MAKSIMOV, A. M.

JPRS 56352

26 June 1972

UDC 533.6.011.72:533.95:539.4

ELECTRIC DISCHARGE SHOCK TUBE AS A PLASMA SOURCE FOR MAGNETOHYDRODYNAMIC EXPERIMENTS

[Article by A. M. Maksimov, High Temperature Institute of the USSR Academy of Sciences; Moscow; Teplofizika Vysokikh Temperatur, Russian, Vol 9, No 5, 1971, pp 1023-1030]

Submitted 25 December 1970

The results are discussed from a complex investigation of the parameters of a shock heated gas in a diaphragmless electric discharge shock tube in the initial pressure range of 0.5-5 mm Hg and the Mach number range M_s = 6-11. The velocity of the wake of the plasma, the gas pressure, the thermal flux to the wall of the shock tube and also the extent of the plug region were measured. It was demonstrated that in the investigated region the Rankin-Hugoniot equations can be used to calculate the properties of the gas flow. The process of ionization relaxation beyond the shock wave front was studied.

Experiments were performed to study the interaction of the plasma flux with crossed electric and magnetic fields.

The problems of the theory and practice of the magnetohydrodynamic generation of electric power are at the present time closely connected with the problem of obtaining a detailed picture of the physical processes occurring in the generator channel. Pulse devices of the shock tube type permit just this. The pulse devices have an entire series of advantages over stationary devices, and at the present time they are finding broader and broader application for simulation of the processes occurring in magnetohydrodynamic generators of various types [1-3]. In addition, such studies can be aimed at the creation of large pulse magnetohydrodynamic generators with high specific power [4, 5].

The most widespread research devices are the diaphragm shock tubes in which the possibility of calculating the gas flow parameters in such tubes as much as the possibility of calculating the gas flow parameters in such tubes by the Rankine-Hugoniot equations has been proved experimentally. However, the utilization of diaphragm shock tubes in magnetohydrodynamic experimentation is connected with defined difficulties. For example, for small Mach numbers

1/2 049 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--VOLT AMPERE CHARACTERISTICS OF AN ARGON PLASMA BEHIND A SHOCK WAVE ON COLD ELECTRODES DURING NONINDEPENDENT DISCHARGE -U-

AUTHOR-(02)-MAKSIMOV, A.M., NIKEUV, YU.A.

COUNTRY OF INFO--USSR

SOURCE--TEPLOFIZ. VYS. TEMP. 1970, 8(2), 272-6

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PLASMA PHYSICS, ARGON, PLASMA DISCHARGE, SHOCK WAVE FRONT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1408 STEP NO--UR/0294/70/008/002/0272/0276

CIRC ACCESSION NO--AP0133360

UNCLASSIFIED

2/2 049 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0133360

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. E-I CHARACTERISTICS WERE MEASURED BEHIND THE SHOCK WAVE FRONT PRODUCED BY CAPACITOR BANK DISCHARGE IN AR PLASMA. THE MEASUREMENTS WERE CARRIED OUT BY MEANS OF A DOUBLE PROBE UNDER CONDITIONS OF A NONSTATIONARY BOUNDARY LAYER IN A 3.5-M-LONG AND 50-MM-INNER-DIAM. TUBE AT 0.5-4 MM HG. UNDER CONDITIONS OF NONINDEPENDENT DISCHARGE, THESE CHARACTERISTICS WERE USED TO DET. THE ELECTRON CONCN. PROFILE BEHIND THE SHOCK WAVE FRONT. THE RESULTS WERE COMPARED WITH THOSE OBTAINED BY MICROWAVE DIAGNOSTICS. THE EXPTL. SATN. CURRENT AGREES WITH THEORY. THE ELECTRON CONCNS. WERE MEASURED FOR WHICH THE TRANSITION FROM THE NONINDEPENDENT DISCHARGE TO ARC CONDITIONS WAS OBSD. FACILITY: INST. VYS. TEMP., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 548.736.6

CHERNOV, A. N., MAKSIMOV, B. A., ILYUKHIN, V. V., Academician BELOV, N. V.

"Crystalline Structure of a Monoclinic Modification of K,Zr Diorthosilicate = $K_2ZrSi_2O_7$"

Moscow, Doklady Akademii Nauk SSSR, Vol 193, No 6, 1970, pp 1293-1296

Abstract: Crystals of this type were obtained in the examination of the K_2O-ZrO_2-SiO_2 system by V. G. Chukhlantsev and Yu. M. Polezhayev of the Ural Polytechnical Institute imeni S. M. Kirov. In a cell of the crystal having the periods a = 9.54 and b = 14.26 (with an even pseudo-period of b' = b/2) c = 5.60A, γ = 116°31', Z = 4 units. The Fedorov group C_{2h}^5 = $P2_1/b$ is determined by quenching. Analysis of the three-dimensional Patterson function P(uvw) detected heavy atoms of Zr and medium atoms of Si and K, the coordinates of the last two being taken as the starting points in the synthesis of the electron density $\rho(x,y,z)$. Two tables are supplied in the article, the first giving final values of the basic atom coordinates, the second giving the interatomic distances computed from the data of the first. Also presented are two sketches of the $K_2ZrSi_2O_7$

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CHERNOV, A. N., et al, Doklady Akademii Nauk SSSR, Vol 193, No 6, 1970, pp 1293-1296

structure in the xy and yz projections and a sketch of the $Na_2ZrSi_2O_7$ structure in the xy projection. The authors note that it is worthwhile to make a comparison of the two structures of $K_2ZrSi_2O_7$ and $Na_2ZrSi_2O_7$ with that of $Na_3Sc/Si_2O_7/$, where the 4-valent Zr is replaced by the almost identical ion radius of the 3-valent scandium.

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1/2 024 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--CRYSTAL STRUCTURE OF SYNTHETIC SODIUM YTTRIUM ORTHOGERMANATE NAY(GEO SUB4) -U-

AUTHOR-(04)-KUZMIN, E.A., MAKSIMOV, B.A., ILYUKHIN, V.V., BELOV, N.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 159-61

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--CRYSTAL STRUCTURE, X RAY DIFFRACTION ANALYSIS, CRYSTAL LATTICE PARAMETER, SODIUM COMPOUND, YTTRIUM COMPOUND, GERMANIUM COMPOUND, OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0783 STEP NO--UR/0192/70/011/001/0159/0161

CIRC ACCESSION NO--AP0104229

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104229

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE OF NAYGEO SUB4, ISOMORPHOUS WITH NAYSIO SUB4, WAS DETD. BY SINGLE CRYSTAL X RAY METHODS. THE ORTHORHOMBIC LATTICE PARAMETERS ARE A 5.32, B 11.49, AND C 6.49 ANGSTROM; THE SPACE GROUP IS PBN2 SUB1; AND Z EQUALS 4. THE Y ATOM IS SURROUNDED BY 6 O ATOMS AT THE CORNERS OF AN OCTAHEDRON; Y-O DISTANCES ARE 2.25-2.44 ANGSTROM. THE NA COORDINATION POLYHEDRON CONTAINS 6 O ATOMS AT DISTANCES OF 2.24-2.65 ANGSTROM. GE IS TETRAHEDRALLY COORDINATED (GE-O EQUALS 1.66-1.81 ANGSTROM). MARY FRANCES RICHARDSON

UNCLASSIFIED

USSR UDC 593.42

RUDNEVSKIY, N. K., MAKSIMOV, D. YE., and SHABANOVA, T. M.

"Investigation of the Sensitivity Increase of Spectral Determination of Micro-impurities Using a Discharge With Hollow Cathode in the Magnetic Field"

V Sb. "VII Ural'sk. Konf. po Spektroskopii, 1971. Vyp.1" [In the Collection "Seventh Ural Conference on Spectroscopy, 1971. No 1".], Sverdlovsk, 1971, pp 12-14 (from Referativnyy Zhurnal, No 10, Oct 72. 32. Metrologiya i Izmeritel'naya Tekhnika. Single Issue. Abstract No 10.32.990 by V. S. K.)

Translation: An investigation was made of a series of spectroscopic characteristics of a discharge with a hollow cathode in an axial magnetic field, and the possibility of using this field for increasing the sensitivity in analyzing microadmixtures of elements was determined. Results of carried out investigations showed that the discharge with a hollow cathode in the magnetic field can be used as excitation source in spectral determination of elements according to curved lines with low excitation potentials, as 45 among the 70 elements, located in the upper part of the periodic system, have the last lines of atoms with excitation potentials less than 5 ev. The sensitivity in determining elements in a hollow cathode, when superimposing a magnetic field, exceeds by a factor of one the sensitivity achieved under similar conditions without field.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910013-2"

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RUDNEVSKIY, N. K., et al, V Sb. "VII Ural'sk. Konf. po Spektroskopii, 1971, Vyp. 1"

The reproductiveness of the analysis, rated according to the magnitude of the mean square error, is similar in both cases and amounts to 15-35%. Two illustr., one table, eleven biblio. refs.

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USSR

UDC: 536.46

YUKHVID, V. I., MAKSIMOV, E. I., MERZHANOV, A. G., and KOZLOV, V. S., Moscow

"Formation of a Semi-Liquefied Layer During the Combustion of Condensed Systems With Solid Non-agglomerating Admixtures in a Field of Mass Forces"

Novosibirsk, Fizika Goreniya i Vzryva, Vol 9, No 4, Jul-Aug 73, pp 496-501

Abstract: The authors conduct an experimental study to explain the regularities associated with the pseudo-liquefied layer and its effect on combustion. This study is based on an earlier work by V. I. Yukhvid et al., Fizika Goreniya i Vzryva, Vol 9, No 2, 1973, where the authors observed that the rate of combustion of ammonium perchlorate with a refractory metal admixture (titanium) increases as the overload is increased where the overload is set up by centrifugal acceleration. On the basis of the results of that study, a mechanism is proposed for the combustion of the composition under the effect of mass forces. In the current study, inert refractory particles were used in the form of aluminum oxide. The test was conducted on a centrifuge. The combustion rate was measured by photoregistration. The overload vector in all of the tests was directed along the normal to the combustion surface, in the front propagation direction. The specimens were in the form of cylindrical tablets 0.8 cm in diameter and 2.4-2.5 cm high. These had been pressed to the point of maximal density. The results show that the motion of the com-

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YUKHVID, V. I., et al, Fizika Goreniya i Vzryva, Vol 9, No 4, Jul-Aug 73, pp 496-501

bustion front is uniform and that the effect of mass forces is complex in nature. A fall in the rate of combustion follows the combustion rate increase segment. These results can be explained by the properties of the pseudo-liquefied layer and the effect that they have on the combustion process.

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USSR

UDC: 662.612.3

YUKHVID, V. I., MAKSIMOV, E. I., MERZHANOV, A. G., KHAYKIN, B. I., and KOZLOV, V. S.

"Combustion Mechanism of Condensed Systems With Solid Admixtures in a Mass Force Field"

Novosibirsk, Fizika goreniya i vzryva, No 2, 1973, pp 235-240

Abstract: This paper presents the results of experiments to study the rarely examined case of the combustion of systems with non-agglomerating admixtures. The experiments were conducted in a mass force field on compositions of ammonium perchlorate and titanium. The assumption of non-agglomeration is based on the fact that the melting point of Ti is, at 1700°, much higher than that of the perchlorate, at 1100° C. A diagram of the centrifuge in which the experiments were conducted is given together with a description of the experimental method. The rate of combustion was measured by film photography. The reader is referred to an earlier paper (B. B. Serkov, et al, FGV, 1968, 4, 4) for a more detailed description of the apparatus and methodology. The combustion rate was measured as a function of accelerations in the interval of 36 to 1200 g at room temperature. A model of the combustion process is devised to explain the experimental results.

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USSR

UDC 536.46

MAKSIMOV, YU. M., MAKSIMOV, E. I., Moscow

"Combustion Laws for Condensed Systems in a Mass Force Field at Moderate Pressures"

Novosibirsk, Fizika goreniya i vzryva, Vol 8, No 4, 1972, pp 517-523

Abstract: A study was made of the combustion of some substances with different combustion mechanisms: pyroxyline, polyvinyl nitrate, hexogene, octogene and ammonium perchlorate under G-loads to 900 g and pressures to 70 technical atmospheres at a temperature of the material of 20° C. Provision was made for holding the investigated specimens in two positions: where the mass force acted from the direction of the reaction products toward the combustion front (a_+) and in the opposite direction (a_-). The combustion rate was determined by photographing the process on a moving streak camera film. The setup was described in detail previously [E. I. Maksimov, et al., FGV, Vol 7, No 2, 197, 1971].

With an increase in the G-load the combustion rate can increase (polyvinyl nitrate, pyroxyline at pressures above 10 technical atmospheres), decrease (hexogene below 25 technical atmospheres) and not depend on the G-load (ammonium perchlorate, octogene, hexogene at 50 technical atmospheres and pyroxyline up to 10 technical atmospheres). For hexogene, octogene and ammonium perchlorate

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MAKSIMOV, YU. M., et al., Fizika goreniya i vzryva, Vol 8, No 4, 1972, pp 517-523

there is a combustion limit with respect to G-load depending on the pressure. Some of the obtained laws can be explained on the basis of the existing concepts of the combustion mechanism. For example, the increase in the combustion rate of polyvinyl nitrate and pyroxyline above 10 technical atmospheres can be explained by the compression of the disperse zone which is the lead zone. The invariability of the combustion rate of octogene and hexogene at 50 technical atmospheres and pyroxiline is explained by the fact that the lead stage is in the gas phase. In explaining the combustion limits with respect to G-loads conclusions presented by E. I. Maksimov, et al. [Dokl. AN SSSR, Vol 157, No 12, 412, 1964] can be used which are based on the fact that with an increase in the G-load the variables entering into the stability criteria according to Zel'-dovich vary.

2/2

1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--MACROKINETIC FEATURES OF RADICAL POLYMERIZATION REACTIONS -U-

AUTHOR--MAKSIMOV, E.I.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(5), 1091-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--RADICAL POLYMERIZATION, MONOMER, DIFFERENTIAL EQUATION, INTEGRAL EQUATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605021/C05 STEP NO--UR/0020/70/191/005/1091/1094

CIRC ACCESSION NO--AT0141078

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0141078

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SERIES OF DIFFERENTIAL AND INTEGRAL EQUATIONS WAS DERIVED ANAL. FOR DESCRIBING ISOTHERMAL AND ADIABATIC POLYMNS., AS WELL AS OPEN SYSTEM FREE RADICAL POLYMN. OF MONOMERS. THE EQUATIONS DERIVED ADEQUATELY DESCRIBED POLYMN. IN BATCH AND TUBULAR REACTORS. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

1/3 050 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--ALONG THE 'EARTH SPACE' ROUTE SPACE TRANSPORT VEHICLES VISUALIZED

-U-

AUTHOR--MAKSIMOV, G.

M

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, GUDOK, 1 MARCH 1970, P 4

DATE PUBLISHED--01MAR70

SUBJECT AREAS--SPACE TECHNOLOGY

TOPIC TAGS--MANNED ORBITAL LABORATORY, SPACE STATION, RENDEZVOUS SPACECRAFT, SPACECRAFT DOCKING, MANEUVERABLE SATELLITE, MANEUVERABLE REENTRY VEHICLE, MANNED SPACECRAFT/(U)SOYUZ MANNED SPACECRAFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0480 STEP NO--UR/9002/70/000/000/0004/0004

CIRC ACCESSION NO--AN0114735

UNCLASSIFIED

2/3 050 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AN0114735

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ORBITAL STATION WITH A THREE MAN CREW WITH A SERVICE TIME OF ONE YEAR WILL REQUIRE A TOTAL OF MORE THAN 10 TONS OF FOOD, WATER AND OXYGEN (INCLUDING CONTAINERS AND PACKAGING). SPACE TRANSPORT VEHICLES MUST BE LAUNCHED FOR RENDEZVOUSING AND DOCKING WITH SUCH SPACE STATIONS, PERIODICALLY REPLACING CREWS AND DELIVERING FOOD, ROCKET FUEL AND SCIENTIFIC EQUIPMENT. TRANSPORT VEHICLES WILL BE USED FOR SOLVING MANY PROBLEMS INVOLVED IN THE LONG TERM FUNCTIONING OF BOTH MANNED SPACE STATIONS AND AUTOMATIC OBJECTS. THE USE OF TRANSPORT SHIPS FOR CARRYING CREWS TO SPACE STATIONS REQUIRES THAT THEY HAVE THE NECESSARY CONDITIONS FOR HUMAN LIFE, THAT THEIR ACCELERATIONS BE NEITHER TOO GREAT NOT TOO PROLONGED. THE SAME SHIP WILL BE REUSED AGAIN AND AGAIN. IN ORDER TO REDUCE ACCELERATIONS AND INCREASE ITS MANEUVERABILITY SUCH A SHIP MUST HAVE AN EXTERNAL CONFIGURATION SO THAT LIFT CAN BE EMPLOYED DURING REENTRY. THE SHIP WILL BE ACTED UPON BY DRAG, DIRECTED OPPOSITE THE DIRECTION OF MOVEMENT, AND LIFT PERPENDICULAR TO THE DIRECTION OF FLIGHT. DECELERATION WILL OCCUR OVER A LONGER TIME AND ACCELERATIONS WILL THEREBY BE REDUCED. THE PERSONNEL ABOARD SUCH SHIPS WILL BE EXPOSED TO NOT MORE THAN 3-4 G IN COMPARISON WITH 8-10 G WHICH ACCOMPANIES A BALLISTIC DESCENT. ANOTHER ADVANTAGE OF TRANSPORT SHIPS USING THE LIFT PRINCIPLE DURING REENTRY IS A BROAD MANEUVERABILITY. MANEUVERABILITY IN BOTH ALTITUDE AND FLIGHT DIRECTION WILL BE POSSIBLE, THEREBY INCREASING THE ACCURACY OF LANDING OF THE VEHICLE. THE INTERNAL APPEARANCE OF A TRANSPORT SHIP WILL BE DEPENDENT ON ITS PURPOSE.

3/3 050 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AN0114735

ABSTRACT/EXTRACT--HOWEVER, IT WILL EVIDENTLY HAVE THE SAME COMPARTMENTS AS THE "SOYUZ" SHIPS: A COMMAND MODULE WITH CONTROLS, SERVICE EQUIPMENT AND CREW, A COMPARTMENT FOR TRANSPORTING PASSENGERS AND MINOR CARGO; A CARGO COMPARTMENT FOR DELIVERY OF FREIGHT TO THE STATION OR TO THE EARTH AND A SERVICE MODULE. TRANSPORT SHIPS WILL HAVE A DOCKING ASSEMBLY AND HATCHES FOR EMERGENCE OF COSMONAUTS INTO OPEN SPACE. FLIGHTS OF THE "SOYUZ" SPACESHIPS HAVE SHOWN THAT EVEN NOW THEY ARE CAPABLE OF SOLVING MANY OF THE PROBLEMS INVOLVED IN SERVICING SPACE STATIONS, THAT IS, ARE PROTOTYPES OF SPACE TRANSPORT SHIPS OF THE FUTURE.

MAKSIMOV, G.G.

J-8448

VOYENNO-MEDITSINSKIY ZHURNAL, NO. 4, 1970, pp. 52-54

PROTEIN FRACTIONS OF THE BLOOD SERUM IN ULCER DISEASE

by

Maksimov, Lt.Col. of Med.Serv. A

---N.S. Gastroenterology

Due to electrophoretic examinations of the serum proteins in recent years certain changes were established in the protein metabolism of peptic ulcer patients. L.I. Anokhina, S.G. Butyl'kina, K.T. Stepanchikova, V. Ye. Frenkina, E.F. Estrin and others observed in the majority of ulcer patients hypoproteinemia and decrease in the albumin-globulin ratio. Other authors (L.V. Shkodin, I.I. Abasov) did not find substantial changes in the serum protein in this pathology. The majority of authors attributed the cause of disturbed protein metabolism in ulcer disease to the disordered protein-forming function of the liver. Thus, S.M. Ryss, A.A. Shatalova found functional liver disturbances, and hepatomegaly in 26.8%. S.O. Ikhil'kina noted hepatomegaly almost in one half of the ulcer patients. In the opinion of G.A. Atakhanov (1967) the disturbed protein metabolism in ulcer disease is caused by secondary disturbance of digestion, and absorption of food substances in the small bowel.

To elucidate the composition of protein fractions, we examined 108 men suffering from ulcer disease within the 25-65 year age group. Among them, 100 patients had duodenal ulcer and 8 had gastric ulcer. The duration of ailment was less than one year in 32 persons, 1 to 5 years in 66, 5 to 10 years in 6, more than 10 years in 4.

In 44 persons, the following associated ailments existed: cholecystitis, gastritis, lamblyasis, chronic gastritis, helminthosis, sovenic had increased acidity; acidity was normal in 34, and depressed in 4. In 48 patients radiography showed a niche, while 20 had typical cicatricial ulcerous deformation without a niche syndrome. Total protein was determined by the method of Phillips and Vanslyke, the protein fractions were studied with the aid of paper electrophoresis. The protein metabolism was examined at the exacerbation of the ailment and after a course of antiulcerous treatment.

For a more objective evaluation of the observed changes, 30 young donors were examined in advance. Here, the following serum protein and protein fraction content was found: total protein 7.5 ± 0.62% (albumin ...58.5% ± 3%; alpha-globulin ... ± 0.5%; 1.5% alpha2-globulin 8.3 ± 1.5%; beta-globulin 13.5 ± 3%; gamma-globulin 15.5 ± 3%), albumin-globulin ratio 1.4 ± 0.19.

Moderately marked hypoproteinemia was found in 40 patients. Their average total protein was 6.2 ± 0.5%. There was no relationship between the total protein level, the duration of the ailment, and the acid-forming function of the stomach. At the examination of protein fractions, hypoalbuminemia was found in 58 (54%). The average albumin content was 50.2 ± 4.3%. More often this was observed in case of elevated acid-forming function, gastric ulcer patients, hypoalbuminemia [illegible] function, less often in case of normal and depressed function. Hypoalbuminemia was found in 50 out of 88 patients with niche symptom, and in 8 out of 20 with cicatricial ulcerous deformation. Thus, in patients with niche symptom the albumin-forming hepatic function was comparatively more often disturbed than in patients who did not have niche. In presence of niche symptom, evidently, other

USSR

AKOYEV, I. G., MAKSIMOV, G. K., and MALYSHEV, V. M.

Moscow, Luchevoye Porasheniye Mlekoptiayushchikh i Statisticheskoye Modelirovaniye (Radiation Sickness in Mammals and Statistical Modeling), Atomizdat, 1972, 99 pp

Translation:

Contents

1/2

USSR

AKOYEV, I. G., et al., Luchevoye Porazheniye Mlekopitayushchikh i Statisticheskoye Modelirovaniye, Atomizdat, 1972 99 pp

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USSR

UDC: 621.373.431.2

MAKSIMOV, G. T., VOLOKH, N. F.

"A Sawtooth Voltage Generator"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 5, 1970, p 39, patent No 261457, filed 6 May 68

Abstract: This Author's Certificate introduces a sawtooth voltage generator based on a symmetric multivibrator which uses semiconductor elements. The generator contains a T-shaped diode-resistor load network. As a distinguishing feature of the patent, the return time is reduced and the operational relinbility of the device is improved by connecting a series diode-resistor network shunted by an additional diode to the collector of each of the transistors. The other end of this diode resistor network is connected to the emitter of the same transistor through a storage capacitor, and the emitters of both transistors are connected to the positive pole of the power supply through a blocking diode.

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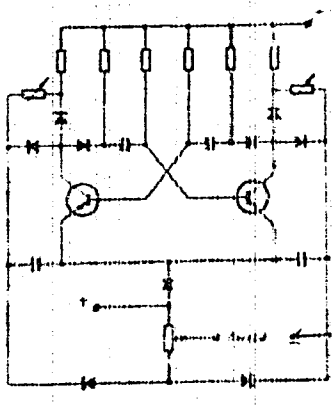
USSR

MAKSIMOV, G. T., VOLOKH, N. F., Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 5, 1970, p 39, patent No 261457, filed 6 May 68



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MAKSIMOV, G. Z.

Telephone Networks

Maksimov, G. Z., [illegible] (Organizing of Exchange Structures in Rural Telephone Networks), 197?, 176 pages. Price 57 kopeks.

Modern agriculture based on large widely [illegible] agricultural enterprises required intensive development of telephone communications. Great tasks were set before rural communicators by decisions of the [illegible] Congress pertaining to the plan for the national economic development of the country in 1971-1975. The principal task concerning the development of telephone communications in the current five-year period [illegible] a further expansion of telephone facilities for a better satisfaction of the needs of the rural population and agricultural production enterprises. By the end of the five-year plan all sovkhozes and 80 percent of the kolkhozes must have intraproduction communications.

This book encompasses principal questions concerning the design of exchange structures for dial communication in rural telephone networks. Basic principles pertaining to the construction of rural telephone exchanges are presented and a determination is made of their place in the statewide telephone network. Information is given on the most promising types of coordinate automatic telephone exchanges for rural networks, on multiplexing apparatus for rural communications lines, electric power supply equipment, and input-switching board devices.

An examination is made of the norms and distribution of attenuation in communications sectors as well as methods of organizing transit connections at network exchanges. An analysis is made of various numbering systems for subscribers' lines in rural areas within the limits of the network and zone.

Fundamental principles concerning the designing of rural networks are cited. Methods of calculating equipment are given for exchanges of the ATS K-100/2,000 type. Some information is given pertaining to typical designs of rural coordinate ATC K-100/2,000 exchanges.

The supplement contains an example of calculations of equipment for a central exchange of the K-100/2,000 type with a 1,000 number capacity and tables and graphs for the calculations are included.

The aid is designed for communications students at technicums. It may also be useful for engineering and technical personnel engaged in the designing and installation of rural telephone exchanges.

*** *** ***

Rubin, M. Kholler, K., Kommutatsionnyye Sistemy (Switching Systems), Translated from English, edited by Yu. M. Martynov, 1972, 396 pages. Price 2 rubles 52 kopeks.

The need for an effective resolution of tasks pertaining to control led to the necessity of transmitting data via communications channels

1/3 008 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--RADIOCHEMICAL DETERMINATION OF THE SPECIFIC ACTIVITY OF ANTIMONY IN VARIOUS SUBSTANCES -U-

AUTHOR-(03)-MAKSIMOV, I.N., SYSOYEVA, L.N., YAKOVLEVA, G.V.

COUNTRY OF INFO--USSR

SOURCE--RADIOKHIMIYA 1970, 12(1), 189-91

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ANTIMONY, CHEMICAL ANALYSIS, RADIOACTIVE ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0084 STEP NO--UR/0186/70/012/001/0189/0191

CIRC ACCESSION NO--AP0125917

UNCLASSIFIED

2/3 008 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125917

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR THE DETN. OF THE SP. ACTIVITY OF PRIME124 SB AND PRIME125 SB IN ROCKS, CLAYS, ASHES, ETC., TREAT 1 G OF THE SAMPLE IN A HOT MIXT. OF 15-20 ML HNO SUB3 AND 10-15 ML HF. TO THE SOLN., ADD 5 ML OF 1:1 H SUB2 SO SUB4 AND EVAP. UNTIL THE APPEARANCE OF H SUB2 SO SUB4 VAPORS. COOL THE PRODUCT, ADD 10 ML H SUB2 O AND HEAT AGAIN UNTIL THE APPEARANCE OF H SUB2 SO SUB4 VAPORS. DIL. WITH AN EQUAL VOL. OF H SUB2 O, ADD 10-15 ML 1:1 HCL, HEAT TO DISSOLVE THE SALTS, AND FILTER THROUGH A DENSE FILTER. WASH THE RESIDUE WITH HOT 1:1 HCL, ADD TO THE FILTRATE, AND ADJUST THE VOL. TO 50 ML WITH 1:1 HCL. IF AT THAT STAGE THE SOLN. IS NOT COLORED (INDICATING THE ABSENCE OF FE) ADD 1-2 ML OF A 15PERCENT FECL SUB3 SOLN. (TO SERVE AS CARRIER); NO SUCH ADDN. IS NECESSARY IF THE SOLN. IS COLORED. TITRATE WITH A 15PERCENT SNCL SUB2 SOLN. UNTIL THE DISAPPEARANCE OF THE COLOR, THEN ADD 1-2 ML OF A 5PERCENT NANO SUB2 SOLN., WAIT FOR 10-15 MIN, DIL. WITH AN EQUAL VOL. OF H SUB2 O AND ADD 1 ML OF A SATD. SOLN. OF UREA. SHAKE THE SOLN. FOR 2-3 MIN, AND ADJUST THE VOL. TO 100 ML WITH H SUB2 O. ADD 1-2 ML OF A 0.2PERCENT SOLN. OF METHYL VIOLET, MIX THOROUGHLY AND ADD 10 ML OF PHME. SHAKE FOR 3-5 MIN AND SEP. THE PHME PHASE CONTG. THE SB (REPEAT THIS OPERATION 2-3 TIMES WITH FRESH BATCHES OF PHME AND COMBINE THE PHME EXTS.). ADJUST THE VOL. OF THE PHME EXT. TO 50 ML AND DET. THE TOTAL SB CONCN. BY MEASURING THE ABSORBANCE AT 620-30 NM, THEN DISTILL OFF THE PHME AND MEASURE THE ACTIVITIES OF PRIME124 SB AND PRIME125 SB WITH THE AID OF A SCINTILLATION GAMMA SPECTROMETER, AT 1710 AND 427 KEV, RESP.

UNCLASSIFIED

3/3 006 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0125917
ABSTRACT/EXTRACT--THE SENSITIVITY OF THE METHOD IS 10 PRIME NEGATIVE10 CI.

UNCLASSIFIED

1/3 023 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--RELATIONSHIP BETWEEN THE DEFORMATION FORCE AND MOVEMENT OF ATMOSPHERIC CENTERS OF ACTION -U-
AUTHOR-(03)-MAKSIMOV, I.V., SARUKHANYAN, E.I., SMIRNOV, N.P.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, DOKLADY AKADEMII NAUK SSSR, VOL. 190, NO. 5, PP. 1095-1097

DATE PUBLISHED--------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--LOW PRESSURE, HIGH PRESSURE, POLAR AREA, EQUATOR, GEOGRAPHIC LATITUDE, VECTOR, ROTATIONAL FLOW

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1991/0972 STEP NO--UR/0020/70/190/005/1095/1097

CIRC ACCESSION NO--AT0110677
UNCLASSIFIED

2/3 023 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0110677

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POTENTIAL OF THE DEFORMAITON FORCE ARISING AS A RESULT OF MOTION OF THE EARTH'S POLES WAS INVESTIGATED. THE HORIZONTAL COMPONENT OF THIS FORCE WILL REPRESENT THE VECTOR SUM OF TWO COMPONENTS, ONE DIRECTED ALONG THE MERIDAN AND THE OTHER ALONG THE PARALLEL. THE MERIDIONAL COMPONENT OF THE DEFORMATION FORCE HAS MAXIMUM AND OPPOSITELY DIRECTED VALUES AT THE POLES AND AT THE EQUATOR AND IS EQUAL TO ZERO AT 45DEGREESN ADN S. THE LATITUDE COMPONENT OF THE FORCE IS MAXIMUM AND OPPOSITELY DIRECTED AT THE POLES AND IS EQUAL TO ZERO AT THE EQUATOR. AS A RESULT, THE TOTAL HORIZONTAL COMPONENT OF THE DEFORMATION FORCE HAS A COMPLEX NATURE OF CHANGE WITH LATITUDE. AT THE POLES THE VALUES OF THE FORCE VECTOR ARE MAXIMUMA AND WITH COUNTERCLOCKWISE ROTATION THE END OF THE VECTOR DESCRIBES A CIRCLE. IN THE LATITUDINAL ZONE 55-75DEGREES, AS A RESULT OF PREDOMINANCE OF THE LATITUDE COMPONENT, THE TRAJECTORY DESCRIBED BY THE END OF THE FORCE VECTOR IS AN ELLIPSE WHICH EXTENDS MORE AND MORE ALONG THE PARALLEL WITH APPROACH TO LATITUDE 45DEGREES. AT 45DEGREES THE FORCE CHANGES ONLY IN A ZONAL DIRECTION. THE MERIDIONAL COMPONENT OF THE FORCE IS ABSENT. SOUTHWARD IT APPEAR AGAIN, BUT NOW IT IS DIRECTED IN THE OPPOSITE DIRECTION. AT 30DEGREES THE END OF THE TOTAL FORCE VECTOR, NOW ROTATING CLOCKWISE, AGAIN DESCRIBES A CIRCLE, BUT WITH HALF THE RADIUS OF THE CIRCLE AT THE POLE. WITH APPROACH TO THE EQUATOR THIS CIRCLE BECOMES CLOSER TO AN ELLIPSE, ELONGATED ALONG THE MERIDIAN, AND AT THE EQUATOR THE HORIZONTAL COMPONENT OF THE DEFORMATION FORCE AGAIN ATTAINS MAXIMUM VALUES, CHANGING ONLY IN A MERIDIONAL DIRECTION.

UNCLASSIFIED

3/3 023 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0110677

ABSTRACT/EXTRACT--THE HORIZONTAL COMPONENT OF THE DEFORMATION FORCE IS COMMENSURABLE WITH THE FORCES WHICH OPERATE IN THE HORIZONTAL PLAE AND THEREFORE ASSUMES PARTICULAR IMPORTANCE IN STUDIES OF THE DYNAMICS OF ATMOSPHERIC PROCESSES. SEVEN YEAR SERIES OF DATA ON THE LATITUDE ANDLONGITUDE OF THE ICELANDIC LOW AND THE AZORES HIGH WERE PROCESSED BY HARMONIC ANALYSIS FOR THE YEARS 1945-1951, A PERIOD OF CONSIDERABLE AMPLITUDE OF POLAR OSCILLATIONS. THE AMPLITUDES AND PHASES OF 14 MONTH VARIATIONS OF LATITUDE AND LONGITUDE OF THE CENTERS OF ACTION WERE USED IN COMPUTING AND CONSTRUCTION THE ELLIPSES OF 14 MONTH DISPLACEMENTS OF THE CENTER OF THIS HIGH AND LOW. DURING THE CONSIDERED PERIOD THE 14 MONTH MOVEMENTS OF THESE CENTERS OCCURRED IN ELLIPSES ORIENTED FROM SW TO NE IN OPPOSITE DIRECTIONS. THIS RESULT IS IN FULL AGREEMENT WITH THE NATURE OF THE SPATIAL CHANGE OF THE HORIZONTAL COMPONENT OF THE DEFORMATION FORCE. THE AMPLITUDE OF THE 14 MONTH DISPLACEMENTS OF THE CENTER OF THE ICELANDIC LOW IN LATITUDE WAS APPROXIMATELY 1.5 TIMES GREATER THAN THE CORRESPONDING MOVEMENTS OF THE AZORES HIGH. IT CAN THEREFORE BE CONCLUDED THAT THE 14 MONTH MOVEMENTS OF THE ATMOSPHERIC CENTERS OF THE ATMOSPHERIC CENTERS OF ACTION IN THE ATLANTIC ZONE IN THE NORTHERN HEMISPHERE OCCUR UNDER THE INFLUENCE OF THE HORIZONTAL COMPONENT OF THE DEFORMATION FORCE. FACILITY: INSTITUTE OF THE BIOLOGY OF INTERIOR WATERS.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--SEASONAL AND LONG TERM CHANGES IN THE GEOGRAPHIC POSITION AND INTENSITY OF THE AZORES HIGH -U-
AUTHOR-(02)-MAKSIMOV, I.V., KARKLIN, V.P.

COUNTRY OF INFO--USSR, UNITED STATES

SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA GEOGRAFICHESKAYA, NO. 1, 1970, PP. 17-23, POSITION AND INTENSITY OF AZORES HIGH
DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--METEOROLOGIC DATA, METEOROLOGIC OBSERVATION, GEOGRAPHIC LOCATION, SEASONAL VARIATION, ISLAND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1024 STEP NO--UR/9067/70/000/001/0017/0023

CIRC ACCESSION NO--AP0112173
UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0112173

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF CHANGES IN THE GEOGRAPHIC POSITION AND INTENSITY OF THE CENTER OF THE AZORES HIGH ON THE BASIS OF MAPS OF THE MEAN MONTHLY ATMOSPHERIC PRESSURE COMPILED FOR THE EARTH'S NORTHERN HEMISPHERE BY THE UNITED STATES WEATHER BUREAU FOR ALL MONTHS DURING THE YEARS 1899 THROUGH 1951. THE RESULTS OF PROCESSING OF THESE DATA ARE REPRESENTED IN FIGURES 1-5. THESE DATA SHOW THAT THE SEASONAL MIGRATIONS OF THE AZORES HIGH WERE VERY GREAT. IN LATITUDE THE CENTER OF THE HIGH SHIFTED IN THE RANGE FROM 31 TO 35DEGREESN AND IN LONGITUDE FROM 23 TO 40DEGREESW. DURING THE WINTER MONTHS THE AZORES HIGH SHIFTED EASTWARD AND DURING THE SUMMER MONTHS IT SHIFTED WESTWARD. MOVEMENTS OF THE CENTER OF THE HIGH OCCURRED ALONG AN AXIS CHARACTERIZED BY AN AZIMUTH OF 70-80DEGREES, THAT IS, ALONG A GENERAL DIRECTION FROM WSW TO ENE. THE SEASONAL PRESSURE CHANGES AT THE CENTER OF THE AZORES HIGH WERE INSIGNIFICANT, IRREGULAR AND DID NOT EXCEED PLUS OR MINUS 2 MB. IT IS CLEAR THAT THE CLIMATE FORMING ROLE OF THE CENTERS OF ACTION IN THE ATMOSPHERE IS DETERMINED NOT SO MUCH BY CHANGES IN THE DEPTH OF THESE CENTERS AS BY THEIR MIGRATIONS. THE AUTHORS DESCRIBE A DEFORMATION HYPOTHESIS OF THE ORIGIN OF CENTERS OF ACTION IN THE ATMOSPHERE WHICH EXPLAINS THEIR POSITION AND ORIENTATION. IN THE "SECULAR" TENDENCY IN SHIFTING OF THE MAXIMUM THERE IS A CLEARLY TRACED NORTHERLY DRIFT WHICH IS EVIDENTLY ASSOCIATED WITH AN INCREASE IN SOLAR ACTIVITY IN THE FIRST HALF OF THE CENTURY.

UNCLASSIFIED

MAKSIMOV I. V.

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CLASSIFICATION: UNCLASSIFIED

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TITLE: SOME BASIC PROBLEMS OF MODERN OCEANOGRAPHY

Meteorye nauchnye problemy sovremennoy okeanografii

AUTHOR(S): Maksimov, I. V., Garkavaya, E. I., and Seliverstov, N. F.

PAGES: 23

SOURCE: Problemy Arktiki i Antarktiki, Sbornik statey, No. 12, 1963, pp. 5-13

ORIGINAL LANGUAGE: Russian

TRANSLATOR: R

NISC TRANSLATION NO. 3413

APPROVED PTK

DATE 26 February 1971

SOME BASIC PROBLEMS OF MODERN OCEANOGRAPHY

(Nekotoryy, I. V., Sarkisyan, S. I., and Smirnov, N. P., Nekotoryye sovremennyy okeanografii, Problemy Arktiki i Antarktiki, Sbornik statey No. 32, 1969, pp. 5-28, Russian)

The present state of the earth sciences is characterized by a significant expansion of the spatial-temporal scale of research. Questions connected with the study of processes operating over the planet as a whole are taking on ever greater meaning. It has become evident that the discovery of any regional geological events in the development of the ocean or the atmosphere will be impossible without an understanding of the common laws which govern the processes throughout these fluid envelopes of the earth. In oceanography in particular, this has led to a sharpening of interest in the problems which are common or global for the entire world ocean. The principal element of the problems indicated is, first of all, the organization and development of efforts directed at the solution of the fundamental question regarding the nature, governing laws, and causes of the intense changes in the state of the ocean and in the dynamics of the basic oceanic circulatory systems.

The ocean as an entity, as a global unit is continuously under the influence of a complex aggregate of forces external to the

* Numbers in the right margin indicate pagination in the original text.

"ocean-atmosphere" system, and it always responds to their temporal distribution. At the present level in the development of oceanography, we can consider as established the fact of the influence of the entire complex of external forces on the condition, variability, movement, and distribution of the waters in the world ocean. The analysis of this system of forces and of all their varied and intricate consequences is the first and truly global mission in the study of the ocean.

Considering the exceptional importance of the present issue and its fundamental nature for the development of modern oceanography, we shall examine here in more detail the main global problems now arising with the study of the world ocean.

It is well known that the tide-generating forces of the moon and the sun which act on the earth, besides semidiurnal and diurnal components, contain a sizeable and quite complex long-period component. As far back as 40 years ago, Sir George Darwin showed that the long-period forces are the cause of the constant changes in the position of the leveled surface of the world ocean. Thus arose the problem of studying the long-period tides in the ocean and their possible influence both on the transfer of heat by the ocean waters and on the climate of the earth.

But until very recently, the investigation of long-period tidal phenomena in the ocean progressed extremely slowly. This was due, to begin with, to the fact that the study of ocean phenomena was hampered by the lack of long-term observations of the sea level all

1/2 036 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--ON CALCULATING THE KINETIC COEFFICIENTS OF METALS ALLOWING FOR SEVERAL MOMENTS -U-

AUTHOR-(02)-BARABANOV, A.F., MAKSIMOV, L.A.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA METALLOV I METALLOVEDENIE, MAR. 1970, 29, (3), 471-478

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--METAL ELECTRICAL CONDUCTIVITY, ELECTRON SCATTERING, ELECTRON DISTRIBUTION, ALUMINUM, HALL CONSTANT, THERMAL EMF, KINETIC EQUATION, CALCULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1820 STEP NO--UR/0126/70/029/003/0471/0478

CIRC ACCESSION NO--AP0129188

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2/2 036 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129188

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROBLEMS ARISING IN THE CALCULATION OF THE KINETIC COEFF. AND ASSOCIATED ELECTRICAL PROPERTIES OF METALS ARE DISCUSSED THEORETICALLY. IN ORDER TO ALLOW FOR THE TEMP. DEPENDENCE OF THE SCATTERING ANISOTROPY, MORE THAN ONE MOMENT HAS TO BE INTRODUCED INTO THE EXPRESSION FOR THE INCREMENT TO THE EQUILIBRIUM ELECTRON DISTRIBUTION FUNCTION WHEN USING THE STANDARD METHOD BASED ON THE MOMENTS OF THE KINETIC COEFF. IN THE CASE OF SUCH METALS AS AL, THE INTRODUCTION OF A SECOND MOMENT LEADS TO A CONSIDERABLE CHANGE IN THE ELECTRICAL RESISTANCE, HALL CONSTANT, AND THERMAL E.M.F. IN THE LOW TEMP. REGION.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910013-2"

1/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--EFFECT OF ELECTRON CORRELATION IN METALS ON THEIR HYDRIDIZATION AND MAGNETIC PROPERTIES -U-

AUTHOR-(02)-KIKOIN, K.A., MAKSIMOV, L.A.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 6, PP 2184-2194

DATE PUBLISHED----------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--ELECTRON, CORRELATION ANALYSIS, HYDRIDE, METAL, MAGNETIC PROPERTY, MODEL, ATOMIC STRUCTURE, ELECTRON SHELL STRUCTURE, FERROMAGNETIC STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1693 STEP NO--UR/0056/70/058/006/2184/2194

CIRC ACCESSION NO--AP0120405

UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--APC120405

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MODEL OF METALS IS CONSIDERED IN WHICH ELECTRONS CAN EXIST IN ALMOST FREE STATES AND ALSO BE LOCALIZED AT NODES IN THE D PRIME1 AND D PRIME2 STATES OF THE ATOMIC D SHELLS. THE FERMI ELECTRON EXCITATION SPECTRUM IS FOUND BY TAKING INTO ACCOUNT HYBRIDIZATION OF THE STATES AND INTRA ATOMIC INTERACTION OF THE D ELECTRONS. THE INFLUENCE OF THE INDICATED INTERACTIONS ON MAGNETIC PROPERTIES OF THE SYSTEM IS INVESTIGATED AND IT IS SHOWN THAT WHEN THE NUMBER OF ELECTRONS ON THE ATOM N LESS THAN OR SIMILAR TO 2, FERROMAGNETIC ORDERING IS POSSIBLE AND ENERGETICALLY PROFITABLE.

UNCLASSIFIED

USSR

UDC 621.373:590.145.6

BATANOV, V. A., YERSHOV, B. V., MAKSIMOV, L. P., SAVRANSKIY, V. V., FEDOROV, V. B.

"Laser Unit with Radiation Energy up to 10 Kilojoules for Investigating the Interaction of Powerful Luminous Fluxes with Matter"

Kratk. soobshcheniya po fiz. (Brief Reports on Physics), No 4, 1970, pp 8-14 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8 D188)

Translation: This article contains a description of a device created on the basis of a neodynium glass laser (λ = 10,600 Å) generating pulses with an energy to 10 kilojoules and $\sim$ 1 millisecond long. The intensity of the light flux reaches 10^7 watts/cm^2 over an area of up to 1 cm^2. The device consists of three independent generators operating in parallel each of which contains three plane-parallel rods of neodynium glass pumped by pulse tubes. The experience in operating the device for three years has demonstrated that obtaining an energy of ~10 kilojoules is possible 5-10 times, obtaining an energy of five kilojoules is possible 50 times without replacing the tubes, active elements and reflectors.

1/1

USSR UDC: 621.394.42(088.8)

MAKSIMOV, L. V.

"A Device for Selection of Communications Channels"

USSR Author's Certificate No 265978, filed 18 Oct 68, published 2 Jul 70 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D44 P)

Translation: This Author's Certificate introduces a channel selector which contains communications channel numbering devices, readout modules, a code converter, memory cells and a pulse distributor. For simultaneous isolation of channels from a larger number of communication lines which are not intersynchronized, a pulse-phasing module is connected at the input. The outputs of this module are connected simultaneously to individual readout modules for each channel and to a pulse distributor which is common to all channels. The inputs of the isolated channels are connected to the inputs of the memory cells, whose second inputs are connected to the outputs of the pulse distributor.

1/1

USSR UDC: 621.398.08

MAKSIMOV, L. V.

"A Device for Scanning Telemetric Channels"

USSR Author's Certificate No 313305, filed 13 Mar 70, published 28 Oct 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 7, Jul 72, Abstract No 7A222 P)

Translation: Telemeter scanning devices are known which contain a channel interrogation pulse distributor, a two-coordinate commutation block, and switches. The trouble with these devices is that the switch elements scan the channels consecutively one after another at a constant rate in fixed sequence or according to a program set once and for all. Such a channel scanning system has low flexibility and low secrecy of data transmission in communication lines. For purposes of self-contained programmed scanning of telemetric channels and improved flexibility and transmission secrecy, a block of interrogation programs is introduced in the proposed device between the controlling inputs of the switches and the outputs of the commutation block. The controlling inputs of the two-coordinate program commutation block are connected to the outputs of the channel inter-

USSR

MAKSIMOV, L. V., USSR Author's Certificate No 313305

rogation pulse distributor and to the outputs of the channel interrogation program selection pulse distributor. The proposed device can be used to transmit information over communication lines chaotically and, at the same time, in accordance with an autonomously variable program. This program, which is included in the channel separation device at the other end of the communication line, separates the incoming information from the chaos. One illustration.

USSR

UDC 621.73.04.043

VOLCHKEVICH, T. A. and MAKSIMOV, L. Yu.

"Stamping Hard-to-Form Materials Under High Hydrostatic Pressures"

Moscow, Kuznechno-shtampovochnoye proizvodstvo, No 4, Apr 72, pp 9-12

Abstract: Discussed here are problems related to designing process parameters and tooling for stamping materials under high hydrostatic pressures. The study involved low-plasticity metals including gray iron, silicon iron, magnesium, molybdenum, and AEMts aluminum-beryllium alloy to show the significant increase of their technological plasticity during upsetting. The measurements include the punch movements, hydrostatic pressure in the container, and pressures in the hydraulic system. Cited are the stamping parameters for presses of 315 to 3150 tonf operating under constant hydrostatic pressures up to 20,000 kgf/cm^2. (5 illustrations, 2 tables, 2 bibliographic references)

1/1

USSR UDC: 621.373

MAKAROV, N. A., MAKSIMOV, M. G., Special Design Office of Biological Instrument Building, Academy of Sciences of the USSR

"A Generator of Pneumatic or Hydraulic Pulses"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 8, Mar 71, Author's Certificate No 296090, division G, filed 2 Jun 69, published 12 Feb 71, p 148

Translation: This Author's Certificate introduces a generator of pneumatic or hydraulic pulses which contains a vessel, input and output chokes, and a relay device. As a distinguishing feature of the patent, the design is simplified and service life is extended by connecting the input choke to the vessel housing, together with a dripcock located above the output capillary choke.

1/1

USSR

UDC: 621.396.9

MAKSIMOV, M. V.

"Pomekhoustoychivost' mnogokanal'nykh komandnykh radioliniy upravleniya" (Noise Immunity of Multichannel Command Telemetering Control Lines) Moscow, "Sovetskoye radio," 1970, 344 pp, pp 339-341

Translation:

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MAKSIMOV, M. V., "Pomekhoustoychivost' mnogokanal'nykh komandnykh radiolinii upravleniya", "Sovetskoye radio," 1970, 344 pp, pp 339-341

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USSR

UDC: 621.396.9

MAKSIMOV, M. V.

"Pomekhoustoychivost' mnogokanal'nykh komandnykh radioliniy upravleniya" (Noise Immunity of Multichannel Command Telemetering Control Lines) Moscow, "Sovetskoye radio," 1970, 344 pp

Abstract: Command telemetering control lines (CTC) are used in automated and semi-automated command radio-controlled systems for error-signal transmission. The purpose of this book on CTC is threefold: to examine methods for finding mathematical models of multichannel CTC lines and how they are affected by noise; to estimate the noise immunity and detection methods of the models for pulse-width, pulse-count, pulse-position, and pulse-code modulations; and, finally, to show how the models are realized technically.

The methods this monograph proposes are useful in the analysis of newly developed as well as existing types of CTC, and their results may be used as the initial data for analyzing the noise immunity of telemetering lines differing from those investigated here.

1/2

USSR

MAKSIMOV, M. V.

"Pomekhoustoychivost' mnogokanal'nykh komandnykh radioliniy upravleniya" (Noise Immunity of Multichannel Command Telemetering Control Lines) Moscow, "Sovetskoye radio," 1970, 342 pp

The first and second chapters provide introductory information regarding the structure and characteristics of CTC, and describe the method for finding the mathematical models of multichannel CTC under the action of noise. The remainder of this book is devoted to a detailed examination of the noise action and its effects. Appended is a bibliography of 35 titles and a subject index.

2/2

USSR

UDC: 621.396.9

MAKSIMOV, M. V.

"Pomekhoustoychivost' mnogokanal'nykh komandnykh radioliniy upravleniya" (Noise Immunity of Multichannel Command Telemetering Control Lines) Moscow, "Sovetskoye radio," 1970, 344 pp, p 2

Translation: This monograph considers methods of constructing and verifying the characteristics of command telemetering control (CTC) lines as dynamic links in automated and semi-automated telemetering control systems. Methods are developed for a mathematical description of CTC lines with due attention to the fact that the transformation parameters of these structures vary under the action of radio noise. The noise immunity of multichannel CTC lines with pulse-position, pulse-count, pulse-code, and pulse-phase modulations is analyzed. A method of mathematically modeling CTC lines is described.

The results of research conducted by the author provided the basis for the book.

USSR

MAKSIMOV, M. V., "Sovetskoye radio", 1970, 344 pp, p 2

The proposed methods of mathematical description and analysis of CTC lines are concerned with telemetric lines of specified structure. In investigating the noise immunity of CTC lines with the various forms of modulation, a good deal of attention is given to decoding processes since the problem of the passage of signals and noise through the individual elements of the radio receivers is covered by a large number of works. The most important computation formulas characterizing the operation of the receivers, however, are presented.

In view of the fact that such problems as potential CTC noise immunity, the mystery of the lines' operation, and the methods by which these devices develop noise are incidental, they are not considered in the book.

This monograph is meant for engineers, degree candidates, and scientific personnel. It may also be useful to students in electronics schools.

It contains 51 illustrations and a bibliography of 35 titles.

2/2

USSR UDC: 621.391:519.2

MAKSIMOV, M. V.

"Interference Resistance of Multichannel Command Radio Control Lines"

Pomekhoustoychivost' mnogokanal'nykh komandnykh radiolinii upravleniya (cf. English above), Moscow, "Sov. radio", 1970, 341 pp, ill. 1 r. 28 k. (from RŽ-Radiotekhnika, no 11, Nov 70, Abstract No 11A53 K)

Translation: The author discusses methods of construction and basic characteristics of command radio control lines which are dynamic links in automatic and semiautomatic radio control systems. Methods are developed for mathematically describing command radio control lines with regard to the effect of interference. An analysis is made of the interference resistance of command radio control lines with PPM, PDM, PCM and pulse-count modulation. The proposed methods can be used to find mathematical models of multichannel command radio control lines, and to determine the technical realization of these models. The mathematical model for each channel of the command radio control line which receives a mixture of signal and interference is a statistically equivalent filter which does not require knowledge of statistical characteristics for commands being transmitted. L. S.

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USSR

UDC 536.46:533.6

MAKSIMOV, N. N., ABRUKOV, S. A.

"Experimental Test of the Constancy of the Heat Release Rate at the Vibration Propagation Boundary of a Flame"

V sb. Fiz. vibrats. goreniya i metody yeye issled. Vyp. 1 (Physics of Vibration Combustion and Methods for Studying It. No. 1 -- Collection of Works), Cheboksary, 1971, pp 28-33 (from RZh-Mekhanika, No 6, Jun 72, Abstract No 6B896)

Translation: The excitation and amplification of sound waves in vibration propagation of a flame was caused by the conversion of a certain portion of the thermal energy released in the flame front into sound energy. The paper uses the vibration propagation of flame in closed narrow tubes filled with CO - air and CO - oxygen mixtures as an example, and experimentally tested the hypothesis that conversion of thermal to acoustical energy is possible only when the total rate of heat release in the flame is not less than some critical value. The data favorably support the assumption of the presence of a minimum value of the heat release determining the boundary of vibration flame propagation. Yu. S. Ryazantsev.

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1/2 025 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--MAPS AND DRAWING ON MICROFILMS -U-

AUTHOR-(02)-MAKSIMOV, N.P., SIDOROV, F.V.

COUNTRY OF INFO--USSR

SOURCE--MAPS AND DRAWING ON MICROFILMS (MIKROFIL'MIROVANIYE KART I CHERTEZHEY), MOSCOW, NEDRA, 1970, 183 PP

DATE PUBLISHED--------70

SUBJECT AREAS--METHODS AND EQUIPMENT

TOPIC TAGS--HANDBOOK, MAPPING EQUIPMENT, MICROFILM, PHOTOSENSITIVITY, PHOTOGRAPHIC EQUIPMENT, PHOTOGRAPHIC PROCESSING

CONTROL MARKING--NO RESTRICTIONS

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CIRC ACCESSION NO--AM0130257

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AM0130257

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: INTRODUCTION 3. CHAPTER I BASIC PROBLEMS OF REPRODUCTION OF MAPS AND DRAWING ON MICROFILMS 6. II CHARACTERISTICS OF MAPS AND DRAWING AS OBJECTS TO BE RECORDED ON MICROFILMS 23. III SPECIFICATIONS FOR MICROPHOTOCOPIES 33. IV EVALUATION OF QUALITY OF THE PHOTOGRAPHIC IMAGE 46. V PHOTOSENSITIVE MATERIALS 70. VI EQUIPMENT FOR MICROFILMS REPRODUCTION AND PROJECTOR READING EQUIPMENT 82. VII MAPS ON MICROFILMS 118. IX PRODUCTION OF COPIES FROM MICROFILMS 151. X QUALITATIVE CONTROL, RECORDING AND STORAGE OF MICROPHOTOCOPIES 167. APPENDIX 174. BIBLIOGRAPHY 178. THE BOOK DEALS WITH PRODUCTION AND UTILIZATION OF MICROPHOTOCOPIES OF MAPS AND DRAWINGS... THE BOOK PRESENTS NEW METHODS FOR EVALUATION OF QUALITY OF THE PHOTOGRAPH AND AN ANALYSIS OF TECHNOLOGICAL PROCESSES IN MICROPHOTOREPRODUCTION OF MAPS AND DRAWINGS, AS WELL AS PRODUCTION OF COPIES FROM MICROFILMS.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--EFFECT OF DIBORANE ON HUMIC ACIDS -U-

AUTHOR--MAKSIMOV, O.B., KULICHKOVA, V.A., GLEBKO, L.I.

COUNTRY OF INFO--USSR

SOURCE--KHIM. TVERD. TOPL. 1970, (1), 14-17

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DIBORANE, TETRAHYDROFURAN, QUINONE, WOOD PRODUCT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/2045 STEP NO--UR/0467/70/000/001/0014/0017

CIRC ACCESSION NO--AP0109977

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0109977

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLY. OF HUMIC ACIDS (I) IN TETRAHYDROFURAN STRONGLY DECREASES DURING THE REACTION WITH DIBORANE (II). THE REMAINING I HAS A CHARACTER OF A NONAROMATIC ALC. THE REACTION OF II WITH I C:O GROUPS NEEDS GREATER THAN 15 HR, WITH OTHER C:O GROUPS GREATER THAN 30 DAYS. THE DEGREE OF PARTICIPATION OF QUINONE GROUPS IN THE REDN. COULD NOT BE DETD.

UNCLASSIFIED

USSR

UDC 621.791.052:620.1.001.4:669.788

MAKSIMOV, P. K., Engineer, MATKHANOV, V. N., MOROZ, V. G., Candidates of Technical Sciences, and ROSSINEVICH, L. I., Engineer

"Study of the Efficiency of Welded Joints Between Dissilimar Steels (12KhlMF and Kh5ML) in a Medium of Hydrogen"

Moscow, Khimicheskoye i Neftyanoye Mashinostroyeniye, No 11, Nov 70, pp 25-27

Abstract: This article presents the results of an investigation of the effects of hydrogen on the metal in the area of a welded joint between 12KhlMf and Kh5ML steels. The investigations were performed using specimens which were held in an autoclave at 570°C under a hydrostatic pressure of technical hydrogen from 100 to 300 kg/cm^2. The temperature used in the experiments was 570 $\pm$ 10°C. The experiments showed that whereas holding under a 90 kg/cm^2 hydrogen pressure at 570°C for various times up to 4,000 hours had little effect on mechanical properties, holding at 273 kg/cm^2 hydrogen pressure resulted in the development of a tendency to brittle rupture, primarily along the line of the welded seam. Notch-sensitivity of the metal was increased in all cases. No noticeable changes in the structure of the metal were discovered. However, in all cases the exposure to hydrogen resulted in slight surface decarburation along the seam.

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AA0040761 MAKSIMOV P.A. UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 1-70.

241094 CHROMATOGRAPH for gas impurities analysis, consisting of the enrichment column unit; measuring unit with a recording instrument; thermal conduction detector; recording potentiometer and a power pack with a control unit. The enrichment column unit comprises an electric motor with a drive electric heater; chromatographic column; a liquid nitrogen tank. This unit serves to enrich and separate the analysed impurities. The measurement unit records the isolated impurities, and the potentiometer records the analysis results.

Gas from the tested cylinder (10) flows through a reducing valve (11), input adjusting valve (12) and rotameter (13) to the detector comparator cell. The gas pressure is controlled by a pressure gauge at the reducing valve. Then the gas flows to the chromatographic column and from there to the detector working chamber and through the outlet control valve (14) escapes into the air. A gas meter can be placed after the outlet valve. The control valve (15) is used for blowing out. The

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residual pressure is controlled by the pressure gauge (16). All gas pipes are metal capillary tubes, Some of them are flexible.

The chromatographic column is in form of a coiled copper tube filled with a sorbent, e.g. with molecular sieves 13X. The column can be moved from a liquid nitrogen bath to a heater and back again. Thus a variable temperature field from -196 to 300°C moves along the sorbent layer.

2.1.64 as 873985/26-25. GENKIN,Yu.M.et alia. EXPERIMENTAL FACTORY OF THE INST. OF NATURAL GAS. (12.8.69.) Bul 13/1.4.69. Class 421. Int.Cl.G 01n.

AUTHORS: Genkin, Yu. M; Shevelev, B. P.; Sidorov, A. P.; Podol'skaya, Ye. V.; Maksimov, P. K.; and Estrin, V. N.

Opytnyy Zavod Vsesoyuznogo Nauchno - Issledovatel'skogo Instituta Prirodnogo Gaza

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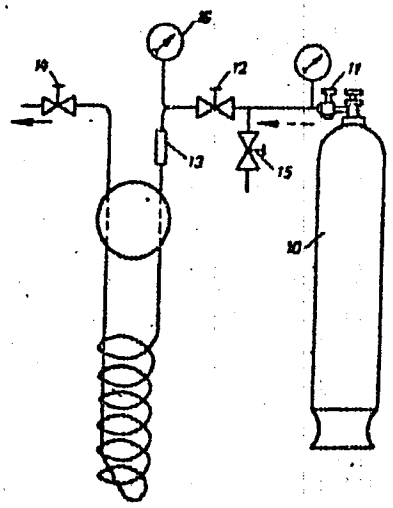

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1/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--THE EXPERIENCE IN THE TREATMENT OF PANARITIUM -U-

AUTHOR--MAKSIMOV, P.M.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 6, PP 115-117

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SKIN DISEASE, SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1786 STEP NO--UR/0531/70/000/006/0115/0117

CIRC ACCESSION NO--AP0129154

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0129154

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TREATMENT OF PANARITIUM IS DISCUSSED. THE AUTHOR DISCUSSES THE PRINCIPLES OF TREATMENT AND GENERAL REQUIREMENTS TO THE OPERATION IN PANARITIUM: TYPES OF ANESTHESIA, THE IMPORTANCE OF TEMPORARY EXSANGUINATION; THE OPERATIVE TECHNIQUE OF SUBCUTANEOUS PANARICIUM, THE TREATMENT OF BONE PANARICIUM, THE POSTOPERATIVE PERIOD. PERSISTENT IMPROVEMENT OF THE SURGICAL TREATMENT OF PANARITIUM MADE IT POSSIBLE TO SHORTEN THE TERM OF ITS TREATMENT AND ALMOST COMPLETELY ELIMINATED THE TRANSITION OF SUBCUTANEOUS FORMS INTO OSTEOMYELITITIS OF THE NAIL PHALANX.

UNCLASSIFIED

USSR

AKHMANOV, S. A., KOVRIGIN, A. I., MAKSIMOV, S. A., and OGLUZDIN, V. YE., Moscow State University imeni M. V. Lomonosov

"Dispersion of Resonant Nonlinear Susceptibility in Potassium Vapors"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 4, 20 Feb 72, pp 186-191

Abstract: The article describes results of an experimental study of the dispersion of nonlinear susceptibility of potassium vapors near the transitions $4S_{1/2} - 4P_{3/2}$ ($\nu_{01} = 13043$ cm^{-1}) and $4S_{1/2} - 4P_{1/2}$ ($\nu_{02} = 12985$ cm^{-1}). The use of a frequency-tunable, high-power pulse, parametric light oscillator as the source for the observation of self-modulation, self-focusing, and self-defocusing effects made it possible for the first time to trace the dispersion of the modulus and sign of nonlinear susceptibility in the entire frequency range $\nu = \nu_{01}$, $\nu_{01} > \nu > \nu_{02}$, $\nu < \nu_{02}$. The strong effect of nonlinearity saturation and group velocity dispersions was pronounced in the experiments.

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1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--QUANTITATIVE DETERMINATION OF ISOPROPYL ALCOHOL AND WATER IN A PETROLEUM PRODUCT BY MEASURING THE DIELECTRIC CONSTANT AND ELECTRICAL

AUTHOR-(03)-SADYKHOV, I.D., MAKSIMOV, S.I., ZEYNALOV, A.YA.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (2), 43

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--ELECTRICAL CONDUCTIVITY, PROPANOL, ISOMER, DIELECTRIC CONSTANT, UREA, PETROLEUM DEWAXING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1512 STEP NO--UR/0318/70/000/002/0043/0043

CIRC ACCESSION NO--AP0118499

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118499

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RAPID DETN., SUITABLE FOR LAB. AND CONTINUOUS ATOMATIC ANALYZERS, USED A TRICOMPONENT DIAGRAM BASED ON THE DIFFERENT DIELEC. CONST. AND COND. OF EACH OF THE STREAM COMPONENTS, AND WAS APPLIED TO UREA DEWAXING OF PETROLEUM PRODUCTS.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910013-2"

Acc. Nr: AP0051917 Ref. Code: UR0475

PRIMARY SOURCE: Vrachebnoye Delo, 1970, Nr 2, pp35-37

ADRENAL CORTEX ACTIVITY IN OLD AGED PERSONS AND CHANGES OF ITS FUNCTION UNDER THE EFFECT OF CARNOSINE AND VITAMIN B_{15}

S. V. Maksimov, L. P. Motova and A. I. Laskavaya (Kharkov)

A study of 59 persons (age: 60—87 years) indicates that old aged subjects show a weakened adrenal cortex function, though the reserves of corticoid function to administration of ACTH is preserved.

Use of carnosine exerts a stimulating effect on the functional activity of the adrenal cortex.

Vitamin B_{15} exerts a stimulating effect on the functional activity of the adrenal cortex and also regulates the corticoid activity in old aged persons.

REEL/FRAME
19820400

USSR UDC 616.988.75+616.988-06:616.981.25]-06:616.127-092.9

MAKSIMOV, V. A., BALYABIN, A. A., DYGIN, V. P., PERVOMAYSKIY, A. G., and TOPLENINOVA, K. A., Chairs of Faculty Therapy, Microbiology and Pathological Anatomy, Military Medical Academy imeni S. M. Kirov, Leningrad

"Myocardial Lesions in Experimental Influenza and Mixed (Viral-Staphylococcal Infection"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1971, pp 21-25

Abstract: EKG examination of mice several days after intranasal infection with influenza A1 virus revealed pronounced bradycardia, marked slowing of intraventricular conduction, lengthening of electric systole, and deviation of the electric axis of the heart to the right. Histological study of the myocardium showed evidence of circulatory disorders, edema of connective tissue, and degenerative changes in the muscle fibers. Influenza combined with staphylococcal infection produced more severe degenerative and inflammatory changes in the myocardium. Similar changes occurred when staphylococcal infection preceded influenza.
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MAKSIMOV, V. A., et al., Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1971, pp 21-25

In the 3rd week of the mixed infection, antibodies to the heart were found in the serum of several animals whose EKG's showed substantial changes caused by inflammatory and sclerotic phenomena in the myocardium. This suggests that autoimmune mechanisms may be involved in the myocardial lesions resulting from mixed influenza and staphylococcal infection.

USSR UDC 582.26:581.1

MAKSIMOV, V. A., Institute of Botany, Academy of Sciences Ukrainian SSR, Kiev

"Photosynthesis and Productivity of the Green Alga Scenedesmus acuminatus (Lagerh.) Chod. Cultured Under Various Conditions of Phosphorus Nutrition"

Kiev, Fiziologiya i Biokhimiya Kul'turnykh Rasteniy, Vol 2, No 5, Sep/Oct 70, pp 548-552

Abstract: Scenedesmus acuminatus was cultured in Krauss nutrient medium containing various amounts of phosphorus (275.52 mg/l, 137.76 mg/l, and 13.78 mg/l HPO_4^{2-}. In some of the experiments, chlorine was used instead of phosphorus. The increase in the number of cells and the accumulation of dry mass were virtually the same throughout the growth period, regardless of the amount of phosphorus used. When chlorine was substituted for phosphorus, cell multiplication and the increase in dry mass were inhibited, and after cultivation for 30 to 40 days the cells ceased to grow and the content of dry mass decreased even more. The intensity of photosynthesis in relation to the phosphorus concentration corresponded to shifts in the content of dry mass. The beneficial effect of phosphorus on algal growth and multiplication is attributed to the fact that the element participes in:

USSR

MAKSIMOV, V. A., Fiziologiya i Biokhimiya Kul'turnykh Rasteniy, Vol 2, No 5, Sep/Oct 70, pp 548-552

photosynthesis; respiration; activation of enzyme systems; synthesis of proteins, carbohydrates, and lipids; and the energy processes of cells.

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USSR

UDC 669.275'295'738

[redacted], and SHAMRAY, F. I., Moscow

"Phase Diagram of the System W-Ti-Si"

Moscow, Izvestiya Akademii Nauk SSR, Metally, No 1, Jan-Feb 1970, pp 197-201

Abstract: A study was made of the system W-Ti-Si by thermal, microstructural, x-ray, and phase analysis and hardness and microhardness measurements. The binary phase diagrams of systems Ti-Si and W-Si were investigated. It was verified that compound Ti_3Si is formed in the system Ti-Si at 1170°C after peritectoid reaction, and in the system W-Si, silicide W_5Si_3 melts congruently at a temperature ~ 2330° C. The quasi-binary sections W_5Si_3-Ti_5Si_3, WSi_2-$TiSi_2$, and W-Ti_5Si_3, the surface liquidus, and isothermal sections of the system W-Ti-Si at 800, 1000 and 1200° C are shown.

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USSR

UDC 620.17:669.295'27'78

MAKSIMOV, V. A. and SHAMRAY, F. I.

"Properties of Titanium Alloys with Tungsten and Silicon"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 2, 1970, pp 69-70

Abstract: An investigation was made of certain properties of alloys within the limits of ternary α- and β-solid solutions. The physical properties of some alloys are tabulated, and microstructural photographs of titanium alloys with tungsten and silicon are presented for various heat treatments. It is concluded that the introduction of tungsten and silicon into the α-solid solution of titanium increases the strength by 10-20 kg/mm^2 while preserving high plasticity. When hardening the alloys from the β-solid solution region, a metastable α'-phase is formed. With an increase in tungsten content to 4.8% the strength of the alloys increases sharply and reaches 93 kg/mm^2. Alloys hardened from the two-phase α + β region have lower strength than those hardened from the β-region; however, their plasticity is higher.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201910013-2"

1/2 040 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--PROPERTIES OF TITANIUM ALLOYS WITH TUNGSTEN AND SILICON -U-

AUTHOR-(02)-MAKSIMOV, V.A., SHAMRAY, F.I.

COUNTRY OF INFO--USSR

SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (2), 69-70

DATE PUBLISHED--------70

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

TOPIC TAGS--TITANIUM ALLOY, TUNGSTEN CONTAINING ALLOY, SILICON CONTAINING ALLOY, METAL MELTING, METAL ROLLING, HELIUM, TENSILE STRENGTH, PLASTICITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1286 STEP NO--UR/0129/70/000/002/0069/0070

CIRC ACCESSION NO--AP0106067

UNCLASSIFIED

2/2 040 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0106067

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALLOYS (4) CONTG. TI 99.47, 99.44, 97.97, AND 94.75; W 0.35, 0.5, 2.0, 4.8; AND SI 0.18, 0.06, 0.03, AND 0.45PERCENT (I, II, III, AND IV, RESP.) WERE MELTED IN AN ARC FURNACE WITH NONCONSUMABLE ELECTRODE IN HE. PARTS OF THE INGOTS WERE ROLLED AT 800DEGREES AND OTHERS WERE FORGED AT 800DEGREES WITH 50-60PERCENT. DEFORMATION. THE SPECIMENS WERE CUT FROM RODS AND SHEETS AND ANNEALED AT 1000DEGREES-25 HR PLUS 800DEGREES-105 HR, AND QUENCHED IN WATER FROM 1000 OR 800DEGREES. SOME OF THEM WERE ADDNL. ANNEALED AT 800-50 PLUS 600DEGREES-100 HR AND QUENCHED FROM 600DEGREES. THE RESULTS SHOWED THAT ALLOYING OF TI WITH W AND SI MARKEDLY INCREASES ITS STRENGTH. AT QUENCHING OF THE ALLOYS FROM THE BETA REGION (1000DEGREES) THE METASTABLE ALPHA PRIME PHASE IS FORMED AND THE STRENGTH INCREASES (THE MAX. VALUE OF TENSILE STRENGTH, SIGMA UPSILON, OBTAINED WAS 99 KG-MM PRIME2 FOR THE SHEET SPECIMEN OF ALLOY IV QUENCHED FROM 1000DEGREES), BUT THE PLASTICITY IS LESS (ELONGATION, DELTA, 3.7PERCENT FOR THE SAME SPECIMEN). THE QUENCHING FROM THE (ALPHA PLUS BETA) REGION (1000DEGREES) ALSO SIGNIFICANTLY IMPROVES STRENGTH (ALTHOUGH TO LESS DEGREE) BUT THE RELATIVELY HIGH PLASTICITY IS CONSERVED. GENERALLY, THE SPECIMENS CUT FROM SHEETS SHOWED SOMEWHAT LESS PLASTICITY THAN THOSE FROM RODS, OWING TO THEIR GREATER OXION. IN THE ROLLING PROCESS.

UNCLASSIFIED

Acc. Nr: AP0050467 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: 4R 0370

93769g **Phase diagram of a tungsten-titanium-silicon system.** Maksimov, V. A.; Shamrai, F. I. (USSR). *Izv. Akad. Nauk SSSR, Metal.* 1970, (1), 197–201 (Russ). The systems were studied by thermal, x-ray, and microstructural methods. The sections studied were W_5Si_3–Ti_5Si_3, WSi_2–$TiSi_2$, (W:Si = 1:1)–TiSi, Si–(W:Ti = 1:3, 1:1, 3:1), W–Ti_5Si_3, W–$TiSi_2$, Ti–W_5Si_3, Ti–WSi_2. In Ti–Si, the compd. Ti_5Si_3 is formed by a peritectoid reaction at 1170°. The compd. Ti_5Si_3 m. 2290°, not at 2120° as indicated in literature. In the W–Si system the compd. W_5Si_3 melts congruently at 2330°, the eutectic (W) + W_5Si_3 contains 31.5 atom % Si and m. 2180°. In the W–Ti–Si system the section W_5Si_3–Ti_5Si_3 is of the quasibinary eutectic type. The eutectic (W_5Si_3) + (Ti_5Si_3) is at 2000° and a Ti_5Si_3 content of 50 mole %. In the WSi_2–$TiSi_2$ the initial components practically do not form solid solns. At a $TiSi_2$ content of 60 mole% at 1680° the ternary compd. $W_2Ti_3Si_{10}$ is formed. At 800 and 1000° the solid soln. has a region of homogeneity of ≦77 mole%. $TiSi_2$. The section W–Ti_5Si_3 is of the quasibinary eutectic type. The eutectic W + Ti_5Si_3 is formed at 2135° and 70 mole% Ti_5Si_3. The surface of the liquidus of the W–Ti–Si system consists of 9 fields of primary crystn. of the solid solns. of W, Si, Ti, and chem. compds. The isothermal section of W–Ti–Si at 800° shows that

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REEL/FRAME
19810446

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in $W_2Ti_3Si_{10}$ addnl. W and Ti are dissolved. Si is nearly not dissolved in it. The section at 1000° has the same structure as at 800°. In the section at 1200° the section $W-W_5Si_3-Ti_5Si_3-Ti$ is divided into $W-W_5Si_3-Ti_5Si_3$ and $W-Ti_5Si_3-Ti$. L. Holl

2/2

19810447

USSR

UDC 54-162.3

GINZBURG, F. L., KARANTSEVICH, T. S., and MAKSIMOV, V. F.

"The Problem of the Coprecipitation of Plutonium and Americium With a Precipitate of Barium Sulfate"

Leningrad, Radiokhimiya, Vol 15, No 4, 1973, pp 481-487

Abstract: The conditions for coprecipitation of americium and plutonium with $BaSO_4$ precipitate was investigated. It was shown that quantitative precipitation takes place from 0.001 M HNO_3 solution. Plutonium can be redissolved by treating the $BaSO_4$ precipitate with $\geq$ 1 M HNO_3 solution. Under these conditions the desorption of americium does not exceed 40-50%. Both americium and plutonium coprecipitated with $BaSO_4$ from nitrate solutions containing aluminum and lanthanum nitrates may be fully redissolved by treating the precipitate with $\geq$ 1 M HNO_3.

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1/2 011 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--APPARATUS FOR PURIFYING STEAM GAS DISCHARGES -U-

AUTHOR-(05)-MAKSIMOV, V.F., TORF, A.I., ISYANOV, L.M., PASECHNIK, S.P., LESOKHIN, V.B.

COUNTRY OF INFO--USSR

SOURCE--BUM. PROM. 1970, (2) 20-1

DATE PUBLISHED--------70

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

TOPIC TAGS--SULFUR, INDUSTRIAL FURNACE, AIR POLLUTION CONTROL, AIR PURIFICATION EQUIPMENT, STEAM BOILER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1372 STEP NO--UR/0329/70/000/002/0020/0021

CIRC ACCESSION NO--AP0107845

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--020CT70

2/2 011

CIRC ACCESSION NO--AP0107345

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WHEN THE SMELT FROM A SODA RECOVERY FURNACE IS DISSOLVED (IN WEAK WHITE LIQUOR), A CONSIDERABLE AMT. OF A MIXT. OF STEAM AND GAS IS EVOLVED. THE MIXT. IS DISCHARGED INTO THE ATM. THROUGH AN EXHAUST PIPE AND CONTAINS SOLID PARTICLES ENTRAINED BY THE FLOW, WHICH CAUSE POLLUTION. THE APP. DESCRIBED WAS DESIGNED TO PURIFY THE MIXT. FROM THE ENTRAINED PARTICLES AND ALSO FROM GASEOUS S COMPONENTS. FROM THE TANK CONTG. THE SOLN., THE STEAM GAS MIXT. GOES TO A SCRUBBER CONSISTING OF A MIXING TUBE AND A GRAVITY CONDENSATE TRAP. THE WEAK WHITE LIQUOR FROM THE CAUSTICIZATION ROOM IS PUMPED, AT 1.5-2 BARS, INTO THE LOWER CONE OF THE CONDENSATE TRAP, WHERE THE LIQUOR USED FOR SPRAYING THE MIXING TUBE ALSO COLLECTS. THE LIQUOR FED IS CONTROLLED BY VALVES, AND A DEFINITE VOL. OF WEAK WHITE LIQUOR CIRCULATES CONTINUOUSLY THROUGH THE APP. THE APP. REMOVES 95PERCENT OF THE SOLID PARTICLES, AND NEARLY 100PERCENT OF THE S COMPDS.

UNCLASSIFIED

UDC: 547.963.3

USSR

KOROTYAYEV, A. I., MAKSIMOV, V. F., ORLOV, V. G., SHIRYAYEVA, I. N., and ASTAPOV, A. A., Kuban' State Medical Institute, Krasnodar

"Unusual Changes in the DNA Content of Some Escherichia coli Strains in the Process of Growth"

Moscow, Doklady Akademii Nauk SSSR, Vol 194, No 6, 1970, pp 1433-1436

Abstract: The amount of DNA and the rate of synthesis were investigated at different stages of growth of three Escherichia coli strains, K-12S, M, and 026. The DNA content of the K-12S strain increased more than threefold at the end of the lag phase as compared with the control. The M strain differed significantly from the K-12S strain in the dynamics of DNA content. At the start of the lag phase, the M strain contained only one-half to one-third as much DNA as the K-12S strain. The E. coli 026 strain was similar to the M strain in this respect. From the start of the lag phase to the stage of logarithmic growth, the amount of DNA decreased by a factor of ~ 2.5. In K-12S, all of the chromosomes replicated completely, whereas in M and 026 the chromosomes did not replicate completely in either the original or daughter cells. As a result, the rate of DNA synthesis was lower in M and 026 than in K-12S, but these experimental results are preliminary.

1/1

USSR

SPEKTOROV, K. S., KRYLOV, Yu. V., NIKOL'SKAYA, T. V., GROMAKOVSKIY, B. M., and NICHIPOROVICH, A. A., Institute of Plant Physiology imeni K. A. Timiryazev, Academy of Sciences USSR, Moscow

"Changes in Biological and Physiological Properties of Chlorella pyrenoidosa Pringsh. 82 T Cells Cultured in High-Density Cultures at Constant Optical Density"

Moscow, Fiziologiya Rasteniy, Vol 18, No 1, Jan/Feb 71, pp 60-68

Abstract: Chlorella pyrenoidosa Pringsh. 82 T cells were cultured on Tamiya's medium with KNO as a nitrogen source. An increase in the density of the culture up to a certain level had virtually no effect on the productivity per unit of suspension volume, i.e., the system as a whole acquired the character of a "dark" leaf. At the same time, the chlorophyll content of the cells decreased while the potential capacity of their photosynthetic apparatus increased (maximum amount of CO_2 assimilated per mg of chlorophyll per hour under optimum conditions of photosynthesis), i.e., the cells making up the system acquired the character of a "light" leaf. The decrease in chlorophyll content of the cells was highly important for the phytocenosis as a whole because, despite the in-

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UDC 538.573.001.5

USSR

KLYUKIN, L.M., MAKSIMOV, V.I., STEPANOV, B.M., FABRIKOV, V.A., SHEVCHUK, E.N.

"Registration Of The Structure Of Microwave Radiation On Magnetic Film"

Radiotekhnika i elektronika, Vol XVII, No 5, May 72, pp 1114-1116

Abstract: The thermal method of recording radiation on thin magnetic film with strip domains described previously in two papers by L.M. Klyukin and others was used for registration of the structure of microwave radiation. The scheme of the device used for recording microwave radiation on magnetic film and a block diagram of the experimental equipment used for registration are shown and described. The authors thank V.P. Kuznetsov for assistance in conducting the experiment. 3 fig. 2 ref. Received by editors, 7 June 1971.

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UDC 537.591.15

USSR

VERNOV, S. N., Y'EGOROV, T. A., Y'EFIMOV, N. N., KOLOSOV, V. A., KORYAKIN, V. D., KRASIL'NIKOV, D. D., KUZ'MIN, A. I., KULAKOVSKAYA, V. P., MAKSIMOV, S. V., NESTEROVA, N. M., NIKOL'SKIY, S. I., ORLOV, V. A., SLEPTSOV, I.YE., SIZOV, V. V., KHRISTIANSEN, G. B., and SHAMSUTDINOVA, F. K.

"Preliminary Results of Recording Extensive Showers on a Recording Array in Yakutsk"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 10, Oct 71, pp 2098-2101

Abstract: Experiments are described in which attempts were made at determining the energy spectrum, composition, and anisotropy of cosmic rays within the range of energy 10^{17} to 10^{18} ev. It is desired to extend the range to cover 10^{19} ev and above. Of a particular interest are the following problems: do the rays originate within the Galaxy or in metagalactic regions, what is the direction from which they arrive, and how Cerenkov radiation produced by them is distributed within the atmosphere. The test equipment consists of 13 recording points distributed over an area of 3 km², with a central time-control point. The output spectrum was measured over a period of 29.5 hours. 82 showers were noted during that period, with the axes falling within the

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VERNOV, S. N., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 10, Oct 71, pp 2098-2101

array area. The orientation of the axis was found by the "triangulation" method, comparing the time of arrival of the showers at different recording points. An analytic expression is given in the paper for the integral output spectrum of extensive showers at sea level for the interval of N between 2×10^7 and 2×10^8. The intensity, determined with this formula, appears to be 2 to 3 times as great as recorded elsewhere. Distribution of Cerenkov light with respect to the shower axis was determined by observations conducted on clear, moonless nights. It was found to be similar to that of the primary gamma quanta, but it decayed with the distance from the axis more slowly than the amount of charged particles ($R^{-2.5}$ as against $R^{-3.3}$ for charged particles).

Examination of the energy spectrum of primary particles lead to the conclusion that the electromagnetic component is responsible for 80% of it. Dependence of primary energy on the output N was established, and on the basis of this relation the integral spectrum was computed. The coefficient connecting these two magnitudes was found to be twice as high as the one previously accepted elsewhere.

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VERNOV, S. N., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 10, Oct 71, pp 2098-2101

In the final analysis, variation of Cerenkov light at the primary particle energy of 3.6×10^{16} ev and the output (intensity) of 1.5×10^{7} particles at sea level is given, as well as the expected distribution of the nuclear components of primary rays.

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USSR UDC: 621.317.784.023(088.8)

KARPOV, R. G., GRUZDEV, S. V., OSOKIN, V. I., DUBOVOY, N. D., KROTENKO, V. I., MAKSIMOV, Yu. N.

"An SHF Power Meter"

USSR Author's Certificate No 263006, filed 30 Apr 68, published 8 Jun 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A277 P)

Translation: This Author's Certificate introduces an SHF power meter which contains a self-balancing thermistor bridge with a selective amplifier in the self-balancing circuit, and a heater for the thermistor. As a distinguishing feature of the patent, measurement precision is improved by using a high-frequency oscillator as the thermistor heating source.

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USSR

VOLKOV, N. I., ZATSIORSKIY, V. M., KRYLATYKH, Yu. G., MAKSIMOV, N. M., NEVERKOVICH, S. D., SARSANIYA, S. K., CHEREMISINOV, V. N., and SHIRKOVETS, Ye. A., State Order of Lenin Central Institute of Physical Culture

"Physiological Characteristics of Repeated Exercise Done at Different Heart Rates"

Moscow, Teoriya i Praktika Fizicheskoy Kul'tury, No 5, 1971, pp 23-28

Abstract: Lung ventilation, oxygen consumption, and release of "excess" CO_2 were measured in 3 skilled cyclists after repeated exertions on a bicycle ergometer with different lengths of work and rest periods. Each subject performed 5 variations of the experiment at 3 heart rates - 150, 165, and 180 beats/min. The periods of exertion were 1.5, 3, 7.5, 15, and 30 min. The nature of the physiological reactions to the repeated exercise varied considerably with the length of the work and rest periods. Oxygen consumption was highest when the repeated exercise was done at a heart rate of 180 beats/min with work periods of up to 3 min. Lung function was most efficient when the heart rate was over 150 beats/min and the exercise period was less than 7.5 min. Repeated exercise at 165 beats/min for about 7.5 min had the greatest effect on tissue utilization of oxygen.

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USSR

UDC: 621-398

BENIN, V. L., KIZILOV, V. U., and MAKSIMOV, V. M.

"Broad-Pulsed Modulator"

USSR Authors Certificate No 296141, filed 26 May 69, published 9 Apr 71 (from RZh-Avtomatika, telemekhanika i vychislitel'naya tekhnika, No 12, 1971, Abstract No 12A233P)

Translation: A broad-pulsed modulator contains a bistable transistorized d-c converter and is distinguished in that, for the purpose of broadening the functional possibilities of the device, it contains an additional magnetic core with a control winding, the collector and output windings of the converter both using the core.

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USSR UDC 620.17:669.295:621.791.052

GUREVICH, S. M., KORNILOV, I. I., BLASHCHUK, V. YE., VAVILOVA, V. V., and MAKSIMOV, YU. A., Institute of Metallurgy imeni A. A. Baykov

"Mechanical Properties of Welded Joints of Titanium Alloys With an Increased Oxygen Content"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 39-41

Abstract: A study was made of the effect of oxygen on the weldability of Ti-V-O and Ti-V-Al-O alloys. Results are presented from estimating the mechanical properties of the welded joints at room temperature. Alloys of 8 compositions were manufactured for the investigation. Data from the chemical and gas analysis of the initial alloys, the results of the effect of oxygen on the mechanical properties of titanium alloys with 2.5% V and 2.5% V + 2% Al at room temperature, and the results of gas analysis of the weld metal were tabulated. From the data it is concluded that the mechanical properties, including impact toughness of the

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USSR

GUREVICH, S. M., et al., Metallovedeniye i Termicheskaya Obrabotka Met. lov, No 3, 1971, pp 39-41

base metal and the welds of alloys with an oxygen content up to 0.3%, remain high. With 0.5% O in alloys od rhw Ti-V-O system the impact toughness of the weld is the same as that of the base metal. In alloys of the Ti-V-Al-O system with 0.58% O, the plasticity drops sharply as a result of the occurrence of a second phase in the structure. Some microstructural characteristics of one of the alloys are presented. Preliminary conclusions are drawn that alloys of the Ti-V-O system with 2.5% V, and the Ti-V-Al-O system with a.5% V, and the 3-3.5% Al system are less sensitive to oxygen and be welded with an oxygen content up to 0.3% in the base metal.

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USSR

UDC 577.3

KAVERZNEVA, Ye. D., MAKSIMOV, V. I., and OSIPOV, V. I., Institute of Organic Chemistry imeni N. D. Zelinskiy, Academy of Sciences USSR, Moscow

"Structural Disturbances in Lysozyme and Ribonuclease A After Gamma Irradiation in a Dry State"

Moscow, Biofizika, Vol 16, Vyp 4, Jul/Aug 71, pp 581-588

Abstract: Dry lysozyme and ribonuclease A were irradiated with 30 Mrad. Subsequent analyses of the structure and chemical properties of these substances revealed that while dry ribonuclease exhibited signs of an overall disturbance of its conformation, the tertiary structure of dry lysozyme was disturbed to a much smaller degree: its tryptophan content was reduced, but the changes were local. The severity of the deviations from the initial state was increased after dissolution and fractionation. It is concluded that ionizing irradiation of proteins in the dry state always induces certain small, primary, localized changes in the molecules, even though these changes may be difficult to detect. When the irradiated proteins are subsequently dissolved, a chain of secondary structural rearrangements takes place in the protein molecules.

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USSR

UDC: 621.372.853.2

MAKSIMOV, V. I.

"On the Problem of Mutual Coupling Between Two Ferrite Resonators in a Waveguide (Long-Range Zone)"

Moscow, Radiotekhnika i Elektronika, Vol. 16, No 6, Jun 71, pp 946-949

Abstract: Expressions are found and experimentally verified for the coupling factor between two ferrite resonators in a matched waveguide, and broadening of the curve for the ferrite resonators due to mutual losses, as functions of the parameters of the ferrite resonators, waveguide, and coordinates of location of the ferrite resonators in the waveguide. Recommendations are given on locating two ferrite resonators in a matched rectangular waveguide to guarantee a minimum or predetermined intercoupling. It is pointed out that the volumes of the ferrite resonators must be reduced as much as possible in order to minimize mutual coupling between them.

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USSR

UDC 547.665

GRINENKO, G. S., POPOVA, YE. V., MAKSIMOV, V. I., and ALEKSEYEVA, L. M.
All-Union Chemical-Pharmaceutical Scientific Research Institute

"Reactions of Metal Derivatives of Compounds Possessing a Labile Hydrogen Atom With α-Haloketones. XVIII. Reaction of Halodesoxybenzoines With Na acetoacetates"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 6, No 4, Apr 70, pp 736-739

Abstract: Reaction of α-chlorodesoxybenzoine and α-bromo-p-methyldesoxybenzoine with sodium acetoacetate gave corresponding ethyl esters of α-acetyl-β-benzoyl- and α-acetyl-β-toluylhydrocinnamic acid, m.p. 73-75° and 110-111° respectively. Both compounds are almost completely in the ketonic form. Refluxing these esters for 9 hrs with 20% sulfuric acid cyclizes them, yielding 2-methyl-3-carboethoxy-4,5-diphenylfurane, m.p. 67-68°C and 4-phenyl-5-tolylfurane, m.p. 81-83°. These compounds could be converted to free acids by alkaline hydrolysis yielding 2-methyl-4,5-diphenyl-3-furanecarboxylic acid,

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GRINENKO, G. S., et al., Zhurnal Organicheskoy Khimii, Vol 6, No 4, Apr 70, pp 736-739

m.p. 211-213° and 2-methyl-4-phenyl-5-tolyl-3-furanecarboxylic acid, m.p. 193-195°. The structures of all of the above compounds were supported by IR and PMR spectra. Cyclization occurs very easily; evidently after the esters are protonated at the carbonyl oxygen atom, the cyclization occurs analogously to cyanosubstituted compounds.

USSR UDC 621.311.42:621.316.1

GOROKHOVIR, D. I., MAKSIMOV, V. I., PARSADANYAN, V. V., TRAKHTENBERG, M. I.

"Six-Ten Kilovolt Transformer Substation for Municipal Electric Power Networks"

V sb. Tekhn. progress v elektrosnabzh. gorodov (Technical Progress in Municipal Electric Power Supply -- Collection of Works), Leningrad, Energiya Press, 1970, pp 222-225 (from RZh-Elektrotekhnika i Energetika, No 3, Mar 71, Abstract No 3Ye80)

Translation: At Kishinev, a 630 kilovolt-ampere dual-transformer substation developed on the basis of the standard design No 407-3-52 (KSK-32-630) has been introduced. This substation is designed for application in areas where there are low buildings with high load density and responsible consumers. The buses are sectionalized on the 6-10 kilovolt-ampere side. This makes it possible to execute dual-wire circuits.

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1/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--CHROMATOGRAPHY OF NATIVE AND GAMMA IRRADIATED LYSOZYMES ON DENSE GELS -U-

AUTHOR-(02)-MAKSIMOV, V.I., MOSIN, V.A.

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CHROMATOGRAPHIC METHOD HAS BEEN DEVELOPED FOR THE ISOLATION OF THE MOST HEAVILY DAMAGED PART (FRACTION I) OF GAMMA IRRADIATED LYSOZYME. THIS METHOD CUTS SECONDARY CHANGES OF PROTEIN STRUCTURE OCCURRING AFTER IRRADIATION TO A MINIMUM. THE CHROMATOGRAPHY OF NATIVE AND GAMMA IRRADIATED LYSOZYMES ON GELS OF HIGH DENSITY (SEPHADEX G-25, BIO GELS P-6 AND P-10) WAS INVESTIGATED AND THE CHARACTERISTICS OF CHROMATOGRAPHY ESTABLISHED, VIZ., 2 TYPES OF ADSORPTION, RELATIVE LARGE CAPACITY OF ADSORPTION, CONCENTRATION DEPENDENCE FOR ELUTION VOLUMES, ZONAL ASYMMETRY, AND THE EXISTENCE OF JOHNSON OGSTON EFFECT. IT IS SUGGESTED THAT THE CHROMATOGRAPHIC ANOMALIES OF LYSOZYMES ARE DUE TO THE OSMOTIC PRESSURE OF ITS SOLUTIONS WHICH WOULD REACH A LARGE VALUE OWING TO THE DONNAN EFFECT. CHROMATOGRAPHY OF IRRADIATED AND THERMALLY DENATURED LYSOZYMES ON SEPHADEX G-75 AS COMPARED TO THAT ON SEPHADEX G-25 SHOWED SHARP DIFFERENCES. FACILITY: INST. OF ORGANIC CHEMISTRY, MOSCOW.

UNCLASSIFIED