

USSR

TARASENKO, N.YU., et al., Meditsina, 1972, 176 pp

The book may be highly useful in substantiating radiation safety measures to be observed by those engaged in producing radioisotopes or using them in medicine and in the economy.

The book is intended for hygienists, health officers, biologists, physicists, chemists, and industrial workers producing and using radioisotopes.

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TARASENKO, N. YU. et al., Meditsina, 1972, 176 pp

Comparative Evaluation of Cleansing Agents for Removing
Radioactive Contaminants from Skin...
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USSR

UDC 621.317.6(088.8)

KOVALENKO, N. V., ROSLYAKOV, N. M., SIZOV, V. P., TARASENKO, O. M., KONEV, L. N.
"Device for Measuring the Phase Characteristics of Antennas"

USSR Author's Certificate No 272401, Filed 12 Dec 68, Published 22 Sep 70 (from
RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A314P)

Translation: A device is proposed for measuring the phase characteristics of antennas. It is based on using the modulation of the reflected field and comprises a generator, a receiver, a low frequency reference signal amplifier, two transmitting antennas, the investigated receiving antenna and an auxiliary receiving antenna. In order to improve the measurement accuracy, H-modulators are included in the wave guide channels of the investigated and auxiliary antennas, and a mixer is connected to the timer outputs.

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UDC: 621.317.328

KOVALENKO, N. V., ROSLIYAKOV, N. M., SIZOV, V. P., TARASENKO, G. N., KONEV, L. N.

"A Device for Measuring the Phase Characteristics of Antennas"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztzy, Tovarnyye Znaki, No 19, 1970, Author's Certificate No 272401, filed 12 Dec 68, p 50

Abstract: This author's certificate introduces a device for measuring the phase characteristics of antennas. The device is based on using the modulation of a reflected field, and consists of an oscillator, a receiver, an amplifier for the low frequency of the reference signal, two transmitting antennas, the receiving antenna to be studied, and an auxiliary receiving antenna. As a distinguishing feature of the patent, measurement precision is improved by connecting Π -modulators in the waveguide channels of the antenna to be studied and the auxiliary antenna, and a mixer is connected to the timer outputs.

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... R. V.

MS 57875
8 Jan 73

JUNIOR MEDICAL AND OTHER SERVICE PERSONNEL IN SOME HOSPITALS OF KIEV AND PROSPECTS OF ADEQUATE SUPPLY THEREOF

Article by L.N. Navrolokhava, Candidate of Medical Sciences, S.P. Tarasenko, S.E. Yermakova, Chair of Social Psychology and Public Health Organization of Physicians, Moscow, S.I. Shupik, Kiev Institute for Advanced Training submitted 30 April 1972, pp 26-35

At the present time there is particular urgency with regard to staffing hospitals of major cities with junior and other service personnel.

The turnover among junior medical personnel of therapeutic and prophylactic institutions of large cities is considerable, however, this has not been reflected in statistical reports.

In the Soviet medical literature the duties of attendants in hospital departments have been discussed rather comprehensively (S.A. Rusanov, G. Sobolevskiy, V.Ya. Sarviliy, Z.G. Yashkova). Several works deal with availability of public health workers and methods of planning and advancing their qualifications (M.A. Chernovskaya, A.A. Kargin and N.A. Romanov, G. M.I. Shpakovskiy, A.M. Kozlovskiy, N.S. Mironov, S.K. Rukhovich, G. et al.). However, we failed to encounter any special articles dealing with the social characteristics of hospital attendants in Moscow (I.S. Suchancko and our chair in the hospitals of large cities, and suggestions to designate other service personnel at therapeutic institutions.

Information pertaining to domestic conditions, family composition, financial status, working conditions, desired duration of work day is of great interest, not only to assess the situation regarding junior medical personnel in hospitals but also for proper orientation in future screening of attendants for employment.

USSR

UDC 61.914.018.58

MEDVEDEV, I. A., TARASENKO, V. A., and CHERNUKHA, A. P., Candidates of Technical Sciences

"Determining the Coefficient of Production Difficulty for Various Brands of Steel in Martin Works"

Dnepropetrovsk, Metallurgicheskaya i Gornocrudnaya Promyshlennost', No 5, Sep-Oct 70, pp 75-77

Abstract: A method for determining the coefficient of production difficulty for various steels is described by using examples from four Martin works at metallurgical plants. Steel is produced at all four plants from ore and scrap, using natural gas as the fuel and oxygen as the intensifier. The difficulty in producing various steels is determined by the time of refinement, which depends on carbon burn-out quantity. The coefficients make it possible to establish planned production goals, to stimulate the production of quality steels, and to improve the procedure for measuring work productivity. 2 tables.

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USSR

TARASENKO, V. F., KURBATOV, Yu. A., BYCHKOV, Yu. I.

UDC: 621.378.325

"A Nitrogen Pulse Laser With Emission Wavelength of 337.1 nm"
Moscow, Kvantovaya Elektronika, Sbornik Statey, No 2(8), 1972,
pp 84-85

Abstract: A nitrogen pulse laser with emission wavelength of 337.1 nm pumped by a transverse electrical discharge is investigated. The supply system utilizes a strip line made of a ceramic material with high permittivity. A maximum peak power of 23 kW is attained when the active length of the discharge is 15 cm. It is shown that when the voltage across the discharge space is increased, there is a rise in the emission power and the optimum pressure. It is established that when the voltage is held constant, the impedance of the laser-produced plasma increases linearly with an increase in the pressure of the working gas. Four illustrations, bibliography of four titles.

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KURBATOV, Yu. A. and TARASENKO, V. F.

UDC: 537.523.4

"Time Characteristics of Spark Discharges Initiated by a Laser Pulse"

Moscow, Pribory i tekhnika eksperimenta, No 1, 1975, pp 142-144

Abstract: Results are given of experiments investigating the time characteristics of spark discharges initiated by a laser pulse of 10 kW of power at a wavelength of 3371 Å, the half-amplitude duration of the light pulse being 4 nsec. The radiation was recorded by a FEK-15 photodiode, the signal from which was applied to the time interval meter I2-7. The experiments were conducted in two modes: the first with a pulse of up to 40 kV; the second with a bell-shaped pulse of 50-200 kV. Schematics of the circuits used for both modes are given. Also given are curves for the spark switching time as a function of the electric field intensity and of the gas pressure for gap lengths of 5 and 10 mm. The discharge time is also plotted as a function of the field intensity-to-pressure ratio. The authors express their gratitude to Yu. I. Bychkov for his useful advice.

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THE CHARACTERISTICS OF SPARK GAPS ACTIVATED BY A LASER PULSE
Factors by Yu. A. Kurbatov and V. P. Tuzigulko: Moscow, Prilozhenie k Zhurnal'u Eksperimental'naya, Russkaya, No. 1, January 1973, pp 1472-

MS 516 77
1 Aug 73
(2)

The characteristics are studied for the development of a discharge across a gap with wavelength 3.371 μ and peak power 10 cm. The experimental conditions were: gap length 1-10 mm, voltage 10-200 kv, a tubular anode. With the resistor through 1-100 Ω the discharge follows the resistor in this case (depending on the delay of time (even at voltages close to that of breakdown)).

Such attention is being devoted today to the of activating a spark discharge with a laser beam. It is entirely obvious that a laser operating in the ultraviolet region, for example a nitrogen laser with wavelength 3.371 μ , would make it possible to sharply reduce the required power.

This paper describes results of research on the characteristics of a spark gap activated by a pulsed laser.

USSR

TARASENKO, V. F. and KURBATOV, Yu. A.

UDC: 621.375.826

"Nitrogen Laser With Longitudinal Discharge and High Specific Power"

Moscow, Pribory i tekhnika eksperimenta, No 1, 1973, pp 182-183

Abstract: The purpose of this paper is to indicate means of increasing the power in the pulsations of a nitrogen laser with longitudinal discharge that has been discussed in a number of earlier papers (J. D. Shipman, Jr., Appl. Phys. Letters, 10, 1967, 3, etc.). The reason for the interest in this laser is the possibility of using it to obtain short powerful pulses of about 10 nsec of ultraviolet light. Construction of the modification suggested by the authors for improving the power is shown in a cross-sectional drawing, and some of its technical characteristics are given. A curve of the radiated power as a function of the gas pressure for various voltages applied to the laser tube is also plotted. The authors express their gratitude to Yu. I. Bychkov and P. A. Bokhan for their assistance.

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USSR

TARASENKO, V. F. and BYCHKOV, Yu. I.

UDC: 621.375.826

"Nitrogen Laser With Transverse Discharge"

Moscow, *Pribory i tekhnika eksperimenta*, No 1, 1973, pp 183-184

Abstract: This short article describes a power supply system for operation with a transverse discharge nitrogen laser operating at a power level of 300 kW and radiating a wavelength of 3371 Å. A schematic of the power supply, made up of ceramics with high dielectric permeability, is given together with some technical details concerning the laser itself. A photograph of the laser's external view is also provided. It is stated that the equipment permits radiation with other gases as well.

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USSR

KURBATOV, YU. A., TARASENKO, V. F.

UDC: 537.52

"Time Characteristics of Spark Dischargers When a Discharge is Initiated by a Gas Laser Beam With Wavelength of 0.3371 μ m"
Moscow, Kvant. elektronika--sbornik (Quantum Electronics--collection of works), "Sov. radio", 1972, pp 108-109 (from RZh-Fizika, No 6, Jun 73, abstract No 6, Jun 73, abstract No 6G181)

Translation: The time characteristics of the development of a discharge in a gas gap were studied for initiation by a laser beam with wavelength of 0.3371 μ m and peak power of 10 kw. Conditions of the experiment: pressure in the research chamber 1-8 atmospheres; length of the gap 1-10 mm, voltage 10-200 kv. The beam was incident on a copper cathode through a grid anode. It was found that in the investigated range the discharge has a delay time of from 1 to 100 ns (depending on conditions); the fluctuations do not exceed ± 3 ns (even at voltages close to the static breakdown value). The high stability of triggering of the investigated gas gap by a laser beam shows that the latter is an effective source for triggering high-power spark dischargers.

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TARASENKO, V. F., KURBATOV, Yu. A., BYCHKOV, Yu. I.

UDC 621.375.82

"Pulsed Nitrogen Laser With a Wavelength of 3371 Å"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works),
No. 2, Moscow, "Sov. radio", 1972, pp 84-85 (from RZh-Fizika, No 10,
Oct 72, Abstract No 10D944)

Translation: A pulsed nitrogen laser with a wavelength of 3371 Å pumped by a transverse electric discharge was investigated. A ceramic band line with a high dielectric permeability was applied in the supply system. A maximum peak power of 23 kw was obtained with an active discharge length of 15 cm. It was shown that the radiation intensity and the optimal pressure rise with an increase in voltage on the discharge interval. It was established that the resistance of the laser plasma increases linearly with an increase in the pressure of the working gas at constant voltage. Authors abstract.

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WSR

UDC 533.9

VISHNEVETSKIY, V.N., VOYTENKO, D. A., VOLKOV, YE. D., DIKIY, A. G., ZALKIND, V. M., KONOTON, P. I., MOISEYEV, S. S., PAVLICHENKO, O. S., PASHNEV, V. K., SUPRUNENKO, V. A., TOLOK, V. T., TERESHCHENKO, F. F., TONKOPRYAD, V. M., and TARASENKO, V. P., Physico-Technical Institute of Academy of Sciences Ukrainian SSR, Kharkov

"Energy Losses of Plasma in a 'Uragan' Stellarator With Large Shear"

Kiev, Ukrainskiy Fizicheskij Zhurnal, Vol 16, No 8, Aug 71, pp 1320-1323

Abstract: Investigations of the rate of energy losses in plasma have shown that the holding time of particles significantly exceeds the energy life time when the plasma is of collision type. This article discusses the results of investigations on the rate of energy losses of collision-type plasma for the "Uragan" stellarator. The authors study the dependence of energy life time of the plasma on the amount of shear and the angle of conversion. They make extensive use of graphs to illustrate their findings and find that the experimental points lie on a straight line. The authors conclude that the results may be explained on the basis that a temperature-drift instability develops in the plasma. The article contains 5 figures and 8 bibliographic entries.

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USSR

TARASENKO, V. P., KORNEYCHUK, V. I.

"The Effectiveness of k-Valued Multiplier Circuits"

Mnogoustoych. Elementy i ikh Primeneniye [Multistable Elements and Their Applications -- Collection of Works], Moscow, Sov. Radio Press, 1971, pp 111-118, (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V673).

NO ABSTRACT.

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USSR

UDC: 519.217

ZAKHAROV, V. V., TARASENKO, V. P.

"Optimum Control of an Object in the Static Mode as a Problem in Stochastic Programming"

V sb. Nelineyn. i optimal'n. sistemy (Nonlinear and Optimum Systems-- collection of works), Moscow, "Nauka", 1971, pp 125-130 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V108)

Translation: Control of an object in the static mode is treated as a problem in stochastic programming. Let $F(x,c)$ be a purpose function, $f_i(x,a)$ be a system of constraints on the permissible states of the object, $x = x_1, x_2, \dots, x_n$ be a vector of controlling actions whose components are random functions of time, and $s(z) = (s_0(z), s_1(z), \dots, s_m(z))$ be an additive interference whose components are scalar functions of a random vector of uncontrolled actions. It is required to choose distributions of components of the random quantity x such that some numerical characteristic of the random quantity $F(x,c) + s_0(z)$ is minimized. At this point, the object goes beyond the limits of permissible states with probabilities no greater than $1 - \alpha_j$. If the form of the distribution $p(x)$ of the

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- 9 -

ZAKHAROV, V. V., TARASENKO, V. P., Nelineyn. i optimal'n. sistemy, Moscow, "Nauka", 1971, pp 125-130

random quantity is known exact to the value of the vector of moments of the first order \bar{x} , and P_j is a normal distribution function, then the problem reduces to a problem in deterministic linear programming. The approach outlined in this paper to optimum control of an object in the static mode presents new possibilities for constructing the mathematical description of complex processes. In many important problems of optimum control, the controlling effects cannot be considered as acting instantaneously. As a consequence, it becomes necessary to overstate somewhat the minimum value of the purpose function so that the permissible states of the object will be violated with minimum frequency. The proposed method of mathematical description of the object makes it possible to account precisely for the extent of compromise between increasing the purpose function and guaranteeing the maintenance of permissible states. An example of a practical computer-solved problem is presented to illustrate these conclusions and the described procedure as a whole. Authors' abstract.

USSR

UDC: 681.142

KORNEYCHUK, V. I., ROMANKEVICH, A. M., TARASENKO, V. P., Kiev Polytechnical Institute imeni the Fiftieth Anniversary of the Great October Socialist Revolution

"A Device for Shaping Carry Signals in Addition"

Moscow, Otkrytiya, izobreneniya, promyshlennyye obraztsy, tovarnyye znaki, No 5, Feb 71, Author's Certificate No 293240, Division G, filed 23 Jan 70, published 15 Jan 71, pp 163-164

Translation: This Author's Certificate introduces a device for shaping carry signals in addition. The device contains AND and OR circuits, a logic circuit based on a magnetic core, a flip-flop and a reference pulse oscillator. As a distinguishing feature of the patent, the device is simplified and speed is increased by connecting one of the inputs of the device to an input of the OR circuit, and connecting the second input of the device to the other input of the OR circuit and to the input of the first AND circuit. The output of the OR circuit is connected to the readout winding of the core, the record winding of the core being connected to the reset terminal of the flip-flop and to the first output of the reference pulse oscillator. The second and third outputs of the oscillator are connected to the inputs of the second and third AND circuits respectively. The output winding of the

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USSR

KORNEYCHUK, V. I. et al., USSR Author's Certificate No 293240

core is connected to the set terminal of the flip-flop through the first AND circuit. The one-output and zero-output terminals of the flip-flop are connected through the second and third AND circuits to the inputs of another OR circuit, and the output of this OR circuit is connected to the output of the device.

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USSR

UDC 612.766.1:622.272.3

RESHETYUK, A. L., VANIN, L. G., ONISHCHENKO, L. P., ~~TARASENKO, V. T.~~ and VASYL'KOV, V. M., Donetsk Institute of the Work Hygiene and Occupational Diseases

"Physiological Function Stress of Miners' Organisms Under Conditions of the Deep Donbas Mines"

Kiev, Fiziologichnyy Zhurnal, Vol 18, No 4, Jul/Aug 72, pp 547-553

Abstract: Physiological and ergometric studies were carried out with experienced miners (15 years) during a full shift of manual work, or a combination of manual and machine work under different microclimatic conditions (70-95% humidity, 22-31°C). High temperature of deep mines (29-31°C) reduces the work productivity and increases the functional stresses of miners. A danger of heat stroke was observed with workers who worked previously in not too deep mines, and also in experienced miners after vacations. Adaptation of miners to working conditions at 29-31°C lasts for 1 month, and readaptation, for 15 days. After adaptation to heat the work productivity increases and the functional stress of the whole organism decreases, along with physiological effectiveness. In order to avoid chronic overstresses of miners in deep mines a vacation every 6 months is recommended. Some formulas are presented for description of the physiological conditions of miners and for proper scheduling of their work and rest periods.

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USSR

TARASENKO, V. V. and KHARITONOV, V. D., Institute of Radio Engineering and Electronics, USSR Academy of Sciences

"Surface Magnetostatic Waves in Uniaxial Ferromagnetic Materials"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 60, No 6, Jun 71, pp 2321-2330

Abstract: The authors find the spectrum of surface magnetostatic waves in semi-bounded uniaxial antiferromagnetic materials. They also find the regions of existence of these waves in magnetic fields perpendicular and parallel to the crystal surface for antiferromagnetic materials with magnetic anisotropy of easy magnetization, axis and plane type. The authors give four schematics depicting the regions of existence for surface and body waves in antiferromagnetic materials. Figures 1-3 show the "easy axis" type; and Figure 4, the "easy plane" type. Detailed discussions are given for the frequencies of surface waves in antiferromagnetic materials with magnetic anisotropy for both "easy axis" and "easy plane" types. These discussions are graphically presented by the above 4 figures. Finally, the authors discuss in detail the frequencies of surface waves in antiferromagnetic materials with weak ferromagnetism. The article contains 4 figures and a bibliography of 7 titles.

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1/2 040 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--EFFECT OF POINT DEFECTS ON THE ENERGY SPECTRUM OF FERROELECTRICS
WITH A HYDROGEN BOND -U-
AUTHOR--(02)-TARASENKO, V.V., KHARITONOV, V.D.
COUNTRY OF INFO--USSR
SOURCE--LENINGRAD, SOLID STATE PHYSICS, FEBRUARY 1970, PP 333-342
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--ATOMIC DEFECT, IMPURITY CENTER, ENERGY SPECTRUM, CRYSTAL
POLARIZATION, FERROELECTRIC MATERIAL, HYDROGEN BONDING, HYDROGEN ION,
OSCILLATION, HIGH FREQUENCY, DIELECTRIC SUSCEPTIBILITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/0856 STEP NO--UR/0181/70/000/000/0333/0342
CIRC ACCESSION NO--AP0126527
UNCLASSIFIED

2/2 040

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0126527

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE CONCERNS THE EFFECT OF POINT DEFECTS (IMPURITIES) ON THE ENERGY SPECTRUM OF POLARIZATION WAVES IN FERROELECTRICS WITH A HYDROGEN BOND, IN WHICH THE FERROELECTRIC PHASE IS DETERMINED BY AN ORDERED ARRANGEMENT OF HYDROGEN IONS. IT IS SHOWN THAT LOCAL AND QUASI LOCAL LEVELS OF POLARIZATION OSCILLATIONS OCCUR IN SUCH CRYSTALS. THE HIGH FREQUENCY DIELECTRIC SUSCEPTIBILITY IS CALCULATED. THE AUTHORS EXPRESS THEIR THANKS TO V. G. BAR'YAKHTAR FOR HIS DISCUSSION OF THE WORK. THE ARTICLE INCLUDES 41 EQUATIONS AND 6 FIGURES. THERE ARE 17 REFERENCES. FACILITY: INSTITUTE OF RADIO ENGINEERING AND ELECTRONICS, USSR ACADEMY OF SCIENCES, MOSCOW.

UNCLASSIFIED

1/2 :021 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--EFFECT OF POINT DEFECTS ON THE ENERGY SPECTRUM OF FERROELECTRICS
WITH HYDROGEN BONDS -U-
AUTHOR-(02)-KHARITONOV, V.D.; TARASENKO, V.V. T
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(2) 333-42
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--ENERGY SPECTRUM, HYDROGEN BONDING, CRYSTAL POLARIZATION,
ELECTRIC POLARIZATION, FERROELECTRIC CRYSTAL, DIELECTRIC SUSCEPTIBILITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0065 STEP NO--UR/0181/70/012/002/0333/0342
CIRC ACCESSION NO--AP0054863
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC. ACCESSION NO--AP0054863

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT WAS CONSIDERED OF POINT DEFECTS (IMPURITIES) ON THE ENERGY SPECTRUM OF POLARIZATION WAVES IN FERROELECTS. WITH H BONDING, WHERE THE FERROELEC. PHASE IS DETD. BY ORDERED DISTRIBUTION OF H IONS. IN SUCH CRYSTALS, LOCAL AND QUASI LOCAL LEVELS OF POLARIZATION OSCILLATIONS ARE FORMED. THE HIGH-FREQUENCY DIELEC. SUSCEPTIBILITY WAS CALCD.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--MATRIX METHODS FOR ESTIMATING THE STATISTIC CHARACTERISTICS OF
PULSE CODE SIGNALS -U-
AUTHOR--(02)-KONOVALOV, G.V., TARASENKO, YE.M.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, RADIOTEKNIKA, NO 2, 1970, PP 30-38
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., MATHEMATICAL SCIENCES
TOPIC TAGS--MATRIX FUNCTION, PULSE CODING, PHASE SHIFT, PROBABILITY
DISTRIBUTION, SIGNAL ANALYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1284 STEP NO--UR/0108/70/000/002/0030/0038
CIRC ACCESSION NO--AP0123243
UNCLASSIFIED

2/2 029

CIRC ACCESSION NO--AP0123243

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

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT. RELATIONSHIPS ARE OBTAINED FOR ESTIMATING THE STATISTICAL CHARACTERISTICS AND ENERGY SPECTRA OF PULSE CODE AND SOME OTHER TYPES OF PHASE MANIPULATED SIGNALS IN THE INSTANCE OF AN ARBITRARY TWO DIMENSIONAL RULE FOR THE DISTRIBUTION PROBABILITY OF MESSAGES CODED BY UNIFORM CODES.

UNCLASSIFIED

USSR

UDC 628.543:663.631.8

BUDKEVICH, G. B., MOMOT, V. YA., SIRENKO, I. I., TARASENKO, YU. A., and SHEKA, I. A.

"Removal of Mercury From Polluted Water by Silicon Oxyhydride"

Kiev, Khimicheskaya Tekhnologiya, No 6, Nov/Dec 73, pp 50-52

Abstract: The compound $(H_2Si_2O_3)_N$ is proposed as an absorbent. The Hg ion in solution is reduced to the metal on the surface of the $(H_2Si_2O_3)_N$ where it is fixed. A table gives the amount of Hg removed under various conditions. The amount of Hg removed is 99+% for every case except the high Hg concentration (4000 mg). In another set of experiments the concentration of Hg was reduced 40 to 85 times at a pumping rate of 4 to 6 l/hr over 1 kg of absorbent.

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TARASENKO, Yu. A.

J 685 61450
8 Nov. 1974

ISSUE

(4)

REMOVAL OF MERCURY FROM WASTE WATER BY SILICON OXYHYDRIDE
UDC 628.543.663.631.9

Article No. 7. Tarasenko, Yu. A., Kostin, I. I., *et al.*, *Izv. Akad. Nauk SSSR, Khim. i Metallurgiya*, No. 6, 1973, pp. 2622-2627.

In producing chlorine and alkalis by the mercury method, the waste water contains a considerable amount of mercury in metallic form, in the form of low-solubility compounds, and in ion form.

The only method of removing mercury from waste water that is presently used in the industry of producing chlorine and alkalis is sulfide treatment, based on the interaction of bivalent mercury ions with the sulfide ion (S²⁻). The finely-dispersed colloid sediment of the sulfide of mercury is difficult to remove by filtration or clarification. In addition, where there is insufficient sodium sulfide, there is incomplete binding of the ion mercury; other methods of cleaning waste water (2-7) is restricted by the capability of extracting only the ion form of mercury. For this reason, searches for new and more efficient methods of extracting mercury from waste water represent an important and urgent scientific-technical problem.

One promising method for cleaning waste water of mercury appears to be the use of a silicic water-containing adsorbent (8), a silicon oxyhydrate (H₂SiO₃·2H₂O). When the silicon oxyhydrate comes in contact with solutions that contain ion mercury, there occurs on its surface a reduction of the ions to the metallic state. The reduced metallic mercury settles on the surface of the sorbent and sticks to its pores because of dispersion forces.

The study gives experimental data concerning the removal of mercury from waste water that comes from the production of sodium hydrate using the mercury method; the experiments utilize the adsorption-reduction method by silicon oxyhydrate. For the investigation, the fraction 3-0.5 mm silicon oxyhydrate was used, obtained by procedures described in [9]. The total volume content of the pores of the silicon oxyhydrate that was obtained,

USSR

UDC: 629.7.018.2

TARASENKOV, A. M., POPANIN, Yu. P., MIRONENKO, A. I.

"A Model Which Simulates Longitudinal Oscillations of an Aircraft"

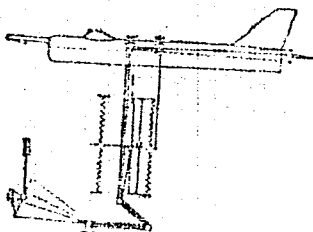
Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 2, Jan 72, Author's Certificate No 324645, Division G, filed 18 Nov 69, published 23 Dec 71, pp 159-160

Translation: This Author's Certificate introduces a model which simulates longitudinal oscillations of an aircraft. The model contains a fuselage with horizontal stabilizers and hinged elevator, control levers, clamps and measuring equipment. As a distinguishing feature of the patent, in order to demonstrate the longitudinal motion of an aircraft, the model is hinged at the center of gravity and the focus on clamped rods which move in grooves lengthwise of the model. The rods are coupled to springs and control levers. The spring for the rod fastened to the focus of the model, and the elevator, are fastened through tie rods to the control lever.

1/2

USSR

TARASENKOV, A. M. et al., Soviet Patent No 324645



2/2

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USSR

UDC 621.397.132:621.397.238

TSIRLIN, V. M., SHESTAKOV, Yu. N., TARASENKOV, G. V., PALITSKIY, V. M.

"A Device for Transmitting Image Signals and Accompanying Audio in a Single Channel in a Television System"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 36, Soviet Patent No 288026, class 21, filed 24 May 67, published 3 Dec 70, p 52

Translation: This Author's Certificate introduces a device for transmitting image signals and accompanying audio in a single channel in a television system based on Soviet Patent No 221029. As a distinguishing feature of the patent, the frequency band of the audio channel is expanded by connecting the output of the pulse-duration modulator to the inputs of the AND circuit both directly and through a delay line. The output of the AND circuit is connected to one of the inputs of a coincidence circuit, and the signal from a flip-flop is sent to the other input of the coincidence circuit.

1/1

USSR

UDC 541.67

TARASEVICH, A. S., YEGOROV, Yu. P.

"The Problem of Estimating the $p_{\pi}-d_{\pi}$ Contribution of the Phosphorus Atom in Symmetrically Substituted Phosphines"

Kiev, Teoreticheskaya i Eksperimental'naya Khimiya, Vol 8, No 2, Mar-Apr, 1972, pp 235-238.

Abstract: The literature contains contradictory estimates of the number of π electrons per P atom in phosphines. An earlier work which compared the suitability of various atoms for $p_{\pi}-d_{\pi}$ interactions by means of IR spectroscopy showed that the reactivity decreases in the sequence $F > Cl > Br > I$. This article demonstrates that this same sequence can be produced by the calculation method of Letcher and Van Wazer, which has produced the opposite result, by means of a slight modification. The authors feel that their corrections produced a more realistic relationship of the values of π contributions of phosphorus for symmetrically placed phosphines.

1/1

USSR

UDC 541.8

YEGOROV, Yu. P., RYL'TSEV, Ye. V., TARASEVICH, A. S.

"Electron-Acceptor Properties of Four-Coordination Phosphorus in Intermolecular Reactions"

Kiev, Teoreticheskaya i Eksperimental'naya Khimiya, Vol 8, No 2, Mar-Apr, 1972, pp 169-175.

Abstract: Organic compounds containing four-coordination phosphorus with phosphoryl, thiophosphoryl and imine bonds with the general form $P = X$ have exceptionally high tendencies toward the formation of molecular complexes and associates. This tendency of these compounds has been related to the uneven distribution of the charge in the $P = X$ bond, to the significant transfer of electron density to the $X:P^+ - X^-$ group. Although it has been presumed in the literature that intermolecular bonds are formed in which the P atom acts as an electron acceptor, no direct confirmation has ever been presented. The purpose of the present work is to confirm this assumption by studying the mechanisms of intermolecular interaction -- the first stage in the process of chemical conversion -- using a number of oxides ($R_3P = O$)

as examples. The studies were performed by IR-spectroscopy of the compounds dissolved in cyclohexane with the electron donor compounds added to the solution. The studies confirmed that organophosphorus compounds with the four-coordination phosphorus atom can participate in the formation of molecular aggregates by accepting electrons at this atom. If this interaction is the

USSR

UDC 541.8

YEGOROV, Yu. P., RYL'TSEV, Ye. V., TARASEVICH, A. S., Kiev, Teoreticheskaya i Eksperimental'naya Khimiya, Vol 8, No 2, Mar-Apr, 1972, pp 169-175.

first stage in an elementary chemical conversion, in the limiting case the electrophilicity of these compounds is determined by the freedom of the phosphorus atom to accept electrons.

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USSR

UDC 541.67

TARASEVICH, A. S., and YEGOROV, YU. P., Institute of Organic Chemistry,
Academy of Sciences Ukr. SSR, Kiev

"Determination by the ^{31}P Nuclear Magnetic Resonance Method of the Order of
the P=N Bond of Phosphazo Derivatives"

Kiev, Teoreticheskaya i Eksperimental'naya Khimiya, Vol 7, No 6, Nov-Dec 71,
pp 828-831

Abstract: The method proposed by J. H. Letcher and J. R. Van Wazer (J. Chem.
Phys., Vol 44, 815, 1966; vol 45, 2916, 2926, 1966) was applied to the mole-
cules of 18 compounds $\text{R}'\text{R}''\text{R}'''\text{P}=\text{NR}$ for which values of the chemical shift

$\delta^{31}\text{P}$ that followed from nuclear magnetic resonance determinations were
available (cf. ^{31}P Nuclear Magnetic Resonance, Chapter 2, Vol 5, Topics in
Phosphorus Chemistry, New York - London - Sydney, 1967). On the basis of the
experimental values of $\delta^{31}\text{P}$, the $p\pi - d\pi$ contributions of the
substituents R' , R'' , R''' at P as well as of NR and the order P_{NR} of the π bond

P=N were determined for the compounds in question (table). The electronega-
tivities χ_{NR} that were calculated satisfied the rule $\chi_{\text{S}} < \chi_{\text{NR}} < \chi_{\text{O}}$.

The authors thank V. V. Man' for assistance in experimental work in connection
with determinations of $\delta^{31}\text{P}$. 1/1

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USSR

UDC 539.194

TARASEVICH, A. S., and YEGOROV, YU. P., Institute of Organic Chemistry
Academy of Sciences Ukr. SSR, Kiev

"A Theoretical Estimation of the Dipole Moments of Some Phosphines with
Consideration of the $p\pi - d\pi$ Contribution"

Kiev, Teoreticheskaya i Eksperimental'naya Khimiya, Vol 7, no 6, Nov-Dec 71,
pp 747-751

Abstract: The dipole moments μ (s,p) of compounds PZ_3 ($Z = H, Me, F, Cl$)
were calculated by a procedure based on R. Hoffman's method (J. Chem. Phys.
Vol 39, 1397, 1963). The values obtained were in good agreement with experi-
mental values of the dipole moment for PH_3 and PMe_3 , but such too high for
 PF_3 and PCl_3 . On considering the contribution of the $p\pi - d\pi$ conjugation,
values of μ (s,p,d) were obtained that were in satisfactory agreement with
experimental values of the dipole moment for all four compounds (table).

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USSR

UDC 616.981.714

KULAGIN, S. M., and TARASEVICH, I. V.

Moscow, Likhoradka Tsutsugamushi (Tsutsugamushi Fever), Meditsina, 1972, 232 pp

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KULGAIN, S. M., and TARASEVICH, I. V., Likhovadka Tsutsugamushi, Meditsina, 1972, 232 pp

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The data from world literature are generalized for the first time in this monograph, and the personal observations of the authors with respect to various problems of this infectious disease is discussed. The history of its study,

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USSR

KULAGIN, S. M., and TARASEVICH, I. V., Likhoradka Tsutsugamushi, Meditsina, 1972, 232 pp

data on the propagation of tsutsugamushi, the morphology, methods of cultivation, antigenic structure, immunogenic properties, natural variability and the resistance of the pathogen are discussed.

A study is made of the pathogenesis, clinical treatment, diagnostics and differential diagnostics, prognosis, treatment, immunity and prophylaxis and also the standard landscapes of the centers, lists of carrier mites and warm blooded animals which carry the pathogen of the disease.

The monograph contains 59 illustrations including maps of the world propagation of the natural centers and carriers. The book is designed for doctors of infectious diseases, epidemiologists, immunologists and therapists.

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USSR

UDC 576.851.71.097.2.083.3

DYUYSALIYEVA, R. G., TARASEVICH, I. V., and PLOTNIKOVA, L. P., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR, Moscow

"Preparation of Antigen from Rickettsia tsutsugamushi Grown in Tissue Cultures"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 7, Jul 70, pp 101-103

Abstract: Soluble antigen was obtained from R. tsutsugamushi (Gilliam and B-15 strains) cultured in a monolayer of L cells and primary trypsinized chick fibroblasts. Three days after formation of the monolayer, the medium was removed and the culture inoculated with a suspension of egg yolk infected with rickettsia. The culture was then left for 2 hours or overnight at 37°C. The suspension containing rickettsia was removed and the culture covered with medium 199. As soon as the first signs of degeneration of the monolayer appeared, the cells were removed mechanically and centrifuged for 1 hour until all rickettsia and cells settled. The supernatant was removed, and the precipitate was used as starting material to prepare the antigen. The specificity of this antigen was determined from the results of a complement-fixation test.

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Heat, Combustion, Detonation

USSR

UDC 536.244:66.015.23

SMOL'SKIY, B. M., EL'PERIN, I. T., FATEYEV, G. A., and TARASEVICH, L. I.

"The Effect of Conductive and Convective Heat Exchange on the Speed of the Reaction Zone's Motion in a Porous Body That Is Being Purged"

Minsk, Teplo- i massoperenos -- sb. (Heat and Mass Transfer -- Collection of Works), Vol 2, Part 2, 1972, pp 493-499 (from Referativnyy Zhurnal -- Teploenergetika, No 10, 1972, Abstract No 10G150)

Translation: The authors, who are employed by the Belorussian SSR Academy of Sciences' Institute of Heat and Mass Exchange and the Belorussian Polytechnic Institute in Minsk, analyzed the equations describing the steady temperature field in a reacting porous body that is being purged and, on the basis of this analysis, discovered the effect of the conductive and convective transfer of heat on the speed at which the reaction zone moves. They established that the effect of both types of heat transfer is analogous, although the analogy is not effective for the small Re numbers and the large values of the relative adiabatic combustion temperature that characterize the intensity of an internal heat source. The reason that the analogy is destroyed is related to the complication of the temperature profile's configuration near the reaction zone, for which the quadratic

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USSR

SMOL'SKIY, B. M., et al., Teplo- i massoperenos -- sb., Vol 2, Part 2, 1972,
pp 493-499 (from Referativnyy Zhurnal -- Teploenergetika, No 10, 1972, Abstract
No 10G150)

approximation of the profile that is the basic analogy becomes inadequate.
(1 illustration; 4 bibliog. ref.)

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- 2/ -

USSR

UDC 576.858.77

TARASEVICH, L. M., Institute of Microbiology, USSR Academy of Sciences,
Moscow

"Insect Viruses in a Unified Classification of Viruses"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 5, 1973,
pp 696-705

Abstract: Insect viruses are gaining in popularity as an object of study among virologists, and this has to a large extent been due to the fact that they may account for 10-30% of the body weight of the insect host and are easily isolated. In accordance with the decision of the Ninth International Congress of Microbiology on viral classification, classification of the insect viruses is based on their structural and chemical properties. At the present time they are divided into seven groups or genera as follows: Baculovirus, Poxvirus, Iridovirus, Parvovirus, Cytoplasmic polyhedrosis, Rhabdovirus, and Enterovirus. Numerous new viruses are coming to light constantly and present a problem since they cannot be classified in view of sparse data.

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USSR

UDC 576.858.77

TARASEVICH, L. M.

"Entomopathogenic Viruses and Their Use"

Uspekhi mikrobiologii (Advances in Microbiology), No 7, 1971

Abstract: The author discusses the significance of entomopathogenic viruses for general virology and for the biological control of pests, the history of Soviet research in the field of insect pathology, and modern views on known entomopathogenic viruses that attack various insect orders. He briefly describes the causative agent of polyhedrosis and its two types of nucleic acids, DNA and RNA. He presents data on infectious nucleic acids of insect viruses, transovarian transmission of viruses, and viruses now recommended for biological control of insect pests. He summarizes the results of research on the use of nuclear polyhedrosis and granulosis against quarantine blight, the white moth *Hyphantria cunea* Dr.

1/1

USSR

UDC 911.3:616.988.25(571.13)

TAGIL'TSEV, A. A., and ~~TARASEVICH, I. N.~~

"The Possibility of Gamasid Ticks Participating in the Virus Cycle of Tickborne Encephalitis in Native Foci"

V sb. Vtoroye Acarologicheskoye soveshchaniye. Ch. 2. Tezisy dokl. (Second Acarological Conference. Part 2. Theses of Reports -- collection of works) Kiev, "Nauk. dumka," 1970, pp. 159-160 (from RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.60)

[No abstract]

1/1

USSR

UDC 541.132

BURSHTEYN, R. KH., DRIBINSKIY, A. V., TARASEVICH, M. R.,
CHIZMADZHEV, YU. A., CHIRKOV, YU. G., Institute of Electro-
chemistry, Academy of Sciences USSR, Moscow

"Mechanism of Current Generation in Hydrophobic Gas-diffusion
Electrodes. I"

Moscow, Elektrokhimiya, Vol 7, No 12, Dec 71, pp 1826-1830

Abstract: In spite of the wide utilization of hydrophobic gas-diffusion electrodes, the mechanism of their action has been poorly studied. This study was aimed at theoretical analysis of the mechanism of current generation in such electrodes and comparison with experimental results. The active layer of a hydrophobic electrode may be approximated by a model consisting of a gas filled cylinder, its walls a mixture of fluoroplast and a catalyst wetted with the electrolyte. With $\varphi > 0.97$ the entire surface of porous electrode generates current by an intrakinetic regimen. The electrochemical activity of hydrophobic electrodes calculated from derived equation and the one obtained experimentally for the range $\varphi = -1.07 \rightarrow 0.9v$ were very close. The

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USSR

BURSHTEYN, R. KH., et al, Elektrokhimiya, Vol 7, No 12, Dec 71,
pp 1826-1830

electrochemical activity of these electrodes is in direct linear relationship to the layer thickness at low polarizations. It has been determined that when $\bar{\eta} < 1-1.5$, the current generation is controlled by the kinetic regimen and when $\bar{\eta} > 8$ ---by the intra-diffusional regimen.

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- 20 -

Electrochemistry

USSR

UDC 541.136

CHIZMADZHEV, YU. A., MARKIN, V. S., TARASEVICH, M. R.,
CHIRKOV, YU. G., Academy of Sciences USSR, Institute of
Electrochemistry

Moscow, Makrokinetika Protseessov v Poristvkh Sredakh (Macrokinetics
of Processes in Porous Media), "Nauka," 1971, 364 pp

Translation of Annotation: The behavior of liquid and gas in porous media is of interest in connection with a variety of problems pertaining to underground hydro- and gas dynamics, mercury porometry, and industrial chemistry. Of special urgency are the investigations of the processes in porous catalysts, where chemical or electrochemical reactions take place against the background of hydrodynamic phenomena. Fuel cells, which are highly promising and are now being intensely developed, making it possible to directly convert chemical energy into electric energy, can serve as an example of such a system.

This book is devoted to the study of the mechanism of current generation in electrochemical generators. It expounds in detail the theory of capillary phenomena in porous media, the theory of
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USSR

CHIZMADZHEV, YU. A., et al, Makrokinetika Protssessov v Poristykh Sredakh, "Nauka," 1971, 364 pp

hydrodynamic mixing, etc., as well as the basic principles of the action of porous gas electrodes of fuel cells.

The book is intended for physicists, physical chemists, electrical chemists, and engineers interested in the phenomena occurring in porous media. It is of special interest to specialists working in the field of direct conversion of chemical energy into electric energy. This book can be useful to students of upper courses and to graduate students of the appropriate specialties.

Tables: 1. Illustrations: 261. Bibliography: 491 entries.

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CHIZMADZHEV, YU. A., et al, Makrokinetika Protssessov v Poristykh Sredakh. "Nauka," 1971, 364 pp

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GHIZMADZHEV, YU. A., et al, Makrokinetika Protssessov v Poristykh Sredakh, "Nauka," 1971, 364 pp

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CHIZMADZHEV, YU. A., et al, Makrokinetika Protseessov v Poristykh Sredakh, "Nauka," 1971, 364 pp

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USSR

CHIZMADZHEV, YU. A., et al, Makrokinetika Protssosov v Poristykh Sredakh, "Neuka," 1971, 364 pp

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USSR

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CHIZMADZHEV, YU. A., et al, Makrokinetika Protsessov v Poristykh Sredakh, "Nauka," 1971, 364 pp

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GHIZMADZHEV, YU. A., et al, Makrokinetika Protsessov v Poristykh Sredakh, "Nauka," 1971, 364 pp

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USSR

UDC 541.138.3

SABIROV, F. Z., TARASEVICH, M. R., BURSHTEYN, R. Kh., Institute of Electrochemistry, Academy of Sciences, USSR, Moscow

"Mechanism of Reduction of Oxygen on Pyrographite in Acid Solutions"
Moscow, Elektrokimiya, Vol 6, No 8, Aug 70, pp 1130-1133

Abstract: The ionization of oxygen in acid solutions is studied at various pH. The experimental data produced allowed the reduction of oxygen in the range of pH values from 4 to 1 to be described by the following kinetic equation:

$$i = [O_2] \exp(-qF\phi/RT), \tag{1}$$

where $q \approx 0.4-0.5$. This equation corresponds to retarding of the stage of attachment of the first electron to the oxygen molecule:



The mechanism of ionization of oxygen on pyrographite in acid solutions is therefore similar to the mechanism of ionization of oxygen on a mercury electrode, where the process of electroreduction of the oxygen is determined by reaction (2).

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USSR

Graphite

UDC 541.138.3:546

TARASEVICH, M. R., SABIROV, F. Z., and BURSHTEYN, R. Kh.,
~~Institute of Electrochemistry~~, Academy of Sciences USSR, Moscow

"Mechanism of Electrochemical Reduction of Oxygen on Pyro-
lytic Graphite"

Moscow, Elektrokimiya, No. 3, Mar 71, pp 404-407

Abstract: The article describes the reduction of oxygen in a broad range of pH (from 0.5 to 14) on pyrolytic graphite electrodes. On the basis of the results obtained in this work and earlier obtained data the mechanism for the electrochemical reduction of oxygen is proposed. The experiments were conducted with quiescent pyrolytic graphite electrodes. The measurements involved the determination of the polarization curves in various solutions of different pH, yet constant ionic strength. In alkaline solutions cathodic polarization curves for the reduction of oxygen and oxidation of hydrogen peroxide merge, which indicates low overpotential for these processes close to the equilibrium potential. In

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USSR

TARASEVICH, M. R., et al, Elektrokhimiya, No. 3, Mar 71,
pp 404-407

acid solution (pH=2.2) oxidation of H_2O_2 proceeds at significantly more positive potentials than the equilibrium potential in O_2 atmosphere. The described phenomena are close to those observed earlier for the reduction of oxygen on mercury and are explained by the slow stage $O_2 + e \rightarrow O_2^-$.

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022

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--CHEMISORPTION OF HYDROGEN AND OXYGEN ON PLATINUM GOLD ALLOYS -U-

AUTHOR--(04)-RADYUSHKINA, K.A., BURSHEYN, R.KH., TARASEVICH, M.R.,
KUPRINA, V.V.

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CIRC ACCESSION NO--AP0124106

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

ABSTRACT. THE CHEMISORPTION OF H AND D ON THE SURFACE OF PT AU ALLOYS WAS STUDIED AS A FUNCTION OF ALLOY COMPOSITION IN ACID AND ALKALI SOLUTIONS. METHODS EMPLOYED INCLUDED X RAY SPECTRAL ANALYSIS AND THE PLOTTING OF OF POTENTIODYNAMIC CHARGING CURVES. IN THE CASE OF D THE ALLOY COMPONENTS ACTED ADDITIVELY IN BOTH TYPES OF SOLUTION. IN THE CASE OF H THE DEGREE OF ADSORPTION REMAINED INDEPENDENT OF ALLOY COMPOSITION UP TO 50PERCENT AU. FOR HIGHER PROPORTIONS OF AU THE EFFECT OF THE BETA PHASE OF THE ALLOY BECAME APPRECIABLE AND THE AMOUNT OF CHEMISORBED H DIMINISHED.

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UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--PARALLEL CONSECUTIVE STAGES OF OXYGEN AND HYDROGEN PEROXIDE REACTIONS. I. REDUCTION OF OXYGEN ON A PLATINUM ELECTRODE -U-
AUTHOR--(03)-TARASEVICH, M.R., BURSHTEYN, R.KH., RADYUSHKINA, K.A.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKIMIYA 1970, 6(3), 372-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--OXYGEN, CHEMICAL REDUCTION, HYDROGEN PEROXIDE, PLATINUM ELECTRODE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/1130

STEP NO--UR/0364/70/006/003/0372/0375

CIRC ACCESSION NO--AP0121689

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121689

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RATE CONSTS. OF THE INDIVIDUAL STEPS IN THE REDN. OF O_2 ON PT ELECTRODE IN ALK. SOLN. WERE CALCD. EXPTS. WERE CONDUCTED IN 0.1N KOH WITH A PT DISK-PT-PT RING ELECTRODE. POLARIZATION CURVES FOR THE IONIZATION OF O_2 ON PT ELECTRODE IN 0.1N KOH AND THE LIMITING CURRENT OF THE OXIDN. OF H_2O_2 ON THE RING AS A FUNCTION OF THE DISK POTENTIAL ARE GIVEN FOR VARIOUS ROTATION RATES. AT 0.6-0.2 V, A LIMITING CURRENT PLATEAU FOR A 4 ELECTRON PROCESS WAS OBSD. AND AT MORE POS. POTENTIALS THE RATE OF THE PROCESS ON THE REDUCED ELECTRODE WAS CORRESPONDINGLY HIGHER. WITH INCREASING TIME OF THE ELECTRODE AT 0.75 V, THE RATE OF THE 4 ELECTRON PROCESS AND THE CONVERSION OF H_2O_2 DECREASED, EVIDENTLY BECAUSE OF CHANGES IN THE SURFACE RESULTING FROM OXIDES ACCUMULATING, AND THE SIMULTANEOUS OCCURRENCE OF 2 AND 4 ELECTRON REACTION OF O_2 REDN. WAS INDICATED. A COMBINATION CONST. CHARACTERIZING THE OXIDN. PROCESS ($k_{SUB2 PRIME}$), REDN. (k_{SUB3}), AND CATALYTIC DECOMP. (k_{SUB4}) OF H_2O_2 WAS CALCD. AT LOW POS. POTENTIALS, THE RATE OF THE CATALYTIC DECOMP. OF H_2O_2 AT ϕ EQUALS 0.8-0.7 V WAS INDEPENDENT OF ϕ , BUT AT ϕ SMALLER THAN 0.65 V, ONLY THE ELECTROCHEM. REDN. OF H_2O_2 WAS PRESENT, DUE TO THE DECREASE OF CHEMISORBED O_2 ON THE ELECTRODE SURFACE. THE REDN. OF O_2 ON PT IN ALK. SOLN. TAKES PLACES BY A 2 AS WELL AS A 4 ELECTRON MECHANISM. THE LATTER MAY BE DUE TO THE DISSOCN. OF CHEMISORBED O_2 , LEADING TO THE FORMATION OF AT. ADSORBED O . FACILITY: INST. ELEKTROKHM., MOSCOW, USSR.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--PARALLEL CONSECUTIVE STAGES OF OXYGEN AND HYDROGEN PEROXIDE REACTIONS. II. OXIDATION AND REDUCTION OF HYDROGEN PEROXIDE
AUTHOR--(02)--TARASEVICH, M.R., RADYUSHKINA, K.A.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(3), 376-8

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL OXIDATION, HYDROGEN PEROXIDE, CHEMICAL REACTION MECHANISM, ELECTRODE POTENTIAL, PLATINUM ELECTRODE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/1129

CIRC ACCESSION NO--AP0121688

STEP NO--UR/0364770/006/003/0376/0378

UNCLASSIFIED

272 019

CIRC ACCESSION NO--AP0121688
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT. AFTER ACTIVATION OF DISK AND RING ELECTRODES BY IMPOSING TRIANGULAR SWEEP IN A HE ATM. H SUB2 O SUB2 (3 TO 5) TIMES 10 NEGATIVE PRIME7 MOLE-CM PRIME3) WAS INTRODUCED INTO 0.1N KOH SOLN. THE LIMITING DIFFUSION CURRENT WAS MEASURED ON THE RING AT PHI EQUALS 1.2 AND 0.2 V. POLARIZATION CURVES OF THE OXIDN. AND REDN. OF H SUB2 O SUB2 ON PT ARE GIVEN. ANODIC AND CATHODIC PROCESSES OCCURRED WITH RELATIVELY LOW OVERVOLTAGES. AT THE STEADY STATE POTENTIAL OF SIMILAR TO 0.88 V, THE ANODIC AND CATHODIC CURRENTS SUDDENTLY INCREASED WITH INCREASE IN POTENTIAL, WHICH INDICATED THE CONTRIBUTIONS OF THE RESP. REVERSE REACTIONS. COMBINATION RATE CONSTS. CHARACTERIZING THE REACTION OF H SUB2 O SUB2 WERE CALCD. THE REACTION MECHANISMS OF H SUB2 O SUB2, WHEN H SUB2 O SUB2 IS PRESENT IN THE SOLN. BULK AND WHEN IT IS FORMED ON THE PT ELECTRODE SURFACE DURING REDN. OF MOL. O SUB2, ARE NEARLY THE SAME.

FACILITY: INST. ELEKTROKHM, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 541.13

BURSHTEYN, R. KH., PSHENICHIKOV, A. G., TARASEVICH, M. R., CHIZMADZHEV,
YU. A., and CHIRKOV, YU. G., Institute of Electrochemistry Academy of Sciences
USSR, Moscow

"Moisture Exchange in Hydrogen-Oxygen Cell with a Capillary Membrane. II.
Cells with a High Moisture Capacity"

Moscow, Elektrokimiya, Vol 9, No 1, Jan 73, pp 107-115

Abstract: Analysis of the moisture exchange process in hydrogen-oxygen
element with a capillary membrane and with electrodes exhibiting buffering
capacity makes it possible to determine certain advantages of the "open"
system (moisture exchange occurs on both electrodes) in comparison to the
"closed" system (the moisture exchange occurring only at the hydrogen
electrode). When the moisture exchange is sufficiently large in open systems
(in contrast to the closed systems), the volume of the liquid in the electrode
does not depend on the current charge. Therefore in such a case there are
no limitations in regard to the current magnitude in the element.

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UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--SPECTROGRAPHIC AND CHEMICAL SPECTROGRAPHIC DETERMINATION OF
 TUNGSTEN IN MOLYBDENUM -U-

AUTHOR--(02)-KHLYSTOVA, A.D., TARASEVICH, N.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(3), 515-17

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--TUNGSTEN CONTAINING ALLOY, MOLYBDENUM ALLOY, METAL CHEMICAL
 ANALYSIS, SPECTROGRAPHIC ANALYSIS, REFRACTORY METAL

CENTRCL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0466

CIRC ACCESSION NO--AP0126218

STEP NO--UR/0075/70/025/003/0515/0517

UNCLASSIFIED

2/2 023

CIRC ACCESSION NO--AP0126218
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--20NOV70

CHEV. SPECTROGRAPHIC DETN. OF W IN MO, MOD SUB3, AND AMMONIUM MOLYBDATE, THE ANAL. CONDITIONS ARE READILY REPRODUCIBLE FOR THE ANAL. LINES W 3049-.7-MO 3050.2 ANGSTROM. THE DETN. OF W CAN THUS BE CARRIED OUT BY USING EMPIRICAL FORMULAS: $\Delta W = \Delta C$, WHERE ΔW IS THE DIFFERENCE BETWEEN THE ABSORBANCES OF THE W AND MO ANAL. LINES AND C IS CONC. OF W IN THE SAMPLE IN PERCENT, AND ΔC IS THE INITIAL MO SUB3 CONC., WHERE K IS THE WT. OF THE COLLECTOR RESIDUE, N THE INITIAL MO FORMER FORMULA IS USED FOR THE DETN. OF SMALLER THAN OR EQUAL TO 0.025PERCENT W, WHILE THE LATTER IS USED FOR THE DETN. OF GREATER THAN OR EQUAL TO 1PERCENT W AFTER USING AMMONIUM MOLYBDOPHOSPHATE AS A COLLECTOR. THE EMPIRICAL FORMULAS CAN BE USED FOR THE SEMIQUANT. DETN. OF 6 TIMES 10 PRIME NEGATIVE 3 5PERCENT W IN MO. FACILITY: MOSCOW STATE UNIV., MOSCOW, USSR.

UNCLASSIFIED

1/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--EFFECT OF SODIUM CHLORIDE IN THE INTENSITY OF THE SPECTROGRAPHIC
LINES OF NIOBIUM AND TANTALUM -U-
AUTHOR-(03)-TARASEVICH, N.I., SEMENENKO, K.A., BAIER, G.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 281-4

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--SODIUM CHLORIDE, SPECTROGRAPHIC ANALYSIS, NIOBIUM, TANTALUM,
CARBON ELECTRODE, ROCK, CHEMICAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1893

STEP NO--UR/0075/70/025/002/0281/0284

CIRC ACCESSION NO--AP0115712

UNCLASSIFIED

2/2 021

CIRC ACCESSION NO--AP0115712

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF NA₂CO₃ ON THE INTENSITY OF NB AND TA SPECTRAL LINES WAS STUDIED TO INCREASES INTENSITY OF THEIR DETN. A NEW METHOD OF INTRODUCING NA₂CO₃ INTO THE LIGHT SOURCE BY SATN. OF THE C ELECTRODE WITH THE NA₂CO₃ SOLN. IS PROPOSED. C ELECTRODES (LOWER) ARE FIRED PREVIOUSLY IN A 6-A ARC FOR 30 SEC AND WHILE HOT ARE IMMERSED IN 10PERCENT NA₂CO₃ FOR 5 MIN. THE UPPER ELECTRODE IS NOT SATD. WITH NA₂CO₃. THERE IS A LINEAR DEPENDENCE BETWEEN THE INTENSITY OF SPECTRAL LINES OF THESE ELEMENTS AND THEIR CONC. IN THE RANGE OF 1 TIMES 10³ PRIME NEGATIVE 3 MINUS 3.6 TIMES 10³ PRIME NEGATIVE 2 PERCENT TA AND 2 TIMES 10³ PRIME NEGATIVE 3 MINUS 1 TIMES 10³ PRIME NEGATIVE 2 PERCENT NB. NB DOES NOT AFFECT TA DETN. IN THE NB-TA RATIOS OF 10:1 AND 1:1. THE SENSITIVITY LIMIT OF THE DIRECT TA DETN. IS INCREASED BY ONE ORDER TO 2 TIMES 10³ PRIME NEGATIVE 7 G 12 TIMES NEGATIVE 3 PERCENT). THE VARIATION COEFF. IS 6PERCENT. THIS METHOD CAN BE USED FOR THE DETN. OF NB AND TA IN GRANITES. FACILITY: MOSCOW STATE UNIV., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr: AP0049027

Ref. Code: UR0607

PRIMARY SOURCE: Vestnik Otorinolaringologii, 1970, Nr 1
PP 18-24

NASAL POLYPOSIS AS AN AUTOIMMUNE DISEASE

G. N. Popova, A. M. Monayenkov, N. N. Tarasevich (Moscow)

Summary

The authors studied nasal polyposis from the viewpoint of the possibility of referring it to autoimmune diseases. In the patient's serum the content of autoantibodies to specially prepared polyp antigen was investigated. The following techniques were employed: latex-agglutination, passive hemagglutination and the immunofluorescent method. In serological reactions the authors used the principle of consecutive employment of antigens — at the first stage the serum was exhausted by normal tissue antigen and then the reaction with polyp antigen occurred. The reactions of latex-agglutination and passive hemagglutination demonstrated the presence of autoantibodies to polyp antigen in all patients with nasal polyposis in different dilutions (reaction of latex-agglutination in dilution of 1:8—1:64, reaction of passive hemagglutination — 1:50—1:1000). In control sera autoantibodies were practically absent.

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Apart from the blood serum the polyp fluid was also subjected to serological analysis. Autoantibodies to polyp antigen were revealed in titers of 1:50--1:800. In 2 out of 10 patients the autoantibody titer in the polyp fluid markedly surpassed the titer of antibodies in the blood serum.

By means of the immunofluorescent method in the polyp tissue an antigen-antibody complex was revealed.

The dynamics of autoantibody accumulation was studied at diverse periods of the disease — during relapse of polyposis and during the period free of polyps. There was noted a definite relation between the antibody titers and stage of the disease — intensification during relapses of polyposis and decline of autoantibody titers during the period free of polyps. The data derived make it possible to state that autoimmune reactions play a definite role in the pathogenesis of nasal polyposis.

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Adsorption

USSR

UDC 541.183.2

BONDARENKO, S. V., VDOVENKO, N. V., BUNTOVA, M. A., RUDENKO, V. M., AND
TARASEVICH, YU. I., Institute of Colloidal Chemistry and Chemistry of Water,
Academy of Sciences, UkrSSR

"Wetting Heat and Water Adsorption on Organopalygorskite"
Kiev, Ukrainskiy Khimicheskij Zhurnal, Vol 38, No 10, Oct 71, pp 1008-1013

Abstract: The wetting heat and adsorption of water on a natural sample of palygorskite and on samples treated with organic materials were investigated. It has been shown that mineral surfaces modified with organic cations have a lower adsorption capacity. This is due principally to the replacement of the most active adsorption centers of the internal surface of the mineral (inorganic exchange ions, hydroxyl groups) by less active organic cations. The surface covered with organic modifiers increases with their increasing chain length, and consequently a gradual decrease occurs of the wetting heat and of the magnitude of adsorption. On the basis of thermochemical studies, changes were calculated for the differential thermodynamic functions of the

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BONDARENKO, S. V., et al., Ukrainskiy Khimicheskiy Zhurnal, Vol 38,
No 10, Oct 71, pp 1008-1013

adsorption process. It has been established that the A. V. DUMANSKY law
applies in determining the quantity of water bound by the palygorskite
modified with organic materials.

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-U- ADSORPTION OF WATER ON CATION SUBSTITUTED HALLOYSITE AND KAOLINITE
 UNCLASSIFIED
 PROCESSING DATE--04DEC70
 AUTHOR--(05)--DVCHARENKO, F.D., TARASEVICH, YU.I., RUDENKO, V.M.,
 BONDARENKO, S.V., ALEKSEYEV, O.L.
 COUNTRY OF INFO--USSR
 SOURCE--UKR. KHIM. ZH. 1970, 36(3), 253-9
 DATE PUBLISHED-----70
 SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
 TOPIC TAGS--ADSORPTION, ISOTHERM, KAOLINITE, WATER, METHANOL
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRA--3008/0895
 CIRC ACCESSION NO--AP0137923
 STEP NO--UR/0073/70/036/003/0253/0259
 UNCLASSIFIED

ACCESSION NO--AP0137923 UNCLASSIFIED PROCESSING DATE--04DEC70
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADSORPTION DESORPTION ISOTHERMS
 FOR H SUB2 O ON NATURAL HALLOYSITE AND KAOLINITE AND ON THE NH SUB4, NA,
 CA, AL, AND TH FORMS ARE GIVEN. THERE ARE NO GREAT DIFFERENCES IN THE
 HYSTERESIS LOOPS FOR THE VARIOUS FORMS OF HALLOYSITE, BUT THE KAOLINITES
 AT LOW RELATIVE PRESSURES HAD INCREASINGLY LARGE HYSTERESIS LOOPS IN
 GOING FROM THE NATURAL AND CA FORMS TO THE NA, AL, AND TH FORMS. THIS
 IS DISCUSSED IN TERMS OF HYDRATION OF METAL CATIONS AND IN TERMS OF THE
 ENERGY INVOLVED IN DISPLACING THE CATIONS FROM THE SILICATE SURFACE WITH
 RESULTANT HYDRATION OF BOTH METAL AND SURFACE. THE HYSTERESIS LOOPS OF
 OF H SUB2 O. AT A RELATIVE PRESSURES LARGER THAN 0.9, THERE IS A RAPID
 INCREASE IN ADSORPTION. THIS IS ATTRIBUTED TO THE PRESENCE OF PORES OF
 RADIUS LARGER THAN 200 ANGSTROM. A TABLE IS GIVEN OF HEATS OF WETTING
 AND OF VOLTS. OF THE MONOLAYER FOR THESE MATERIALS.
 INST. KOLLOID, KHIM. KHIM. VODY, KIEV, USSR. FACILITY:

UNCLASSIFIED

METHANOL AND ETHANOL ADSORPTION ON CATION SUBSTITUTED
MONTMORILLONITE AND VERMICULITE -U-
AUTHOR--(04)--TARASEVICH, YU.I., RUDENKO, V.M., SHARKINA, E.V., OVCHARENKO,
F.D.
UNCLASSIFIED
PROCESSING DATE--30OCT70

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 2, PP 266-271
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--METHYL ALCOHOL, ETHYL ALCOHOL, ADSORPTION, MINERAL, ION
EXCHANGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/1719

STEP NO--UR/0069/70/032/002/0266/0271

CIRC ACCESSION NO--AP0112713

UNCLASSIFIED

017

CIRC ACCESSION NO--AP0112713
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT. THE SORPTION ISOTHERMS OF METHANOL AND ETHANOL VAPORS ON CATION SUBSTITUTED MONTMORILLONITE AND VERMICULITE DEGASSED AT DIFFERENT TEMPERATURES HAVE BEEN STUDIED. THE CATION SUBSTITUTED MINERAL SAMPLES SATURATED WITH LIQUID ALCOHOLS HAVE BEEN EXAMINED ROENTGENOGRAPHICALLY. IN THE CASE OF VERMICULITE IT IS MORE DIFFICULT FOR METHANOL AND ETHANOL MOLECULES TO PENETRATE INTO THE SPACE BETWEEN THE PACKETS, THAN IN THE CASE OF MONTMORILLONITE. EXCHANGE CATIONS AFFECT SIGNIFICANTLY THE INTERLAYER SORPTION OF ALCOHOLS BY BOTH MINERALS.

UNCLASSIFIED

USSR

UDC 541.183

TARASEVICH, YU. L., and RUDENKO, V. M., Institute of Colloid Chemistry and of the Chemistry of Water, Academy of Sciences UkrSSR

"The Effect of Exchange Cations on the Adsorption of Water by Kaolinite" Kiev, Ukrainskiy Khimichskiy Zhurnal, Vol 38, No 9, Sep 72, pp 894-899

Abstract: The effects of the exchange cations K^+ , Na^+ , Li^+ , Ba^{++} , Ca^{++} , Cu^{++} , Al^{3+} , and Fe^{3+} introduced into Glukhovetsk kaolinite on the heat of wetting of the kaolinite and the water vapor adsorption by it were studied. The adsorption-desorption isotherms of the substituted kaolinites exhibited a hysteresis loop, which extended down to low relative pressures for samples saturated with di- and trivalent cations. The size of the loop increased on transition from Ba and Ca to Cu and then further to Al and Fe. In experiments in which adsorption-desorption cycles were repeated up to a number of seven at increasing final relative pressures p/p_s , the hysteresis loop increased in size with the number of cycles and the adsorption became greatest in the range $p/p_s = 0.65 - 1.0$, which coincided with the range in which capillary condensation (swelling) took place. The nature and

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TARASEVICH, YU. L., and RUDENKO, V. M., *Ukrainskiy Khimich skiy Zhurnal*,
Vol 38, No 9, Sep 72, pp 894-899

magnitude of the effects involved in the formation of the hysteresis loop indicated that in explaining H_2O adsorption by substituted kaolinites the non-rigidity of the submicroscopic structure of kaolinite must be taken into consideration in addition to the hydration of cations. Breaking of point contacts between kaolinite particles was involved in hysteresis. On the basis of an increase by a factor of ~ 2 of the capacity of the adsorbing monolayer, the number of interparticle contacts was large enough to warrant the assumption of an essentially parallel arrangement of platelets of the adsorbent. On the assumption that the adsorption isotherm and the heat of wetting of K-kaolinite reflected interaction of H_2O with surface O atoms and OH groups only, the relative hydration numbers n and heats of hydration q of exchange ions could be calculated at $n = 10$, $q = 80$ kcal/g-ion for Ca^{++} and $n = 3$, $q = 12$ kcal/g-ion for Na^+ , respectively.

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USSR

TARASKIN, A. F."Statistical Problems for One Class of Stochastic Differential Equations"

Mat. Fizika. Resp. Mezhd. Sb. [Mathematical Physics, Republic Interdepartmental Collection], No 10, 1971, pp 91-99 (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V177 by the author).

Translation: The problems of estimation of vector α and checking the hypothesis that there are no additives with process $\theta(t)$ are studied for the stochastic differential equation

$$d\tilde{\xi}(t) = \left[a(t, \tilde{\xi}(t)) + \sum_{k=1}^n \alpha_k \varphi_k(t, \tilde{\xi}(t), \theta(t)) \right] dt + \sigma(t, \tilde{\xi}(t)) d\omega(t),$$

where $\theta(t)$ is a perturbing random process. With certain limitations on function $a(t, x)$, $\sigma(t, x)$ and $\varphi_k(t, x, \theta)$, asymptotic effectiveness of the estimate of maximum likelihood of vector α is proven and certain asymptotic properties of the criterion of the likelihood ratio are proven.

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USSR

UDC: 519.24

TARASKIN, A. F.

"Evaluating the Parameters of One Stationary Process by the Method of Maximum Likelihood"

Mat. fizika. Resp. mezhved. sb. (Mathematical Physics. Republic Inter-departmental Collection), 1971, vyp. 9, pp 123-131 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V413)

Translation: The paper deals with the problem of using the method of maximum likelihood to estimate the parameters α_1 and α_2 in a system of stochastic differential equations

$$\begin{aligned} d\xi_t + \alpha_1 \xi_t &= d\eta_t, \\ d\xi_t + \alpha_2 \xi_t &= \xi_t dt. \end{aligned}$$

where η_t is a Wiener process with $M\eta_t = 0$ and $M(d\eta_t)^2 = 2\sigma^2 dt$ with respect to the observed stationary solution ξ_t . An investigation is made of the limiting behavior of the system of equations of likelihood in the case of unbounded growth of the interval of observation of process ξ_t , and also of the asymptotic distribution of the vector of estimates. Explicit formulas

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USSR

TARASKIN, A. F., Mat. fizika. Resp. mezhved. sb., 1971, vyp. 9, pp 123-131

are derived for estimates "close" to the estimates of maximum likelihood. The properties of the estimate of one of the parameters are analyzed assuming that the other parameter is given. Author's abstract.

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USSR

UDC 519.217

TARASKIN A. F.

"Asymptotic Normality of Vector Stochastic Integrals and Estimates of Shift Parameters of a Multidimensional Diffusion Process"

Teoriya Veroyatnostey i Mat. Statist. Mezhd. Nauch. Sb. [Theory of Probabilities and Mathematical Statistics, Interdepartmental Scientific Collection], No 2, 1970, pp 205-220 (Translated from Referativnyy Zhurnal Kibernetika, No 3, 1971, Abstract No 3 V56).

Translation: Let $F(s)$ be a matrix random function for which with any $t > 0$ the stochastic Ito integral $\int_0^t F(s)dw(s)$, is defined, where $w(s)$ is a Wienerian process with independent components. This work produces sufficient conditions for asymptotic normality of the random quantity

$$\frac{1}{\sqrt{t}} \int_0^t F(s) dw(s)$$

This result is used to prove asymptotic normality of the estimates of maximum likelihood of parameters of the diffusion process.

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UDC 519.24

TARASKIN, A. F.

"Asymptotic Normality of Stochastic Integrals and Estimates of the Transfer Coefficient of a Diffusion Process"

Mat. Fizika. Resp. Mezhved. Sb. [Mathematical Physics, Republic Interdepartmental Collection], No. 8, 1970, pp 149-163 (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V242 by the author).

Translation: Suppose $H(0, \infty)$ is a class of random functions $f(s)$, for which with any $t < 0$ the stochastic Ito integral for Wiener process $w(s)$ is defined and has a finite second moment. A limit theorem is produced. The problem of estimating the transfer parameters of the one-dimensional Markov diffusion process by the method of maximum likelihood is studied. Using this limit theorem, asymptotic normality of the estimates produced is proven. A generalization of the problem of estimating parameters using stochastic high order differential equations is briefly studied.

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USSR

UDC 621.396.967:621.396.669.8

TARASKIN, A. M.

"Estimating Noise Immunity With Respect to Reflections from the Ground Surface for a Radar System with Pseudo-Random Probing Signals"

Tr. Mosk. energ. in-ta (Transactions of the Moscow Power Institute) No 117, 1972, pp 31-36 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10G25)

Translation: The relationship of signal power and noise is estimated at the output of the linear portion of a radio relay receiver with a pseudo-random signal with signal processing which is optimal with respect to internal noise. The accuracy of the formulas obtained is determined. Two illustrations, bibliography of 16. N. S.

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TARASKIN, A.M.

RADIO ENGINEERING

radio engineering

JPRS 54365

1 November 1971

W

UDC 621.396.967

DETERMINATION OF SIGNAL/CLUTTER RATIO

[Article by A. M. Taraskin; Kiev, Izvestiya Vuzov SSSR, Radioelektronika, Russian, Vol. 14, No 5, 1971, signed to press 13 July 1970, pp 852-860]

The procedure of determination of the signal/clutter ratio is presented. The case of processing of a single pulse, optimal for internal noise, is examined. The final expressions permit approximation of the signal/clutter ratio without the aid of the electronic digital computer.

In detection and tracking of targets with a radar system traveling above the earth's surface the RS picks up, in addition to the signal reflected by the target, interfering reflections from the earth. These interfering reflections, or clutter, are the superimposing of a large number of elementary reflections, assuming the reflecting surface to be of a homogeneous character, and are of a Gauss' character by virtue of the central limit theorem. The ratio of signal power to that of interference due to reflections on the output of the linear part of the receiver, related by a monotonic dependence with the quality indices of detection and measurement processes, can be used as a criterion of the interference stability of a radar system [1]. A procedure for evaluating the stated ratio in application to a radar system using pulsed emission without intrapulse modulation is set forth. Examined herein is the case of processing of a single short pulse, optimal for internal noise. The results can then be applied to the case of accumulation of signal pulses.

By virtue of the fact that the reflecting surface is vast, determination of interference power through reflections and signal/noise ratio is possible only for a radar station with a completely known antenna directivity characteristic. The direction diagrams of real antennas are of an extremely capricious character; for this there are numerous reasons, which are hard to take into account during determination of direction diagrams by ray optics methods (diffraction on aperture fringes, shading of part of the aperture by the emitter, etc.). Therefore it is essential to turn to the electronic digital computer for exact computation of clutter power. Derived in this work are expressions whereby the signal/noise ratio can be approximated through reflections from the earth without resorting to the computer.

[I - USSR - F]

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1/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--THERMAL AND ELECTRICAL PROPERTIES OF A TRIGLYCINE SULFATE SINGLE
CRYSTAL -U-
AUTHOR--(03)-TARASKIN, S.A., STRUKOV, B.A., MELESHINA, Y.A.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1386-92
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--ELECTRIC PROPERTY, TRIGLYCINE SULFATE, SINGLE CRYSTAL,
ELECTRIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0925

STEP NO--UR/0181/70/012/005/1386/1392

CIRC ACCESSION NO--AP0134654

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134654

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS ARE GIVEN OF THE MEASUREMENTS OF SP. HEAT AND DIELEC. CONST. OF SINGLE CRYSTAL TRIGLYCINE SULFATE IN THE REGION OF THE FERROELEC. PHASE TRANSITION (46.6-49.2DEGREES) IN THE CONTROL OF ITS DOMAIN STRUCTURE. THE EFFECT WAS CONSIDERED OF AN ELEC. FIELD ON SP. HEAT OF THE CRYSTALS IN THE SAME TEMP. INTERVAL. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

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USSR

UDC 616.988.75-084.47 "1969"

BOBYLEVA, T. K., SLEPUSHKIN, A. N., RUSSINA, A. Ye., VITKINA, B. S., GRINEBERG, I. R., TARASOV, A. A., LIVERGAND, M. I., and ZHDANOV, V. M., Institute of Virology imeni Ivanovskiy, Academy of Sciences USSR, and Smolenskaya Oblast Sanitary Epidemiological Station

"Evaluation of the Efficacy of Mass Vaccinations Against Influenza" Report III

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii No 9, 1971, pp 18-23

Abstract: Double vaccination of approximately 50% of the population of the city of Smolensk with live influenza vaccine in 1968 proved to be effective in controlling the disease even during the 1969 epidemic caused by a new antigenic variant of type A influenza virus. Almost half as many contracted the disease as in the nearby cities of Vitebsk and Kaluga, where the population was not vaccinated -- 28.8, 54.3 and 48.7%, respectively. The difference between the adult sick rates was even greater -- 17.9, 33.1, and 41.2%, respectively. The side effects of the vaccine were minimal. The results of a similar mass vaccination program in Yartsevo were poor mainly because vaccine from the same strain had been used for three successive years and most of the people had become immune to it. Hence the vaccine strains should be changed periodically (once every 2 or 3 years).

1/1

1/2 017 UNCLASSIFIED PROCESSING DATE--300CT70
TITLE--POLYMERIZATION OF ALLYL COMPOUNDS -U-
AUTHOR--(03)-VOLODINA, V.I., TARASOV, A.I., SPASSKIY, S.S.
COUNTRY OF INFO--USSR
SOURCE--USP. KHIM. 1970, 39(2), 276-303
DATE PUBLISHED--70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--POLYMERIZATION, ALLYL HALICE, AMINE, ALCOHOL, CYCLIC GROUP
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/2035 STEP NO--UR/0074/70/039/002/0276/0303
CIRC ACCESSION NO--AP0125623
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125623

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYMN. OF ALLYL ETHERS, ESTERS, AMINES, ALCS., AND HALIDES, ALLYLAROMATIC COMPS., AND OTHER ALLYL COMPS., THE MECHANISMS OF ALLYL POLYMN. BY RADICAL, RADICAL COMPLEX, RADIATION, AND IONIC MEANS, AND CYCLOPOLYMN. OF GEN DIALLYL COMPS. ARE REVIEWED WITH 386 REFS. FACILITY: INST. KHIM. SVERDLOVSK, USSR.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THE EFFECT OF THE ELECTROMAGNETIC STRUCTURE OF HADRONS ON THE VALUE
OF THE PI PRIME NEGATIVE P YIELDS NE PRIME POSITIVE E PRIME NEGATIVE
AUTHOR--(U2)--TARASOV, A.V., TKACHEV, L.G.
COUNTRY OF INFO--USSR
SOURCE--JINR-P2-4970 DEP. CFSTI 1970 18P
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--STRONG NUCLEAR INTERACTION, PION PROTON INTERACTION, RESONANCE
ABSORPTION, DIFFERENTIAL CROSS SECTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/2171 STEP NO--UR/0000/70/000/000/0018/0018
CIRC ACCESSION NO--AT0127535
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0127535

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DIFFERENTIAL CROSS SECTION FOR THE
PROCESS P_1 PRIME NEGATIVE P YIELDS NE PRIME POSITIVE E PRIME NEGATIVE
NEAR THE 33 RESONANCE IS CONSIDERED. IT IS SHOWN THAT THIS CROSS
SECTION IS ESPECIALLY SENSITIVE TO THE VALUE OF THE ELECTRIC PROTON
RADIUS. FACILITY: JOINT INST. FOR NUCLEAR RESEARCH, DUBNA USSR.

UNCLASSIFIED

172 011 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ON THE PROCESSES WITH K MESON DOUBLE STRANGE EXCHANGE -U-
AUTHGR--(03)-LAPIDUS, L.I., TARASOV, A.V., TSEREN, CH.
CCUNTRY OF INFO--USSR
SOURCE--(JINR P2-5028) LAB. OF NUCLEAR PROBLEMS). 1970. 18P. DEP. CFSTI
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS
TOPIC TAGS--EXCHANGE REACTION, K MESON, HELIUM ISOTOPE, MESON INTERACTION,
STRANGE PARTICLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/2188 STEP NO--UR/0000/70/000/000/0016/0018
CIRC ACCESSION NU--AT0127552
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AT0127552
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROCESS OF DOUBLE STRANGENESS
EXCHANGE INTERACTIONS OF KAONS WITH NUCLEI IS DISCUSSED. THE FINAL
STATES IN K^- PRIME NEGATIVE MINUS PRIME⁴ HE INTERACTIONS ARE PRESENTED
WITH PROPER THRESHOLDS AND HYPERNUCLEI WHICH CAN BE PRODUCED. POSSIBLE
KAON DOUBLE STRANGE EXCHANGE PROCESSES ON DEUTERONS ARE PRESENTED. THE
DEVIATION OF THE CROSS SECTION IS CONSIDERED ON THE GLAUBER
APPROXIMATION. ESTIMATES ARE GIVEN FOR THE DOUBLE STRANGENESS EXCHANGE
CROSS SECTIONS ON NUCLEONS AND ON DEUTERONS. FACILITY: JOINT
INST. FOR NUCLEAR RESEARCH, DUBNA USSR.

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