

USSR

UDC 669.083.4

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REZNYAKOV, A. A., ISAKOVA, R. A., YESYUTIN, V. S., NESTEROV, V. M., NECHIPORENKO, G. I., MOROZOV, I. F., ZHUKOV, P. I., ZAVADSKAYA, N. F., and KALININ, V. Ya.

"Increasing the Effectiveness of Vacuum Refining of Selenium"

N

Moscow, Tsvetnyye Metally, No 1, Jan 70, pp 54-57

Abstract: Data were obtained which confirm the results of previously conducted laboratory investigations regarding the possibility of producing high-quality commercial Se in a single operation. At 450° and a vacuum of 0.6 mm Hg, the output of the apparatus was 2 g/m² per day. The yield of high-quality Se was 80%; highly volatile fractions and mother liquor accounted for 15 and 5%, respectively. During prolonged operation of the apparatus the disks overgrown with shelliness, which formed as the result of the precipitation of metal selenides suspended in Se. An investigation of the filtration of fusion and vapors of Se showed that it is possible to produce high-quality commercial Se in a single operation. The process has been introduced into Se production.

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NESTEROV, V. P.

UDC 551.510.535.4

WIND IN THE IONOSPHERE AND THE FORMATION OF THE SPORADIC E LAYER

Article by Candidate of Physical and Mathematical Sciences L. A. Andreyeva, Doctor of Physical and Mathematical Sciences L. A. Katshev, V. P. Nesterov, Candidates of Physical and Mathematical Sciences B. B. Uvarov and Yu. V. Chayvitskiy, Institute of Experimental Meteorology, Moscow, Meteorologiya i Klimatologiya, Russian, No 2, 1972, submitted 17 December 1970, pp 3-7

Three profiles of the wind velocity and direction in the lower atmosphere obtained by observation data on artificial noctilucent clouds on 16, 25 and 26 July 1968 at the Volgograd station are presented in this article. Some results of experimental checking of the theory of formation of the main latitude E_s ionospheric layer under the effect of wind shear are discussed.

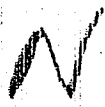
The M-11 rocket with containers filled with a special mixture containing sodium was launched in the summer of 1968 in Volgograd to study the wind in the lower atmosphere. The experiments were performed on 16, 25 and 26 July at 2040 hours, 2030 hours and 0300 hours Moscow time, respectively.

The elongated noctilucent clouds formed were photographed synchronously from two points. The successive positions of the cloud photographed on 16 July are shown in the photograph in Figure 1. The procedure for processing these photographs is described in reference [3].

By the data obtained only the horizontal components of the wind velocity were determined. Obviously, the vertical components are small, and they could not be reliably established.

In Figure 2a we have the profiles of the horizontal wind velocity obtained in three experiments. The profiles on 16 and 25 July, have much in common with the characteristics of the wind conditions of the upper atmosphere obtained by Kobhanskiy [9] and Blamont [7] by the data from numerous observations from artificial noctilucent clouds. The profile for 26 July has some differences.

UDC 551.535.4
1972

1/2 006 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--NATURE OF THE CHANDLERIAN MOTION OF THE POLE -U-
AUTHOR--(02)-RYKHLOVA, L.V., NESTEROV, V.V. 
COUNTRY OF INFO--USSR
SOURCE--ASTRONOMICHESKII ZHURNAL, VOL. 47, NO. 2, 1970, P. 426-430
DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--COORDINATE, MOVING POLE METHOD, PLANET EARTH

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1761 STEP NO--UR/0033/70/047/002/0426/0430
CIRC ACCESSION NO--AP0125377
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/2 006

CIRC ACCESSION NO--A0125377

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

ABSTRACT. DISCUSSION OF THE RESULTS OF A STATISTICAL TEST OF MELCHIOR'S LAWS GOVERNING THE CHANDLERIAN MOTION OF THE EARTH'S POLE, ON THE BASIS OF POLAR COORDINATES CALCULATED FOR THE PERIOD FROM 1846.0 TO 1065.0. POSSIBLE RELATIONSHIPS BETWEEN THE CHANDLERIAN PERIOD, THE AMPLITUDE OF THE CHANDLERIAN PERIOD, AND THE AMPLITUDE OF THE ANNUAL MOTION ARE STUDIED BY STATISTICAL METHODS. CORRELATION COEFFICIENTS AND DISPERSION RELATIONS ARE OBTAINED. NO RELATIONSHIP BETWEEN THESE VALUES IS DETECTED. THE ANALYSIS LEADS TO THE CONCLUSION THAT THE CHANDLERIAN PERIOD DOES NOT CHANGE WITH TIME.

FACILITY: MOSKOVSKII GOSUDARSTVENNYI UNIVERSITET, MOSCOW, USSR.

UNCLASSIFIED

1/2 031 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--EFFECTIVE CROSS SECTIONS OF INELASTIC PROTON INTERACTION WITH
CARBON AND HYDROGEN NUCLEI IN THE 20-600 GEV REGION MEASURED AT THE
AUTHOR--(05)-SAVENKO, I.A., GRIGOROV, N.L., NESTEROV, V.YE., RAPOPORT,
I.D., SURIDIN, G.A.
COUNTRY OF INFO--USSR
SOURCE--YAD. FIZ. 1970, 11(4), 814-29
DATE PUBLISHED-----70
SUBJECT AREAS--SPACE TECHNOLOGY, PHYSICS
TOPIC TAGS--PROTON INTERACTION, CARBON, HYDROGEN, NUCLEUS, INELASTIC
INTERACTION/(U)PROTON 3 SCIENTIFIC SATELLITE, (U)PROTON 2 UNMANNED
LABORATORY, (U)PROTON 1 UNMANNED LABORATORY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3007/1078 STEP NO--UR/0367/70/011/004/0814/0829
CIRC ACCESSION NO--AP0136498
UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--27NDV70

CIRC ACCESSION NO--AP0136498

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CROSS SECTIONS SIGMA SUBPC AND SIGMA SUBPP AT THE EFFECTIVE P ENERGIES 20-600 GEV WERE MEASURED BY USING EHA APP. PLACED ON THE SPACE STATIONS (ORBITING SATELLITES) PROTON MINUS 1, MINUS 2, AND MINUS 3. WITH THE RISE OF THE RHO ENERGY THE CROSS SECTION SIGMA SUBPC INCREASED BY (20 PLUS OR MINUS 5)PERCENT. THE CROSS SECTION SIGMA SUBPP WAS DETD. BY THE DIFFERENCE METHOD (POLYETHYLENE-C) WITH ERRORS 8-20PERCENT. THE MEASURED DEPENDENCE OF SIGMA SUBPP ON THE ENERGY DOES NOT CONTRADICT THE OBSD. INCREASE OF THE CROSS SECTION SIGMA SUBPC IN THE SAME ENERGY RANGE. VARIOUS METHODIC EFFECTS AND TRIVIAL PHYS. PROCESSES WHICH COULD AFFECT THE VALUES OF MEASURED CROSS SECTIONS WERE ANALYZED. THE OBSD. INCREASE OF THE CROSS SECTIONS CANNOT BE EXPLAINED BY THESE EFFECTS. FACILITY: INST. YAD. FIZ., MOSK. GOS. UNIV., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 629.7.036.34.05.121

NESTEROV, YE. D.

"Selection of Optimal Flow Parameters in the Mixing Chamber of a Two-Loop Turbojet Engine"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1970, No. 45, pp 147-155 (from RZh-Aviatsionnyye i raketnyye dvigateli, No 5, May 72, Abstract No 5.34.119)

Translation: Equations for determining the optimal parameters at the input to the cylindrical mixing chamber are derived from the condition of providing maximum pressure of the mixture in the absence of external heat exchange within the framework of one-dimensional theory. Various versions of assigning the initial parameters are discussed and the optimal parameters for certain of these versions are calculated. 3 ill., 3 ref.

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1/2 023 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--HYPERTROPHY OF THE MYOCARDIUM OF THE RIGHT VENTRICLE AND ITS
EXPERIMENTAL REVERSIBILITY -U-
AUTHOR--(02)-AVTANDILOV, G.G., NESTEROV, YE.N. N
COUNTRY OF INFO--USSR
SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69,
NR 4, PP 51-54
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CELLULOSE, LUNG, ARTERY, RABBIT, MYOCARDIUM, DNA, HYPERTROPHY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/1589 . STEP NO--UR/0219/70/069/004/0051/0054
CIRC ACCESSION NO--AP0106335
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0106335
ABSTRACT/EXTRACT--(U) GP-D-

ABSTRACT. REPEATED INTRAVENOUS ADMINISTRATION OF CARBOXYMETHYL CELLULOSE INDUCED CHRONIC LUNG ARTERITIS AND ANGIOSCLEROSIS IN THE RABBITS WITH FOLLOWING HYPERTROPHY OF THE RIGHT VENTRICLE OF THE HEART AFTER 12-14 WEEKS. HYPERTROPHY OF THE MYOCARDIUM, REGISTERED BY FRACTIONAL WEIGHING OF THE HEART WALLS, WAS FOLLOWED BY THICKENING OF THE MUSCLE FIBERS OF THE MYOCARDIUM, BY AN INCREASE OF THE NUCLEI VOLUME AND A RISE OF CYTOMETRIC INDEX OF THE DNA CONTENT. 12-16 WEEKS AFTER ADMINISTRATION OF CARBOXYMETHYL CELLULOSE, ALONG WITH DISAPPEARANCE OF ARTERITIS, THE WEIGHT OF THE RIGHT VENTRICLE FALLS, DIAMETER OF THE FIBERS AND OF THE NUCLEI AND THE DNA CONTENT DECREASES. A DISCUSSION IS GIVEN OF POSSIBLE CAUSES OF A POSITIVE CORRELATION BETWEEN THE VOLUME OF THE MYOCARDIUM NUCLEI AND THE DNA CONTENT IN THEM DURING HYPERTROPHY AND IN THE REVERSE PROCESS.

UNCLASSIFIED

MASTEROV, Yu. I.

SPS 57493
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- 50 -

*Published for the purpose of discussion.

UDC: 616-026-082-089.51.008
 SCIENTIFIC PROBLEMS PERTAINING TO OPERATION OF A RESUSCITATION AND ANESTHESIOLOGY
 DEPARTMENT OF A CLINICAL HOSPITAL
 Article by A. B. Myzeli, A. S. Zabolotn, Yu. I. Mastero, School of
 Resuscitation and Anesthesiology (headed by Docent A. B. Myzeli), Kemerovo
 Medical Institute, at the Central Municipal Clinical Hospital (chief
 physician: Z. Ya. Fridman, Honored Physician of the USSR), Kemerovo
 Province, Сибирский медицинский журнал, No 10, 1972, submitted 17 March 1972,
 pp 39-43

Resuscitation-anesthesiology departments are growing increasingly important in the diagnostic and therapeutic work of large general hospitals. Having been established in the last few years, thanks to the good equipment of laboratories and availability of diverse monitoring equipment, they significantly improved the quality of diverse monitoring process. These departments are regulating and maintaining vital functions of the organism on a high and constant level; they effectively administer intensive care, provide anesthesiological assistance during surgery and diverse manipulations in different departments of the hospital. At present time it is recognized by all that it is timely and important to create a resuscitation and anesthesiology service in large hospitals.

At the Central Municipal General Hospital of Kemerovo, which has 1,150 beds and is the base for seven chairs and classes of the medical faculties, the resuscitation and anesthesiology service was created in accordance with order No 605 of the USSR Minister of Health three years ago. In view of the pavilion-type structure of the hospital with blocks spread over a large territory, a chief resuscitation department with 10 beds was organized in the surgical block where all serious emergency victims were delivered (52 of all those admitted) as well as serious patients from surgical departments (600 beds) as well as serious patients from the department with eight beds in the internal medicine block (400 beds). The resuscitation service had 18 beds in all. The departments were given isolated facilities in the direct vicinity of the decontamination station and surgical block.

USSR

UDC 532.525.6

MEL'NIKOVA, M. F., NESTEROV, YU. N.

"Action of a Nondesign Supersonic Flow on a Plane Obstacle Perpendicular to the Axis of the Flow"

Uch. zap. Tsentr. aero-gidrodinam. in-ta (Scientific Notes of the Central Aerodynamics Institute), 1971, Vol. 2, No. 5, pp. 105-108 (from RZh-Aviatsionnyye i raketnyye dvigateli, No 4, Apr 72, Abstract No 4.34.91)

Translation: The results of an experimental study of the inflow of a nondesign supersonic flow on a plane obstacle placed perpendicular to the axis of the flow in direct proximity to the end of the nozzle are presented. The effect of the flow parameters on the end of the nozzle and on the gasdynamic action on the obstacle is shown. Empirical formulas are given for constructing a pressure diagram at the obstacle and the limits of their application are indicated. 5 ill., 5 ref. Resume.

1/2 013 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--EFFECT OF OXYGEN PRESSURE AND ROASTING TEMPERATURE ON THE EXCESS
METAL CONTENT IN POLYCRYSTALLINE SAMPLES OF BARIUM OXIDE, STRONTIUM
AUTHOR--(02)-NESTEROVA, I.L., KOVTUNENKO, P.V.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 506-7
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--ROASTING FURNACE, BARIUM OXIDE, OXYGEN, STRONTIUM COMPOUND,
POLYCRYSTAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1988/0684 STEP NO--UR/0076/70/044/002/0506/0507
CIRC ACCESSION NO--AP0105660
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105660

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT, ROASTING OF POLYCRYST. SAMPLES OF SRO AND ITS EQUIMOLAR SOLN. WITH BA0 AT AN O PRESSURE OF (3 PLUS OR MINUS 1) TIMES 10 PRIME NEGATIVE3 MM HG LEADS TO EXCESS METAL CONCNS. THAT ARE EXPONENTIALLY TEMP. DEPENDENT (900-1150DEGREES). AT 10 PRIME NEGATIVE3 MINUS 10 PRIME NEGATIVE4 TORR O, THE CONC. OF EXCESS METAL IS INVERSELY PROPORTIONAL TO THE PRESSURE. THE BULK OF THE EXCESS METAL IS LOCALIZED ON THE SURFACE OF THE OXIDE CRYSTALS.

UNCLASSIFIED

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UDC 632.95

NESTEROVA, I. P.

"Spectrophotometric Method of Analyzing Residual Amounts of Siphos in Plant Material by Phosphorus"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov i profilakt. zagryazneniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Feeds and Environment), Tallin, 1971, pp 300-301 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N447)

Translation: In analyzing siphos (I) in a green mass of peas, potatoes and apples, I is extracted with ether, the extract is purified by distribution between two immiscible solvents and it is analyzed for the total P content. The sensitivity of the method is 0.15 mg/kg I, and the degree of detection, 70-83%.

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USSR

UDC 537.591.15

VERNOV, S. N., Y'EGOROV, T. A., Y'EFIMOV, N. N., KOLOSOV, V. A., KORYAKIN, V. D., KRASIL'NIKOV, D. D., KUZ'MIN, A. I., KULAKOVSKAYA, V. P., MAKSIMOV, S. V., NESTEROVA, N. M., NIKOL'SKIY, S. I., ORLOV, V. A., SLEPTSOV, I.YE., SIZOV, V. V., KRISTIANSEN, G. B., and SHAMSUTDINOVA, F. K.

"Preliminary Results of Recording Extensive Showers on a Recording Array in Yakutsk"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 10, Oct 71, pp 2098-2101

Abstract: Experiments are described in which attempts were made at determining the energy spectrum, composition, and anisotropy of cosmic rays within the range of energy 10^{17} to 10^{18} ev. It is desired to extend the range to cover 10^{19} ev and above. Of a particular interest are the following problems: do the rays originate within the Galaxy or in metagalactic regions, what is the direction from which they arrive, and how Cerenkov radiation produced by them is distributed within the atmosphere. The test equipment consists of 13 recording points distributed over an area of 3 km^2 , with a central time-control point. The output spectrum was measured over a period of 29.5 hours. 82 showers were noted during that period, with the axes falling within the

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VERNOV, S. N., et al.; Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 10, Oct 71, pp 2098-2101

array area. The orientation of the axis was found by the "triangulation" method, comparing the time of arrival of the showers at different recording points. An analytic expression is given in the paper for the integral output spectrum of extensive showers at sea level for the interval of N between 2×10^7 and 2×10^8 . The intensity, determined with this formula, appears to be 2 to 3 times as great as recorded elsewhere. Distribution of Cerenkov light with respect to the shower axis was determined by observations conducted on clear, moonless nights. It was found to be similar to that of the primary gamma quanta, but it decayed with the distance from the axis more slowly than the amount of charged particles ($R^{-2.5}$ as against $R^{-3.3}$ for charged particles).

Examination of the energy spectrum of primary particles lead to the conclusion that the electromagnetic component is responsible for 80% of it. Dependence of primary energy on the output N was established, and on the basis of this relation the integral spectrum was computed. The coefficient connecting these two magnitudes was found to be twice as high as the one previously accepted elsewhere.

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VERNOV, S. N., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 10, Oct 71, pp 2098-2101

In the final analysis, variation of Cerenkov light at the primary particle energy of 3.6×10^{16} ev and the output (intensity) of 1.5×10^7 particles at sea level is given, as well as the expected distribution of the nuclear components of primary rays.

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1/2 C18 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--THE PRIMARY ENERGY SPECTRUM OF COSMIC RAYS IN THE 10 TO THE 13TH
POWER TO THE 10 TO THE 15TH POWER EV REGION -U-
AUTHOR-(G4)-HLAVAC, T., NESTEROVA, N.M., NIKOLSKIY, S.I., ROMAKHIN, V.A.
COUNTRY OF INFO--USSR, HUNGARY
SOURCE--INTERNATIONAL CONFERENCE ON COSMIC RAYS, 11TH, BUDAPEST, HUNGARY,
AUGUST 15-SEPTEMBER 4, 1969, PROCEEDINGS, VOLUME 1, ORIGINE AND GALACTIC
DATE PUBLISHED-----70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--EXTENSIVE AIR SHOWER, ENERGY SPECTRUM, COSMIC RAY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----F070/609060/F08 STEP NO--HU/2506/70/029/000/0521/0525

CIRC ACCESSION NO--AT0144421

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AT0144421

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE EXTENSIVE AIR SHOWER (EAS) SIZE SPECTRUM IN THE SIZE INTERVAL OF 2,000 TO 2,000,000 EV, MEASURED AT THE TIEN SHAN STATION (ALTITUDE 3340 M A.S.L.). IT WAS FOUND THAT THE MEASURED SIZE SPECTRUM CANNOT BE REPRESENTED BY A POWER LAW WITH A CONSTANT EXPONENT. THE DATA OBTAINED ARE COMPARED WITH VARIOUS THEORETICAL CALCULATIONS, AND AN INTERPRETATION OF THE RESULTS IS PRESENTED. FACILITY: AKADEMIJA NAUK SSSR, FIZICHESKII INSTITUT, MOSCOW, USSR.

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MEL'NIKOV, N. N., et al., USSR Author's Certificate No 327204, filed 23 Feb 70, published 28 Mar 72

1.2 g III is added, the mixture is boiled for 10-15 min., kept for ~16 hrs, and the residue is separated. The reaction yields 2.69 g I (R = 4-ClC₆H₄CO, n = 0), m.p. 173-175°C (decomposes; PhMe). Another I are prepared in a similar way (R, yield in %, m.p. in °C are given in that order), n=0: Bu, 99, 39-40; Me, 94, 116-117 (benzene); PhCO, 88.6, 139-141 (decomposes); 4-ClC₆H₄, 96.8, 194-195 (PhMe); 3-ClC₆H₄, 90.2, 180-181. The structure of I was verified by infrared and NMR spectra.

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UDC 582.232:547.963.32

MOSKOVETS', S. M., NESTEROVA, N. V., and MENDZHUL, M. I., Institute of Microbiology and Virology, Academy of Sciences Ukrainian SSR

"Isolation and Characteristics of DNA of the Blue-Green Algae *Anacystis nidulans*"

Kiev, Mikrobiologichniy Zhurnal, Vol 33, No 1, Jan/Feb 71, pp 53-56

Abstract: The isolation of pure and high-molecular DNA from the single-cell alga *A. nidulans* was studied. This alga was selected because it lacks a capsule, is easy to cultivate, and for the principal reason that it is susceptible to virus infection, so that the latter can be studied on the basis of changes in the nucleic acid metabolism. Similarity of the structure of membranes of blue-green algae with those of Gram-negative bacteria made it possible to apply methods of degradation developed for the latter. Three methods of degradation were applied: 1) treatment with $HClCl_3$ followed by that lysozyme; 2) heat treatment at 60° in a buffer solution in the presence of EDTA followed by treatment with lysozyme; 3) freezing with liquid N_2 followed by rapid thawing at 37° and treatment with lysozyme. Method (3) of destroy-

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MOSKOVETS', S. M., et al., *Microbiologichnyi Zhurnal*, Vol 33, No 1, Jan/Feb 71, pp 53-56

ing the membranes resulted in a greater yield of DNA with a higher molecular weight than methods (1) and (2). Deproteinization of the DNA was carried out by the procedure described by J. Marmur (*J. Mol. Biol.* 3, 203, 1961). Application of method (3) and of this procedure made it possible to obtain DNA with the high yield of 1.5 mg/g dry weight of the alga. The DNA had a protein content $< 1\%$; RNA and polysaccharides were absent. The characteristic viscosity of the DNA was 115 dl/g, corresponding to a molecular weight of 13 million.

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UDC 576.858.8:582.264.45.7.094

HOSKOVETS, S. N., MENDZHUL, M. I., ZHIGIR, V. V., NESTEROVA, N. V., and KHIL', O. S., Institute of Microbiology and Virology, Academy of Sciences Ukrainian SSR, Kiev

"Morphology of the Lytic Agent of *Chlorella pyrenoidosa* Pringh"

Moscow, *Voprosy Virusologii*, No 1, Jan/Feb 71, pp 98-100

Abstract: The morphology of the virus producing breakdown of a laboratory culture of *Chlorella pyrenoidosa* strain 82 was studied. Purified lysate products of *C. pyrenoidosa* were found to contain phage-like particles which were uniform in shape and size. They consisted of an isometric capsid 480 Å and a short, tail-like appendage of 110 Å length and 94 Å width. The appendage had a transverse striation, and the shape appeared to be a clearly defined octahedral structure. On a solid medium, the algophage produced negative colonies typical for phage-type viruses. Within 5-7 days, these colonies had a diameter of 2-3 mm.

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UDC 617-001.4-085.462

USSR

NESTEROVA, N. V., PASKINA, L. P., and PEREPEL'KIN, V. P., All-
Union Scientific Research Institute of Medical Polymers, Moscow

"Polymer Coatings for the Treatment of Wounds and Burns (Survey
of the Literature)"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol. 4, No. 11, Nov. 70,
pp. 5-11

Abstract: The article describes the state-of-the-art in the de-
velopment of polymer coatings for the treatment of wounds and
burns in the USSR and abroad. A survey of the literature indi-
cates the following two basic trends:

1. Finished coatings, i. e. coatings performed as film or
foam. Film-type and especially foam-type synthetic finished poly-
mer coatings have significant advantages over ordinary dressings,
mainly because of the lack of adhesion to the wound surface. Fin-
ished polymer coatings also include biological films, such as the
fibrin films suggested by A. N. FILATOV. The use of all finished

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NESTEROVA, N. V., et al., *Khimiko-Farmatsevticheskiy Zhurnal*, Vol 4, No 11, Nov 70, pp 5-11

coatings necessitates secondary fixing dressings, which limits their potential applications.

2. Film-forming composites. Foreign companies working on the problem of creating liquid dressings include Aktibolaget Bofors (Sweden) and Johnson and Johnson (U.S.). Interesting work has been done in the last few years in Hungary, Czechoslovakia, West Germany and other countries. Of this group of preparations, collodion and cleol are widely known in the USSR. However, coatings obtained with the use of these preparations possess low skin adhesion and are insufficiently elastic. In 1959 the Pharmacopeic Committee of the Ministry of Health approved the preparation Furaplast based on chlorinated polyvinyl chloride resin with a plasticizer in a mixture of chloroform-acetone solvents. Composites based on chlorinated polyvinyl chloride resin dissolved in butyl acetate (solution No. 1) and polyvinyl butyral dissolved in ethyl alcohol (solution No. 2) have been suggested. Methylene

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NESTEROVA, N. V., et al., Khimiko-Farmatsevticheskiy Zhurnal, Vol 4, No 11, Nov 70, pp 5-11

chloride has been added to accelerate drying and novocaine and anesthesin have been used as anesthetics. However, coatings based on these preparations are also insufficiently elastic, crack and come off the skin in two days. The All-Union Scientific Research Institute of Medical Polymers has developed film-forming compositions -- SBV-14 (product of lacquer polymerization of butyl methacrylate) and BMK-5 (solution of butyl methacrylate-methacrylic acid copolymer in a mixture of chloroform with acetone and the addition of a plasticizer). Coatings based on SBV-14 and BMK-5 are strong, elastic, transparent, possess good skin adhesion, do not impede the healing of covered wounds and stay on the skin for over eight days. Clinical tests show that protective films based on these preparations can be successfully used for the pre-operative preparation of the skin, as well as for closing postoperative sutures, the skin around fistulas and minor skin injuries. However, the compositions cannot be applied to wound or burn surfaces because of the presence of organic solvents in them, which cause considerable pain on an open

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NESTEROVA, N. V., et al., Khimiko-Farmatsevticheskiy Zhurnal, Voi
4, No 11, NOV 70, pp 5-11

wound (burn), and such coatings possess negligible moisture permeability. These shortcomings make it impossible to use such lacquer compositions for the closing of wounds and burns. The foreign literature contains reports to the same effect.

The search for dressings possessing high film-forming properties and skin adhesion combined with painlessness of application has led to aqueous film-forming compositions. The All-Union Scientific Research Institute of Medical Polymers has done research on film-forming compositions based on water dispersions of polymers and aqueous solutions of polymers. Animal (rabbit) experiments have shown that latex BK is fast-setting on a dried wound surface and retains good adhesion during healing. However, when latex is applied to a burn surface under liberal exudation, it has been found that the low moisture permeability of the latex film prevents conditions for the runoff of the exudate. The liquid being released accumulates under the film,

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NESTEROVA, N. V., et al., Khimiko-Farmatsevticheskiy Zhurnal, Vol 4, No 11, Nov 70, pp 5-11

which rules out the possibility of using latex films as liquid surgical dressings. Little information exists on aqueous solutions of film-forming polymer compositions. The film formation in such polymers is based on the self-elimination of water (evaporation) by analogy with film formation based on lacquer solutions of polymers. This stretches out the process of the formation of a protective film. The All-Union Scientific Research Institute of Medical Polymers has developed a composition based on alginic acid salts. Animal experiments have shown that alginate compositions do not cause pain and form on a wound surface a coating which coalesces in 24 hours with live tissue and remains until complete epithelization and gives good protection to the wound and young epidermis. The general healing pattern under an alginate film indicates that alginate films have the same effect as biological plates, while possessing distinct advantages over the latter.

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USSR

UDC 541.183

SVETLOV, A. K., DEMENKOVA, T. N., TSVETKOV, YU. S., NESTEROVA, O. M., and
KRYUCHKOV, V. V., Kuzbas Polytechnical Institute

"The Effect of the Structure of Ion Exchange Resin on the Process of Ion
Exchange Sorption"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 46, No 10, Oct 72, pp 2596-2598

Abstract: The effect of the structure of ion exchange resins on the process of dye sorption in aqueous and organic media has been investigated. It was shown that the maximum adsorption value is obtained in monoporous samples with total pore volume of $0.8 \text{ cm}^3/\text{g}$, and individual pore dimensions of $4.5\text{-}5.5 \mu\text{m}$, due to uniform accessibility of the granular structure. Maximum adsorption of rhodamine 6Zn by the cation exchange resin KU-2 occurs in acetone solution; sodium eosine is most effectively absorbed by the anion exchange resin AV-17 from aqueous solutions. It has been noted that the anion exchange resin AV-17 in the OH form shows a higher sorptive ability than in the chloride form.

1/1

UDC 539.216.2

USSR

KOVALEVSKAYA, T.I., NESTEROVA, S.N., RZHANOV, A.V., SVITASHEV, K.K.

"Study By The Method Of Infrared Spectroscopy Of Multiple Distorted Internal Reflection Of The Structure Of The Transition Layer In The System Germanium--Silicon-Dioxide Film"

Fiz. i tekhn. poluprovodnikov (Physics And Technology Of Semiconductors), 1971, 2, No 9, pp 1720-1724 (from RZh:Elektronika i yeye primeneniye, No 1, Jan 72, Abstract No 1B157)

Translation: The structure of an extremely thin transition layer in the system germanium--SiO₂ film is studied by the method of infrared spectroscopy of multiple distorted total internal reflection. A precise computation is made of the reflection factor in the region of the absorption band of the valence vibrations of the Si-O bonds. The computed and experimental spectra are compared. It is established that the structure of the transition layer is similar to the structure of germanium--silicate glass. Summary.

1/1

- 94 -

UNCLASSIFIED

PROCESSING DATE--23OCT70

1/2 024
TITLE--ELECTRICAL AND OPTICAL PROPERTIES OF ALLOYS OF THE (CUINTE SUB2)
SUB3(NEGATIVEX)-(IN SUB2 TE SUB3) SUB2X AND (CUGATE SUB2)

AUTHOR--(05)-KOSHKIN, V.M., NESTEROVA, T.N., GALCHINETSKIY, L.P.,
SKLOVSKAYA, I.L., KARAS, V.R.
COUNTRY OF INFO--USSR

SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(2), 210-16

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--OPTIC PROPERTY, TELLURIDE, INDIUM COMPOUND, ELECTRIC PROPERTY,
SEMICONDUCTOR ALLOY, SEMICONDUCTOR MATERIAL, GALLIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1938

STEP NO--UR/0185/70/015/002/0210/0216

CIRC ACCESSION NO--AP0118900

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118900

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELEC. COND. SIGMA, MOBILITIES MU, CONC. OF THE MAIN CARRIERS N, AND THE OPTICAL ENERGY GAP (E SUBQ) OF SEMICONDUCTING ALLOYS OF THE (CUINTE SUB2) SUB3(INEGATIVEX) -(IN SUB2 TE SUB3)SUB2X AND (CUGATE SUB2)SUB3(INEGATIVEX) -(GA SUB2 TE SUB3) SUB2X SYSTEMS WERE INVESTIGATED. VALUES FOR BAND BAND TRANSISTIONS ENERGY WERE DETD. THE METHOD CONSISTS OF BUILDING THE DIFFERENTIAL CURVES OK-D EPSILON (EPSILON) AND D(I-K)-D EPSILON (EPSILON), WHERE K IS THE ABSORPTION COEFF. AND, EPSILON IS THE PHOTON ENERGY. APPLICATION OF THIS METHOD PERMITS SPLITTING THE VALENCE BAND IN THE ALLOYS WITH THE CHALCOPYRITE LATTICE TO BE FOUND. ALL TRANSITIONS ARE CONSIDERED DIRECT AND ALLOWED. PERCULARITIES IN THE CURVES E SUBO (X) ARE CONNECTED WITH THE CHANGE IN THE CRYSTAL STRUCTURE FROM CHALCOPYRITE TO SPHALERITE. THE DEPENDENCE OF N, SIGMA, E SUBO IN THE ABOVE SYSTEMS SHOWS THEIR DEVIATION FROM THE PSEUDOBINARITY. THIS INCREASES N AND SIGMA IN THE ALLOYS WITH SMALL VALUES OF X COMPARED TO THAT N AND SIGMA IN THE ALLOYS WITH X EQUALS 0. THE RISE OF N CAUSES DEGENERATION OF THE FREE CARRIER GAS AND RESULTS IN THE BURSTAINÉ EFFECT. FACILITY: VNII MONOKRIST., KHARKOV, USSR.

UNCLASSIFIED

USSR

UDC 616.935-022.35

NESTEROVA, V. B., Central Scientific Research Institute of Epidemiology,
~~Ministry of Health~~ USSR

"Causes of Outbreaks of Water-Borne Dysentery"

Moscow, Gigiyena i Sanitariya, No 4, 1971, pp 13-16

Abstract: The main reasons for the prominence of the water factor in the epidemiology of dysentery and the frequency of water-borne outbreaks of the disease are the increasing bacterial pollution of open bodies of water, violation of sanitary regulations concerning the supply of water, and generally inadequate legislation in this field. Analysis of the epidemics that occurred in the RSFSR from 1958 to 1967 showed that pollution of the central supply system was the signal most important source, accounting for over 70% of the outbreaks. More than half of the outbreaks were due to poor maintenance of water supply lines and sewer systems. Of the outbreaks occurring in regions served by a decentralized water supply system, most were caused by the poor condition and misuse of wells and by drinking water from streams, lakes and so forth.

1/1

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USSR

UDC:521.719.2:621.378.9

VOLKONSKIY, V. B., NESTEROVA, Z. V., POPOV, Yu. V., CHERNYAYEV, A. I.,
YAKOVLEV, V. V.

"A Laser Rangefinder with Super-High-Frequency Modulation of Radiation
and Frequency Conversion in the Photoreceptor"

Optiko-Mekhanicheskaya Promyshlennost', No 10, Oct 73, pp 22-25

Abstract: In known light rangefinders with SHF modulation of optical radiation, phase detection of the signal received is performed in the light modulator. The operating range of a laser rangefinder can be significantly increased by attaching a reflecting film to the object, the distance to which is to be measured. This article presents the results of experimental studies of a laser rangefinder with SHF amplitude modulation of the radiation, the modulation frequency convertor in the photoreceptor and phase detection at low frequency. The laser uses a helium-neon laser operating at 755 MHz. The maximum range measurement error when a film reflector is used at a range of 25 m is 0.5 mm, with a signal/noise ratio of at least 10. Automatic recording of the results of measurements on a strip-chart recorder is possible.

1/1

Precision Mechanical and Optical

1

USSR

UDC: 528.519:621.376

Adrianova, I. I., Candidate of Technical Sciences, Asnis, L. N., Vereshchaka, A. I.,
Nesterova, Z. V., Candidate of Technical Sciences, and Popov, Yu. V., Candidate
of Technical Sciences

"Frequency Conversion with Dual Modulation of Light in Light Rangefinders"

Optiko-Mekhanicheskaya Promyshlennost', No 5, 1972, pp 8-11.

Abstract: Nonlinear distortions are studied with dual modulation by polarization, resulting from operating modes of light modulators. It is shown that with the maximum signal at the intermediate frequency, the nonlinear distortions amount to 27%. It is found to be possible to decrease nonlinear distortions by selecting the operating mode of the light modulator and converter. In contrast to the method of the phase detector, in the light modulator studied, the method of conversion of frequency in the modulator is free of errors related to changing position of the plane of polarization of radiation as it propagates from the modulator to the converter. Thus, when the converter is mismatched with the modulator by $\pm 15^\circ$, equivalent to rotating the plane of polarization of the radiation by the same angle, the phase error does not exceed the error of the measuring device ($\pm 1^\circ$). The results produced can be used to select the operating mode

1/2

USSR

Adrianova, I. I., Asnis, L. N., Vereshchaka, A. I., Nesterova, Z. V., and Popov, Yu. V., Optiko-Mekhanicheskaya Promyshlennost', No 5, 1972, pp 8-11.

of an optical radiation modulator and converter in a light rangefinder with frequency conversion and dual light modulation.

2/2

- 68 -

1/2 030

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--WIDE BAND UHF ULTRAHIGH FREQUENCY LIGHT MODULATION DURING THE
FOURFOLD TRANSMISSION OF LIGHT THROUGH AN ELECTROOPTICAL CRYSTAL -U-
AUTHOR--(02)--ADRIANOVA, I.I., NESTEROVA, Z.V.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(3), 566-71

DATE PUBLISHED--70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTROOPTIC EFFECT, LIGHT MODULATION, ULTRAHIGH FREQUENCY,
OPTIC CRYSTAL, RECTANGULAR WAVEGUIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1133

STEP NO--UR/0051/70/028/003/0566/0571

CIRC ACCESSION NO--AP0124788

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 030

CIRC ACCESSION NO--AP0124788

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

ABSTRACT. THEORETICAL AND EXPTL.

INVESTIGATION WAS MADE OF THE WIDE BAND UHF MODULATION OF LIGHT OBTAINED DURING THE 4 FOLD TRANSMISSION OF LIGHT THROUGH AN ELECYROOPTICAL CRYSTAL IN A RECTANGULAR WAVEGUIDE. THE MODULATION DIP RELATED TO THE MIDDLE PART OF THE STATISTICAL CHARACTERISTICS WAS 21PERCENT AT THE MODULATOR POWER SUPPLY SMALLER THAN 1 W, PERIODICITY 1 KHZ, AND THE MODULATION FREQUENCY 2.2 GHZ. THE WIDTH OF THE FREQUENCY BAND WAS LARGER THAN 450 MHZ.

UNCLASSIFIED

UDC: 621.376

USSR

ADRIANOVA, I. I., BEREZHNOY, A. A., ~~NESTEROVA, Z. V.~~, and RUSITSKAYA, V. S.

"Ultra High-Frequency Light Modulation by Electrooptical Effects in a Zinc Selenide Crystal"

Moscow, Kvantovaya elektronika, No 7, 1972, pp 81-82

Abstract: It is asserted that cubic crystals have a number of advantages for use as light modulators due to the absence of a natural anisotropy and the presence of a linear electrooptical effect. Because of the first of these advantages, the optical system can be simplified and the modulator aperture increased; because of the second, the crystals are especially promising as light modulators at a uhf rate. This brief communication describes experiments performed with a uhf light modulator using a ZnSe crystal, which has a cubic structure, set in a waveguide. The latter is of rectangular cross section measuring 42 by 2 mm, and the crystal dimensions are 14 X 4 X 2 mm. A diagram of the device is shown. The frequency used in the experiments was 2600 MHz, and the uhf voltage applied to the modulator was obtained from a standard GZ-10A oscillator operating in pulse mode at a repetition rate of 1 kHz, with a duty cycle of $\frac{1}{2}$ and a power level of less than 1 watt. The authors find that use of the

1/2

USSR

ADRIANOVA, I. I., et al, Kvantovaya elektronika, No 7, 1972,
pp 81-82

cubic crystal in this application is far more advantageous than
the use of other types. They conclude by thanking K. K. Duben-
skiy and V. A. Sokolov for preparing the ZnSe crystals.

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NESTEROVA, N. V.

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TECHNICAL TRANSLATION

103

1887 | PSYCHIT-23-2015-72
39 div 72

ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION
PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE, KIEV,
SEPTEMBER 1968

RUSSIAN TITLE: ПРОБЛЕМЫ ПЕРЕДАЧИ ИНФОРМАЦИИ ЛАЗЕРНЫМ ИЗЛУЧЕНИЕМ

AUTHOR: I. A. DERVIGIN, ET AL.

SOURCE: KIEV ORDER OF LENIN STATE UNIVERSITY
IMENI I.C. SCHEVCHENKO

Translated for STIC by ACS1

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- File Page -

USSR

Circuit Theory

UDC: 621.396.662

NESTEROVICH, B. P.

"Designing a Tuned Circuit With a Varicap"

V sb. Vopr. radiotekhniki (Radio Engineering Problems -- collection of works)
Tula, Tula Polytechnical Institute, 1970, pp 126-130 (from RZh-Radiotekhnika,
No. 3, March 71, Abstract No. 3D15)

Translation: The computation of the frequency coverage coefficient for a varactor circuit, the determination of operating biases, and the effect of signal amplitude on the average capacitance of the circuits are considered.

1/1

1/3 022 UNCLASSIFIED PROCESSING DATE--09OCT70
 TITLE--STRUCTURE AND MAGNETIC PROPERTIES OF A CONTROLLABLE FE-Fe SUBX 5B
 EUTECTIC -U-
 AUTHOR--(03)-GOREV, K.V., KUPCHENKO, G.V., NESTEROVICH, L.N.
 COUNTRY OF INFO--USSR
 SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. FIZ.-TEKH. NAVUK 1970, (1),
 79-81
 DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS
 TOPIC TAGS--EUTECTIC MIXTURE, IRON, ANTIMONY, HYSTERESIS LOOP,
 CRYSTALLIZATION, ANISOTROPY, MAGNETIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--1993/1967 STEP NO--UR/0201/70/000/001/0079/0081
 CIRC ACCESSION NO--AP0114379
 UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--09OCT70

2/3 022

CIRC ACCESSION NO--AP0114379

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

ABSTRACT. THE FE-FE SUBX SB EUTECTIC, WITH THE COMPN. 48PERCENT FE AND 52PERCENT SB, WAS PREPD. BY MELTING 99.984PERCENT PURE CARBONYL FE AND 99.999PERCENT PURE SB IN QUARTZ CRUCIBLES IN A PURIFIED AR ATM. THE BOULES OBTAINED WERE ZONE REFINED. THE SAMPLES FOR METALLOGRAPHIC AND MAGNETIC STUDIES, 20 TIMES 20 TIMES 4 MM, WERE SECTIONED FROM THE BOULE PARALLEL TO ITS UPPER SURFACE AND PARALLEL TO THE CRYSTN. DIRECTION. THE CONTROLLABLE EUTECTIC CONSISTS OF FE FIBERS WHICH ARE ARRANGED IN THE FE SUBX SB MATRIX PARALLEL TO ONE ANOTHER AND TO THE GROWTH DIRECTION. AT A CRYSTN. RATE OF 6-12 CM-HR, THE PARALLEL ARRANGEMENT OF THE FIBERS IS PRESERVED, BUT THEIR DIAM. DECREASES FROM 1.5 TO 1 MU. THE FE PARTICLES ARE, AS A RULE, NOT COMBINED WITH ONE ANOTHER, BUT SIT IN THE MATRIX INDIVIDUALLY AND SEP. AS A RESULT OF THE PARALLEL ORIENTATION OF THE FE PARTICLES, THE MAGNETIZATION CURVES ALSO DIFFER. INFLECTION OF THE CURVE ON MAGNETIZATION ALONG THE FIBERS IS GENERALLY OBSD. AT MAGNETIC INDUCTION OF 3750-3950 G. MAGNETIZATION ACROSS THE FIBERS IS DIFFICULT TO ACHIEVE. IN THE STRUCTURE OF THE CAST EUTECTIC, THERE ARE NO PREFERRED ORIENTATIONS OF THE FE PARTICLES. SATN. INDUCTION IS REACHED IN A FIELD OF GREATER THAN 7 KOE. THE HYSTERESIS LOOPS OF THE FE-FE SUBX SB EUTECTIC ARE VERY NARROW. FOR SAMPLES WITH PARTICLES 1.5 MU IN DIAM., THE RESIDUAL INDUCTION ALONG THE FIBERS IS 1150-1210 G, AND THE COERCIVE FORCE IS 19-21 OE. DIRECTED CRYSTN. OF THE FE-FE SUBX SB EUTECTIC LEADS TO CONSIDERABLE ANISOTROPY IN ITS MAGNETIC PROPERTIES DUE TO UNIDIRECTIONAL ARRANGEMENT OF THE FE PARTICLES IN THE FE SUBX SB MATRIX.

UNCLASSIFIED

3/3 022

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0114379

ABSTRACT/EXTRACT--FACILITY: FIZ.-TEKH. INST., MINSK, USSR.

89

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--20NOV70
 TITLE--EFFECT OF THE TOP DRESSING APPLICATION OF TRACE ELEMENTS ON THE
 YIELD OF FRUIT FROM FRUIT TREES -U-
 AUTHOR--(02)--NESTEROVICH, N.D., KRAVCHENKO, L.V.
 COUNTRY OF INFO--USSR N
 SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. BIYAL. NAVUK 1970, (1), 5-10
 DATE PUBLISHED-----70
 SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES
 TOPIC TAGS--AGRICULTURE CROP, TRACE ELEMENT, PLANT PHYSIOLOGY, BORON,
 ZINC, COPPER, MANGANESE
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--3001/0513 STEP NO--UR/0440/70/000/000/0005/0010
 CIRC ACCESSION NO--AP0126261
 UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--20NOV70

2/2 017

CIRC ACCESSION NO--AP0126261

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. APPLICATION OF B, ZN, CU, MN, OR
 THEIR MIXT. IN TOP DRESSINGS IN THE PERIOD OF BUDDING, BLOSSOMING, AND
 FRUCTIFICATION INCREASED FRUIT PRODUCTION OF WILD GROWING TREE SPECIES
 BY 117-484PERCENT. BEST EFFECTS WERE PRODUCED WITH BORIC ACID AND ZNSO
 SUB4, LESS EFFECTIVE WERE CUSO SUB4 AND A MIXT. OF ALL TRACE ELEMENTS.
 MNSO SUB4 HAD A FAVORABLE EFFECT ONLY IN SPECIES GROWING ON A SOIL WITH
 MEDIUM MN CONTENT. IN SPECIES GROWING ON A SOIL WITH A HIGH MN CONTENT
 IT PRODUCED AN ADVERSE EFFECT. FACILITY: INST. EKSP. BOT.,
 MINSK, USSR.

UNCLASSIFIED

USSR

UDC 532.526:533.601.313

KOVALENKO, V. M., NESTEROVICH, N. I., SHULEMOVICH, V. M.

"Experimental Study of the Turbulent Boundary Layer on a Much Elongated Solid of Revolution in a Supersonic Flow"

Izvestiya sibirskogo otdeleniya Akademii Nauk SSSR, Seriya tekhnicheskikh nauk, No 8 (203), vyp. 2, Jun 1972, pp 41-46

Abstract: An experimental Study was performed to check the calculation techniques used to determine the characteristics of the boundary layer on an elongated solid of revolution in a supersonic flow. A model of the M-100 meteorological rocket without fins was used. It is a long hollow cylinder with ogive nose and shaft. The diameter of the cylindrical part was 25 mm with a total geometric elongation of $\lambda = 40$. Along the upper and lower generatrices of the cylindrical section there were 7 holes 0.6 mm in diameter to measure the static pressure P_w and 7 chromel-copel thermocouples to measure the surface temperature of the model T_w . The tests in a wind tunnel revealed that the wall law obtained for a turbulent boundary layer on a plate remains valid for the boundary layer on a cylinder at supersonic gas flow velocities to $M = 6$. With great elongation of the cylinder when the thickness of the boundary layer becomes commensurate $1/2$

USSR

KOVALENKO, V. M., et al., *Izvestiya sibirskogo otdeleniya Akademii Nauk SSSR, Seriya tekhnicheskikh nauk*, No 8 (203), vyp. 2, Jun 1972, pp 41-46

with the radius, the basic characteristics of the boundary layer differ noticeably from the corresponding characteristics on a plate. In particular, when $\lambda = 30-40$ the coefficients of friction, displacement area and momentum loss increased by 10-15%. The shape parameter H does not differ from the calculated value for a plate. The experimental data on the effect of the transverse curvature on the integral characteristics of the turbulent boundary layer and on the friction drag agree with those calculated by the semiempirical methods used previously [A. S. Ginevskiy, et al., *Izv. AN SSSR, otd. mekhaniki i mashinostroyeniya*, No 1, 1963; V. M. Kovalenko, *Tr. TsAGI*, No 1064, 1967].

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UDC 669.046.5

USSR

KRUPMAN, L. I., SOCHNEV, A. Ye., DETOCHKA, V. I., TELESCV, S. A.,
OFENGENDEN, A. M., and NESTEROVICH, R. P.

"Steel Refining in Ladle by Self-Fluxing (Exothermic) Slag Mixtures"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISIS), (Collection of Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys).
Izd-vo "Metallurgiya," No 61, 1970, pp 244-246

Translation of abstract: Results are presented of an investigation of the burning rate of self-fluxing mixtures as a function of their thermal state and humidity of the lime used. A procedure is described for preliminary melting of such mixtures with liquid refining of slag in a ladle before casting. Data are presented on experimental heats with refining by self-fluxing mixtures for preliminary melting in a 140-ton ladle. Advantages in using such mixtures are as follows: the degree of desulfurization obtained with the addition of a 3% mixture is on the average 52%; the steel contamination with nonmetallic impurities is reduced; and its plastic properties are improved. 2 tables.

1/1

- 40 -

AA0046429 -

NESTEROVICH, U.S.A.

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 1-70

241248 GUARD TO PREVENT SEA WATER FROM ENTERING A
SHIP'S ENGINE WITH UNDERWATER EXHAUST,

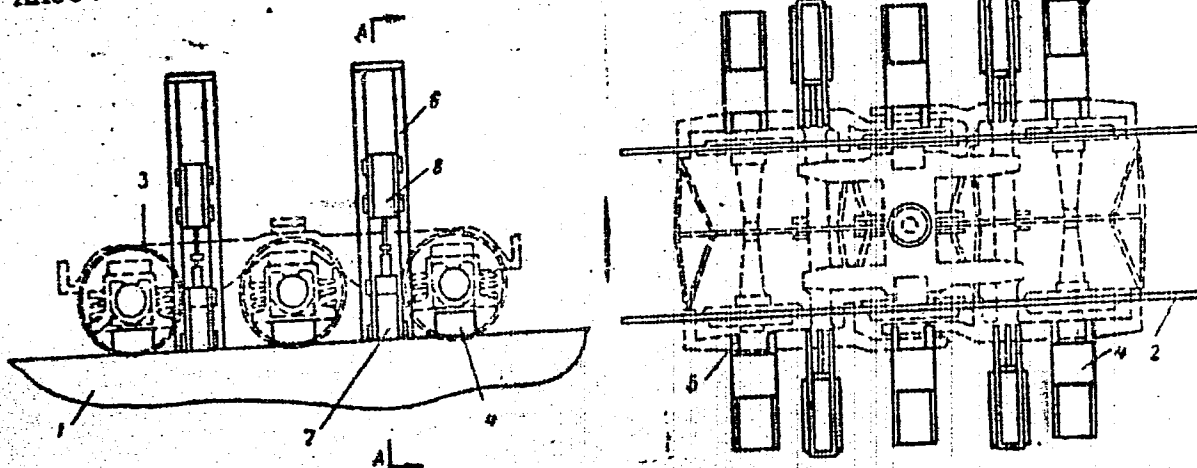
comprising screen on the exhaust pipe, differing in the screen turning on a body passing round a separate sector of the pipe, and a diaphragm dividing the body into two cavities with a drainage system. This enables the screen to be opened by gas dynamic pressure when the engine is running. When the diesel is started, the exhaust gases go into the screen chamber. Plate 12 opens to the position shown by the broken line and the gases are ejected via the neck, chamber B and side neck 4. When the diesel stops, the plate reverts to the initial position under its own weight. The plate is kept pressed to sealing ring 9 by a spherical pin connecting it to lever 11, forming a ball joint. With the diesel not running, absence of water can be checked by opening cock 5.

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26.6.67 as 1167168/25-28.V.P.NESTEROVICH (1.9.69)
Bul 14/18.4.69. Class 87a. Int.Cl.B 23p.

2/2

19781644

71p

1/2 040 UNCLASSIFIED PROCESSING DATE--090070
TITLE--ESTIMATION OF THE REPEATABILITY OF STRENGTH OF STRUCTURAL
FIBERGLASS PLASTICS IN CONICAL SHELLS -U-
AUTHOR-(03)-IVONIN, YU.N., DUSHIN, M.I., NESTEROVSKIY, N.V. *N*
COUNTRY OF INFO--USSR
SOURCE--MEKHANIKA POLIMEROV, VOL. 6, JAN.-FEB. 1970, P. 102-108
DATE PUBLISHED-----70

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

TOPIC TAGS--FIBERGLASS, PLASTIC MECHANICAL PROPERTY, COMPOSITE MATERIAL,
PLASTIC FABRICATION, CONIC SHELL, MECHANICAL STRENGTH, CONSTRUCTION
MATERIAL, STATISTIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1891

STEP NO--UR/0374/70/006/000/0102/0108

CIRC ACCESSION NO--AP0112871

UNCLASSIFIED

2/2 040

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112871
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPARISON OF THE MECHANICAL
PROPERTIES OF FIBERGLASS REINFORCED COMPOSITES HAVING A SHAPE OF CONICAL
SHELLS, AND FABRICATED UNDER LABORATORY AND INDUSTRIAL CONDITIONS. THE
TECHNIQUE OF THE IMPREGNATION OF A DRY PACKAGE UNDER PRESSURE IN A
CLOSED MOLD IS USED. ON THE BASIS OF A STATISTICAL ANALYSIS OF THE
EXPERIMENTAL DATA A SUBSTANTIAL DIFFERENCE IS DEMONSTRATED BETWEEN THE
STRENGTHS OF SHELLS MADE UNDER LABORATORY AND INDUSTRIAL CONDITIONS.

UNCLASSIFIED

USSR

UDG 666.764.1.001.4

KUKOLEV, G. V., NEMETS, I. I., DOBROVOL'SKIY, G. B., and NESTERTSOV, A. I., Kharkov Polytechnical Institute imeni V. I. Lenin

"Production and Properties of Dense Magnesia Refractories With Increased Thermal Stability"

Moscow, Ogneupory, No 3, Mar 71, pp 43-48

Abstract: It was found that magnesia refractories can be produced with improved thermomechanical properties using a spinel binder for synthesis instead of technical alumina. Experimental studies revealed the substantial effect of crystallization and spatial distribution of the spinel in the structure of the material on the thermomechanical properties of magnesia parts. From a chemical analysis it was found that at 1070°C in MgO-Al₂O₃ mixtures the spinel content was less than 1%, while in a mixture of MgO and Al the spinel content was almost 1% at 750°C and increased with temperature, so that at 1070°C the spinel content was 8.5%. This confirmed the fact that in MgO-Al the spinel starts forming at 770°C but in MgO-Al₂O₃ mixtures the spinel does not form until a temperature of 1000°C is reached.

1/1

USSR

UDC: 519.2

NESTERUK, V. F., PORFIR'YEVA, N. N.

"The Problem of Recognizing Two Objects in the Presence of Interference in the Channel as Solved by the Theory of Games in Positional Form"

Probl. peredachi inform., 1973, 9, No 1, pp 98-103 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V205 by the authors)

Translation: A previous paper (RZhMat, 1969, 10V326) dealt with the problem of recognizing two signal sources described by an antagonistic game. This paper deals with the problem of recognizing two signal sources in the case of a potential zero situation when neither of them falls into the sphere of observations. The problem reduces to a game in positional form; optimum strategies of the system of observation are found as well as the index of recognition, and the part played by the zero situation is evaluated.

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USSR

NESTERUK, V. F.

"Minimax Detection of Signals with Normal Noise"

Probl. Peredachi Inform. [Problems of Information Transmission], 1972, Vol 8, No 4, pp 101-104 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V271, by the author).

Translation: The problem of detection of a signal against a background of normal noise is studied, leading to solution of a simple minimax problem with the loss function selected.

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- 34 -

USSR

UDC: 621.392.2

NESTERUK, V. F.

"Effect of Signal Shape on Noise Suppression in Signal Reception Against a Background of Correlated Noises When the Peak Values are Clipped"

Moscow, Radiotekhnika i Elektronika, vol 16, No 11, Nov 71, pp 2098-2101

Abstract: The author solves the problem of finding the signal shape which maximizes noise suppression when signals are received against a background of correlated noises. A discrete sequence of signals with clipped peaks is considered. The problem is formulated as follows. Let there be a finite sequence of random quantities s_k on the time interval T at times

$$s_k = m_k + n_k; \quad k = 1, 2, \dots, H, \quad (1)$$

where m_k are samples of the useful signal; n_k are noise samples, and it is assumed that $\overline{n_k} = 0$. In the case of optimum processing of sequence s_k , the parameter of noise suppression in the sense of effective signal-to-noise ratio at the output of an optimum filter is defined by the expression

1/2

USSR

NESTERUK, V. F., Radiotekhnika i Elektronika, vol 16, No 11, Nov 71,
pp 2098-2101

$$\rho = \sum_{i,k} D_{ik} m_i m_k \quad (2)$$

where D_{ik} are elements of the matrix $D = R^{-1}$, R is the noise correlation matrix, which is assumed to be positive definite. It is further assumed that the class of permissible vectors satisfies the conditions

$$-a_i \leq m_i \leq a_i; \quad a_i > 0, \quad i = 1, 2, \dots, H, \quad (3)$$

i. e. the peaks of the useful signal are clipped. The problem is to find the vector for the set of useful signals which maximizes expression (2) with condition (3). The procedure used for solving this problem is applicable to more general cases as well. Examples are given. Bibliography of ten titles.

2/2

USSR

UDC 621.391

NESTERUK, V. F., PORFIR'YEVA, N. N.

"Application of the Theory of Statistical Resolvings to the Problems of Optimal Signal Reception by Two-Channel Systems"

Kiev, Izvestiya vysshikh uchebnykh zavedeniy--Radioelektronika, Vol XIV, No 8, 1971, pp 944-945

Abstract: The interaction of signals and noise, receiving and resolving systems in the single-channel version was described earlier [Van Mater, et al., Trans. IRE, PCIT-4, 119, 1954]. An analogous interaction scheme is presented here where the signal and observation spaces are subdivided into two parts, and their interaction provides for the presence of two channels. The system is made up of a receiving-resolving unit in the form of the decision function which depends on the observed signals in the two channels. Comparison of the systems and the method of studying them based on risk theory shows that the two channel system is completely described by the distribution functions not of one but two vector arguments in the corresponding spaces of the signals and observations. The expression for the average risk is obtained for the practical case of a finite number of signals with random parameters (channels with

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USSR

NESTERUK, V. F., et al., Izvestiya vysshikh uchebnykh zavedeniy---Radioelektronika, Vol XIV, No 8, 1971, pp 944-945.

variable parameters). The results are illustrated by an example of a binary transmission system for equiprobable transmissions encoded by pairs of signals with sign manipulation over a channel with fading with the additive effect of normal white noise. The reception algorithm is outlined, and the method of polarity comparison [Petrovich, Peredacha diskretnoy informatsii v kanalakh s fazovoy manipulyatsiyey, Soviet Radio Press, 1965] is found to be the optimal method of reception of a sign manipulation signal in the class of Bayes two-channel receiving systems with signals with random normal amplitude.

2/2

USSR

UDC: 519.87

NESTERUK, V. F. Active Member of the Scientific and Technical Society of Radio Engineering, Electronics and Communications

"Theory of Games in Radio Engineering"

Moscow, Radiotekhnika, Vol. 26, No 5, May 71, pp 30-42

Abstract: The paper describes the principles of using the methods of game theory in radio engineering problems of signal detection, filtering, information theory, pattern recognition, etc. In addition to the consideration of general problems, the article also contains a survey of works on the application of the theory of games to radio engineering.

1/1

USSR

UDC: 621.374.4(088.8)

DANIELYAN, S. A., MATSKOV, A. A., ~~NESTERUK, V. V.~~

"A Device for Obtaining the Difference Frequency of Two Pulse Trains"

USSR Author's Certificate No 262164, filed 29 Dec 67, published 1 Jun 70
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11G216 P)

Translation: This Author's Certificate introduces a device for obtaining the difference frequency of two pulse trains. The unit contains a flip-flop whose inputs are connected through coincidence circuits to the pulse shapers of the initial pulse trains. The output of one of these pulse shapers is connected to the input of one of the coincidence circuits through a phase inverter. To eliminate fragmentation of the output signal in the case of interference, a unit for modulating the relative position of the shaper output pulses, such as a pulse time modulator, is connected in series with the output of one of the pulse shapers. The controlling input of this modulator is connected to the flip-flop output.

1/1

Miscellaneous

USSR

UDC: 537.529:536.422:537.528

KOROTKOV, V. A., NESVETAYLOV, G. A., RAKHUBA, V. K., Minsk

"On Optimizing the Electrical Explosion of Wires"

Kishinev, Elektronnaya Obrabotka Materialov, No 3(45), 1972, pp 35-37

Abstract: The authors study and generalize experimental material on optimizing the electrical explosion of copper wires in water and air. Formulas are derived for determining the optimum wire diameter over a broad range of discharge circuit parameters. A nomogram is constructed for finding the optimum diameter of a copper wire exploded in water. The authors thank A. P. Klimkovich for assistance in doing the experiments.

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USSR

UDC 621.791:53.087.92

NETSVITAY, A. M., VASIL'CHENKO, A. V., Engineers

"Low-Ampere Arc Welding of Diaphragm-Type Sensors"

Moscow, Pribory i Sistemy Upravleniya, No 11, 1973, pp 56-57

Abstract: The use of low-ampere arc welding with a nonconsumable tungsten electrode and argon gas shielding has led to much more exact manufacture of the cases for diaphragm-type sensors, better indexes, control and regulation of the technological process. Several pressure gauges on which this type of welding is used are described.

The described welding technique excludes electrode manipulation. The torch is inclined at 5-20° opposite to the direction of welding. With great difference in the thicknesses (0.1 to 1.0 mm) the arc is struck on a minimum current of 3-5 amps after which the current is increased.

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56

USSR

UDC 537:226:537:311:33]:538

NESVIZHSKIY, Yu. B.

"Displaced Hysteresis Loop of Magnetically Soft Ferrites at High Frequencies"

Materialy nauchno-tekhn. konferentsii. Leningr. elektrotekhn. in-t svyazi. Vyp. 3, [Materials of Scientific-Technical Conference. Leningrad Electronic Engineering and Communications Institute, No 3 -- Collection of Works], Leningrad, 1970, pp 127-130, (Translated from Referativnyy Zhurnal Fizika, No 10, 1970, Abstract No 10 Ye 1212 by M. A. Smol'kov).

Translation: Processes of HF magnetic reversal of ferrites upon application of a permanent magnetizing field H_0 are studied. The analysis of the shifted hysteresis loop is based on experimental data on the functional nature of the dependence of amplitudes of the third-order combination component of inductance on the amplitude of the harmonic component in the biharmonic HF field, the constancy of the functional dependence of the increment of magnetic hysteresis losses on the amplitude of the HF component of the field with application of the field H_0 , and other facts established in the study of ferrites in pulsed fields. An analytic expression is obtained for the shifted hysteresis loop, including hysteresis parameters dependent on field intensity H_0 .

UDC 537:226:537:311:33]:538

USSR

NESVIAHSKIY, Yu. B., Materialy nauchno-tekhn. konferentsii. Leningr. elektro-tekhn. in-t svyazi. Vyp. 3, [Materials of Scientific-Technical Conference. Leningrad Electronic Engineering and Communications Institute, No. 3. -- Collection of Works], Leningrad, 1970, pp 127-130

The expression obtained leads to the conclusion of asymmetry of the displaced hysteresis loop, due to the appearance of even inductance harmonics and the constant component, dependent on the amplitude of variable field H.

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UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

243717 DETERMINING THE DEPENDANCE OF INDUCTANCE OF COILS WITH FERROMAGNETIC CORES FROM THE

AMPLITUDE OF THE CURRENT. Through the coil being tested the amplitude-modulated current is passed, and at various mean amplitudes and coefficients of modulation the limits of periodical changes of inductance are determined. Thus, the effect of temperature changes in the ferromagnetic core is eliminated. Inductance changes can be determined either by the resonance method of measuring inductance, or by the bridge method in which the bridge is fed from the source of amplitude-modulated oscillations.

5.1.67 as 1123899/18-10.YU.B.NESVIZHSKII.LENINGRAD ELECTROTECHNICAL INST. (LEIS) (26.9.69) Bul. 17/14.5.69. Class 21e. Int.Cl.G 01 r.

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AUTHOR: Nesvizhskiy, Yu. B.

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Bonch-Bruyevicha

7/11

19771666

UDC 632.95

USSR

PROTOPOPOVA, G. V., NESTERENKO, N. I., NESYNOV, Ye. P., BESPROZVANAYA, M. M.,
and PEK'KIS, P. S.

"Insecticide Activity of Some Arylhydrazones and Aryl Esters E of Iminothio-
acids for Rice Weevils and for Grain and Chard Aphids"

Fiziol. aktivn. veshchestva. Resp. mezhved. sb. (Physiological Effects of
Compounds, Republic Interscience Symposium), Vyp 4, 1972, pp 68-71 (from
Referativnyy Zhurnal -- Khimiya, No 4(II), 1973, Abstract No 4N613 by T. A.
Belyayeva)

Abstract: Insecticidal properties of the compounds $\text{PhN}=\text{C}(\text{CN})\text{SC}_6\text{H}_4\text{R}$ (compound
I), $\text{PhN}=\text{C}(\text{NHPh})\text{SC}_6\text{H}_4\text{R}$ (compound II), $(\text{EtOOC})_2\text{C}=\text{NNHC}_6\text{H}_4\text{R}$ (compound III), and
the 2-arylthiobenzazols were determined. The highest insecticidal activity
for the rice weevils was shown by I (R = p-Me), 67% mortality for a 1% con-
centration; I (R = p-Br), 94% mortality; II (R = m-Cl), 100% mortality;
2-parachlorophenylthiobenzothiazole, 95% mortality for a 0.1% concentration;
and III (R = o-OMe), 100% mortality. It should be noted that for the
stereoisomers, the insecticidal properties are stronger for the β -form
than the α -form.

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1/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--REACTION OF ARYLDIAZONIUM SALTS WITH ACETOTHIOACETIC ACID

ARYLAMIDES -U-

AUTHOR--(03)-NESYNOV, YE.P., BESPROZVANNAYA, M.M., PELKIS, P.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 805-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AMIDE, ORGANIC SALT, ACETIC ACID, THIOL, CONDENSATION
REACTION, ORGANIC AZOLE COMPOUND, HYDROLYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/2156

STEP NO--UR/0366/70/006/004/0805/0809

CIRC ACCESSION NO--AP0125739

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125739

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONDENSATION OF MECOCH SUB2
 C(S)NHPH WITH XC SUB6 H SUB4 N SUB2 CL IN AQ. ACETONE SOLN. CONTG. ACONA
 GAVE MECOC(:NNHC SUB6 H SUB4 X)C(S)NHPH (I). THE REACTION OF I WITH X
 PRIME1 C SUB6 H SUB4 N SUB2 CL IN ALK. SOLN. GAVE MECOC(:NNHC SUB6 H
 SUB4 X)C(:NPH)SC SUB6 H SUB4 X PRIME1 (II). THE HYDROLYSIS OF I GAVE X
 PRIME1 C SUB6 H SUB4 SH. THE REACTIONS OF II WITH H SUB2 NNH SUB2.H
 SUB2 U GIVE MECOC(CONHPH):NNHC SUB6 H SUB4 X.
 3,METHYL,4,ARYLHYDRAZONO,5,ANILINOPYRAZOLE, AND MEC(:NNH SUB2) C(:NNHC
 SUB6 H SUB4 X)C(:NPH)NHNH SUB2 (III). THE REACTION OF BZCL WITH III
 GAVE MEC(:NNHBZ)C(:NNHC SUB6 H SUB4 X) C(:NPH)NHNHBZ. FACILITY:
 INST. ORG. KHIM., KIEV, USSR.

UNCLASSIFIED

1/2 007 UNCLASSIFIED PROCESSING DATE--02 OCT 70
 TITLE--REACTION OF ARYLDIAZONIUM SALTS WITH UNSUBSTITUTED AMIDES AND
 THIOAMIDES OF CARBOXYLIC ACIDS -U-
 AUTHOR-(03)-NESYNOV, YE.P., BESPROZVANNAYA, M.M., PELKIS, P.S.
 N
 COUNTRY OF INFO--USSR
 SOURCE--ZH. GRG. KHIM. 1970, 6(3) 540-4
 DATE PUBLISHED-----70
 SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--DIAZONIUM SALT, CARBOXYLIC ACID, AMIDE, ORGANIC SULFUR
 COMPOUND, MOLECULAR STRUCTURE
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--1991/2572 STEP NO--UR/0366/70/006/003/0540/0544
 CIRC. ACCESSION NO--AP0112566
 UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0112566

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF SC SUB6 H SUB4 N SUB2 CL (X EQUALS H, O-CL, P-CL, M-ME, M-NO SUB2, P-ETO, P-CD SUB2 ET, OR P-BR) WITH PHNHC(:S)NH SUB2 (I) IN NaOH SOLN. GAVE 9-50PERCENT PHN:C(NH SUB2)SC SUB6 H SUB4 X (II) AND ALSO THE CORRESPONDING PHN:C(SC SUB6 H SUB4 X)NH:NC SUB6 H SUB4 X (III). THE REACTION OF II WITH XC SUB6 H SUB4 N SUB2 CL ALSO GAVE III. THE REACTION MUST INVOLVE PHNHC(SNA):NH AS THE INTERMEDIATE SINCE IN ACIDIC SOLN. I ARE NOT FORMED. SIMILARLY, IN AQ. NaOH SOLN. RCONH SUB2 EXIST AS RC(ONa):NH WHICH REACT WITH XC SUB6 H SUB4 N SUB2 CL GIVING RC(OC SUB6 H SUB4 X):NN:NC SUB6 H SUB4 X (R AND X GIVEN); ME, P-CL; PH, H; PH, O-CL. ALSO PHNHC(:S)NHCH SUB2 CH:CH SUB2 PLUS NaOH IN EQUILIBRIUM PHNHN:C(SNA)NHCH SUB2 CH:CH SUB2 (IV). THE REACTION OF IV WITH PHN SUB2 OAC GAVE A MIXT. OF PHNHN:C(SPH)-NHCH SUB2 CH:CH SUB2 AND PHN(N:NPH)N:C(SPH)NHCH SUB2 CH:CH SUB2, (V) (THE STRUCTURE PHNHN:C(SPH)N(N:NPH)CH SUB2 CH:CH SUB2 IS NOT EXCLUDED FOR V).

UNCLASSIFIED

USSR

UDC 615.917

NESYNOVA, L. I.

"Free Nucleotides of Rat Liver After Joint Injection of Derivatives of Dithiocarbamic Acid and Adenosine Triphosphate"

V sb. Gigiyena primeneniya, toksikol. pestitsidov i klinika otravl. (Hygiene of the Application and Toxicology of Pesticides and the Clinical Aspects of Poisoning — collection of works), vyp. 9, Kiev, 1971, pp 188-194 (from RZh-Farmakologiya. Khimioterapevticheskiye sredstva. Toksikologiya, No 2, Feb 72, Abstract No 2.54.799)

Translation: Rats were injected three times intraperitoneally with maneb (I), cineb (II) and ciram (III) in the amount of 0.1 DL₅₀, and 1, 3, 4, 7, 14 and 21 days and 1-2 months later the P content in individual fractions of the free liver nucleotides was investigated. The damaging effect of the dithiocarbamates on the energy balance of the liver remained for 1 week after injection of II and appreciably longer (more than 2 months) after injection of I and III. Intramuscular injection of the poisoned rats with an equimolar amount of adenosine triphosphate (5.5 mg per 0.1 ml) did not promote recovery of the damaged biochemical processes in the organism. This is connected with the multifaceted nature of the damaging effect of dithiocarbamates on metabolism.

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USSR

UDC 539.5

GINDIN, I. A., NEKLYUDOV, I. M., NETESOV, V. M., STAROLAT, M. P., Khar'kov

"Structure and Properties of Type 1Kh18N9T Austenitic Steel Following Programmed Loading"

Problemy Prochnosti, No 11, 1971, pp 28-31.

ABSTRACT: A study is presented of the influence of annealing and programmed loading of 1Kh18N9T steel on the structure and mechanical properties. It is demonstrated that programmed loading of hardened austenitic steel at 400 and 600°C causes an increase in the strength characteristics over a broad temperature interval in subsequent tests. The basic mechanism of hardening at 400°C is formation of a dislocation structure with high density of triple points, dislocation loops and helicoidal dislocations. Programmed hardening at this temperature also causes a reduction in packing defect energy. Hardening at 600°C is achieved by development of evenly distributed, finely dispersed carbide inclusions.

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USSR

UDC: 681.332.65

MARKOV, A. I., NETKACH, A. Ya., SHULAYEV, V. F., Kazan' University

"A Pulse Shaper"

USSR Author's Certificate No 296043, filed 8 Dec 69, published 6 Apr 71
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, Oct
71, Abstract No 10B219 P)

Translation: The invention applies to the field of information-measurement and computer technology. The advantages of the proposed device are most fully realized in instruments designed for operations under field conditions with power supply from portable truck-mounted generators. Similar devices are known for shaping control pulses for a dekatron which are based on vacuum-tube, semiconductor, and gas-discharge devices. The analogs described in many instances are not very economical, require high-voltage power supplies, or are exceptionally slow. The proposed device is capable of operation at a supply voltage of 10-12 V, providing high speed (up to 100 kHz when operated with an OG-8 dekatron) and adequate economy. One illustration.

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1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--FORMATION OF COMPLEX SYSTEMS OF TEMPORARY CONNECTIONS IN CHILDREN
SUPPLIED WITH MINIMUM INFORMATION -U-
AUTHOR-(02)-VORONIN, L.G., NETOPINA, S.A. N
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL VYSSHEY NERVNOY DEYATEL'NOSTI, 1970, VOL 20, NR 3, PP
563-568
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, BEHAVIORAL AND SOCIAL
SCIENCES
TOPIC TAGS--NEUROPHYSIOLOGY, CHILD PSYCHOLOGY, LEARNING THEORY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/1918

STEP NO--UR/0247/70/020/003/0563/0568

CIRC ACCESSION NO--AP0120570

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/2 019

CIRC. ACCESSION NO--A0120570
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DYNAMICS OF THE ESTABLISHMENT OF CONDITIONED CONNECTION SYSTEMS IN THE FORM OF FORMAL LOGICAL DEPENDENCES OF NEGATION, DISJUNCTION AND CONJUNCTION WAS STUDIED IN 50 SCHOOL CHILDREN OF THE 1ST TO 10TH FORMS (FIVE FROM EACH FORM), WITH AN INSTRUCTION CONTAINING MINIMUM INFORMATION. THE SUBJECT WAS INFORMED ABOUT THE ULTIMATE TASK ONLY, I.E. THE TASK TO SWITCH ON TWO LAMPS USING 25 BUTTONS. THE FORMATION OF THE ENTIRE SYSTEM OF TEMPORARY CONNECTIONS WAS RECORDED ONLY IN PUPILS OF THE INTERMEDIATE AND SENIOR SCHOOL AGE GROUPS (ONE FROM THE 5TH AND 6TH FORM EACH, TWO, FROM THE 7TH AND ONE FROM THE 8TH AND 9TH EACH, AND THREE FROM THE 10TH FORMS). VARIOUS DEGREES OF ESTABLISHING INDIVIDUAL CONNECTIONS AND DEPENDENCES WERE OBSERVED AMONG THE CHILDREN OF JUNIOR FORMS. THEY WERE ALSO NOTED FOR MORE DISORDERLY AND RANDOM ACTIONS, THAN SENIOR PUPILS BEGINNING WITH THE 5TH FORM. A SUBSTANTIAL DIFFERENCE ALSO CONSISTS IN THE DIFFERENT DEGREE OF COMBINATIONAL ACTIONS IN PUPILS OF DIFFERENT FORMS. THIS POINTS TO AGE PECULIARITIES OF THE ANALYTICAL SYNTHETIC ACTIVITY OF THE NERVOUS SYSTEM. FACILITY: CHAIR OF PHYSIOLOGY OF HIGHER NERVOUS ACTIVITY, LOMONOSOV UNIVERSITY, MOSCOW.

UNCLASSIFIED

USSR

N
UDC: 612.821.6.001.5

VORONIN, L.G., Corresponding Member, Academy of Sciences, and NETOPINA, S.A.

"Age Characteristics in the Formation of Systems of Conditional Connections With Different Degrees of Information"

Moscow, Doklady Akademii Nauk SSSR, Vol 191, No 2, Mar 70, pp 490-492

Abstract: A series of experimental problems were devised, whose solution depended upon comprehension of the information or instruction, and upon the formation of a system applicable to the situation. The subjects were pupils from grades 1-10. The problems consisted of insertion of lamp plugs into their proper outlets, with different plugs for different outlets. The time it took to solve the problem was the measure of systemic development. From grades 1-10 solution took: 28, 20, 19.5, 16, 16.2, 16.6, 15, 12, and 10. min. In other series the results were similar. The plateau in the case of grades 5-7 is the period of experimentation. Generally the young pupils tried to solve the problems without any system, and frequently they got into blind alleys, whereas the older pupils already have an idea of a system, and they usually remember their own correct and incorrect acts. With the development of the nervous system, there is also growth of inner information, which readily absorbs and organizes the information from outside. These are ontogenetic processes.

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UDC 612.833.81

USSR

VORONIN, L. G. and NETOPINA, S. A., Moscow State University

"Formation of Complex Systems of Temporary Connections in Children Supplied With a Minimum Amount of Information"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti, No 3, 1970, pp 563-568

Abstract: The experiment was performed on school children 7 to 17 years of age in grades 1 to 10 (5 per grade), seated at a panel with buttons numbered from 1 to 25 and a board with corresponding bulbs. The only information provided was that two bulbs had to be turned on using all the buttons. A bulb could be turned on by pressing a button, by a series of actions, or by turning another off. Three logical decisions were involved - "or," "and," "no." None of the first to fourth graders was able to solve the problem, but many could determine the individual connections between the signals and actions and the tactics varied considerably among the subjects from "conservative" to planned." The older the subject, the more varied was his planning and the fewer his random actions. Those who solved the problem included one from the 5th, 6th, 8th, and 9th grades each, two from the 7th grade, and three from the 10th grade (total of nine). Thus, age is a prime factor in solving a mental problem involving minimum information.

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UNCLASSIFIED

PROCESSING DATE--27NOV70

1/2 024

TITLE--MIXED ACUTE RESPIRATORY VIRAL INFECTIONS IN YOUNG CHILDREN -U-

AUTHOR--(03)-ALYABYEVA, M.N., KUCHEROVA, N.T., NETREBA, N.I.

COUNTRY OF INFO--USSR

SOURCE--PEDIATRIYA 49(1): 6-10, 1970

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PEDIATRICS, RESPIRATORY SYSTEM DISEASE, VIRUS DISEASE,
SEROLOGIC TEST, IMMUNOFLOURESCENCE, ADENOVIRUS, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/0428

STEP NO--UR/0546/70/049/001/0006/0010

CIRC ACCESSION NO--AP0134196

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134196

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CLINICAL PICTURE OF MIXED RESPIRATORY VIRAL INFECTIONS IN YOUNG CHILDREN TREATED IN A PEDIATRIC HOSPITAL WITH A DIAGNOSIS OF ACUTE CATARRH OF THE RESPIRATORY TRACT AND PNEUMONIA WAS STUDIED. VIROLOGICAL, SEROLOGICAL AND IMMUNOFLUORESCENT INVESTIGATIONS WERE DONE. A TOTAL OF 208 PATIENTS 3 WK TO 3 YR OF AGE WERE EXAMINED. MIXED VIRAL RESPIRATORY INFECTION WAS CONFIRMED IN 21 PATIENTS. IN 12 OUT OF 21 PATIENTS, ADENOVIRAL INFECTION AND INFLUENZA WERE DIAGNOSED, IN 9 CHILDREN THERE WAS A COMBINATION OF ADENOVIRAL INFECTION WITH PARAINFLUENZA. IN THE MAJORITY OF PATIENTS (15) MARKED CLINICAL SYMPTOMS OF VIRAL RESPIRATORY DISEASES WERE CONFIRMED BY LABORATORY METHODS. CLINICAL DIAGNOSIS OF MIXED VIRAL RESPIRATORY INFECTIONS IS STILL VERY DIFFICULT. FREQUENT DEVELOPMENT OF PNEUMONIS (IN 12 OUT OF 21) WAS NOTED IN MIXED RESPIRATORY VIRAL INFECTIONS. THERE WAS SEEN A TENDENCY TO RUN A PROTRACTED COURSE IN PATIENTS WITH MANIFESTATIONS OF ALLERGY AND OFTEN IN CHILDREN HAVING HAD THE DISEASE BEFORE. FACILITY: P. M. BUIKO RES. INST. PEDIAT. OBSTET. GYNECOL., KIEV, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--USE OF UREA FOAMED PLASTICS IN MINING -U-
AUTHOR--(03)-HEKTIYENKO, B.A., TELICHKO, K.A., NETREBA, V.I.
COUNTRY OF INFO--USSR
SOURCE--UGOL' UKR. 1970, 141(1), 48-9
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--MINING ENGINEERING, UREA RESIN, FOAM PLASTIC, SEALER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/0078 STEP NO--UR/0605/70/014/001/0048/0049
CIRC ACCESSION NO--AP0125913
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125913

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UREA HCHO RESINS AND AQ. SOLNS. OF AVO-I WERE USED TO SEAL UNSTABILIZED MINING CAVITIES, SHAFTS, ETC. AQ. RESIN SOLN. WAS FOAMED WITH COMPRESSED AIR AND USED TO FILL THE SPACE BETWEEN WOODEN OR METAL PARTITIONS. AFTER HARDENING THE SEALS HAD LOW PERMEABILITY TO AIR, GASES, AND MOISTURE, AND SUFFICIENT ELASTICITY TO ACCOMMODATE THE RELATIVE DISPLACEMENTS OF THE CAVITY SIDES.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--THE OPTICO MECHANICAL PROPERTIES OF MACROLON AND ITS APPLICATION
FOR THE SOLUTION OF PHOTOPLASTICITY PROBLEMS -U-
AUTHOR--NETREBKO, V.P.
COUNTRY OF INFO--USSR
SOURCE--MOSKOVSKII UNIVERSITET, VESTNIK, SERIIA I--MATEMATIKA, MEKHANIKA,
VOL. 25, JAN.--FEB. 1970, P. 61-69
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, MATERIALS
TOPIC TAGS--PHOTOELASTICITY, STRESS ANALYSIS, PLASTIC DEFORMATION, STRAIN,
PLASTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/1632

STEP NO--UR/0055/70/025/000/0061/0069

CIRC ACCESSION NO--AP0054478

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0054478

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RELATIONS BETWEEN STRESSES AND STRAINS AND ALSO BETWEEN OPTICAL EFFECTS AND MECHANICAL QUANTITIES IN MACROLON ARE INVESTIGATED FOR ELASTIC PLASTIC STRAINS. IT IS SHOWN THAT THE EQUATION RELATING UNIT STRESSES AND STRAINS UNDER SIMPLE LOADING CAN BE REPRESENTED IN THE FORM OF THE LAWS OF THE DEFORMATION THEORY OF PLASTICITY. TWO INDEPENDENT RELATIONS ARE ESTABLISHED WHICH RELATE THE DIFFERENCES OF THE PRINCIPAL STRESSES AND THE DIFFERENCES OF THE PRINCIPAL STRAINS TO OPTICAL EFFECTS. USING THESE RELATIONS IN COMBINATION WITH THE DEFORMATION LAW, IT IS POSSIBLE TO DETERMINE THE COMPONENTS OF THE STRESS AND STRAIN TENSORS AT AN ARBITRARY POINT OF A TWO DIMENSIONAL MODEL FOR ELASTIC PLASTIC STRAINS. FACILITY: MOSKOVSKII GOSUDARSTVENNYI UNIVERSITET, MOSCOW, USSR.

UNCLASSIFIED

172 017 UNCLASSIFIED PROCESSING DATE--300CT70/
TITLE--VULCANIZATION OF SATURATED FLUORINE CONTAINING RUBBERS -U-

AUTHOR--(05)--LUNDSTREM, A.M., GRINBLAT, M.P., FOMICHEVA, M.M., LOPYREV,
V.A., NETSETSKAYA, O.A.
COUNTRY OF INFO--USSR

SOURCE--USSR 263,132
REFERENCE--UTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--04FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--VULCANIZATION, SYNTHETIC RUBBER, FLUORINATED ORGANIC COMPOUND,
CHEMICAL RESISTANCE, AMINE, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PRUXY REEL/FRAME--3002/1461

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

CIRC ACCESSION NO--AA0128860

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AA0128860

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SATD. F CONTG RUBBERS ARE
VULCANIZED BY AMINES AND CONVENTIONALLY USED INGREDIENTS. TO IMPROVE
THE CHEM. RESISTANCE OF THE VULCANIZATES, COMPS. OF THE FORMULA I,
WHERE N IS 0-8, OR THEIR COMBINATIONS IN CONCNS. OF 1-10PERCENT BY WT.
OF THE POLYMER ARE USED AS AMINES.

UNCLASSIFIED

USSR

UDC 616.988.25-022.395.42-084(-21)

CHUDINOV, P. I., NETSKIY, G. I., CHERNUKHA, A. D., YEVSTIGNEYEVA, N. S., PASTUKHOVA, A. N., SHCHEGLOVA, Ye. Ye., and PRIGORODOV, V. I., Omsk Scientific Research Institute of Natural Focus Infections, Ministry of Health RSFSR, and Novosibirskaya Oblast Sanitary Epidemiological Station

"Prevention of Tickborne Encephalitis in a Large City"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 5, 1971, pp 588-591

Abstract: The rapid growth of industrial centers in Western Siberia near endemic regions of tickborne encephalitis has increased the incidence of this disease among some urban populations. For example, in Novosibirsk, a city of approximately half a million people located on the Ob River, four cases were reported in 1955, 108 in 1962, and 141 in 1966. The city is located close to a number of densely wooded, heavily tick-infested areas often visited by hikers, vacationers, etc. However, the number of cases was reduced to 74 in 1969 mainly as a result of systematically dusting the forests most frequented by Novosibirsk residents with DDT (30 to 50 kg of 10% dust per hectare) and by selective vaccination of groups most vulnerable to tickborne encephalitis (geologists, regular hikers, etc.). It was not deemed necessary to provide mass vaccinations.

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USSR

UDC 911.3:616.988.25

NETSKIY, G. I.

"Some Current Problems in the Ecology of Agents of Communicable Diseases Associated With Ixodes Ticks"

V sb. Vtoroye Acarologicheskoye soveshchaniye. Ch. 2. Tezisy dokl. (Second Acarological Conference. Part 2. Theses of Reports -- collection of works) Kiev, "Nauk. dumka," 1970, pp 44-46 (from RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.64)

Translation: The question is still open regarding the susceptibility of Ixodes ticks to agents of communicable diseases. It is important to clarify the relationship between open and closed native cycles (the first is associated with primary carriers, chiefly with Ixodes persulcatus, the second -- with blood-sucking arthropods of burrows and nests. An analysis of the relation between fluctuations in the population of small mammals and long range changes in tick infection with agents of communicable diseases is necessary. These points are illustrated by examples from the epizootiology of tickborne encephalitis and Omsk hemorrhagic fever.

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USSR

UDC 911.3:616.99:576.895.42(571)

NETSKIY, G. I., BUSYGIN, F. F., PRIGORODOV, V. I., FEDOROVA, T. N., and SHAYMAN, M. S.

"Landscape and Epidemiological Regional Classification of Territories in Relation to Obligate Transmissible Diseases Carried by Ticks, and Reasons for Planned Prophylaxis of Epidemic Outbreaks"

V sb. Materialy XV Vses. sezda epidemiologov, mikrobiologov i infektsionistov, Tezisy Dokl. Ch. 1 (Proceedings of the 15th All Union Meeting of Epidemiologists, Microbiologists, and Infectious Disease Specialists, Theses Reports, Part 1 -- collection of Works), Moscow, 1970, pp 98-99 (from RZh-Meditsinskaya Geografiya, No 2, Feb 71, Abstract No 2.36.54)

Translation: According to an accumulation of collected data, Western Siberia can be preliminarily divided into the following territorial epidemiological zones in relation to specified infectious diseases: central taiga, southern taiga, aspen-birch subtaiga forests, mountainous-taiga, forest-steppe, and steppe. The landscape epidemiological regions of tickborne encephalitis are distributed over all zones, except the steppe. The steppe and the forest-steppe are characterized in this classification as regions of Asian tickborne

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USSR

NETSKIY, G. I., et al., RZh-Meditsinskaya Geografiya, No 2, Feb 71, Abstract
No 2.36.54)

rickettsiosis. As far as Omsk hemorrhagic fever is concerned, the landscape
epidemiological regions are divided between the forest-steppe zones of the
Omsk, Novosibirsk, Tyumensk, and Kurgansk districts.

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UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

243010 COMPENSATING BACKLASH IN PNEUMATIC DEVICES.

The backlash is also known as dry friction and is due to the non-linearity of a component. In order to compensate a backlash in the chamber (3) a non-linear channel (1) changes the incoming signal (x) into its derivative (x₁) with respect to time. Two signals are mixed in the summation point (2) and applied to the chamber (3). It is possible to select a right value for the derivative which when mixed with the original signal and passed through the chamber with a backlash will result in the original signal (y = x).

18.3.68 as 1226385/18-24. A.V. NETUSHIL & V.S. PLUTES.
MOSCOW ENERGETICS INST. (23.9.69) Bul 16/5.5.69.
Class 21c. Int. Cl. G 05f.

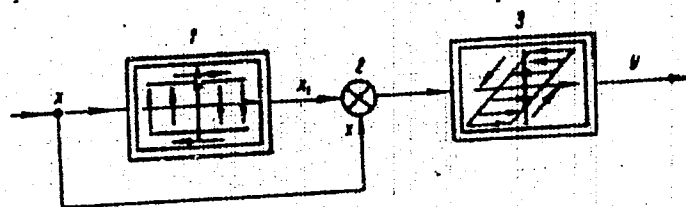
118

AUTHORS: Netushil, A. V.; Plutes, V. S.
Moskovskiy Energeticheskiy Institut

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AA0044635



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19771331

gc

Thin Films

USSR

UDC 539.4.019.3

POSTHIKOV, V. S., ZOLOTUKHIN, I. V., and NETUSOV, YU. K., Voronezh

"The Damping of Mechanical Oscillations and the ΔE -Effect in Thin Nickel Films"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 1, Jan-Feb 72, pp 161-163

Abstract: A study was made of the damping of mechanical oscillations and the change of the modulus of elasticity in nickel films 1000 Å thick. The very high damping was found to depend on large surfaces of the grain boundaries. No change in the damping level in the magnetic field was observed for the films. The ΔE -effect changes by 35%, which exceeds considerably the usually observed values in solid nickel specimens. In solid polycrystal nickel specimens the change in the ΔE -effect by magnetization up to saturation (600 oer) does not exceed 6%, but in thin-layer nickel condensates it changes by 35% even in a field of up to 200 oer. The reason for this abrupt change of the ΔE -effect is not clear. Two illustrations, four bibliographic references.

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1/2 019 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--FIRST STEPS INTO SCIENCE -U-
AUTHOR--(02)-NETYKSA, V., OLEYNICHENKO, L.
COUNTRY OF INFO--USSR N
SOURCE--KOMсомOL, SKAYA PRAVDA, MAY 5, 1970, P 2, COLS 1-5
DATE PUBLISHED-----70
SUBJECT AREAS--AERONAUTICS, BEHAVIORAL AND SOCIAL SCIENCES
TOPIC TAGS--AVIATION INSTITUTE, RESEARCH PROGRAM, SCIENTIFIC R AND D
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/0064 STEP NO--UR/9007/70/000/000/0002/0002
CIRC ACCESSION NO--ANO100624
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AN0100624

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE REVIEWS THE RESEARCH PROGRAM OF THE STUDENTS DESIGN BUREAUS AT MAI, MOSCOW AVIATION INSTITUTE. THE MAI SUPPORTS SEVEN STUDENTS DESIGN BUREAUS, SKB, S. TWO SCIENCE SOCIETIES, KLUBY AND SEVENTY SCIENCE CLUBS, KRUSHKI. THE SKB, S ARE DOING RESEARCH ON A SELF SUPPORTING CONTRACTUAL PRINCIPLE. HOWEVER, SOME RESEARCH IS PAID OUT OF THE STATE BUDGET. "THE INVESTIGATION OF PARAMETERS AND CHARACTERISTICS OF PASSENGER AIRCRAFT OF THE AIRBUS TYPE" AND "SEMICONDUCTOR SENSORS AND CONVERTERS" ARE SOME OF THE PROJECTS HANDLED BY THE STUDENTS. THE SKB-2 IS WORKING ON THE DESIGN OF A SINGLE SEATER HELICOPTER. THE RECENTLY ESTABLISHED SKB FOR AIRCRAFT MODELING IS DESIGNING SPORTS TYPE AND EXPERIMENTAL MODELS. SOME PROJECTS, SUCH AS SPORTS AIRPLANE "KVANT" AND SMALL SUBMARINES FOR THE MOVIE INDUSTRY AND FISHERIES WERE DEVELOPED BY JOINT EFFORTS OF SEVERAL SPECIALISTS. THIS SPRING, A FAMILY OF SMALL MODEL ENGINES DEVELOPED AND MADE BY THE SKB-2, THE ULTRASONIC UNDERWATER TELEPHONE STATION, "VOLNA-1", DEVELOPED BY THE SKB-4, AND THE MODEL OF AN AGRICULTURAL AIRPLANE, DESIGNED BY THE SKB-5, WERE EXHIBITED AT THE EXPOSITION OF ACHIEVEMENTS OF NATIONAL ECONOMY IN MOSCOW. LAST YEAR, THE MAI COUNCIL OF THE STUDENT SCIENTIFIC SOCIETY, SOVET SNO, WAS REORGANIZED AS THE COUNCIL FOR SCIENTIFIC RESEARCH WORK OF THE STUDENTS, SOVET PO NIRS. HENCE, STUDENT RESEARCH AND DEVELOPMENT WORK IS NO LONGER GUIDED BY A SOCIAL ORGANIZATION BUT BY A COUNCIL APPOINTED BY THE PRESIDENT OF THE INSTITUTE.

UNCLASSIFIED

USSR

UDC 532.5

NETYUKHAYLO, A. P., TELEZHKIN, E. D., SHERENKOV, I. A.

"Transfer of Momentum in a Two-Dimensional Headless Stratified Flow of an Incompressible Fluid"

Tr. Khar'kov. otd. vod. kh-va prompredpriyatiy VNII VODGYeO (Works of the Khar'kov Department of Water Economy of Industrial Enterprises of the All-Union Scientific Research Institute of Water Supply, Sewer Systems, Hydraulic Engineering Structures, and Engineering Hydrogeology), 1971, No. 9, pp 33-47 (from RZh-Mekhanika, No 3, Mar 72, Abstract No 3B565)

Translation: The results of various theoretical and experimental studies of flow regimes in open stratified flows are generalized under plane problem conditions. Dimensionless criteria R , F' , F and P_T are obtained from the Navier-Stokes, continuity, diffusion and heat conductivity equations, the observance of which ensures dynamic similarity of stratified flows if geometrical similarity and boundary conditions are fulfilled. If boundary conditions in the flow are fixed it is proposed that the following condition be used for determining the transition boundary from stable stratification of a given form to neutral stratification: $RF'^2 = C \leq C_{cr}$, where R and F' are the Reynolds number and Froude

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