

USSR

UDC: None

GROSS, Ye. F., SAFAROV, V. I., ~~TITKOV, A. N.~~, and SHLIMAK, I. S.

"Observation of Excited States and Experimental Determination of Energy Coupling in Indirect Excitons in Germanium"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, vol. 13, No. 7, 5 April 1971, pp 332-336

Abstract: This letter describes experimental research in the method of long-wave spectrum differentiation for determining exciton structure in the region of indirect absorption in germanium. This method is highly sensitive and, in addition to permitting observation of transitions of the excitons to the basic state with the participation of all four crystalline phonons (TA, LA, LO, and TO), will detect transitions from $n = 2$ to the excited state. As a result of this method, the value of the Rydberg exciton has been experimentally obtained and the coupled energy of the least level $E_{ex} = 0.0036 \pm 0.0003$ eV of the indirect exciton in germanium found for the first time. The differential spectra were obtained with a special spectrometer in which a rotating mirror, placed in front of the output slot of a monochromator and set to rotating at a rate of 73 Hz, produces a light beam modulated at that same frequency which is incident on the crystal and then is fed to a light sensor.

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UDC 621.315.592

SAFAROV, V. I., TITKOV, A. N., SHLIMAK, I. S.

"Effect of Alloying on the Exciton States in Germanium at 4.2°K"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 5, No 4, April 1971, pp 771-774

Abstract: It has been demonstrated previously that with an increase in alloying in semiconductor crystals, disturbance of the exciton state arises either from the screening effect in the case of high concentrations of free carriers (uncompensated crystals at high temperature) or by ionization of the exciton in the electric fields of the admixed ions (strongly compensated crystals). This paper contains a study of the effect of both factors on the exciton state for crystals with a different degree of compensation at low temperature (4.2°K) where the movement of the carriers is realized in the admixture band. The studies were performed on germanium in the region of the indirect absorption edge. Data on the variation of the amplitude of the exciton maximum as a function of the charged admixture concentration in compensated germanium and the amplitude of the exciton maximum as a function of the concentration of the basic admixture in compensated and uncompensated germanium are plotted.

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USSR

UDC 612.13-088.4

SAKOV, B. A., LUBE, V. M., SHEPOTINOVSKIY, V. I., and ~~TITKOV, B. P.~~, Rostov Medical Institute

"The Regional Blood Circulation Studied by the Ultrasound Method"

Moscow, Byulleten' Eksperimental'noy Biologii Meditsiny, No 5, 1971, pp 116-119

Abstract: A bloodless method of deep zonal ultrasonic sphygmography based on the principles of acoustic biocholocation is described. It yields specific information about the state of any part of the vascular system regardless of its site (in bone canals, skull, soft tissues, etc.) or the amount of ultrasound absorbed by the tissues surrounding a blood vessel. An ultrasonic sensor using a reverse and direct piezo effect emits short acoustic impulses toward a blood vessel under study and receives a signal reflected from it. If there is an increase in the volume of blood entering the vessel, its diameter widens, thereby increasing the area of the lateral reflecting surface. The amplitude of the reflected signal grows at the same time. If there is a decrease in the volume of blood entering the vessel, its diameter narrows and the amplitude of the reflected signal decreases accordingly.

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SAAKOV, B. A., et al., Byulleten' Eksperimental'noy Biologii Meditsiny,
No 5, 1971, pp 116-119

Thus, changes in the amplitude of the signal are proportional to the degree
of blood supply of the vessel. These changes are recorded on an ink-writing
device.

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VAKHNOV, R. S., GORELOV, V. P. and TITKOV, V. I.

"Problems of Decomposition of Functional Systems to Logic Systems"

Avtomatiz. Proyektir. RZA [Automation of the Planning of RZA (Expansion unknown -- tr)], Moscow, 1973, pp 77-79 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V704).

Translation: A method is presented for automatic production of descriptions of circuits in base elements (BE) from descriptions of circuits containing functional elements (FE). It is based on the use of a catalogue, where each type of FE performing a certain function is compared to a system of BE performing the same function. The possibility of creation of such a method is based on the following assumptions: 1. There is a single language for description of FE in functional plans (FP) and BE in schematic plans (SE). 2. The descriptions of the FP, SP and catalogue are constructed according to a modular principle. 3. An unambiguous relationship is established between the input and output contact identifiers describing the FE and the corresponding description in BE. A single input language allows mixed systems consisting of

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USSR

Vakhnov, R. S., Gorelov, V. P. and Titkov, V. I., Avtomatiz. Proyektir. RZA, Moscow, 1973, pp 77-79.

FE and BE simultaneously to be described, simplifies the description process and the process of construction of working programs. The modular principle allows gradual incrementing of descriptions of modules and their accumulation and simplifies the process of making changes. The unambiguous correspondence between contact identifiers allows their order to be unlimited.

V. Mikheyev

1/2 007 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--SYNTHESIS OF GLUCOSE AMINIDES OF MENTHOL AND THYMOL -U-

AUTHOR--(02)-KOZHIN, S.A., TITKOVA, YE.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(1), 248-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC SYNTHESIS, GLUCOSE, AMIDE, GLUCOSIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1503

STEP NO--UR/0079/70/040/001/0248/0249

CIRC ACCESSION NO--AP0135164

UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0135164

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 2 ACETAMIDO 3,4,6 TRI O ACETYL 2
DEOXY ALPHA D GLUCOPYRANOSYL BROMIDE WAS TREATED WITH SHOWN ON
MICROFICHE. FACILITY: LENINGRAD. GOS. UNIV., LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 619:616.988.21-07

MOKROUSOVA, A. V., and TITLOVA, Z. I., Veterinarians, Republic Veterinary Laboratory, Ministry of Agriculture, Kirgiz SSR

"Rapid Bioassay for Investigation of Rabies"

Moscow, Veterinariya, No 12, 1971, p 99

Abstract: The fluorescent antibody method has been used in conjunction with a bioassay on baby white rats for early diagnosis of rabies. A hypothetical diagnosis is established in a matter of a few hours. Then, instead of waiting 14-17-20 days for final results, seven white rats are inoculated with the substance taken from the specimen. Six days later smears of rat brain tissue are conjugated with fluorescent antirabies gamma-globulin. In positive cases a large number of specific bright-shining granules is observed through the fluorescence microscope. On the 14th-20th day these findings are confirmed when clinical symptoms are observed in other baby white rats.

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USSR

UDC 621.771.23.001.5

TEPLYANOV, A. Ye., POLUKHIN, V. P., BOGDANOVA, G. P., and SAVINKINA, A. I.

"Optimizing Reduction States of the Dressing Process Considering the Effect of Straightening on the Mechanical Properties of a Thin Sheet"

Moscow, Plasticheskaya Deformatsiya Metallov i Splavov, "Metallurgiya" Publishing House, No. 64, 1970, pp 97-103

Translation: It is shown that, at low reductions in the process of dressing 08kp steel, subsequent straightening lowers the value of a majority of mechanical properties and the depth of the hole when testing according to Eriksen. Taking into account the effect of straightening on mechanical properties of the dressed metal makes it possible to select the optimal dressing mode more correctly. Reduction during dressing in the range of 0.5-0.7 percent with subsequent straightening makes it possible to eliminate the area of yield on the tension diagram and to obtain metal with a minimum yield point, lowered hardness, and a very deep Eriksen hole, which increases the stampability of sheet metal. Six illustrations and seven bibliographic entries.

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USSR

UDC 621.771.23.001.5

TITLYANOV, A. Ye., POLUKHIN, V. P., BOGDANOVA, G. P., and SAVINKINA, A. I.

"The Effect of Speed on Change in the Technological Parameters of the Dressing Process"

Moscow, Plasticheskaya Deformatsiya Metallov i Splavov, "Metallurgiya" Publishing House, No. 64, 1970, pp 91-97

Translation: Investigation on the four-high 1700 mill showed that, with 08kp steel 0.5-2.0 mm thick, increasing the speed of dressing leads to an increase in reduction and metal pressure on the rolls. It is shown that increasing these quantities does not depend on preliminary adjustment and is established by the mechanical properties, thickness of the sheet, rigidity of the stand, and design of the liquid friction bearings. The results make it possible to determine the amount of preliminary adjustment established at low speeds, which corresponds to the optimal reduction state at working speed. Six illustrations, 13 bibliographic entries.

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USSR

LYAPUNOV, A. A., TITLYANOVA, A. A.

"The Systems Approach to the Study of Cycles of Matter and Flows of Energy in a Biogeocenosis"

O Nekotorykh Vopr. Kodir. i Peredachi Inform. v upr. Sistemakh Zhivoy Prirody [Some Problems of Coding and Transmission of Information in the Control Systems of Animate Nature -- Collection of Works], Novosibirsk, 1971, pp 99-188 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V874 by L. Savchenko).

Translation: This article is dedicated to the cybernetic description of biogeocenoses -- sectors of territories with the adjacent underground and above-ground sectors, as well as the plants, animals and microorganisms which populate them.

A structural-functional plan of a biogeocenosis is constructed, describing the cycles of matter and flows of energy in the biogeocenosis from the standpoint of the theory of control systems. The description utilizes the concept of substances, blocks, flows and derivative concepts such as links, paths, branches, cycles and aggregates.

The description of blocks and flows is oriented toward an abstract biogeocenosis of meadow steppe type. In this biogeocenosis in the approx-
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LYAPUNOV, A. A., TITLYANOVA, A. A., O Nekotorykh Vopr. Kodir. i Peredachi Inform. v upr. Sistemakh Zhivoy Prirody, Novosibirsk, 1971, pp 99-188.

imate description the author distinguishes the following blocks: the atmosphere, vegetation, plant deritus, algae, animals, protozoans, microorganisms, soil and soil water. The substances include materials, primarily oxygen, hydrogen, carbon, nitrogen and their compounds, which are very significant in the biological cycle of matter.

A description of the basic blocks in a meadow-steppe biogeocenosis is presented.

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USSR

UDC 8.74

LYAPUNOV, A. A., TITLYANOVA, A. A.

"A Systems Approach to Investigation of the Cycle of Matter and Flow of Energy in a Biogeocenosis"

Novosibirsk, O nekotorykh vopr. kodir. i peredachi inform. v upr. sistemakh zhivoy prirody--sbornik (Some Problems of Coding and Transmission of Information in the Control Systems of Animate Nature--collection of works), 1971, pp 98-188 (from RZh-Matematika, No 1, Jan 73, abstract No 1V874 by L. Savchenko)

Translation: The article is devoted to a cybernetic description of biogeocenoses -- sections of territories with the adjacent subterranean and aerial sections and also the plants, animals, and microorganisms populating them.

A functional schematic diagram of a biogeocenosis is constructed which describes the cycle of matter and the flows of energy of the biogeocenosis from the standpoint of the theory of control systems. The description uses the concepts of substance, modules, and fluxes and the derived concepts of the link, path, branch, cycle, and aggregate.

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USSR

LYAPUNOV, A. A., TITLYANOVA, A. A., O nekotorykh vopr. kodir. i peredachi inform. v upr. sistemakh zhivoy prirody, 1971, pp 98-188

The description of modules and fluxes is directed toward an abstract biogeocenosis of the prairie-meadow type. In this biogeocenosis, the authors single out the following modules: atmosphere, vegetation, rags [sic], litter, algae, animals, protozoa, microorganisms, soil, and ground water. By way of substances, the authors consider materials: -- primarily oxygen, hydrogen, carbon, nitrogen, and their compounds, which play a large part in the biological cycle of matter.

The principal modules of the prairie-meadow biogeocenosis are described.

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Titanium

USSR

UDC 669.295

DENISOV, S. I., BLINOV, B. S., SHAKHRAY, I. M., and TITOMER, B. P.

"Magnetic Separation of Titanium Slag"

Moscow, Metallurgiya i Khimiya Titana (Institut Titana), Metallurgiya Publishing House, Vol 6, 1970, pp 7-12

Translation: An industrial electromagnetic separator was used in a study of conditions for separating crushed titanium slag as a function of the magnetic induction of the electromagnet, the magnitude of the slag particles, and the height of the layer. It is shown that, under optimal conditions for separating slag, it is possible to remove 70-80% of all metallic iron from it into the magnetic fraction and to obtain slag with a metal content of not more than 0.4-0.5 %. The expediency is shown of separating large slag parts (of a class greater than two millimeters), in which most of the metallic iron is concentrated independently. Two illustrations, three tables, and four bibliographic entries.

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1/2 022 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--AN EXPERIMENTAL STUDY OF THE ORTHOGONAL VECTORCARDIOGRAPHIC SYSTEM
SVEC-III WITH A SIMPLIFIED Z LEAD -U-
AUTHOR-(02)-FITCHIK, L.I., SHAKIN, V.V.
COUNTRY OF INFO--USSR
SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDISTINY, 1970, VOL 49,
NR. 6, PP 13-20
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ELECTROCARDIOGRAPHY, VECTORCARDIOGRAPHY, MATHEMATIC ANALYSIS,
ALGORITHM, DIGITAL COMPUTER APPLICATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/0702 STEP NO--UR/0219/70/049/006/0018/0020
CIRC ACCESSION NO--AP0131301
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0131301

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SCALAR ELECTROCARDIOGRAMS AND VECTORCARDIOGRAPHIC LOOPS (FOR THE QRS COMPLEX) RECORDED FROM 40 NORMAL MEN AND PATIENTS USING THE CORRECTED ORTHOGONAL LEAD SYSTEM SVEC-III ARE COMPARED WITH THE ANALOGOUS CURVES RECORDED USING THE SAME LEAD SYSTEM WITH A SIMPLIFIED Z LEAD THAT INCLUDES A SINGLE DORSAL ELECTRODE INSTEAD OF FOUR. THE DISCREPANCY BETWEEN THE CURVES WAS ESTIMATED VISUALLY AND ON THE DIGITAL COMPUTER BY MEANS OF AN ALGORITHM ALLOWING TO EXCLUDE THE BASIC ERRORS OF MEASUREMENTS. THE CURVES ARE FOUND TO DIFFER INSIGNIFICANTLY SO THAT THE MEASURING FEATURES AND DIAGNOSTIC CRITERIA OF THE SVEC-III SYSTEM ARE PRESERVED IN ITS PROPOSED MODIFIED VERSION BEING AT THE SAME TIME SIMPLER AND MORE CONVENIENT IN PRACTICE.

FACILITY: FIZIOLOGICHESKAYA LABORATORIYA, INSTITUTA KHIRURGII IM. A. V. VISHNEVSKOGO AMN SSSR. FACILITY: VYCHISLITEL'NAYA LABORATORIYA, INSTITUTA PROBLEMI PEREDACHI INFORMATSII AN SSSR, MOSKVA.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--EFFECT OF THE THICKNESS OF ROLLED IRON ON SECONDARY
RECRYSTALLIZATION -U-
AUTHOR--(04)--GUBERNATOROV, V.V., SOKOLOV, B.K., SCHASTLIVTSEVA, I.K.,
TITUROV, D.B.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(2), 376-8
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS; MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--TRANSFORMER STEEL, METAL RECRYSTALLIZATION, COLD ROLLING,
SHEET METAL, ALUMINUM ALLOY, IRON ALLOY, NICKEL ALLOY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1995/0183 STEP NO--UR/0048/70/034/002/0376/0378
CIRC ACCESSION NO--AP0115887
UNCLASSIFIED

2/2 025

CIRC ACCESSION NO--AP0115387

UNCLASSIFIED

PROCESSING DATE--09OCT70

ABSTRACT. TRANSFORMER STEEL SHEETS SUPPLIED BY 2 DIFFERENT PLANTS HAVE BEEN COLD ROLLED TO A REDN. OF 90, 92, 94, AND 96PERCENT, RECRYSTD. 2 HR AT 750DEGREES IN VACUUM, AND THEN CHEM. POLISHED FROM ONE SIDE OF THE SHEET TO PRODUCE SPECIMENS OF DIFFERENT THICKNESS: 0.05-0.20 MM. SUBSEQUENT HIGH TEMP. ANNEAL FOR 2 HR AT 1050DEGREES PRODUCED A VARYING DEGREE OF SECONDARY RECRYSTN. SECONDARY RECRYSTN. IS LESS DEVELOPED WITH DECREASING SPECIMEN THICKNESS AND AT 0.10 MM IT DOES NOT OCCUR, REGARDLESS OF HOW THIS THICKNESS IS OBTAINED (COLD ROLLING OR POLISHING). SIMILAR RESULTS ARE QUOTED FOR AL USED FOR ELEC. PURPOSES AND SOME FE-NI ALLOYS. WHILE CONSIDERING THE IMPORTANCE OF INCLUSIONS IN PROMOTING THE EFFECT OF SECONDARY RECRYSTN., IN SUFFICIENTLY THIN SPECIMENS THE VACUUM ANNEAL CAN LEAD TO VAPORIZATION OF INCLUSIONS WITH THE RESULTING UNIFORM GROWTH OF THE MATRIX GRAINS. ON THE OTHER HAND, IN THIN SPECIMENS INDIVIDUAL GRAINS CANNOT GROW LARGE ENOUGH TO ACT AS NUCLEI OF SECONDARY RECRYSTN. FACILITY: INST. FIZ. METAL., SVERDLOVSK, USSR.

UNCLASSIFIED

USSR

UDC 8.74

VORONIN, Yu. A., MARASULOV, A. F., TITOV, A. A., SHEVCHENKO, N. G.

"Computer Software for Finding Optimum Subspaces to Solve Recognition Problems"

Novosibirsk, *Primeneniye mat. metodov i EVM pri poiske polezn. iskopayemykh--* sbornik (Using Mathematical Methods and Computers in Searching for Minerals-- collection of works), 1972, pp 150-179 (from *RZh-Matematika*, No 1, Jan 73, abstract No 1V858 by E. Vagner)

Translation: The problem of finding informative aggregates of properties is usually solved in the following way: First, some method is assigned for evaluating the informability of individual properties; then considerations are pointed out which enable approximate determination of informative aggregates of properties as aggregates of independent and individually informative properties. In most methods of determining informability the informability of the aggregate of properties cannot be less than the informability of any component subaggregate and, as a rule, is expressed by a single number. The trial and error method is used in searching for the optimum aggregate of properties. Clearly there can be no procedure which avoids a very "extensive" sorting process which is suitable for all cases.

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USSR

VORONIN, Yu. A., et al., *Primeneniye mat. metodov i EVM pri poiske polezn. iskopayemykh--sbornik*, 1972, pp 150-179

It is proposed that an aggregate of properties be sought whose informability is not less than that of some fixed aggregate of properties. Asymmetric and symmetric coefficients of coupling between properties are introduced, and the proposed algorithm for finding informative subspaces is described. This algorithm is based on determining closely related components of connectedness of properties. An over-all flow chart of the algorithm is presented. Bibliography of 37 titles.

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USSR

VORONIN, Yu. A., MARASULOV, A. F., TITOV, A. A., SHEVCHENKO, N. G.

"Computer Programs for Determination of Optimal Subspaces in Order to Solve Recognition Problems"

Primeneniye mat. Metodov i EVM pri Poiske Polezn. Iskopaemykh [Use of Mathematical Methods and Computers in the Search for Useful Minerals -- Collection of Works], Novosibirsk, 1972, pp 150-179 (Translated from Referativnyy Zhurnal, Kibernetika, No.1, 1973, Abstract No 1 V858 by E. Vagner).

Translation: The problem of finding information sets of properties is most frequently solved as follows. First some method of evaluating the information content of individual properties is indicated, then considerations are stated allowing approximate determination of the information sets of properties as sets of independent quantities and informative properties individually. In most methods of determination of information content, the information content of a set of properties can be no less than the information content of any subset and is expressed, as a rule, by a single number. The search for the optimal set of properties is performed by random choice. It is clear that a method suitable for all cases which can avoid running through a long list cannot

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VORONIN, Yu. A., MARASULOV, A. F., et. al., *Primeneniye mat. Metodov i EVM pri Poiske Polezn. Iskopaemykh*, Novosibirsk, 1972, pp 150-179.

be developed.

It is suggested that a set of properties be sought, the information content of which is no less than the information content of a certain fixed set of properties. Asymmetrical and symmetrical coupling factors between properties are sought, and a suggested algorithm for running through the information subspaces is described, based on determination of the close components of connection of properties. A generalized block diagram of the algorithm is presented. 37 Biblio. Refs.

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110V, A. A.

COMMUNICATION-EMOTIONAL SIGNALS OF BLACK SEA DOLPHINS

Article by A. A. Titov, A. G. Ionkin, N. S. Garennikov, L. I. Yurkevich and V. N. Ikonnikov, Sevastopol; Kiev, Hydrofizika, Russian, No 3, 1971, 144-150

JPRS 559822
15 May 72

During 1966-1968 specialists at the base of the "Sudarny" Division of the Institute of the Biology of Southern Seas investigated the communication-emotional signals of Atlantic dolphins, five bottle-nosed porpoises and five harbor porpoises. The animals were kept singly and in groups in a basin (18 x 13 x 2 m) and in a sea cage made of kapron net (10 x 8 x 10 m). In registering the sounds of dolphins confined to a basin we used an instrument for measuring sonic pressure with a band of 0.5-100 kc/sec and a magnetic recorder with a altered frequency characteristic 1-100 kc/sec. The signals were analyzed using a SSSN 1-24 spectrum analyzer and a W-102 oscilloscope. The rate of sound reproduction was slowed down by fac-

The lack of a classification of acoustic signals of cetaceans creates great difficulties in determining the biological importance of these sounds. In /7,8/ the acoustic signals are classified as echolocation, communication and complex. But we receive only echolocation and communication signals. The classification is complex because in behavioral situations it is common to detect sounds of all three groups /7,8/ and there is a considerable variety of signals even within one group. A group of communication-emotional signals includes signals, sounds of a nonlocation nature (howling, grunting, chirping, barking, meowing), and also whistles mixed with pulsed clicks not having a location function. Under nonlocation conditions, when the dolphin is at rest and its location apparatus is not operating, pulsed clicks can have a high and low repetition rate.

CHARACTERISTICS OF SONIC SIGNALING OF COMMON DOLPHINS UNDER NEW CONDITIONS
Article by A. A. ~~Il'inskiy~~ Sevastopoli: Kiev, Izvestia, Russian, No 5, 1971,
Izd-vo "Naukova Dumka", pp 62-67

SPRS 53-982
15 May 72

A study of the bioacoustic signals of cetaceans and especially dolphins is of great practical importance. It is of interest to classify the sonic signals emitted by dolphins on the basis of their physical parameters and biological importance and also to study their hydrolocation apparatus.

The Ukrainian researchers Il'y and Miller, in studying the sonic signaling of dolphins, distinguished three types of sonic signals emitted by dolphins: whistles with a frequency up to 170 kc/sec, ultrasonic echolocation clicks with a frequency of 170-200 kc/sec, and complex sounds with a frequency of 10-20 kc/sec. On the basis of biological importance the sounds emitted by dolphins can be classified as sounds used in orientation, search for and finding food, intercourse sounds and sounds expressing definite emotions. The results of experiments reveal that for echolocation purposes the dolphin uses pulsed clicks $\frac{1}{5}, \frac{1}{7}$. Isolated animals emit whistles and clicks during intercourse.

Sources A-37 give a frequency analysis and classification of the registered sounds, and an attempt was made to establish their biological importance. Despite the great number of studies on the sonic signaling of dolphins maintained during their prolonged captivity, only the sonic activity of the bottlenose porpoise (Tursiops truncatus) has been relatively well studied.

The sonic signaling of four common dolphins (Dolphin delphinus) was investigated at the time of their successive confinement in an artificial basin (18 x 11 x 2 m) at the Karadag Academy of Sciences Ukrainian SSR.

ИТОВ, А. А.

PHYSICAL CHARACTERISTICS OF NONLOCATING SOUNDS OF BLACK SEA DOLPHINS

Article by A. A. Itov and L. I. Surkevich, Sevastopol; Kiev, Bionika, Russian, No. 3, 1971, 1st-vo "Makova Dumka", pp 51-62

SPS 55982
15 May 72

In studies [1-7] all the acoustic signals of dolphins were classified into three principal groups: 1) pulsed clicks, tonally mixed with clicks and other complex sounds (grunts, cries, bellows, moans, etc.) [1, 2, 6].

The diversity of sounds uttered by dolphins is determined primarily by emotional-sonic signals. The lack of a clear-cut creation of acoustic signals of dolphins worked out in detail is creating great difficulties in determining their biological importance. The classification is complex because in detail in common dolphins and especially in bottle-nosed porpoises one observes a great number and diversity of sounds in most cases three groups.

He will give a classification of sounds in the third group on the basis of their audible perception and will describe these sounds and the behavior of the animals during signaling.

Sounds were studied in three species of Black Sea dolphins: bottle-nosed porpoise, common dolphin and Arca porpoise (Azovka) during the years 1966-1968 (Table 1). The animals were registered in a basin of underwater cage under the following multiple repeated situations: capture of the fish and its lifting from the water, "orientation reflex," feeding and teasing the hungry animal with a fish, ball games, "versations" of two isolated animals using an electroacoustic communication channel, free swimming, while conducting experiments, dropping wild animals in the basin.

USSR

UDC 537.533.2+537.534

ABROYAN, I. A., BELYAKOV, V. S., TITOV, A. I.

"Ion-Electron Emission of Germanium Bombarded by Krypton Ions"

Tr. Leningr. politekhn. in-ta (Works of Leningrad Polytechnical Institute), 1970, No 311, pp 71-76 (from RZh-Fizika, No 12(I), Dec 70, Abstract No 12Zh662)

Translation: The ion-electron emission of Ge single crystals under bombardment by krypton ions with energies from 0.3 to 15 keV was studied. It was observed that the coefficient of ion-electron emission γ was a nonlinear function of ion energy. It was established that in the region of emission potentials γ remains constant under a change in the angle of incidence of the ions ϕ . The kinetic knocking out of electrons noted begins krypton ion energies of ~ 2 keV, and the function $\gamma(\phi)$ is nonmonotonic in accordance with the transparency model of a crystal in the region of kinetic emission. The dependence of γ on target temperature was also investigated. 14 references. Abstract.

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USSR

UDC:537.226+537.311.33]:539.16.04

TITOV, A. I.

"The Kinetics of Radiation Conductivity"

Tr. Leningr. Politekhn. In-ta [Works of Leningrad Polytechnical Institute], No. 311, 1970, pp. 123-129 (Translated from Referativnyy Zhurnal Fizika, No. 11, 1970, Abstract No. 11 Ye 1089 by A. Shub)

Abstract: The diffusion equation for non-equilibrium carriers is solved to analyze the processes of relaxation of radiation conductivity current when current carrier generators are connected and to establish the stable state with various rates of surface recombination on all faces. It is demonstrated that the rise and fall of the concentration of excited carriers occur according to an identical rule if their generation is performed by rectangular pulses of electrons, ions, etc. The results are presented from an experiment designed to determine the dependence of the rate of surface recombination of Ge when the surface is bombarded with K ions with an energy of 8 KeV. It is determined that at low doses, it changes linearly.

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USSR

UDC 621.375.826.001

MUKHAMEDGALIYEVA, A. F., TATARENKOV, V. M., TITOV, A. N., USPENSKIY, A. V.

"Study of the Lamb Trough in the Determination of the Radiation Width of the Transition Line $3S_2-3P_4$ of the Ne^{20} Atom"

Tr. VNII fiz.-tekhn. i radiotekhn. izmereniy (Works of the All-Union Scientific Research Institute of Physicotechnical and Radio Engineering Measurements), 1970, No. 3(33), pp 281-290 (from Referativnyy Zhurnal, Metrologiya i izmeritel'naya tekhnika, No 11, Nov 71, Abstract No 11.32.62)

Translation: The width and relative size of the Lamb trough $\lambda = 3.39 \mu$ were studied as a function of the intensity of the saturating field on the gas pressure. It was shown that the relative size of the trough as a function of the field intensity has a maximum with a magnitude decreasing with an increase in the pressure. The radiation width of the $3S_2-3P_4$ transition of the Ne^{20} atom (24 ± 6 MHz) and the broadening of the homogeneous line by pressure (150 ± 40 MHz/mm Hg) were determined. The shift in the maximum of the output power of the generator with an increase in pressure in an amplifier tube was measured and was 16 ± 2 MHz/mm Hg for isotopically pure Ne^{20} and 33 ± 3 MHz/mm Hg for a natural mixture of the isotopes. 5 ill., 8 ref.

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USSR

UDC: 621.396.677.4

TITOV, A. N., SAPSOVICH, B. I.

"A Phased Array as an Antenna System With Artificial Dielectric"

V sb. Antenny (Antennas--collection of works), Byp. 8, Moscow, "Svyaz'", 1970, pp 18-27 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7B33)

Translation: A method is described for calculating the gain and fluctuation properties of the radiation pattern of a phased antenna array based on the use of integral characteristics of the radiating system, which is the aggregate of elementary radiators of the array. This method is used to study the characteristics of emission of a two-dimensional array with elementary radiators in the form of pyramidal horns. The equivalent radiation pattern of a horn within the two-dimensional array is found. It is shown that in arrays with a beam rocking angle of up to 35-40° to one side, horn antennas are extremely effective from the standpoint of antenna power characteristics. Six illustrations, bibliography of two titles. Resumé.

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- 45 -

USSR

UDC: None

TITOV, A. N. and SAPSOVICH, B. I.

"A Phased Array as an Artificial Dielectric Antenna System"

Moscow, Antenny, No. 8, 1970, pp 18-27

Abstract: The field of an antenna array is usually considered as the superposition of the fields of the individual elements in the analysis of the array's radiative characteristics. For a particular array, such an approach involves serious difficulties. Interest has therefore been aroused by another approach based on the use of the integral characteristics of a phased antenna array radiative structure, an approach which not only permits easy computation of the expected characteristics of a designed array, but also determines its potential possibilities and the choice of an elementary radiator. This approach is used in the article to investigate the characteristics of a two-dimensional array with elementary radiators in the form of pyramidal horns. The authors conclude that the method explained by the article is convenient in that it permits determining such characteristics as the gain factor and its variation in beam scanning without getting too involved in details of radiating system processes and without encountering difficult calculations.

1/1

Medical Service

J-9605

UDK 616.824/616.823.98

45

People

W. R. DUNBAR, Colonel, Medical Service
A. C. ...
I. Korshunova

Sgt. Murray Medical Journal
Nov 90

Many authors believe that death from carbon monoxide poisoning can occur when the blood content shows from 50 to 60 percent CO saturation. L. V. Aronovich, 1950; I. I. Ryklov, 1953; H. I. Avdeyev, 1959; Aronovich, 1960; G. Hansen, 1965; and others. Factors which contribute to the poisoning are various diseases, psychic trauma, fatigue among military personnel, and the presence of carbon monoxide poisoning in the environment. The most common cause of carbon monoxide poisoning is the use of portable heaters (in tents) and inhalation of CO gas. The majority of poisonings take a very severe form and there was a number of fatal outcomes. Chief value are our observations.

Sergeant S. was working a tour of duty as watchman in a building. The soldier who arrived to replace him, found the soldier in a dazed state on a bench. It was established that S. after coming on duty, turned on the stove and before going to sleep, shut off the heater without checking to see whether all of the gas had burned up. Autopsy revealed interstitial edema of the lungs, dilatation of the heart, increased blood in the vessels and cardiac chambers, an abundance of blood and bright-red coloration of muscles and internal organs, as well as the presence of carboxyhemoglobin in the blood.

Sergeant P. arrived at 1 a.m. to take over his shift in the garage of a fire brigade. At 6:40 a.m. a soldier who came into the garage on service business, found that the motor of a GAZ-51 type vehicle had stopped. Artificial respiration was administered at once. However, it was not possible to revive the victim. Autopsy revealed a typical picture of carbon monoxide poisoning and the presence of carboxyhemoglobin in the blood.

Some authors have established that, sometimes, accidental carbon monoxide poisoning can be due not so much to direct failure of mechanisms as to severe disturbance that they showed from 8 to 19 percent of carboxyhemoglobin in the blood, while the first evidence of carboxyhemoglobin in the reports, requires a carboxyhemoglobin level of 10 percent. Some, too, had an opportunity to observe such a case.

Analysis of data at our disposal shows that CO poisonings occur, as a rule, as a result of violations of safety procedures, and only in individual cases was it committed due to lack of information as to the rules for using heating equipment. For the purpose of preventing such accidents, it is indispensable to make a point of instilling in personnel a better understanding of the danger and consequences of CO poisoning, steps to be taken in the event of poisoning and not to permit the use of automobiles for keeping the personnel warm in closed buildings during their tours of duty.

Received in February 1969

UNCLASSIFIED
TITLE--METHOD OF CHROMATOGRAPHIC DETERMINATION OF BETA MERCAPTOETHYLAMINE
(MEA) IN BLOOD AND TISSUES -U- PROCESSING DATE--23OCT70
AUTHOR--(03)--TITOV, A.V., MORDUKHOVICH, V.V., LERNER, O.M.
COUNTRY OF INFO--USSR
SOURCE--VOPROSY MEDITSINSKOY KHIMII, 1970, VOL 16, NR 3, PP 329-333
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--MERCAPTAN, AMINE DERIVATIVE, CHROMATOGRAPHIC ANALYSIS, THIOL,
CYSTAMINE, CHEMICAL LABELLING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/0156 STEP NO--UR/0301/70/016/003/0329/0333
CIRC ACCESSION NO--AP0120856
UNCLASSIFIED

ACCESSION NO--AP0120856
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT. THE PROPOSED METHOD IS BASED UPON
BLOCKADE OF SH GROUPS OF MEA AND OTHER THIOL COMPOUNDS BY MEANS OF
EXCESS OF N, (4, THYDROXY, L, NAPHTYL), ISOMALEIMIDE (NMI). COMPLEXES
MEA-NMI WERE SEPARATED FROM OTHER THIOL COMPOUNDS AND EXCESS OF REAGENT
BY MEANS OF PAPER CHROMATOGRAPHY. THE COMPLEXES OF THIOLS AND NMI ON
THE PAPER WERE LOCATED BY MEANS OF 5, NITRO, O, ANIZIDINE. THE METHOD IS
SUITABLE FOR MEA IDENTIFICATION IN SOLUTIONS AND PROTEIN FREE EXTRACTS
OF ANIMAL TISSUES AFTER CYSTAMINE ADMINISTRATIONS. THE SENSITIVITY OF
THE METHOD IS 0.005 MU MOLES OF THIOL. USING THE LABELLED CYSTAMINE IT
IS POSSIBLE TO CHARACTERIZE QUANTITATIVELY THE CONTENT OF MEA AND ITS
DECOMPOSITION PRODUCTS IN TISSUES. FACILITY: S. M. KIROV
MILITARY MEDICAL ACADEMY, LENINGRAD.

UNCLASSIFIED

USSR

UDC 615.849.1.015.25.034.61

GOLUBENTSEV, D. A., MERKINA, T. N., MORDUKHOVICH, V. V., and TITOV, A. V.

"The Effect of Ionizing Radiation on the Excretion of Radioprotectors in Rats' Urine"

Moscow, Farmakologiya i Toksikologiya, Vol 35, No 5, Sep-Oct 70, pp 607-610

Abstract: Administration of sulfur containing radioprotectors such as β -mercaptoethylamine (MEA), cystamine, or cystophos in optimal doses to non-irradiated rats produces a sharp rise of non-protein thiols in the urine due to excretion of MEA. When cystamine is administered, the amount of MEA excreted in urine is twice as low as when MEA itself is used. Administration of sulfur containing protectors in combination with serotonin lowers considerably the excretion of non-protein thiols in urine. A whole body irradiation of rats at a dose of 700 r (LD 100/30) 5-10 min after administration of the radioprotector results in a drastic drop of the excretion of MEA. This indicates a change in metabolism due to the effect of radiation.

1/1

Radar

USSR

~~TITOV, A. V.~~

UDC: 621.396.95

"Comparison of the Characteristics of Two Methods of Realizing Tracking Range Finders"

Kiev, IVUZ Radioelektronika, Vol 15, No 5, May 72, pp 581-588

Abstract: The author compares the characteristics of two modifications of a circuit for tracking the time position of pulse signals against a background of interference to determine the coordinates of objects in pulse radar and radio navigation. In the first type of instrument, the instantaneous values of the signal voltage at the selection points are sent to an adder through a zero-delay divider with fixed division coefficient. The second type of circuit utilizes an auxiliary adder with reset for linear summation of the instantaneous voltages from the output of a divider with division coefficient n in the time interval for action of n signal pulses. After completion of summation, the voltage in the first (auxiliary) adder is transferred to the second (main) adder which controls a variable delay module. It is shown that under certain conditions, these circuits differ only in the nature and duration of the transient process.

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USSR

UDC: 772.9:535.41

BALAKHANOV, V. Ya., ZHIVOTOV, V. K., ~~TITOV, A. V.~~

"Using Holographic Fourier Spectroscopy for Analyzing the Spectrum of Micro-wave Emission"

Moscow, Pribory i Tekhnika Eksperimenta, No 3, May/June 72, pp 146-150

Abstract: The paper describes analyzers for studying pulse emission in the millimeter and centimeter wave bands. The analyzers are based on methods of holographic Fourier spectroscopy. The operating principles are described, and quasioptical, semi-quasioptical and waveguide modifications of the basic instrument are presented. An analyzer operating simultaneously in waveguide and quasioptical modes covers the wave band from 6 to 12 mm and has a spectral resolution of $\sim 1/10$ of a wavelength with a time constant of 0.3 μ s. The authors thank V. D. Rusanov for continuous interest and assistance with the work.

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USSR

4
ARAKSLOV, A. G., KOLESNIKOV, B. P., KONONENKO, V. A., LUK'YANOV, A. N.,
MALOV, V. V., POLYAK, L. Z., ROZANOV, A. N., and TITOV, B. V.

"Device for Studying Structural Changes in Refractory Metals and Alloys"

USSR Authors' Certificate No 356536, Cl. G 01n 23/20, filed 7 Dec 70, published 23 Oct 72 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 32, 1972, p 121)

Abstract: The device, which studies structural changes during high-temperature strain in a vacuum or other environment, contains a working chamber with a beryllium window located on the front cover, a loading mechanism, clamps for the specimen, heaters, mechanisms for measurements and the recording of readings. For purposes of studying the structure of a specimen during tests, the front cover of the working chamber has mounted on it a device for X-ray analysis with a mechanism for the vertical displacement of this device along the specimen and a mechanism for rotating it around a horizontal axis.

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USSR

UDC 547.183;547.655.4;547.655.6

TITOV, E. A., AVDEYENKO, A. P., Chair of Basic Technology of Organic and Petrochemical Synthesis, Dnepropetrovsk Chemical Technology Institute

"Reaction of N-Arenesulfonylnaphthoquinoneimines with Dialkyl Phosphites"

Ivanovo, Khimiya i Khimicheskaya Tekhnologiya, Vol 14, No 4, 1971, PP 565-567

Abstract: In continuing the study of the newly synthesized N-arenesulfonyl-1,4-naphthoquinoneimines, N-benzenesulfonyl-2-chloro-1,4-naphthoquinoneimine was allowed to react with dialkyl phosphites. Replacement of the chlorine atom was not observed. IR spectral data and elemental analysis indicated that the products are O, O'-dialkyl O"-4-arenesulfonamido-1-naphthyl phosphates.

Acc. Nr.: AP0050224

PRIMARY SOURCE: FBIS Daily Report, Soviet Union, 8 April 1970, Vol III,
Nr 68, pp D 9 - D 10

Ref. Code: U50000

USSR

COSMONAUT TRAINING CENTER MARKS 10TH ANNIVERSARY
Moscow TASS International Service in English 1522 GMT 7 Apr 70 L

[Text] Moscow April 7, TASS--During his one-year training for a space flight the Soviet Cosmonaut Alexei Leonov covered about a thousand kilometres on bicycle, made two hundred cross-country races and covered three hundred kilometres on skis, whereas German Titov boarded different planes 800 times and spent hundreds of hours in flight.

These figures were cited by Colonel General of the Air Force Nikolai Kamanin in his feature story about the Soviet Space Training Centre, which will be ten years old this month. The feature story was published in the magazine "AVIATSIYA AND KOSMONAVTIKA".

A group of socialists of which General Kamanin was one of the leaders was set up to start this centre by the decision of the CPSU Central Committee and government. In

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1960 Kamanin was summoned from Central Asia by Konstantin Vershinin, commander-in-chief of the air force, and was entrusted with the training and selecting of cosmonauts. "Our main task was to organize a cosmonauts' detachment and set up a space training centre," Kamanin writes.

At present this centre, known as "Zvyozdny Gorodok" has grown into a real town with all modern conveniences, but at the time it was an ordinary forest in Moscow region, far from noisy thoroughfares, factories and busy cities.

In the midst of a pine forest the walls of a hotel, a canteen, headquarters and academic building began growing up day by day.

Among the experienced specialists who began pioneering work to set up the space training centre, Kamanin mentions Major General of Aviation Leonid Goreglyad, who downed about two dozen Hitler planes during the war, and Colonel Boris Aristov, a navigator.

It was clear that the man who will lead the group of future spacemen will have to be a chief and a teacher and at the same time a daring experimentalist. Colonel Yevgeniy Karpov, connoisseur of aviation medicine, became the chief of the centre. "The cosmonauts' deep-felt gratitude to the first chief of the centre is an appreciation of his great efforts to establish and mould this collective body," Kamanin says.

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The future cosmonauts Gagarin, Titov, Nikolayev, Popovich and other fighter-pilots came to Zvyozdny in March 1960. They were to master the rudiments of rocketry and space engineering, the design of the spacecraft Vostok, astronomy, geophysics and space medicine.

There was a lot of parachute jumping training at the first stage. The training was directed by Lieutenant Colonel Nikolai Nikitin, the world record hold, who died later during an experimental jump.

Flight training was directed by well known test pilots, specifically Anatoly Starikov. A special laboratory was set up aboard a TU-104 plane for training for flights in conditions of weightlessness.

"Step by step our cosmonauts climbed higher and higher to earn the right to pilot spaceships," General Kamanin writes.

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USSR

GRININ, A. S., and TITOV, I. N.

UDC 576.858.093.3

Ochistka, Kontsentrirvaniye, i Fraktsionirovaniye Virusov Zhivotnykh (Purifying, Concentrating, and Fractionating Animal Viruses), Moscow, "Kolos," 1971, 240 pp

Translation: Annotation: This book is a manual for scientific workers and veterinarians in laboratories and for virologists, biochemists, and biophysicists. It gives brief information on the biochemical and biophysical characteristics of viruses. Descriptions are given for methods of extracting viruses from infected tissues, physical and chemical methods of purifying and concentrating viruses, and methods of adsorption, ion exchange, and molecular sieve chromatography.

Brief descriptions are given of the working principles of ultracentrifuges, electron microscopes, and chromatographic equipment.

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GRININ, A. S., and TITOV, I. N., Ochistka, Kontsentrirvaniye, i Fraktsionirovaniye Virusov Zhivotnykh (Purifying, Concentrating, and Fractionating Animal Viruses), Moscow, "Kolos," 1971, 240 pp

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GRININ, A. S., and TITOV, I. N., Ochistka, Kontsentrirvaniye, i Fraktsionirovaniye Virusov Zhivotnykh (Purifying, Concentrating, and Fractionating Animal Viruses), Moscow, "Kolos," 1971, 240 pp

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USSR

GRININ, A. S., and TITOV, I. N., Ochistka, Kontsentrirvaniye, i Fraktsionirovaniye Virusov Zhivotnykh (Purifying, Concentrating, and Fractionating Animal Viruses), Moscow, "Kolos," 1971, 240 pp.

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UNCLASSIFIED

PROCESSING DATE--23OCT70
-U-

TITLE--AEROLOGICAL CHARACTERISTICS OF CLOUDS IN NORTHERN KAZAKHSTAN

AUTHOR--TITOV, L.

COUNTRY OF INFO--USSR

SOURCE--TRUDY KAZAKHSKOGO NAUCHNO-ISSLEDOVATEL'SKOGO INSTITUTA, NO 37,
REFERENCE--REFERATIVNYY ZHURNAL, GEOFIZIKA, SVODNYY TOM, NO 4, 1970, 48270
DATE PUBLISHED-----69

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--AIRCRAFT MEASUREMENT, AEROLOGIC STATION, ATMOSPHERIC CLOUD,
TEMPERATURE, CLOUD PHYSICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/0663

STEP NO--UR/0000/69/000/037/0097/0130

CIRC ACCESSION NO--AT0126380

UNCLASSIFIED

2/2 019

CIRC ACCESSION NO--AT0126380

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESULTS OF AN ANALYSIS OF FLIGHT DATA OBTAINED IN NORTHERN KAZAKHSTAN USING SOUNDING AIRCRAFT ARE GIVEN. THE PAPER GIVES THE FUNDAMENTAL GEOMETRIC, TEMPERATURE AND MICROPHYSICAL CHARACTERISTICS OF CLOUDS. THE MEAN, EXTREME AND MODAL VALUES ARE PRESENTED, AS WELL AS THE FREQUENCIES OF OCCURRENCE.

UNCLASSIFIED

USSR

UDC:538.56.01

TITOV, L. G.

"Memory Devices for Parametron Circuits (Review)"

Tr. Soyuzn. N-I. In-ta Priborostr. [Works of Union Scientific Research Institute for Instrument Building], No. 12, 1970, pp. 148-160 (Translated from Referativnyy Zhurnal Fizika, No. 11, 1970, Abstract No. 11 Zh22 from the Resume)

Abstract: A review is presented of the main types of memory devices operated in combination with parametron circuits. Analyzed are: pure parametron dynamic memory units (three parametrons per digit), matrix units (two parametrons per digit) using parametron tubes (one parametron per digit); magnetic core memory units; memory units using ultrasonic delay lines. The advantages and disadvantages of each type of memory unit are analyzed. Recommendations are given on the expediency of using these devices in parametron-based electronic and physical apparatus. Twenty biblio. refs.

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176 053

TITLE--REACTION OF ALUMINUM BOROHYDRIDE WITH TETRAETHYLAMMONIUM
BOROHYDRIDE -U- UNCLASSIFIED PROCESSING DATE--11SEP70

AUTHOR--TITOV, L.V., YEREMIN, YE.R., GAVRILOVA, L.A., ROSOLOVSKIY, V.YA.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD, NAUK SSSR, SER. KHIM. 1970, (1), 180-2

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALUMINUM COMPOUND, BOROHYDRIDE, AMMONIUM COMPOUND, COMPLEX
MOLECULE, WATER, PROPANDL, THERMOGRAM, X RAY DIFFRACTION STUDY, IR
SPECTRUM, THERMAL DECOMPOSITION, TRIETHYLAMINE, ETHANE, ALUMINUM, BORDN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1984/1666

STEP NO--UR/0062/70/000/001/0180/0182

CIRC ACCESSION NO--AP0100270

UNCLASSIFIED

2/2 053

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--A0100270

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ET SUB4 N(BH SUB4) PREPD. BY EXCHANGE BETWEEN ET SUB4 NBR AND EXCESS NABH SUB4 IN ISO,PROH, WAS ALLOWED TO REACT IN A VACUUM SYSTEM WITH 5 MOLES AL(BH SUB4)SUB3, THE MIXT. WAS KEPT FINALLY AT ROOM TEMP. 3 TO 4 HR TO YIELD 100PERCENT COLORLESS AND STABLE (UNDER N ATM.) ET SUB4 N, AL(BH SUB4)SUB4, WHICH RAPIDLY REACTS WITH H SUB2 O WITH EVOLUTION OF H BUT WITHOUT SELF IGNITION; IT REACTS SIMILARLY WITH ISO,PROH. THE SUBSTANCE WAS CHARACTERIZED BY X RAY DIFFRACTION AND IR SPECTRUM; ON A THERMOGRAM IT GAVE AN ENDOTHERM AT 97DEGREES THAT WAS REVERSIBLE AND PROBABLY CAUSED BY A POLYMORPHIC CHANGE. IN INERT ATM. AT 150DEGREES, IT DECOMPO. WITH LOSS OF H, ET SUB3 N, C SUB2 H SUB6 AND H SUB2 H SUB6 (SMALL AMT.), LEAVING A RESIDUE OF B AND AL.

UNCLASSIFIED

USSR

UDC 616.981-718.078.737

MARTYNYUK, Yu. V., EMDINA, I. A., ~~TITOV, M. B.~~, OBOLENSKAYA, G. I., KRUKIYER, M. D., SUPRUNOVICH, M. S., ZABNINA, S. G., and MOSKAL'CHUK, Z. A., L'vov Institute of Epidemiology and Microbiology

"Specificity of the Complement Fixation Reaction in the Diagnosis of Q Fever"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1970, pp 55-59

Abstract: Study of the immunological structure of the L'vov population with respect to Q fever, using the complement fixation reaction with antigen from *Rickettsia burneti*, revealed the highest number of positives (18-21%) among livestock handlers, meat plant workers, etc., as compared with 10.7% in the population at large. Serological examination of 429 hospitalized patients with cardiovascular, respiratory, liver, kidney, gastrointestinal, endocrine diseases, etc., 1730 febrile patients suffering from typhoid, influenza, meningoencephalitis, and other infectious diseases, and 158 cancer patients showed that about 12% had complement-fixing antibodies to the specific Q-fever antigen, or about the same rate as in the general population. There was no increase in the level of specific complement-fixing antibodies in any of the patients with diseases

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USSR

MARTYNYUK, Yu. V., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii,
No 4, 1970, pp 55-59

of non-Q-fever etiology. Even when the sera were stored for as long as 3-4
months (at 4°C) no nonspecific reactions were observed.

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UNCLASSIFIED
FEVER -U- ACTIVITY OF THE COMPLEMENT FIXATION REACTION IN DIAGNOSIS OF Q
PROCESSING DATE--09OCT70
AUTHOR-(05)-MARTYNYUK, YU.V., EMDINA, I.A., TITOV, M.B., OBLENSKAYA, G.I.,
KRUKIYER, M.D.
COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 4,
PP 55-59
DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--Q FEVER, BLOOD SERUM, ANTIBODY, ANIMAL DISEASE THERAPEUTICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/1539

STEP NO--UR/0016/70/000/004/0055/0059

CIRC ACCESSION NO--AP0109599

UNCLASSIFIED

ACCESSION NO--AP0109599
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--09OCT70

ABSTRACT. A STUDY WAS MADE OF THE SPECIFICITY OF THE COMPLEMENT FIXATION REACTION IN EXAMINATION OF THE SERA OF 429 PATIENTS FROM THE THERAPEUTIC DEPARTMENTS, 1,730 PATIENTS WITH FEBRILE CONDITIONS OF VARIOUS ETIOLOGY, AS WELL AS OF 158 PATIENTS SUFFERING FROM CARCINOMA AND LYMPHOGRANULOMATOSIS. BESIDES, SERA PRESERVED FOR A PROLONGED PERIOD OF TIME WERE SUBJECTED TO EXAMINATION. THE RESULTS OBTAINED POINTED TO THE HIGH SPECIFICITY OF THE MENTIONED REACTION IN DIAGNOSIS OF Q FEVER. NOT IN A SINGLE CASE WAS THERE NOTED ANY ELEVATION OF SPECIFIC COMPLEMENT FIXATING ANTIBODIES IN DISEASE OF NON Q RICKETTSIAL ETIOLOGY, THE PERCENTAGE OF ANAMNESTIC REACTIONS REVEALED IN THE LATTER PATIENTS APPROACHED THAT OBTAINED IN STUDYING THE IMMUNOLOGICAL STRUCTURE OF THE HEALTHY POPULATION. NEVER WERE NONSPECIFIC RESULTS OBTAINED WHEN THE SERA WERE PROPERLY PRESERVED.

UNCLASSIFIED

USSR

BRASLAVSKIY, L.M., PAZNIKOV, P.M., TITOV, M.G.

UDC 621.316.722.1

"Parametric Voltage Regulators With Current--Regulating Two--Terminal Network"

Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR (Works of Communication Educational Institutes. Ministry of Communications, USSR), 1969, Vyp 44, pp 126-135 (from RZh--Elektronika i yeye primeneniye, No 5, May 70, Abstract No 5B655)

Translation: Parametric d-c voltage regulators with a limiting resistor have a number of deficiencies (low efficiency and coefficient of regulation) which are eliminated by replacement of the voltage--dropping resistor by an active transistorized circuit which consists of a resistor connected into the emitter circuit of the transistor, a stabilitron connected between the transistor base and the resistor, and the limiting resistor for the stabilitron. It is shown that an increase of the coefficient of regulation is attained by an increase of the resistance of the resistor in the emitter circuit and an increase of the differential resistance of the transistor collector. An experimental investigation was conducted on regulators of 25 and 100 ma current. 4 ill. 2 tab. 2 ref. V.Sh.

1/1

№.: AVAO104087

Ref. Code: 4170000

Kuznetsov, A. A.; Alifanov, O. M.; Vetrov, V. I.; Zolotov, A. A.; Titov, M. I.
Probability Characteristics of Strength of Aircraft Materials and Dimensions of
an Assortment (Veroyatnostnyye kharakteristiki prochnosti aviatsionnykh mate-
rialev i razmerov sortamenta) Manual. Moscow, Mashinostroyeniye, 1970, 565 pp
(SL:2007)

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	...The manual contains tables of mathematical expectations, mean square	6
	deviations of the tensile strength and yield point, relative elongation and	9
	probability characteristics of sheet thickness, cross-section areas of shapes	417
	and thickness of tubes from nonferrous alloys and steels.	565
	The book was written for designers and calculators employed by the	
	aircraft industry and other machine-constructing branches.	

Reel/Frame
19870480

182

USSR

UDC: 681.3.06:51

TITOV, N. I., BALONISHNIKOV, M. S.

"Determining the Distribution Density Function for Errors in Analog Computer Calculations"

V sb. Analogovaya i analogo-tsifr. vychisl. tekhn. (Analog and Analog-Digital Computer Technology--collection of works), vyp. 4, Moscow, "Sov. radio", 1971, pp 114-127 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V583)

Translation: The paper deals with problems in determining the error in analog computer solution of problems as a function of the error in the initial data and in the resolving elements of the computer. In connection with the fact that all these errors are random quantities which may have different distribution density functions, an algorithm is proposed for determining the parameters of the law of distribution of the error in analog computer solution of the problem. Authors' abstract.

1/1

USSR

TITOV, N. YA., BEL'CHUK, G. A., and MEL'NIK, N. V., Leningrad Ship-Building Institute

UDC 621.791.754'.264

"Mechanized Welding of Metals With Consumable Electrodes Along a Narrow Spacing Gap in the Gaseous Protection"

Kiev, Avtomaticheskaya Svarka, No 2, 1973, pp 5-7

Abstract: The effect of the gaseous composition ($CO_2 + Ar$) on the saturation with hydrogen of the low-alloyed weld metal was studied. For this purpose Sv-10KhGSN2Mt welding wire was used. The minimal concentration of hydrogen in the weld metal was observed in the presence of 20-30% CO_2 in the gaseous protective mixture with argon. Application of the reverse polarity welding with a jet transfer of the electrode metal decreased the amount of hydrogen in the weld metal. When the amount of oxygen in the gaseous mixture increased to 10% the concentration of hydrogen in the weld metal also increased. However, a further increase in the concentration of oxygen did not increase the amount of hydrogen in the weld metal. It is recommended that 75% Ar and 25% CO_2 be used as the protective atmosphere during the mechanized welding of metals.

1/1

USSR

UDC 621.791.754.011

BEL'CHUK, G. A., TITOV, N. Ya., Leningrad Shipbuilding Institute

"Method of Selecting Modes of Mechanized Gas-Electric Welding with Fusible Electrode in a Narrow Gap"

Kiev, Avtomaticheskaya Svarka, No 12, 1972, pp 23-26.

Abstract: A calculation method is suggested for selecting the basic parameters of the mode of a mechanized gas-electric welding installation with a fusible electrode. The order of calculation of the basic parameters is as follows: 1) Depending on the thickness of the edges, the gap width is assigned. In order to prevent shorting of the arc to the walls of the gap, it must not be less than the critical width. 2) The welding mode parameters are selected according to formulas presented in this article. 3) Other formulas presented are used to calculate the chemical composition of the seam metal.

1/1

USSR

UDC: 536.516.2(088.8)

ARBUZOVA, I. A., TITOV, P. V., KHANDROS, L. G.

"Temperature-Sensitive Element"

USSR Authors' Certificate No 330359, Filed 3/07/70, Published 18/04/72
(Translated from Referativnyy Zhurnal Metrologiya i Izmeritel'naya Tekhnika,
No 4, 1973, Abstract No 4.32.800P, by V. S. K.).

Translation: A temperature-sensitive element (TE) made of a bimetal is suggested. The sensitivity of the TE is limited by the difference in coefficients of thermal expansion of the metals or alloys and, in the low temperature area, is reduced due to the decrease in coefficients of thermal expansion of metals at low temperatures. In order to increase the sensitivity, accuracy and range of application, it is suggested that elements be made of materials which undergo martensite conversion in both directions as the temperature changes, for example of a Cu-Al-Ni alloy with 12-16% Al and 0-10% Ni. By varying the chemical composition of the Cu-Al-Ni alloy, the hysteresis of the martensite conversion can be changed, as can the martensite point. The working area of the TE can thus be varied from -200 to +200° C. To assure deformation of the TE as it is cooled, it is equipped with a directed load unit, allowing the TE to be used in repeated heating and cooling cycles. 1 figure.

1/1

- END -

USSR

UDC 548.7

KOVAL', YU. N., TITOV, P. V., and KHANDROS, I. G., Institute of Metal Physics, Academy of Sciences Ukr SSR

"Change in the State of Hardened Steel at Low Temperatures"
Kiev, Metallofizika, No 32, 1970, pp 85-88

Translation: The relationship among processes occurring in manganese steel over various temperature ranges from -196 to 200°C with a change in electric resistance and magnetization is examined. The effect of the carbon content on these processes is evaluated. A comparison is made of the amount of energy for activating the process of lowering electric resistance at various stages of isothermal holding. The temperature dependence of the initial rate of change in electric resistance over the range from -100 to 100°C is studied.

It is shown that the martensite transformation increases electric resistance. A reduction in electrical resistance above 100°C is connected with the order or carbon, its interaction with defects, and relaxation of strain.

1/1

7 -

USSR

UDC 539.389.2:669.15

DONUKIS, T. L., LOBODYUK, V. A., SAVVAKIN, G. I., TITOV, P. V.,
FEDAS, N. P., and KHANDROS, L. G., Institute of Metal Physics,
Academy of Sciences Ukr SSR

"The Effect of Shock Loading on the Structure and Properties of
Fe - Ni Alloys"

Kiev, Metallofizika, No. 32, 1970, pp 88-94

Translation: The structure and properties of Fe - 30% Ni and
Fe - 32% Ni alloys after the passage of shock waves of 100 and
300 kbar were studied. The loading was made by a shock of a
steel plate. The time of the effect of high pressure was 1.4
microseconds. A shock wave of 300 kbar induces an almost full
 $\alpha \rightarrow \gamma$ transformation. A needle structure unusual for aus-
tenite, twins, and a cellular dislocation structure were observed
in the γ -phase formed.

After the $\alpha \rightarrow \gamma$ transformation induced by the passage of
a shock wave, hardness reached 270 Hv, and the γ -phase hardened
by shock loading had a hardness of 220 Hv. The recovery of the
1/2

USSR

DONUKIS, T. L., et al., Metallofizika, No 32, 1970, pp 88-94

β -phase formed as a result of the $\alpha \rightarrow \beta$ transformation under the effect of shock loading began at 200°C below the recovery temperature of 70% deformed austenite.

2/2

USSR

7

UDC 539.4.015 + 534.141.2

DONDUKIS, T. L., SAVVAKIN, G. I., ~~TITOV, P. M.~~ and KHANDROS, L. G., Institute of Metal Physics, Academy of Sciences UkrSSR, Kiev

"Steel Strengthening by Explosive Loading"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 4, 1970, pp 32-35

Abstract: Metal strengthening by means of impulse loading is based on the distribution of a compression impulse through a solid body, whose amplitude exceeds the fluidity limit by ten to hundred-fold, causing structural and phase changes in the material. This phenomenon occurs without manifested macroscopic changes in the material. Structural changes and the strengthening connected with it are due to the mechanical action of the shock wave and the temperature changes accompanying it. Therefore the strengthening depends on the load and the form and volume of specimens subjected to the shock. In this study steel strengthening was achieved by explosive deformation. A diagram for the experimental setup is included. The greatest strengthening was observed with extensive final deformations, and was accompanied by pulverization of mosaic blocks. Block pulverization increases with longer action of the force, but does not depend on the pressure itself.

1/1

UNCLASSIFIED

TITLE--CHANGE IN THE ELECTRICAL RESISTANCE OF HARDENED RHENIUM STEEL AT TEMPERATURES BELOW ROOM TEMPERATURE -U-
AUTHOR--(03)-KOVAL, YU.N., TITOV, P.V., KHANDROS, L.G.

PROCESSING DATE--20NOV70

COUNTRY OF INFC--USSR

SOURCE--FIZ. METAL METALLOVED. 1970, 29(3), 649-51
DATE PUBLISHED--70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ELECTRIC RESISTANCE, RHENIUM CONTAINING ALLOY, MANGANESE STEEL, MARTENSITE, ORDERED ALLOY, AUSTENITE, STEEL QUENCHING

CENTRCL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/0342

STEP NO--UK/0126/70/029/003/0649/0651

CIRC ACCESSION NO--AP0126098

UNCLASSIFIED

212 017

CIRC ACCESSION NO--AP0126098
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT. THE MN STEELS AND RE STEELS (CONTG. C 1.8, AND RE 6 WT. PERCENT, MARTENSITIC POINT NEGATIVE 80DEGREES), WHEN RAPIDLY QUENCHED FROM THE AUSTENITIC STATE TO NEGATIVE 196DEGREES, UNDERGO FORMATION OF MARTENSITE WITH ANOMALOUS TETRAGONALITY, WHICH ON WARMING UP TO ROOM TEMP. ASSUMED NORMAL TETRAGONALITY. IN MN STEELS THIS EFFECT WAS ACCOMPANIED BY INCREASED ELEC. RESISTANCE (BY SIMILAR TO 2PERCENT) OF MARTENSITE WITH ANOMALOUS TETRAGONALITY, AND THE RETURN TO THE NORMAL VALUE OF ELEC. RESISTANCE WHEN MARTENSITE ASSUMED NORMAL TETRAGONALITY. SPECIMENS OF RE STEEL WERE HELD ABOVE THE SURFACE OF LIQ. N. AND THERE WAS A TEMP. DROP ACROSS THE THICKNESS OF THE SPECIMEN OF SIMILAR TO 1DEGREE, AND THE EMF REACHED SIMILAR TO 0.01 MV. THE OBSD. INCREASE OF ELEC. RESISTANCE IN RE STEELS IS BELIEVED TO RESULT FROM THE INCREASED AMT. OF MARTENSITE, WHILE THE LOWERING OF ELEC. RESISTANCE ON WARMING UP IS CAUSED BY THE ORDERING PROCESSES IN MARTENSITE.

FACILITY: INST. METALLOFIZ., KIEV, USSR.

UNCLASSIFIED

USSR

UDC 539.389.2:669.15

BEREZINA, N. V., DONUKIS, T. L., KUDINOV, V. M., ~~TITOV, P. V.~~ and KHANDROS, L. G., Institute of Metal Physics, Academy of Sciences Ukr SSR

"Structural Changes in Steel Kh18N9T During Explosive Welding"

Kiev, Metallofizika, No 40, 1972, pp 49-53

Abstract: An investigation was made of the weld seam of a steel Kh18N9T-copper bimetal, produced by explosive welding with contact rates of 2.7 and 3.9 km/sec. Strengthening of the steel to a depth of 0.5 mm was detected in the seam zone, and the rolling texture disappears in this same layer. At the rate of 3.9 km/sec, 30% alpha-martensite formed in the steel in the seam zone. As x-ray diffraction analysis showed, the width of the interference lines of the alpha-martensite were small and considerably less than for the martensite obtained during cold working. This suggests that the martensite is found in a weakened condition apparently as the result of heat liberation. 3 figures, 1 table, 5 bibliographic references.

1/1

STATE OF THE LIVER IN ACUTE CHOLECYSTOPANCREATITIS -U- UNCLASSIFIED PROCESSING DATE--13NOV70

AUTHOR--(02)--SHABANDV, A.N., TITOV, R.I.
COUNTRY OF INFO--USSR

SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 6, PP 75-79
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--GALL BLADDER, LIVER FUNCTION, PANCREAS, PROTEIN, PROTHROMBIN,
LIPID METABOLISM, ALBUMIN, GLOBULIN, BILE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0077

STEP NO--UR/0497/70/048/004/0075/0079

CIRC ACCESSION NO--AP0132370
UNCLASSIFIED

CIRC ACCESSION NO--AP0132370
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT. IN 202 PATIENTS WITH ACUTE CHOLECYSTOPANCREATITIS THE AUTHORS STUDIED THE PROTEIN FORMING, PROTHROMBIN FORMING, PIGMENTARY FUNCTIONS OF THE LIVER AND PARTICIPATION OF THE LIVER IN FAT METABOLISM. FOR THIS PURPOSE THE FOLLOWING INVESTIGATIONS WERE CARRIED OUT: TOTAL BLOOD SERUM PROTEIN, QUANTITY OF ALBUMINS AND GLOBULINS, MERCURIC CHLORIDE, THYMOL AND FORMOL REACTIONS IN THE BLOOD CHOLESTEROL AND BILIRUBIN, RUBBILIN AND BILIARY PIGMENTS IN THE URINE. IN ONE THIRD OF PATIENTS WITH ACUTE CHOLECYSTOPANCREATITIS FUNCTIONAL DISTURBANCES OF THE LIVER WERE REVEALED. DIFFUSE AFFECTION OF THE PEPATIC PARENCHYMA CORRESPONDED MAINLY WITH THE DEGREE OF ANATOMICAL CHANGES IN THE PANCREAS. IN NECROTIC PANCREATITIS THE LIVER FUNCTIONS SUFFERED MORE SHARPLY, THIS CAUSING THE HAZARD OF DEVELOPMENT OF HEPATIC INSUFFICIENCY. FACILITY: KAFEDRA KHIRURGII I TRAVMATOLOGII SANITARNO-GIGIYENICHESKOGO FAKUL'TETA I MOSKOVSKOGO MEDITSINSKOGO INST. IM. I. M. SECHENOVA.

UNCLASSIFIED

USSR

UDC 612.82:615.781

KIRZON, M. V., TITOV, S. A., and KAMENSKIY, A. A., Chair of
Human and Animal Physiology

"Direct Effects of Novocain on the Cerebrum of White Rats"
Moscow, Vestnik Moskovskogo Universiteta, No 1, Jan/Feb 71,
pp 98-99

Abstract: In an investigation of the effects of novocain on the cerebrum, small volumes of novocain (0.01 ml of 5-12% solutions) were injected into various brain structures (amygdaloid nucleus, substantia nigra, and caudate nucleus) in nonpremedicated white rats. The immediate results observed included: complete immobility, areflexia, fall in respiratory rate from the control 80 to 10 and fewer breaths per minute, and a marked depression of electroencephalographic waves. If the animal did not die from apnea in the first 5 minutes, it gradually recovered during the next hour. Since such a rapid diffusion of the novocain from the site of injection to the respiratory centers was improbable, the authors postulate activation of inhibitory neural reflexes.

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1/2 034 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--CHARACTERISTICS OF THE ELECTRICAL ACTIVITY OF SUBCORTICAL AND CORD
STRUCTURES OF RATS DURING SODIUM FLUORACETATE POISONING -U-
AUTHOR--(02)-KIRZON, M-V-> TITOV, S.A.
COUNTRY OF INFO--USSR
SOURCE--VESTN. MOSK. UNIV., BIOL., POCHVOVED, 1970, 25(1), 18-25
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SODIUM COMPOUND, FLUORINATED ORGANIC COMPOUND, POISON EFFECT, ..
SPINAL CORD, NERVOUS SYSTEM, ELECTROPHYSIOLOGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/0595 STEP NO--UR/0444/70/025/001/0018/0025
CIRC ACCESSION NO--AP0117823
UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117823

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PATHOL. CHANGES IN ELEC. ACTIVITY OF SUBCORTICAL AND CURD STRUCTURES DURING FLUOROACETATE POISONING ARE DISCUSSED. TWO COMPETITIVE PROCESSES IN THE COURSE OF POISONING WERE REGISTERED. INCREASED EXCITABILITY OF THE RETICULAR THALAMUS NUCLEI, FOLLOWED BY SPASMS AND A PHASE OF DEPRESSED MOTILITY AND INHIBITION OF ELEC. ACTIVITY CHARACTERISTIC FOR BARBITURATE POISONING WERE FOUND.

UNCLASSIFIED

USSR

UDC 669.14.018.8:621.762

SHAPIRO, YU. L., POLTORATSKIY, N. I., TITOV, S. G., and BYVSHIKH, M. I., Podol'sk

"Pressing and Vacuum Sintering of Powder of Type Kh18N15 Stainless Steel"

Poroshkovaya Metallurgiya, No 3, Mar 71, pp 31-35

Abstract: In a continuation of earlier works, the authors study the next production batch of austenitic stainless steel powder. The principal properties, cold pressing, melting and isothermal sintering in a vacuum of powder produced by reduction of the oxides with calcium hydride were studied. The larger fractions of the powder had significantly greater specific surface and lower bulk density than the finer fractions, resulting from the complex shape and porosity of the particles. Introduction of a binder decreases and evens the bulk density. Cold pressability increases with decreasing particle size. The powder melts in a vacuum at 1375-1400°C, so vacuum sintering should be performed at 1300°. Final densities of specimens of 70 to 97% can be achieved with sintering at 1300°C by varying powder particle size 1/2

USSR

SHAPIRO, YU. L., et al., Poroshkovaya Metallurgiya, No 3, Mar 71, pp 31-35

from $-150+100$ to -45μ , specific pressure from 1.6 to 15.2 t/cm², and holding time from 1 to 8 hours. Specific pressure has the greatest influence on final density of material produced and its grain size. The composition of the steel changes little with extended sintering near the solidus point.

2/2

- 61 -

USSR

UDC: 681.325.65.522

DVORETSKIY, V. M. TITOV, S. M.

"Relay and Logic Hydraulic Automation Devices for General Industrial Use"

Probl. Gidravtomatika [Problems of Hydraulic Automation -- Collection of Works], Moscow, Nauka Press, 1969, pp 13-19 (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 7, 1970, Abstract No 7A63, by Ye. S.)

Translation: The shortcomings of known valve-type relays are the technological difficulty of manufacturing valve pairs requiring high finishing accuracy and the design complexity resulting from the use of valve bias springs. A universal hydraulic relay is described in which the channels are covered by the end surface of the valve, allowing the requirements for manufacturing precision of relay parts to be reduced and allowing materials which are not in short supply to be used in their manufacture. The relay described is used as the basis of a universal system of hydraulic automatic control elements developed at the Institute of Automation and Telemekhanika (Engineering Cybernetics). Standard circuits of devices realizing the principal logic operations are presented. Nine illustrations; three biblio. refs.

1/1

USSR

UDC 547.26'118

KIREYEV, V. V., KOLESNIKOV, G. S., and TITOV, S. S., Moscow Chemical-Technical Institute imeni D. I. Mendeleev

"The Reaction of Tetraalkyl Esters of Imidodiphosphoric Acid with Triorganohalosilanes"

Leningrad, Zhurnal Obshchey Khimii, Vol XL, No 12, Dec 70, pp 2634-2642

Abstract: It is shown that the reaction of tetraalkyl esters of imidodiphosphoric acid with chlorosilanes leads to the formation of products with P-O-Si bonds. The overall reaction follows first order kinetics -- first order with respect to the ester, zero order with respect to the chlorosilane.

On the basis of study of the infrared, ultraviolet and nuclear magnetic resonance spectra, it was established that the initial substances form a complex.

The most probable mechanism is suggested for the reaction which proceeds with ionization of the bond POR.

1/1

USSR

UDC 547.26.118

KIREYEV, V. V., KOLESNIKOV, G. S. (DECEASED), TITOV, S. S., Moscow
Institute of Chemical Technology imeni D. I. Mendeleev, Moscow,
Ministry of Higher and Secondary Specialized Education RSFSR

"Esters of Imidodiphosphoric Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70,
pp 2015-2019

Abstract: Reacting trichlorophosphazodichlorophosphonyl with alcohols and alkoxides gave a series of novel esters of imidodiphosphoric acid. To freshly prepared sodium butoxide in anhydrous dioxane, trichlorophosphazodichlorophosphonyl (I) in benzene was added with stirring. The precipitated NaCl was filtered off, the solvents were evaporated, and the residue was extracted with petroleum ether, washed, and dried, and the solvent was evaporated to give tributoxyphosphazodibutoxyphosphonyl, n_D^{20} 1.4460, d_4^{20} 1.0611. To obtain the tetrabutyl ester of imidodiphosphonic acid, (I) in benzene was added to a mixture of absolute butyl alcohol and triethylamine in petroleum ether with stirring at a rate permitting the 1/2

- 71 -

USSR

KIREYEV, V. V., et al, Zhurnal Obshchey Khimii, Vol 40, No 9,
Sep 70, pp 2015-2019

temperature to be kept at +5°. Then the mixture was kept at room temperature for 2 days, the precipitated triethylamine salt was filtered off, and the solvent distilled at a temperature below 80°. The residue was dissolved in petroleum ether and chromatographed over neutral alumina.

2/2

Corrosion

USSR

UDC 620.197(075.8)

TOMASHOV, N. D., ZHUK, N. P., TITOV, V. A., and VEDENEYEVA, M. A.

"Laboratornyye raboty po korrozii i zashchite metallov" (Laboratory Studies on Corrosion and Protection of Metals), Moscow, Izd-vo "Metallurgiya," 1971, 280 pp

Translation of Annotation: An account is given of 34 laboratory works on the course of corrosion and protection of metals. Each work contains a brief theoretical introduction, a description of equipment and work methods, and a discussion of methods of data processing. The reference data necessary for calculations and a recommended bibliography are presented at the end.

The book is intended for students at schools of higher technical education as a handbook of laboratory studies, and may be used by corrosion laboratory personnel. 72 figures, 50 tables, 10 references.

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USSR

TOMASHOV, N. D., et al., "Laboratornyye raboty po korrozii i zashchite metallov" (Laboratory Studies on Corrosion and Protection of Metals), Moscow, Izd-vo "Metallurgiya," 1971, 280 pp

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USSR

TOMASHOV, N. D., et al., "Laboratornyye raboty po korrozii i zashchite metallov" (Laboratory Studies on Corrosion and Protection of Metals), Moscow, Izd-vo "Metallurgiya," 1971, 280 pp

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USSR

TOMASHOV, N. D., et al., "Laboratornyye raboty po korrozii i zashchite metallov" (Laboratory Studies on Corrosion and Protection of Metals), Moscow, Izd-vo "Metallurgiya," 1971, 280 pp

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USSR

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YEROLIMSKIY, B. G., BONDARENKO, L. N., MOSTOVOY, Yu. A., ORLINSKIY, B. A.;
ZAKHAROVA, V. P.; and TITOV, V. A., Institute of Atomic Energy imeni I. V.
Kurchatov

"Search for Three-Vector Correlation in the Decay of Polarized Neutrons"

Moscow, Yadernaya Fizika, Vol. 11, No. 5, May 70, pp 1049-1057

Abstract: An experiment conducted to measure the constant D of triple correlation between the vectors of the neutron spin σ and the electron and antineutrino momenta p_e and $p_{\bar{\nu}}$ is described. The experiment was conducted on the IRT-M reactor of the Institute of Atomic Energy imeni I. V. Kurchatov. 23 series of measurements of duration 35-100 hours each were conducted and approximately $9.1 \cdot 10^4$ decay events were recorded. The average value of the coefficient D for all series was -0.01 ± 0.01 . The accuracy in obtaining the constant D made it possible to establish the difference from 180° of the phase difference between the axial-vector and the vector constants of weak interaction; this was found to be

$$\phi = 181.3^\circ \pm 1.3^\circ.$$

1/1

USSR

24

ADO, YU. M., ZHURAVLEV, A. A., LOGUNOV, A. A., MYAE, E. A., NAUMOV, A. A., PISAREVSKIY, V. YE., ROGOZINSKIY, V. G., TUSHAKRAMISHVILI, K. Z., SHUKHLO, I. A., BOYKO, S. N., KOMAR, YE. G., MALYSHEV, I. F., MOZIN, I. V., MCWOSZON, N. A., MOZALEVSKIY, I. A., SPEVAKOVA, F. M., STOLOV, A. M., TITOV, V. A., VODOP'YANOV, F. A., KUZ'MIN, A. A., KUZ'MIN, V. F., MINTS, A. L., RUBCHINSKIY, S. M., UVAROV, V. A., GUTNER, B. M., ZALMANZON, V. B., PROKOP'YEV, A. I., and TEMKIN, A. S.

"Some Results of the Overall Adjustment and Start-up of the 70-Gev Proton Synchrotron of the Institute of High-energy Physics"

Moscow, Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

Abstract: The physical part of the plan for the 70-Gev proton synchrotron was executed by the Institute of Theoretical and Experimental Physics. The electromagnet with feed system, the vacuum chamber, and the injection devices were developed at the Scientific Research Institute of Electrophysical Apparatus imeni D. V. Yefremov. The radio-electronic systems for acceleration process control and generation of

1/4

USSR

ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

the accelerating field, as well as the radiotechnical measurement and beam observation systems, were developed by the Radiotechnical Institute of the Academy of Sciences USSR. "Tyazhpromelektroproyekt" [State Planning Institute for the Planning of Electrical Equipment for Heavy Industry] designed the general-purpose electrotechnical devices and cable connections. The plan for the construction complex of the accelerator was developed by the State All-Union Planning Institute. The construction of the accelerator was under the general supervision of the State Committee for the Use of Atomic Energy USSR. The adjustment of individual systems and the overall adjustment and start-up of the accelerator were carried out by the Institute of High-energy Physics and the developers of the accelerator systems. The basic beam work was done by the Institute of High-energy Physics with the participation of the Radiotechnical Institute. The construction of the accelerator was begun in 1960, and all the basic construction and assembly work was completed at the beginning of

2/4

USSR

ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

1967. At the initial stage of construction, before the formation of the Institute of High-energy Physics in 1963, the work was coordinated by the Institute of Theoretical and Experimental Physics. The linear accelerator injector was started on 28 July 1967, the operation of the individual systems was adjusted by September 1967, and the physical start-up of the accelerator was accomplished on 14 October.

A description is given of the work done to adjust the annular electromagnet (including the electromagnet cooling and feed systems), the injection system (consisting of matching channel and injection device), the vacuum system, the radioelectronic system (including the accelerating field generation system, the acceleration process control system, and the radiotechnical measurement system), and the beam observation system (which provides for beam observation in the first revolution and during acceleration). In the physical start-up of the accelerator the main efforts were directed towards obtaining accelerated protons of the planned energy, and the problem of obtaining high

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ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

intensity of the accelerated proton was not raised.

The article gives a listing of the principal parameters of the proton synchrotron, as well as a schedule of the individual stages of the start-up of the accelerator. Photographs include a view of the part of the ring hall in the beam injection area and a general view of the hall of ignitron rectifiers.

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1/2 056

TITLE--CATHODIC PROTECTION OF METALS FOR USE IN AGGRESSIVE LIQUID FLOWS
UNCLASSIFIED PROCESSING DATE--09OCT70
-U-

AUTHOR--TITOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(2), 126-8

DATE PUBLISHED--70

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

TOPIC TAGS--CORROSION RATE, CAST IRON, FLUID PUMP, CORROSION PROTECTION,
CHLORINE, FLUORINE, CALCIUM OXIDE, ALUMINUM OXIDE, MAGNESIUM OXIDE,
METAL COATING, MATERIAL MIXING, CHEMICAL PLANT, BORON COMPOUND, CATHODIC
INHIBITOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1990/1450

STEP NO--UR/0004/70/046/002/0126/0128

CIRC ACCESSION NO--AP0109510

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--09OCT70

2/2 056

CIRC ACCESSION NO--AP0109510

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CATHODIC PROTECTION (AT AC.D. OF 2.3 A-M PRIME2) OF MONEL STIRRERS WORKING IN A 5.2PERCENT H SUB2 SIF SUB6 SOLN. AT 75DEGREES REDUCED THE CORROSION RATE FROM 41 TO 2 G-M PRIME2 HR; CATHOD PROTECTION (AT AC.D OF SIMILAR TO 12 A-M PRIME2) CAST IRON PUMP STARTS IN THE FILTRATE FROM H SUB3 BO SUB3 MANUF. (CONTG. B SUB2 O SUB3 7.35, MGO 4.89, CAO 0.116, AL SUB2 O SUB3 0.045, CL SMALLER THAN OR EQUAL TO 0.2PERCENT, AT PH 1.0-1.6 AND 90-95DEGREES) INCREASED THE SERVICE LIFE OF THE PARTS FROM 28-33 TO 100-106 DAYS.

UNCLASSIFIED

1/2 020
UNCLASSIFIED
PROCESSING DATE--13NOV70
TITLE--HIGH TEMPERATURE RADIOLYSIS OF M, TERPHENYL AND ITS HYDROGENATED
DERIVATIVES -U-
AUTHOR--(03)--LAVROVSKIY, K.P., PROTSIDIM, P.S., TITOV, V.8.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(5), 1066-9 (CHEM)
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--RADIOLYSIS, HIGH TEMPERATURE EFFECT, BENZENE DERIVATIVE,
HYDROGENATION, WATER MODERATED REACTOR
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/1217 STEP NO--UR/0020/70/191/005/1066/1069
CIRC ACCESSION NO--AT0134891
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0134891

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

ABSTRACT. RADIOLYSIS AT 370DEGREES IN A NUCLEAR, WATER MODERATED REACTOR IS DESCRIBED FOR M,TERCYCLOHEXYL, M,TERPHENYL, AND 30-60PERCENT HYDROGENATION PRODUCTS OF THE LATTER. THE RADIATION YIELDS OF PRODUCTS INCLUDING C SUB12 H SUB10, C SUB12 H SUB22, C SUB7 H SUB11, C SUB6 H SUB6, C SUB6 H SUB12, AND THE TOTAL GASES ARE TABULATED. THE GAS YIELD WAS LINEAR WITH THE DOSE OF RADIATION. FORMATION OF THE C SUB1-5 PRODUCTS SHOWED THAT RADIOLYSIS OF HYDROGENATED TERPHENYLS RESULTS IN CONSIDERABLE INTRAMOL. CLEAVAGE OF C-C BONDS IN THE HEXAMETHYLENE RINGS AND INTER RING BRIDGES. THE COMPLETELY HYDROGENATED MATERIAL GAVE THE GREATEST YIELD (23PERCENT) OF HIGHER BOILING PRODUCTS, RELATIVE TO THE STARTING MATERIALS, BUT AS RADIATION DOSE INCREASED, THE DIFFERENCES BETWEEN VARIOUS SUBSTRATES BECAME SMALLER.

FACILITY: INST. NEFTEKHIM, SIN, IM. TOPCHIEVA, USSR.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ON THE METHODS FOR PREPARING REFERENCE MANUALS ON THE SEA CURRENTS
TO HELP NAVIGATORS -U-
AUTHOR--TITOV, V.B.
COUNTRY OF INFO--USSR
SOURCE--OKEANOLOGIYA, 1970, VOL 10, NR 3, PP 538-545
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, BEHAVIORAL AND SOCIAL SCIENCES-
TOPIC TAGS--TIDAL CURRENT, OCEAN CURRENT, MANUAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/1863 STEP NO--UR/0213/70/010/003/0538/0545
CIRC ACCESSION NO--AP0129223
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0129223

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

ABSTRACT. SHORTCOMINGS OF THE TABLES OF
 CONSTITUENT ARGUMENTS USED FOR THE PRECOMPUTATION OF TIDAY CURRENTS WITH
 THE AID OF ELLIPSES ARE DISCUSSED. A NEW METHOD IS SUGGESTED FOR THE
 PREASSIGNMENT OF ASTRONOMICAL ARGUMENTS, I. E. THE GRAPHIC METHOD, WHICH
 ELIMINATES THE DEFECTS OF THE FORMER METHOD BASED ON THE TABLES. A
 COMPARATIVE ESTIMATE OF THE ACCURACY OF PRECOMPUTING THE TIDAL CURRENT
 ELEMENTS WITH THE AID OF THE ANALYTICAL OR GRAPHIC METHODS IS GIVEN. A
 NEW METHOD IS ALSO SUGGESTED FOR PRESENTING WIND DRIVEN CURRENTS IN
 ATLASES WHICH MAKES POSSIBLE TO RAPIDLY OBTAIN TOTAL CURRENTS.
 FACILITY: INSTITUT OKEANOLOGII IM. P. P. SHIRSHOVA AN SSSR, YUZHNOYE
 OTDELENIYE.

UNCLASSIFIED

USSR

UDC 546.841:543.432.062

LUKIN, A. M., TITOV, V. I., (DECEASED), CHERNYSHOVA, T. V., and YEVDOKI-MOVA, N. N.

"Spectrophotometric Determination of Thorium with Chlorophosphonazo III in Phosphoric Acid"

Moscow, Zavodskaya Laboratoriya, Vol 39, No 10, Oct 73, pp 1174-1175

Abstract: In the determination of thorium with chlorophosphonazo III in phosphoric acid, the reaction takes place in the interval of 2-0.003 molar phosphoric acid with Beer's law observable up to concentrations of 20 micrograms/5 ml thorium for a reagent concentration of $2.5 \cdot 10^{-5}$ molar. This method makes it possible to increase the selectivity of thorium determination in comparison to Zr, Ti, Fe, and other metals and is also more selective than the method using hydrochloric acid. This method has been used for analysis of monazite ores. Two figures, one table, three bibliographic references.

1/1

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE--STATISTICAL ANALYSIS OF THE DECARBURIZATION DYNAMICS OF A MOLTEN METAL
AUTHOR--(05)-KAGANOV, V.YU., SURGUCHEV, G.O., DERKACHEV, YE.N., MOSALOV, G.I., TITOV, V.I.
COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN MET. 1970, 13(1), 167-71
DATE PUBLISHED--70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--DECARBURIZATION, LIQUID METAL, STATISTIC ANALYSIS, OXYGEN, CARBON, FLUID DYNAMICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
NOX REEL/FRAME--1981/0594

STEP NO--UR/0148/70/013/001/0167/0171

ARC ACCESSION NO--AT0050601

UNCLASSIFIED

039

UNCLASSIFIED

PROCESSING DATE--09OCT70

RC ACCESSION NO--AT0050601
 STRACT/EXTRACT--(U) GP-0- ABSTRACT. REMOVAL OF C FROM A LIQ. METAL IS
 A COMPLEX PROCESS, NOT ALWAYS SUSCEPTIBLE TO RECOGNIZED FORMS OF ANAL.
 RESULTS ARE GIVEN OF STATISTICAL ANAL. OF RANDOM FUNCTIONS DETG. THE
 DYNAMICS OF DECARBURIZATION OF FUSED METAL BY THE INTRODUCTION OF O.
 THE CONNECTION BETWEEN AMT. OF U ADDN. AND RATE OF DECARBURIZATION
 ((U(T)-V(T)) IS DETD., THOUGH THIS IS DIFFICULT IN VIEW OF THE MULTIPLE
 PROBABILITY SURFACES OF THE RANDOM FUNCTIONS, AND HENCE, ONLY THE
 SIMPLEST APPROXNS. CAN BE EXAMD. CURVES ARE GIVEN TO COMPARE THE MATH.
 EXPECTATION AND MEAN SQUARE DEVIATIONS OF EXPTL. MELTS WITH RESULTS
 ACTUALLY OBTAINED. THE C CONTENT EXERCISES ONLY A SMALL EFFECT ON THE
 MATH. EXPECTATION OF V(T). DECARBURIZATION IS A NONSTATIONARY EFFECT
 FOR STEEL MELTS, OWING TO A COMBINATION OF INTERNAL COMPN. FACTORS.

UNCLASSIFIED

USSR

UDC: 621.396.69:621.372.412

AKSHIN, A. I., VINTOVKIN, S. I., TITOV, V. I., TOKAREV, G. A.

"Effect of Ionizing Radiation on the Piezoelectric Properties of Quartz Plates"

V sb. Radiatsion. fiz. nemet. kristallov (Radiation Physics of Nonmetallic Crystals--collection of works), Minsk, "Nauka i tekhn.", 1970, pp 220-229 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2V483)

Translation: An investigation was made of the change in fundamental piezoelectric properties of AT- and DT-cut quartz plates at room temperature over a broad frequency range (300 kHz-10 MHz) exposed to X-radiation ($E \approx 400$ kev), gamma radiation (Co-60), a stream of electrons with energies of 0.2-1.0 and 2 MeV, protons (6.3 MeV) and alpha particles (25 MeV). It is shown that X-rays and gamma rays have an identical effect on the one hand, as do electrons of various energies on the other hand on changing the natural frequency of AT-cut quartz plates at doses of $\sim 2 \cdot 10^5$ rad. Four illustrations, bibliography of one title. N. K.

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Acc. Nr:

AP0050042

Abstracting Service:
CHEMICAL ABST. 5170

Ref. Code:

UR0368 2

94391q Interaction of a high-frequency discharge plasma with the surface of some dielectrics. Akishin, A. L.; Bludov, E. V.; Guzhova, S. K.; Isaev, L. N.; Solov'ev, G. G.; Titov, V. I. (UESR). *Zh. Prikl. Spektrosk.* 1970, 12(1), 13-18 (Russian).
 An expt. was performed, imitating the effect of the ionic component of the upper atm. on some dielec. materials (satellite surfaces) present in a plasma of a high-frequency discharge. Optical properties, such as reflection and transmittance coeffs. of a series of dielec. materials were detd. in ionic plasmas of 5-10 eV energy. The reflection coeffs. of dielect. in the visible range decreased markedly due to interaction with O⁺, N⁺, H⁺, or He⁺. The effect of O⁺ was the greatest.
 HMJR

IG

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REEL/FRAME
19801981