

USSR

UDC 539.292:548.73



NEMOSHKALENKO, V. V., GORSKIY, V. V., and KORKISHKO, R. F.,  
Institute of Metal Physics, Academy of Sciences UkrSSR

"X-Ray-Spectral Study of the Electron Structure of Nickel and  
Aluminum Atoms in the System of Binary Nickel-Aluminum Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 3,  
Mar 71, pp 634-637

Abstract: Single-phase alloys of nickel with 25, 50, 60, and 75 at. % Al were studied. The emission K spectra of nickel and aluminum were studied and compared with the L spectra presented in the literature. The data produced indicated that the formation of aluminides in the nickel-aluminum system involves a significant redistribution of electrons between the atoms of aluminum and nickel. In contrast to aluminides of the first half of the period, nickel aluminides apparently include both covalent bonds and ionic bonds, the share of ionic bonds being quite high in comparison with the iron-aluminum and cobalt-aluminum systems studied earlier. The change in the form of the Al  $K\beta_x$  band in the nickel-aluminum system indicated that, in contrast to the

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NEMOSHKALENKO, V. V., et al., Fizika Metallov i Metallovedeniye,  
Vol 31, No 3, Mar 71, pp 634-637

to the other systems, localization of all p electrons does not occur, some of them supporting conductivity together with the s electrons and participating in the formation of ionic bonds between the atoms of the alloy components.

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UDC: 537.226+537.311.331.01

ALESHIN, V. G., NEMOSHKALENKO, V. V.

"Band Structure and X-Ray Emission Spectra of Crystals"

Zonnaya struktura i rentgenovskiyeh emissionnyeh spektrah kristallov. In-t metallofiz. AN USSR. Preprint. No 2 (cf. English above. Institute of Physics of Metals, Academy of Sciences of the UkrSSR. Preprint. No 2), Kiev, 1970, 65 pp, ill. 25 k. (from RZh-Fizika, No 9, Sep 70, Abstract No 9Ye675)

Translation: The authors examine the energy spectra of cubic crystals of BN, SiC, and BP. The orthogonalized-plane-wave method is used for finding the band energies and wave functions and for determining the density of states in the valence band of BN and SiC and the emission x-ray spectra of BN.

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1/2 030 UNCLASSIFIED PROCESSING DATE--23DCT70  
TITLE--X RAY SPECTRAL INVESTIGATION OF THE ELECTRON STRUCTURE OF A  
TITANIUM CHROMIUM ALLOY IN THE REGIONAL OF EXISTENCE OF THE TIGR2  
AUTHOR--(02)--~~NEMOSUKALENKO~~, V.V., NAGORNIY, V.YA.  
COUNTRY OF INFO--USSR  
SOURCE--UKRAINS'KII FIZICHNII ZHURNAL, VOL. 15, MAR. 1970, P. 512-514.  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, MATERIALS  
TOPIC TAGS--TITANIUM ALLOY, CHROMIUM ALLOY, INTERMETALLIC COMPOUND,  
ELECTRON STRUCTURE, CHROMIUM COMPOUND, X RAY ANALYSIS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1996/1922 STEP NO--UR/0185/70/015/000/0512/0514  
CIRC ACCESSION NO--AP0118884  
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--A90118884

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE X RAY K SPECTRA OF TITANIUM AND CHROMIUM FOR THE ALLOY TI PLUS 65 WT DEGREES CR, BOTH IN THE REGION OF THE TICR2 PHASE AND IN THE REGION OF EXISTENCE OF A CONTINUOUS SERIES OF SOLID SOLUTIONS (ABOVE 1350 C). ELECTRON EXCITATION WAS USED TO OBTAIN BETA 2.5 EMISSION LINES. ANALYSIS OF THE RESULTS IN INCREASED RELATIVE AND SPECTRAL INTENSITIES OF THE K BETA 2.5 LINE OF CHROMIUM WITH SIMULTANEDUS REDUCTION OF ITS WIDTH.

UNCLASSIFIED

USSR

UDC 533.951.7/.8

NEMOV, V. V.

"Investigation of the Hydrodynamic Drift Instability of an Impact Plasma"

V sb. Fiz. plazmy i probl. upravlyayemogo termoyadern. sinteza. Vyp. 1  
(Plasma Physics and Problems of Controlled Thermonuclear Synthesis. No 1  
--collection of works), Kiev, "Nauk. dumka", 1971, pp 233-237 (from RZh-  
-Mekhanika, No 10, Oct 71, Abstract No 10B93)

Translation: The region of values of the parameter  $\eta = \partial \ln T / \partial \ln n$  for which instability is realized is determined. Expressions are found for the critical  $k_z$  ( $k_z$  is the component of the wave vector lengthwise of the magnetic field) for which instability arises, as well as expressions for the values of  $k_z$  which correspond to the maximum increment of rise in oscillations and expressions for the maximum increments of rise themselves. Author's abstract.

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1/2 045 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--THE HYDRODYNAMICS OF COLLISIONAL PLASMA IN A STRONG INHOMOGENEOUS  
MAGNETIC FIELD -U-  
AUTHOR--NEMOV, V.V.  
COUNTRY OF INFO--USSR  
SOURCE--NUCLEAR FUSION, VOL. 10, MAR. 1970, P. 19-28  
DATE PUBLISHED----MAR70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--DRIFT MOBILITY, BOLTZAMNN TRANSPORT EQUATION, HYDRODYNAMICS,  
NONHOMOGENEOUS MAGNETIC FIELD, PLASMA INSTABILITY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1985/1854 STEP NO--AU/0000/70/010/000/0019/0028  
CIRC ACCESSION NO--AP0101899  
UNCLASSIFIED

2/2 045

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0101899

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE BASIS OF BOLTZMANN'S KINETIC EQUATIONS HYDRODYNAMIC EQUATIONS HAVE BEEN OBTAINED FOR THE IONS AND ELECTRONS OF A FULLY IONIZED COLLISIONAL PLASMA IN A STRONG INHOMOGENEOUS MAGNETIC FIELD UNDER ASSUMPTIONS CHARACTERISTIC OF WORKS ON DRIFT INSTABILITY. THESE EQUATIONS ARE A GENERALIZATION OF THE RESULTS OF MIKHAILOVSKY'S WORK ON AN INHOMOGENEOUS MAGNETIC FIELD AND MAKE IT POSSIBLE TO SOLVE PROBLEMS CONNECTED WITH THE HYDRODYNAMIC DRIFT INSTABILITY OF PLASMA IN THE PRESENCE OF SHEAR, CURVATURE OF THE LINES OF FORCE AND INHOMOGENEITY OF THE ABSOLUTE VALUE OF THE MAGNETIC FIELD.

FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR, FIZIKO TEKHNICHESKII INSTITUT, KHARKOV, UKRAINIAN SSR.

UNCLASSIFIED



AT0029464

NUCLEAR SCI. ABST.

UR0000

44384 (CONF-680113-(Vol.5), pp 107-11) MAGNETIC PUMP-  
ING OF INHOMOGENEOUS COLLIDING PLASMA. Stepanov, K. N. (Akademiya Nauk Ukrainskoi SSSR, Kharkov.  
Fiziko-Tekhnicheskii Institut). (In Russian).

The heating of a radially nonhomogeneous cylindrical plasma in a longitudinal magnetic field by a low-frequency electromagnetic field was examined; azimuthal electric currents were used to create the electromagnetic field. Simple analytical expressions based on two-component magnetohydrodynamics were derived to describe the energy absorbed by the plasma. It was found that heating of the plasma up to a given temperature by magnetic pumping, using weak high-frequency fields, requires a time much longer than the time of ion-ion collisions at that temperature. As the time of heating is too long, the "turbulent" type heating methods appear to be more attractive. (TTT)

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UDC 669.243.73;621.762.214;620.187

KIPNIS, A. YA., MURAVIN, K. A., and NEMOYTIN, M. A., Gipro-nicel<sup>a</sup>

"Investigation of Carbonyl Nickel Powders by the Electron Microscopic Method"

Poroshkovaya Metallurgiya, No 4(100), Apr 71, pp 8-12

Abstract: Carbonyl nickel powders obtained by different methods and differing in their macroscopic characteristics were used in this study. Five samples measuring less than 2 microns or between 2 and 3 microns were examined by electron microscopic methods. Examination of these particles showed a range in particles size from several angstroms to several hundred angstroms. The relation of the macroscopic properties of the powders to the cumulative size of the primary particles, and probably, also to the form of the aggregate could be established from the data. The relation of specific surface and bulk density to the primary particle size was shown.

The size of the primary particles and the nature of the aggregates are dependent on the methods of powder production. Higher velocities usually corresponded to smaller sizes and more porous aggregates of primary particles. On standing at room temperature, primary particles of carbonyl nickel powders spontaneously undergo transformation to micron-size particles. Macroscopic properties and particle size composition of carbonyl nickel powders can be

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KIPNIS, A. YA., et al., Poroshkovaya Metallurgiya, No 4(100), Apr 71, pp 8-12  
used to determine the size of the primary particles and the nature of the  
aggregates.

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UDC: 577.4

USSR

NEMSADZE, N. K.

"Concerning the Complexity of a Combination Module in an Interference-Resistant Automaton"

V sb. Avtomaty i upr. setyami svyazi (Automata and Control of Communications Networks--collection of works), Moscow, "Nauka", 1971, pp 202-206 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V365)

Translation: An upper estimate is derived for the complexity of realization of a combination module in an automaton which is stable in the case of critical controversies and resistant to failures of internal elements (memory elements) because of the interference-resistant coding of its internal states. Author's abstract.

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Public Health, Hygiene and Sanitation

USSR

NEWTSEV, N., Veterinary Physician and Toxicologist, Voldarskaya Veterinary Laboratory

"For the Sake of Rapid Action"

Moscow, Voyennyye Znaniya, No 1, Jan 72, p 24

Translation: The more quickly one succeeds in detecting and locating foci of radioactive, chemical or bacterial contamination, the better will be the veterinary sanitation and prophylactic measures. For this, it is suggested that veterinary reconnaissance teams be created at animal breeding farms.

Of course, the teams must be supplied with instruments for radioactive and chemical reconnaissance and people must be taught to use these instruments expertly to collect test samples for analysis. Teams could be made up of representatives from the village and upperclassmen from schools. They would be guided by a veterinary specialist. During the threat of an attack, a team would be able to conduct reconnaissance and make tests in the area.

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UDC: 681.84

NAKHODKIN, N. G., KUVSHINSKIY, N. G., SHEVLYAKOV, YU. A., KEMISEY, V. P.,  
NEUZHIY, S. A., BORODKINA, M. S., USPENSKIY, V. I., SHEBENSTOV, V. I., Kiev  
State University imeni T. G. Shevchenko and the All-Union Scientific Research  
Institute of the Chemical and Photographic Industry

"A Photothermopolymerization Data Recording Method"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 3,  
1970, p 48, patent No 259961, filed 25 Jan 67

Abstract: This Author's Certificate introduces a photothermopolymerization data recording method based on the cross-linking response of polymers when they are exposed to radiation such as light. As a distinguishing feature of this method, the resolving power of the recording is improved and permanent recordings are made by converting the latent image to a three-dimensional relief with subsequent fixation through the process of heating the carrier material to its softening temperature and then cooling it.

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1/2 020 UNCLASSIFIED PROCESSING DATE--11SEP70  
 TITLE--CHANGE OF THE GEOMETRIC PROFILE ON THE SURFACE OF A THERMOPLASTIC  
 CARRIER AS A FUNCTION OF THE WIDTH OF A SINGLE ELECTRON TRACE -U-  
 AUTHOR--NAKHODKIN, N.G., NEMTSEV, V.P., SHEVLYAKOV, YU.A.

COUNTRY OF INFO--USSR  
 SOURCE--RADIOTEKH. ELEKTRON. 1970, 15(1), 212-13  
 DATE PUBLISHED-----70

N

SUBJECT AREAS--MATERIALS, METHODS AND EQUIPMENT  
 TOPIC TAGS--THERMOPLASTIC MATERIAL, ELECTRON BEAM, SURFACE PROPERTY,  
 RECORDING EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS  
 DOCUMENT CLASS--UNCLASSIFIED  
 PROXY REEL/FRAE--1984/0671 STEP NO--UR/0109/70/015/001/0212/0213  
 CIRC ACCESSION NO--AP0055374  
 UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0055374

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

ABSTRACT. IN RECORDING INFORMATION ON THERMOPLASTICS BY MEANS OF AN ELECTRON BEAM, GROOVES ARE FORMED ON THE SURFACE. THE DEFORMATION PROFILE OF COLOPHONY SUPPORTS WAS STUDIED BY A MICRO INTERFEROMETRIC METHOD AS A FUNCTION OF THE SLIT WIDTH. THE WIDENING OF THE GROOVES WAS ATTRIBUTED TO VISCOUS FLOW OF THE SUPPORT, SWELLING OF SPACE CHARGE DUE TO COULOMB REPULSION FORCES, AND DIFFRACTION OF THE ELECTRON BEAM; THE LAST PROCESS WAS LESS IMPORTANT.

UNCLASSIFIED



USSR

NEMTSEVA, A. N.

"Selection of a Structure of Hierarchical Control Systems"

Aktual'n. Vopr. Tekhn. Kibernetiki [Pressing Problems of Engineering Cybernetics -- Collection of Works], Moscow, Nauka Press, 1972, pp 180-181  
(Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V591, by the author).

Translation: The possibility is studied of optimizing the structure of hierarchical control systems by separation of characteristic structural features and subsequent formal reflection of the influence of these features on system quality. It is suggested that such structural features as the number of hierarchical levels in the system, a number and type of elements in the system, the "richness" of connections, etc. be considered. Such generalized indicators as the cost of creation of the system, operating speed, accuracy, possibility of realization and flexibility of the control system are used to estimate system quality.

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USSR

UDC 575.24

NEMTSEVA, L. S., Institute of General Genetics, Academy of Sciences USSR

"Protracted Mutagenesis Induced by Ionizing Radiation and Its Dependence on the Water Content of the Biosystem"

Moscow, Genetika, No 8, 1971, pp 19-30

Abstract: Radiation with small and large linear energy transfer can initiate protracted mutagenesis in a dry biosystem (1 to 12% H<sub>2</sub>O). During the storage of irradiated dry *Crepis capillaris* seeds, the frequency of chromosomal aberrations increased substantially. The process was dependent on the amount of water present at the time of irradiation, the mutation rate being highest when the water content was 2 to 4%. Sparse ionizing radiation did not stimulate mutagenesis. When oven-dried *C. capillaris* seeds irradiated with fast neutrons (150 rads) were stored, the frequency of aberrations first increased and then decreased. In air-dried seeds, the frequency of aberrations 2 months after irradiation was equal to that observed immediately after exposure.

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USSR

UDC 575.111.23:582.998.4

DUBININ, N. P., NEMTSEVA, L. S., and YURGELAYTITE, K.-N. V., Institute of General Genetics, Academy of Sciences USSR, Moscow

"Frequency of Vested Ring Chromosomes in Relation to Irradiation Dose"

Moscow, Genetika, No 6, 1971, pp 5-10

Abstract: Water-soaked *Crepis capillaris* seeds were exposed to Cs<sup>137</sup> gamma rays at 1 and 2 kr. Irradiation produced structural mutations only of the chromosome type. Among the chromosomal aberrations were rings whose number, like the frequency of the chromosomal aberrations as a whole, was dose-dependent. Doubling the dose tripled the number. The ring chromosomes included some of the vested type. The number of the latter was also dose-dependent. At 1 kr, only one case of vesting was detected among 5,500 cells studied, whereas 20 were found among 3,000 cells after irradiation at 2 kr. Thus, doubling the dose increased the frequency of vesting about 30-fold. Vesting occurred at the time the ring chromosomes were formed. Whether the ring was free or vested on a rod-shaped chromosome depended on whether the middle fragment was enclosed without a rod-shaped fragment or included within the ring formed.

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Instruments and Equipment

USSR

UDC 612.843.36-088.7

NEMTSEYEV, G. I., Candidate of Medical Sciences, Kharkov Scientific Research Institute of Labor Hygiene and Occupational Diseases

"Adaptoelectro-oculography"

Moscow, Vestnik Oftal'mologii, No 4, Jul/Aug 70, pp 35-38

Abstract: A method is described for concurrent measurement of photosensitivity and corneoretinal potential in the dynamics of dark adaptation. Using a modified serial adaptometer, photosensitivity is measured and the corneoretinal potential is recorded every 5 minutes over a 45-minute period of adaptation to the dark. The method is twice as rapid as any of the other procedures available. The results are recorded on a single form, thus making it convenient to compare the curves which represent changed photosensitivity and corneoretinal potential.

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USSR

UDC 621.771.35.001.5

KYMOV, V. A., POLURGIN, P. I., ISAYEV, L. M., VAIKIN, Yu. Ya., and NEMTSOV,  
A. S.

"Determining the Basic Parameters of the Process of Continuous, Roll-Less  
Shaping of Skelp"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya,"  
1970, pp 152-158

Translation: Proceeding from the condition of continuity of the deformation  
area, the basic parameters of the process of roll-less shaping of skelp are  
found: the work of shaping; the length of the deflecting area; the traction  
force of the circular-pass stands; and their drive power. Two figures and  
three bibliographic entries.

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USSR

UDC 669.293:669.774.21

PAVLOV, I. M., RYMOV, V. A., SAUTIN, Yu. I., IZOTOV, V. M., KRICHEVSKIY, Ye. M.,  
YEL'CHANIKOV, V. N., and NEVTSOV, A. S.

"Some Problems in the Manufacture of Welded Pipes"

Moscow, Tsvetnyye Metally, No 3, Mar 70, pp 50-52

Abstract: The cost of seamless pipe from niobium and its alloys is high due to the low percentage of pipe fit for service (10--15%). The present study describes a more economical production technology for thin-walled pipe from a skelp. Niobium ingots alloyed with titanium and zirconium were used as the starting material. The mechanical properties of the plates and the electron-beam welding parameters are given in tabular form. The mechanical test data show that preliminary vacuum annealing of the parent metal slightly reduces the strength properties (by 12--15%) and considerably increases elongation per unit length (1.5 to twofold). The strength properties of the welds are somewhat lower than those of the parent material whereas elongation per unit length remains at the same level. Metallographic analysis revealed coarse-grained dendritic structure (for the weld area) with dark inclusions. The microhardness is the same in both the weld and parent metal and ranges from 270 to 330 kg/mm<sup>2</sup>. The microhardness of electron-beam welds is about the same as that of argon-arc welds. Prior to

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PAVLOV, I. M., Tsvetnyye Metally, No 3, Mar 70, pp 50-52

rolling the billets were annealed at 1200°C. For 11.6-and 12-mm pipes the total deformation was 40 to 60%; for 20 mm pipes -- 33%. The pipes passed flattening tests to the point of wall contiguity. The new technology of the process makes it possible to reduce by 2 to 2.5 times the cost of the finished product, with the physicomechanical properties remaining the same.

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USSR

UDC 615.214.22.015.44:576.314

NEMTSOV, A. V., and RIMSKAYA, V. A., Department of Psychopharmacology, Moscow Scientific Research Institute of Psychiatry, Ministry of Health RSFSR

"The Effects of Chlorpromazine, Triftazin, Promazine, and Imipramine on the Properties of Excitable Membranes"

Moscow, Farmakologiya i Toksikologiya, Vol 35, No 2, Mar/Apr 72, pp 145-148

Abstract: Records obtained by means of intracellular microelectrodes indicate that the transmembrane potential of single muscle fibers of the frog sartorius decreases with increasing concentration of potassium ions (from 2.5 to 10 mmol KCl) in the surrounding medium. After preliminary incubation of the muscle in  $10^{-4}$  M solutions of neuroleptics of the phenothiazine series -- chlorpromazine, triftazin, and promazine -- the initial rate of depolarization is decreased, implying a reduced ratio of potassium and chloride conductance of the membrane. The antidepressant imipramine, even though its chemical structure is similar to that of phenothiazines, does not change the rate of depolarization. It is suggested that the K/Cl conductance ratio is reduced because of decreased potassium conductance and that phenothiazine derivatives also inhibit potassium transport during the development of action potentials.

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1/2 021 UNCLASSIFIED PROCESSING DATE--27NDV70  
TITLE--METHOD OF GRAVITY DETERMINATION IN MOTION -U-

AUTHOR--(05)-LISITSIN, YU.M., LOZINSKAYA, A.M., MARAYEV, L.S., NEHTSOV,  
L.D., PEYSIKOV, YU.V.  
COUNTRY OF INFO--USSR

SOURCE--GEOFIZICHESKAYA APPARATURA, 1969, NR 39, P 161; AUTHOR CERTIFICATE  
NR 204618  
DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GRAVIMETER, GRAVITY, TOWED BODY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3007/1779

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

CIRC-ACCESSION NO--AA0137019

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0137019

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD OF GRAVITY DETERMINATION IN MOTION, BASED ON TOWING THE GRAVIMETER IN A GONDOLA AT A GIVEN DEPTH WHILE SIMULTANEOUSLY MEASURING DEPTH VALUES AND GRAVIMETER READINGS, IS REPORTED. TO EXCLUDE PERTURBING ACCELERATIONS AND TO INCREASE ACCURACY, THE VERTICAL ACCELERATIONS OF THE FOUNDATION ARE DETERMINED FROM DEPTH MEASUREMENTS AND THE OBTAINED VALUES COMPUTED FROM THE GRAVIMETER READINGS.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--SHEAR VISCOSITY OF A BINARY MIXTURE OF SIMPLE LIQUIDS -U-  
AUTHOR--(04)-BRUKLEVINSON, E.T., VIKHRENKO, V.S., NEMTSOV, V.B., ROTT, L.A.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 70-5  
DATE PUBLISHED--70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--FLUID VISCOSITY, BINARY FLUID SYSTEM, TENSOR ANALYSIS, SHEAR  
MODULUS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1988/0196 STEP NO--UR/0139/70/013/002/0070/0075  
CIRC ACCESSION NO--AT0105272  
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0105272

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR THE BINARY MIXT. OF THE SIMPLE LIQS. THE TENSOR OF THE VISCOSITY FACTORS IS GIVEN AND THE RELATION BETWEEN THE SHEAR VISCOSITY FACTOR AND THE LIMITING VALUE OF THE SHEAR MODULUS FOR THE SIMPLE LIQ. MIXT. IS DERIVED. FACILITY: BELORUSS. TEKHNOL. INST. IM. KIROVA, MINSK, USSR.

UNCLASSIFIED

NEMUDROV, V. G.

Microelectronics

MICROELECTRONICS

Excerpta from Russian-language book edited by F. V. Lukin; Mikroelektronika, No. 5, 1972, Sovetskoye Radio Publishing House, Moscow, UDC 621.382.521.396.6-181.5.

JPRS 57333  
25 October 1972

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Obituary of Fedor Viktorovich Lukin.....	2
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[I - USSR - F]

UDC 681.375.65

Analysis of the Operation of a Logic Element Type SETL on a Transmissions Line. Churkin, M.A. In the Collection Mikroelektronika, edited by I.V. Lukin, No 5, p 253, Sovetskoye Radio Publishing House, 1972.

The article analyzes the interaction between a high-speed logic element type SHTL (transistor logic on circuits with connected emitters) and length of the line, in view of the complexity of the system its investigation is done by a numerical method using a computer.

The article gives the results of numerical computation indicating the influence of the parameters of the circuit on the distortion of the transmitted signals. On the basis of this analysis the author gives recommendations for selecting the allowable length of the matched and unmatched connections in several specific cases.

The article contains 10 figures and 5 bibliographic references.

UDC 621.382.8-0.9.4

The Question of Interblock Bonds of Digital Equipment on Integrated Circuits of Transistor-Translator Type. Asyev, H.A. In the Collection Mikroelektronika, edited by I.V. Lukin, No 5, p 267, Sovetskoye Radio Publishing House, 1972.

The author cites data on the parameters of lattice-type impulse noises generated in the interblock communication lines of digital equipment on integrated circuits of transistor-translator logic (RTL). He examines a circuit with elevated noise stability, intended for reception from communication lines constructed on the basis of standard integrated circuits appearing in the RTL series.

The article contains 5 figures and 7 bibliographic references.

UDC 621.382.8

Selection of a Constant Current Source in Logic Circuits for Current Switches. Hennidray, V.G., Strukov, V.M. and Shishkovich, A.A. In the Collection Mikroelektronika, edited by I.V. Lukin, No 5, p 275, Sovetskoye Radio Publishing House, 1972.

To ensure the required noise stability in integrated circuits for current switches, especially in multilevel cir-

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current source. The article analyzes the dependence of instability of the logic differential of the integrated circuits for the current switches on change in the destabilizing factors (supply voltage, temperature, and technological scatter in the component parameters) by using different modifications of the constant current source.

Recommendations are given for the optimal selection of the constant current source.

The article contains 4 figures, 1 table, and 5 bibliographic references.

UDC 539.186.3.211.27

Distribution of Thermodynamic Deformations in the Surface Region of Thermally Oxidized Silicon. Valiyev, R.M., Bekov, B.I., Kokha, A.A., Nalor, A.G., and Sakov, A.V. In the Collection "Mikroelektronika", edited by F.V. Lukhin, No 5, p 282, Sovetskoye Radio Publishing House, 1972.

The article theoretically analyzes the distribution of elastic deformations in the surface region of thermally oxidized silicon. The authors examine the case of a dense oxide film on a semiconductor and the case of termination of its denseness. The value obtained agrees with the theoretical computation. The authors discuss the results of experiments testifying to the localization of the deformation of denseness of the oxide at the sites of termination of thermodynamic deformations on the chemical activity and volt-Faraday characteristics of the NDP structures.

The article contains 3 figures and 11 bibliographic references.

UDC 621.383.42:548.48.22/23

Investigation of the Longitudinal Operating Mode of Cds-CdSe Film Photoreceptors. Yodovnikov, A.A., Kroleverts, K.M., Kor-mashko, V.A., and Skafzhevskaya, I.P. In the Collection "Mikroelektronika", edited by F.V. Lukhin, No 5, p 296, Sovetskoye Radio Publishing House, 1972.

The article describes a manufacturing method and the parameters of the Cds-CdSe photoreceptors, operating in a longitudinal mode. The authors mention their high specific sensitivity (0.5-1 A/V.ln) and the weak dependence of the

AA0040772 -

N

UR 0482

Soviet Inventions Illustrated, Section II. Electrical, Derwent, 1/2

AUTHORS: Fokin, V. A.; Nemykina, V. M. and Anan'yev, K. Ya.

233078 SMOOTH VOLTAGE CONTROL under load can be achieved by three-phase transformer (1) and three-phase saturable reactor (2) with control windings which can receive a dc current. The neutral point of the primary transformer winding is disconnected and joined to like phases of the power windings of the reactor which are connected in series. The secondary transformer winding is taken to the centre tap of this power winding of the reactor and also to the load (3) which is connected in star.

7.7.67. as 1170023/24-7, FOKIN, V.A. et al.  
Zaporozhe Mechanical Engineering Inst. (18.4.69)  
Bul. 2/18.12.69. Class 21d<sup>2</sup> Int. Cl. H 01F.

Zaporozhskiy Mashinostroitel'nyy Institut

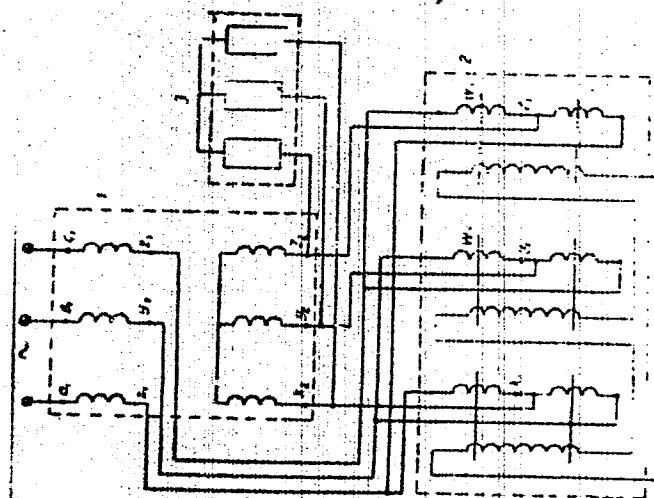
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AA0040772



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USSR

UDC 539.214;539.374

NEMYTKOV, V. A., BEKIN, N. G.

"On the Position of the Maximum Pressure Cross Section and the Deformation Region in the Working of Polymer Materials on Rolling Machines"

Sb. nauch. tr. Yaroslav. tekhnol. in-t (Collection of Scientific Works of Yaroslavl' Technological Institute), 1972, Vol. 31, pp 8-12 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V475)

Translation: The coordinate of the cross section for maximum pressure  $\psi_1$  is determined by a numerical solution of the equation giving the pressure distribution in the gap of rolling machines

$$p = \mu_1 \left( \frac{U}{h_0} \right)^n \left( \frac{1+2n}{n} \right)^n \sqrt{\frac{2R}{h_0}} \int_{-\xi_1}^{\xi_1} \frac{|\xi^2 - \xi_1|^{n-1} (\xi^2 - \xi_1^2)}{(\xi^2 + 1)^{1+2n}} d\xi$$

where  $R$  is the radius of the rolls,  $\psi$  is the dimensionless coordinate of the position of the cross section,  $U$  is the circular velocity of the rolls,  $n$  is the flow index,  $h_0$  is one half the magnitude of the gap, and  $\mu_1$  is the degree

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USSR

NEMYTKOV, V. A., BEKIN, N. G., Sb. nauch. tr. Yaroslav. tekhnol. in-t, 1972,  
Vol. 31, pp 8-12

of consistency of the non-Newtonian material. It is shown that the quantity  $\psi_1$  increases with an increase in the coordinate of the beginning of the capture arc. The degree of the non-Newtonian character of the flow of the material has a considerable effect on the position of the cross section of the maximum pressure. 11 ref. M. I. Rozovskiy.

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- 61 -

Acc. No: **AP0052451**

Abstracting Service:  
CHEMICAL ABST. 5-70

Ref. Code:  
**UR0096**

N

101205n Thermophysical properties of poly(methylsiloxane) liquids. Rastorguev, Yu. L.; Nemzei, V. G. (Groz. Neft. Inst., Grozny, USSR). *Teplotekhnika* 1976, 11(2), 80-3 (Russ). The d., kinematic viscosity ( $\mu$ ), heat capacity (C), and thermal cond. ( $\lambda$ ) were detd. of  $(SiMe_2O)_n$  (I) of 2-1000 d.p. The changes of d.,  $\mu$ , C, and  $\lambda$  with the temp. (t) in the 20-200° range are given by:  $d = d_{30}[1 - \beta(t-30)]$ ,  $\mu = A/(t+a)^2$ ,  $C = C_{30}[1 + \gamma(t-30)]$ , and  $\lambda = \lambda_{26}(1.449/1.736 \beta_0 T)$  where  $d_{30}$ ,  $C_{30}$ ,  $\lambda_{26}$  are d., C, or  $\lambda$  at 30°, or 26°, resp.; T is abs. t, and  $\beta$ ,  $\beta_0$ , A, a, and  $\gamma$  are consts. depending on the d.p. of I. A correction was also introduced into Vargaftik's equation (N. B. Vargaftik, 1949): the "invariant" A changes with the mol. wt. (M) according to the relation  $A = (0.665 \times 10^{-4} M^{0.4022}) - (0.0779 \times 10^{-4})$ . CPJR

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19821085

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Acc. Nr:

AP0049768

Abstracting Service:

CHEMICAL ABST. 5-70

Ref. Code:

UR 0191

N

101208r Thermal physical properties of poly(ethylsiloxanes). Nemzer V. G.; Rastorguev Yu. L. (USSR). *Plast. Massy* 1970, (1), 14-16 (Russ). The d. (at 20-200°), viscosity (at 20-260°), sp. heat (at 20-100°) and thermal cond. ( $\lambda$ ) of 5 poly(ethylsiloxanes) (I), PESZh-1, PESZh-2, PESZh-3, PESZh-4, and PESZh-5 were detd. The d. and viscosity of I were proportional to the mol. wt. Treatment of the viscosity data in terms of the theory of corresponding states led to the derivation of an equation by means of which the viscosity of I could be extrapolated from an exptl. point in a wide range of temps. The  $\lambda$  of I was inversely proportional to the d.p.

CKJR -

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REEL/FRAME  
19801686

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USSR

UDC 531.44:669.35

BELOBORODOV, I. I., KOLESNICHENKO, I. F., NENAYKHOV, A. V., and YUGA, A. I.,  
Institute of Problems of the Material Science of the Academy of Sciences  
UkrSSR

"Investigation of Antifriction Properties of Bronze-Base Materials"

Kiev, Poroshkovaya Metallurgiya, No 11(131), Nov 73, pp 91-93

Abstract: The technology of the production of bronze-base metalloplastic antifriction materials with a high content of solid lubricant is described. The antifriction properties were studied on specimens with a highly porous (50%) bronze shell, produced from Cu (90%) and Sn(10%) powders and impregnated with a mix of fluoroplast-4 with 30% graphite. The results of investigations carried out in air at a sliding rate of 6 m/sec and loads of up to 60 kg/cm<sup>2</sup> show that materials with 50% porosity based on non-spherical powders possess a high fatigue life independent of the presence of a solid lubricant surface layer. The antifriction properties of materials with 30% porosity based on spherical powders do not deteriorate when the surface layer is eliminated. Metalloplastic materials based on non-spherical powders with a higher content of solid lubricant are recommended for working under conditions of friction without lubrication. Four figures, one table, five bibliographic references.  
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1/2 071 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--DEVELOPMENT OF PRODUCTION TECHNOLOGY FOR CERMET ALUMINUM AND INVESTIGATION OF ITS PROPERTIES -U-  
AUTHOR--(05)-FEDORCHENKO, I.M., BELOBORODOV, I.I., AFANASYEV, V.F., NENAKHOV, A.V., MANYKIN, E.T.  
COUNTRY OF INFO--USSR, UNITED STATES  
SOURCE--KIEV, POROSHKOVAYA METALLURGIYA, NO 3, MAR 70, PP 39-42  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--ALUMINUM, POROUS, HEAT TRANSFER, FLUORINE, GRAPHITE, LEAD, ANTIFRICTION ALLOY, ANTIFRICTION MATERIAL, IMPACT STRENGTH, MECHANICAL PROPERTY, CERMET  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1997/0409 STEP NO--UR/0226/70/000/003/0039/0042  
CIRC ACCESSION NO--AP0119351  
UNCLASSIFIED

2/2 071

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119351

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY IS MADE OF THE POSSIBILITY OF PRODUCING A POROUS ALUMINUM SKELETON WHICH WOULD PERMIT MANUFACTURE OF A METAL CERAMIC ANTIFRICTION MATERIAL. THE DEVELOPMENT OF A PRODUCTION PROCESS FOR POROUS ALUMINUM FROM ALUMINUM AND SODIUM CHLORIDE POWDERS OF 0.1-0.3 AND 0.1-0.2 MM PARTICLE SIZE, RESPECTIVELY, IS DESCRIBED. PELLETS WERE SINTERED IN ACCORDANCE WITH UNITED STATES PATENT NO 3276867. PELLET SINTERING QUALITY WAS DETERMINED BY MEASURING THE IMPACT DUCTILITY, HARDNESS, AND STRENGTH AT CUTOFF. THE MECHANICAL PROPERTIES OF THE CERMET ALUMINUM ARE SHOWN TO BE COMPARABLE TO THOSE OF A FILLED FLUORINE PLASTIC. THIS WILL MAKE IT POSSIBLE TO USE ALUMINUM NOT ONLY AS A HEAT TRANSFER AGENT, BUT AS A SUPPORTING SKELETON FOR METAL FLUORINE MATERIALS. ANTIFRICTION TESTS CONDUCTED IN AIR AND IN VACUUM (2 TIMES 10 PRIME NEGATIVE5 TO 5 TIMES 10 PRIME NEGATIVE6 MM HG) ON SAMPLES WITH A 50PERCENT POROSITY IMPREGNATED WITH FLUORINE PLASTIC 4, FILLED WITH GRAPHITE, LEAD, AND MOLYBDENUM SULFIDES, SHOWED THE POSSIBILITY OF THEIR USE AT SPEEDS UP TO 0.25 M-SEC AND AT PRESSURES UP TO 10 KG-CM PRIME2. ORIGINAL ARTICLE HAS 3 TABLES.

UNCLASSIFIED



USSE

UDC: 616.981.57-085.835.3

RATNER, G. L., NENASHEV, A. A., SVECHNIKOVA, E. L., and SMIRNITSKIY, V. V., Department of Faculty Surgery, Kuybyshev Medical Institute imeni D. I. Ul'yanova

"Hyperbaric Oxygen Therapy of Anaerobic Infections (Communication I)"

Moscow, Khirurgiya, No 1, Jan 71, pp 39-44

Abstract: Eleven patients, most of whom were in serious condition because of gas gangrene resulting from careless primary surgery, were given hyperbaric oxygen treatments before surgery and, in cases where the infection flared up, after surgery. All of the patients recovered. Three amputations were performed, not as a result of the infection, but because the extremity was nonviable due either to injury to major blood vessels or to functional insufficiency of the extremity resulting from extensive skin and muscle defects. Several of the cases are discussed in detail.

Recorders and Transducers

USSR

UDC 537.311.33

LOBOV, G.D., NENASHEV, A.N.

"Recording Of Submillimeter And Infrared Radiation With The Aid Of The Tunnelling Junction Metal--Insulator--Metal"

Tr. Mosk. energ. in-ta (Works Of The Moscow Power Institute), 1972, Issue 100, pp 95-101 (from RZh:Elektronika i yeye primeneniye, No 8, August 1972, Abstract No 8895)

Translation: An analytical expression is derived for the tunnel current flowing in a metal--insulator--metal system across a potential barrier of arbitrary form in a regime of small biases. A computation is made of the forces of the mirror image and the thermionic emission across the barrier, and experiments are conducted with point contacts for determination of the time constant of transition of the RC-network of a pulse being detected. As a source of microwave oscillations a klystron in the 5-mm range and a CO<sub>2</sub> laser with AM radiation were used. The dependence was measured of the magnitude and form of the pulses detected on the thickness of the dielectric film. Tungsten wires 15 micron in diameter were placed in contact with an Al<sub>2</sub>O<sub>3</sub> layer grown in natural condition on an Al electrode. 2 ill. V.K.

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NEVASHEV, B.G.

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VII-3. RELATION BETWEEN THE NATURE OF CLEAVAGE AND THE DEGREE OF STRESS OF SINGLE CRYSTALS OF PROUSTITE

Article by A. A. Godovikov, M. G. Serbulenko, B. G. Nevashin, N. K. Cheltev, Novosibirsk, III Sbornik na Prof. Ivan Kovačička, Karta i Slike za Polu. Iovodnikovih Kristalov (Planov, Rusian, 12-17 June 1972, p 103)

Ag<sub>3</sub>As<sub>3</sub> proustite is a compound with a quite clear rhombohedral cleavage — (101). The study of the cleavage of single crystals grown by the Bridgman-Stoberger method demonstrated that the degree of exhibition of cleavage in them differs from clear to perfect. The comparative study of the cleavage surfaces using a scanning electron microscope revealed significant differences in its surface in different crystals. The optical (polaroscopic) study of such crystals permitted establishment of the fact that they are distinguished by the degree of stress. Optically unstressed crystals were characterized by less perfect cleavage. The crystals with strong internal stresses during rapid cooling of them turned out to be optically biaxial with perfect rhombohedral cleavage.

The surface of the cleavage can obviously be used for a fast qualitative estimate of other single crystals characterized in the unstressed state by insufficiently perfect cleavage. The same characteristic can also be applied to crystals of any natural minerals, the degree of perfection of the cleavage of which will be determined by the thermal history of the minerals themselves and the enclosing minerals.

UNCLASSIFIED

PROCESSING DATE--02OCT70

1/3 011  
TITLE--SCULDER OF DIAMOND BEARING ECLOGITE FROM THE MIR KIMBERLITE PIPE

-U-  
AUTHOR--(04)-MIKHEYENKO, V.I., VLADIMIROV, B.M., NENASHEV, N.I.,  
SELDISHEVA, YE.B.  
COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(6), 1440-3

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--DIAMOND, GEOCHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1990/0274

STEP NO--UR/0020/70/190/006/1440/1443

CIRC ACCESSION NO--AT0108576

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--02OCT70

2/3 011

CINC ACCESSION NO--AT0108576

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

ABSTRACT. THE 1ST LARGE XENOLITH OF DIAMOND BEARING ECLOGITE WAS FOUND IN 1967. IT HAD THE FORM OF TYPICAL BOULDER 15 TIMES 10 TIMES 6 CM. FIVE DIAMONS, 1-3 MM LONG, WERE FOUND ON ITS SURFACE, THE 6TH DIAMOND, 13 MM LONG, WAS FOUND IN THE WALL OF AN OPEN FRACTURE, AND THE 7TH, WEIGHING 8 MG, WAS FOUND IN THE ECLOGITE PROTRUSION. THE ECLOGITE FROM THE MIR PIPE CONSISTED OF FRESH GARNET AND ALTERED PYROXENE. THE ROCK HAD PORPHYROBLASTIC TEXTURE, D. 3.20, AND CONTAINED: SID SUB2 40.50, TIO SUB2 0.96, AL SUB2 0 SUB3 10.47, FE SUB2 0 SUB3 2.86, FEO 10.45, MN 0.014, MGO 9.95, CAO 10.35, NA SUB2 0 1.32, K SUB2 0 0.89, H SUB2 0 PLUS 2.84, H SUB2 0 MINUS 0.30, P SUB2 0 SUB5 0.27, CR SUB2 0 SUB3 0.41, NIO 0.024, AND S 0.32 PERCENT. THE DIAMONDS ON ECLOGITE XENOLITHS WERE XENOCRYSTALS AND THEIR APPEARANCE IN KIMBERLITE WAS CONTROLLED TO A LARGE DEGREE BY THE SIZE AND SHAPE OF KIMBERLITE BODY. THE SERPENTINE CARBONATE COMPN. OF KIMBERLITE, THE COMPLETE ABSENCE OF MAGMATIC EFFECT ON THE NEAR CONTACT ROCKS, AND XENOLITHS WITH ORG. BITUMENS PRESERVED WITHOUT ALTERATION, INDICATE THAT THERMAL ENERGY WAS NOT A FACTOR CONTROLLING FORMATION OF THESE DIAMONDS. THE EFFECTS OF POWERFUL MECH. ENERGY, DURING FORMATION OF PIPE, WERE OBSD. IN KIMBERLITE. THE CRYSTAL STRUCTURE OF MINERALS PROBABLY CAN DISINTEGRATE TO AMORPHOUS AND IONIZED STATE OF SUBSTANCE UNDER EFFECT OF SUFFICIENTLY STRONG DYNAMIC PRESSURE. THE EXCITED ATOMS AND IONS ARE CAPABLE TO BUILD NEW AND STRONGER CRYST. FORMS. THE DIAMONDS WERE CRYST. TOGETHER WITH GRAPHITE IN KIMBERLITE INTRUSIONS WHICH ARE A CONTINUOUS ZONE OF CATACLISM.

UNCLASSIFIED

3/3 011

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AT0108576

ABSTRACT/EXTRACT--NATURAL DIAMONDS ARE THUS THE PRODUCTS OF HUGE DYNAMIC PRESSURE GENERATED DURING VISCOUS PLASTIC DEFORMATION OF KIMBERLITE. THE HIGH PHYS. DYNAMICAL PARAMETERS IN KIMBERLITE OF LARGE PIPES AND DIKES WERE THE MAIN CAUSES OF GENERATION AND GROWTHS OF DIAMOND CRYSTALS BOTH IN SERPENTINE CARBONATE ROCKS AND ON THE SURFACE OF ECLOGITE XENOLITHS.

UNCLASSIFIED

USSR

LIBERMAN, YE. A. and NENASHEV, V. A., Institute of Biophysics, Academy of Sciences USSR, Pushchino

"Modeling of Changes in Permeability of Bimolecular Phospholipid Membranes"

Moscow, Biofizika, No 6, 1972, pp 1017-1023

Abstract: Bimolecular phospholipid membranes made from a solution of ox brain lipids, swine liver mitochondria lipids, or a mixture of ox brain lipids and cytochrome c in a heptane were fused in aqueous solutions of KCl, CaCl<sub>2</sub>, MgCl<sub>2</sub>, nystatin, amphotericin B, and gramicidin A. The resistance of the area of contact between two bimolecular bubbles were high when nystatin alone was inside the bubbles. When amphotericin B was present, membrane resistance decreased considerably. In solutions containing the polyene antibiotics, resistance of the contact area also decreased sharply after a phospholipid membrane fused with one containing cholesterol. During fusion there was an exchange of cholesterol between the membranes. Contact resistance increased after the membranes fused in a solution with gramicidin A. However, the presence of Ca ions (in the solution between bubbles) reduced the resistance of the con-

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USSR

LIBERMAN, YE. A. and NENASHEV, V. A., Biofizika, No 6, 1972, pp 1017-1023

contact area. The experimental results suggest that a hydrophobic contact between cell membranes is sufficient to ensure cell communication. A specific contact substance (e.g., nystatin, amphotericin B, or gramicidin A) may produce electric communication and permit the passage of comparatively small molecules from cell to cell.

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USSR

UDC 615.372:576.851.555].015.46

ARTEMENKO, V. D., NENASHEV, V. P., and USHAKOVA, A. A., Moscow Institute of Vaccines and Sera imeni Mechnikov

"Immunogenic and Antigenic Characteristics of Purified, Concentrated, and Sorbed *Cl. oedematiens* Toxoids Obtained From Concentrated Toxins"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 5, May 71, pp 94-98

Abstract: Although assaying toxoids in antigenic units makes it possible to prepare fairly standardized sorbed preparations, nevertheless the basic index of their quality is their immunogenicity as determined in direct tests on animals. In this study, the immunogenic activity and the protein fraction of type A strain No 79 *Cl. oedematiens* toxoids was investigated. Toxoids were purified, concentrated, and sorbed and bioassayed on white mice. The results revealed that the immunogenic activity of the preparations does not completely correspond to their antigenic activity. The immunogenic activity largely depends on the purity of the preparations. Differences in the immunogenic activity of concentrated, purified toxoids are associated with the varying protein compositions of the toxoids.

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Immunology

USSR

UDC: 615.372:576.885.557.012

NENASHEV, V. P. and ARTEMENKO, V. D., Mbscow Institute of Vaccines and Sera,  
imeni Mechnikov

"Purified Cl. oedematiens Toxoids From Concentrated Toxins With the Use of  
Casein Culture Media"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, Vol 48, No 1, Jan  
71, pp 87-90

Abstract: The filtrates of Cl. oedematiens type A, strain No 79, cultures were used as starting material. The antitoxin-binding activity of the toxins was determined on white mice. From concentrated solution of the Cl. oedematiens toxins grown on casein media, stable, harmless, purified toxoids were obtained which retained their initial activity for 8-12 months, at 6-8°. They contained 230-330 BU per mg of protein nitrogen, and they had an activity of 120-150 Bu/ml. Gel filtration of the purified toxoids over a Sefadex G-100 gel produced two peaks: one corresponding to the antitoxin-binding activity and an additional one indicating the presence of low-molecular weight compounds. The concentrated purified toxoids were found to be nonhomogeneous in their antigenic composition.

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USSR

UDC 576.851.555.097.29

KULAK, V. G., GOLSHMID, V. K., NENASHEV, V. P., GLUSHKOVA, A. I. and YANISHEVSKAYA, M. N., Moscow Institute of Vaccines and Sera imeni Mechnikov

"Study of the Fractional Composition of *Cl. oedematiens* Toxins and Toxoids. Report I. Fractionation of Toxins and Toxoids by Gel Filtration"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 47, No 6, Jun 70, pp 112-115

Abstract: *Cl. oedematiens* toxin has a mosaic structure. It contains lethal necrotic factors and hemolysin. The fractional composition of a toxin nutrient medium on Sefadex G-100 gel, including crude and purified *Cl. oedematiens* toxoids, type A, was studied. The toxins were separated into three fractions, differing from one another in their biological and enzymatic activity. The first fraction contained the lethal dermonecrotic and antitoxin-binding activity; the second fraction contained the lecithinase and hemolytic activity; and the third fraction contained amylase. Two peaks were observed in the fraction of crude toxoid and toxin. All of the antitoxin-binding activity of the toxoids was contained in the high-molecular-weight proteins eluted in the first peak. The significance of the different components in *Cl. oedematiens* immunity requires further study.

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UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--A STUDY OF THE FRACTIONAL COMPOSITION OF CL DEDEMATIENS TOXINS AND TOXOIDS -U-

AUTHOR--(05)--KULAK, V.G., GOLSHMID, V.K., NENASHEV, V.P., GLUSHKOVA, A.I., YANISHEVSKAYA, M.N.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 6, PP 112-115

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CLOSTRIDIUM, BACTERIAL TOXIN, TOXOID, FRACTIONATION, GEL, FILTRATION, ENZYME ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3001/0394

STEP NO--UR/0016/70/000/006/0112/0115

CIRC ACCESSION NO--AP0126149

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0126149

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY FILTRATION ON GEL SEFADIX G-100 CL. OEDEMATIENS TOXINS TYPE A WERE DIVIDED INTO THREE FRACTIONS DIFFERENTIATED BY TOXICITY AND FERMENTING ACTIVITY. THE FIRST FRACTION INCLUDED THE LETAHL DERMONECROTIC AND ANTITOXIN BINDING ACTIVITY, THE SECOND LECITHINASE AND HEMOLYTIC ACTIVITY, AND THE THIRD AMYLASE. GEL FILTRATION OF OEDEMATIENS TOXOIDS PROVED TO INCREASE THEIR SPECIFIC ACTIVITY. FACILITY: MOSKOVSKIY INSTITUT VAKTSIN I SYVOROTOK IM MECHNIKOVA.

UNCLASSIFIED

USSR

UDC 624.07:534.1

NENAST'YEVA, V. M., SABEVA, R. F.

"Studying the Thermal Stability of a Freely Supported Hollow Spherical Dome"

V sb. Fiz.-mat. issledovaniya (Physicomathematical Studies -- Collection of Works), Rostov-na-Donu, Rostov University, 1972, pp 41-45 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V301)

Translation: The Bubnov method is used to study the nonlinear axisymmetric problem of the stability of a hollow spherical shell under the simultaneous action of a uniformly distributed pressure and temperature drop over the thickness. The load characteristics are constructed and the upper and lower critical numbers are determined. Authors' abstract.

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1/2 016 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--SOME CLINICAL ASPECTS AND DIAGNOSIS OF DYSENTERY -U-  
AUTHOR--(03)-MITCHENKO, I.K., NENIKOVABOGDANOVICH, A.I., KUBASOV, I.G.  
COUNTRY OF INFO--USSR  
SOURCE--VRACHEBNOYE DELO, 1970, NR. 5, PP 146-149  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--DYSENTERY, DRUG TREATMENT, ANTIBIOTIC, SULFA DRUG  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3001/1023 STEP NO--UR/0475/70/000/005/0146/0149  
CIRC ACCESSION NO--AP0126661  
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0126661

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

ABSTRACT. A STUDY OF 200 PATIENTS WITH DYSENTERY IS PRESENTED. THE DIAGNOSIS WAS CONFIRMED BACTERIOLOGICALLY IN 150 PATIENTS (B. SONNEI, IN 132; B. FLECHSNERT, IN 18). THE FORM WAS MILD IN 60.5PERCENT, AVERAGE SEVERE IN 36.5PERCENT AND SEVERE IN 3PERCENT. THE TREATMENT WAS CARRIED OUT BY COMBINING ANTIOTBIOTICS WITH SULFANYLAMIDE PREPARATIONS. MODERN DYSENTERY IS CHARACTERIZED BY MILD ATYPIC COURSES. THERE WAS NO TRANSITION OF DYSENTERY INTO THE CHRONIC FORM. FACILITY: KIYEVSKOGO INSTITUTA USOVYERSHENSTVOVANIYA VRACHEY.

UNCLASSIFIED



USSR

UDC 621.357.7:678.029.665

PETROV, KH., NENOV, D., BAYEVA, V., MIKHAYLOV, M.

"Effect of the Conditions of Pickling Bulgarian Shock Resistant Polystyrene on Its Galvanic Metal Plating"

Polimery 71. Simpoz., Varna, 1971 (Polymers 71. Symposium, Varna, 1971), Place and date of publication not given, 115 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 6L324)

Translation: A study was made of the resistance to scaling, the resistance to temperature variations and the corrosion resistance of electrodeposited metal coatings on Bustren U825Yell Bulgarian polystyrene (having antishock properties) pickled before applying the galvanic coating with acid bichromate solutions under various conditions. It was established that the macroroughness of the plastic substrate increases with time during pickling to a defined, later invariant degree for which the resistance to scaling of the metal coating reaches a maximum. A study of the microhardness (by an electron microscope) demonstrated the presence of a correlation of this parameter to the scaling resistance. The conclusion was drawn that the investigated antishock polystyrene can be subjected to metal plating.

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I/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--SPECTROPHOTOMETRIC STUDY OF THE REACTION OF BISMUTH WITH  
METHYLTHYMOL BLUE -U-  
AUTHOR--(03)--KARADAKOV, B., NENOVA, P., KANCHEVA, D. *N*  
COUNTRY OF INFO--USSR  
SOURCE--ZH. NEORG. KHIM. 1970, 15(2) 417-23  
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SPECTROPHOTOMETRIC ANALYSIS, BISMUTH, CHEMICAL INDICATOR,  
METAL COMPLEX COMPOUND, CHEMICAL STABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0777

STEP NO--UR/0078/70/015/002/0417/0423

CIRC ACCESSION NO--AP0104223

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--18SEP70

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CIRC ACCESSION NO--AP0104223

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

ABSTRACT. THE STUDY CONFIRMED THAT BI (III)

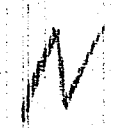
FORMS WITH METHYLTHYMOL BLUE (H SUB6 R) 2 COMPLEXES, (BI(H SUB3 R)) (I)

AND (BI(H SUB4 R) SUB2) PRIME NEGATIVE (II). STABILITY CONSTS. (BETA)

FOR I ARE: LOG BETA SUB11 EQUALS 12.49 AND LOG BETA SUB131 EQUALS 44.65

AND FOR II LOG BETA SUB12 EQUALS 5.60.

UNCLASSIFIED

1/3 013 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--STUDIES OF PHYSICS OF THE EARTH IN TURKMENISTAN -U-  
AUTHOR--(03)--KURBANOV, M., ODEKOV, O., NEPESOV, R.   
COUNTRY OF INFO--USSR  
SOURCE--ASHKhabAD, IZVESTIYA AKADEMII NAUK TURKMENSKOY SSR, SERIYA  
FIZIKO-TEKHNICHESKIKH, KHIMICHESKIKH I GEOLOGICHESKIKH NAUK, NO 2, 1970,  
DATE PUBLISHED-----70  
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY  
TOPIC TAGS--SEISMICITY, STRUCTURAL GEOLOGY, CENOZOIC ERA, MESOZOIC ERA,  
MAP, CRETACEOUS PERIOD  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAme--3001/0098 STEP NO--UR/0202/70/000/002/0026/0032  
CIRC ACCESSION NO--AP0125923  
UNCLASSIFIED

2/3 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125923

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS ARTICLE DESCRIBES THE STATUS AND PROSPECTS FOR DEVELOPMENT OF STUDIES OF THE DEEP STRUCTURE AND SEISMICITY OF TURKMENIA AND OTHER GEOPHYSICAL WORK. AT PRESENT THE ENTIRE AREA OF TURKMENISTAN HAS BEEN STUDIED BY GEOPHYSICAL METHODS, ALTHOUGH TO DIFFERENT DEGREES. A RELATIVELY THOROUGH STUDY HAS BEEN MADE OF THE SEDIMENTARY COVER OF THE CENTRAL, EASTERN AND SOUTHEASTERN REGIONS OF THE PLATFORM AREA AND THE OROGENIC STRUCTURAL STAGE OF THE WEST TURKMEN DEPRESSION. STRUCTURAL MAPS AND DIAGRAMS HAVE BEEN CONSTRUCTED OF DIFFERENT STAGES OF THE MESOZOIC-CENOZOIC STRATUM. DATA FROM COMBINED GEOLOGICAL GEOPHYSICAL INVESTIGATIONS AND THE RESULTS OF DRILLING IN THE PLATFORM PART OF TURKMENISTAN OBTAINED PRIOR TO 1965 HAVE BEEN SYSTEMATIZED IN SEVERAL MONOGRAPHS AND NUMEROUS ARTICLES. THEY INCLUDE STRUCTURAL MAPS FOR THE BOTTOM OF THE NEOGENE, ALONG THE SURFACES OF CRETACEOUS AND JURASSIC DEPOSITS AND THE BASEMENT SURFACE. MAPS OF THE MOHO HAVE BEEN CONSTRUCTED FOR THE WHOLE OF TURKMENIA AND FOR INDIVIDUAL REGIONS WITHIN IT. TURKMENIA IS ONE OF THE MOST SEISMICALLY ACTIVE REGIONS IN CENTRAL ASIA, BUT PRIOR TO 1947 HAD NOT A SINGLE SEISMIC STATION; NOT ONLY ARE NO INSTRUMENTAL DATA AVAILABLE FOR THE PERIOD PRIOR TO THAT DATE, BUT ARCHIVAL DATA ARE VIRTUALLY NONEXISTENT. IN 1953 AN EARTH CURRENTS STATION WAS ESTABLISHED AND IN 1957 A GEOMAGNETIC OBSERVATORY. SYSTEMATIC TILTMETER OBSERVATIONS HAVE BEEN MADE SINCE 1956. THE INSTITUTE OF PHYSICS OF THE EARTH AND ATMOSPHERE ACADEMY OF SCIENCES TURKMEN SSR WAS ESTABLISHED IN 1965.

UNCLASSIFIED

3/3 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125923

ABSTRACT/EXTRACT--ONE OF ITS MISSIONS IS A STUDY OF THE DEEP STRUCTURE OF THE EARTH'S CRUST, THE SEISMIC REGIME AND EARTHQUAKE PREDICTION. IN 1964 THE ASHKHABAD GEOPHYSICAL POLYGON WAS ESTABLISHED IN THE ASHKHABAD SEISMIC ZONE; IN 1968 THE NEBITDAG GEOPHYSICAL POLYGON WAS ESTABLISHED IN THE KRASNOVODSK SEISMIC ZONE. EACH YEAR A SERIES OF TOPOGEODETTIC, TILTMETER AND GEOMORPHOLOGICAL INVESTIGATIONS IS CARRIED OUT AT THESE POLYGONS. TILTMETER OBSERVATIONS OF 1956-1966 REVEALED A NORTHERLY TILT OF THE EARTH'S SURFACE. THESE RESULTS AGREE WELL WITH GEOLOGICAL AND GEOPHYSICAL DATA. SINCE 1968 TILTMETER INVESTIGATIONS HAVE BEEN MADE CONTINUOUSLY AT ASHKHABAD USING AN OSTROVSKIY TILTMETER. RECENTLY MUCH WORK HAS BEEN DONE ON REFINING A MAP OF SEISMIC REGIONALIZATION OF THE REPUBLIC. DURING 1966-1969 NEW SEISMIC STATIONS WERE OPENED AT KRASNOVODSK, NEBIT-DAG AND KIZYL-ATREK. THE INSTITUTE OF PHYSICS OF THE EARTH AND ATMOSPHERE IS WORKING ON THE AUTOMATION OF SEISMIC OBSERVATIONS.

UNCLASSIFIED

USSR

UDC 621.373.544(088.8)

MILASH, V. G., NEPLYUYEV, L. N.

N

"A Two-Frequency Radio Impulse Flip-Flop"

USSR Author's Certificate No 258378, Filed 28 Mar 68, Published 24 Apr 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10G192 P)

Translation: This Author's Certificate introduces a two-frequency radio impulse flip-flop which contains two tank circuits with supercritical coupling between these tank circuits and a tunnel diode. To stabilize the oscillation frequency of the flip-flop and improve operational reliability, the tunnel diode is connected between the tank circuits as a coupling element.

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- 92 -

USSR

UDC 621.373.42

BRYUSHKOVA, E. A., NEPLYUYEV, L. N.

"Maximum Power from a Tunnel Diode Oscillator"

Moscow, Radiotekhnika, Vol 25, No 9, 1970, pp 33-38

Abstract: This theoretical article is devoted to clarifying the nature of the change in maximum power in the load of a tunnel diode oscillator and the optimal load resistance throughout the operating frequency range up to the critical frequency of the diode. Two basic tunnel diode circuits are considered in which the load is connected in series and in parallel with the tuned circuit inductance. The capacitance of the tuned circuit is the p-n junction capacitance. To simplify the analysis, it is assumed that the characteristic inductance of the diode is small compared to the tuned-circuit inductance -- i.e., that the natural resonant frequency of the diode is much greater than the critical frequency. The analysis is conducted in the quasi-linear approximation. Expressions are obtained for the maximum output power and for the optimal load, and it is shown that the condition for obtaining maximum power in the load is not the same as that for getting maximum power from the diode p-n junction. It is shown also that the use of the latter condition in output power computations for frequencies equal to or greater than half the critical value may lead to substantial errors.

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1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ARYLSULFONYLACETONITRILES. III. ARYLSULFONYLCYANTHOACETIC ACID  
ARYLAMIDES IN THE JAPP-KLINGEMANN REACTION. HYDROLYTIC SPLITTING OFF OF  
AUTHOR--(04)--NEPLYUYEV, V.M., USENKO, YU.N., DUBENKO, R.G., PELKIS, P.S.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. ORG. KHIM. 1970, 6(4), 801-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--THIOL, ACETIC ACID, ORGANIC NITRILE COMPOUND, ANILINE,  
AROMATIC CARBOXYLIC ACID, AMIDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--2000/2154 STEP NO--UR/0366/70/006/004/0801/0805  
CIRC ACCESSION NO--AP0125737  
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 009

CIRC ACCESSION NO--AP0125737

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTIONS OF P-XC SUB6 H SUB4 SO SUB2 CH(CN)CSNHR WITH P-X PRIME1 C SUB6 H SUB4 N SUB2 CL IN AN ALC.-WATER MIXT. CONTG. ACCNA GAVE P-XC SUB6 H SUB4 SO SUB2 C(CN):NNHC SUB6 H SUB4 X PRIME1-P AND RNHC(S)OH. SIMILARLY, PHNHCOCH(CN)CO SUB2 ET REACTED WITH P-X PRIME1 C SUB6 H SUB4 N SUB2 CL TO GIVE P-X PRIME1 C SUB6 H SUB4 NHN:C(CN)CO SUB2 ET PLUS PHNHCO SUB2 H. IN THE COURSE OF THE REACTION, PHNHCO SUB2 H DECOMP. TO PHNH SUB2 AND CO SUB2. ALSO, PHNH(S)CH(CN)CO SUB2 ET REACTED WITH P-X PRIME1 C SUB6 H SUB4 N SUB2 CL TO GIVE P-X PRIME1 C SUB6 H SUB4 NHN:C(CN)CO SUB2 ET, PHNH SUB2, H SUB2 S, AND CO SUB2. THESE REACTIONS INVOLVE THE INTERMEDIATE P-XC SUB6 H SUB4 SO SUB2 C(CN)(Y)N:NC SUB6 H SUB4 X PRIME1-P COMPLEXES IN WHICH THE FACILITY FOR THE SPLITTING OFF Y DECREASES IN ORDER H GREATER THAN CSNHR GREATER THAN OR EQUAL TO CONH SUB2 GREATER THAN CONHR GREATER THAN CO SUB2 H GREATER THAN COR PRIME1 GREATER THAN CO SUB2 R PRIME1 GREATER THAN BR APPROXIMATELY EQUAL TO NO SUB2 GREATER THAN CN GREATER THAN SO SUB2 R GREATER THAN R APPROXIMATELY EQUAL TO R PRIME1 (R AND R PRIME1 ARE AROMATIC AND ALKYL GROUPS RESP.). FACILITY: INST. ORG.

KHIM., KIEV, USSR.

UNCLASSIFIED

Acc. Nr.

AP0041688

Abstracting Service:  
CHEMICAL ABST.

4/70

Ref. Code

UR0366

N

89993h Arylsulfonylacetonitriles. I. Arylamides of arylsulfonylcyanothioacetic acid. Neplyuev, V. M.; Usenko, Yu. N.; Dubenko, R. G.; Pel'kis, L. P. (Inst. Org. Khim., Kiev, USSR). *Zh. Org. Khim.* 1970, 6(1), 164-8 (Russ). The reaction of  $p\text{-RC}_6\text{H}_4\text{SO}_2\text{CH}(\text{CN})\text{Na}$  (I) with  $\text{R}'\text{C}_6\text{H}_4\text{NCS}$  in alc. ether soln. gave  $p\text{-RC}_6\text{H}_4\text{SO}_2\text{CH}(\text{CN})\text{CSN}\text{NaC}_6\text{H}_4\text{R}'$  which were decompd. with HCl to give 35-84% (on I)  $p\text{-RC}_6\text{H}_4\text{SO}_2\text{CH}(\text{CN})\text{CSNHC}_6\text{H}_4\text{R}'$  (II) (R and R' given): H, H; H, *p*-Me; H, *p*-Cl; H, *p*-I; H, *p*-Br; Me, H; Me, *p*-Cl; Me, *p*-Br; Me, *p*-I; Cl, H; Cl, *p*-Br;  $\text{NO}_2$ , *p*-Br. The uv and ir spectra of II confirmed their structure. CPJR

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me

REEL/FRAME

19751565

7

UDC 631.954:631.811:633.63:632.51

USSR

KOROLEV, L. I., GULIDOV, A. M., ZIMOVSKAYA, A. T., and NEPOCHATOV, A. P.,  
Scientific Research Institute of Fertilizers and Insectofungicides, Moscow

"Herbicidal Activity and Selectivity of Preparations on Sugar Beets and  
Weeds as a Function of the Conditions of Mineral Supply"

Moscow, Agrokimiya, No 4, Apr 73, pp 114-121

Abstract: Experimental results are reported from the study of the phytotoxicity of herbicides as a function of the nutritional conditions in sugar beets and weeds. Both greenhouse and field trials have shown a change in the reaction of sugar beets and various weeds towards the dichlorourea, eptam (S-ethyl N,N-dipropylthiocarbamate), tillam (S-propyl N-butyl-N-ethylthiocarbamate), pyramine (1-phenyl-4-amino-5-chloropyridazone-6) and murbetol, depending on the amounts of mineral fertilizers added. Significant differences in the content and breakdown of nutritional agents have been noticed in case of bristly foxtail grass treated with dichlorourea, directly related to the level of fertilizers. It has been shown possible to increase herbicidal effectiveness by regulating the supply of minerals.

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- 32 -

USSR

UIC 632.954

KOROLEV, L. I., NEPOCHATOV, A. P.

"Results of Experiments in Studying the Systematic Application of Herbicides in Crop Rotation"

Moscow, Khimiya v Sel'skom Khozyaystve, No 1, 1972, pp 30-34.

Abstract: The results of 6 years of experiments dealing with the effect of various herbicides on the weediness and yield of farm crops are presented for systematic application of the herbicides in a 5-field crop rotation program. The set of procedures used in rating the crops in the crop rotation program promoted a 4.5-fold reduction in the weeds in the fields on the first rotation. The intensity of the reduction in the number of weeds of individual types was different, as a result of which essential changes took place in the phytoceenoses of the weeds. Systematic application of the herbicides in the first crop rotation (against a background of agrotechnical procedures) led to a decrease in the potential weediness of the fields. The greatest reduction in weeds without a negative effect on the crops was provided by the following system of herbicides: atrazine (4 kg/hectare) in corn fields for grain, aptan (3 kg/hectare) in sugar beet fields, 2,4-D (0.3 kg/hectare) in oats and atrazine and

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USSR

KOROLEV, L. I., NEPOCHAROV, A. P., *Khimiya v Sel'skom Khozyaystve*, No 1, 1972, pp 30-34

promethrine (2 kg/hectare each) in corn fields for green feed. As a rule, aptam, dichloralurea and 2,4-D had no aftereffect on the weeds and crops. The application of atrazine in corn fields for grain in the amount of 4 kg/hectare are safe for the crop rotation crops. Systematic application of the herbicides with crop rotation from 1965 to 1969 did not essentially change the agrochemical properties of the soil.

USSR

UDC: 632.954

KOROLEV, L. I., GULIDOV, A. M., ~~NEROCHATOV, A. P.~~, Laboratory of Herbicides and Defoliants, Moscow Scientific Research Institute of Fertilizers, Insecticides and Fungicides imeni Ya. V. Samoylov

"Investigation of the Herbicidal Properties of Lenacyl and Ronite"

Moscow, Agrokhimiya, No 6, Jun 72, pp 114-118

Abstract: The article is a report on studies conducted at the Moscow Institute of Fertilizers, Insecticides and Fungicides on the herbicidal properties of Lenacyl (uracyl 634, Venzal, 3-cyclohexyl-5,6-trimethyleneuracyl) in the form of an 80% moist powder, and Ronite (S-ethyl cyclohexylthiocarbamate) in the form of a 72% emulsion concentrate. It was found that in heavy chernozem Lenacyl is most effective as a weed killer in a dose of 3 kg/hectare; however, in view of its destructive effect on sugar beets and on oats (and possibly on other grain crops), it is not advisable to use the herbicide in a dose of more than 2 kg/hectare. Lenacyl is preferably used in even lower doses (0.5-1 kg/hectare) in combination with standard narrow-leaf herbicides. Ronite has excellent herbicidal properties and selectivity when used on sugar  
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USSR

KOROLEV, L. I., et al., *Agrokimiya*, No 6, Jun 72, pp 114-118

beets. It should be used in doses of 4-10 kg/hectare, depending on the type of weeds being controlled. A dose of 4 kg/hectare is highly effective against gray foxtail and annual hedge nettle. When weeds more resistant to the herbicide (field mustard, etc.) are present together with those which are sensitive to Ronite, a dose of 8-10 kg/hectare should be used.

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USSR

UDC: 681.3.06:51

GANEYEV, D. G., GIGLAVYY, A. V., KANDALOVA, N. S., MURTAZI, P. F., MUKHINA, V. N., NEPOCHATYKH, D. P., SURINOVA, R. V.

"An Operational System Oriented for Use in the ASUP Management Systems for ASVT Computer Systems Models"

Tr. N.-i. i proyekt. in-ta po vnedreniyu vychisl. tekhn. v nar. kh-vo  
(Works of the Scientific Research and Design Institute on Introducing Computer Technology Into the National Economy), 1970, vyp. 5, pp 36-44 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V837)

Translation: The paper describes the fundamental principles which lie at the base of development of a small operational system designed for use in the development and operation of ASUP automated systems for management of enterprises with production of discrete type based on an aggregated system of computer facilities (ASVT). An ASVT mnemonic code with a set of macro-commands is used as the programming language in the proposed operational system. The principal functions, make-up and working singularities of the operational system are presented. V. Mikheyev.

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USSR

NEPOKLONOV, A. A., KRYKIN, A. S., and CHERNYSH, N. I.

"All-Union Conference on the Control of Bloodsucking Flies, Ticks, and Gadflies of Farm Animals"

Moscow, Veterinariya, No 10, 1971, pp 120-122

Abstract: The title conference was held in June 1971 in the city of Novomoskovsk (Tul'skaya Oblast). The 70 papers and reports discussed methods of protecting farm animals against bloodsucking flies and ticks (R. M. Alekhin, USSR Ministry of Agriculture); summary of research conducted from 1966 to 1970 on the control of insect and tick parasites (Yu. I. Boykov, All-Union Scientific Research Institute of Veterinary Sanitation); main directions of efforts to control gadflies of cattle and reindeer (A. A. Nepoklonov, All-Union Scientific Research Institute of Veterinary Sanitation); principles and methods used in toxicological evaluation of pesticides (G. A. Talabov, ARIVS); outlook for the development of biological methods to control bloodsucking mosquitoes (P. A. Lavrent'yev, Kazan' Veterinary Institute); ecology of reindeer gadflies and control measures (P. I. Bryushinin, Izhma-Pechora Veterinary Research Station); use of thermostable exotoxin and entobacterin against insects (A. P. 1/2

USSR

NEPOKLONOV, A. A., et al., Veterinariya, No 10, 1971, pp 120-122

Tonkonozhenko, ARIVS); toxic properties of new insecticides (A. S. Selivanova, Kazan' Veterinary Institute); physicochemical methods of analyzing pesticide residues in biological substrates (G. A. Talanov, ARIVS); and histological, histochemical, and electron-microscope studies of reindeer organs and tissues after exposure to baitex (P. M. Makhno).

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USSR

UDC 619:614.9-07:543.544:637.1+637.5

ZABOLOTNY, K. F., METELITSA, V. K., and NEPOKLONOV, A. A., All-Union Scientific Research Institute of Veterinary Sanitation

"Detection of Phthalophos in Milk and Fat by Thin-Layer Chromatography"

Moscow, Veterinariya, No 5, May 71, pp 103-104

Abstract: A method for determining residual amounts of phthalophos in milk and fat was developed, using thin-layer chromatography with alumina and gypsum in a ratio of 93:7. The extraction is done with acetone and chloroform. The chromatographic system used consists of a mixture of hexane and methanol (19:1). The chromatogram is produced by spraying with a 20% aqueous alkali solution and a 1% aqueous solution of silver nitrate. Phthalophos appears in the form of dark-grey needles with Rf 0.62. The sensitivity of the method is 1 microgram per sample. Since sanitary rules do not permit the presence of phthalophos in milk and fat, the compound cannot be recommended for use on dairy animals. In the case of slaughter animals, the test must be run not earlier than 20 days after treatment of the animals with phthalophos.

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USSR

UDC 612.82+612.74.612.275.1

MIRRAKHIMOV, M. M., AYDARALIYEV, A. A., and NEPOMNYASHCHAYA, Kirgiz State Medical Institute, Frunze

"State of the Brain and Muscles During Gradual Acclimatization to High Altitudes"

Leningrad, Fiziologicheskii Zhurnal SSSR, no 12, 1971, pp 1,840-1,843

Abstract: The dynamics of oxygen tension, blood flow, oxidation-reduction potential, brain and gastrocnemius temperature during gradual adaptation of rats to an altitude of 3,200 m were studied in the Tyan Shan mountains. All the physiological parameters changed significantly by day 7 when the oxidation-reduction potential, blood flow, and temperature reached a peak in the brain, after which they returned to normal by day 45, except  $PO_2$  which did not attain the original level. Meanwhile all the parameters decreased in the gastrocnemius, reaching the low point on day 7 and then returning to normal by day 45. The functional changes occurred more slowly with abrupt adaptation and normalcy was not reached until day 60. Keeping the animals for a while at the intermediate altitude of 2,200 m promoted earlier stabilization of the physiological functions.

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USSR

UDC 681.3.06.51

NEPOMNYASHCHAYA, A. Sh.

"Operator Recording of Programs of an Algorithm for Morphological Synthesis"

Nekotor. Vopr. Avtomatiz. Programmir. [Some Problems of Automation of Programming -- Collection of Works] Novosibirsk, Nauka Press, 1970, pp 139-156 (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V640 by V. Zhdanov).

Translation: A method of writing operator systems of morphological synthesis programs, used for automation of programming of algorithms of machine translation for one language to another, is described. Recording utilizes a language developed earlier by the author. The synthesis program uses information fixed in the form of tables; the structure of these tables is described. Also, a general operator plan of the programs for morphological synthesis of Russian words is presented, as well as operator plans of flocks of formation of nouns, adjectives, verbs, participles, pronouns and unchanging parts of speech, used in translation from French to Russian.

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UNCLASSIFIED PROCESSING DATE--300CT70

TITLE--A PSEUDOTUMOROUS FORM OF CHRONIC PNEUMONIA -U-

AUTHOR--(G5)--PRISS, B.N., FEOFILOV, G.L., SHUTSKAYA, YE.I., RYBINA, I.A.,  
 NEPOMNYASHCHIKH, G.I.

COUNTRY OF INFO--USSR

SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 3, PP 54-60

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PNEUMONIA, CANCER, LUNG, SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/1859

STEP NO--UR/0497/70/048/003/0054/0060

ARC ACCESSION NO--AP0125470

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

272 019

ERIC ACCESSION NO--AP0125470

ABSTRACT: EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS ANALYZE OBSERVATIONS OVER 20 PATIENTS WITH A PROTRACTED PNEUMONIA, IN WHOM THE CLINICAL COURSE MORE CORRELATED WITH THE PICTURE OF PERIPHERAL LUNG CANCER. OUT OF 20 PATIENTS 16 UNDERWENT SURGICAL INTERVENTION. THE AUTHORS ASSOCIATE THE SYMPTOMS OF LUNG CANCER WITH PROFOUND ALTERATIONS IN THE DRAINING BRONCHI (PANBRONCHITIS) IN THE INVOLVED PULMONARY SEGMENTS.  
FACILITY: --NOVOSIBIRSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED



USSR

UDC: 621.396.677

NEPOMNYASHCHIY, I. L., YAMPOL'SKIY, V. G., Members of the Scientific and Technical Society of Radio Engineering, Electronics and Communications imeni A. S. Popov

"Influence Which the Amplitude-Phase Distribution of the Field in the Aperture of an Antenna has on its Directional Properties"

Moscow, Radiotekhnika, Vol 27, No 8, Aug 72, pp 50-57

Abstract: Approximate methods convenient for engineering calculations are proposed for analyzing the emission characteristics of an antenna as a function of arbitrary amplitude-phase distribution of the field in the antenna aperture. The results can be used to obtain comparatively simple expressions for the polar diagram showing the influence of specific factors on antenna radiation characteristics. In the case of small phase distortions the resultant expressions give quite satisfactory accuracy.

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USSR

UDC 669.295.018.9(088.8)

GAMELKIN, B. S., GOLIKOV, V. V., OGURTSOV, S. V., NEPOMNYASHCHIY, I. V.,  
SAMAROV, M. A., SAVIKIN, V. I., and RODNYI, M. I.

"Method of Producing Alloys of Titanium With Refractory Metals"

USSR Author's Certificate No 258598, Filed 28/01/67, Published 30/04/70  
(Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract  
No 2 G197 P)

Translation: A method is suggested for producing alloys of Ti with refractory metals by metallothermic reduction of preliminarily prepared solutions of chlorides of the alloying metals to  $TiCl_4$ . To increase the homogeneity and quality of the alloys produced, the chloride solutions are heated to a temperature above the boiling point of the solution before the reduction process.

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Public Health, Hygiene and Sanitation

UDC 613.647:612.424

USSR

MINKH, A. A., ~~NEPOMNYASHCHIY~~, P. I., and PORTNOV, E. G., (Moscow, Riga), Medical Institute, Institute of Elementary and Clinical Medicine.

"Hygienic and Occupational-Pathological Aspects of the Biological Effect of Static Electric Fields in Industry"

Moscow, Gigiyena Truda i Professionalnyye Zabolevaniya, No. 6, Jun. 71, pp 42-44

Abstract: The general level of disease incidence was found to be higher in persons subjected to the effect of static electric fields; there was a higher incidence of particularly acute respiratory diseases in this group than in the control group. In a wood-processing plant, the disease incidence was found to be more than two times that of the control group; the latter group had not been exposed to electrification of the production process. No harmful substances had been found in the air, meteorological factors had been normal and they had been maintained at a normal level by an air-conditioning system. The noise level was 87 decibels and 90-95 decibels, respectively. The various differences systems were attributed to the presence of static electric fields in the factories.

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NEPOMPKASHCHY Yur. L.  
UR 0482

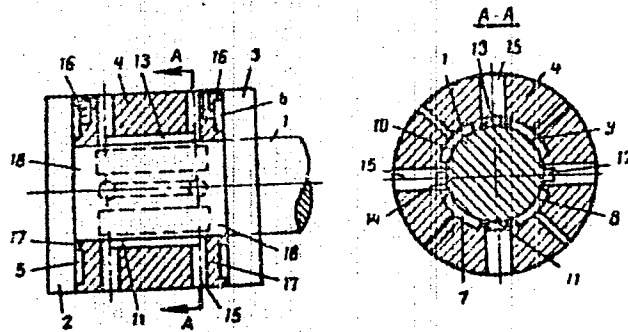
Soviet Inventions Illustrated, Section III Mechanical and General,  
Derwent, 1-70

241829 HYDRAULIC BEARING requires less fluid. shaft 1 with the end flanges 2 and 3 is supported in a cylindrical body 4 of a bearing. The body has end ring channels 5 and 6 which take the axial load and recesses 7 to 10 which take the radial load. The channels 11 to 14 are connected to a drain through channels 15. The channels 5 and 6 have seals 16 and 17 in the form of rings 18. Due to the absence of drain channels between channels 5 and 6 on one side and channels 7 and 10 on the opposite side, the liquid from channels 5 and 6 is drained only between the seals 16. No draining takes place between seals 17. In addition, pressure in channels 7 to 10 prevent drainage. The liquid flows only in the tangential direction to channels 11 to 14. The pressure in channels 5 and 6 prevents flow of liquid from channels 7 to 10 to rings 18. This reduces the liquid flow in the bearing.

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27.5.67. as 1159759/25-27, SOKOLOV, Y.N. et al.  
 Experimental and Res. Inst. for Metal Cutting  
 plant. (29.8.69) Bul. 14/18.4.69. Class 47b, Int  
 Cl. F 16c.

Sokolov, Yu. N.; Shimanovich, M. A.; Rassokhin, V. Ya.; Nepomnyash-  
chiy, Yu. L.  
Ekspperimental'nyy Nauchno-Issledovatel'skiy Institut Metallorezhush-  
chikh Stankov

19821038

USSR

UDC 621.396.669 (088.8)

NEPONOV, V.V.

"Radio Receiver"

USSR Author's Certificate No 296269, filed 10 June 69, published 14 Apr 71  
(from RZh:Radiotekhnika, No 2, Feb 72, Abstract No 2D57P)

Translation: A radio receiver is proposed, the principal channel for processing the signal of which contains a band-pass filter connected to the antenna--feeder device, a radio-frequency amplifier, a converter with a local oscillator, an IF amplifier, an automatic tuning network for the radio- and intermediate-frequency amplifiers, and also a radio-frequency attenuator. In order to enlarge the dynamic range of the receiver, a supplementary channel is supplied for processing the signal, which includes in itself the attenuator referred to above, connected by its input to the output of the band-pass filter, the attenuator made (for example) in the form of a narrow-band filter of lumped selection, tuned to the frequency of the effective signal and having two outputs with different attenuation of the signal, an amplitude detector connected to the output of the attenuator with the smaller attenuation and connected by its output

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NEPONOV, V. V., USSR Author's Certificate No 296269

to the input of the IF amplifier of the basic channel, a supplementary converter of the signal frequency which is taken from the output of the attenuator with the larger attenuation, and a multiplied frequency of the local oscillator of the basic channel for processing the signal. The voltage of the local oscillator at the basic converter is fed across a series-connected buffer stage, the transmission coefficient of which depends on the voltage at the output detector and the frequency multiplier.

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UDC 546.161

ALENCHIKOVA, I. F., NEPOREZOV, V. S., and SUKHOVERKHOV, V. F., Academy of Sciences USSR, Institute of General and Inorganic Chemistry imeni N. S. Kuznakov

"Kinetics of the Interaction of Fluorine with Iron-Nickel Alloys"  
Moscow, Zashchita Metallov, Vol 9, No 2, Mar-Apr 73, pp 190-191

Abstract: The kinetics of the interaction of fluorine with 50N iron-nickel alloy (in %: 50 Fe, 0.3 Si, 0.5 Mn, 0.05 Mo, 49 Ni, 0.15 Al) and 79NM iron-nickel alloy (in %: 80 Ni, 0.5 Si, 0.6 Mn, 3.9 Mo, 15 Fe) were investigated. The interaction of F with 50N alloy at 350-500°, described by a linear dependence in time, results in development of loose fluorine films easily separating into layers. The interaction of F with 79NM alloy proceeds linearly at 700-850°, with development of porous films separating into layers, it proceeds parabolically at 500-650°. The apparent activation energy of the interaction processes is 4580 cal/mol for 550-650° (fluorine diffusion through the fluoride layer) and 16,660 cal/mol for 700-850° (chemical interaction of reagents). Two figures, two tables, twelve bibliographic references.

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NEPOROZHNEV, I. P., PETRENYUK, A. Ya.

"Constructive Denumeration of Systems of Groups of Pairs and Subdivided Systems of Steiner Triads"

Kombinator. Analiz. [Combinatorial Analysis -- Collection of Works], No 2, Moscow, 1972, pp 17-37 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V335, by V. Tarakanov).

Translation: A system of groups of pairs  $\Pi_{2\mu}$  of order  $2\mu$  refers to a subdivision of the set of disordered pairs of elements from set  $F$  of thickness  $2\mu$  into groups of pairs such that each element from  $F$  belongs to exactly one pair of each group. An algorithmic method of construction of all systems of nonisomorphic groups of pairs of a fixed order is described; the systems of groups of pairs  $\Pi_{2\mu}$  and  $\Pi'_{2\mu}$ , constructed in sets  $F$  and  $F'$  respectively, are called isomorphic if there is a mutually unambiguous correspondence  $\phi: F \rightarrow F'$ , for which each group of pairs  $\Pi_{2\mu}$  corresponds to a certain group of pairs from  $\Pi'_{2\mu}$ . The basic tools used in this construction are the tables of invariants and diagrams introduced by the authors. If  $\Pi_{2\mu}$  consists of the

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Neporozhnev, I. P., Petrenyuk, A. Ya., *Kombinator. Analiz.*, No 2, Moscow, 1972, pp 17-37.

systems  $\Sigma_1, \dots, \Sigma_{2\mu-1}$ , graph  $G_{ij}$  is constructed, the points of which are elements from  $F$ , while the lines are elements from  $\Sigma_i \cup \Sigma_j$  ( $i \neq j, 1 \leq i, j \leq 2\mu - 1$ ). This graph is nothing other than a set of nonintersecting cycle. The type of interweaving of groups of pairs  $\Sigma_i$  and  $\Sigma_j$  refers to the symbol

$(s_1^{r_1}, \dots, s_m^{r_m})$ , where  $0 < s_1 < \dots < s_m, r_i > 0, i = 1, \dots, m$ ; this symbol expresses the fact that  $G_{ij}$  consists of  $r_k$  cycles of length  $2s_k, \sum r_k s_k = \mu$ .

The invariant table for certain set of groups of pairs is a full summary of the types of interweavings of each of the groups of pairs in the given set with all others. Obviously, two sets with different invariant tables are not isomorphic. However, coincidence of invariant tables still does not provide isomorphism of two sets of groups of pairs. Therefore, in the case of coincidence, a more precise method of differentiation is used -- the method of diagrams, which transform one into another, if the systems of groups of pairs are isomorphic. A list (incomplete) is presented of 120 systems  $\Pi_{10}$  of groups of pairs of order 10, not isomorphic in pairs, produced by application of the method found by the authors. Applications are also indicated,

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Neporozhnev, I. P., Petrenyuk, A. Ya., *Kombinator. Analiz.*, No 2, Moscow, 1972, pp 17-37.

in the calculation of nonisomorphic systems of Steiner triads  $\Delta_{2t+1}$  of order  $2t + 1$ , each containing a subsystem of Steiner triads  $\Delta_t$  or order  $t$  (such systems of triads are called subdivided).

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1/2 011 UNCLASSIFIED PROCESSING DATE--09OCT70  
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III WATER POWER 236.

V EXPLOITATION OF POWER SYSTEMS

NATIONAL ECONOMY 448.

ABSTRACT. CHAPTER I: THE DEVELOPMENT OF

12. II THERMAL POWER ENGINEERING 118.

IV POWER SYSTEMS AND ELECTRICAL NETWORKS 322.

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SINCE 1960 THE INSTITUTE OF OCEANOLOGY HAS BEEN CONDUCTING SEISMIC STUDIES OF CRUSTAL STRUCTURE IN THE INDIAN OCEAN BY THE DEEP SEISMIC SOUNDING AND REFLECTED WAVES METHODS. FIGURE 1 IN THE TEXT SHOWS EXACTLY WHERE THIS WORK HAS BEEN DONE AND BY WHAT RESEARCH VESSELS. THIS ARTICLE IS DEVOTED EXCLUSIVELY TO WHAT HAS BEEN LEARNED CONCERNING THE THICKNESSES OF THE SEDIMENTARY LAYER IN THE INDIAN OCEAN AND FIGURE 2 IS A MAP SUMMARIZING DATA FROM ALL SUCH RESEARCH. THE THICKNESS OF SEDIMENTS ON THE MID OCEAN RIDGES IS SMALL AND VERY VARIABLE. THE SLOPES OF RIFT CANYONS ARE USUALLY WITHOUT A SEDIMENTARY COVER. IN THE ARABIAN SEA AND THE BAY OF BENGAL THICKNESSES WERE RECKONED FROM THE SURFACE OF THE LAYER WITH A VELOCITY OF 6.5 KM-SEC. FOR OTHER REGIONS THICKNESS OF SEDIMENTS WAS RECKONED TO THE SURFACE OF THE LAYER WITH A VELOCITY OF 4.5-5.5 KM-SEC, THAT IS, IN SOME AREAS PROBABLY APPLIES ONLY TO UNCOMPACTED SEDIMENTS RATHER THAN THE ENTIRE SEDIMENTARY LAYER. MAXIMUM SEDIMENT THICKNESS (MORE THAN 1-2 KM) ARE CONCENTRATED IN THE NORTHERN REGIONS OF THE OCEAN WHERE ACCUMULATIVE PLAINS ARE PRESENT, IN THE JAVA TRENCH AND NEAR THE SHORES OF AFRICA. IN EXTENSIVE REGIONS OCCUPIED BY OCEAN BASINS AND MID OCEANIC RIDGES THE THICKNESS OF THE UNCOMPACTED SEDIMENTS IS LESS THAN 0.5 KM AND VARIES GREATLY, PARTICULARLY ON THE RIDGES. THE TOTAL THICKNESS OF THE SEDIMENTS IN THE OCEANIC BASINS AND ON THE RIDGES WILL REMAIN OPEN UNTIL THERE IS A FULL UNDERSTANDING OF THE NATURE OF THE LAYER WITH A VELOCITY OF 4.5-5.5 KM-SEC.

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373 009

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ABSTRACT/EXTRACT--IT IS ENTIRELY PROBABLE THAT IN MANY REGIONS AS A RESULT OF INTENSE VOLCANIC ACTIVITY THE LOWER PART OF THE SEDIMENTS HAS BEEN COMPACTED AND MIXED WITH VOLCANIC MATERIAL. FACILITY: INSTITUTE OF OCEANOLOGY.

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PROTASOV, V. P., NEPROSHIN, A. YU., GUSAR, A. G., and KUPRIYANOV, V. S.,  
Institute of Animal Evolutionary Morphology and Ecology, imeni A. N. Severtsov,  
Moscow, and Azov-Black Sea Scientific Research Institute of Marine Fisheries  
and Oceanography, Kerch'

"Sounds Emitted by the Anchovy (*Engraulis encrasicolus* L.) in a Light Field"

Moscow, Voprosy Ikhtiologii, Vol 12, Vyp 2(73), 1972, pp 394-396

Abstract: Apparently fish within a light field emit sounds that attract other fish outside the light field. This reaction was tested in 17 experiments with anchovies on the Black Sea in March 1970 using television, underwater photography, sound recording, and oscillographic analysis. Before light was introduced the fish emitted rare high-frequency crackling sounds and a low-frequency persistent drumming that was attributed to other fish species. When a submerged lamp was switched on the fish congregated about it, emitting sounds of higher frequency at a significantly greater rate. These results were confirmed with those of laboratory tank experiments with *Leucaspodus delineatus* Heck. When lights were turned on after 3 minutes of darkness the acoustic activity of the fish increased noticeably. These significant differences in acoustic activity in the absence and presence of light should be studied in their application to fish attraction methods.

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Hydrobiology

USSR

UDC 62-506.2:534.618.3

NEPROSHIN, A. Yu., and NIKOLAYEV, A. S.

"Spawning Sounds of the Red Salmon"

Moscow, Rybnoye Khozyaystvo, No 6, 1971, pp 14-16

Translation: As is known, the sound activity of fish depends on their biological state, behavioral peculiarities, season of the year, time of day, and other causes, and attains its maximum during the spawning period. Inasmuch as salmon during its lifetime inhabits different media -- fresh water and salt water -- it has become necessary to investigate both these periods of its life.

Studies in fresh water were performed in Kuril'skoye Lake in southern Kamchatka. The largest run of red salmon in the Far East passes annually into the lake for spawning up the Ozeraya River from the Sea of Okhotsk. Kuril'skoye Lake is one of the most important spawning grounds in Kamchatka. Furthermore, only red salmon (and an insignificant number of loach [char] spawn in the lake, which greatly simplifies the deciphering of sounds of biological origin.

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