARCHUK, I.F., BAZAVOV, D.A., BELYKH, G.V., GOLYSHKIN, V.I.,  
MURZIN, A.V.  
COUNTRY OF INFO--USSR  
SOURCE--YAD. FIZ. 1970, 11(5), 934-41  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--THERMAL NEUTRON, GAMMA RAY, SPECTRUM, ZINC ISOTOPE, PARTICLE  
CAPTURE, SEMICONDUCTOR DETECTOR  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3008/0582 STEP NO--UR/0367/70/011/005/0934/0941  
CIRC ACCESSION NO--AP0137667  
UNCLASSIFIED

B

2/2 022

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137667

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HARD PART OF GAMMA RAY SPECTRA RESULTING FROM THE CAPTURE OF THERMAL N BY PRIME 64, PRIME66, PRIME67, PRIME 67 ZN ISOTOPES WAS STUDIED BY USING A SEMICONDUCTOR GE(LI) DETECTOR. ENERGIES AND INTENSITIES OF GAMMA LINES WITHIN THE GAMMA SPECTRA RANGE MEASURED ARE DETD. TRANSITION SCHEMES ARE COMPILED BASED ON THE DATA OBTAINED. A STRONG DISCREPANCY IS FOUND BETWEEN THE VALUES OF SPECTROSCOPIC FACTORS FOR P LEVELS OBSERVED IN THE REACTION (D,P), AND THE PROBABILITY OF EL TRANSITIONS FROM THE CAPTURE STATE TO THESE LEVELS IN THE (N,GAMMA) REACTION. IN PRIME69 ZN THE MOST INTENSIVE TRANSITIONS FROM THE CAPTURE STATE ARE THOSE TO THE LEVELS WHICH ARE ABSENT IN THE OTHER REACTIONS. FACILITY: INST. FIZ., KIEV, USSR.

UNCLASSIFIED

USSR

UDC 547.26'113

KHASKIN, B. A., RYMAREVA, T. G., MEL'NIKOV, N. N., and BELYKH, L. N., All  
Union Scientific Research Institute of Chemical Plant Protection Agents

"Reaction of Ester-Amides of Phosphorus Thioacids With Sodium Iodide"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 2, Feb 73, pp 435-436

Abstract: In studying the reactions of amidoesters of phosphorus thioacids with sodium iodide it was found that this reaction may take different routes, depending on the structure of the substituent at the nitrogen atom of the amidoester molecule. With two alkyl substituents at the nitrogen atom the reaction carried out at room temperature in acetone after 3-5 hrs will yield the sodium salt of O-methyl-N,N-dialkylamidothiolphosphoric acid and methyl iodide. When a hydrogen atom is attached to the amide, the reaction goes further and after 5 hrs of heating to 120° in acetone in a sealed vial yields methylmercaptan, tetramethylammonium iodide and a polymer.

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1/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--QUALITY ASSESSMENT OF ROLLING EQUIPMENT -U-

AUTHOR--BELYKH, N.N.

COUNTRY OF INFO--USSR

SOURCE--STANDARTY I KACHESTVO, 1970, NR 5, PP 73-75

DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--ROLLING MILL, HIGH QUALITY STEEL, ECONOMIC INCENTIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1997/1552

STEP NO--UR/0422/70/000/005/0073/0075

CIRC ACCESSION NO--AP0120331

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120331

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN ORDER TO EVALUATE THE QUALITY OF ROLLING EQUIPMENT USE IS MADE OF THE QUALITY OF THE SHAPES PRODUCED AND THE COST OF ROLLING OF 1 TON OF METAL.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--TERNARY SYSTEMS OF LITHIUM, SODIUM, RUBIDIUM, AND CESIUM CARBONATES  
-U-  
AUTHOR--(02)-ZAKHVALINSKIY, M.N., BELYKH, P.D.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 856-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, CHEMISTRY  
TOPIC TAGS--LITHIUM, SODIUM, RUBIDIUM, CESIUM, CARBONATE, TERNARY FLUID  
SYSTEM, EUTECTIC MIXTURE, CRYSTALLIZATION, SOLID SOLUTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1994/1727 STEP NO--UR/0078/70/015/003/0856/0858  
CIRC ACCESSION NO--AP0115556  
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0115556

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. PHASE DIAGRAM OF LI SUB2 CO SUB3-CS SUB2 CO SUB3-RB SUB2 CO SUB3 HAS 3 CRYSTN. FIELDS: THE CRYSTN. FIELD OF RB-CS CARBONATE SOLID SOLNS.; SOLID SOLN. OF A CONGRUENTLY MELTING COMPD.; AND LI SUB2 CO SUB3. THE SYSTEM NA SUB2 CO SUB3-CS SUB2 CO SUB3-RB SUB2 CO SUB3 HAS 4 FIELDS OF CRYSTN. CORRESPONDING TO EACH OF THE COMPONENT SALTS AND TO RB-CS CARBONATE SOLID SOLNS., THE LATTER BEING THE ALRGST IN AREA (SIMILAR TO 73.3PERCENT). A TERNARY EUTECTIC IS AT 470DEGREES AND RB SUB2 CO SUB3 16, NA SUB2 CO SUB3 50, AND CS SUB2 CO SUB3 34 MOLE PERCENT; A PERITECTIC POINT IS AT 495DEGREES AND 29, 53, AND 18 MOLE PERCENT OF THESE SALTS, RESP.

UNCLASSIFIED

USSR

B  
UDC: 621.391.8:519.27

YELAGIN, V. A., BELYKH, S. F., BLOKHIN, A. V.

"One of the Methods of Determining the Probability Characteristics of Instability of the Operating Point of Threshold Devices Subjected to a Signal and Noise"

Tr. Ural'sk. politekhn. in-ta (Works of the Ural Polytechnical Institute), 1970, sb. 183, pp 120-125 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7A21)

Translation: A method is outlined for determining the law of distribution of the probability density for deviation of the operating point based on quantization of a signal with respect to levels. The process is treated as stationary within the limits of discreteness. The case of a signal which is a linear function of time mixed with normal noise is considered by way of example. Five illustrations, bibliography of two titles. N. S.

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USSR

UDC: 621.396.67:621.396.965

FILATOV, A. I., BELYNSKIY, A. S. **B**

"An Antenna With Controllable Radiation Pattern in the Horizontal Plane"

Tr. Ural'skogo politekhn. in-ta (Works of the Ural Polytechnical Institute), 1970, sb. 183, pp 25-29 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7B76)

Translation: The authors describe an antenna for the 3-cm band in the form of a radial waveguide which passes into a biconical horn and is excited at the center by a circular waveguide which is matched to the radial waveguide by three cylinders coaxial with it. The radiation pattern is controlled by means of an electrically controllable polarizer which consists of two ferrite rotators of the polarization plane separated by a  $\frac{1}{4}$ -wave plate of polystyrene, and a matched converter. Three illustrations, bibliography of nine titles. N. S.

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USSR

UDC: 621.396.677

FILATOV, A. I., BELYSKIY, A. S.

B

"Distortion of Wide-Band Signals by an Antenna With Arbitrary Polarization Characteristics"

Tr. Ural'skogo politekhn. in-ta (Works of the Ural Polytechnical Institute), 1970, sb. 183, pp 30-35 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7B7)

Translation: The authors investigate the reasons for development of linear distortions in antennas which are designed for signals with elliptical polarization close to circular. The conditions are determined for which these distortions have a minimum value. One illustration, bibliography of 9 titles. N. S.

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USSR

UDC: 632.95

SERGEYEV, L. I., KULAKOV, V. N., BELYSHEV, L. K., KUZNETSOVA,  
M. G., SAKHNOV, N. S.

"Experience in the Use of N-1 Fraction as a Herbicide"

Moscow, Khimiya seraorgan. soyedin., soderzhashchikhsya v  
neftiyakh i nefteproduktakh--sbornik (Chemistry of Organosulfur  
Compounds Present in Petroleum and Petroleum Products--collection  
of works), T. 9, "Vyssh. shkola", 1972, pp 60-65 (from RZh-Khimiya,  
Vol 10, May 73, abstract No 10N594 by T. A. Belyayeva)

Translation: Data are presented on the physiological activity and possibility  
for practical utilization of the narrow fraction of high-sulfur aromatic  
extract called N-1. The initial raw material was light gas oil of catalytic  
cracking. The sulfurous aromatic compounds are extracted with furfurool and  
"kalosha" gasoline. After the solvents are driven off, a sulfur-aromatic  
concentrate is obtained from which a narrow fraction is isolated by rectifi-  
cation with the following characteristics: boiling range 250-285°C, density  
0.99, molecular weight 152, sulfur content 4.6%, content of aromatic hydro-  
carbons 78%, including 56% bicyclic. The hydrocarbons are chiefly dimethyl  
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USSR

SERGEYEV, L. I., et al., Chemistry of Organosulfur Compounds Present in Petroleum and Petroleum Products -- collection of works, T. 9, "Vyssh. shkola", 1972, pp 60-65

naphthalines. The organosulfur compounds consist mainly of alkyl derivatives of benzothiophene. For using N-1 fraction as a herbicide or growth stimulator, aqueous emulsions are prepared using OP-7 or OP-10. Laboratory and field experiments are done with concentrations of 0.00001, 0.0001, 0.001, 0.01, 0.1, 1 and 10%. Depending on the concentration, N-1 fraction has herbicidal (0.01-10%) or stimulating (0.001-0.0001%) properties for flowering plants. Even a 1% emulsion of N-1 is heavily damaging to *Stellaria media* (chickweed). In the appropriate quantities N-1 is a contact herbicide and is most effectively used in controlling annual weeds.

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USSR

UDC: 621.317.44

BELYUSHKIN, G. A., KUGAYEVSKIY, A. F.

"Radio Spectrometers for Studying the Permeability of Magnetic Thin Films"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 1), Novosibirsk, 1970, pp 122-124 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1A373)

Translation: The authors briefly outline the results of works on the method of susceptibility, which is extensively used for studying ferrites and magnetic thin films. Installations have been developed for studying susceptibility in the region of ferromagnetic resonance and in the region of radio frequency losses, which are essentially radio spectrometers of permeability. Various diagrams of such installations are considered, various types are evaluated and circuits are recommended for construction of wide band radio spectrometers of permeability. Special attention is given to problems involved in measurement of the permeability spectra of magnetic thin films. A method is proposed for regulating the magnetic characteristics of magnetic thin films. Bibliography of six titles. E. L.

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USSR

B  
UDC: 612.746.6

BIDULYA, P. N. (deceased), LIVSHITS, V. B., and BELYI, D. I.

"Influence of Pressure on Rate of Cooling During Crystallization"

Izv. VUZ, Tsvetnaya Metallurgiya, No 3, 1970, pp 161-163

Abstract: This work represents an attempt to record the cooling rate using a practically inertia-free apparatus. The cooling rate curves were recorded using a N-700 oscilloscope with a set of type M 001 oscillographic galvanometers. The temperature of ferrous metals was measured using a type NIA thermocouple. The temperature of steels was measured using type VR 5/20 and PP thermocouples. The junctions were not shielded, and were placed in a matrix at 15-25 mm from the floor of the press mold. Typical cooling curves with and without pressure are presented for zinc. The cooling rate is considerably higher for cooling under pressure than for cooling with free crystallization. It was found that cooling rate is practically independent of pressure during crystallization at pressures over 15 t. The cooling rate with solidification under pressure was approximately one and one-half to two times higher than with free crystallization. It was impossible to determine the solidification rate more precisely due to difficulties of precise measurement of the actual crystallization interval. The authors conclude that the main factor determining the acceleration in solidification is improved heat transfer.

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USSR

UDC: 534-8

STADNIK, B. N., KAZANSKIY, M. F., BELYI, L. N.

"Effect of Porous Structure on the Propagation of Ultrasound in Capillary Pore Models"

Vliyaniye poristoy struktury na rasprostraneniye ul'trazvuka v model'nykh kapillyarno-poristykh telakh. Redkollegiya "Inzh.-fiz. zh." AN BSSR (cf. English above. Editorial Staff of "Engineering Physics Journal" Academy of Sciences of the BSSR), Minsk, 1971, 7 pp, ill., bibl. of 7 titles (No 3855-71 Dep.) (from RZh-Fizika, No 6, Jun 72, Abstract No 6Zh580 DEP)

Translation: The physical and mechanical properties of capillary porous bodies are very precisely described with the aid of a model system of mutually touching, elastic spherical particles. The speed of propagation of elastic waves along a one-dimensional chain of elastic particles in the absence of attenuation is independent of the sizes of the particles and is determined by the elasticity of the contact between adjacent particles as calculated by the theory of H. Hertz. A one-dimensional chain of particles in a capillary porous body is a mechanical low-frequency filter whose cutoff frequency is directly proportional to the speed of ultrasound and inversely proportional to the sizes of the particles. Measurements of the

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USSR

STADNIK, B. N. et al., Vliyaniye poristoy struktury na rasprostraneniye ul'trazvuka v model'nykh kapillyarno-poristykh telakh, Minsk, 1971

speed of propagation of ultrasound on a frequency of 70 kHz in fractionated quartz sand showed a slight increase (by 24%) in velocity with an appreciable increase (by a factor of 7.6) in the effective dimensions of the particles. Authors' abstract.

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1/2 020 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--OPTICAL PROPERTIES OF PHOSPHORUS CONTAINING SOLUTIONS ACTIVATED BY  
SILVER -U-

AUTHOR--(03)-BELYI, M.U., ZASHIVAYLO, T.V., KUSHNIRENKO, I.YA.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(2), 306-11

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY, PHYSICS

TOPIC TAGS--SILVER, PHOSPHORUS, OPTIC PROPERTY, LUMINESCENCE SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1995/0927

STEP NO--UR/0368/70/012/002/0306/0311

CIRC ACCESSION NO--AP0116437

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116437

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OPTICAL PROPERTIES OF AG ACTIVATED SOLNS. OF P COMPS. (HPO SUB3, NAPO SUB3, H SUB3 PO SUB4, NA SUB3 PO SUB4, H SUB4 P SUB2 O SUB7, AND NA SUB4 P SUB2 O SUB7) WERE STUDIED BY MEASURING ABSORPTION AND LUMINESCENCE SPECTRA OF THE SOLNS. AT 273 AND 77DEGREEK AND AG PRIME POSITIVE ION CONC. 10 PRIME NEGATIVE5 10 PRIME NEGATIVE3 G ION-L. AND 0.25-7.8 M P COMPD. THE ABSORPTION SPECTRA OF THE P CONTG. COMPS. IN THE PRESENCE OF AG PRIME POSITIVE IONS ARE SIMILAR TO THOSE WITH AG HALIDES. THE POSITION OF THE MAX. IN THE SPECTRA OF VARIOUS P CONTG. COMPS. DEPENDS MAINLY ON THE NATURE OF THE ANION GROUP. THE MAX. SHIFT TOWARD THE LONGWAVE REGION IN THE ORDER PO SUB3 PRIME NEGATIVE IS SMALLER THAN P SUB2 O SUB7 PRIME4NEGATIVE IS SMALLER THAN PO SUB4 PRIME3NEGATIVE. THE VALUE OF THE SHIFT DEPENDS ON THE CATION PRESENT, E. G., FOR THE SERIES NAPO SUB3 YIELDS NA SUB4 P SUB2 O SUB7 YIELDS NA SUB3 PO SUB4 THE SHIFT WAS SIMILAR TO 0.50 EV, AND FOR THE SERIES HPO SUB3 YIELDS H SUB4 P SUB2 O SUB7 YIELDS H SUB3 PO SUB4 IS SIMILAR TO 0.08 EV. SOLNS. OF P ACIDS AND THEIR SALTS CONTG. 10 PRIME NEGATIVE5-10 PRIME NEGATIVE3 GI ION-L. AG PRIME POSITIVE ARE NOT LUMINESCENT AT ROOM TEMP., BUT LUMINESCENT AT 90-77DEGREEK WHEN IRRADIATED WITH UV RADIATION. THE LUMINESCENCE SPECTRA HAVE 3 TYPES OF BANDS A, B, AND C, WHICH ARE ATTRIBUTED TO THE TRANSITIONS 4D PRIME10 IN EQUILIBRIUM TO 4D PRIME9 5P, 4D PRIME10 IN EQUILIBRIUM TO 4D PRIME8 5S PRIME2, AND 4D PRIME10 IN EQUILIBRIUM TO 4D PRIME9 5S, RESP.

UNCLASSIFIED

1/3 019 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--LUMINESCENCE OF SOLUTIONS OF HALIDE AND OXYGEN CONTAINING SALTS OF  
SILVER -U-  
AUTHOR-(02)-BELYY, M.U., ZASHIVAYLO, T.V. **B**  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 507-12  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, PHYSICS  
TOPIC TAGS--LUMINESCENCE SPECTRUM, SILVER COMPOUND, OXYGEN COMPOUND,  
HALIDE, ABSORPTION SPECTRUM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3001/0080 STEP NO--UR/0048/70/034/003/0507/0512  
CIRC ACCESSION NO--AP0125915  
UNCLASSIFIED



2/3 019

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0125915

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LUMINESCENCE AND ABSORPTION SPECTRA OF CONCD. SOLNS. OF HCL, LILCL, LIBR, NABR, AND H SUB3 PO SUB4 CONTG. TRACES OF AG PRIME POSITIVE (1 TIMES 10 PRIME NEGATIVES -1 TIMES 10 PRIME NEGATIVE3 G ION-L.) WERE STUDIED AT 290-20DEGREEK. THE EMISSION SPECTRA WERE COMPLICATED AND CONSISTED OF SEVERAL BANDS. THE SHORT WAVELENGTH BANDS WERE SINGLET, BUT THE LONG WAVELENGTH BANDS WERE USUALLY COMPLEX. DECREASING TEMP. (TO 20.4DEGREEK) INCREASED THE COMPLEXITY OF THE LONG WAVELENGTH BAND AND REDUCED THE BAND HALF WIDTH. LOW TEMP. ALSO CAUSED SHIFTS OF THE MAX. TO SHORTER WAVELENGTH. AT HIGHER TEMPS. EMISSION SPECTRA WERE INTENSE AND DEPENDED ON THE EXCITING LIGHT WAVELENGTH. THUS, A LIGHT SOURCE OF 366 NM GAVE ONLY A LONG WAVELENGTH BAND AT SIMILAR TO 500 NM, BUT A 313-NM LIGHT SOURCE PRODUCED ANOTHER BAND AT 420 NM. AT 20.4DEGREEK LUMINESCENCE SPECTRA WERE PRACTICALLY INDEPENDENT OF THE EXCITING LIGHT WAVELENGTH. ABSORPTION SPECTRA STUDIED SHOWED SIMILAR COMPLEX STRUCTURE, ONE STRONG INTENSE SHORT WAVELENGTH BAND AND A GROUP OF LOWER INTENSITY LONG WAVELENGTH MAX. BOTH KINDS OF SPECTRA WERE DIFFERENT FOR DIFFERENT CATIONS, SO, IT IS SUGGESTED THAT CATIONS TAKE PART IN THE FORMATION OF COMPLEXES IN SOLN. THE LONG WAVELENGTH ABSORPTION OR EMISSION BANDS CAN BE ASCRIBED TO THE TRANSITIONS 4D PRIME10 (PRIME1 S SUB0) IN EQUILIBRIUM 4D PRIME9 5S (PRIME3 D SUB3,3,1; PRIME1 D SUB2) AND THE INTENSE SHORT WAVELENGTH BANDS TO 4D PRIME10 IN EQUILIBRIUM 4D PRIME9 5P TRANSITIONS. THE BANDS IN THE 300-NM REGION AND EMISSION BANDS WITH MAX. SIMILAR TO 400 NM WERE DIFFICULT TO EXPLAIN.

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0125915

ABSTRACT/EXTRACT--THEY MAY BE DUE TO 2-ELECTRON TRANSITIONS OF THE TYPE 4D PRIME10 IN EQUILIBRIUM 4D PRIME8 5S PRIME2, WITH LOWER PROBABILITY. THE TRANSITIONS 4D PRIME10 IN EQUILIBRIUM 4D PRIME9 5P ARE ALLOWED, BUT THE 4D PRIME10 IN EQUILIBRIUM 4D PRIME9 5S AND 4D PRIME10 IN EQUILIBRIUM 4D PRIME8 5S PRIME2 TRANSITIONS ARE FORBIDDEN BY LAPORT'S RULES; THIS COULD EXPLAIN HIGHER INTENSITY OF THE SHORT WAVELENGTH. FACILITY:  
KIEV. GOS. UNIV. IM. SHEVCHENKO, KIEV, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--EFFECT OF ULTRAVIOLET IRRADIATION ON THE LUMINESCENT PROPERTIES OF  
ALCOHOLIC SOLUTIONS OF THALLIUM AND LEAD SALTS -U-  
AUTHOR--(02)-BELYI, M.U., BURSEVICH, V.V.

B

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 667-9

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--THALLIUM CHLORIDE, LEAD CHLORIDE, LITHIUM CHLORIDE, ALCOHOL,  
LUMINESCENCE, ABSORPTION SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1996/1807

STEP NO--UR/0048/70/034/003/0667/0669

CIRC ACCESSION NO--AP0118773

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NC--AP0118773

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CHANGE OF THE SOLVENT FROM WATER, TO ETCH AND MECH DETS. A BATHOCHROMIC SHIFT IN THE UV ABSORPTION AND LIMINESCENT SPECTRA OF (1) PBCL SUB2 PLUS LI<sub>2</sub>CL AND (2) TLCL PLUS LI<sub>2</sub>CL SOLNS. A CONSIDERABLE DIFFERENCE IN QUANTUM YIELD WAS ALSO OBSD., BUT THE FORM OF THE CURVES IS MAINTAINED. THE INTENSITY OF LUMINESCENCE, AS WELL AS THE VALUE OF THE ABSORPTIVITY IS DEPENDENT ON THE TIME OF UV IRRADN.: THE INTENSITY AT THE BEGINNING INCREASES WITH THE TIME OF IRRADN. AND LATER DECREASES. WITH A SUFFICIENTLY LONG TIME (3-4 HR), THE LUMINESCENCE BAND DISAPPEARS. AWAY FROM UV FOR 8-10 HR, ABSORPTION AND LUMINESCENCE SPECTRA OF THE IRRADIATED SOLNS. ARE COMPLETELY RESTORED. FROM THE BEGINNING TO SIMILAR TO 60 MIN THE INTENSITY OF ABSORPTION IS PRACTICALLY UNCHANGED, WHILE THE INTENSITY OF LUMINESCENCE INCREASES AND REACHES A MAX. THEREAFTER BOTH DECREASE STEADILY. A TENTATIVE EXPLANATION IS GIVEN, BASED ON REVERSIBLE CHANGE IN THE SOLVENT UNDER IRRADN., LEADINT TO A CHANGE IN DEGREE OF INTERACTION BETWEEN THE COMPLEX OF THE CATION AND ANION WITH THE SURROUNDING MEDIUM. THE INFLUENCE IS LARGER ON THE EXCITED STATE OF THE COMPLEX, AND EXPLAINS THE INITIAL INCREASE IN QUANTUM YIELD OF LUMINESCENCE AND UNCHANGED ABSORPTION. FURTHER IRRADN. DISTURBS THE CENTERS OF ABSORPTION WHICH IS REFLECTED IN THE LUMINESCENCE OF THE SOLN.: DECREASE OF LUMINESCENCE FOLLOWS DECREASE IN ABSORPTION. THESE PHENOMENA ARE GENERAL CHARACTERISTICS OF SUCH ALC. SOLNS. AND SHOULD BE ACCOUNTED FOR WHEN STUDYING THEIR LUMINESCENCE AND ABSORPTION SPECTRA.

FACILITY: KIEV. GOS. UNIV. IM. SHEVCHENKO, KIEV, USSR.

UNCLASSIFIED