

2/2 012

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128772

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SORPTION DYNAMICS WAS STUDIED BY USING A COLUMN PACKED WITH 3 G DRY ION EXCHANGER, FILTRATION RATES OF 0.47-2.85 ML-MIN, AND TANNIN (I) SOLNS. OF EXTS. FROM TURKISH GALL NUTS, EACH CONTG. 7.5-8.5PERCENT I. THE SORPTION CAPACITY FOR I SOLNS. INCREASED IN THE FOLLOWING SERIES OF ION EXCHANGERS: KB-4, KU-2, KU-1, AN-1, AN-31, AN-2F, AV-16, EDE-10P, AV-17, WHEREAS FOR I EXTS. IN THE SERIES: KU-2, KU-1, KB-4, AN-1, AN-31, AN-2F, AV-17, EDE-10P, AV-16. THERE WAS A LITTLE DIFFERENCE BETWEEN THE SORPTION OF I FROM SOLNS. AND EXTS. THE SORPTION OF I WAS ACCOMPANIED BY THAT OF MINERAL IONS. HOWEVER, THEIR PRESENCE REDUCED THE SORPTION CAPACITY WITH RESPECT TO I. IT ALSO DROPPED MARKEDLY WITH INCREASING FILTRATION RATE, WHEREAS THE SORPTION WITH RESPECT TO MINERAL IONS DROPPED ONLY SLIGHTLY. WEAKLY BASIC ION EXCHANGERS FAILED TO SORB I OVER THE FLOW RATE RANGE 1.8-2.85 ML-MIN CM PRIME2, WHEREAS STRONGLY ACIDIC ONES SORBED LARGE AMTS. OF I EVEN AT HIGH RATES. I EXTS. CAN BE LIBERATED FROM MINERAL SALTS, ACIDIC COMPONENTS, AND NATURAL DYES BY FILTERING THEM THROUGH ION EXCHANGERS. IT IS ALSO POSSIBLE TO REMOVE I LIKE SUBSTANCES FROM PLANT EXTS. USING A SYSTEM COMPRISING A STRONGLY ACIDIC CATION EXCHANGER AND A STRONGLY BASIC ANION EXCHANGER. FACILITY: INST. FARMAKOKHIM. IM. KUTATELADZE, TBILISI, USSR.

UNCLASSIFIED

USSR

UDC 621.357:621.79.027

SARAFANOV, I. S., ANAGORSKIY, L. A., RABKIN, M. A.

"Potential Distribution in the Electrolyzer Circuit"

V sb. Novoye v elektrofiz. i elektrokhim. obrabotke materialov (What's New in Electrophysical and Electrochemical Treatment of Materials -- collection of works), Leningrad, Mashinostroyeniye Press, 1972, pp 102-106 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L310)

Translation: Mathematical expressions were obtained for calculating the basic electrical parameters of the electrolyzer circuit for heating metals in an electrolyte. They permit determination of the voltage drop in various parts of the circuit and selection of the most advantageous conditions for machining parts with different shape and also determination of the specific resistance of the gas layer occurring at the cathode.

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USSR

UDC 62.500.757

SARAFYAN, N. YE., and TUMANYAN, V. A., Institute of Experimental Biology,  
Academy of Sciences Armenian SSR

"Modeling the Elements of the Functional Organization of the Nervous System"

Yerevan, Biologicheskii Zhurnal Armenii, Vol 25, No 12, 1972, pp 88-89

Abstract: The central nervous system consists of a number of sections located one above another according to increasing complexity of anatomical and functional organization. Each section controls the functions performed by lower sections and is designed to analyze and integrate afferent information necessary for formulating the program of action. A section consists of one nervous center and of neurons representing lower centers, and it is designed to analyze certain sensory information and to synthesize a certain reaction. A center consists of one sensory nucleus which can be excited by receptors and by the representative neurons, and it is designed to perform just one function. During the activity of any section, the nervous center and the neurons representing lower centers influence each other on the principle of coordination. The reaction elicited by a section is modified by the activity of a higher section on the principle of subordination. Each nervous center operates on the principle of the fastest restoration of equilibrium in response to internal and external stimuli.

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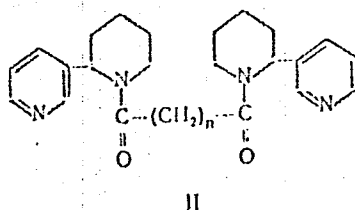
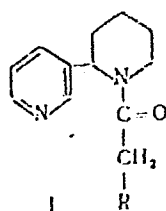
UDC 547.821+547.91

ARUTYUNYAN, L. S., TSATINYAN, A. S., AVAKYAN, O. M., KARAGEZYAN, S. G.,  
SARAFYAN, V. G., and MHATSAKANYAN, V. A., Institute of Fine Organic Chemistry  
Imeni A. L. Madzhoyana, Academy of Sciences Armenian SSR (Yerevan)

"Modification of Alkaloid Structures. VI. Some N-substituted Anabazines"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 25, No 1, 1972, pp 78-80

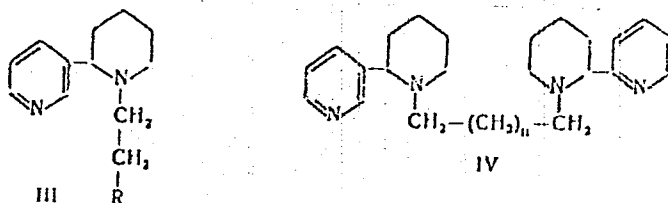
Abstract: Alkylhydroxyphenyl groups were substituted at the 2-, 3-, and 4-  
position of structures I, II, III, and IV.



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USSR

ARUTYUNYAN, L. S., et al., Armyanskiy Khimicheskiy Zhurnal, Vol 25, No 1, 1972,  
pp 78-80



The products were separated and purified by thin-layer chromatography, and identified by their IR spectra. A table presents the values of  $[\alpha]_D^{22}$ ,  $R_F$ , boiling point, and percent yield for all the compounds.

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USSR

SARAFYAN, V. V.

"Diffusion Processes and Differential Equations which Degenerate at Singular Points"

Teoriya Veroyatnostey i Eyo Primeneniya [Theory of Probabilities and its Applications], 1972, Vol 17, No 4, pp 738-745 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V117, by B. Yamrov).

Translation: The Dirichlet problem

$$Lu(x) = 0; u(x)|_{\partial D} = \varphi(x) \tag{1}$$

is studied in limited area D (with smooth boundary  $\partial D$ ), containing the coordinate origin. Here

$$L = \frac{1}{2} \sum_{i,j=1}^n a^{ij}(x) \frac{\partial^2}{\partial x^i \partial x^j} + \sum_{i=1}^n b^i(x) \frac{\partial}{\partial x^i}$$

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USSR

Sarafyan, V. V., *Teoriya Veroyatnostey i Ego Primeneniya*, 1972, Vol 17, No 4, pp 738-743.

is an elliptical differential operator in  $R^n$ , degenerating only at the coordinate origin, where  $a^{ij}(0) = 0$ ,  $b^i(0) = 0$ ,  $i, j = 1, 2, \dots, n$ , while  $\phi(x)$  is a continuous function. Together with (1), we study the stochastic differential equation

$$dx_t = \sigma(x_t) d\xi_t + b(x_t) dt,$$

(2)

where  $\xi_t$  is an  $n$ -dimensional Wienerian process,  $\sigma(x)$  is a matrix such that  $\{a^{ij}(x)\} = \sigma(x)\sigma^*(x)$ . The author proves the following theory: suppose solution  $x_t \equiv 0$  of equation (2) is asymptotically probably stable. Let us assume that in a certain area around point 0, the following condition is fulfilled:

$$m_1 |x|^2 \left( \sum_{i=1}^n \lambda_i^2 \right) > \sum_{i,j=1}^n a^{ij}(x) \lambda_i \lambda_j > \\ > m_2 |x|^2 \left( \sum_{i=1}^n \lambda_i^2 \right); \quad m_1 > m_2 > 0$$

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Sarafyan, V. V., Teoriya Veroyatnostey i Ego Primeneniya, 1972, Vol 17, No 4, pp 738-743.

and

$$\max_{\substack{1 \leq l, j, k, l \leq n \\ x \in D}} \left\{ \frac{\partial^j a^l(x)}{\partial x^k \partial x^l}, \frac{\partial^k b^l(x)}{\partial x^k \partial x^l} \right\} < K < \infty.$$

Then: 1) any limited solution of problem (1) has the limit  $\lim_{x \rightarrow 0} u(x)$ ,

2) in order to separate the unique solution of problem (1) it is sufficient to fix the limit  $\lim_{x \rightarrow 0} u(x) = \text{const.}$

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USSR

UDC 632.95

NCVRUZOV, Kh., KUCHKAREV, A. B., ALOVITDINOV, A. B., and SARANKINA, S. A.

"Method of Preparing tert-Alkyl Phenols"

USSR Authors' Certificate No 259903, filed 17 Jul 68, published 7 May 70  
(from RZh-Khimiya, No 1, 10 Jan 71, Abstract No 1N608P)

Translation: tert-Alkyl phenols which can be employed as herbicides and fungicides are obtained by the alkylation of PhOH with tertiary alcohols a in the presence of polyphosphoric acid (I) at  $\leq 200^\circ$ . This increases the selectivity of the alkylation as compared with other acid catalysts. In a device with a DIN-STARK [transliterated from the Russian; possibly DEAN-STARK] cap, 0.6 mole tert-BuOH is added dropwise to 0.5 mole PhOH containing 1-3% I at  $145-150^\circ$  with stirring. After heating for 15 min, the mixture is cooled, rinsed off from I with water, and 4-tert-BuC<sub>6</sub>H<sub>4</sub>OH is separated by distillation, yield 98%, melting point  $96-8.5^\circ$  (heptane).

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USSR

UDC 621.438.001.5

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KOCHUROV, V. I., Candidate of Technical Sciences, TARAKANOV, N. I., SARANISEV,  
Engineers, VLASENKO, I. V., Candidate of Technical Sciences

"Experimental Dynamic Characteristics of the GTK-10 NZL Gas Turbine"

Leningrad, Energomashinostroyeniye, No 2, February 1970, pp 1-3

Abstract: This article contains the results of experimental investigations to determine the dynamic characteristics of an open cycle gas turbine engine with a free power turbine and regeneration of the exhaust gas heat. The experimental phase-amplitude characteristics of the GTK-10 which were obtained offer the possibility of refining the procedure for calculating the dynamic characteristics of the gas turbine engine and determining the effect of various factors on the dynamic characteristics of such engines. The engine in question has a rated power of 10,000 kilowatts and rotot rpm's of 5,350 for the high pressure turbine axial compressor and 4,800 for the low pressure turbine blower. The experimental tests were run with the engine operating on a closed blower loop which permitted determination of the dynamic characteristics of the turbine engine in a broad load range. The characteristics of the unit are both tabulated and plotted on graphs.

The experimental determinations of the dynamic characteristics of the gas

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USSR

KOCHUROV, V. I., et al, *Energomashinostroyeniya*, No 2, February 1970, pp 1-3

turbine engine showed that it is not possible to determine the frequency characteristics of the object of regulation jointly with the regulation system included in connection with the fact that when the unit operates with an rpm regulator there are aperiodic oscillations of the fuel regulation valve. The magnitude of the amplitude of these oscillations is commensurate with the amplitude of the forced oscillations of the valve. Therefore it is expedient to investigate the dynamic characteristics of the regulating system and the gas turbine engine separately. It is pointed out that the data gathered during these investigations can be used when designing automatic regulating and control systems for new gas turbine engines. It is also pointed out that investigation of the phase-amplitude characteristics determined for various values of the input perturbation amplitude under the same operating conditions shows that the frequency characteristics of GTK-10 depend insignificantly on the amplitude of the perturbation in the range of variation of the amplitude  $A_n = 0.158-0.944$  mm on the given frequency.

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- END -

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USSR

UDC: 621.43.001.3

ANTONOV, G. G., DOLINSKIY, D. V., MARCHEVSKIY, V. P., MEL'NICHENKO, R. M.,  
OTSECHKIN, Yu. G., PAVLENKO, G. V., TOVKANETS, V. Ye., SAFANTSEV, K. B.,  
Institute of Automation, Khar'kov Polytechnical Institute

"An Antistall Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,  
No 13, May 72, Author's Certificate No 335444, Division F, filed 21 Sep 70,  
published 11 Apr 72, p 140

Translation: This Author's Certificate introduces an antistall device which may be used for controlling centrifugal compressors. The device contains pickups for the rate of flow and pressure drop across the compressor, an amplifying adder and a regulating valve installed on a bypass line between the pressure and suction channels. As a distinguishing feature of the patent, in order to improve the reliability and accuracy of maintaining the limiting flow rate, a pickup is connected to the amplifying adder which measures the difference in pressures between the wake and kernel of the flow behind the vanes of the exit guide cone to correct control in accordance with variation of the static characteristic of the compressor.

1/1

1/2 008 UNCLASSIFIED PROCESSING DATE--160CT70  
TITLE--USE OF ONE MESON APPROXIMATION TO DETERMINE PI PI INTERACTION CROSS  
SECTIONS -U-  
AUTHOR--(04)-MAKAROV, M.M., NELYUBIN, V.V., SARANTSEV, V.V., TKACH, L.N.  
COUNTRY OF INFO--USSR  
SOURCE--YAD. FIZ. 1970, 11(2), 461-7  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--PION PION INTERACTION, APPROXIMATION CALCULATION, PION PROTON  
INTERACTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1991/1038 STEP NO--UR/0367/70/011/002/0461/0467  
CIRC ACCESSION NO--AP0110728  
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0110728

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELASTIC PI PRIME POSITIVE PI PRIME  
NEGATIVE INTERACTION CROSS SECTIONS ARE DETD. BY ANAL. OF EXPTL. DATA ON  
THE REACTION PI PRIME NEGATIVE P YIELDS PI PRIME POSITIVE PI PRIME  
NEGATIVE N IN THE ENERGY RANGE 360-780 MEV. FACILITY: FIZ.  
TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--11DEC70  
TITLE--WHEAT STREAK MOSAIC VIRUS AND PROTEIN METABOLISM IN WINTER WHEAT  
-U-  
AUTHOR--(04)--KANEVCHVA, I.S., ALESHIN, YE.P., ZEMLINA, A.G., SAKAPULKIN,  
M.M.  
COUNTRY OF INFO--USSR  
SOURCE--VESTNIK SEL'SKOKHOZYAYSTVENNOY NAUKI, 1970, NR 3, PP 27-29  
DATE PUBLISHED-----70  
SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--WHEAT, PLANT DISEASE, PROTEIN METABOLISM, PLANT VIRUS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY FICHE NO-----FD70/605049/E02 STEP NO--UR/9091/70/000/003/0027/0029  
CIRC ACCESSION NO--AP0143384  
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0143384

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROTEIN METABOLISM IN LEAVES AND TILLERING NODES OF HEALTHY WINTER WHEAT, VARIETY BEZOSTAYA 1, AND WHEAT INFECTED WITH WHEAT STREAK MOSAIC, WAS STUDIED. TESTS SHOWED THAT INFECTION CONSIDERABLY DISRUPTS NITROGEN METABOLISM IN PLANTS; THE AMOUNT OF PROTEIN NITROGEN DECREASED AND THE AMOUNT OF NONPROTEIN INCREASED, INDICATING INHIBITION OF PROTEIN SYNTHESIS BY THE VIRUS. FRACTIONATION OF PROTEINS ON AE CELLULOSE SHOWED THAT THE VIRUS CAUSES IMPORTANT CHANGES IN PROTEIN METABOLISM: THE NUMBER OF PROTEIN FRACTIONS IN INFECTED PLANTS DROPPED FROM EIGHT TO SIX, AND TWO NEW FRACTIONS NOT FOUND IN HEALTHY PLANTS APPEARED. APPARENTLY THE VIRUS PREVENTS SYNTHESIS OF PLANT PROTEINS IN FAVOR OF ITS OWN.

UNCLASSIFIED



USSR

UDC 635.11+632.9

KANEVCHEVA, I. S., ALESHIN, Ye. P., ZEMLINA, A. G., and SARAPULKIN, M. M.

"Wheat Streak Mosaic Virus and Protein Metabolism in Winter Wheat"

Moscow, Vestnik Sel'skokhozyaystvennoy Nauki, No 3, 1970, pp 27-29

Abstract: Wheat streak mosaic virus causes massive destruction of winter wheat in the epiphytotic period in the Krasnodarsk area. In an attempt to elucidate the mechanism of this infection, the authors studied the effect of the virus on protein content in the leaves of Bezostaya I wheat. They found that virus infection affects plant nitrogen metabolism: infected plants show lower levels of protein nitrogen and increased values of nonprotein nitrogen, indicating depressed protein synthesis. Chromatography of albumin on AE-cellulose A-50 showed that the virus causes extensive changes in protein metabolism. Many fractions disappear, while new ones show up which were absent in healthy plants.

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USSR

UDC 615.281:8:547.775

SARATIKOV, A. S., YAVOROVSKAYA, V. YE., PRISHCHEP, T. P., BLAGERMAN, S. K.,  
KISELEVA, V. N., IL'INSKIY, N. N., and GICHEVA, T. A., Chair of Pharmacology,  
Tomsk Medical Institute, Tomsk, and Chair of Microbiology, Novosibirsk  
Medical Institute, Novosibirsk

"The Antivirus Effect of Some Pyrazolone Derivatives in a Cell Culture in Vitro"

Moscow, Farmakologiya i Toksikologiya, Vol 36, No 1, Jan/Feb 73, pp 67-73

Abstract: In experiments carried out with human fibroblast cell cultures, butadion, stearic acid antipyrylamide, and p-aminobenzoic acid N-methyl-N-antipyrylamide had an antivirus effect on the Coxsackie A13 virus with which the cell culture was infected. This effect was due to the formation by the culture cells of an inhibitor which was not identical with interferon, because it was inactivated at pH 2.2. The pyrazolone derivatives studied stimulated the functional activity of the culture cells and did not damage their nuclear structures. These derivatives had no bactericidal effect on hemolytic streptococci. However, the culture liquid containing the inhibitor had a bacteriostatic effect on these streptococci. Hemolytic streptococci are often present together with Coxsackie virus A 13 in patients with rheumatic fever, particularly in the acute stage of this disease.

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Physiology

USSR

SARATIKOV, A. S., VOLOSHINA, E. I., REVINA, T. A., and SAKHAROVA, S. A.,  
Tomsk State Medical Institute, Tomsk

"Energy Metabolism of the Brain in Acute Hypoxic Hypoxia"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya  
Biologicheskikh Nauk, No 5, Apr 71, pp 119-126

Abstract: Hypoxia was produced in rats by placing individual animals into a chamber with a capacity of 1.5 liters in which CO<sub>2</sub> was absorbed by a 20% solution of NaOH. Severe hypoxia, as indicated by slowed respiration and spasmodic gasping for air, developed in approximately one hour. At that time the O<sub>2</sub> pressure in the chamber was 40-60 mm and the CO<sub>2</sub> content in it less than 0.2%. As a result of the hypoxia that developed, the content of ATP, ADP, AMP creatine phosphate, glucose, and glycogen in the brain tissue of the animals decreased. The decrease in the level of macroergic phosphates was due to an inadequate resynthesis of the latter in consequence of a distributed conjugation between oxidation and phosphorylation and also to an increased rate of decomposition because of activation of the mitochondrial ATP-ase. The disturbance of conjugation was established on the basis of a decrease of  
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SARATIKOV, A. S., et al., Izvestiya Sibirskogo Otdeleniya Akademii Nauk USSR, Seriya Biologicheskikh Nauk, No 1, Apr 71, pp 119-126

the P/O index in experiments on mitochondria separated by centrifuging and a drop in the respiratory control of phosphorylation in the mitochondria. The relative increase in free oxidation was apparently associated with damage to the ultrastructure of mitochondria of the brain tissue. The fact that the mitochondrial ATP-ase was activated followed from an increase in the amount of inorganic phosphate that was formed on incubation with ATP. The intensification of anaerobic glycolysis in the brain in hypoxia evidently did not offset to a sufficient degree the depletion of energy resources in brain tissue.

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USSR

UDC 615.31.546.347.033

SARATIKOV, A. S., SAMOYLOV, N. N., SUBBOTIN, V. F., KUKLENKO, V. G., and  
PILIPENKO, YU. A., Tomsk Medical Institute

"The Distribution of Lithium in the Body and Its Elimination"

Moscow, Zhurnal Nevropatologii i Psikhatrii imeni S. S. Korsakova,  
Vol 71, No 11, 1971, pp 1,709-1,712

Abstract: Lithium was administered to mice, and upon sacrifice of the animals its content was determined by the flame photometry method. Statistically processed results demonstrated that the accumulation of lithium after a single administration of its salts in doses of  $1/3$  to  $1 LD_{50}$  was manifested to the highest degree in the kidneys, then in order of diminishing values, in the heart, lungs, spleen, muscles, liver, and brain. The method of administration, dosage and anion type of lithium salt have no significant effect on the nature of distribution, accumulation, or elimination of the metal from the body, whereas the rapidity of its accumulation in the tissues depends on the type of tissue, method of administration and dosage. A study of the dynamics of elimination of lithium from the tissues revealed its selective retention by the brain.

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USSR

UDC 615.225.2.015.4:612.82.013.7

SARATKOV, A. S., VOLOSHINA, E. I., and SAKHAROVA, S. A., Chair of Pharmacology and Central Scientific Research Laboratory, Tomsk Medical Institute

"Effect of Aminophylline on Metabolism in the Brain During Hypoxia"

Moscow, Zhurnal Nevropatologii i Psikhatrii imeni S. S. Korsakov, Vol 70, No 7, 1970, pp 995-999

Abstract: In vivo and in vitro experiments on rats showed that aminophylline (diaphylline) (2 mg/100 g) acts directly on the respiratory cycle of the cell. In intact animals, aminophylline intensified tissue respiration in the brain without affecting the respiratory quotient. For in vivo experiments and at high concentrations (1:5,000 to 1:1,000), it decreased the intensity of tissue respiration substantially. In hypoxic animals, aminophylline increased tissue respiration in the brain and normalized the respiratory quotient. Addition of the preparation to a brain homogenate of hypoxic animals increased both the consumption of oxygen and the release of carbon dioxide. Biochemical analysis revealed that aminophylline increased succinic dehydrogenase and cytochrome activity while decreasing that of NADH. In hypoxic animals, it increased the activity of all three enzyme systems. In brain mitochondria, aminophylline impaired oxidative phosphorylation, caused the organelles to swell, and decreased the content of macroergic phosphates, partially as a result of the activation of mitochondrial adenosinetriphosphatase.

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USSR

UDC: 666.593.8.001

SARATOVKINA, N. V., SARATOVKIN, V. D.

"Solders for High-Temperature Titanium-Ceramic Junctions"

Elektron. tekhnika. Nauch.-tekhn. sb. Priyerno-usilit. lampy (Electronic Technology. Scientific and Technical Collection. Amplifying and Receiving Tubes), 1970, vyp. 2(17), pp 38-47 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V397)

Translation: The authors investigate the properties of junctions between titanium and LF-11 ceramic soldered by foil made from various alloys, and by copper-silver solder. It is shown that the use of NiCu<sub>2</sub>OSi<sub>4</sub> alloy as solder gives a junction which combines high mechanical strength, a wide permissible soldering interval in vacuum, reserve resistance to moisture, and resistance to the protracted action of temperatures of 500-700°C. An analysis is made of the mechanisms of formation of the junction and the effect of high temperature on its properties.

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USSR

UDC: 666.593.8.001

SARATOVKINA, N. V., SARATOVKIN, V. D.

"Solders for High-Temperature Titanium-Ceramic Junctions"

Elektron. tekhnika. Nauch.-tekhn. sb. Priyemno-usilit. lampy (Electronic Technology. Scientific and Technical Collection. Amplifying and Receiving Tubes), 1970, vyp. 2(17), pp 38-47 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V397)

Translation: The authors investigate the properties of junctions between titanium and LF-11 ceramic soldered by foil made from various alloys, and by copper-silver solder. It is shown that the use of NiCu<sub>2</sub>OSi<sub>4</sub> alloy as solder gives a junction which combines high mechanical strength, a wide permissible soldering interval in vacuum, reserve resistance to moisture, and resistance to the protracted action of temperatures of 500-700°C. An analysis is made of the mechanisms of formation of the junction and the effect of high temperature on its properties.

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USSR

UDC 669.28.172

BULGAK, L. V., SAVITSKIY, Ye. M., BELOMYTTSEV, Yu. S., SARATOVSKIY, L. N.,  
PAVLOVICH, T. M., and MKHAYLOV, S. M.

"Study of Structure and Properties of Molybdenum Single Crystals Produced  
Under Oilless Vacuum Conditions"

Monokristally Tugoplavkikh i Redkikh Metallov [Single Crystals of Refractory  
and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 67-70

Translation: Data are presented on the mechanical properties and structure  
of monocrystalline molybdenum, produced under oilless vacuum conditions by  
cathode ray zone refining. 1 Table; 4 Figures; 2 Bibliographic References.

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USSR

UDC: 621.375.132.3(088.8)

SARATOVSKIY, O. B., SEL'DYAKOV, Yu. P.

"A Threshold Amplifier"

USSR Author's Certificate No 246592, filed 22 Apr 68, published 24 Nov 69 (from RZh-Radiotekhnika, No 6, Jun 70, Abstract No 6D136 P)

Translation: This Author's Certificate introduces a threshold amplifier which contains input and output cathode followers. To reduce the nonlinear segment of the I/O characteristic and extend the dynamic range of the output signal, the cathode of the tube in the output follower is connected simultaneously through a series-connected stabilivolt and thermistor to a power supply terminal, and through a second stabilivolt to the cathode of the tube in the input follower and to an output terminal, the control grids of both tubes being tied to the power supply terminal by means of a resistive divider. P. U.

1/1

SARAYEV, A. F.

SO: JPRS 54019  
9 SEP 91

UDC: 362.11(47-21)

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

All-Union Health

Article by Ye. A. Logina, V. V. Zhigareva, T. S. Belyakova, N. T. Trubilin, L. K. Sobolev, L. F. Bopuz, A. N. Pivunov, Z. P. Taranenko, A. V. Sarayev, M. G. Krasav, All-Union Scientific Research Institute of Social Hygiene and Public Health Organization named N. A. Semashko, Kostovskaya, Ul'yanovskaya and Saratov Oblast Health Departments: Moscow, Sovetskoye Zdravoohraneniye, Saratov, No 7, 1971, submitted 16 February 1971, pp 18-23

In spite of the knowhow accumulated by Soviet public health in the area of planning and developing norms for medical care in hospitals, still unstudied is the matter of bed requirements referable to emergency hospitalization of patients and the structure of such requirements. Of special interest is the development and improvement of the network and structure of the beds allocated for emergency hospitalization in view of the specialized emergency hospitals founded on the basis of Decree No. 517 dated 5 July 1966 issued by the Central Committee of the CPSU and USSR Council of Ministers, "On Measures for Further Improvement of Public Health and Development of Medical Science in the Nation," as well as integration of emergency stations and hospitals, as reflected in order No 608, dated 6 August 1968, issued by the USSR Minister of Health.

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

For the purpose of substantiating the structure of the beds allocated for emergency hospitalization, the All-Union Scientific Research Institute of Social Hygiene and Public Health Organization (with L. A. Semashko) jointly with the oblast health departments of Kostovskaya, Ul'yanovskaya, Kurekaya, Kaluzhinskaya, and Volgodonskaya oblasts and the Ministry of Health of Bashkir ASSR, conducted a complex study to determine the level, scope, and nature of emergency hospital care in different types of cities.

SARAYEV, A. F.

SO: JPR5 55015  
25 JAN 72

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

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

Article by Ye.A. Logina, N.Y. Potekhina, V.M. Shapova, M.T. Trubilin, I.K. Smolovik, L. Yegorin, A.K. Plyusina, Z.I. Pletencho, V.I. Kolesnikov, A.P. N. ~~Shapova, M.T. Trubilin, I.K. Smolovik, L. Yegorin, A.K. Plyusina, Z.I. Pletencho, V.I. Kolesnikov, A.P. N.~~ Hygiene and Public Health Organization Imeni N.A. Semashko, Rostovskaya, Ul'yanovskaya, and Kurskaya oblast health departments; Moscow, Sovetskoye Zarnavookhraneniye, Russian, No 12, 1971, submitted 24 March 1971, pp 16-21

Urban therapeutic institutions play an important role in rendering qualified and particularly specialized care for the rural population.

It is a known fact that the volume of medical care rendered to the rural population by urban institutions is increasing annually, however, to date this is not taken into consideration in planning urban public health care. In addition, there are still insufficient special investigations to substantiate the rural residents demand for specialized hospital and extramural care at different stages of organization of rural public health.

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

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

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

Acc. Nr.

AT 0031897

Abstracting Service:  
CHEMICAL ABST. 3-70

Ref. Code  
UR 0000

S

50459p Effect of oxygen-containing substance additions on the decomposition of lithium perchlorate. Kudryakova, S. A.; Saray, B. A.; Troitskii, E. N. (USSR). *Uch. Zap. Yaroslav. Gos. Pedagog. Inst.* 1969, No. 66, 51-6 (Russ). Effect of the nature and concn. of admixts. in LiClO<sub>4</sub> on the decompn. temp. of LiClO<sub>4</sub> was studied by DTA. The addn. of Ni(ClO<sub>4</sub>)<sub>2</sub> and (NH<sub>4</sub>)<sub>2</sub>CrO<sub>4</sub> (1-2%) to LiClO<sub>4</sub> caused the decompn. temp. to decrease 30 and 22°, resp. Admixts. of perchlorates of Cu, NH<sub>4</sub>, Ca, and Mg decrease the decompn. temp. about 10°. In the case of mixts. contg. 0.01-0.1% of the added salts, the decompn. temp. was not changed. A. Bekarkova

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REEL/FRAME

19692047

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USSR

UDC 621.375.426

SARAYEV, S. M., Active Member of the Scientific and Technical Society of Radio Engineering, Electronics and Communications imeni A. S. Popov

"Single-Circuit OB-OB Type Resonance Transistorized Amplifier"

Moscow, Radiotekhnika, Vol 27, No 1, 1972, 1972, pp 98-104

Abstract: Results are presented from an analysis of a single-circuit amplifier with combination inclusion of the transistors in the resonance circuit. Simple formulas are proposed for calculating the basic parameters of the amplifying stage and the circuit elements. The frequency characteristic of the amplifier is analyzed, and an algorithm is presented for calculating the amplifying stage. Exact and comparatively simple formulas are obtained for calculating the basic parameters of the OB-OB transistorized amplifier with parallel-series inclusion of the circuit: the amplification factor, the tuning frequency and the pass band. The conditions maximizing the amplification coefficient of the cathode were obtained. The errors occurring when calculating the tuning frequency and the pass band of the amplifier are determined by the general formulas used for calculating the ordinary resonance amplifiers. The derived relations permit calculation of the basic circuit elements of the amplifier.

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- 2 -

USSR

UDC 56.07:539.217.1

SARAYEVA, G. D., and KHANIN, A. A., All-Union Scientific Research Institute  
of Natural Gas

"A Comparative Analysis of the Methods for Studying Open Porosity"

Moscow, Geologiya Nefti i Gaza, No 1, Jan 73, pp 40-42

Abstract: The theoretical errors were calculated for the kerosene saturation and the helium porosimeter methods for studying open porosity. It was shown to be possible to obtain a relative error of  $\pm 1\%$  for the kerosene saturation method, while the gasometric method has an error of  $\pm 3\%$ . It was further demonstrated that the use of air, rather than an inert gas, as the working substance of the porosimeter will significantly elevate results, unless sorption is minimized by having the rocks at maximal hygroscopic moisture.

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1/2 020 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--REGENERATION OF THE IRON FORM OF TYPE X ZEOLITE AS A CATALYST OF  
CARBON MONOXIDE OXIDATION -U-  
AUTHOR--YERMOLENKO, N.F., MALASHEVICH, L.N., SARAYEVA, M.L. S

COUNTRY OF INFO--USSR

SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. KHIM. NAVUK 1970, (1), 95-8

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ZEOLITE, CARBON MONOXIDE, IRON OXIDE, OXIDATION, CRYSTAL  
STRUCTURE, ADSORPTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1666

STEP NO--UR/0419/70/000/001/0095/0098

CIRC ACCESSION NO--AP0104888

UNCLASSIFIED



2/2 020

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104888

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ACTIVITY OF AN FE X TYPE ZEOLITE CONTG. 4.19 WT. PERCENT FE SUB2 O SUB3 WITH A 39.5PERCENT NA YIELDS FE EXCHANGE DEGREE WAS STUDIED EXPTL. DURING THE OXIDN. OF AN AIR MIXT. CONTG. 5-7 VOL. PERCENT CO IN A FLOW APP. AT 350DEGREES. THE INITIAL OXIDN. DEGREE (ALPHA) DECREASES LINEARLY FROM ALPHA EQUALS 84PERCENT TO SIMILAR TO 45-50PERCENT AFTER 35 HR AND THEN REMAINS CONST. FOR 38 HR. THE ADSORPTION CAPACITY OF ZEOLITE IS SIMILAR TO 22PERCENT LOWER THAN THAT OF THE FRESH ZEOLITE AS DETD. FROM THE ADSORPTION OF AQ. VAPORS ON SAMPLES HEATED TO 300DEGREES AT 10 PRIME NEGATIVE5 TORR FOR 6 HR. THE CRYST. STRUCTURE OF THE ZEOLITE DID NOT CHANGE DURING THE REACTION. TO RECOVER THE CATALYST ACTIVITY, THE FOLLOWING METHODS WERE USED: (1) OXIDN. REGENERATION BY DRY AIR AT 350DEGREES FOR 6 HR WITH A RESULTING ALPHA EQUALS 60PERCENT, (2) A FLOW OF DRY N AT 350DEGREES FOR 6 HR DID NOT INCREASE ALPHA, (3) THE REGENERATION BY H SUB2 O AT 25DEGREES WITH RESULTING ALPHA EQUALS 55PERCENT, (4) AND THE REGENERATION WITH H SUB2 O AT 90-95DEGREES WITH RESULTING ALPHA EQUALS 81.6PERCENT. THE RECOMMENDED MANNER FOR MAINTAINING ALPHA SIMILAR TO 80-82PERCENT IS A 1 HR OXIDN. REGENERATION EVERY 5TH HR COMBINED WITH A H SUB2 O REGENERATION AT 95DEGREES EVERY 25TH HR.

UNCLASSIFIED

Radiation Chemistry

USSR

UDC 541.15

MURATBEKOV, M. B., ZATONSKIY, S. V., and SARAYEVA, V. V., Moscow State University imeni M. V. Lomonosov

"The Effect of Charged-Particle Acceptors on the Gamma-Radiolysis of 2,2,4-Trimethylpentane (Isooctane)"

Moscow, Khimiya Vysokikh Energiy, Vol 5, No 2, Mar-Apr 71, pp 134-139

Abstract: A study was carried out of the effect of addition of nitrous oxide ( $N_2O$ ) as an acceptor of electrons, and of ammonia as an acceptor of protons, on  $\gamma$ -radiolysis of Isooctane. The results obtained led to a conclusion that during the decomposition of secondary excited molecules found in ion-electron neutralization in which the C-C bonds are broken, both free radicals and stable products are formed. The secondary excited molecules yield primarily atomic hydrogen and Isooctyl radicals, while the "molecular" isomeric octenes are the products of primary excited molecules. During radiolysis of Isooctane molecular ions incapable of transferring a proton to ammonia are formed in considerable quantities. It was assumed that such ions have their charge located on the quaternary carbon atom.

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Doc. Nr.

APD100023

Abstracting Service:  
CHEMICAL ABST.

6-70

Ref. Code

UR 0080

115211y Kinetics of urea decomposition in the presence of monoammonium phosphate at high temperatures. ~~Sarbaev, A. N.; Timoshenko, L. S. (Gos. Inst. Azotn. Prom. Org. Sib. Moscow, USSR). Zh. Prikl. Khim. (Leningrad) 1970, 43(1), 28-32 (Russ).~~ Rates of decompn. of urea in mixt. contg. 31.13 wt.% CO(NH<sub>2</sub>)<sub>2</sub>, 29.30 wt.% NH<sub>4</sub>H<sub>2</sub>PO<sub>4</sub>, and 39.57 wt.% H<sub>2</sub>O were measured at 100-150°. The dependence of rate const. *k* (l./mole min) on temp. is  $k = 1.45 \times 10^9 \exp[-21,700/RT]$ . Equations presented can be used to calc. the degree of decompn. and the time needed for total decompn. as function of temp. Urea is decompd. immediately into CO<sub>2</sub> and NH<sub>3</sub>, and isomerization of urea into NH<sub>4</sub>OCN does not occur. Decompn. is a 2nd-order reaction. Ivan Wichterle

C.K.

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REEL/FRA  
19841360

Miscellaneous

USSR UDC 547.495.2+546.185-31'39+546.212/.002.612.3.03

SARBAYEV, A. N., POLYAKOV, TE. V., TYUNINA, H. F., POLYAKOVA, Z. A., and RUCHKOVA, A. KH.

"The Physico-Chemical Properties of Aqueous Solutions of Carboammophos of Grade 1:1"

Moscow, Khimicheskaya Promyshlennost', Vol 48, No 6, Jun 72, pp 437-438

Abstract: The solubilities, density, and vapor pressure in relation to the concentration and temperature in the system  $\text{CO}(\text{NH}_2)_2\text{-NH}_4\text{H}_2\text{PO}_4\text{-H}_2\text{O}$  ( $\text{N:P}_2\text{O}_5 = 1:1$ ) were determined experimentally. On the basis of the data obtained, a diagram was plotted (figure) which represents the physico-chemical properties of aqueous solutions of carboammophos 1:1 at concentrations of 0-97% by weight and pressures of 20-760 mm Hg. The diagram covers the total range of existence of aqueous solutions of this fertilizer. By using it, the solubility, concentration, temperature, vapor tension, boiling point, density, and specific volume of carboammophos 1:1 solutions can be determined and also the relation between the liquid and solid phase in the range of saturated solutions of the fertilizer. Because of the hydrolysis of urea, the properties of the system do not correspond to equilibrium. However, the diagram applies if determinations of the experimental characteristic that is used are carried out rapidly.

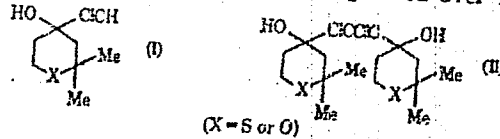
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AT0022509

CHEMICAL ABSTRACTS 3/70

UR 0000

30945r Hydrogenation of tertiary cyclic acetylenic and diacetylenic alcohols of the pyran and thiopyran series on a Raney nickel catalyst with tantalum additives. Azerbaev, I. N.; Yagudeev, T. A.; Kurmargazieva Zh. M.; Sarbaev, T. G. (USSR). *Tr. Khim.-Met. Inst., Akad. Nauk Kaz.* 1969, 8, 22-33 (Russ). I and II were hydrogenated over 1:1 Ni-Al



catalyst with addn. of 0-25% Ta in MeOH, EtOH, EtOH soln. of 0.1M KOH and 0.1M HCl at 15°, 30°, and 45°, and 0.1M KOH and H<sub>2</sub>O at 40°. The kinetics of hydrogenation, activation energy of double and triple bonds, and catalyst potential changes during the hydrogenation were studied. The addn. of 15% Ta to the catalyst increased its activity 3-3.5 times.

Michael Reinstein

19630801

USSR

UDC 51

SARCHIMELIYA, R. A. and FEL'NER, V. M.

"On the Problem of Linear Programming with Some Change in the Limits"

V sb. Issled. nekot. vopr. mat. kibernet. (Studies of Some Questions of Mathematical Cybernetics--collection of works), Tbilisi, Tbilisi University, 1973, pp 43 - 56 (abstract in Georgian) (from RZh Matematika No 12, 1973, Item No 12 V 533)

Translation: This is a study of the behavior of the goal function in a linear programming problem with changes in the absolute terms of the boundaries. The problem considered is

where

$$c(\varepsilon) = \min \{cx \mid x \in G_\varepsilon\},$$

$$G_\varepsilon = \{x \mid x \in D, \|Ax - b^0\| \leq \varepsilon - \varepsilon_0\},$$

$$D + \{x \mid x \geq 0, Rx = r\},$$

$$\varepsilon_0 = \min_{x \in D} \|Ax - b\| = \|Ax^0 - b\|,$$

$$b^0 = Ax^0 - Ax(\varepsilon_0),$$

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USSR

SARCHIMELIYA, R. A., et al, V ab. Issled. nektor. vopr. mat. kibernet.,  
Tbilisi, Tbilisi University, 1973, pp 43 - 56

$x(\epsilon)$  is the optimal solution (1). Here  $A$  and  $R$  are matrices of dimensions  
 $m \times n$ ,  $q \times n$ , respectively. An algorithm based on the simplex method is  
suggested, yielding piecewise-linear functions  $c(\epsilon)$  and  $x(\epsilon)$  on  $[\epsilon_0, \epsilon^*]$   
in approximate form.

Abstract by S. Lebedev.

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USSR

UDC 576.851.31.06

MARAMOVICH, A. S., VEYDE, A. A., SARDAR, Ye. A., MAKAROVA, A. P., SHVETSOVA, R. I., and URBANOVICH, L. Ya., Irkutsk Antiplague Institute of Siberia and the Far East

"Determination of the Cholerogetic Properties of Vibrios in Newborn Rabbits"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1972, pp 59-64

Abstract: Study of 65 vibrio strains from different sources in newborn rabbits (considered a suitable model for testing the pathogenicity of a given cholera vibrio strain for man) showed that all the cholera strains could produce the typical syndrome of cholerogeticity, whereas the nonagglutinable vibrios could not do so except for occasional strains (Heiberg's group 1) isolated from human beings in cholera foci. The main signs of cholerogeticity are marked dilatation of the lumen of the large intestine filled with a light transparent fluid and marked hyperemia of the small intestine containing a viscous yellow fluid throughout. Cholerogeticity was regularly observed after intra-intestinal infection of 9- to 12-day-old rabbits with doses ranging from  $10^3$  to  $10^6$  vibrios/100 g of weight. Smaller doses generally failed to elicit any reaction.

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- 8 -



USSR

UDC 614.777-078:576.851.316

MARAMOVICH, A. S., SARDAR, Ye. A., and VEYDE, A. A., Irkutsk Scientific Research Antiplague Institute of Siberia and the Far East

"Possibility of Utilizing Moor Tampons to Isolate Cholera Vibrios from Water"

Moscow, Laboratornoye Delo, No 8, 71, pp 497-499

Abstract: The possibility of utilizing Moor tampons to detect the presence of cholera vibrios was tested in waters of the Irkutskaya Oblast irrigation system. The tampons (each a metal rod loosely wound with 15-20 layers of gauze forming a ball 15-20 cm in diameter, wrapped in paper, and sterilized) were suspended by a cord in the water to a depth of 10-15 cm, close to a metal net installed to prevent the entry of large particles into the water system. The tampons were left in the water for 24-48 hours, then taken to the laboratory, where their contents were squeezed into sterilized metal jars and alkalized to pH 8.0. The alkalized liquid was poured into a half-liter vessel, 40 ml of basic peptone was added, and the mixture was left standing at 37°C for 5-6 hours. The investigations established the presence of El Tor cholera vibrios with typical morphological, cultural, and biological properties, although water samples previously obtained from the same

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USSR

MARAMOVICH, A. S., et al., Laboratornoye Delo, No 8, 71, pp 497-499

waters without the use of tampons produced negative results. The tampon method can be used also in isolating cholera vibrios from waters of rivers, wastewaters of populated areas, and even homes and hostalries.

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- 9 -

Acc. Nr:

AA0108729

Abstracting Service:

Ref. Code:

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 3/70

228144

DETERMINATION OF THE AGE OF DEPOSITS AND MINERALS

by the potassium-argon method with isotope dilution and measurements of Ar<sup>40</sup> is improved by using measured samples of air. The use of air simplifies the conventional method, because the air has a constant argon content (0.93%) of a constant isotopic composition (Ar<sup>40</sup> 99.6%, Ar<sup>38</sup> 0.06% Ar<sup>36</sup> 0.34%). Samples of air are enclosed in steel ampoules sealed with lead, which melts when the ampoule is heated in the reactor. The method does not involve the use of complex vacuum apparatus, and can also be applied to mass spectroscopic measurements. 12.1.65. as 939184/26-25, SARDAROV,

S.S. Geology Inst. (5.8.69) Bul. 31/8.10.68. Class 21g  
Int. Cl. G 01v.

AUTHOR: Sardarov, S. S.

Institut Geologiy

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REEL/FRAME

19900508

85

1/2 017

UNCLASSIFIED

PROCESSING DATE--11SEP70.

TITLE--ON POSSIBLE VARIATIONS OF GRAVITATIONAL FIELD ANOMALIES OF  
RECTANGULAR PRISM AT THE VARIATION OF PRESSURES IN ITS FACES -U-

AUTHOR--SARDARYAN, A.S.

S

COUNTRY OF INFO--USSR

SOURCE--GEOLOGIYA I GEOFIZIKA, 1970, NR 2, PP 111-113

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--EARTHQUAKE, GRAVIMETER, GRAVITATION FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/1231

STEP NO--UR/0210/70/000/002/0111/0113

CIRC ACCESSION NO--AP0103119

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103119

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL ESTIMATIONS OF THE POSSIBLE VARIATIONS OF FORCE OF GRAVITY IN ANOMALOUS ZONE TIMED TO SEISMOACTIVE AREAS ARE LISTED IN THE PAPER. IT IS SHOWN THAT ANOMALY VARIATIONS VALUES CAUSED BY EARTHQUAKES CAN BE MEASURED BY PRESENT GRAVIMETERS.

UNCLASSIFIED

USSR

UDC 911.3:616.936(47+57)

RASHINA, M. G., ~~SARIKYAN, S. Ya.~~, DUKHANINA, N. N., PROKOPENKO, L. I.,  
LYSENKO, A. Ya., and ZHUKOVA, T. A.

"Results of the Anti-Malaria Campaign in the USSR"

V sb. Vopr. med. parazitol. (Problems of Medical Parasitology -- collection of works), Moscow, 1970, pp 6-30 (from RZh-Meditsinskaya Geografiya, No 2, Feb 71, Abstract No 2.36.82, by A. Belyaev)

Translation: In 1967, 91 malaria foci were registered in the USSR (these are locations where 1 local or imported case was reported), among these were six active residual points, seven inactive residual points, 47 new potential points, four new active points, and 16 foci in large cities where transmission is impossible. The number of brought-in cases increases with each year. In 1959, they amounted to 0.7% of the total number of cases, in 1963 they were 45.5%, in 1966 59.5%, in 1967, 60.2%. Malaria was brought in from 56 countries, among them 36 African countries, 16 Southeast Asian countries and four Latin American countries. Tropical malaria predominated. Because of the long duration of 4-day malaria, cases of this form continue to appear (154 cases during 1958-1966).

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USSR

UDC 620:186.4

BARANOVSKIY, M. A., and SARELO, S. B., Belorussian Polytechnical Institute

"Variation of the Structure of Steel During High-Speed Swaging"

Minsk, Izvestiya Akademii Nauk BSSR, Seriya Fiziko-Tekhnicheskikh Nauk, No 4, 1971, pp 107-110

Abstract: Broad utilization of high loading rates during working of metals gives rise to the necessity for a detailed study of the physical-mechanical properties and, especially, changes in structure, since the suitability of the parts and their fitness depend on the structure of the strained material. The change in structure of samples made of steels 20 and 45 after swaging with initial loading rates of 100, 200, and 320 m/sec is described. Photographs of the macrostructures after their deformation at rates of 100 and 320 m/sec are presented from which it follows that the specimen separates into two zones on increasing the loading rate. One zone has the form of a paraboloid of rotation with its base on the impact end, and the other encompasses 1/2

- 7 -

USSR

BARANOVSKIY, M. A., and SARELO, S. B., Izvestiya Akademii Nauk BSSR, Seriya Fiziko-Tekhnicheskikh Nauk, No 4, 1971, pp 107-110

the first at a certain height. Photographs of the microstructure of the samples made of steel 20 after deformation at a rate of 320 m/sec are also presented. It was established that the deformation rate depends to a significant extent on the structural state of the steel.

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UNCLASSIFIED

PROCESSING DATE--11DEC70

172 014  
TITLE--VISCOSITY OF AQUEOUS POTASSIUM HYDROXIDE SOLUTIONS TO 90DEGREES -U-

AUTHOR--(03)-PUCHKOV, L.V., SARGAYEV, P.M., FEDOROV, M.K.

COUNTRY OF INFO--USSR

SOURCE--Zh. Prikl. Khim. (Leningrad) 1970, 43(3), 677-80

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--HYDROXIDE, POTASSIUM COMPOUND, AQUEOUS SOLUTION, FLUID  
VISCOSITY, ENTHALPY, ENTROPY, HYDROGEN BONDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3004/C960

STEP NO--UR/0080/70/043/003/0677/0680

CIRC ACCESSION NO--AP0131545

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0131545

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

ABSTRACT. THE VISCOSITY OF AQUEOUS 5.01-60.92 WT. PERCENT SOLUTIONS OF KOH WAS MEASURED AT 25, 50, 75, AND 90 DEGREES BY USING AN OSTWALD VISCOMETER. THE ENTHALPY  $\Delta H$  PRIME PLUS OR MINUS AND ENTROPY  $\Delta S$  PRIME PLUS OR MINUS OF THE ACTIVATION OF THE VISCOUS STREAM WERE CALCULATED. THE PLOTS OF  $\Delta H$  PRIME PLUS OR MINUS AND  $\Delta S$  PRIME PLUS OR MINUS VS. MOL. CONC. OF KOH,  $\eta$ , AT VARIOUS TEMPS. SHOW. MIN. AT APPROX.  $\eta$  EQUALS 10 TO 12 MOLE PERCENT KOH. THE DECREASE IN  $\Delta H$  PRIME PLUS OR MINUS AND  $\Delta S$  PRIME PLUS OR MINUS ON INCREASING  $\eta$  FROM 0 TO 12 IS DUE TO A DESTRUCTION OF H-BONDS BETWEEN H<sub>2</sub>O MOLES. BY HYDROXIDE MOLES. IN CONCD. SOLNS., A MOL. SPACE ORIENTATION IS ASSUMED AGAIN DUE TO AN INCREASE IN ELECTROSTATIC INTERACTIONS BETWEEN THE MOLES. FACILITY: LENINGRAD. TEKHNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 613.11-C53.9(212+211)

SARIBEKOVA, T. N., F. F. Erisman Moscow Institute of Hygiene

"Social and Hygienic Conditions and Health Status of Elderly Persons Settled in the Temperate Zone After Long Residence in the Arctic"

Moscow, Gigiyena i Sanitariya, No 10, 1973, pp 55-57

Abstract: Comprehensive examination of 331 elderly persons, mostly pensioners, who had moved to the temperate zone (cities of Gor'kiy, Lipetsk, and Kalinin) after living many years in the Far North revealed that most of them experienced a marked improvement in their sense of well-being after moving to the south. While the number of persons with chronic diseases was about the same as in the established populations of the southern cities, exacerbations occurred only half as often following their move south. Credit for these good results is ascribed, in part, to the fact that all the "immigrants" were living in their own apartments and eating more healthful foods (e.g., fresh vegetables and fruits almost daily).

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USSR

UDC 616.936-084.4(47+57)(091)

RASHINA, M. G., DUKHANINA, N. N., and SARIKYAN, S. Ya., Institute of Medical Parasitology and Tropical Medicine imeh' Ye. I. Martynovskiy, Ministry of Health USSR, Moscow

"Achievements in the Control and Eradication of Malaria in the USSR"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, Vol 41, No 6, Nov/Dec 72, pp 658-665

Abstract: At present malaria has been practically eliminated in the USSR. Beginning with 1921, a network of institutions for the control of malaria was created. An effective measure for the control of mosquito larvae in Southern regions was breeding of Gambusia fish in bodies of water. After Gambusia had been imported from Italy in 1924 by N. P. Rukhadze, Director of the Abkhaziya Tropical Institute, they were bred on a mass scale in Georgia, Azerbaydzhan, and Armenia and also introduced in the Uzbek, Tadzhik, and Turkmenian SSR. Great attention was paid to problems pertaining to the prevention of malaria in connection with the construction of hydraulic engineering and irrigation installations as well as large shipping canals within the scope of the 5-Year plans following World War II. In 1951 the Ministry of Health USSR issued instructions dealing with the determination of epidemiological factors and  
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USSR

RASHINA, M. G., et al., *Meditsinskaya Parazitologiya i Parazitarnyye Bolezni*, Vol 41, No 6, Nov/Dec 72, pp 658-665

measures against malaria to be carried out in connection with the construction of large water reservoirs. As a result of measures applied under the 4th Five-Year Plan (1946-49), which included treatment of buildings with DDT and hexachlorocyclohexane, the incidence of malaria in the USSR was reduced by a factor of four in relation to the pre-war year 1940. Use of effective drugs such as bigumal in addition to the application of insecticides contributed to the reduction of the number of malaria cases in the USSR to 13,034 (0.65 per 10,000 of population) in 1956 and 425 (0.17 per 100,000 of population) in 1960. Studies were carried out on the regional aspects of malaria epidemiology and the results were used in drawing up typical plans for the control of malaria adapted to the regional characteristics in various republics. New chemotherapeutic and chemoprophylactic agents (e.g., quinocide) were tested under different epidemiological conditions. Data on typical conditions with respect to malaria as affected by diverse local landscapes were compiled for many USSR republics and regions. The concept of chronic malaria was rejected. Work was conducted to determine the extent of restoration of the numbers of Anopheles mosquitoes of different species after the use of persistent insecticides had been discontinued. At present considerable attention is being paid to the prevention of the importation of malaria from abroad by sailors, travelers,

2/3

USSR

RASHINA, M. G., et al, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni,  
Vol 41, No 6, Nov/Dec 72, pp 658-665

etc. In a number of Southern regions of the USSR a considerable danger of renewed development of foci of malaria infection exists; particular vigilance is required there to prevent the development of such foci.

3/3

- 11 -

USSR

UDC 911.3.616.936(47 57)

DUKHANINA, N. N., SARIKYAN, S. Ya., ZHUKOVA, T. A., and BANDIN, A. I.

"Characteristics of Malaria Foci During the Final Period of Its Elimination in the USSR"

V sb. Materialy Nauchn. konferentsii, posvyashch. 50-letiyu In-ta med. parazitol. i tropich. med., 1970 (Proceedings of the Scientific Conference Commemorating the 50th Anniversary of the Institute of Medical Parasitology and Tropical Medicine, 1970 — collection of works), Moscow, 1970, pp 14-16 (from RZh-36. Meditsinskaya Geografiya, No. 1, Jan 71, Abstract No 1.36.129 by V. Maslovskaya)

Translation: Cases of malaria brought into the country from abroad are most often recorded in the central zone and in the south RSFSR. Isolated residual foci persist in only a few rayons of the Azerbaydzhan, Georgian, Uzbek and Tadzhik SSRS, where 5-7 parasite life cycles are possible per season. In areas with residual foci, the vectors were Anopheles m. maculipennis, A. m. sacharovi, A. superpictus, and A. pulcherrimus. New foci almost always appeared only where residual foci remained or in adjacent regions, or in areas associated through population migration. Only five populated centers had local cases of three-day malaria following return

1/2

USSR

DUKHANINA, N. N., et al, V sb. Materialy Nauchn. konferentsii, posvyashch. 50-letiyu In-ta med. parazitol. i tropich. med., 1970 (Proceedings of the Scientific Conference Commemorating the 50th Anniversary of the Institute of Medical Parasitology and Tropical Medicine, 1970 — collection of works), Moscow, 1970, pp 14-16 (from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.129 by V. Maslovskaya)

of people from abroad; this is the only evidence that the reappearance of the disease is related to malaria brought in from abroad.

2/2



USSR

UDC 616.936-07

DUKHANINA, N. N., SARTICAN, S. Ya., ZHUKOVA, T. A., KHEOMOV, A. S., and  
ALEKSEYEVA, Z. M., Institute of Medical Parasitology and Tropical Medicine  
imeni Ye. I. Martsinovskiy, Ministry of Health USSR

"Detection of Malaria Cases in the USSR Between 1967 and 1970"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 3, 1972,  
pp 319-323

Abstract: Many malaria cases are not detected early due to some laxness in the system induced by the virtual eradication of the disease and by the inconvenience and costliness of running mass screening tests. Study of two groups of malaria patients and parasite carriers - local residents, including those who contracted malaria after receiving blood transfusions, and Soviet citizens returning from trips to Asia and Southeast Asia and foreign nationals - showed that the disease was not detected in most of the local residents until they sought care in a medical facility, only 40% (out of 234) doing so 1 to 5 days after the onset. The disease was detected earlier in the second group, mostly students, because they tended to visit a physician promptly. Some delays were occasioned by an absence of symptoms for a long time (6 to 12 months) owing to the protracted latent period of the causative agent.

1/1

1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--A FOLLOW UP STUDY OF PATIENTS WITH TRANSITORY DISORDERS OF  
CIRCULATION IN THE VERTEBRO BASILLAR BASIN -U-  
AUTHOR-(03)-SARIN, M.I., KRAVCHENKO, L.G., BUGAYEV, V.S.  
COUNTRY OF INFO--USSR S  
SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,  
VOL 70, NR 6, PP 808-811  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--BRAIN, BLOOD CIRCULATION, ATHEROSCLEROSIS, HYPERTENSION,  
VENEREAL DISEASE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3001/0922 STEP NO--UR/0246/70/070/006/0808/0811  
CIRC ACCESSION NO--AP0126581  
UNCLASSIFIED

2/2 024

CIRC ACCESSION NO--AP0126581

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS CONDUCTED A FOLLOW UP STUDY OF 100 PATIENTS WHO WERE DISMISSED FROM HOSPITALS 1-5 YEARS BEFORE, WITH A DIAGNOSIS OF TRANSITORY DISORDERS OF CEREBRAL CIRCULATION IN THE VERTEBRO BASILLAR SYSTEM (IN ATHEROSCLEROSIS, HYPERTENSIVE DISEASE, SYPHILITIC VASCULITIS, CERVICAL OSTEOCHONDROSIS AND WITH INITIAL SYMPTOMS OF ATHEROSCLEROSIS). THE MOST SEVERE DEVELOPMENT WAS SEEN IN THE GROUP OF PATIENTS WITH LATE STAGES OF HYPERTENSIVE DISEASE AND ATHEROSCLEROSIS. IN TRANSITORY DISORDERS OF CEREBRAL CIRCULATION DUE TO CERVICAL OSTEOCHONDROSIS AND INITIAL SYMPTOMS OF ATHEROSCLEROSIS THE FOLLOW UP STUDIED DISPLAYED MORE FAVORABLE STATES. IN ALL CASES THE DECISIVE ROLE IN THE DEVELOPMENT OF THE DISEASE WERE CONDITIONS OF LIFE, WORKING READAPTATION AND INTRAFAMILIAL RELATIONSHIP, AS WELL AS CONTROL ON BEHALF OF THE PHYSICIAN AND OUTPATIENT TREATMENT.

UNCLASSIFIED

USSR

UDC 666.113.621'431'47'41'33'32'28

KOSTANYAN, K. A., ~~SARINGYULYAN~~, R. S., KHERUNTSYAN, V. I., EELOV, N. I.,  
OGANEZOVA, R. S., and UL'YANOV, V. V.

"Glass"

USSR Author's Certificate No 366157, Filed 29 Jan 71, Published 16 Jan 73  
(from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7,  
Mar (a) 73, Claim No 1620354/29-33)

Translation: A glass including  $\text{SiO}_2$ ,  $\text{CaO}$ ,  $\text{ZnO}$ ,  $\text{Na}_2\text{O}$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{BaO}$  and  $\text{K}_2\text{O}$ , distinguished by the fact that in order to decrease the spectral absorption in the ultraviolet region it contains the above components in the following quantities, weight %:  $\text{SiO}_2$  67-76,  $\text{CaO}$  1.5-1.2,  $\text{ZnO}$  1-4,  $\text{Na}_2\text{O}$  7-15,  $\text{Al}_2\text{O}_3$  0.5-5,  $\text{BaO}$  0.5-5,  $\text{K}_2\text{O}$  2-12 and furthermore  $\text{SnO}$  0.2-2.0.

1/1

USSR

UDC: 621.3.083.8:531/768

BYKOV, V. A., VOLKOV, L. N., VOLNYANSKIY, V. N., KISECHENKOV, O. V.,  
SARINGULYAN, Ye. Kh., FILATOV, V. M.

"A Digital Accelerometer"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obrastzy, Tovarnyye Znaki,  
No 31, Nov 71, Author's Certificate No 317977, Division G, filed 26 Feb 70,  
published 19 Oct 71, p 167

Translation: This Author's Certificate introduces a digital accelerometer which contains a sensing element with moment and position pickups, and an amplifier with its input connected to the position pickup, while the output is connected to the moment pickup through a series circuit comprised of a pulse-duration modulator and a feedback pulse shaper. The device also contains a pulse generator connected through a switch to a counter. As a distinguishing feature of the patent, accuracy is improved by including a comparison unit connected to the amplifier output, and a control unit whose output is connected to the controlling input of the switch. One input of the control unit is connected to the output of the comparison unit, and the other is connected to the modulator output.

1/1

1/2 022

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--DETERMINATION OF POTASSIUM AND SODIUM CONCENTRATION IN THE PLASMA,  
ERYTHROCYTES, AND URINE OF HEALTHY PERSONS BY FLAME PHOTOMETRY -U-

AUTHOR--(02)-GAZHIYEV, F.M., SARIYEV, B.B.

COUNTRY OF INFO--USSR

SOURCE--AZERB. MED ZH. 1970, 47(1), 39-41

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FLAME PHOTOMETRY, POTASSIUM, SODIUM, BLOOD PLASMA,  
ERYTHROCYTE, URINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0219

STEP NO--UR/0488/70/047/001/0039/0041

CIRC ACCESSION NO--AP0134024

UNCLASSIFIED

2/2 022

CIRC ACCESSION NO--A0134024  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT. THE FLAME PHOTOMETRIC METHOD WAS USED FOR THE DETN. OF K PRIME POSITIVE AND NA PRIME POSITIVE CONC. IN PLASMA, ERYTHROCYTES, AND URINE OF HEALTHY PERSON. PLASMA WAS DILD. IN THE RATION 1:100, ERYTHROCYTE SUSPENSION 1:200, A DAILY ALIQUOT OF URINE 1:200. THE AV. VALUE OF THE NA PRIME POSITIVE CONC. IN PLASMA OF HEALTHY PERSONS WAS 135.9, IN ERYTHROCYTES 11, AND IN URINE 146.9 MEQUIV-L. THE AV. VALUE OF THE K PRIME POSITIVE CONC. IN PLASMA WAS 4.53, IN ERYTHROCYTES 95.4, AND IN URINE 49.97 MEQUIV-L.  
FACILITY: AZERB. GOS. MED. INST. IM. NARIMANOVA, BAKU, USSR.

UNCLASSIFIED

USSR

UDC 681.325.65

ARUSTANYAN, V. LL., GRIGORYAN, L. A., KAZARYAN, S. YE., KOMESEYAN, I. A.,  
and SARKISYAN, A. YE.

"Transistor-Transistor Logic Circuit"

USSR Authors' Certificate No 314397, Cl. H 03 k 19/00, filed 26 Feb 70, pub-  
lished 20 Oct 71 (from Izv-Akademiya Nauk SSSR, Tekhnika i Vychislitel'naya  
Tekhnika, No 5, May 72, Abstract No 52157P)

Translation: There are well-known devices which contain an input multiemitter transistor (T) connected by the collector to the base of an intermediate T, whose collector and emitter are connected to the bases of two output series-connected Ts. The logic circuit described differs from these in that it contains a complementary T connected by its collector to the emitter of the intermediate T, by its emitter to the collector of the input T, and by its base through the resistor to the base of the input T. This makes it possible to increase the operating speed of the device.

1/3

- 38 -



USSR

UDC: 621.039.566.8

SARKISOV, A. A., PUCHKOV, V. N., and MEL'NIKOV, B. A.

"Choice of Efficiency of Absorption Rods for Protection from Excessive Power Levels"

Moscow, Atomnaya energiya, No 6, 1973, pp 441-444

Abstract: The usual method of protection against excessive power levels in a reactor is the use of absorption rods to switch off the reactor at a danger signal. In this connection, experiments were undertaken, using the IR-100 reactor and an electronic model of reactor kinetics realized by the MN-14 analog computer, to resolve the problem of determining the minimum efficiency of absorbing rods for protecting the reactor in cases of disturbances in the reaction procedures when all the rods are simultaneously activated to halt those disturbances. A brief description of the experiments is given. They yielded a family of curves determining the change in relative power of the reactor as a function of the speed and time of the reactivity disengagement. Comparison of these curves indicated that for low disengagement speeds, the reactivity corresponding to a given relative power level depends primarily on the speed of disengagement. Other reactivity curves are plotted.

1/1

USSR

UDC 536.423.4:531.66

SARKISOV, A. A., POPOV, I. A., LUK'YANOV, A. A.

"The Mechanism of Condensation of Steam Bubbles in a Steam-Water Mixture Under the Influence of Shock Loads"

Inzhenerno-fizicheskiy Zhurnal, Vol 22, No 3, 1972, pp 429-434.

Abstract: Experimental data are presented on the collapse of steam bubbles in boiling water under the influence of shock loading. The studies were performed with static pressures in the experimental installation of 1, 10, 20 and 30 bar and under the influence of vertical impact loadings with relative accelerations of 35, 50, 75 and 100 g.

The steam-water mixture was observed at the moment of and following impact through quartz glass by high-speed motion picture photography. Analysis of the experimental data showed that the impact action increased the pressure in the boiling liquid. The steam bubbles, entering the field of variable pressure, change their configuration, and the process of bubble destruction is an oscillating process. The time of condensation of the bubble depends on the acceleration applied to the steam-water mixture, the static pressure and bubble size.

1/2

USSR

UDC 536.423.4:531.66

SARKISOV, A. A., POPOV, I. A., LUK'YANOV, A. A., Inzhenerno-fizicheskiy Zhurnal, Vol 22, No 3, 1972, pp 429-434.

Condensation of steam bubbles results from two effects: heat exchange and fluid inertia. An increase in static pressure decreases the significance of heat exchange between the steam bubble and the water during condensation and strengthens the effect of the inertia of the liquid, resulting from the change in pressure.

The results of experiments are presented in the form of dependences  $R/R_0 = f(\tau_n)$ , where  $\tau_n = 4/\pi \lambda a^2 \text{ at}/R_0^2$  is the dimensionless time,  $R$  and  $R_0$  are the instantaneous and initial radii of a steam bubble;  $\lambda$  is the heat conductivity factor;  $t$  is time.

The experimental curves are generally similar to the theoretical curves, but the rate of condensation of steam bubbles is somewhat higher. The rate of destruction of bubbles in the experiment performed is explained primarily by the significant speeds of transfer (floating) of bubbles resulting from impact of the experimental sector with a barrier. 3 Figures; 5 Biblio. Refs.

2/2

USSR .

UDC 619:616--002.828--07(084)

SARKISOV, A. Kh., KOROLEVA, V. P., KVASHENINA, Ye. S., and GREZIN, V. F.  
Diagnostika Gribnykh Bolezney (Mikozov i Mikotoksikozov) Zhivotnykh  
(Diagnosis of Fungal Diseases -- Mycosis and Mycotoxicosis -- in Animals)  
Moscow, "Kolos," 1971, 144 pp

Translation: Annotation: All types of fungal diseases found in farm animals are represented in this handbook. The agents of diseases are shown, laboratory diagnosis of pathogenic and toxic fungi are listed, and the clinical traits of the diseases and the pathological-anatomical changes they cause in animal organisms are given. The publication has more than 200 original illustrations.

The handbook is designed for veterinary specialists at kolkhozes and sov-khozes, workers at veterinary hospitals and laboratories, scientific workers, and students in the veterinary schools of institutes.

It is requested that suggestions and remarks be sent to: Moscow, Zh-472, VIEV, Laboratory of Antibiotics and Mycology.

Foreword

Brief Information on Fungi

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USSR .

SARKISOV, A. Kh. et al., "Kolos," 1971, 144 pp

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SARKISOV, A. Kh., et al., "Kolos," 1971, 144 pp

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4/4

Acc. Nr.

AP0105546

Abstracting Service:  
CHEMICAL ABST.

670

Ref. Code

UR 0363

S

125674r Coprecipitation of germanium with indium hydroxide. Sarkisov, B. S.; Lidin, R. A.; Krymskaya, E. B. (Mosk. Inst. Tonkoj Khim. Tekhnol. im. Lomonosova, Moscow, USSR). *Izv. Akad. Nauk SSSR, Neorg. Mater.* 1970, 6(2), 281-3 (Russ). The copptn. of Ge, in the form of an aq. soln. of  $GeO_2$ , with  $In(OH)_3$  was studied. The copptn. takes place as a result of the formation of In germanates. Indium germanates of the compn.  $2In_2O_3 \cdot GeO_2 \cdot xH_2O$  and  $In_2O_3 \cdot 2GeO_2 \cdot yH_2O$  were pptd. The  $In(OH)_3$  is a suitable collector for the rather complete concn. of Ge in the soln. The formation of In germanates starts during the copptn. process. S. A. Mersol

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19880561

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Acc. Nr. **AP0054892** Abstracting Service:  
CHEMICAL ABST.

670 Ref. Code  
UR0363

115359c Indium sesquisulfide-germanium sulfide system.  
 Sarkisov, E. S.; Lidin, R. A.; Vengelevskaya, N. S. (Mosk.  
 Inst. Tonkoi Khim. Tekhnol. im. Lomonosova, Moscow, USSR).  
 Izv. Akad. Nauk SSSR, Neorg. Mater. 1970, 6(1), 184-5 (Russ).  
 The  $In_2S_3$ -GeS system was studied by using DTA and x-ray  
 diffraction methods. The fusibility diagram of the  $In_2S_3$ -GeS  
 system was constructed on the basis of heating and cooling data.  
 It corresponds to a system of the simple eutectic type, with the  
 eutectic point at  $600^\circ$  and 30 mole %  $In_2S_3$ . The effect of poly-  
 morphic transformation  $\beta \rightarrow \alpha$ -GeS at  $535^\circ$  is obsd. only for  
 samples rich in GeS. An effect at  $750^\circ$  is obsd. in the case of  
 annealed samples ( $700^\circ$ , 10 hr) contg. 35-100 mole %  $In_2S_3$ .  
 This thermal effect was interpreted as being the effect of poly-  
 morphic transformation  $\gamma \rightarrow \beta$ - $In_2S_3$ . X-ray diffraction patterns  
 for samples of the  $In_2S_3$ -GeS system contain only lines for the  
 starting sulfides ( $\beta$ - $In_2O_3$  and  $\alpha$ -GeS). S. A. Mersol ]

REEL/FRA  
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C.K.

18

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S

UR 0482

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

241359 TURBO-DRILL REV.  
COUNTER comprises the  
 half disc (1) fixed to the  
 drill shaft (2), the body (3),  
 flexible bellows (4), lead (5)  
 A cable links this lead to one  
 pole of the source of power,  
 whilst the second pole is  
 linked to the metal of the  
 pipes. As the drill shaft  
 turns, so the disc turns the  
 lever (6) round the axis (7) via the bellows,  
 thus making and breaking circuit accordingly.  
 The pulses generated are passed to the surface  
 in the normal way.

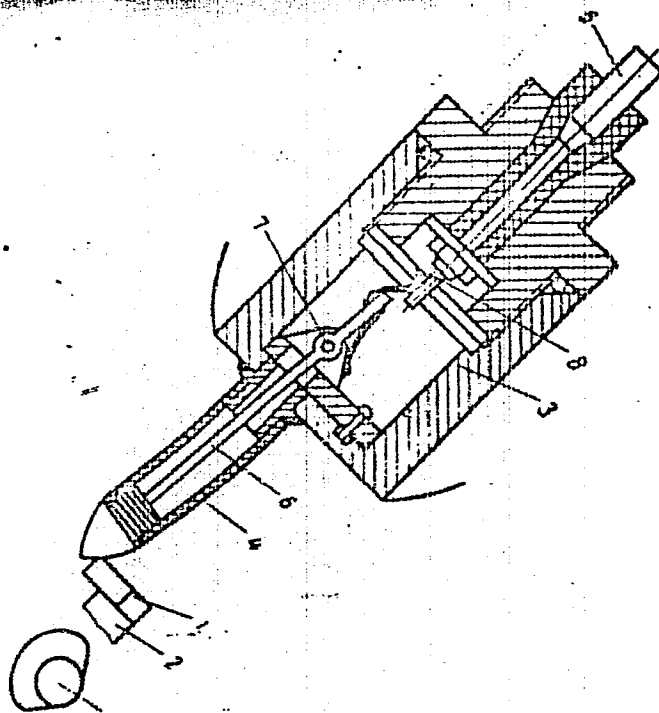
20.12.67. as 1204613/22-3, SARKISOV, I. K.  
 (3.9.69) Bul. 14/18.4.69. Class 5a, Int. Cl.  
 E 21b.

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18

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19781669

USSR

SARKISOV, I. Yu., Moscow Physicotechnical Institute

"The Effect of Human Orientation in a Mobile System on Vestibular Function"

Moscow, Biofizika, Vol 18, No 5, Sep/Oct 73, pp 942-944

Abstract: Mathematical studies were conducted to determine the optimum orientation for the human head for a subject in a rotating situation, in which there would be least stimulation of the receptors in the semi-circular canals. The results showed that stimulation was minimum if the head is oriented in such a fashion that the vector of the angular velocity of the rotating human body is perpendicular to the plane of that pair of semi-circular canals whose contribution to maximum stimulation of the receptors is the greatest.

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USSR

UDC 611.85:523

SARKISOV, I. Yu. and SHIPOV, A. A., Moscow Physicotechnical Institute

"Adequate Vestibular Stimulation on the Earth and in Space"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya, Biologicheskaya, No 3, 1973,  
pp 374-379

Abstract: The article describes a mathematical analysis of adequate vestibular forces felt by man while moving his head, trunk, and entire body using reference systems both inactive and moving relative to the earth. Formulas are given for computing effective accelerations acting on the receptors of the otoliths and semicircular canals. A three-element model of a human skeleton is employed to study the application of the formulas to a case involving human activity in an orbital station steadily revolving to create artificial gravity.

1/1

SARKISOV, I. Yu.

SOIIP45 53382  
(17 Jun 71)

USSR 512.458.3.011.47.531.15

ANALYSIS OF RECEPTORS FORMED ON EARLY STAGES OF THE  
DEVELOPMENT OF THE VESTIBULAR CANALS (Vestibular Receptors in Developing Stages)

(Article by I. Yu. Sarkisov, Institute of Higher Mathematics, Moscow State University, Moscow, U.S.S.R., 1971, pp. 1-16, included for publication 28 May 1970)

Abstract: Acceleration (ferrous) affecting the receptors in the carotid canal during the development of the vestibular canals were investigated by the vector analysis method. It is shown that only tangential acceleration of the lateral wall of the canal in this experiment, as well as tangential acceleration caused by horizontal rotation of the head about an axis in the horizontal plane, result in displacement of the cupula from its original state, thus leading to inhibition changes in the output activity of the semicircular canal. Author agrees with the main results of acceleration (ferrous) analysis of the signals received. Numerical estimation of the tangential acceleration with angle

of the lateral wall of the canal is also a number of unfavorable conditions which affect the receptors during their activity of the semicircular canal (A. A. Zaslavsky, et al.). This can probably be taken into account in the analysis of the signals concerning detection of the head movement (Sarkisov, I. Yu., Sarkisov and A. A. Shipov) and the lateral wall of the canal (Sarkisov and A. A. Shipov) with the lateral deviation (Dr. D. V. Kuznetsov; Kh. Galla and L. N. Gavrilov; Galla, et al., and others).

The results of the vector analysis in the analysis of vestibular acceleration are also investigated which is a vector idea concerning the movement and direction of the forces acting on different parts of the vestibular apparatus. The results of the vestibular apparatus had not been investigated in most studies conducted in the laboratory (Sarkisov, van Ryzov, et al.; Sarkisov and Shipov; Sarkisov, van Ryzov, and others).

USSR

SARKISOV, I. Yu., Moscow Physical-Technical Institute

"Effect of Adequate Stimulation on the Semicircular Canal Receptors"

Moscow, Biofizika, No 1, 1972, pp 169-172

Abstract: The effect of orientation of a stationary human head in an accelerating rotating system on the semicircular canal receptors was subjected to mathematical analysis. Rotation with the vector of angular acceleration perpendicular to the plane of one of the pairs of semicircular canals was found to produce the least excitation of the vestibular apparatus. Calculations showed the direction of rotation conducive to maximum excitation.

1/1

1/2 032

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE--TWO STAGE BONE PLASTIC AMPUTATIONS AND REAMPUTATIONS OF THE  
EXTREMITIES IN INFECTED WOUNDS -U-

AUTHOR--SARKISOV, M.A.

COUNTRY OF INFO--USSR

S

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 5, PP  
90-93

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BONE FRACTURE, AMPUTATION, BONE GRAFT, PROSTHESIS, WOUND  
HEALING, ORTHOPEDIC SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0582

STEP NO--UR/0589/70/104/005/0090/0093

CIRC ACCESSION NO--AP0108797

UNCLASSIFIED



2/2 032

UNCLASSIFIED

PROCESSING DATE--C90CT70

CIRC ACCESSION NO--AP0108797

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE ARTICLE THE DATA ON TWO STAGE BONE PLASTIC AMPUTATIONS AND REAMPUTATIONS OF THE EXTREMITIES AFTER THE PIROGOV AND GRITTI, SHIMANOVSKY TECHNIC ARE PRESENTED. THIRTY FOUR PATIENTS AND THE WOUNDED WERE OPERATED UPON (17 FOR GUNSHOT INJURIES, 6 FOR TEARING OFF AND CRUSHING OF THE EXTREMITIES AND IN 11 CASES REAMPUTATION AFTER THE FROST BITE). BONE PLASTIC AMPUTATIONS WERE PERFORMED ONLY IN CASES WHEN THERE WAS A DOUBT AS TO THE ASEPTIC COURSE OF THE WOUND, THEN SURGERY SHOULD BE PERFORMED IN TWO STAGES. IN THE FIRST STAGE A GRAFT WITH A BONE TRANSPLANT WERE LEFT UNSUTURED UNDER THE LIGATURE, AND DURING THE SECOND STAGE IN A FAVOURABLE COURSE OF THE WOUND PROCESS DELAYED OR SECONDARY SUTURES WERE PUT. IN MOST CASES WOUNDS WERE HEALED BY PRIMARY INTENTION. SURGERY YIELDED QUITE ENCOURAGING RESULTS. FOLLOWING TWO STAGE OPERATIONS STUMPS WERE FOUND TO BE OF ADEQUATE WEIGHT BEARING CAPACITY AND THEIR PROSTHESIZING WAS QUITE FEASIBLE. FACILITY: KLINIKI VOYENNO POLEVOY KHIRURGII VOYENNO-MEDITSINSKOY ORDENA LENIN DRASNOZNAMENNY AKADEMII IM. S. M. KIROVA.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--MECHANISM OF BRANCHING IN THE REACTION OF FLUORINE WITH DEUTERIUM.  
I -U-  
AUTHOR--(03)-VEDENEYEV, V.I., PROPOY, V.I., SARKISOV, O.M.  
COUNTRY OF INFO--USSR  
SOURCE--KINET. KATAL. 1970, 11(1), 36-40  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--FLUORINE, DEUTERIUM, CHEMICAL KINETICS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
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UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120249

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCE OF THE EMISSION KINETICS IN THE D SUB2, F SUB2, AR SYSTEM ON AR PRESSURE WAS STUDIED AT A TOTAL D PLUS F PRESSURE OF 0.03 TORR AND A 3:5 F:D CONC. RATIO AT 273DEGREEK. UP TO SIMILAR TO 50 TORR, DECAY OF AT. F AND D OCCURRED BY A HETEROGENEOUS MECHANISM PARTIALLY ON D IMPURITIES WHICH WERE INTRODUCED WITH F. THE EFFECTIVE DECAY CONST.,  $G_{SUBEFF}$  EQUALS  $KAPPA PRIME SUBEFF PLUS KAPPA PRIME PRIME SUBEFF (D SUB2) (AR)$ , WHERE  $KAPPA PRIME SUBEFF$  APPROXIMATELY EQUAL TO 0.2 SEC PRIME NEGATIVE1 AND  $KAPPA PRIME PRIME SUBEFF$  EQUALS 3 TIMES 10 PRIME NEGATIVE32 CM PRIME6 MOL. PRIME NEGATIVE2 SEC PRIME NEGATIVE1. IT IS ASSUMED THAT THE REACTION D SUB2 PLUS F SUB2 EQUALS F PLUS DF PLUS D IS THE BASIC CHAIN INITIATION REACTION.

FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 536.46

VEDENEYEV, V. I., GERSHENZON, YU. M., SARKISOV, O. M., Moscow

"Upper Limit of Spontaneous Combustion of Hydrogen with Oxygen"

Novosibirsk, Fizika goreniya i vzryva, Vol 8, No 3, 1972, pp 403-408

Abstract: A study was made of the basic experimental laws with respect to the upper limit of spontaneous combustion beginning with the mechanism including only the reaction of O and H atoms and the OH, HO<sub>2</sub> radicals. The chemical formulas and mathematical descriptions are presented for these reactions. A study is then made of the combustion limit for vessels with an active surface, for example, KCl. The proposed kinetic system both qualitatively and quantitatively describes the existing experimental data with respect to the second limit of combustion of hydrogen with oxygen as demonstrated by the fact that the values of the constants of the elementary stages do not contradict the published data. A brief survey of experimental facts and data is presented in support of the developed laws.

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Combustion

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USSR

UDC 541.126.2:546.16:546.11.022

BULATOV, V. P., VEDENEYEV, V. I., GERSHENZON, YU. M., DEMENT'YEV, A. P., and SARKISOV, O. N., Institute of Chemical Physics, Academy of Sciences USSR

"The Non-Linear Mechanism of Spontaneous Combustion in the Reaction Between Fluorine and Deuterium"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, 1972, pp 557-559

Abstract: Previously it had been determined from the isothermal spontaneous combustion of phosphorus in fluorine that the vibrationally-excited deuterium molecules bring about branching in this reaction. In this study, the influence of the external initiation of active centers in the limit of the spontaneous combustion reaction between fluorine and deuterium is determined. The reaction mixture was composed of  $O_2:D_2:F_2$  in the ratio of 5.5:1:1 at a pressure of 1 torr. A plot of the rate of radical accumulation as a function of temperature shows an abrupt change at  $T = 590^\circ K$ . Increasing in reaction time 2.7-fold did not significantly change the disruption temperature. The value of  $T$  decreased with increasing partial pressure of fluorine at a constant total pressure, and also with an increase in the total pressure, and increased on addition of small amounts of  $CO_2$ . Previously it had been shown that the

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USSR

BULATOV, V. P., et al., *Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya*, No 3, 1972, pp 557-559

contributions of the nonlinear phases are essentially related to the experimental conditions determining the competition of the rates of branching according to the following paths -- (1)  $D_2(v = 1) + F_2 = D + DF + F$ ; and (2)  $D_2(v > 1) + F_2 = D + DF + F$  -- by the ratio of the constants  $k_2/k_1 \approx \exp 9000/RT$  and that of  $[D_2](v > 1)/[D_2](v = 1)$ . It was concluded that the lower limit of spontaneous combustion  $F_2 \rightarrow D_2$  is related to the rate of production of active centers. The expansion of the region in which this reaction occurs on external initiation confirms the nonlinear mechanism of branching presented above.

2/2

Reaction Kinetics

USSR

UDC 541.126+542.943

VEDENEYEV, V. I., GERSHENZOU, Yu. M., and SARKISOV, O. M., Institute of Chemical Physics of the Academy of Sciences of the USSR

"Chain Reaction and the Liberation of Heat Near the Lower Limit of Self Ignition of an Oxygen-Hydrogen Mixture"

Moscow, Doklady Akademii Nauk SSSR, Vol 208, No 1, 1973, pp 116-119

Abstract: The purpose of this work was to establish the effect of various nonlinear processes on the behavior of the oxygen-hydrogen reaction near the lower self ignition limit. It is found that although the experimentally defined self ignition limits in the kinetic and diffusion regions of the reaction chain termination are described by the same condition,  $\psi=0$ , the reaction kinetics in the two regions differ significantly in principle. The difference between the self ignition limit and the limit of slow reaction manifests itself in that near the self ignition limit increase of temperature of the gas mixture can change significantly the reaction kinetics.

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(3)

USSR

UDC 539.89

ALEKSANDROV, V. I., KAMINSKIY, A. A., MAKSIMOVA, G. V., PROKHOREV, A. M.  
(Academician), SARKISOV, S. E., SOBOL', A. A., TATARINISEV, V. M., Physical  
Institute imeni P. N. Lebedev, and Institute of Crystallography imeni A. V.  
Shubnikov, Academy of Sciences of the USSR, Moscow

"A Study of Stimulated Emission by  $Nd^{3+}$  Ions in Crystals at the  ${}^4F_{3/2} \rightarrow {}^4I_{13/2}$   
Transition"

Moscow, Doklady Akademii Nauk SSSR, Vol 211, No 3, 21 Jul 73, pp 567 - 570

Abstract: The prevailing transition for neodymium is  ${}^4F_{3/2} \rightarrow {}^4I_{11/2}$  (about 60%),  
but the transition to  ${}^4I_{13/2}$  is of both practical and theoretical interest.

The authors studied doped crystals of  $CaF_2-YF_3$ ,  $Ca_2Y_5F_{19}$ ,  $Ca_5(PO_4)_3F$ ,  $ZrO_2-Y_2O_3$ ,  
and  $HfO_2-Y_2O_3$ . Samples were tested at 77°K and 300°K. Laser action was observed  
at three frequencies near 1.35 microns in yttrifluorite, at two points in  
tysonite, and at several locations in fluorapatite with a 90° angle between the  
optical and geometric axes. Analysis of the low-temperature spectra showed that  
in all observations their lines were insensitive to concentration.

The cubic crystals of  $ZrO_2-Y_2O_3$  and  $HfO_2-Y_2O_3$  with  $Nd^{3+}$  ions showed very  
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USSR

ALEKSANDROV, V. I., et al., Moscow, Doklady Akademii Nauk SSSR, Vol 211, No 3,  
21 Jul 73, pp 567 - 570

similar properties, and a spectrum is given for only the first of these. It shows  
lasing at both the transitions.

2/2

- 21 -

SARKISYAN, A.S.

FIRST INTERNATIONAL SYMPOSIUM ON NUMERICAL MODELLING OF THE OCEAN CIRCULATION

TPRS 59000  
14 MAY 1973

[Article by Professor A. S. Sarkisyan; Moscow, Vestnik Akademii Nauk SSSR, Russian, No 3, March 1973, p 92]

The first International Symposium on Numerical Modelling of the Ocean Circulation was held by the National Academy of Sciences of the USA on 17-21 October 1972 in Durham, New Hampshire. The organizers of the symposium invited to it, besides American scientists, specialists from other countries, including the USSR.

Twenty-seven reports were heard. Their contents were stated very briefly, and the main time was given to discussion. In combination with pre-publication of the complete texts of reports of the reports and also with the statements of previously designated reviewers in the discussion, this led to high effectiveness of the work of the symposium.

Very great interest was aroused by discussion of questions connected with prognostic calculations of large-scale motions in the ocean. The physical essence of the task is reduced to the following. Let us assume the existence in the ocean of a certain initial greatly idealized state; for example, the water is at rest in the entire ocean and its temperature and salinity are constant. That state is disturbed by the instantaneous formation of a field of wind and flows of heat (and salts) on the surface of the ocean. It is required to trace by calculations the entire process of the formation, development and establishment of the currents. The formulation of that task in the first simple examples of calculation (for the North Atlantic) was accomplished in the USSR as long ago as the start of the 1960s. Now our foreign colleagues have made test calculations for the entire world ocean on high-speed computers. The main results on the basis of the K. Bielen model were obtained by W. Holland and M. Cox (USA), G. Friedmann (West Germany) and K. Takano (Japan). It should be said that prognostic models are still in the development stage.

SARKISYAN, A.S.

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JPRS 57000  
14 MAY 1973

FIRST INTERNATIONAL SYMPOSIUM ON NUMERICAL MODELLING  
OF THE OCEAN CIRCULATION

Article by Professor A. S. Sarkisyan, Moscow, Vestnik Akademii Nauk SSSR, Russian, no 7, March 1973, p 921

The first international symposium on numerical modeling of the ocean circulation was held by the National Academy of Sciences of the USA on 17-21 October 1972 in Durham, New Hampshire. The organizers of the symposium invited to it, besides American scientists, specialists from other countries, including the USSR.

Twenty-seven reports were heard. Their contents were stated very briefly and the main time was given to discussion. In combination with pre-publication of the complete texts of most of the reports and also with the statements of previously designated reviewers in the discussion, this led to high effectiveness of the work of the symposium.

Very great interest was aroused by discussion of questions connected with prognostic calculations of large-scale motions in the ocean. The physical essence of the task is reduced to the following. Let us assume the existence in the ocean of a certain initial freely idealized state, for example, the water is at rest in the entire ocean and its temperature and salinity are constant. That state is disturbed by the instantaneous formation of a field of wind and flows of heat (and salts) on the surface of the ocean. It is required to trace by calculations the entire process of the formation, development and establishment of the currents. The formulation of that task in the first simple examples of calculation (for the North Atlantic) was accomplished in the USSR as long ago as the start of the 1960s. Now our foreign colleagues have made test calculations for the entire world on high-speed computers. The main results on the basis of the K. Biyen model were obtained by W. Holland and M. Cox (USA), G. Friedmann (West Germany) and K. Takano (Japan). It should be said that prognostic models are still in the development stage.

and more still is such that is desirable. In particular, the series are required for the establishment of current, and predicted, currents, 10-15 years in advance, in order to solve the problems and a number of other problems of the dynamics of the ocean. An effective numerical model has been worked out and reported by G. I. Marchuk. The results of his investigations are presented in the symposium.

Another, relatively easier problem (it can be solved on a medium-size computer) is diagnostic calculations. It can be solved on a practical interest have already been obtained here. Results of diagnostic calculations, it is required to calculate the rate of flow and other hydrodynamic characteristics with consideration of the relief of the ocean bottom, the contour of the coast, the flow of the water, the wind field, etc. Tens of projects have been completed in the USSR within the framework of that problem since 1965. A survey of their results was presented at the symposium by the author of the present article. A number of diagnostic calculations were presented by W. Holland and M. Cox.

A diagnostic model has now not only been worked out but has also been tested on many ocean basins. On the basis of it it is possible to calculate for any ocean or sea the rate of flow with the degree of precision permitted by the hydrological observations.

Some reports were devoted to the study of medium- and small-scale currents. Foreign specialists attribute much importance to the expeditionary investigation conducted by Soviet scientists on a polygon in the Atlantic in 1970. A similar polygon will be organized in the next few years by the Americans.

USSR

UDC 577.1:615.7/9

SARKISYAN, A. A., YEPREMYAN, G. A., and SIMAVORYAN, P. S.

"On Certain Biochemical and Morphological Changes in the Kidneys in Cases of Chromium Poisoning and the Therapeutic Efficacy of Unithiol"

Zh. eksperim. i klinich. med. (Journal of Experimental and Clinical Medicine), 1971, 11, No 5, pp 25-31 (Armenian summary) (from RZh-Biologicheskaya Khimiya, No 10, 25 May 1972, Abstract No 10F2216 by M. Shuster)

Translation: A determination was made of SH-group and ascorbic-acid (I) concentration and ATPase activity in rat kidney tissue under conditions of intoxication with varying chromium doses administered internally with the drinking water or subcutaneously. A dose  $\geq 17$  mg/kg was the lethal chromium dose. A significant decline was shown in ATPase activity (58% in individual experiments), in SH-groups (32.15%) and I (33.1%). The therapeutic action of unithiol is evinced in a lowering of the animals' mortality and in a normalization of the investigated biochemical indicators. With unithiol, destructive kidney lesions are less pronounced.

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SARKISYAN, A. A.

COLEEN

103. USSR

UDC 611--018.8 : 621.371.81+519.21

PETROV, A. A. and SARKISYAN, A. A.

"A Probabilistic Analysis of the Transmission of a Signal Through Elementary Neuron Nets"

SO: FOREIGN PRESS DIGEST  
28 OCT 1971

Kiberneticheskiye Aspekty v Izuchenii Raboty Mozga (Cybernetic Aspects of the Study of the Brain's Functioning), Moscow, Nauka Publishing House, 1970, pp 244-255

Abstract: The goal of this work is an analysis of the probabilistic characteristics of the passage and processing of signals by certain elementary neuron nets in the brain, which are well-known in neurophysiological literature. The analysis will be based on the notion that the excitation of a neuron is a random event with a given probability of happening. This kind of analysis allows us to take the structural organization of neurons as a basis for explaining certain functional capabilities of the structure with respect to processing signals entering at the inputs.

The conditional structures with stimulating and inhibiting connections are examined. Comparison of the structures shows that in both cases the processing of sensory information consists of the transmission of signals for which the probability of an impulse occurring is high to the output of the neuron (these correspond to "useful" signals, represented by batches of impulses) and of a reduction in the possibility of dissemination of signals for which this probability is low (single, "noisy" impulses).

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USSR

UDC: 621.391.1:519.2:621.372.54

SARKISYAN, A. A. and PETROV, A. A.

"Using the Model of a Receptive Field for Improving Signal Detection Efficiency (Author's Abstract)"

Elektron. tekhnika. Nauchno-tekhn. sb. Mikroelektronika (Electronic Engineering, Scientific-Technical Collection, Microelectronics) 1970, No. 2(23): pp 131-132 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3A42)

Translation: A method of signal storage widely used in engineering is considered. The storage procedure described in this paper is based on the modeling of some function processes of the receptive field in the retina of the eye. Author's abstract

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1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--NATURE OF NON STOICHIOMETRIC DEFECTS IN TITANIUM NITRIDE PHASES OF  
VARIABLE COMPOSITION -U-  
AUTHOR--(04)-AYVAZOV, M.I., DOMASHNEV, I.A., SARKISYAN, A.G., REZCHIKOVA,  
T.V.  
COUNTRY OF INFO--USSR  
SOURCE--IZVEST. AKAD. NAUK SSSR, NEORG. MATERIALY, APR. 1970, 6, (4),  
745-749  
DATE PUBLISHED----APR70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--CRYSTAL LATTICE DEFECT, TITANIUM COMPOUND, NITRIDE, ELECTRIC  
PROPERTY, METAL OXIDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3003/1449 STEP NO--UR/0363/70/006/006/0745/0749  
CIRC ACCESSION NO--AP0130382  
UNCLASSIFIED-



2/2 020

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0130382

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NATURE OF THE NON STOICHIOMETRIC DEFECTS OCCURRING IN TIN SUBX PHASE OF VARIABLE COMPOSITON (X EQUALS 0.6-0.96) WAS STUDIED AND CORRELATED WITH CORRESPONDING CHANGES IN THE ELECTRO PHYSICAL PROPERTIES, AS WELL AS WITH ANALOGOUS CHANGES TAKING PLACE IN OXIDE PHASES. THE NON STOICHIOMETRIC DEFECTS TENDED TO CHANGE THE EFFECTIVE MASSES OF THE CARRIERS IN THESE COMPOUNDS; LOCAL CARRIER CONCENTRATIONS ALSO DEVELOPED AND ANOMALOUS ENERGY GAPS APPEARED.

UNCLASSIFIED

USSR

UDC 546.171.1

AYVAZOV, M. L., SARKISYAN, A. G., DOMASHNEV, I. A., GUROV, S. V., Institute of New Chemical Problems, Academy of Sciences USSR

"Synthesis and Study of Alloys in the TiO-MnO Cross Section"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, No 7, 1972, pp 1218-1220

Abstract: In certain ternary phases, a deviation is observed from the ordinary  $A_2B$  formula. The deviation from stoichiometry is most significant when component B is chrome or manganese. In this case, the stoichiometric composition shifts from  $A_2$  to B to AB. The literature contains no data on the nature of formation of phases in the cross section TiO-MnO. Study of this section is of both theoretical and practical interest, since as the 3d shell is filled, the electro-physical properties of monoxides shift from metal-like to dielectric. TiO-MnO specimens were prepared each 10 wt. % throughout the entire concentration interval and studied. MnO dissolves in TiO up to 15 wt. %, TiO in MnO--up to 40 wt. %. The alloys have an NaCl-like structure. The single-phase area in the TiO-MnO cross section can be considered a solid solution of substitution.

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USSR

UDC 546.822\*712-31.538.214

AYVAZOV, M. I., GUROV, S. V., and SARKISYAN, A. G.

"Magnetic Properties of Materials Based on TiO-MnO"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 8,  
No 5, 1972, pp 853-857

Abstract: The magnetic susceptibility of alloys in the TiO-MnO cross section is studied in the 100-1000° K temperature interval. In alloys on the MnO side, as the content of TiO is increased, the degree of antiferromagnetic interaction decreases and super exchange interaction of ferromagnetic type appears. In alloys on the TiO side, the introduction of MnO results in the appearance of antiferromagnetic pairing of electrons and a decrease in the contribution of the spin paramagnetism of quasicoupled electrons.

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USSR

UDC 633.11+582.285.2(479.25)

BABAYAN, A. A., and SARKISYAN, D. Zh. D., Armenian Scientific Research  
Institute of Plant Protection

"Comparative Resistance of Some Wheat Varieties to Races of Stem Rust in  
Armenia"

Yerevan, Biologicheskii Zhurnal Armenii, No 8, 1971, pp 13-17

Abstract: Twenty winter wheat and 10 spring wheat varieties from the Soviet Union, Mexico, and the United States were tested for susceptibility to a number of races of stem rust found in Armenia (1k, 11, 15, 34, 40, 57k, 17, 21, and mixture of races). Of the 20 Soviet varieties, only Avrora, Kavkaz, Skorospelka 35, Bezostaya 2, and Predgornaya 2 exhibited noticeable resistance. Five of six Mexican wheats (Tobari 66, 7-Cerros, Inia 66, Lerma-Royo 64, Ciano-F-67) proved to be highly resistant. All four American spring varieties (Verdl Seeds 1809, Verdl Seeds 1812, Red River 68, Verdl Seeds 1877) were fairly resistant except Verdl Seeds 1877 which proved to be susceptible to two races (1k, 21). All four American varieties also exhibited high resistance to stem rust in a field experiment despite the presence of infection in nearby susceptible varieties.

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