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Academician

CHARACTERISTICS OF CONCEPTIONS OF A LARGE ELECTRIC TOWER

Author: L. R. Neyman, Moscow, Academician
Document: 701 41, No 7, July 1971, pp 7-10

UICI: 621.316.721

1000 24/7/71
-28 50/7/71

The construction of the United Electric Power System of the USSR, as well as the national electrical network in a part, and the construction of the national network of all types of energy transmission, the national application of all methods of transport of energy carriers, and the reliable supplying of all consumers with it, is closely related to such tasks in the optimal basis of the total energy balance of the country, and also the rational utilization of the great mass of water and also a significant reduction of the great mass of water, in which only on the basis of complex review of those tasks, in which even having of production, transport and consumption of energy was not given in accordance with the physical properties and technical and economic advantages characteristic of it.

Characteristic of the power engineering of our country is an irregular distribution of natural power engineering resources and forms of power conceptions. The greatest power concentration is in a growing stream of natural power resources, which is necessary for a long time in the European part of the USSR. On the 1959 level, to cover the deficit, a flow of energy from the eastern regions of the country will be required, and some of them will have to be provided by 60-70 million kilowatts of generators also by side with the construction of hydroelectric stations. The energy here and now and production of energy from the eastern regions, very effective will be the construction of a national long-distance electric power transmission system and the system of electrical connections, including the large-scale interconnection of the European and Asiatic parts of the USSR. The most effective advantage is secured by reduction of the energy capacity in electrical power stations as a result

USSR

UDC: 621.31.043:006.12

KOSTENKO, M. P., KOSTENKO, M. V., NEYMAN, L. R., PETROV, G. N., POPKOV, V. I.,
SLONIM, M. A., Leningrad, Moscow

"Goals of the Scientific Council of the Academy of Sciences of the USSR on
Theoretical and Electrophysical Problems of Electric Power Engineering, and
the Work of the Council in 1969-1970"

Moscow, Izvestiya Akademii Nauk SSSR, Energetika i Transport, No 2, Mar/Apr 71,
pp 28-38

Abstract: The goals of the Council and its activities for the years 1969-1970
are explained by the chairmen of the five sections of the Council: Academician
M. P. Kostenko, chairman of the first section on theoretical problems of genera-
tion of electromagnetic energy, Corresponding Member of the Academy of Sciences
of the USSR G. N. Petrov, chairman of the second section on problems of electro-
magnetic field theory in electric power and electrophysical devices, Academician
L. R. Neyman, chairman of the third section on problems in the theory of non-
linear electric circuits of complex electric power and electromechanical de-
vices, Corresponding Member of the Academy of Sciences of the USSR M. V. Kos-
tenko, chairman of the fourth section on theoretical problems of electrophy-
sically high voltages, and Academician V. I. Popkov, chairman of the fifth

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USSR

KOSTENKO, M. P., et al, Izvestiya Akademii Nauk SSSR, Energetika i Transport, No 2, Mar/Apr 71, pp 28-38

section on electrophysical processes in gases under high pressure, and scientific problems associated with creating transfers and equipment with insulation by compressed gases. A historical review is given of the aims of each section, its future goals are outlined, and the work done by each section in 1969-1970 is outlined together with plans for 1971.

2/2

- 158 -

ELECTRICAL ENGINEERING
Cryogenics and Superconductivity

USSR

UDC: 621.31:537.312.62

~~NEYMAN, I. R.~~, Leningrad

"Using Superconductivity is a Promising Way to Solve Big Problems in Electric Power Engineering"

Moscow, Izv. AN SSSR: Energetika i Transport, No 4, Jul/Aug 72, pp3-5

Abstract: A general overview of the problem of using the effect of superconductivity in electric power engineering. It is pointed out that most of the theoretical work done in the field of superconductivity has been satisfactorily confirmed by experiment. The niobium-aluminum-germanium alloy system has pushed the critical temperature up past 20°K, but there is no theoretical reason to reject the possibility of systems with a critical temperature in excess of 100°K. In addition, future research should settle unanswered questions on various quantum effects accompanying superconductivity. Advances in techniques for making superconductive materials as well as in cryogenic technology bode well for practical applications of superconductivity in electric power engineering. Some of the problems which must be solved before superconductivity can be applied to large-scale power generating equipment are discussed.

1/1

USSR

UDC: 666.638.678.027.5

SOKOLOVA, M. A., MERKUSHEV, O. M., NEYMAN, M. I., ASHKRUMOVA, A. Yu.,
SVERDLOVA, A. N.

"A Ceramic Suspension for Making Thin-Film Capacitors"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 16, Jun 71, Author's Certificate No 303663, Division H, filed 31 Jan 69,
published 13 May 71, p 187

Translation: This Author's Certificate introduces a ceramic suspension for
making thin-film capacitors which is based on an organic solvent. As a dis-
tinguishing feature of the patent, a dielectric coating with a dense struc-
ture is produced by taking the initial components in the following quanti-
tative ratios (in parts by weight): ceramic material--10-20, acetone--
30-60, ammonium acetate--0.1-0.5, and the remainder amyacetate--up to 100
parts by weight of the total.

1/1

- 85

USSR

UDC: 621.319.4

NEYMAN, M. I., SOKOLOVA, M. A., SVERDLOVA, A. N., VINOGRADOVA, N. V., RYN-
DINA, L. P., STARENCHENKO, V. G., KOTEL'NIKOVA, L. P.

"Thin-Film Ceramic Capacitors With High Specific Capacitance"

Elektron. tekhnika. Nauch.-tekhn. sb. Radiodetali (Electronic Technology.
Scientific and Technical Collection. Radio Components), 1970, vyp. 4(21),
pp 3-9 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V322)

Translation: The authors discuss a new method of making thin-film ceramic
capacitors with high specific capacitance. Their basic electrical charac-
teristics are given.

1/1

USSR

UDC: 621.396.69:621.319.4

DUKAREVICH, N. Ya., NEYMAN, M. I., AFANAS'YEV, B. N.

"Type K21-7 Low-Voltage High-Frequency Sealed Capacitors Based on Thin Transparent Glass Films"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiodetali (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 2 (19), pp 3-18 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V290)

Translation: The paper describes the design and technique of manufacturing type K21-7 sealed high-frequency glass-film capacitors with a working temperature range of -60 to +155°C for a voltage of 50 V. The results of a study of their electrical characteristics are presented. Authors' abstract.

1/1

USSR

UDC: 621.396.6:621.315.612

KAL'MENS, H. V., NEYMAN, M. I., IMANOVA, A. A.

"A Water-Emulsion Plasticizer for Extrusion of Clay-Free Ceramic Materials"

USSR Author's Certificate No 268526, filed 5 Aug 68, published 8 Jul 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V376 P)

Translation: A water-emulsion plasticizer is proposed for extrusion of clay-free ceramic materials based on organic binders and oily components. To increase the strength of tubular stock, the plasticizer contains a mixture of oxidized linseed and transformer oils taken in the following ratios (in parts by weight): oxidized linseed oil 50-70, transformer oil 30-50.

- END -

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CSO: 1860-W

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Corrosion

USSR

N UDC: 620.199

TSINMAN, A. I., DEGTYAREVA, V. K., NEYMAN, N. S., KASSINSKAYA, L. L., KUZUB, V. S., and MURASHKINA, A. A., Severodonetsk Branch, State Institute of the Nitrogen Industry; Zhdanov Plant of Heavy Machinery

"Determining the Tendency of Kh18N10T Chromium Nickel Steel to Intergranular Corrosion by the Method of Potentiostatic Etching"

Moscow, Zashchita Metallov, Vol. 6, no. 4, Jul-Aug 70, pp 475-476

Abstract: Commercial melts of Kh18N10T and OKh18N10T steels were used for elaborating the process of potentiostatic etching in order to determine the tendency of steel to intergranular corrosion (TIC). A total of 88 experimental melts have shown agreement of results of potentiostatic etching (PE) with the "AM" method specified in GOST 6032-58. The new method also makes it possible to observe the nature of dissolution on a longitudinal polished end. A curve in the original article shows anodic polarization of OKh18N10T steel at potential application rate of 1 v/hr in 20% H₂SO₄, 50% H₂SO₄, 1 n H₂SO₄+ 0.003 n KCNS, 1 n H₂SO₄+ 0.05 KCNS. Another figure showing the anodic polarization

1/2

USSR

TSIMAN, A. I., et al, Zashchita Metallov, Vol. 6, no. 4, Jul-Aug 70, pp 475-478

curve obtained on OKh18N10T steel in 50% H₂SO₄ at a potential application rate of 1 v/hr reflects the TIC of the steel. At a potential of 0.28 v a longitudinal ground end of steel with TIC, after 30 minutes of etching, showed a clear lattice of etched grain boundaries. For steels with a strongly pronounced TIC the intergranular etching pattern appears within 10--15 minutes.

2/2

1/3 - 010 UNCLASSIFIED PROCESSING DATE--02JCT70
TITLE--SECOND GULF STREAM, (DISCOVERY OF CURRENT IN WESTERN ATLANTIC) -U-
AUTHOR--NEYMAN, V.G. N
COUNTRY OF INFO--USSR, ATLANTIC OCEAN
SOURCE--MOSCOW, ZEMLYA I VSELENNAYA, NO. 1, 1970, PP 87-88
DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MECH., IND., CIVIL AND
MARINE ENGR
TOPIC TAGS--OCEAN CURRENT, OCEANOGRAPHIC INSTRUMENT, OCEAN TEMPERATURE,
SALINITY/(U)AKADEMIK KURTSHATOV SHIP

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0046 STEP NO--UR/0384/70/000/001/0087/0088
CIRC ACCESSION NO--AP0108422
UNCLASSIFIED

2/3 010

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0108422

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING FEBRUARY THROUGH MAY 1969 THE RESEARCH VESSEL "AKADEMIK KURCHATOV" MADE ITS FIFTH VOYAGE IN ATLANTIC WATERS. THE RESEARCH AREA WAS THE WESTERN BOUNDARY CURRENTS OF THE TROPICAL ATLANTIC. THE RESEARCH AREA WAS THE WESTERN BOUNDARY CURRENTS OF THE TROPICAL ATLANTIC. THE PROGRAM FOR THE FIFTH VOYAGE PROVIDED FOR A SERIES OF INSTRUMENTAL OBSERVATIONS OF CURRENTS, WATER TEMPERATURE AND SALINITY ALONG SEVERAL PROFILES SITUATED PERPENDICULAR TO THE POSTULATED DIRECTION OF CURRENTS FROM THE NORTHERN TO THE SOUTHERN TROPICS. THE EXPEDITION WAS HEADED BY PROFESSOR V. G. KORT. A PRELIMINARY EVALUATION OF THE FIELD OF CURRENT VELOCITIES WHICH WAS THEN TO BE MEASURED AT SEA WAS MADE FOR THE FIRST TIME. PRIOR TO THE BEGINNING OF INSTRUMENTAL OBSERVATIONS THE CURRENT CHARACTERISTICS WERE COMPUTED FROM THE OBSERVED WATER DENSITY AND THEN ANCHORED BUOY STATIONS WITH AUTOMATIC CURRENT METERS WERE SET OUT. THE FIRST MEASUREMENTS AND COMPUTATIONS NEAR THE BAHAMAS REVEALED EARLIER UNKNOWN WATER MOVEMENT PATTERNS. INSTEAD OF A SINGLE NORTHERLY FLOW, THE CROSS SECTIONS FOR THE EASTERN PERIPHERY OF THE ANTILLES CURRENT CLEARLY INDICATED A FLOW WITH AN APPROXIMATELY EQUAL VELOCITY (30 CM-SEC) BUT IN THE OPPOSITE DIRECTION. SPECIAL COMPUTATIONS MADE ABOARD THE SHIP HELPED IN REVISING THE EXPEDITION'S PROGRAM SO THAT THE COURSE OF THIS CURRENT WOULD BE WELL COVERED BY EXPEDITIONARY OBSERVATIONS. FURTHER OBSERVATIONS GAVE CONVINCING PROOF THAT IN THE SYSTEM OF WESTERN BOUNDARY CURRENTS IN THE ATLANTIC THERE IS ACTUALLY AN EARLIER UNKNOWN POWERFUL CURRENT. IT WAS GIVEN THE NAME ANTILLES GUIANA COUNTERCURRENT.

UNCLASSIFIED

3/3 010

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0108422

ABSTRACT/EXTRACT--THE CURRENT WAS INVESTIGATED ALONG THE ENTIRE COURSE (MORE THAN 3,000 MILES) FROM THE BAHAMAS TO THE EQUATORIAL ATLANTIC. THIS CURRENT MOVES SOUTHEASTWARD AGAINST THE WELL KNOWN ANTILLES AND GUIANA CURRENTS AND HAS A VOLUME HALF AS GREAT AS THE GULF STREAM. THE DISCOVERY OF THE ANTILLES GUIANA COUNTERCURRENT IS UNDOUBTEDLY ONE OF THE MOST IMPORTANT RESULTS OF SOVIET OCEANOGRAPHIC WORK DURING 1969. ITS DISCOVERY IN A REGION WHICH HAD BEEN CONSIDERED WELL STUDIED IS QUITE SURPRISING. THE SPATIAL SCALE OF THIS CURRENT AND THE RELATIVE UNIFORMITY OF ITS DYNAMIC STRUCTURE INDICATE AN ALMOST PERMANENT NATURE OF THIS FORMATION.

UNCLASSIFIED

1/3 010 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DENSITY STRATIFICATION IN THE OCEAN -U-
AUTHOR--(03)-MONIN, A.S., NEYMAN, V.G., FILYUSHKIN, B.N.
COUNTRY OF INFO--USSR, PACIFIC OCEAN
SOURCE--MOSCOW, DOKLADY AKADEMII NAUK SSSR, VOL 191, NO 6, 1970, PP
1277-1279
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--OCEAN DEPTH, FLUID DENSITY MEASUREMENT, OCEAN TEMPERATURE,
OCEAN BOTTOM, SALINITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/1158 STEP NO--UR/0020/70/191/006/1277/1279
CIRC ACCESSION NO--AT0133181
UNCLASSIFIED

2/3 010

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0133181

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ANALYSIS OF $N(Z)$ STRATIFICATION CURVES WAS MADE (N IS THE FREQUENCY OF INERTIAL OSCILLATIONS, Z IS DEPTH) USING DATA FROM 40 HYDROLOGICAL STATIONS IN THE NORTHERN HALF OF THE PACIFIC OCEAN. THE $N(Z)$ CURVES FOR THE UPPER LAYER OF THE OCEAN HAVE A COMPLEX AND VARIED SHAPE, OFTEN WITH SEVERAL EXTREMA, BUT IN THE INTERNAL LAYERS OF THE OCEAN, AT DEPTHS OF 500-5,000 M, THEY ARE WELL DESCRIBED BY A SIMPLE LAW OF DISTANCE FROM THE SURFACE $N(Z)$ EQUALS W EQUALS CONST, (3) THAT IS, THE FREQUENCY N IS INVERSELY PROPORTIONAL TO DEPTH Z. THE LAW GIVEN ABOVE IS UNIVERSAL IN THE SENSE THAT THE CONSTANT W IS APPROXIMATELY THE SAME FOR DIFFERENT STATIONS (IT IS W CONGRUENT M-SEC). FIGURE 2 IN THE TEXT SHOWS $N(Z)$ VALUES FOR THE 40 STATIONS. IN THE NEAR BOTTOM LAYER OF THE OCEAN BELOW THE REGION OF APPLICABILITY OF THE ABOVE LAW THE $N(Z)$ CURVES LOSE THEIR UNIVERSAL SHAPE. SOMETIMES N DECREASES THERE WITH DEPTH MORE RAPIDLY THAN INDICATED BY THE LAW (FOR EXAMPLE, IN STAGNANT BASINS WITH BOTTOM CONVECTION CREATED BY A GEOTHERMAL HEAT FLUX) OR SOMETIMES MORE SLOWLY (FOR EXAMPLE, WHEN THERE ARE COLD WATERS OF ANTARCTIC ORIGIN IN THE NEAR BOTTOM LAYER). INSTEAD OF THE DEPTH Z ONE CAN USE HEIGHT ABOVE THE BOTTOM H EQUALS H-Z (H IS TOTAL OCEAN DEPTH). IN THE CASE OF STABLE STRATIFICATION FOR LARGE H TYPICAL SCALES OF TURBULENT INHOMOGENEITIES ARE OF THE ORDER OF L EQUALS U PRIME³ (GM-P) PRIME NEGATIVE, WHERE M EQUALS BAR P PRIME W PRIME IS THE VERTICAL TURBULENT FLUX OF MASS (W IS THE VERTICAL VELOCITY, THE PRIME DENOTES FLUCTUATIONS, THE LINE DENOTES STATISTICAL AVERAGING).

UNCLASSIFIED

3/3 010

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0133181

ABSTRACT/EXTRACT--THE VELOCITY GRADIENT SINULET U-SINULET H FOR LARGE H ASYMPTOTICALLY APPROACHES THE ORDER OF U-L FOR LARGE H, BUT THE TEMPERATURE AND SALINITY GRADIENTS (DETERMINING THE DENSITY GRADIENT) MUST INCREASE WITH HEIGHT AS 1-ALPHA (H), WHERE ALPHS IS THE RATIO OF THE EXCHANGE COEFFICIENTS FOR HEAT (AND SALT) AND FOR MOMENTUM. THE TRANSPORT OF INHOMOGENEITIES OF THE DIMENSION L WITH THE VELOCITY H SINULET U-SINULET H CREATES A LOCAL FREQUENCY H SINULET U-SINULET H-L. THE RESONANCE CONDITION, ACCORDING TO LONG, IS N EQUALS H SINULET U-SINULET H OVER L (EQUALS AH; A EQUALS 1 OVER L SINULTE U OVER SINULET H SIMILAR TO U OVER L PRIME²), ENSURING THE PROPAGATION OF INTERNAL WAVES IN THE ENTIRE THICKNESS OF THE OCEAN (THIS CONDITION CORRESPONDS TO D (H) SIMILAR TO H PRIME NEGATIVE²). CHECKING OF THE LAW OF DISTANCE FROM THE BOTTON N EQUALS AH REVEALED THAT IT IS SATISFACTORILY SATISFIED FOR MOST OF THE MENTIONED HYDROLOGICAL STATIONS AT DEPTHS BELOW 1-2 KM. THE RESONANCE CONDITION IS NOT UNIVERSAL: THE CONSTANT A FOR DIFFERENT STATIONS IS DIFFERENT (IT VARIES IN THE RANGE (1-9) TIMES 10 PRIME NEGATIVE⁷ M PRIME NEGATIVE¹ TIMES SEC PRIME NEGATIVE¹). BY COMBINING LAWS (3) AND (5) ONE OBTAINS A EQUALS W-Z(H-Z). THIS VALUE IS ALMOST CONSTANT (THERE IS LITTLE DEPENDENCE ON Z) IN THE LAYER NEAR THE MAXIMUM OF THE FUNCTION Z(H-Z). THUS, IN THE MIDDLE LAYERS OF OCEAN BOTH (3) AND (5) MAY BE APPLICABLE. FACILITY: INSTITUTE OF OCEANOLOGY.

UNCLASSIFIED

NEYMAN, V.I.

THE SIXTH INTERNATIONAL SYMPOSIUM ON SWITCHING

Article by Candidate of Technical Sciences V. I. Neyman and Doctor of Technical Sciences A. D. Kharkovskiy: Moscow, Institut Akademi Nauk SSSR, Russian "Vol 13, No 1, January 1973, pp 119-120)

S: JPRS: 58684
9 APR 73
UNCL.

Adv. Electronic Switching

D/ANL

The Sixth International Symposium on Switching was held on 6-9 June in Cambridge, Massachusetts (USA). About 700 specialists from 22 countries participated in its work.

The main purpose of such symposia is the exchange of knowledge and experience in the area of scientific investigation, development, the planning of production and the operation of switching equipment for electrical communications. In addition, at them there are discussions of promising directions in the development of switching equipment and its mathematical substantiation (it is a matter of modern systems controlled by computers).

In recent years there has been a trend toward a shift of interests of some investigators studying problems in the transmission and distribution of information in the direction of information distribution and switching networks. This is explained by the fact that the growing requirements for telephone communications, and especially for data transmission, require finding effective means of distributing flows of information.

For these reasons the symposium in Cambridge attracted the attention of many specialists, although its program was devoted to a considerable degree to problems of telephone switching. Over 80 reports were heard and discussed at its sessions. Reports of the heads of departments of communications of Japan, England, France, West Germany and Sweden, read in the section "Survey of the latest achievements and plans for the future," were heard with interest. The work of the other sections was devoted to specific scientific and technical problems.

1/2 014

UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--FORMATION OF A C-N BOND DURING THE CLEAVAGE OF PHENYL IODONIUM
YLIDES OF BETA-DICARBONYL COMPOUNDS BY SALTS OF SLIGHTLY BASIC AROMATIC
AUTHOR--(02)-NEYMANIS, O., NEYLANDS, O.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970 (3) 633-4

DATE PUBLISHED-----70

N

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL BONDING, IODINATED ORGANIC COMPOUND, COMPLEX
COMPOUND, CARBONYL COMPOUND, AROMATIC AMINE, BENZENE DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1541

STEP NO--UR/0366/70/006/003/0633/0634

CIRC ACCESSION NO--AP0112535

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0112535

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF (BZ SUB2 C) PRIME
NEGATIVE (IPH) PRIME POSITIVE WITH O-HO SUB2 CO SUB6 H SUB4 NH SUB3
PRIME POSITIVE. PRIME NEGATIVE O SUB3 SC SUB6 H SUB4 ME-P (I) GAVE BZ
SUB2 CHNHC SUB6 H SUB4 CO SUB2 H-O. SIMILARLY BZ SUB2 CHNHC SUB6 H SUB4
CO SUB2 H-P AND BZ SUB2 CHNHC SUB6 H SUB4 NO SUB2-P WERE PREPD. ((MEQ
SUB2 C) SUB2 C) PRIME NEGATIVE (IPH) PRIME POSITIVE REACTED WITH I TO
GEVE (MEQ SUB2 C) SUB2 CHNHC SUB6 H SUB4 CO SUB2 H-O.

UNCLASSIFIED

USSR

UDC: 621.039.2:004.1

NEUMANN, JAN

"Cooperation Between Czechoslovakia and the USSR in the Area of Peaceful Uses of Atomic Energy"

Moscow, Atomnaya Energiya, Vol 28, No 5, May 70, pp 411-412

Abstract: A summary is presented of the cooperation between Czechoslovakia and the USSR in the past fifteen years, since the signing of the first agreement between the two countries on cooperation in this area. The cooperation has included the construction of the A-1 atomic electric power station in Slovakia, a 150-Mw heavy water reactor cooled by CO² using natural metallic uranium. Many Czechoslovakian scientists have been educated in the Soviet Union and now work at Soviet-supported research institutes in Czechoslovakia. The construction of nuclear power stations in Czechoslovakia must continue, since the supply of coal, the main energy resource of the country, will be exhausted for all practical purposes by 1980. This means that two atomic electric power stations of about 1700-Mw power should be put in operation by 1980, then two more by 1982. Agreements are now being drawn up for the importation of equipment for two 880-Mw atomic power stations with water-water reactors, and participation of the national industry in this project. It is thought that the Soviet Union will supply the complete equipment for the primary circuit, while the CSSR will supply the equipment for the secondary circuit.

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USSR

UDC 621.311.22

SIVACHEV, K. A., Candidate of Technical Sciences, GODIK, I. B.,
Candidate of Technical Sciences, Neymark, B. A., Engineer, and
FLAKSERMAN, G. Yu., Engineer, All-Union Institute of Heat Engi-
neering imeni F. Ye. Dzerzhinskiy, Moscow Branch of All-Union
State Institute for the Planning of Electrical Equipment for
Heat Engineering Installations

"Topping Plant SKR-100 for 300 kgsec/cm² and 650°C at Kashirsk
State Regional Electric Power Plant"

Moscow, Teploenergetika, No 6, Jun 73, pp 8-12

Abstract: The modernization project of Kashirsk State Regional
Electric Power Plant, by means of installation of the preconnec-
ted SKR-100 topping plant with the 100-Mw turbine R-100-300 to
the acting part of medium compression of the Power Plant, was
carried out by the Moscow Branch of All-Union State Institute
for the Planning of Electrical Equipment for Heat Engineering
Installations. The principle outfit of the topping plant, its
heating schema particulars, and the selection of steel brands
for parts working at supercritical steam parameters are described:

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USSR

SIVACHEV, K. A., et al., Teploenergetika, No 6, Jun 73, pp 8-12

the chosen variant of boiler-turbine grouping and the flow sheet of the topping plant are shown. The main results of 60 operating periods in the years 1967-1971 of SKR-100 topping plant and of its individual blocks are discussed. Two figures, two tables.

2/2

- 146 -

Physical Properties

USSR

UDC 669.295.5.018.29:669.018.2

NEYHARK, B. YE., KORYTINA, S. F., MONINA, E. F., and MERKUL'EV, A. N.

"Experimental Study of the Physical Properties of Alloys Based on Type VT-5 and VF8 Titanium"

V. sb. Teplofiz. Svoystva tverd. veshchestv. M. Nauka (Thermophysical Properties of Solid Materials -- Collection of Works), Moscow, "Nauka," 1971, pp 71-80 (from Referativnyy Zhurnal -- Metallurgiya, No 6, Jun 71, Abstract No 6I663)

Translation of Abstract: Experimental studies were carried out on the physical properties of two Ti alloys: VT-5 and VT-8. The properties studied were: normal modulus of elasticity (by dynamic method), internal friction by attenuation of free vibrations of the samples, heat conductivity, electrical resistance, Lorentz Number (by the method of Jaeger-Deisselhorst), linear coefficient of expansion (in a vacuum dilatometer), density and heat capacity in the temperature range of 20-800°. (Two illustrations, one table, 5 bibliographic entries).

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1/2 021

UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--STUDY OF THE FUNCTIONAL CONDITION OF THE LUNGS BY MEANS OF
SCANNOPULMONOGRAPHY -U-

AUTHOR--(02)--NEYMARK, I.I., SHIKHMAN, SH.M.

COUNTRY OF INFO--USSR

SOURCE--TERAPEVITICHESKIY ARKHIV, 1970, VOL 42, NR 3, PP 61-69

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LUNG, BLOOD CIRCULATION, CANCER, LYMPHOID TISSUE, METASTASIS,
TUBERCULOSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1986/0821

STEP NO--UR/0504/70/042/003/0061/0069

CIRC ACCESSION NO--AP0102783

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0102783

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESULTS ARE ANALYSED OF SCINTIGRAPHY FOR DETERMINATION OF THE CONDITION OF PULMONARY BLOODFLOW IN 73 PATIENTS: 29 WITH CANCER, 24 SUPPURATIVE, 20 PULMONARY TUBERCULOSIS, AND 8 HEALTHY INDIVIDUALS. THE AUTHORS COME TO THE CONCLUSION THAT SCANNING PULMONOGRAPHY IN COMBINATION WITH INDIVIDUAL PULSE COUNT ON EACH LUNG AND PLANIMETRY OF SCANNOGRAMS OBJECTIVELY CHARACTERIZES THE CONDITION OF PULMONARY BLOODFLOW. THE METHOD ALLOWS DETERMINATION OF CIRCULAR DISORDER NOT ONLY IN THE ENTIRE LUNG BUT ALSO IN DIFFERENT PORTIONS. MAXIMUM DISORDERS OF PULMONARY MICROCIRCULATION WERE DETECTED IN CENTRAL CANCER WITH METASTASES INTO THE REGIONAL Lymph NODES, IN EXTENSIVE SUPPURATIVE PROCESSES, COMPLICATED BY PNEUMOSCLEROSIS AND IN FIBROUS CAVERNOUS TUBERCULOSIS.

UNCLASSIFIED

1/2 019
UNCLASSIFIED
PROCESSING DATE--18SEP70
TITLE--CLINICAL PICTURE AND DIAGNOSIS OF PULMONARY CYSTS -U-
AUTHOR--(02)-NEYMARK, I.I., NAYMARK, D.A.
COUNTRY OF INFO--USSR
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 2, PP 33-36
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--LUNG, CYST
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1985/1620
STEP NO--UR/0504/70/042/002/0033/0036
CIRC ACCESSION NO--AP0101680
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0101680

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS OBSERVED 50 PATIENTS WITH GENUINE PULMONARY CYSTS (4.2PERCENT CHRONIC SUPPURATIVE DISEASES). 18 PATIENTS HAD SINGLE CYSTS, 32 MULTIPLE. COMBINATION OF MEDIASTINAL AND PULMONARY CYSTS WAS DETECTED IN ONE PATIENT. PECULIARTIES OF THE CLINICAL PICTURE AND DIAGNOSIS OF PULMONARY CYSTS ARE ANALYZED IN THE ARTICLE. THE AUTHORS SUPPOSE THAT MULTIPLE CYSTS ARE CAUSED BY A DEFECTIVE DEVELOPMENT OF THE BRONCHIAL TREE IN THE POSTNATAL PERIOD.

UNCLASSIFIED

Acc. Nr: **AP0044686**

N

Ref. Code: **UR 0531**

PRIMARY SOURCE: **Khirurgiya, 1970, Nr 1, pp 37-43**

**INFUSION OF MEDICINAL PREPARATIONS
INTO THE INTERNAL THORACIC ARTERY AS A METHOD
OF TREATING ACUTE MYOCARDIAL INFARCTION**

Neymark, I. I.; Freylikh, V. M.

The authors have elaborated a method of treating acute myocardial infarction by administration of medicinal preparations into the left internal thoracic artery after its ligation. The paper analyzes the results of experiments on 90 dogs and the results of treatment in 20 patients with acute myocardial infarction. On the basis of clinical and experimental data the authors arrived at the conclusion that drip introduction of medicinal preparations into the central end of the ligated internal thoracic artery leads to their passage into the pericardial-diaphragmatic artery and through anastomoses of the transitional fold of the pericardium into the coronary arteries. Infusion into the internal thoracic artery of vasodilators, anesthetics and anticoagulants increases the coronary circulation more than two times and intensifies the blood flow in the pericardial-diaphragmatic artery more than six times. In experimental myocardial infarction the infusion normalizes the content of AST, ALT, aldolase and cholinesterase of the blood during the first 12 hours and is conducive to a more rapid healing infarction than in the control dogs. Clinical employment confirmed the efficacy of this method in the complex therapy of myocardial infarction.

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REEL/F
19771417

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1/2 011 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--ON THE MECHANISM OF POROUS STRUCTURE FORMATION IN SILICA GELS,
EFFECT OF SILICIC ACID HYDROGEL AGEING IN ORGANIC SOLVENST ON THE
AUTHOR--(03)-SHEYNFAYN, R.YU., STAS, O.P., NEYMARK, I.YE.
COUNTRY OF INFO--USSR
SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 3, PP 451-453
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--POROSITY, SILICA GEL, ORGANIC SOLVENT, GEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2139 STEP NO--UR/0069/70/032/003/0451/0453
CIRC ACCESSION NO--AP0125722
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125722

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOLUTIONS OF WATER SOLUBLE ORGANIC SOLVENTS HINDER THE AGEING OF SILICI ACID HYDROGEL. UNLIKE WATER, ORGANIC MEDIUM INHIBITS THE GROWTH OF HYDROGEL PARTICLES. THIS RESULTS IN XEROGELS WITH HIGHLY DEVELOPED SURFACE AREA CORRESPONDING TO THE SIZE OF FRESHLY PRECIPITATED HYDROGEL PARTICLES. STABILIZATION OF PARTICLES IS ACCOUNTED FOR BY THE FORMATION AROUND THEM OF ADSORPTION SOLVATION SHEATHS FROM ORGANIC MOLECULES WHICH HINDER THEIR GROWTH.
FACILITY: INSTITUT FIZICHESKOY KHMII AN USSR, KIEV.

UNCLASSIFIED

W

Ref. Code: UR 0069

Acc. Nr: AP0036523

PRIMARY SOURCE: Kolloidnyy Zhurnal, 1970, Vol 32, Nr 1, pp 17-23

ADSORPTION OF VARIOUS SUBSTANCES FROM THEIR SOLUTIONS IN HEXANE AND CARBON TETRACHLORIDE ON HYDRIDE-POLYSILOXANE XEROGEL AND SILICA GEL

Budkevich, G. B.; Slinyakova, I. B.; Neymark, I. Ye.

Summary

The adsorption on silica gel and hydride-polysiloxane xerogel has been studied in the following two-component liquid systems: benzene-hexane, acetone-hexane, dioxane-hexane, benzene-CCl₄, dioxane-CCl₄, nitrobenzene-CCl₄, chlorobenzene-CCl₄, phenol-CCl₄ and benzaldehyde-CCl₄, as well as in the system benzene-CCl₄ on partially hydrated hydride-polysiloxane xerogel. The excessive adsorption maximum of all the substances studied on hydride-polysiloxane xerogel is almost by an order of magnitude less than on silica gel. The adsorption extent of various substances on hydride-polysiloxane from their solutions in CCl₄ and hexane is determined by the donor-acceptor properties of xerogel surface and of the molecules being adsorbed.

7 D.A.

REEL/FRAME

Acc. Nr:

AP0036536

Ref. Code: UR 9069

PRIMARY SOURCE: Kolloidnyy Zhurnal, 1970, Vol 32, Nr 1,
pp 104-108

ON THE MECHANISM OF POROUS STRUCTURE FORMATION IN SILICAGEL

CHANGE IN POROUS STRUCTURE OF SILICA GEL UNDER THE ACTION
OF HYDROFLUORIC ACID AT THE HYDROGEL AGEING STAGE

Stas', O. P.; Sheynfayn, R. Yu.; Neymark, I. Ye.

Summary

New possibilities have been found for the porous structure control in silica gels by treating hydrogel with HF. With higher HF concentrations and longer ageing times of hydrogel in it, the pore volume of silica gel increases and its surface area diminishes. A certain similarity has been discovered in the effect of HF and hydroxyl ions concentration on hydrogel ageing, viz. that the porous structure changes in xerogels obtained in the two cases are similar.

D.T.

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REEL/FRAME
19721384

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USSR

UDC 541.182.644;541.183.7

SHEYNFAYN, R. YU., STAS', O. P., and NEYMARK, I. YE.

"Synthesis and Adsorption Properties of Mixed Adsorbents of the Type Silica gel -- Zeolite"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 45, No 10, Oct 72, pp 2192-2195

Abstract: In studying the adsorption properties of the zeolite-silica gel type sorbents in relationship to their composition and methods of preparation, it was established that the mutual effect of both components of the mixture results in a deviation from additive value in the area of capillary vapor condensation. Macropores are formed when silica gel is brought in contact with zeolite. The volume of the macropores increases with increased quantity of the zeolite added. A method for the preparation of mixed adsorbents with different porous structures was developed based on mixing zeolite with zerosilo gel. The zeolite-silica gel obtained in this manner shows a bidisperse structure.

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USSR

UDC 541.183.26:541.182.644:546.287

SLINYAKOVA, I. B., KURENNAYA, L. I., and NEYMARK, I. YE., Institute of Physical Chemistry imeni L. V. Pisarzhevskiy, Academy of Sciences UkrSSR

"The Synthesis and Adsorption Properties of Mixed Silico-Polyhydridesiloxane Adsorbents"

Kiev, Ukrainskiy Khimicheskij Zhurnal, Vol 38, No 9, Sep 72, pp 900-904

Abstract: Silico-polyhydridesiloxane adsorbents were prepared by coprecipitation of gels of polyhydridesiloxane and silicic acid upon acid hydrolysis with HCl of a mixture of triethoxysilane and tetraethoxysilane according to $\text{HSi(OEt)}_3 + \text{Si(OEt)}_4 + 7\text{H}_2\text{O} \rightarrow \text{HSi(OH)}_3 + \text{Si(OH)}_4 + 7\text{EtOH}$. Combined polycondensation of HSi(OH)_3 and Si(OH)_4 took place. By varying the ratio of HSi(OEt)_3 to Si(OEt)_4 , gels with different ratios of $\equiv\text{Si-H}$ to $\equiv\text{Si-OH}$ groups were obtained. The xerogels derived from the lyogels exhibited different properties depending on whether the latter were washed with hexane or dioxane before drying. It was established by viscosimetry that the process of gel formation slowed down with an increasing ratio of $\equiv\text{Si-H}$ groups. Isotherms of adsorption of hexane, MeOH, and H_2O vapors on the xerogels were determined.

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- 2 -

USSR

SLINYAKOVA, I. B., et al., Ukrainskiy Khimicheskiy Zhurnal, Vol 38, No 9,
Sep 72, pp 900-904

Reduction of the content of $\equiv\text{Si-H}$ favored formation of structures with fine pores, reduced the total pore volume, and lowered the limiting adsorption volume of the pores for hydrocarbons (C_6H_{14} and PhH). With an increasing content of $\equiv\text{Si-OH}$ groups the adsorption capacity for MeOH and H_2O increased at low relative pressures, but decreased in the capillary condensation range because of changes in the pore structure that involved formation of finer pores.

2/2

NEYMARK, K.N.

SPRS 59908
6.73

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VIII-4. EXTERNAL SHAPE OF THE DISLOCATION AND DISLOCATIONLESS SINGLE CRYSTALS DURING GROWTH FROM A MELT

[Article by V. E. Savz, H. I. Gevorkiy, K. N. Neymark, E. S. Fal'kevich, Zano-
rezh'ye; Novosti Khimii, III Simpozium po Problemam Rosta i Stirozha Poluprovod-
nikov Kristallov i Elementov, 12-17 Iyul' 1972, p. 104]

A theoretical analysis is made of the effect of the growth conditions on the shape of dislocation and dislocationless single crystals. It is demon-
strated that the dislocationless crystals grown under identical conditions
must have broader "evident" faces and greater diameter than crystals with dis-
locations. These differences must increase with a decrease in the radial tem-
perature gradient. The relations obtained were experimentally confirmed when
growing single silicon crystals.

NEV MARK, K.N.

SFRS 5928
6-73

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VI-7. RADIAL DISTRIBUTION OF THE ADMIXTURE IN SILICON CRYSTALS GROWN IN AN ASYMMETRIC THERMAL FIELD

Article by M. I. Osovskiy, K. N. Neymark, E. S. Pavlovich, B. A. Sakharov, Zaporozh'ya, Novosibirsk, III Simpozium po Protsessam Vzrastaniya i Stalozheniya Poluprovodnikov Kh Kristallov i Plinov, Pustanin, 12-17 June, 1972, p 79]

An experimental study was made of the radial distribution of phosphorus admixture in silicon single crystals grown in an asymmetric thermal field. It was established that with an increase in the asymmetry of the thermal field, the radial homogeneity of the phosphorus distribution becomes sharply worse.

An analysis was performed of the observed phenomenon, and it was established that it is connected with the "settling effect" of the crystal. The function was obtained which relates the rate of rotation and growth of the crystal to the magnitude of the asymmetry of the thermal field. The selection of the growth parameters of the crystal in accordance with the obtained function permits exclusion of the inhibition of the effect of settling and significant improvement of the radial distribution of the admixture.

UDC 621.316.72.001.5

USSR

BERSHADSKIY, I. G., Engineer, and NEYMARK, V. M., Engineer

"Two-Channel Current Stabilizer for Supplying Superconducting Magnetic Systems"

Moscow, Elektrotehnika, No 6, June 1971, pp 16-18

Abstract: The authors describe a unit for stabilizing direct current used for supplying superconducting solenoids. The current is stabilized in two different circuits with smooth variation within the 0-150 amps limits and parallel switching of channels from 0-300 amps. Current maintenance stability is better than 0.001% and the variable component for a current load of 150 amps does not exceed 0.02%. The following block-diagrams are given: one channel of the current stabilizer, the regulating element, feedback amplifier, variable supply source, etc. The proposed circuitry can serve for making multichannel and more powerful (1000 amp and higher) stabilizers. Original article: six figures and four bibliographic entries.

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- 127 -

172 021 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THE CLINICAL DIAGNOSIS OF CEREBRAL THROMBOPHLEBITIS -U-
AUTHOR--NEYMARK, YE.Z. N
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL NEVROPATOLOGII PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,
VOL 70, NR 6, PP 816-820
DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--THROMBOPHLEBITIS, CEREBRUM, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/1027

STEP NO--UR/0246/70/070/006/0816/0820

CIRC ACCESSION NO--AP0126665

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126665

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY OF 95 PERSONAL OBSERVATIONS AND 561 CASES FOUND IN THE LITERATURE WITH CEREBRAL THROMBOPHLEBITIS, GAVE GROUNDS TO ELIMINATE THE CRITERIA IN DIAGNOSING THIS CONDITION. THE MAIN POINTS ARE THE CORRELATIONS OF THE NEUROLOGICAL STATUS (THE CLINICAL SYNDROMES, THEIR DEVELOPMENT), ITS EXPRESSION, REFLECTING CERTAIN LINKS OF THE PATHOGENESIS; SIGNS OF AN INFLAMMATORY PROCESS, VASCULAR LIQUOR DYSIRCULATION AND AN INCREASED TENDENCY TO THROMBOFORMATION. HAVING IN MIND THESE CONSIDERATIONS THE DIAGNOSIS OF VENOUS CEREBRAL THROMBOPHLEBITIS MAY BE MADE WITH A GREAT PERCENT OF SIGNIFICANCE IN SEVERAL GROUPS OF PATIENTS: IN THROMBOPHLEBITIS OF THE LOWER EXTREMITIES AND THE PELVIS PLEXUS; IN WOMEN AFTER DELIVERS, ABORTIONS OR MISCARRIAGES; IN DIFFERENT LOCAL INFLAMMATORY PROCESSES (MAINLY OF THE CRANIUM), IN INFECTIOUS DISEASES, ESPECIALLY IN CHILDREN; SOMETIMES AFTER SURGICAL TREATMENT. TWO VERIFIED CASE HISTORIES ARE GIVEN IN THE PAPER. FACILITY: DONETSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

1/2 032

TITLE--INTRACRANIAL HYPERTENSION IN CHRONIC RESPIRATORY INSUFFICIENCY -U-

AUTHOR--NEYMARK, YE.Z.

N

COUNTRY OF INFO--USSR

SOURCE--SOVETSKAYA MEDITSINA, 1970, NR 2, PP 109-111

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HYPERTENSION, RESPIRATION, BLOOD VESSEL, RESPIRATORY SYSTEM DISEASE, PULMONARY EDEMA, CEREBROSPINAL FLUID, ALLERGIC DISEASE, PNEUMONIA, GERONTOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0375

STEP NO--UR/0399/70/000/002/0109/0111

CIRC ACCESSION NO--AP0135864

UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0135864

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SYNDROME OF INTRACRANIAL HYPERTENSION DURING CHRONIC RESPIRATORY INSUFFICIENCY IS A RARE OCCURRENCE. M. DAVID AND COAUTHORS, IN 1962, FOUND 30 SUCH CASES IN THE LITERATURE, WHILE C. LABRAM AND COAUTHORS, FOUR YEARS LATER, WERE ABLE TO ESTABLISH 40 CASES. M. I. KHOLODENKO (1955, 1961, 1963) DIAGNOSED 50 CASES OF INTRACRANIAL HYPERTENSION AMONG 300 PATIENTS AFFECTED WITH VENOUS ENCEPHALOPATHY. THE AUTHOR HAD OBSERVED SIX PATIENTS WITH A HYPERTENSION SYNDROME BASED ON VENOUS ENCEPHALOPATHY, WHICH WAS ATTRIBUTED TO EMPHYSEMA, PNEUMOSCLEROSIS AND BRONCHIAL ESTASIA. HE REPORTS ON TWO CASES OF INTRACRANIAL HYPERTENSION IN CHRONIC RESPIRATORY DEFICIENCY. HE BELIEVES THAT IN CHRONIC PULMONARY AFFECTIONS, SPECIAL ATTENTION SHOULD BE PAID TO THE EDEMA AND THICKENING OF THE ARACHNOID MEMBRANE, HAMPERING RESORPTION OF THE CEREBROSPINAL FLUID, IN ADDITION TO OTHER MECHANISMS OF INTRACRANIAL HYPERTENSION. ARACHNOID CHANGES CAN STEM NOT ONLY FROM A PROTRACTED VENOUS STASIS AND ANOXIA BUT ALSO FROM EFFECTS PRODUCED BY INFECTION AND ALLERGY, SINCE MANY OF SUCH PATIENTS EXHIBIT BRONCHIAL ESTASIA, CHRONIC BRONCHITIS AND RECURRENT PNEUMONIA. THE RATE OCCURRENCE OF THIS SYNDROME IS APPARENTLY EXPLAINED BY THE PRESENCE OF COMPENSATORY MECHANISMS AND ALSO BY A GENERALLY SLOWER DEVELOPMENT OF INTRACRANIAL HYPERTENSION IN THE AGED.

UNCLASSIFIED

USSR

UDC 62-507

NEYMARK, YU. I., Scientific Research Institute of Applied Mathematics and Cybernetics, Gor'kiy University

"Optimization by Automata"

Kazan', Izvestiya Vysshikh Uchebnykh Zavedeniy -- Radiofizika, Vol 15, No 7, 1972, pp 967-971

Abstract: The article, which is a paper presented at the Fifth All-Union Symposium on Extremum Problems (Gor'kiy, May 1971), gives a survey of the results of mathematical experiments studying the optimization potentialities of a group of autonomous automata. Constructing a method of searching for the minimum requires, first of all, the construction of a mathematical model in which the process of searching for the minimum of a function consists in the sequential selection of actions from the class Ω which minimize the functional H as rapidly as possible. Another possibility, rather than searching for a method, is to search for a system which possesses the ability to find the minimum of a function. From a very general standpoint, the solution of the problem of searching for the minimum of a function in both cases is the result of the activity of a certain system.

1/6

USSR

NEYMARK, YU. I., Izvestiya Vysshikh Uchebnykh Zavedeniy -- Radiofizika, Vol 15, No 7, 1972, pp 967-971

What kind of system should there be, and what should its basic structural characteristics and properties be for it to be capable of the search solution of a rather wide class of function minimization problems? Turning to biological systems helps find the answer. These systems are based on simple elements, capable of simple actions, largely independent of one another, related to one another only through the action of the general environment, which they all influence. In the simplest case an individual element is an automaton with two output actions, defined by the internal state of the automaton, changing under the action of the external environment in accordance with primitive reactions of the YES-NO type. This can be, for example, M. L. TSETLIN's linear-tactics automaton or its stochastic variant.

As for the system as a whole, let us assume that the state of the environment common to all automata and characterized by the number Q varies according to output actions $\xi_1, \xi_2, \dots, \xi_m$ of the automata $\Omega_1, \Omega_2, \dots, \Omega_m$ found therein and that the automata react positively to a decrease in Q

2/6

USSR

NEYMARK, YU. I., Izvestiya Vysshikh Uchebnykh Zavedeniy -- Radiofizika, Vol 15, No 7, 1972, pp 967-971

and negatively to an increase. The index of the state of the environment Q is determined by the values of certain variables x_1, x_2, \dots, x_n . The effect of the automata on the environment is that their actions $\xi_1, \xi_2, \dots, \xi_m$ determine changes in the variables x_1, x_2, \dots, x_n so that

$$\Delta x_s = f_s(\xi_1, \xi_2, \dots, \xi_m; x_1, x_2, \dots, x_n).$$

In the simplest case, when each of the automata Ω_s acts on "its own" variable x_s of the environment, we come to the following block diagram of an automaton optimizer:

3/6

USSR

NEYMARK, YU. I., Izvestiya Vysshikh Uchebnykh Zavedeniy -- Radiofizika, Vol 15, No 7, 1972, pp 967-971

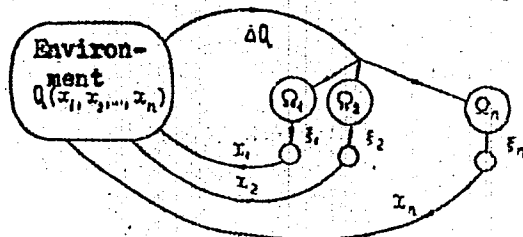


Fig. 3

The automata of this system were chosen to be stochastic. Such a group of autonomous automata can optimize not only a stationary environment function $Q(x_1, x_2, \dots, x_n)$, but also dynamic plants which are not too complex,

4/6

USSR

UDC: 51.681.391

GRIGORENKO, V. P., NEYMARK, Yu. I., RAPOPORT, A. N., RONIN, Ye. I.

"Collective Optimization of Independent Automatic Machines With Adaptation"

V sb. Zadachi statist. optimizatsii (Problems of Statistical Optimization --collection of works), Riga, "Zinatne", 1971, pp 31-43 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V668)

[No abstract]

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- 25 -

USSR

UDC: 51:155.001.57:681.3.06

NEYMARK, Yu. I., BATALOVA, Z. S., VASIN, Yu. G.

"Pattern Recognition and Medical Diagnosis"

Tr. Mezhdunar. simpoziuma po tekhn. i biol. probl. upr., 1968. Raspoznavaniye obrazov. Adaptivn. sistemy (Works of the International Symposium on Technical and Biological Problems of Control, 1968. Pattern Recognition. Adaptive Systems), Moscow, "Nauka", 1971, pp 100-105 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V631)

Translation: Methods are proposed for initial information coding together with algorithms for teaching recognition and algorithms for selecting the most important characteristics developed for application to problems of medical diagnosis and prognosis. The problem of medical diagnosis and prognosis is formulated and its general characteristics are given (large volume and variety of initial data, comparative inadequacy and inaccuracy of instructional material). The authors consider optimization of the coding of characteristics by using inner dependences, as well as the coding of electrocardiograms, and algorithms for recognition and isolation of important characteristics. Results are given for some specific problems of medical diagnosis and prognosis. V. Mikheyev.

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172 011 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--NOR, NUCLEAR QUADRUPOLE RESONANCE, SPECTRA OF CHLORINE 35 AND
INFLUENCE OF TRANSMISSION EFFECTS IN A RSO SUB2 CL SERIES -U-
AUTHOR--(03)-SEMIN, G.K., NEYMSHEVA, A.A., BABUSHKINA, T.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 486-8

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--NUCLEAR RESONANCE, SPECTRUM, CHLORINE ISOTOPE, ORGANIC SULFUR
COMPOUND, CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/0614

STEP NO--UR/0062/70/000/002/0486/0488

CIRC ACCESSION NO--AP0119526

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119526

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRIME35 CL NQR SPECTRA ARE REPORTED FOR RSO SUB2 CL WHERE R WAS: CL, F, CCL SUB3, ME, MED, CH SUB2:CH, CLCH SUB2 CH SUB2, ET, ETO, ME SUB2 N, PR, ISU-PR, 2, THIENYL, BU, ET SUB2 N, C SUB6 F SUB5, NH SUB2, PH, CLCHS UB2, PHO, C SUB6 CL SUB5, (CO) SUB3 MNC SUB5 H SUB4, OR (CO) SUB3 REC SUB5 H SUB4. FROM THE CORRELATION OF THE PRIME35 CL FREQUENCIES WITH THE TAFT SUBSTITUENT CONSTS. IT IS SHOWN THAT THE SUBSTITUENT EFFECTS ARE TRANSMITTED WITH SUCH COMPS. THROUGH SO SUB2 CL GROUP BY ALMOST PURELY INDUCTIVE MECHANISM. FACILITY: INST. ELEMENTOORG. SDEDIN., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 541.128.2:547.241

NEYMYSHEVA, A. A., YERMOLAYEVA, M. V., and KNUNYANTS, I. L.

"Nucleophilic Substitution in a Series of Derivatives of Phosphorus Acid. VII. The Effect of Water Concentration on Acetone in the Rate of Hydrolysis of Phosphorus Acid Chloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 12, Dec 73, pp 2608-2612

Abstract: It was established that during hydrolysis of acid chlorides of dialkylphosphinous, dialkylthiophosphinous, alkylphosphonous, alkylthiophosphonous and dialkylphosphoric acids in aqueous acetone general third-order kinetics are followed: first in respect to the acid chloride and second in respect to water. The reaction order in respect to water is lowered with decreasing number of C-H bonds at the carbon atom in α -position with respect to the phosphorus atom. This is probably due to steric hindrance or to the partial input of the S_N1 mechanism.

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- 43 -

USSR

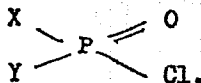
UDC 541.127.547.241

KNUNYANTS, I. L., and NEYMYSHEVA, A. A.

"Nucleophilic Substitution in a Series of Phosphoric acid Derivatives. VI. The Influence of Stearic Electronic Factors on the Reactivity of Acyl Halides of Phosphoric Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, pp 2421-2427

Abstract: The hydrolysis rate constant, previously determined using an hydrometer, was compared with the stearic constant and the induction constant of the substitutions on compounds having the general formula



X generally had the nature of an alkane, alkene, or a phenyl group. Y was frequently Cl or C₂H₅O. Sixteen such compounds were examined. In addition,
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USSR

KNUNYANTS, I. L., and NEYMYSHEVA, A. A., Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, pp 2421-2427

the hydrolysis rate constant, k , was also determined for various compounds at different temperatures. Correlation constants between the rate of hydrolysis and the reactivity given as $\log k = \rho \sigma^*_R + C$ was not less than 0.97.

A direct relationship was established between the induction constant and the log of the hydrolysis rate. However, this relationship did not extend to compounds in which the R group was subject to p - d or π - d interactions. NMR data for P^{31} support the presence of the interaction of the electrons of the benzene and allyl group double bonds with d orbitals on the phosphorus atom.

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USSR

UDC 541-67

KNUNYANTS, I. L., GEORGIYEV, V. I., GALAKHOV, I. V., RAGULIN, L. I.,
and HEYMYSHEVA, A. A.

"p-d-Conjugation in Phosphoryl and Thiophosphoryl Groups of Organophosphorus
Compounds and Electron Screening of Phosphorus Atom Nucleus"

Moscow, Doklady Akademii Nauk SSSR, Vol 201, No 4, Dec 71, pp 862-865

Abstract: In the NMR spectra the H¹ protons on the methyl group of methyl-alkylthiophosphinic acid fluorides are less shielded than in case of methyl-alkylphosphinic acid fluorides. Substituting sulfur for oxygen in dialkylphosphinic acid chlorides and fluorides leads to different shifts in p³¹. This difference is probably due to weak interaction of the sulfur atom in the p-d conjugation and change in the p-d conjugation in the phosphoryl group depending on substituents. Going from phosphine oxides to respective thio-oxides is accompanied by slight changes in electronic density at the phosphorus atom shifting consequently the signal of P³¹ nucleus. In thiophosphorusorganic compounds the electronic density on the phosphorus atom depends on the inductive effect of the substituents. Therefore the magnitude of p³¹ shifts will increase with increased electronegativity of the substituents on the phosphorus atom. Decrease in the number of C-H bonds at the carbon

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USSR

KNUNYANTS, I. L., et al., Doklady Akademii Nauk SSSR, Vol 201, No 4, Dec 71, pp 862-865

atom located in the α -position in respect to the phosphorus results in a shift of the P^{31} signal towards a weaker field, while the F^{19} signal shifts towards stronger fields. The shift in F^{19} signal is constant regardless of the length of the substituent hydrocarbon chain.

2/2

.. 36 -

USSR

KNUNYANTS, I. L., ~~NEYMYSHEVA, A. A.~~ and YEPMOLAYEVA, M. V.

"Method of Producing Esters of Alkyl-(β -sulfonylalkyl)-ethylthionophosphinic Acid"

USSR Author's Certificate No 306131, filed 5/02/70, published 29/07/71.
(Translated from Referativnyy Zhurnal Khimiya, No 5, Moscow, 1972, Abstract No 5N627P by L. V. Razvodovskaya)

Translation: Compounds with the general formula $R(R'O)P(S)CH_2CH_2S(O_2)R''$ (I), where R, R' and R'' = alkyl are obtained by adding $CH_2=CHS(O_2)R''$ (II) to $R(R'O)P(S)H$ (III) in the presence of EtONa at 90-100°. Zero point zero one nine (0.019) mol (III) (R'=Et, R=Me) and a few drops of EtONa in ethanol are added to 0.019 mol II (R''=Me) in dry CO₂ atmosphere at 20°, heated for two hours at 90-100°, distilled, producing I (R=R''=Me, R'=Et), yield 69%, mp 50-2° (ethanol). I is of interest for study as pesticides.

1/1

- 68 -

USSR

UDC 541.128.2:547.241

NEYMYSHEVA, A. A., YERMOLAYEVA, M. V., KNUNYANTS, I. L.

"Nucleophilic Substitution in a Series of Phosphorus Acid Derivatives. V. Effect of the Solvent on the Kinetics of Phosphorus Acid Chlorides Alcoholysis. Catalytic Action of Hydrogen Chloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 2022-2028

Abstract: Study of the kinetics of alcoholysis of the ethyl ester of methylphosphonic acid showed it to be of the overall zero order, HCl catalysing the reaction. It was postulated that the zero order may be the result of three separate processes superimposed: a) reaction of acyl chloride with methanol, b) formation of a complex, and c) reaction of the complex with methanol. It was shown in this study that alcoholysis of the phosphorus acid chlorides in nonpolar solvents -- dioxane, toluene, tetrahydrofuran -- is catalyzed with HCl. Catalytic action of HCl depends on the basicity of the oxygen atom at the phosphoryl group and hence it diminishes in the order: diethylphosphinyl chloride, ethylmethylethylchlorophosphonate, 1/2

USSR

NEYMYSHEVA, A. A., et al, Zhurnal Obshchey Khimii, Vol 40, No 9,
Sep 70, pp 2022-2028

S-ethylmethylthiochlorophosphonate, dimethylchlorophosphonate,
phosphorus oxychloride. Alcoholysis of phosphorus thiooxychloride
is practically unaffected by HCl.

2/2

1/2 029 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--NUCLEOPHILIC SUBSTITUTION IN A SERIES OF PHOSPHORUS V ACID
DERIVATIVES. IV. KINETICS OF CHLOROPHOSPHONATE HYDROLYSIS -U-
AUTHOR-(03)-NEYMYSHEVA, A.A., ARMOLAYEVA, M.V., KNUNYANTS, I.L.
COUNTRY OF INFO--USSR N
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 798-803
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL KINETICS, ACTIVATION ENERGY, CHLORINATED ORGANIC
COMPOUND, ORGANIC PHOSPHORUS COMPOUND, HYDROLYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1501

STEP NO--UR/0079/70/040/004/0798/0803

CIRC ACCESSION NO--AP0135162
UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0135162

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC DATA WERE SHOWN FOR THE TITLE REACTION RUN IN ME SUB2 CO CONTG. 5 VOL. PERCENT H SUB2 O AT TEMPS. OF 0, 10, 20, AND 30 DEGREES, FROM WHICH WERE CALCD. THE VALUES OF ACTIVATION ENERGIES (THESE WERE IN THE RANGE OF 6-10 DCAL-MOLE), DELTA S (28-34 E.U.), AND DELTA F (14-15 KCAL-MOLE) VALUES FOR A SERIES OF RP(O)(OR)CL IN WHICH R WAS SELECTED FROM ME, ET, PR, ISO PR, BU, MEETCH, ISO BU, PH, AND CLCH SUB2 CH SUB2. THE TABULATED DATA FOR THE KINETICS OF HYDROLYSIS OF THE CL ATOM WERE COMPARED WITH EXISTING DATA ON HYDROLYSIS OF RO POCL SUB2 AND (RO)SUB2 POCL. THE STEADY DECLINE OF RATE CONSTS. FOR SUCH HYDROLYSIS IN PASSING FROM R SUB2 POCL TO RP(O)(OR)CL IS EXPLAINED BY THE EXISTENCE OF P D CONJUGATION OF THE O ATOM OF THE RO GROUP, WITH THE RESONANCE EFFECT CAUSED BY THE RO GROUP BEING DEPENDENT ON THE NATURE OF THE OTHER GROUPS AT THE CENTRAL P ATOM.

UNCLASSIFIED

USSR

UDC 547.26'118 + 541.127

NEYMYSHEVA, A. A., YERMOLAYEVA, M. V., and KNUNYANTS, I. L.

"Nucleophilic Substitution in Series of Phosphorus Acid Derivatives.
IV. Kinetics of Hydrolysis of Chlorophosphonates"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 4, Apr 70, pp 798-803

Abstract: As is known, the rate of hydrolysis declines in the transition from dialkylphosphinic acid chlorides to chlorophosphonates. Using the conductometric method, the authors made a detailed kinetic study of the hydrolysis of chlorophosphonates. A comparison of the reactivity of the dialkylphosphinic acid $R(R'CH_2)POCl$ and the chlorophosphonates $R(R'O)POCl$, where R and R' are identical substituents, showed that the decline in the reaction rate is of a regular character. The decline is due to the presence of $p\pi-d\pi$ conjugation of the oxygen atom of the alkoxy group, which can be judged from the spectral characteristics of the substances. The mesomeric influence of the alkoxy group depends on the nature of other substituents at the phosphorus atom.

1/1

- 64 -

Photoelectric Effect

1

USSR

UDC 535.215.1

ALEKSANDROV, S. B., BELKIND, A. I., ALEKSANDROV, V. V., GREKHOV,
V. V., NEYSHLOS, YA. D.

"Photoelectric Emission From Tetracene. Effect of the Condition
of the Surface and of Brightening"

V sb. Poluprovodniki i ikh primeneniya v elektrotekhn (Semiconduc-
tors and Their Application to Electrical Engineering--Collection
of Works), No 5, Riga, "Zinatne," 1971, pp 231-249 (from REh:
Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No ZA19)

Translation: Various mechanisms are considered of photoelectric
emission from tetracene: photoionization of defects of trapped
electrons, ionization of such defects by excitons and photoioniza-
tion of molecules of the basic substance. An analysis is conducted
of the effect of a bend /zagib/ of the energy bands (BEB) on
photoelectric emission: on the spectral dependence of the quantum
yield, the distribution of the electrons with respect to energy,
the photoelectric work function, and others. The parameters of
the BEB are obtained. The photoelectric work function of the

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SR

ALEKSANDROV, S. B., et al, V sb. Poluprovodniki i ikh primeneniye v elektrotekhn, No 5, Riga, "Zinatno," 1971, pp 231-249

tetracene (allowing for BEB) equals 5.40 plus or minus 0.05 ev. The effect is investigated of the brightening in a singlet absorption band on photoelectric emission from tetracene. 11 ill. 43 ref.

2/2

ELECTRICAL ENGINEERING

Equipment/Machinery

USSR

UDC 621.311.21:621.3.076.7

MITINA, S. A., engineer, and NEYSHTADT, I. S., TsNIIKA (Tsentral'nyy nauchno-issledovatel'skiy institute kompleksnoy avtomatizatsii--Central Scientific-Research Institute of Complex Automation)

"Noncontact Automatic Operator for Optimization of the Number and Composition of Operating Components of Hydroelectric Power Plants"

Elektricheskiye stantsii, No 1, Jan 72, pp 31-34

Abstract: The paper discusses a noncontact automatic operator for components of hydroelectric power plants. The operator was developed at the Central Scientific-Research Institute of Complex Automation and which can operate both in a generating regime and in a regime of a synchronous compensator. The device is made on the base of URAL-10 standard semiconductor logic elements. It is concluded that the non-contact automatic operators possess a number of advantages in comparison with electromechanical automatic operators in use at the present time, notably the effective tuning out of frequent start-ups and stops and automatic selection of the sequence. It is advisable to use the automatic operator described at hydroelectric power plants of average power where the equipment of the control machines is economically unsound. 5 fig. 8 ref.

1/1

AA0043554

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/10

242961 RESERVE MULTIVIBRATOR system is provided by two multi-vibrators (1) and (2) run by synchronizing each other. Collectors (3) and (5) are connected through capacitors (7,8) and (9,10) to the base of the transistors (5) and (3) and collectors of the transistors (3-6) are connected through capacitors (11) with the input diodes (12) of the reserved triggers with double path conduction, transistors (13) and (14). Outputs (15) to (18) are direct and inverted outputs of the multi-vibrator.

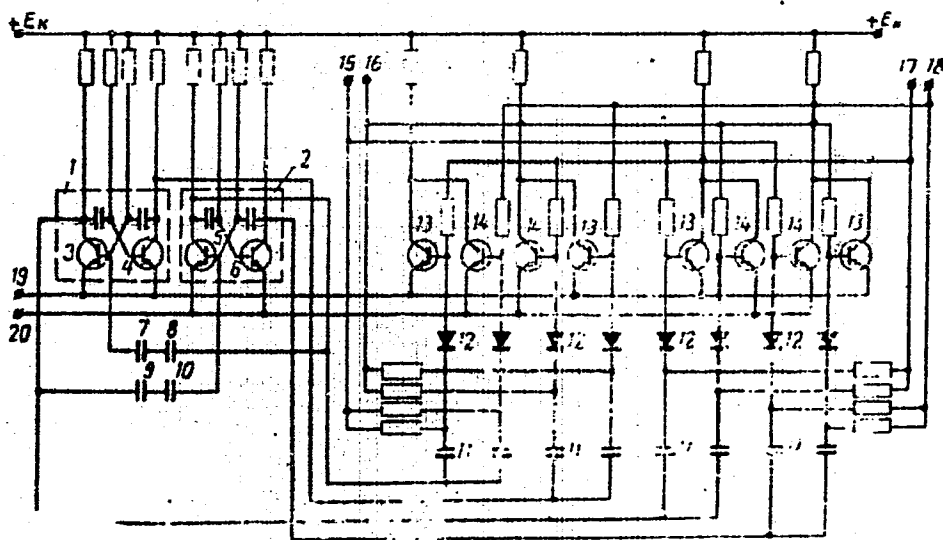
8.4.68 as 1232325/18-24. M. I. ZAKHEYM & M. I. WEISHIADI,
 (17.9.69) Bul 16/5.5.69. Class 21a¹. Int. Cl. H 03k.

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AA0043554



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USSR

UDC 155.3+599.88.019.941

NEYSTRUKH, M. N. and YAKIMOV, V. P. (Reviewers)

Pamyat' u Antropoidov. Fiziologicheskii Analiz: (Memory in Anthropoids, A Physiological Analysis), by Firsov, L. A., Leningrad, 1972, 231 pp

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 59, No 9, Sep 73, pp 1452-1453

Abstract: As a result of many years of investigation Firsov has concluded that the chimpanzee demonstrates a fuller use of subsequent reactions than other animals. He also maintains that subsequent conditioned reflexes are connected to long-term memory, while delayed reactions are a manifestation of operative, short-term memory. Firsov observes the power of elementary abstraction in chimpanzees, such as generalization and representation. This monograph is considered an important contribution to physiology and primatology by the reviewers.

1/1

- 67 -

UDC 619:616.988.75-084.47:636.5

USSR

LAGUTKIN, N. A., CHERNYSHEV, V. V., BONDARENKO, I. M., KHARLAMOV, V. T.,
POLIKARPOV, B. V., BOLOTOV, B. V., MEZAL'ETDINOV, P. B., and RUDOBEL'SKAYA, G.A.

"Aerosol Vaccination of Poultry Against Newcastle Disease"

Moscow, Veterinariya, No 1, 1972, pp 54-56

Abstract: One-time aerosol vaccination of poultry against Newcastle disease produced strong and lasting immunity in almost 3 million animals of different ages and breeds and had no adverse effect on their productivity. The procedure required fewer workers and considerably less vaccine than for nasal or intramuscular vaccination. For example, some 80,000 to 90,000 5-day-old chicks could be vaccinated per day by three men. In 5- to 12-day old chicks hatched from the eggs of hens inoculated with live vaccine, transovarian passive immunity interfered with the development of postvaccinal immunity. Such animals required increased doses of the vaccine or revaccination 12 to 14 days later.

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Acc. Nr.: AM0046211

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Ref. Code: 26P0000

Preface	3
<u>Gridyushko, V. I.</u> Investigation of Reliability of Freight Cars and Effectiveness of Their Maintenance	
I Connection Between Reliability of Cars and Maintenance of the Railroad Stock	4
II Results of Experimental Investigations of Reliability and Analysis of Car Maintenance	30
III Restoration of Useful Life of Cars and Substantiation of the Possibility of Increasing Train Runs Without Technical Inspection and Repairs	47
<u>Khil'chenko, V. P.; Nazgoverov, G. G.</u> Rational Distribution and Improvement of Operation of Stations for Preparation of Cars for Loading	66
<u>Lincherko, V. K.</u> Selection of Rational Mechanization Means and Improvement of Efficiency of Their Utilization in Preparation of Cars for Loading	99

1/2

Reel/Frame
19781320

18

AM0046211

Moscow Vsesoyuznyy Nauchno-Issledovatel'skiy Institut Zheleznodorozhnogo Trans-
porta.

Trudy Nr 390. Improvement of Organization of Maintenance of Freight Cars
(Sovershenstvovaniye organizatsii tekushchego sodержaniya gruzovykh vagonov)
Moscow, Transport, 1970, 117 pp (SL:TFh M85.9t)

TABLE OF CONTENTS:

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19781321

USSR

UDC 621.314.58(088.8)

NEZHDA NOV, I.V., YUKHNIN, M.M.

"Frequency Converter With Direct Coupling"

USSR Author's Certificate No 264531, filed 19 Oct 68, published 24 June 70
(from RZh--Elektronika i yeye primeneniye, No 3, March 1971, Abstract No
3B577P)

Translation: The proposal pertains to frequency converters with direct coupling, which are fed from separate groups of windings of the armature of synchronous generator. With the object of eliminating the voltage regulator, the excitation winding of the synchronous generator is divided into a number of sections, each of which is connected between the common null terminal and the null terminal of the group of windings of the synchronous generator feeding the corresponding rectifier [ventil'] unit of the frequency converter. By means of a nonsymmetric change of the triggering angles of the thyristors of the rectifier units mentioned above, the magnitude of the balancing current of the ambient section of the excitation winding is changed, and the magnitude of the voltage of the synchronous generator is regulated. 1 ill. A.S.

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USSR

UDC 621.314.58(088.8)

NEZHDAŃCV, I.V., YUKHNIN, M.M.

"Frequency Converter"

USSR Author's Certificate No 249781, Filed 20 Mar 68, Published 27 Jun 70 (From RZh--Elektronika i yeye primeneniye, No 10, October 1970, Abstract No 10B356P)

Translation: The patent pertains to a frequency converter based on thyristors which converts m-phase unstable high-frequency into n-phase reduced stable frequency under aviation electrical supply conditions. Possible disruption of shaping the output voltage and failure of the shift register are liquidated, which increases the reliability. The proposed device comprises a sumator of reference signals, the output of which is connected with the inputs of the zero elements [nul'-organ], and the input is connected to the output of the reference generator, to the comparison element of the static channel and via a switch circuit [klyuch] to the comparison element of the astatic channel. 1 ill. I.R.

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USSR

UDC: 621.373.531.1(088.8)

NEZHDAPOV, I. V., YUKHNIN, M. M.

"A Device for Controlling Direct Frequency Conversion With Natural Commutation"

USSR Author's Certificate No 266922, filed 23 Oct 68, published 1 Jul 70
(from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2G258 P)

Translation: This Author's Certificate introduces a device for controlling direct frequency conversion with natural commutation. The unit contains an output frequency pickup and a transformer multivibrator with a capacitor, choke and synchronizing transformer connected in the feedback circuit. To reduce low-frequency modulation in the output voltage curve of the converter, a source of voltage proportional to the output voltage of the converter is connected in the feedback circuit of the multivibrator, and the synchronizing transformer has an additional bias winding connected to a source of direct current as well as a control winding connected to the output of the output frequency pickup. To prevent the possibility of self-excited oscillation of the converter, the output frequency pickup is connected to a threshold device which is made up of two elements, each of them consisting of a resistor which is connected in series with two parallel networks com-

1/2

MEZHIDANOV, I. V., YUKHNIN, M. M., USSR Author's Certificate No 266922

prised of a diode and stabilatron connected in opposition, while each resistor is connected to the input of a flip-flop. The outputs of the flip-flops are connected to the control winding of the synchronizing transformer. To prevent abrupt changes in the frequency of the output voltage of the converter, the output of each flip-flop is connected to the controlling winding of the synchronizing transformer through an integrating network made up of a resistor and capacitor.

2/2

- 13 -

USSR

UDC: 53.07/.08+53.001.5

KRAFTMAKHER, Ya. A., NEZHENTSEV, V. P.

"A Method of Measuring the Coefficient of Thermal Expansion"

V sb. Fiz. tverd. tela i termodinamika (Solid State Physics and Thermodynamics--collection of works), Novosibirsk, "Nauka", 1971, pp 233-237 (from RZh-Fizika, No 4, Apr 72, Abstract No 4A149)

Translation: The paper describes an installation designed for measuring the coefficient of expansion of metal specimens in the form of rods by the method of periodic heating by a current. The specimen is heated by an alternating current, and a modulating voltage is applied to the central part of the specimen. Temperature fluctuations are registered by a thermocouple. Fluctuations in the length of the specimen are automatically compensated by means of a telephone used as an electrochemical converter. Attached to the diaphragm of the telephone is a small flag which partially covers the beam in the light slit in front of a photomultiplier. After amplification, the output voltage from the photomultiplier is fed to the electromechanical converter. The current fluctuations in the converter are proportional to the fluctuations in the length of the specimen. The

1/2

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KRAFTMAKHER, Ya. A., NEZHENTSEV, V. P., Fiz. tverd. tela i termodinamika,
Novosibirsk, "Nauka", 1971, pp 233-237

sensitivity of the circuit is 10^{-5} mm. (It is recommended that the expansion of a current-heated wire also be used for compensating for expansion of the specimen). Standard specimens must be used for calibrating the system. As illustration of the use of the system, data are presented on the expansion of nickel over a temperature range of 400-1100°C (length of specimen 200 mm, modulation period 10 s, amplitude of temperature fluctuations approximately five degrees; a tungsten wire was used for compensation). L. P. Filippov.

2/2

93

USSR

UDC 621.762.2:669.269'784

GUREVICH, B. D., NEZHEVENKO, L. B., GROSHEV, V. I., and GUDOVICH, A. P.

"New Methods for Dispersion of Refractory Metal Carbide Powders"

Tugoplavk. karbidy [Refractory Carbides -- collection of works], Kiev, Nauk. dumka Press, 1970, pp. 40-44 (Translated from Referativnyy Zhurnal-Metallurgiya, No. 2, 1971, Abstract No. 2 G438 by the authors)

Translation: The optimal modes are determined for powdering of Zr carbide by ultrasonics and in a planetary centrifugal mill. Grinding by ultrasonics produces spherical powders with high dispersion and small quantities of rubbed impurities. The impurities rubbed from the surface of the mill during grinding can be reduced by using a Zr carbide liner. 2 figures; 2 tables; 6 biblio. refs.

1/1

- 36 -

USSR

UDC 621.762.001:669.296'784

NEZHEVENKO, L. B., GROSHEV, V. I., GUREVICH, B. D., and BOKOV, O. V.

"Influence of Production Conditions of Zirconium Carbide Powder on Properties of Sintered Specimens"

Tugoplavk. karbidy [Refractory Carbides -- collection of works], Kiev, Nauk. dumka Press, 1970, pp 58-61 (Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract No 2 G403 by the authors)

Translation: The influence of the content of incompletely reduced oxides on the sintering qualities of products of Zr carbide powders is studied. An increase in the content of O in ZrC powders of from 0.2 to 7% decreases the rate of grain growth of finished products and helps to stabilize grain size. A method is developed for production of specimens of Zr carbide of high density. 3 figures; 2 tables; 7 biblio. refs.

1/1

USSR

UDC: 621.391.193

NEZHEVENKO, Ye. S. and TVERDOKHLEB, P. Ye.

"Coherent Optical Devices for Recognizing Unidimensional Signals"

Novosibirsk, Avtometriya, No 5, 1972, pp 15-21

Abstract: This paper is to some extent based on an earlier article by the first of the authors named above, published in the same journal (Opredeleniye blizosti funktsiy v kogerentno-opticheskikh vychislitel'nykh ustroystvakh -- Determining the Proximity of the Functions in Coherent Optical Computing Devices -- No 6, 1971). The earlier article illustrated the possibility of using noncorrelation proximity measures for two comparable signals in the coherent optical device, the first a standard, and the second classified. The present paper offers methods for designing a coherent optical device to calculate the distances between the classified signal and the classes of signals specified by their mathematical expectation vectors and the covariance matrices. It is noted that such devices can be technically realized with relative simplicity. Various means of realizing signal recognition operations in the coherent optical device are considered, and different variants of

1/2

USSR

UDC: 621.391.195

NEZHEVENKO, Ye. S., et al, Avtometriya, No 5, 1972, pp 15-21

the device are analyzed. Since it may have a comparatively extensive memory, the device can advantageously be used in problems with more than 1000 classes of signals.

2/2

- 38 -

USSR

UDC: 621.378:681.332.5

GIBIN, I. S., NEZHEVENKO, Ye. S., POTATURKIN, O. I., and TVERDO-KHLEB, P. Ye.

"Coherent Optical Device for Generalized Spectral Analysis of Images"

Novosibirsk, Avtometriya, No 5, 1972, pp 3-9

Abstract: This paper offers a method of generalizing spectral analysis of images by using holographic methods of storing and processing information realized by coherent optical techniques. This spectrum is defined as the expansion of a function describing the image in a generalized Fourier series. Although the problem can be done with a computer, it is often best to use optical analyzers because the objects of the analysis are basically optical images. To generalize the spectral analysis, holographic methods are used in the present paper for storing and processing information; a scalar mechanism is used for storage, and the correlation mechanism of Gabor is used for the processing. Both these methods are analyzed and the synthesis of the images discussed. The authors find that their coherent optical system has high memory capacity,
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USSR

UDC: 621.378:681.332.5

GIBIN, I. S., et al, Avtometriya, No 5, 1972, pp 3-9

high velocity in analysis, and improved noise immunity.

2/2

- 39 -

Optical

USSR

UDC 621.391.19

NEZHEVENKO, YE. S., SALOV, G. I., TVERDOKHLEB, P. YE., UMANTSEV, G. D., Novosibirsk

"Linear Adaptable Optical Pattern Classifier"

Novosibirsk, Avtometriya, No 3, 1971, pp 82-84

Abstract: One of the urgent problems of automating a scientific experiment is the problem of creating devices to classify optical patterns with respect to random variation of the parameters with incomplete a priori information. Usually the patterns subject to analysis are represented on photographic film or a photographic plate so that their transmission coefficient is a function of two variables s and t . Classification is realized by calculating the discriminate function (functional) of the pattern and using it to decide the classification of the pattern. The pattern $x(s, t)$, $a < s, t < b$ is a realization of one of k classes of patterns $\xi_i(s, t)$, $i = 1, \dots, k$. Then there are probabilities of the occurrence of each of the $\xi_i(s, t)$ (possibly unknown). The linear functional of the pattern $x(s, t)$ has the form

$$(x, h) = \int_a^b \int_a^b x(s, t)h(s, t)dsdt,$$

1/2

USSR

NEZHEVENKO, YE. S., et al, Avtometriya, No 3, 1971, pp 82-84

and the problem consists in finding the weight function $h(s, t)$ suitable for classification. It is demonstrated that by using relatively new material -- photochrome material [K. M. Savost'yanova, Optiko-mekhanicheskaya promyshlennost', No 5, 1968] it is possible comparatively easily to obtain $h(s, t)$ experimentally using a recurrent procedure investigated previously [G. I. Salov, Avtometriya, No 6, 1970]. The linear functional in this case is an estimate of the mean square approximation to the ideal functional assuming a value of $d = d_i$ if $x(s, t)$ belongs to $\xi_i(s, t)$. The initial data for realizing the mentioned recurrent procedure is the unknown sample $x_1(s, t), \dots, x_N(s, t)$ ($N > k$) from the set of patterns of the classes $\{\xi_i(s, t)\}$ insofar as possible indicative for the entire set and also the known series of values of d_{i1}, \dots, d_{iN} and the ideal functional corresponding to this sample. The procedure for constructing $h(s, t) = h_N(s, t)$ was implemented in an optical version of the classifier the schematic of which is given. The adaptive process based on the photochrome material is described and some experimental results are presented.

2/2

- 138 -

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ON SOME RESULTS OF EXPEDITIONARY WATER BALANCE INVESTIGATIONS OF
SPRING FLOOD IN THE BASIN OF THE SHELON RIVER -U-
AUTHOR--(02)-NEZHIKHOVSKIY, R.YE., SAKOVSKAYA, N.P. *N*
COUNTRY OF INFO--USSR
SOURCE--METEOROLOGIYA I GIDROLOGIYA, 1970, NR 6, PP 78-85
DATE PUBLISHED-----70
SUBJECT AREAS--ATMOSPHERIC SCIENCES, EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--RUNOFF, DIURNAL VARIATION, SPRING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1778 STEP NO--UR/0050/70/000/006/0078/0085
CIRC ACCESSION NO--AP0125394
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0125394

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FIELD OF DIURNAL RUNOFF LAYER DURING THE SPRING FLOOD PERIOD IS ANALYSED. THE REASONS OF A SIGNIFICANT REGULATING ROLE OF THE BASIN SURFACE IN RUNOFF FORMATION ARE DETERMINED. FACILITY: GOSUDARSTVENNY GIDROLOGICHESKIY INSTITUT.

UNCLASSIFIED

USSR

UDC: 518.5:681.3.06

KOLEROVA, T. Ya., NEZHINSKAYA, M. M.

"Calculation of Current Distribution in a Branched Network of Underground Structures"

V sb. Mat. obespecheniye avtomatizir. sistem proyektir. elektro- i radio-
tekh. ustroystv. Vyp. 1 (Software for Systems for Automated Design of
Electrical and Radio Equipment--collection of works, No 1), Kiev, 1970,
pp 75-115 (from RZh-Matematika, No 11, Nov. 71, Abstract No 11V857)

Translation: The paper describes an algorithm and program for the case
of intersecting underground pipelines. It is assumed that the pipes are
electrically connected by a bridge with a controllable resistance of any
predetermined value: i. e., they have a mutual electrical effect not only
through the ground, but also through a bridge as well. Combined protection of
a gas line and a cable is considered by way of example. V. Mikheyev.

1/1

USSR

UDC: 518.5:681.3.06

KOLEROVA, T. Ya., NEZHINSKAYA, M. M.

"Calculation of Current Distribution in a Branched Network of Underground Structures"

V sb. Mat. obespecheniye avtomatizir. sistem proyektir. elektro- i radio-tekhn. ustroystv (Software for Automating Systems for Design of Electronic and Radio Equipment), vyp. 1, Kiev, 1970, pp 75-115 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V857)

Translation: The authors describe an algorithm and program for the case of intersecting subterranean pipelines. The pipes are interconnected by a bridge with controllable resistance of any predetermined value, i. e. they have an electrical effect on one another not only through the soil, but also through bridging. Combined shielding of a gas line and a cable is calculated by way of example. V. Mikheyev.

1/1

USSR

UDC: 518.5:681.3.06

KOLEROVA, T. Ya. NEZHINSKAYA, M. M.

"Calculation of Current Distribution in an Isolated Pipeline Located in Homogeneous Soil Bounded by the Surface of the Ground"

V sb. Mat. obespecheniye avtomatizir. sistem proyektir. elektro- i radio-
tekh. ustroystv (Mathematical Provisioning of Automated Systems for
Design of Electrical and Radio Equipment--collection of works), vyp. 1,
Kiev, 1970, pp 26-46 (from RZh-Kibernetika, No 7, Jul 71, Abstract No
7V773)

Translation: The paper describes an algorithm and standard program for
determining voltage drop across the insulation of an isolated pipeline
placed in homogeneous soil parallel to the surface of the ground at a
certain depth. The extent of the effect which the surface has on
the current field in the soil is determined by the method of mirror re-
flection. Appropriate algorithms and a program for the M-20 digital
computer are presented. One illustration. V. Mikheyev.

1/1

USSR

UDC: 518.5:681.3.06

KOLEROVA, T. Ya., NEZHINSKAYA, M. M.

"Calculation of Current Distribution in Two Parallel Underground Structures Connected by Bridges"

V sb. Mat. obespecheniye avtomatizir. sistem proyektir. elektro- i radio-
tekh. ustroystv (Mathematical Provisioning of Automated Systems for
Design of Electrical and Radio Equipment--collection of works), vyp. 1,
Kiev, 1970, pp 116-135 (from RZh-Kibernetika, No 7, Jul 71, Abstract No
7V774)

Translation: The following problem is considered. Two parallel structures of finite length located at a distance α from each other, electrically bridged together, and placed at a depth h in homogeneous soil bounded by the surface of the ground. Connected to one of these structures is a current source (cathode station or projector) at a distance H from the axis of the first structure. The induced magnetic field is to be calculated. The problem is formulated as a system of linear integral equations of the second kind. The effect of the surface of the ground is taken into account by the method of mirror reflection. An algorithm and program for the M-20 digital computer are described. V. Mikheyev.

1/1

- 78 -

USSR

UDC: 621.396.6.017.72(088.8)

PEL'TSMAN, I. D., NEZHINSKIY, T. I., KHASPEKOVA, Ya. N., AZBIL', Z. A.

"A Drying Installation for Radio Components"

USSR Author's Certificate No 267488, filed 3 Oct 66, published 27 Jul 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V232 P)

Translation: This Author's Certificate introduces a drying installation for radio components such as microelements which have a flat base. The installation contains a rotating disc for moving the components from a batching device to the unloading port, and an infrared heater. To improve drying quality and simplify the design, the heater is made in the form of a flat plate located over the disc, and the disc is equipped with radial chutes so that the components can be moved one step by rakes when the chutes match up with the loading device and the unloading port. On the lateral cylindrical surface of the disc between the grooves are drive pins coupled to a mechanism for turning a system of levers and springs to turn the disc by steps and fix its position.

1/1

USSR

UDC 621.396.4:621.396.669.8

ROMANOV, I.M., NEZHMETDINOV, T.K., KOBCHIKOV, A.V., NUGMANOV, I.S.

"Introduction To The Theory Of Designing Asynchronous Pulse Radio Systems"

Vvedeniye v teoriyu proyektirovaniya asinkhronnykh impul'snykh radiosistem
(cf. English above), Moscow, "Sov.radio," 1971. 193 pp, ill. 54 k. (from
RZh: Radiotekhnika, No 2, Feb 1972, Abstract 2A203K)

Translation: From the position of system engineering the book considers a number of basic problems of the initial designing of asynchronous pulse radio systems (APRS) in which several nonsynchronized transmitters transmit information to a common receiving center. In the process, problems are considered connected with a specific efficiency of the APRS, and some interrelations of the probability characteristics of the system. Considerable attention is given to problems of the use of methods of the theory of mass maintenance and to evaluations of the noise immunity and the traffic capacity of the APRS on exposure to noise which imitates the applicable complex signals. Some methods are considered of increasing the efficiency and noise immunity of the APRS by additional processing of information by special logical devices and use of information and structural adaptations in these systems. The book is intended

1/2

USSR

ROMANOV, I. M. et al, Vvedeniye v teoriyu proyektirovaniya asinkhronnykh imoul'snykh radiosistem, Moscow, "Sov. radio," 1971, 193 pp, ill. 54 k.

for specialists occupied with problems of designing complex radio systems and also for graduate students and students of advanced courses of higher educational institutions for corresponding specialities. 49 ill. 9 tab. 79 ref.

Annotation.

2/2

USSR

UDC 519.24

LADOKHIN, V. I., KOBCHIKOV, A. V., NEZHMETDINOV, T. K., PANKOVETS, V. V.,
IVANYCHEV, Yu. N.

"Experimental Determination of the Correlation Function of Processes of Changing Intensity in Adaptive Information Processing Systems"

Priyem i Obrabotka Inform. v Slozhn. Inform. Sistemakh [Reception and Processing of Information in Complex Information Systems -- Collection of Works], No 2, Kazan', Kazan University Press, 1970, pp 141-146, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V202 by Yu. Shevchenko).

Translation: The problem of determination of the sampling estimate of the correlation function in adaptive information processing systems (ADIPS) on the basis of observation data is studied. The Cauchy-Bunyakovskiy inequality is used to write an upper estimate for the dispersion of the estimate of the correlation function. In conclusion, the authors present examples of practical problems which can be solved using the results they produce.

Abstractors Note. The replacement of the actual processes occurring in ADIPS with stable Gaussian processes in this work requires foundation.

USSR

UDC 669.715.5.721.018.29.620.193

BABICHEV, B. I., ZOLOTOREVSKIY, Yu. S., KLEPTSOVA, I. S., NEZHNIKOVSKIY, I. A.,
RYAZHSKAYA, E. K.

"Properties of Alloys in the System Al-Zn-Mg as Functions of Artificial Aging
Mode"

Metallovedeniye [Metal Science -- Collection of Works], No. 14, Leningrad, Sudo-
stroyeniye Press, 1970, pp. 145-150. (Translated from Referativnyy Zhurnal Metal-
lurgiya, No. 5, 1971, Abstract No. 5 I677 by the authors).

Translation: The properties of alloys in the system Al-Zn-Mg are studied with
various aging modes. It is demonstrated that the alloy has satisfactory corrosion
resistance with long storage following hardening with subsequent 2-stage aging
(temperature of stage II 140°). 4 figs; 3 tables; 3 biblio refs.

1/1

Mechanical Properties

USSR

UDC 669.715.5.721.018.29.669.018.2

BABICHEV, B. I., ZOLOTOREVSKIY, Yu. S., NEZHNIKOVSKIY, I. A., RAYAZHSKAYA, T. K.

"The Problem of the Inertia of Natural Aging of Alloys in System Al-Zn-Mg With Mg/Zn 2 and Its Influence on Mechanical Properties"

Metallovedeniye [Metal Science -- Collection of Works], No. 14, Leningrad, Sudostroyeniye Press, 1970, pp. 160-165. (Translated from Referativnyy Zhurnal Metallogiya, No. 5, 1971, Abstract No. 5 1678 by the authors).

Translation: The kinetics of the decomposition of the solid solution of an alloy in the system Al-Zn-Mg and the mechanical properties produced are studied. 2 figs; 2 tables, 12 Biblio refs.

1/1

USSR

UDC 621.378.385

GUDZENKO, L. I., NEZLIN, M. V., and YAKOVLENKO, S. I.

"Recombination Laser Using a Supercooled Plasma Generated in Stationary Form by an Electron Beam"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, No 9, 1973, pp 1931-1937

Abstract: A supercooled plasma is here defined as a plasma whose free electron temperature is less than the thermodynamically balanced one. The upper operating level must then be filled by the electron recombination flow "draining" through atomic or ionic coupled states. This paper considers the possibility of practically creating an intensive recombination quasi-stationary or stationary plasma by introducing a strong electron beam into a dense gas with an atomic concentration of $10^{19}/\text{cm}^3$, the electron energy being 100 keV in a current density of 10-100 amp/cm², and thereby designing a continuous plasma laser system with a stationary state of electron supercooling. The nature of the formation of the free electron energy distribution in a stationary dense gas by the electron beam is discussed from a qualitative standpoint. It is noted that a detailed theory taking into account kinetic leveling cannot be constructed until reliable and complete information of the probabilities of collision transitions is available.

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1/2 032 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--USE OF AN UNSTABLE PLASMA BEAM FOR HEATING IONS IN A TRAP WITH
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AUTHOR-(03)-NEZLIN, M.V., TAKTAKISHVILI, M.I., TRUBNIKOV, A.S.
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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0107594

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PREVIOUSLY DESCRIBED METHOD (CA 63:6428E) WAS REINVESTIGATED. THE NARROW ELEC. FIELD RANGE OF EFFECTIVENESS (2-3 KOE) IN THE EARLIER METHOD IS BROADENED BY INTRODUCTION OF AN ISOLATED GRID INTO THE PLASMA BEAM. THE GRID INCREASES THE EFFECTIVENESS OF THE ION ACCELERATION IN THE RANGE OF HIGH MAGNETIC FIELDS (7-8 KOE) BY A POWER OF TEN.

UNCLASSIFIED

NEZLIN, S. Ye.

Health

ANALYSIS OF CAUSES OF DEATH ASSOCIATED WITH TUBERCULOSIS

Article by Professor S. Ye. Nezlin, K.O. Cherepatshenko, Tuberculosis Control Dispensary No. 16 (Chief Physician P.A. Zait'manin), Leningrad District of Moscow Province, Sovetskoye Editovokhraneniye, Russian, No 4, 1972, submitted 30 August 1971, pp 25-28)

UDC: 616-002.5-036.86-02

SPS 6417
5 3000 17

Very recently mortality due to tuberculosis was considered one of the most significant epidemiological indices of this disease. But in the last decade it has declined sharply. In view of the considerable decline in mortality referable to tuberculosis, the epidemiological significance of this index has diminished, however, even now investigation thereof is interesting. It must be borne in mind that with the presently existing theories on the etiology and treatment of this illness, every death should be evaluated as a failure. For this reason, though comprehensive and detailed analysis, we should determine the causes of death.

We investigated 120 cases of death due to tuberculosis. Of these, 85 (71.8%) were men and 34 (28.2%) were women.

With reference to distribution of deaths according to age, it must be noted that there was not a single death at up to 20 years of age and two in the age group of 20-29 years. We observed 14 cases of death, 11 men and three women, in middle age (30-49 years), and almost half the deaths (50) (47 men and 11 women) were referable to the elderly (50-99 years). There were 26 deaths (seven men and 19 women) referable to old age (70 or more years). In all there were 72 deaths (34.3%) of individuals up to 50 years of age and 98 referable to 50 or more years of age (81.7%). Our data, as well as the literature, indicate that there is a high percentage of elderly and aged victims of tuberculosis. This should be attributed to the fact that at this age it is more often difficult to detect promptly and treat the illness (alone the lines of antibacterial therapy, surgical intervention, etc) and that serious concomitant pathology is also present.

Of the 120 deaths only 35 (29.2%) were under dispensary service for less than five years. There were 66 under such care for over ten years (55%) and 27 (22.5%) for over 20 years. Most deaths were referable to patients with