

USSR

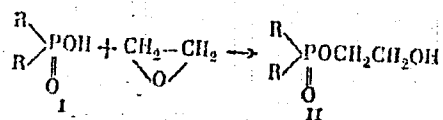
UDC 547.26'118

KARGIN, YU. N., SMIRNOV, A. N., USHCHEMKO, V. P., and KHardIN, A. P.

"Synthesis of B-Hydroxyethyl Dialkyl(diaryl)phosphinates"

Leningrad, Zhurnal Obshechey Khimii, Vol 42(104), Vyp 4, 1972, p 955

Abstract: The addition of ethylene oxide to dialkyl- or diarylphosphinic acid goes easily without a catalyst forming the title product as follows:



for R = CH₃, C₂H₅, C₆H₅. The reaction was carried out in tetrahydrofuran and dioxane solutions and without a solvent. The structure of the product was confirmed by elemental analysis, optical rotation, and IR spectra.

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c. Nr. AP 0100304

Abstracting Service:
CHEMICAL ABST.

6-70

Ref. Code
UR0181

K

116119m Temperature-independent paramagnetism in nickelocene. Zvarykina, A. V.; Karimov, Yu. S.; Leonova, E. V.; Lyubovskii, R. B. (Inst. Khim. Fiz., Moscow, USSR). *Fiz. Tverd. Tela* 1970, 12(3), 490-502 (Russ). The magnetic susceptibilities of nickelocene and 2 of its derivs. are independent of temp. at 0.1-10°K and at higher temps. obeys the Curie law. At low temps., anisotropy of susceptibility was obsd. Magnetic properties of nickelocene are explained by intramol. interaction of 2 unpaired electrons, the spin Hamiltonian of which is $DS_z^2 + g\beta(H_xS_x + H_yS_y + H_zS_z)$. The effective spin, $S = 1$ and $D/k = 43^\circ\text{K}$.
A. Libackyj

C.K.

REEL/FRAME
19841707

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USSR

UDC 616.927.7-022.37

KARIMOV, Z. K. and ABDUSAMATOV, A. G., Uzbek Institute of Epidemiology,
Microbiology and Infectious Diseases, Tashkent

"Role of Some Farm Animals and Poultry in Spreading Paratyphoid B"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1972,
pp 64-66

Abstract: The liver, spleen, gallbladder, and other organs of 122 cows, 34 chickens, and 37 swine slaughtered in the Tashkent Meat Packing Plant were examined for the possible presence of paratyphoid B. Nine cultures of *Salmonella typhi*, *S. urbana*, and *S. paratyphi B* were isolated from 4 cows, 1 chicken, and 3 swine. The cultural, biochemical, and serological properties of the cultures were similar to those isolated from sick persons. Over 100 workers in the plant were examined as chronic bacteria carriers. *S. anatum* was isolated from the stools of only 4. Since this salmonella serotype belongs to the E group, the affected workers could not have transmitted the microorganisms to the animal organs when they were brought to the laboratory for study.

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1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--MICROWAVE SPECTROSCOPIC STUDIES OF AQUEOUS SOLUTIONS OF CHROMIUM
III NITRATE AND TOLUENE SOLUTIONS OF CHROMIUM III DIETHYL
AUTHOR--(03)-VISHNEVSKAYA, G.P., KARIMOVA, A.F., LUCHKINA, S.A.
COUNTRY OF INFO--USSR
SOURCE--TEOR. EKSP. KHIM. 1970, 6(1), 128-33 K
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--EPR SPECTRUM, TEMPERATURE DEPENDENCE, SPIN LATTICE RELAXATION,
CHROMIUM COMPLEX, NITRATE, TOLUENE, ORGANIC PHOSPHATE, ORGANIC SULFUR
COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1225 STEP NO--UR/0379/70/006/001/0123/0133
CIRC ACCESSION NO--AP0128642
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128642

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EPR LINEWIDTH (ON THE SPECTROMETER JEOL, LAMBDA EQUALS 3 CM) AND NONRESONANCE PARAMAGNETIC ABSORPTION (BY THE METHOD OF HORTER'S PARALLEL FIELDS ON G-METER) OF TOLUENE SOLNS. OF CR(III) DIETHYL DITHIOPHOSPHATE (I) AND AQ. SOLNS. OF CR(NO SUB3) SUB3 (II) WERE MEASURED. FOR I, DELTAH WAS NOT DEPENDENT ON CONC. (MAX. DILN. WAS 50 TIMES). TEMP. DEPENDENCE OF DELTAH WAS STUDIED IN THE RANGE 200-423 DEGREES K. BESIDES AN INTENSIVE LINE WITH G EQUALS 1.97, A WEAK COMPLEMENTARY LINE IN THE RANGE OF WEAK FIELDS WAS OBSD. FOR 200-350 DEGREES K. TEMP. DEPENDENCE OF SPIN LATTICE RELAXATION TAU AND SPIN SPIN RELAXATION TAU SIGMA WERE STUDIED BY THE METHOD OF NONRESONANCE ABSORPTION. TAU IS SIMILAR OR EQUAL TO 10 PRIME NEGATIVE 8 SEC INCREASES WITH TEMP. AND REACHES ITS MAX. AT 270 DEGREES K FOR I, AT 320 FOR II. TAU SIGMA FOR BOTH I AND II IS OF THE ORDER 10 PRIME NEGATIVE 9 SEC AND INCREASES WITH THE TEMP. INCREASE, TAU SIGMA (I) IS GREATER THAN TAU SIGMA (II) FOR THE SAME TEMP. DEPENDENCE OF DELTAH ON TEMP. AND CONC. FOR II IS GIVEN. STARTING FROM 0.2M SOLNS. FURTHER DILNS. HAVE NO INFLUENCE ON DELTAH. THE SHIFT OF MAX. TO THE SIDE OF HIGHER TEMP. IN II IS MUCH HIGHER IN COMPARISON WITH I. ENERGY OF ACTIVATION FOR THE ROTATIONAL MOTION OF COMPLEXES WAS DETD.: E SUBROT EQUALS 2.0 KCAL-MOLE FOR I, 2.2 FOR II. E SUBVISC CHARACTERIZING THE TEMP. DEPENDENCE OF VISCOSITY, IS 4 AND 2.2 KCAL-MOLE FOR I AND II, RESP.

FACILITY: KAZAN. FIZ.-TEKH. INST., KAZAN, USSR.

UNCLASSIFIED

USSR

UDC: 8.74

KARIMOVA, D. D.

"Converting the Indices of Sub-Blocks to an Ordered Sequence of Variables With Markers"

V sb. Vopr. vychisl. i prikl. mat. (Problems of Computational and Applied Mathematics--collection of works), vyp. 5, Tashkent, 1971, pp 73-76 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V1015)

Translation: An algorithm is given for conversion of multicomponent indices of sub-blocks allowed by the syntax of the ALGEX algorithmic language for describing economic problems, to single-component variables with markers syntactically permitted by the ALGOL-60 language. The highest rank is the second in the given indices of sub-blocks.

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USSR

KARIMOVA, D. D.

UDC: 681.3.06:51

"One of the Methods of Translating Component Units of Information in the ALGEC Algorithmic Language"

V sb. Vopr. vychisl. i prikl. mat. (Problems of Computational and Applied Mathematics--collection of works), vyp. 4, Tashkent, 1971, pp 147-155 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V944)

Translation: A method is described for representing descriptions of composite quantities and composite variables, single-component and multi-component, in the ALGEC algorithmic language through descriptions of types, data blocks and the corresponding variables allowed by the ALCOL-60 language. In the given method, a list of names is introduced into the translator for conversion of the program written in the ALGEC language to a program in ALGOL when processing descriptions of the components and other quantities appearing in the problem to be translated, while the descriptions of types and data blocks are transferred to the ALGOL program without change. A "description" line is entered in the list of names for each

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USSR

KARIMOVA, D. D., Vopr. vychisl. i prikl. mat., vyp. 4, Tashkent, 1971, pp 147-155

identifier of a composite quantity during translation of its description. This line contains information on the address of the source of information for elements of the structure of the composite quantity x (relative to the given line), on the number n of information lines for the given composite quantity (i. e. the number of identifiers in its structure), on the dimensionality r and the address of the source of information, on the limiting pairs for the composite data blocks x_1 , on entry ($c=1$) or non-entry ($c=0$), into the composite quantity, and on the level L of the composite quantity considered. V. Mikheyev.

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UDC 681.3.06.51

KARIMOVA, D. V.

"Section for Processing of Assignment Operators in the TA-V Translator"

Vopr. Vychisl. I Prikl. Mat., [Problems of Computer and Applied Mathematics], No 1, Tashkent, 1970, pp 49-55, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V643 by V. Mikheyev).

Translation: The operation of the section which processes assignment operators in the TA-V translator, converting the program written in ALGOL to "Vesna" computer code is described. This section assigns values to expressions in the right portion with variables from the list in the left portion (the left portion has the type "integer" while the right portion has the type "real" or has no type) and, when necessary, calls the entier converting function (RE + 0.5). The result of the expression is sent back to the RE word.

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UDC 681.3.06:51

KARIMOVA, D. V.

"Section for Processing Cycle Operators in the TA-V Translator"

Vopr. Vychisl. I Prikl. Mat., [Problems of Computer and Applied Mathematics],
No 1, Tashkent, 1970, pp 41-48, (Translated from Referativnyy Zhurnal
Kibernetika, No 5, 1971, Abstract No. 5V644 by V. Mikheyev).

Translation: The section for processing cycle operators of the TA-V translator
is described, developed at the Institute of Applied Mathematics, Academy of
Sciences USSR, and operated at the Hydrometeorological Center of the USSR.
The characteristic features of this section are noted.

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UDC 681.3.06:51

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UDC 591.461.2:612.014.43

SULTANOV, F. F., BABAYEVA, A. Kh., and KARIMOVA, R. J. Institute of
Physiology and Experimental Pathology of Arid Zones, Academy of Sciences
Turkmen SSR

"Energy Metabolism in the Kidneys of Albino Rats Exposed to Extreme Heat"

Ashkhabad, Izvestiya Akademii Nauk Turkmenskoy SSR, Seriya Biologicheskikh
Nauk, No 5, 1970, pp 52-56

Abstract: Albino rats were kept in an overheated chamber (45°C) and the
changes in their kidney function studied. Aerobic glycolysis in solutions
of the cortical and medullary layers from the kidneys was accelerated. The
oxidative phosphorylation coefficient P/O in the mitochondria decreased;
this may result in a reduction of ATP production. Likewise, the amount of
mitochondrial protein in the kidneys per gram of raw tissue weight decreased.

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UDC 576.856.72.095.6+576.856.72.097.2.083.3

ADUYEVA, T. P., CHERNUKHA, Yu. G., and KARIMOVA, Z. Kh., Institute of Epidemiology and Microbiology imeni Gamal'ya, Academy of Medical Sciences USSR

"Multiplication and Antigenic Activity of Leptospirae in Various Nutrient Media"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 11, 1971, pp 146-147

Abstract: Eighteen strains of Leptospirae belonging to 14 different serological groups (parasitic and saprophytic) were grown in six different media: Fervoort-Vol'f, Kortgof, Lyubashenko, GNKI (State Control Institute of Veterinary Preparations), and Beisman's synthetic medium, to which bovine albumin was added. Proliferation of cells was greatest in the synthetic medium with bovine albumin. Rabbits were used for determination of the antigenic activity of strain No 3705 and Pomona strain after 12 passages in the above media and in Terskis' medium. The greatest rise in antibody concentration was induced by strains grown in Terskis' medium. It is concluded that sera are still the best media for storing Leptospirae.

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USSR

UDC 547.26'118

PUDOVIK, A. N., GUR'YANOVA, I. V., BURNAYEVA, L. A., and KARIMULLINA, E. Kh.

"Reaction of Glycolophosphate Esters and Glycolphosphoramides With α -Ketocarboxylate Esters"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 1978-1980

Abstract: It is shown that pyruvate esters and glyoxylates treated with glycolophosphorates and glycolophosphamides form spiro-1,3,2-dioxaphospholanes. The relatively low yield of the new product (50-65%) is attributed to the formation of oxidation products, i.e. cyclic phosphates. Spiro-1,3,2-dioxaphospholanes are dense liquids which are soluble in organic solvents. Yields, boiling and melting points and formulas of the new compounds are given.

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UDC: 621.762:669.018.25(088.8)

MOLOKHOV, I. F., STRAKHOV, N. S., CHEPURKIN, Yu. N., KARINKIN, P. M., TUNEV, I. G.

"Method of Manufacture of Metal Ceramic Products"

USSR Author's Certificate Number 360151, Filed 24/02/71, Published 15/01/73
(Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G440P, by S. Krivonosova).

Translation: In order to increase the wear resistance (by 1.5-6 times) of hard alloy products, they are annealed after sintering in a medium of quartz sand at 800-900°, then normalized at 900-950°. The method has been tested under production conditions, provides for an increase in wear resistance of hard alloy tools working under conditions of vibration during cutting of channels and drilling of ZhSBK alloy.

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USSR

UDC 534.252-8

KARINSKIY, S.S.

"Electromechanical Transducer For Excitation And Reception Of Torsional Ultrasonic Oscillations"

USSR Author's Certificate No 297401, filed 17 Nov 65, published 26 June 71
(from RZh:Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2A477P)

Translation: A transducer is proposed which contains a waveguide on which is mounted two piezoceramic shift elements with electrodes on the lateral surface. With the object of increasing the working frequency, assuring reliable matching of the waveguide with the transducer, and improving construction, the piezoceramic shift elements are situated in a plane perpendicular to the axis of the acoustic line, parallel to one another and so that the direction of the polarization vectors in the upper and lower elements differ by 180° . The transducer makes it possible by simple means to obtain a delay of the electrical signals and can be used in radar, and in communication and computer techniques. 3 ill.
L.K.

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PHYSICS
Acoustics

USSR

UDC 535.225:534.232.8

GINGIS, A. D., DOKHIKYAN, R. G., KARINSKIY, S. S., and MOROSOV, A. I.

"Measurement of Ultrasonic Wave Attenuation and Photoelastic Constants for Cubic CaF_2 and BaF_2 Crystals"

Moscow, Izvestiya Akademii Nauk SSR, Seriya Fizicheskaya, Vol 35, No 5, May 71, pp 984-986

Abstract: The article describes results of a study of the dependence of longitudinal ultrasonic wave absorption in CaF_2 and BaF_2 crystals on frequency, as well as the photoelastic constants of BaF_2 single crystals. The results indicate the following: 1) BaF_2 and CaF_2 materials are promising for use in ultrasonic devices owing to low ultrasonic wave attenuation and the possibility of fabricating large-size crystals; 2) BaF_2 single crystals can be used as an acoustic line for ultrasonic light modulators over a wide range of light waves.

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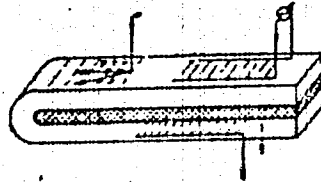
UDC 621.374.5

KARINSKIY, S. S., KOMAROV, V. G., MONDIKOV, V. D., GOLIKOV, M. I., ROMANOV, L. N., KOMAROVA, I. S., KRISTININA, L. I.

"An Integrated Ultrasonic Single-Crystal Delay Line"

Moscow, Otkrytiya, izobreneniya, promyshlennyye obraztsy, tovarnyye znaki, No 15, May 71, Author's Certificate No 302808, Division H, filed 22 Sep 69, published 28 Apr 71

Translation: This Author's Certificate introduces an integrated ultrasonic single-crystal delay line for surface waves. The device contains a piezo-electric single-crystal acoustic line with a slot on one end which is filled with an absorber. The device also contains lattice-type two-phase receiving and transmitting converters. As a distinguishing feature of the patent, the delay time is increased by locating the converters on the upper and lower surfaces of the acoustic line, and by rounding the other end of the line with a radius of at least ten ultrasonic resonance wavelengths.



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USSR

UDC: 621.374.5(088.8)

KEL'ZON, V. S., KARINSKIY, S. S., UL'YANOV, G. K.

"An Ultrasonic Surface-Wave Delay Line"

USSR Author's Certificate No 262951, filed 4 Jan 61, published 3 Jun 70
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 110236 P)

Translation: This Author's Certificate introduces an ultrasonic surface-wave delay line with an acoustic line made from an X-cut quartz plate with continuous control of delay time. The device is equipped with transducers which convert an electric signal to acoustic and vice versa. To extend the range of the bandwidth and simplify construction of the delay line, the unit makes use of matching transformers, a movable reception transducer and an absorbing substrate made from a material such as pitch which cuts down the level of parasitic signals.

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USSR

UDC 669.295.018.9

MOROZOV, YE. I., and KARINSKIY, V. N.

"Plasma-Arc Remelting of Titanium Alloys"

Moscow, Tsvetnyye Metally, No 1, Jan 73, pp 53-55

Abstract: The advantages of plasma-arc remelting over vacuum-arc remelting with a consumable electrode are reported in which VT9 titanium alloy in lump form was used as the test material. These advantages were the possibility of remelting a lumpy, unpacked charge, controlling melting rate and holding metal in the molten state to allow additional degassing, and the use of a simpler type of vacuum equipment. Also, plasma-arc remelting in a vacuum (0.4-0.5 mm Hg) has advantages over plasma-arc melting in a slightly rarified atmosphere (75-100 mm Hg) in that there is a higher degree of degassing of the melt, the process has a higher thermal efficiency, there is less gas (argon) consumption, and low-voltage current sources can be used. It is noted that a source of oxygen contamination is from the argon, and for this reason the process of melting in a vacuum (0.4-0.5 mm Hg) helps to reduce oxide inclusions. Mechanical tests of both plasma-arc- and vacuum-arc-remelted samples of VT9 showed that plasma-arc remelting in a vacuum produced a metal with much better properties. 2 figures, 1 table, 6 bibliographic references.

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I/2 029 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--LINEARIZATION OF LIGHT CHARACTERISTIC OF INFRARED RADIATION
RECEIVERS -U-
AUTHOR-(02)-SOBOLEVA, N.F., KARIZHENSKIY, E.YA.
COUNTRY OF INFO--USSR
SOURCE--LNINGRAD, OPTIKO MEKHANICHESKAYA PROMYSHLENNOST', NO 1, JAN 70,
PP 79-80
DATE PUBLISHED----JAN70
SUBJECT AREAS--NAVIGATION
TOPIC TAGS--IR RECEIVER, LINE NARROWING, LEAD SULFIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0377 STEP NO--UR/0237/70/000/001/0079/0080
CIRC ACCESSION NO--AP0119330
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0119330

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROBLEM OF LINEARIZATION OF LIGHT CHARACTERISTIC OF INFRARED RADIATION RECEIVERS IS CONSIDERED, IN APPLICATION TO THE OPERATION OF A NONCOOLED PBS PHOTORESISTOR. A BLOC DIAGRAM OF THE EXPERIMENTAL SETUP IS PRESENTED AND DESCRIBED. A BRIDGE CIRCUIT COMPRISING DIODES WITH A GIVEN TRANSMISSION FACTOR TO BIAS VOLTAGE RATIO IS USED AS A NONLINEAR ELEMENT. THE PROBLEM IS SOLVED BY OBTAINING A CONTROL SIGNAL, WHICH WITH VARIATION OF IRRADIATION WOULD AFFECT THE BRIDGE BIAS VOLTAGE IN SUCH A WAY THAT THE TRANSMISSION FACTOR OF THE ENTIRE SYSTEM WOULD REMAIN CONSTANT. THUS THE CORRECTION OF THE LIGHT CHARACTERISTIC OF THE RECEIVER IS ACCOMPLISHED AUTOMATICALLY BY VARYING THE TRANSMISSION FACTOR OF THE NONLINEAR BRIDGE TYPE ELEMENT. THE RESULTS ATTEST THE POSSIBILITY OF LINEARIZATION OF LIGHT CHARACTERISTICS OF INFRARED RADIATION RECEIVERS. THE CIRCUIT BEING COMPARATIVELY SIMPLE MAY BE RECOMMENDED FOR USE IN THE INFRARED INSTRUMENTATION, WHERE THE ELIMINATION OF DISTORTIONS RELATED TO NONLINEARITY OF LIGHT CHARACTERISTIC IS NECESSARY.

UNCLASSIFIED

USSR

UDC 621.384.326.22:528.7

KARIZHENSKIY, Ye. Ya., MIROSHNIKOV, M. M., Doctor of Sciences, SHILIN, B. V.,
Candidate of Sciences

"Selection of Optimal Parameters of a Heat Sensor for the Study of Natural
Resources from the Air"

Optiko Mekhanicheskaya Promyshlennost', No 12, 1972, pp 18-20.

Abstract: The expediency of using heat-sensitive television with two signal paths differing in their threshold of sensitivity and resolving capacity for the study of natural resources is analyzed. It is concluded that it is desirable to have two channels, one with high spatial resolution (5 to 7 angular minutes), the other with lower resolution (50 to 70 angular minutes). The former will be the primary channel used to study the natural resources, the latter will be used only to solve certain methodological problems. There is no need, therefore, to perform continuous simultaneous recording of both channels, which simplifies the hardware problem. The operator can note areas for repeated measurements using the second channel. It should be possible to perform these measurements by simply switching the second channel to the same photographic recording device used to record the first channel.

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KARIZHENSKIY Ye. Ya.

geology

Abstracts of Scientific Articles

Infrared Aerial Survey for Studying Ice Cover

JPRS 572135
15 June 1971

Most aerial methods have great limitations in solving the fundamental problem of determining the age of ice because only one criterion can be used, ice color. This problem is solved by the use of an infrared aerial survey. It is based on the reflectivity of thermal radiation in the range 1.6-14 μ m where there are two atmospheric windows of transparency at 1.6-5.3 and 7.0-14 μ m. It is better to use the latter, but the first of these ranges gives entirely satisfactory results. In 1967 the Aerial Methods Laboratory of the Ministry of Geology executed a small infrared survey of the ice cover with a scanning system carried aboard an IL-2 aircraft with reflectivity of thermal radiation in the first atmospheric window. This article gives specific examples of how the IR images at a scale of approximately 1:20,000-1:15,000 can be used in interpreting ice conditions. The results indicated that an infrared survey is an excellent method for studying the ice cover and facilitating the copying of vessels through the ice. An IR survey should be particularly valuable in combination with standard aerial photography and visual observation. It is effective in estimating the age of ice, the thickness of winter ice (up to 1.5 m or somewhat more), and in detecting leads and cracks which have been masked by snow and hummocks which are only slightly frozen together. An IR survey can be employed in reliable determination of thawed sectors in ice fields, whereas if they are covered by snow or ice they are virtually undetectable in an ordinary aerial survey.

(Abstract: "Infrared Aerial Survey for Studying the Ice Cover," by Ye. Ya. Karizhenkiy, Aerial Methods Laboratory, USSR Ministry of Geology, *Otkrytiya*, No. 5, 1970, pp 82-89?)
R 112 C

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S/019/62/000/003/015/061
A154/A126

9.2560

AUTHOR: Karizhenskiy, Ye.Ya.

TITLE: A time selector

PERIODICAL: Byulleten' izobreteniy, no. 5, 1962, 28

TEXT: Class 21a¹, 36. No. 145254 (733049/26 of June 2, 1961). A time selector for passing a signal of a given level in an interval of time which is determined by the duration of a strobe pulse, built around two transistors which are connected in a balancing circuit and whose emitters are connected to a common resistance, the signal being selected and the strobe pulse being sent to the bases of the transistors, distinguished by the fact that, in order to simplify the selector circuit and improve the shape of the output signal, the collector load of one of the triodes, from which the useful signal is taken, is made in the form of a potentiometer, whose cursor is connected to the source of collector voltage through a second potentiometer connected with the collector of the second transistor, and through a capacitance. X

Card 1/1

KARIZHENSKIY, YE., YA.

INFRARED SCANNING /
Aerial photography

KARIZHENSKIY YE. YA.

infrared scanning aerial photography

UDC: 621.304.326.22.523.7

HEAT-SENSING BEING THE STUDY OF NATURAL RESOURCES FROM THE AIR

Article by Ye. Ye. Karizhenskiy, Ye. Ya. Karizhenskaya, B. V. Sulin and N. A. Gusev; Leningrad, Institute of Aerial Photography, Leningrad, USSR; for publication in *Optics*, No. 1, 1971, pp. 5-7.

Results of experimental studies conducted by the authors in 1967 demonstrated the high potentiality involved in utilizing infrared scanning equipment for various meteorological seasons. The data presented in this article indicate the necessity of the most rapid adoption of infrared aerial photography in the national economy.

As is known, the various types of aerial photography include the most rapid methods of studying natural resources. At the present time, the most rapid method in the development of aerial methods is the expansion of the range of electromagnetic spectrum being recorded from the air. This includes especially the infrared aerial photography studying the natural heat radiation from the Earth's surface in the spectral ranges of 1.5-7.5 microns and 7.5-14 microns. Since a great number of natural and man-made objects and phenomena accompanied by temperature variations, the possibility of a rapid determination of temperature and temperature differences in the spectral elements permits us to obtain uniquely valuable information concerning natural resources.

In distinction from the aerial cameras that the range of the recorded in recorded directly on film, in the IR (infrared) systems in use for studying natural resources of a locality, the live video infrared radiation is first transmitted to electronic signals, which after the appropriate processing, may be used for recording the data on photographic film. In these studies, the sensing element (or series of elements) of a photodetector receives the irradiation in a small solid angle from a small area corresponding to the projection of this element onto a locality. Therefore, for obtaining an image of a locality, it is necessary to conduct scanning by some technique a spatial scanning of the field of view. Usually, the scanning is accomplished by winding a polygonal mirror and turning the equipment mounting unit.

UDC: 621.304.326.22.523.7

USSR

UDC 771.531.3:621.384.326.22

KARIZHENSKIY, Ye. Ya., SHIROBOKOV, A. M., LEVINA, L. A.

"Investigation of Exactness of the Intermittent Motion of a Photographic Film in the Photographic Recording System of an Aircraft Television Camera"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 12, December 1971, pp 7-10

Abstract: The article deals with the possibility of a gate mechanism of the electromechanical type, and makes a recommendation concerning its employment, in order to provide the intermittent motion of a photographic film in the photorecording system of aircraft television cameras designed for geologic mapping and for the detection of fires. The exactitude of such a system is investigated. It is found that in the frequency range of 5-25 gates/sec, the relative gate-recording error of the gate mechanism does not exceed 5% with a probability of 0.9. Some distortions on the photographic film, introduced by the gate-recording error, are entirely permissible for the indicated case of the employment of aircraft television cameras. The use of gate mechanism in the photorecording devices of aircraft television cameras considerably simplifies their system and design. 3 figures. 2 tables. 4 references.

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USSR

UDC 612.014.464+612.281

BRESLAV, I. S., KARIYEV, N. N., and SHMELEVA, A. M., Institute of Physiology
imeni I. P. Pavlov, Academy of Sciences USSR, Leningrad

"Voluntary Control of Breathing in Altered Gaseous Media"

Leningrad, Fiziologicheskii Zhurnal SSSR, No 12, 1971, pp 1,768-1,773

Abstract: Two series of experiments were performed to determine the effect of the volitional factor on the respiratory reactions of man to hypoxia and hypercapnia. One series involved a level of lung ventilation normal for each person, the other an increased level of ventilation. When the subjects were verbally instructed to maintain their normal minute volume, they were able to breathe not only ordinary air and a hyperoxic mixture but also moderate hypoxic and, to a lesser degree, hypercapnic mixtures. In pressure-chamber experiments at a simulated altitude of 3,600 m, the subjects' ability to control their breathing deteriorated markedly. A study of newcomers to high mountains (Pamirs) revealed the same phenomenon as in the pressure-chamber experiments: somewhat higher oxygenation of the blood than with natural breathing and invariable disruption of the ventilation regime in response to hypoxic mixtures. Natives of the Pamirs, on the other hand, were generally able to maintain the prescribed level of ventilation; oxygen saturation of the blood with natural breathing was virtually the same as with restricted
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USSR

BRESLAV, I. S., et al., Fiziologicheskiy Zhurnal SSSR, No 12, 1971, pp 1,768-1,773

breathing and disruptions were much less frequent than in the newcomers. In the experiments with an increased level of lung ventilation requiring the inhalation of mixtures containing 3% CO₂ and different amounts of oxygen, the subjects readily tolerated both hypoxic and hypercapnic mixtures, but reported shortness of breath when inhaling ordinary air.

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- 57 -

Acc. Nr:

AP0044157

Ref. Code: UR 0244

PRIMARY SOURCE: Voprosy Pitaniya, 1970, Vol 29, Nr 1,
pp 23-28

CHARACTERIZATION OF BIOCHEMICAL SHIFTS IN EXPERIMENTAL
B₆-HYPOVITAMINOSIS

Karkalitskiy, I. M.; Karkalitskaya, G. V.; Ashikhmina, Ye. M.;
Kovrizhnykh, N. D.; Tuzova, G. P.; Plotnikova, G. F.; Berdnikov,
M. P.

Tubazid in an amount of 100 mg was administered daily intramuscularly for 7 weeks to nuria cospus to produce pyridoxine deficiency. The earliest sign of B₆-hypovitaminosis was diminished passage of 4-pyridoxine acid with the urine, whose week-wise fluctuations were of an undulating nature. The blood serum of animals with pyridoxine deficiency showed a fall of α - and β -globulins, a rise of albumins, declined activity of the aspartate-aminotransferase, unchanged activity of the alanine-aminotransferase and an increase of β -lipoproteids in the blood serum and tissues. The animals also developed fatty degeneration of the liver, kidneys and fatty infiltration of aortic walls. Furthermore, they exhibited symptoms of B₆-hypovitaminosis, such as poor appetite, loss of weight, skin lesions on the tip of the nose, focal affection of the skin around the eyes, bilateral paresis of hind legs, epileptiform seizures and symmetric lamellar desquamation of the skin in hind paws and diminished passage of riboflavin with the urine. All of the listed deviations are corrected following administration of vitamin B₆ to the animals.

REEL/FAME

19770638

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Acc. Nr: **AP0044157**

Ref. Code: UR 0244

PRIMARY SOURCE: Voprosy Pitaniya, 1970, Vol 29, Nr 1,
pp 23-28 **K**CHARACTERIZATION OF BIOCHEMICAL SHIFTS IN EXPERIMENTAL
B₆-HYPOVITAMINOSISKarkalitskiy, I. M.; Karkalitskaya, G. V.; Ashikhmina, Ye. M.;
Kovrizhnykh, N. D.; Tuzova, G. P.; Plotnikova, G. F.; Berdnikov,
M. P.

Tubazid in an amount of 100 mg was administered daily intramuscularly for 7 weeks to *nuria cospus* to produce pyridoxine deficiency. The earliest sign of B₆-hypovitaminosis was diminished passage of 4-pyridoxine acid with the urine, whose week-wise fluctuations were of an undulating nature. The blood serum of animals with pyridoxine deficiency showed a fall of α - and β -globulins, a rise of albumins, declined activity of the aspartate-aminotransferase, unchanged activity of the alanine-aminotransferase and an increase of β -lipoproteids in the blood serum and tissues. The animals also developed fatty degeneration of the liver, kidneys and fatty infiltration of aortic walls. Furthermore, they exhibited symptoms of B₆-hypovitaminosis, such as poor appetite, loss of weight, skin lesions on the tip of the nose, focal affection of the skin around the eyes, bilateral paresis of hind legs, epileptiform seizures and symmetric lamellar desquamation of the skin in hind paws and diminished passage of riboflavin with the urine. All of the listed deviations are corrected following administration of vitamin B₆ to the animals.

REEL/FRAME
19770638

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USSR

UDC 621.315.592

PEKA, G.P., KARKANIN, YU.I. [Kiev State University imeni K.T. Shevchenko]

"Instability Of Recombination Radiation In Semidielectric Gallium Arsenide"

Fizika i tekhnika poluprovodnikov, Vol 6, No 4, Apr 1972, pp 741-747

Abstract: This work is concerned with observation under the conditions of a strong field of the low-frequency instability of impurity recombination radiation which accompanies instability of the photocurrent in high-resistance GaAs doped with Cr. The change of the radiation intensity in fields less than critical is investigated and the peculiarities of photocurrent instability during inherent and impurity excitation is also studied. The measurements were conducted on single crystal specimens of GaAs <Cr> with a resistivity in darkness of $\sim 10^8$ ohm.cm. Production data from GIREDMET [State Scientific-Research And Planning Institute Of the Rare Metals Industry] showed that the concentration of chrome in the crystals amounted to $\sim 10^{17}$ cm⁻³. Crystals were investigated, doped with Cr and Te, also chrome and a noncontrolled donor. Luminescence was excited by a steady light from the region of fundamental absorption ($\lambda_{ex} < 0.6$ micrometer). 3 fig. 11 ref. Received by editors, 22 July 1971.

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USSR

UDC 621.315.59

PEKA, G. P., KAEKHANIN, YU. I.

"Energy Spectrum of Deep Levels and the Mechanism of Radiation Recombination in GaAs (Cr)"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 305-310

Abstract: A study was made of photoluminescence and photoconductivity of GaAs (Cr) for a given level of alloying the crystals with chromium in a broad spectral range and in the temperature range from 77 to 300° K. In GaAs(Cr) there are two deep recombination levels with the energy positions 0.6 and ~0.8 electron volts from the c-band. Radiation recombination in GaAs(Cr) determining the ~0.8 electron volt band takes place in complex centers of the donor-acceptor pair type including chromium. The investigated recombination channel is determining for the electron lifetime and the stationary photocurrent in the investigated crystals.

The mechanism of radiation in the 0.5-0.65 electron volt range is discussed. The luminescence bands with peaks at 0.55 and 0.60 electron volts are connected with electron capture in the excited and ground states of the same center. The dependence of the position of the maximum radiation (~0.8 electron volts) and the activation energy of the temperature quenching on the $1/2$

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PEKA, G. P., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 305-310

nature of the donor in the GaAs(Cr) and the nature of the temperature dependence of the photocurrent confirm the conclusion that radiation recombination in GaAs(Cr) takes place via complex centers of the donor-acceptor pair type.

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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--1021-MAKSIMOV, I.V., KARKLIN, V.P. *R*
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

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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

Single Crystals

USSR

K

UDC 546.815:24:548.55

~~KARKLINA, M. I.~~, ABLOVA, M. S., MUZHDAVA, V. M., Institute of Semiconductors, Academy of Sciences, USSR

"Synthesis of Lead Telluride Single Crystals"

Moscow, Neorganicheskiye Materialy, Vol 6, No 5, May 70, pp 985-987

Abstract: Lead telluride single crystals were obtained by the Bridgeman method. First lead telluride was synthesized by alloying the respective components. The degree of purity of the starting material had no effect on the single crystals. Prior to synthesis, the ampoules were graphitized to prevent leaching out of oxygen and water. The synthesis was carried out at 1000-1040°C for 15-20 min, followed by cooling of the ampoule with the oven. Then the material was ground, mixed, and loaded into graphitized ampoules to let the single crystals grow; maximum 1/2

USSR

KARKLINA, M. I., et al., Neorganicheskiye Materialy, Vol 6,
No 5, May 70, pp 985-987

length of the crystals was 7 cm, with a diameter of 1 cm. The
crystals were checked for electric homogeneity by the thermo-emf
method, Hall constant, and by microhardness tests.

2/2

- 69 -

1/2 034 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--SYNTHESIS OF LEAD TELLURIDE SINGLE CRYSTALS --U--

AUTHOR--(03)-KARKLINA, M.I., ABLOVA, M.S., MUZHODABA, Y.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. SSSR. MOSCOW, NEORGANICHESKIYE MATERIALY, VOL 6, NO 5, MAY
70, PP 985-987

DATE PUBLISHED----MAY70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--LEAD COMPOUND, TELLURIDE, SINGLE CRYSTAL, HIGH PRESSURE
EFFECT, CHEMICAL SYNTHESIS, SEMICONDUCTOR MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3005/1536

STEP NO--UR/0363/70/006/005/0985/0987

CIRC ACCESSION NO--AP0133462

UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133462

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LEAD TELLURIDE SINGLE CRYSTALS WERE OBTAINED BY THE BRIDGEMAN METHOD. FIRST LEAD TELLURIDE WAS SYNTHESIZED BY ALLOYING THE RESPECTIVE COMPONENTS. THE DEGREE OF PURITY OF THE STARTING MATERIAL HAD NO EFFECT ON THE SINGLE CRYSTALS. PRIOR TO SYNTHESIS, THE AMPOULES WERE GRAPHITIZED TO PREVENT LEACHING OUT OF OXYGEN AND WATER. THE SYNTHESIS WAS CARRIED OUT AT 1000-1040DEGREESC FOR 15-20 MIN, FOLLOWED BY COOLING OF THE AMPOULE WITH THE OVER. THEN THE MATERIAL WAS GROUND, MIXED, AND LOADED INTO GRAPHITIZED AMPOULES TO LET THE SINGLE CRYSTALS GROW: MAXIMUM LENGTH OF THE CRYSTALS WAS 7 CM, WITH A DIAMETER OF 1 CM. THE CRYSTALS WERE CHECKED FOR ELECTRIC HOMOGENEITY BY THE THERMO EMF METHOD, HALL CONSTANT, AND BY MICROHARDNESS TESTS. FACILITY: INSTITUTE OF SEMICONDUCTORS, ACADEMY OF SCIENCES, USSR.

UNCLASSIFIED

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NUCLEAR SCI. ABST. ~~2/80~~ UR 0000

5363 (SLAC-Trans-103) ACCELERATING RESONATOR FOR THE VEPP-2 STORAGE RING. Veshcherevich, V. G.; Kabanin, M. M.; Petrov, V. M.; Sedlyarov, I. K.; Shekhtman, I. A. (Akademiya Nauk SSSR, Novosibirsk; Institut Yadernoi Fiziki). Translated by T. Watt for Stanford Linear Accelerator Center, Calif., from Russian Preprint No. 272. 12p. Dep. CPSTI.

The resonator of the VEPP-2 storage ring operates in two oscillation modes; the antiphase mode (natural frequency 75 MHz, shunt resistance about 1 Mohm) and in the inphase mode (natural frequency 25 MHz, effective shunt resistance about 7.5 kohm). The operating accelerating voltage of up to 300 kV at the third-harmonic of the rotational frequency is ensured by the first mode. The second mode is used to recapture the particles from three separatrices onto one. Full account is taken in the resonator design of the required spectrum of higher natural frequencies; so that coherent synchrotron and betatron oscillations are adequately damped out. (auth)

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19

KARKLIN'SH, R. Ya.

biochemistry

Faculty Institute of Biochemistry and Physiology of Microorganisms, Pushchino

SECTION VI Sci Selecta, articles
Facilities PCS-89 SEP 51

Description: (u) During the quarterly reporting period, five new articles were located from the Institute of Biochemistry and Physiology of Microorganisms at Pushchino. On the basis of these articles, it was possible to identify 13 new personalities with the Institute. The personalities, the subjects of the articles, and the dates are given below: *in parenthesis*

Berger, K. Ya.	α-oxoglutaric acid	1969 (65)
Boronin, A. M.	antibiotic production	1970 (66)
Chern, Ye. B.	cantharidin lipolytic	1971 (67)
Kaban, N. Z. A.	α-oxoglutaric acid	1969 (65)
Kovalevich, R. Ya.	γ-oxoglutaric acid	1969 (65)
Lyepin, S. K.	α-oxoglutaric acid	1970 (65)
Mikhail, S. Z.	antibiotic production	1970 (65)
Pelissier, L. Zh.	α-oxoglutaric acid	1970 (65)
Rozental, S. M.	cantharidin lipolytic	1971 (67)
Slava, V. A.	α-oxoglutaric acid	1971 (65)
Tekhnolizov, S. M.	α-oxoglutaric acid	1971 (65)
Vakonov, V. O.	α-oxoglutaric acid	1971 (65)
Zarlov, D. S.	α-oxoglutaric acid	1971 (65)

Two of the five new articles were authored by personalities already identified with the Institute of Biochemistry and Physiology of Microorganisms. One of these articles dealt with penicillinase from *Streptococcus* and the other with methane oxidizing bacteria (69). Reference 69 was jointly issued from the above Institute and the Institute of Microbiology Imeni A. Kirpichnikov RSR, possibly indicating some joint work between the two facilities.

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UNCLASSIFIED

Conferences

USSR

UDC 666.76:62.001.6

KARKLIT, A. K., All-Union Institute of Refractory Materials

"Future Task of the All-Union Institute of Refractory Materials Related to the Introduction of Progressive Technology Into the Refractory Industry"

Moscow, Ogneupory, No 12, 1972, pp 46-48

Abstract: Results of a conference [date not given] held at the All-Union Institute of Refractory Materials are summarized. Application of new production methods in order to increase work productivity is the first task of the institute. Synthesis of new heat-resistant fibers and other refractory materials should be accelerated, along with the construction of mills for grinding the refractory materials (rotary-ring, tunnel-type, and others). Another important point of discussion is the standardization of refractories. The need for new test methods and equipment, especially of nondestructive testing of refractories, is emphasized. Purification methods for refractories and supplying the metallurgical industry with needed high-quality materials is stressed.

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Graphite

USSR

UDC 666.764.4:669.716:621.74

KARKLIT, A. K., SOKOLOV, A. N., LEBEDEVA, M. F., ZEGZHDA, V. P., Deceased,
All-Union Institute of Refractories, SIMONOV, V. N., Leningrad Plant for
Processing of Nonferrous Metals, ANDREYEV, V. F., PARTIN, I. A.,
CHEREPOK, G. V., Kuybyshev Metallurgical Plant imeni V. I. Lenin

"Graphite-Containing Products for Casting of Aluminum Alloys"

Ogneupory, No. 2, 1971, pp 13-15

Abstract: A composition and method of manufacture of graphite-containing refractory products of low heat conductivity for casting of aluminum and aluminum-based alloys have been developed. The reduction in heat conductivity is achieved by introducing asbestos to the mass and using low-temperature (700°C) roasting. The products have shown satisfactory strength in service.

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USSR

KARKLIT, A. K., STEGANTSEV, S. A., and PETROVA, Ye. V., All-Union Institute
of Refractory Materials

"Properties of Ceramics in the $MgO-MgCr_3O_4$ System"

Moscow, Ogneupory, No 12, Dec 70, pp 38-40

Abstract: A study was made of the sintering of masses of magnesium oxide and chrome-magnesium spinel. The effect of the chrome-magnesium spinel on sintering and on the microstructure of the periclase was studied. Mixtures were prepared from analytical-grade materials. Magnesium oxide was preliminarily calcined at $900^{\circ}C$, and then the powders were mixed in drums, pelletized, and calcined at $1750^{\circ}C$ for 4 hours. The completion of the spinel formation reaction was controlled by chemical analysis according to the free magnesium oxide content. Compositions covering a wide range of proportions were investigated. Mixtures were pelletized under a pressure of 500 kg/cm^2 and calcined at $1400-1700^{\circ}C$ for one hour. Samples from a pure periclase had the greatest density. Porosity increased sharply with spinel addition, reaching a maximum at 35% of spinel. Microstructure was studied on samples calcined at $1700^{\circ}C$. It differed sharply with spinel content; a 40-45%
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USSR

KARKLIT, A. K., et al, Ogneupory, No 12, Dec 70, pp 38-40

spinel content contributed to periclase recrystallization, while the periclase and $MgCr_2O_4$ grain sizes were maximum. It is concluded that the presence of a small quantity of spinel in a periclase delays sintering. This is explained by variations in the crystal lattice related to the formation of solid solutions.

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1/2 016 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--LINING OF THE COMBUSTION CHAMBER OF A HIGH PRESSURE STEAM BOILER
-U-
AUTHOR--(04)-KARKLIT, A.K., KRASOTKINA, N.I., PILDISH, V.G., MALINOVSKIY,
S.V. 
COUNTRY OF INFO--USSR
SOURCE--OGNEUPORY 1970, 35(2), 18-23
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--STEAM BOILER, SILICON CARBIDE, REFRACTORY MATERIAL

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1707 STEP NO--UR/0131/70/035/002/0018/0032
CIRC ACCESSION NO--AP0118685
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118685

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE 2 LAYERS LINING OF THE COMBUSTION CHAMBER OF A HIGH PRESSURE STEAM BOILER ABLE TO WITHSTAND RAPID TEMP. CHANGES OF 85-100DEGREES-MIN WAS BASED ON SIC NITRIDE BONDED BACK FILLEDWITH GRC. THIS SYSTEM OF A SIC TOP LAYER AND A TIGHTLY PACKED FILL HAS LITTLE VOL. CHANGE WITH TEMP. AND GOOD THERMAL COND. PRODUCING A LINING THAT HAS IMPROVED LIFE. FACILITY: VSES. INST. OGNEUPOR., LENINGRAD, USSR.

UNCLASSIFIED

AA0043464

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

K

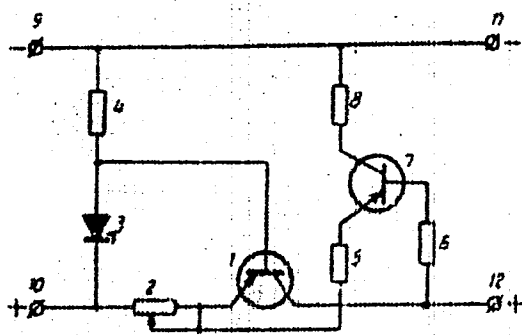
242243 CURRENT STABILISER is operated by applying the supply voltage to terminals 9,10, and this increases the stability coefficient and makes base voltage and collector voltage of the transistor 1 higher. Transistor 7 takes away some current from the emitter 1, potentiometer 2, also its base voltage is increased. In this way current of that transistor 1 is directed to the transistor 7 and its output current across terminals 12 and 11 is stabilised 17.1.68. as 1211040/26-9. V.I. KARLASHCHUK. (11.9.69.) Bul.15/25.4.69. Class 21a4. Int.Cl. H02m.

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4

19761828

AA0043464



EB

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AA0043509

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UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

236635 APPARATUS FOR MEASUREMENT OF ULTRA-SMALL CURRENTS in which test terminals (6), (7) are connected to a semiconducting junction electrode (5) provided with a slit at the apex which acts as a source of electrons. The equipment in a vacuum container houses additionally anode (8), accelerator (10), multiplier and collector (13).

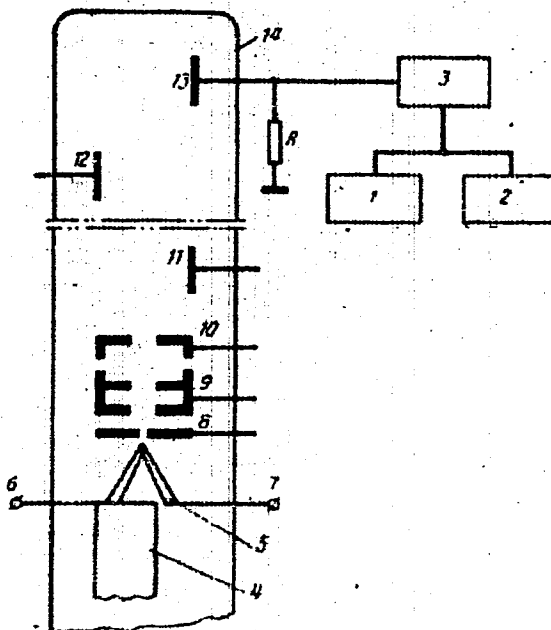
27.2.67 as 1136035/18-10. V.I. KARLASHCHUK (19.6.69)
Bul 7/3.2.69. Class 21e. Int.Cl.G 01 r.

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4

19761908

AA0043509



19761909

USSR

UDC 620.194.8

KARLASHOV, A. Y., and SAZONOV, V. V., Kiev Institute of Civil Aviation Engineers

"Fatigue Strength of D16T Alloy at Different Load Frequencies and at Elevated Temperatures"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 5, 1973, pp 3-6

Abstract: An experimental study was made of the effect of the frequency of a cyclic load ($n_1 = 200$ and $n_2 = 10000$ cycles/min) at $t_1 = 20$ and $t_2 = 150^\circ\text{C}$ temperatures on the fatigue of smooth specimens of D16T alloy, prepared from bar material of one melt according to 2860-65 All-Union State Standard (tensile strength $\sigma_t = 50 \text{ kg/mm}^2$; specification yield point in elongation determinable by $\delta = 0.2\%$ allowance of residual deformation $\sigma_{0.2} = 34 \text{ kg/mm}^2$; residual relative elongation $\delta = 20\%$). The results are discussed by reference to experimentally determined fatigue curves and the stress level dependences on frequency effect coefficients and two factors characterizing the reduction of durability and the interaction of frequency and temperature. Problems of the influence of the cyclic deformation rate on the structural condition and, consequently, on the fatigue longevity, are analyzed. Three figures, nine bibliographic references.

1/1

- 24 -

USSR

UDC 620.194.8

KARLASHOV, A. V. and PRYAKHIN, I. I., Kiev Institute of Civil Aviation Engineers

"Increasing the Corrosion-Fatigue Strength of an Aluminum Alloy by Treating the Medium With a Magnetic Field"

L'vov, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 4, 1973, pp 23-26

Abstract: aluminum alloy D16A-T containing (in %): 4.2 Cu, 1.6 Mg, 1.5 Mn, 0.3 Fe, 0.5 Zn; tensile strength of 42 dyne/mm²; yield strength of 30 dyne/mm² and elongation of 16%, was studied as to its fatigue strength in mediums of fresh water, 3% NaCl and fuel oil T-7 which were subjected to a magnetic field and not subjected to the magnetic field. It was found that at a stress level of 12 dyne/mm² the number of cycles to failure in fresh water was increased by 67% when the magnetic field was applied; at 8 dyne/mm² in 3% NaCl this value increased by 62%; and in fuel oil T-7 at a stress level of 11 dyne/mm²---28%. Thus, magnetic treatment of corrosive media renders a substantial effect on the corrosion-fatigue strength and long-time strength of alloy D16A-T with the long-time strength increasing more intensively than the maximum fatigue strength. 3 figures, 7 bibliographic references.

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USSR

UDC 620.194.620.197.6

KARLASHOV, A. V., GAYNUTDINOV, R. G., and PANKOV, A. T., Kiev Institute of Civil Aviation Engineers

"Relationship of the Effectiveness of Cladding Alloy D16 to the Aggressiveness of a Medium in Corrosion Fatigue"

L'vov, Fiziko-Khimicheskaya Mekhanika Materialov, No 3, 1973, pp 23-27

Abstract: Results are presented from a study of the fatigue strength of type D16 clad aluminum alloy when subjected to air, tap water, water condensate, and 3% solution of NaCl. The D16 alloy had the following chemical composition (in %): 4.1 Cu, 1.6 Mg, 0.5 Mn, 0.4 Fe, 0.3 Si, 0.24 Zn, 0.01 Ni, and 0.04 Ti. Mechanical properties of the clad aluminum material were:

	Thickness, mm	TS, kg/mm ²	YS, kg/mm ²	Elongation %
D16AT (clad)	1.85	45.6	32.18	18.61
D16T (unclad)	1.82	46.5	32.68	19.03

It was found that the fatigue strength of clad D16 is lower than that of the unclad alloy in air, about the same in tap water, and somewhat increased 1/2

USSR

KARLASHOV, A. V., et al., Fiziko-Khimicheskaya Mekhanika Materialov, No 3, 1973, pp 23-27

in the condensate and 3% NaCl. The main conclusion drawn is that cladding does not improve the fatigue strength or corrosion resistance of alloy D16 to warrant its use in the manufacture of aircraft skins (fairings, wings, fuselage, etc.) Four figures, one table, six bibliographic references.

2/2

CORROSION

USSR

UDC 620.197.6

KARLASHOV, A. V., GAYNUTDINOV, R. G., and LUKANIN, S. N., Kiev Institute of Civil Aviation Engineers

"Determination of Electrolyte Residues in the Gap of a Welded and Anodized Joint"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 2, 1973, pp 102-103

Abstract: Tests were conducted to determine if the concentration of sulfuric acid in the residue, residing in the gap of a spot-welded sample after anodization was high enough to cause corrosion damage. Using sheet samples of D16-AT alloy, an angle piece was spot welded to a flat sample which was then anodized. The samples were then washed with distilled water which was tested for its electroconductivity and compared to a standard sulfuric acid electrolyte. It was found that electrolyte concentration in the weld gap was less than the standard as well as less than the amount of acid on the open anodized surfaces. The conclusion was that aluminum alloys and their weld joints can be anodized without danger of corrosion damage occurring in the weld. 3 figures, 1 table, 4 bibliographic references.

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Miscellaneous

USSR

UDC 669:539.43

KARLASHOV, A. V., RADCHENKO, A. I., ZAYKA, A. YA., and VORONKIN, N. F., Kiev Institute of Civil Aviation Engineers

"Fatigue Resistance of Corrosion-Damaged Aircraft Covering"

Kiev, Fiziko-Khimicheskaya Mekhenika Materialov, Academy of Sciences Ukrainian SSR, Vol 7, No 1, 1971, pp 53-56

Abstract: An investigation was made of the effect that a group of corrosion craters, simulating local corrosion of aircraft covering, has on the fatigue longevity of smooth and structural specimens made, respectively, of D16Al (1.85 mm thick) and D16ATV (2.5 mm thick) sheet materials. The fatigue tests of the smooth specimens of two batches were performed with net symmetrical bending ($\sigma = 14$ dynes/mm²) at a frequency of 70 cpm. The corrosion craters on the surface of the first-batch specimens were of constant geometrical dimensions (depth $t = 0.3$ mm and diameter $d = 1.3$ mm), varying only in the number of craters per unit surface. On the specimens of the second batch, in the middle of small craters 0.3 mm deep and 1.3 mm in diameter there was one "general" crater: $t = 1.0$ mm and $d = 3.5$ mm. It was found that the adverse effect of a group of corrosion craters of identical geometrical size covering approximately 10% of the area involved is practically the same as the effect of a single damage area, in the variation of fatigue longevity

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KARLASHOV, A.V., et al, Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Academy of Sciences Ukrainian SSR, Vol. 7, No 1, 1971, pp 53-56

of duralumin D16AT as a function of density of corrosion damage. For the case when the group of corrosion craters included a general crater in the D16AT duralumin specimens, it was found that the added presence of the small craters did not lead to a further reduction in fatigue longevity of the material beyond that induced by the general crater. In contrast to smooth specimens, specimens with rivetted joints were found to be practically unaffected by the presence of groups of corrosion craters.

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USSR

UDC 620.194.620.197.6

KARLASHOV, A. V., and GAYNUTDINOV, R. G., Kiev Institute of
Civil Air Fleet Engineers

"Effect of Anodic Film in Fatigue and Corrosion-Fatigue Destruction of D16T Duralumin"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 5,
1970, pp 10-15

Abstract: Since data on the effect of anodic films on the durability of aluminum alloys in corrosive media are quite limited and information concerning the effect of anodizing in air and in a corrosive medium is generally unavailable, this article presents the results of fatigue and corrosion-fatigue tests of anodized specimens of D16T, results of the determination of residual tensions in the anodic film, and the results of measuring the potentials of anodized specimens in the process of cyclic loading. The experiments were done on cylindrical specimens of the alloy in tempered and naturally aged states; the anodizing was done by the sulfuric acid method, which is the method generally used for protecting aluminum alloy products from corrosion. Anodic oxide films of various thicknesses, 3, 5.8, 10.5, 16.8,

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KARLASHOV, A. V., et al., Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 5, 1970, pp 10-15

and 40 μ , were obtained by varying the length of the anodization process. The results of the tests showed that the effect of anodization on the durability of the specimens is a function of the anodic film thickness and the tension level. At thicknesses less than or equal to 5.8 μ , and at high tension levels the durability of the anodized specimens was lower than that of the non-anodized specimens; at low tension levels, however, it was the other way around.

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1/2 033

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--CHANGE OF RESIDUAL STRESSES IN ANODIC FILM ON DURALUMINUM D16T DUE TO CYCLIC LOADING -U-

AUTHOR--(02)-KARLASHOV, A.V., GAINUTDINOV, R.G.

COUNTRY OF INFO--USSR

K

SOURCE--FIZIKO-KHIMICHESKAYA MEKhanIKA MATERIALOV, VOL. 6, NO. 2, 1970, P. 26-30.

DATE PUBLISHED-----70

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

TOPIC TAGS--ALUMINUM ALLOY, ALLOY DESIGNATION, BIBLIOGRAPHY, METAL CORROSION, RESIDUAL STRESS, AVIATION INSTITUTE, STRESS CORROSION/(U)D16T ALUMINUM ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAme--3001/0063

STEP NO--UR/0369/70/006/002/0026/0030

GIRC ACCESSION NO--AP0125898

UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125898

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. STUDY OF THE RELATIONSHIP BETWEEN RESIDUAL STRESSES IN AN ANODIC FILM ON DURALUMINUM 915T AND THE FILM THICKNESS. SPECIAL ATTENTION IS GIVEN TO THE EFFECT OF CYCLIC LOADINGS IN AIR AND IN CORROSIVE MEDIA ON THE VALUE OF THESE STRESSES. IT IS FOUND THAT THE MAXIMUM COMPRESSIVE STRESSES IN THE FILM ARISE WHEN ITS THICKNESS IS 3 MICRONS. FACILITY: KIEVSKII INSTITUT INZHENEROV GRAZHDANSKOI AVIATSII, KIEV, UKRAINIAN SSR.

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NUCLEAR SCI. ABST. 2/70 UR0000

5364 (SLAC-Trans-104) HIGH-FREQUENCY POWER SUPPLY OF THE VEPP-2 STORAGE RING. Gorniker, E. I.; Karliner, M. M.; Petrov, V. M.; Petukhov, V. V.; Shekhtman, I. A. (Akademiya Nauk SSSR, Novosibirsk, Institut Yadernoi Fiziki). Translated by T. Watt for Stanford Linear Accelerator Center, Calif., from Russian Preprint No. 285. 12p. Dep. CFSTI.

The equipment described consists of two tuned power amplifiers, a master oscillator, and a control system. One of the amplifiers, operating at a wavelength of $\lambda_1 = 4$ m, has a rated power of 150 kW, so that it can be used to develop a voltage of up to 300 kV across the accelerating gap, which is necessary to ensure a short bunch length. The other amplifier has a rated power of 20 kW and operates at a wavelength $\lambda_2 = 12$ m. It is used to take the stored particles from three separatrices onto one. The common master oscillator and the control system ensure correct phasing of the voltages at the two frequencies. The control units stabilize the operation of the system, automate the operation of recapture, and contain feedback circuits which suppress electromechanical oscillations of the resonator. (auth)

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UDC: 620.194;620.198

KARLASHOV, A. V., GAYNUTDINOV, R. G., Kiev Institute of Civil Aviation Engineers

"Variation of Residual Stresses in an Anode Film of Duralumin D16T as a Result of Cyclic Loads"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 2, 1970, pp 26-29

Abstract: This paper contains the results of experiments in determining the residual stresses in an anode film and the effect of cyclic loads on their magnitude. The investigations were performed using samples of D16T duralumin alloy. The samples were anodized in a sulfuric acid bath under industrial conditions. The electrolyte was cooled by a freon unit and mixed in a mixer. Films 3.0, 4.15, 5.82, 8.40, 10.5, 13.2, 14.81, 18.72, 26.09 and 39.76 microns thick were obtained. The film was consolidated in an aqueous solution of $K_2Cr_2O_7$.

It was discovered that in an anode film on the aluminum alloy D16T residual compressive stresses arise which have the greatest effect on the surface of the film and least effect at the interface with the substrate. The magnitude of the residual compressive stresses acting on the surface of the anode film depends on the film thickness reaching a maximum at a thickness of 5.8 microns. The effect of cyclic loads on the magnitude of the residual stresses begins to be felt with a film thickness exceeding three microns. Here, there is a reduction of stresses

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KARLASHOV, A. V., GAYNUTDINOV, R. G., Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 2, 1970, pp 26-29

on the film surface, and there is some increase in them at the interface of the film with the substrate. The presence of a corrosive medium during cyclic loading promotes still greater variation of the residual stresses. An anode thickness of three microns is obviously optimal with respect to durability in air and in a corrosive medium since with this thickness the greatest residual compressive stress is observed on the film surface after cyclic loading in air and in a corrosive medium.

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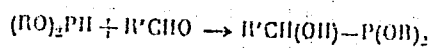
UDC 547.241

KARLCTEDT, M. B., PROSKURNINY, M. V., and LUFENKO, I. S., Moscow State University

"Dialkoxyposphines. II. The Addition of Dialkoxyposphines to Aldehydes"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, pp 2418- 2421

Abstract: Dialkoxyposphines react with aldehydes in inert solvents with a strong evolution of heat in the absence of a base catalyst as follows:



Monitoring the reaction, using the IR spectra at 2220 cm^{-1} (the P—H band) and at 3300 cm^{-1} (the O—H band), shows that the reaction is practically complete in an hour. For example, the reaction of dibutoxyphosphine with isobutoxyaldehyde followed by treatment with trimethyliodide forms the α -oxyphosphinate and in addition the α -oxyphosphinate dimer. The dimer was not observed when acetylaldehyde was used as a starting material. Structures were confirmed by IR, NMR and mass spectra. Preparative procedures and various physical and chemical data are given.

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1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--TRIAMINO,S,HEPTAZINE -U-
AUTHOR--(05)-ZAGRANICHNYI, V.I., MOLEY, I.I., KARLIK, V.M., MOLEVA, V.P.,
MUSHKIN, YU.I.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 264,388
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--03MAR70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--AMINE, ORGANIC AZINE, CHEMICAL PATENT, PYROLYSIS, ORGANIC
SYNTHESIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1565 STEP NO--UR/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0128960
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AA0128960
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TRIAMONO,S,HEPTAZINE IS PREPD. BY
PYROLYZING CYANURIC ACID AT 350-450DEGREES UNDER PRESSURE OF THE GASES
SEPG. IN THE REACTION.

UNCLASSIFIED

USSR

GRIGOR'YEV, V. L. and KARLIN, A. K.

"Algorithm for Separation of an External Contour Line into Images"

Tr. Ryazan. Radiotekhn. In-ta [Works of Ryazan Institute of Electric Engineering], 1972, No 30, pp 163-166 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V785).

Translation: An algorithm is studied for separation of an external contour, based on the maximum information concerning the image produced in the process of input. All coded information is presented in the form of a two-dimensional mass, although it forms a one-dimensional file in memory. The essence of the method suggested by the author for formation of the full contour is as follows. The subfile of coordinates corresponding to the i th row is studied. For each element of the i th row falling within certain fixed ranges, it is determined in what state the elements of the preceding $i - 1$ th row and the subsequent $i + 1$ th row are located. If the quantity tested is in the fixed range both in row $i - 1$ and in row $i + 1$, it is not considered a contour line. Otherwise, the element selected is located on the contour line and is included in the full contour file. The program realization of this algorithm depends on the peculiarities of the specific computer used.

A. Model'

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USSR

UDC 547.245+547.438.1'4

MILESHKEVICH, V. P., and ~~KARLIN, A. V.~~, All-Union Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev

"Reaction of Hexamethyldisiloxane With Phosphoric and Boric Anhydrides"

Leningrad, Zhurnal Obshchey Khimii, Vol XL, No 12, Dec 70, pp 2573-2577

Abstract: Some lack of information and discrepancies exist regarding the mechanism of formation and the yield of tris-(trimethylsilyl) phosphate (MSF), from the title reaction.

The authors found that the yield of MSF is not less than 25% in boiling hexamethyldisiloxane with phosphoric anhydride in the absence of a catalyst with use of forced distillation, 52% of pyrometaphosphates will be obtained (not previously mentioned in the literature). It was also found that bis(trimethylsilyl) sulfate acts as a catalyst in this reaction.

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1/2 008 UNCLASSIFIED
TITLE--PURIFICATION OF ORGANODICHLOROSILANES -U- PROCESSING DATE--13NOV70
AUTHOR--(05)-KLEBANSKIY, A.L., GRUBER, V.N., KRUGLOVA, G.A., KARLIN, A.V.,
LOBKOV, V.D.
COUNTRY OF INFO--USSR
SOURCE--USSR 265,884
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--17MAR70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL PATENT, ORGANIC SILANE, CHLDRINATION, DISTILLATION,
CHEMICAL PURIFICATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1480 STEP NO--UR/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0128879
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0128879

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPODS. ARE PURIFIED BY CHLORINATION WITH THE AID OF UNSATD. ORGANOCHLOROSILANES, E. G. METHYLVINYL DICHLOROSILANE, FOLLOWED BY FRACTIONAL DISTN. OF THE FINAL PRODUCT. THE STILL RESIDUES FROM THE FRACTIONAL DISTN. OF METHYLVINYL DICHLOROSILANE (CONTG. VINYL GROUPS) CAN BE USED AS THE CHLORINATING AGENT.

UNCLASSIFIED

1/2 023

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--INTERACTION OF LATEXES WITH COLLAGEN AND FIBER. II. EFFECT OF SOME FACTORS ON THE INTERACTION OF CARBOXYL CONTAINING AND NITRILE LATEXES

AUTHOR--(02)-KARLINA, G.A., YERKOVA, L.N.

K

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 412-17

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--COLLAGEN, LATEX, NITRILE RUBBER, CARBOXYLATE RUBBER, SURFACE ACTIVE AGENT, SORPTION, STERIC HINDRANCE/(U)SKD1 RUBBER, (U)SKN40 NITRILE RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0080/70/043/002/0412/0417

PROXY REEL/FRAE--1995/1464

CIRC ACCESSION NO--AP0116901

UNCLASSIFIED

2/2 023

CIRC ACCESSION NO--AP0116901
ABSTRACT/EXTRACT--(U) GP-Q-

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT. THE CAPACITY OF COLLAGEN (I) TO ADSORB SKD-1 (II) OR SKN-40 (III) LATEXES WAS STUDIED IN THE PRESENCE OF NEKAL (IV) AND BUNEGAL (V) (A NONIONIC SURFACTANT). INCREASED IV CONTENT IN II LATEX BROUGHT ABOUT HIGHER SORPTION, REACHING A MAX. WHEN THE DEGREE OF SATN. OF II GLOBULES WITH IV WAS 60-70PERCENT, AND THEN DECLINING TO A CONST. VALUE. INTRODUCTION OF V INTO II ALSO INCREASED THE SORPTION CAPACITY TO II, BUT TO A LESSER DEGREE THAN DID IV. ADDN. OF V TO III LATEX (0.0732 MILLIMOLE-G III) CAUSED A SIGNIFICANT DECREASE IN SORPTION CAPACITY, PRESUMABLY DUE TO ITS SEDIMENTATION ON THE POLYMER GLOBULES AND PARTIALLY ON I, WHICH LED TO A SIGNIFICATN STERIC HINDRANCE IN THE REACTION OF I WITH III GLOBULES. THE SORPTION CAPACITY OF III INCREASED WITH TEMP. AND WAS HIGHER THAN THAT OF II.

UNCLASSIFIED

USSR :

UDC 576,809,4:536.422,4:578

KARLINA, N. N.

"Study by Direct Microscopy of Microorganisms in a Freeze-Dried Substrate"

Kishinev, Izvestiya Akademii Nauk Moldavskoy SSR, Seriya Biologicheskikh i Khimicheskikh Nauk, No 5, 1971, pp 84-85

Abstract: Preservation of berries, fruit, and fruit juices by freeze-drying is being used in the Moldavian SSR. Freezing is conducted at temperatures to minus 35°C minus 40°C, whereupon the product is vacuum-dried until the moisture content reaches 2-3%. The effects of lyophilization of the substrate on microorganisms were studied using a specially developed microscopic method and *Debaryomyces rosei* and *Hanseniaspora apiculata* yeast, and *Pullularia pullulans* mold cells. Formation of large crystals of ice outside the cells did not damage the cells; they were rapidly restored upon thawing. Cells perished upon freezing as a result of rupture of the cell wall with consequent loss of protoplasm, detachment of the protoplasm from the cell wall, and the effects of thawing. The dehydrated cells were considerably smaller than the fresh cells which had not been frozen. Cells which had not been lethally damaged were restored in 2-3 hrs after freezing and 6 or more hours after lyophilization. Cells restored after freezing were larger than

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USSR

KARLINA, N. N. Izvestiya Akademii Nauk Moldavskoy SSR, Seriya Biologicheskikh i Khimicheskikh Nauk, No 5, 1971, pp 84-85

those not exposed to low temperatures. Freezing in fruit juice did the least damage to *P. pullulans*, while *H. apiculata* had the highest resistance to the effects of lyophilization after freezing of the juice.

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UDCR :

UDC 621.317.725

KARLINER, M. M., NIFONTOV, V. I., ORESHKOV, A. D., Novosibirsk

"Precision Digital-to-Analog Converter"

Novosibirsk, Avtometriya, No 2, 1972, pp 88-92

Abstract: The control system for the VEPP-3 storage element using the computer described previously [M. M. Karliner, et al., Avtometriya, No 2, 1972] requires digital-to-analog converters of the potentiometric type which satisfy the following requirements: one digital-to-analog converter must insure a relative error of the division factor of less than $\pm 1 \cdot 10^{-4}$ with a factor varying from 0.1 to 1; the remaining digital-to-analog converters must insure an error of the division factor of less than $\pm 3 \cdot 10^{-4}$ for the input voltage varying from 0.5 to 5 volts. The converters must have galvanic decoupling of the analog part from the control circuits. The circuitry of the digital-to-analog converters, the procedure used in selecting their elements and checking them are described. The converters are executed on the basis of the ohmic decoding grid R-2R [P. Campiche, Etude d'un convertisseur numerique analogique, JSR-PO/70-22, Geneva, 1970] and two-position transistor switches. The digital-to-analog converter is selected by means of an address decoder circuit. The characteristics of the 1KT011A and 1KT621 integral breakers used as the switching elements are presented. The results of checking a 16-bit digital-to-analog

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USSR

KARLINER, M. M., et al, Avtometriya, No 2, 1972, pp 88-92

converter are tabulated in the form of the voltage at the output from the converter at the "elongated transition" points. The developed converters have the following parameters: input and output voltage range +6.3 volts for the converter with 1KT011A switches, +30 volts for the converter with 1KT621 switches, the number of bits for the converter with 1KT011A switches is 12, and for the converter with the 1KT621 switches, 16, the division factor error for the converters of the first type is $\pm 10^{-4}$ (for input voltages from 0.5 to 5 volts) and for converters of the second type it is $\pm 1 \cdot 10^{-5}$; the temperature drift of the division factor in the temperature range from 20 to 60° C for the converter of the first type is less than $\pm 3 \cdot 10^{-6}$ /degree and for the converter of the second type it is on the order of $\pm 2 \cdot 10^{-1}$ /degree; the zero temperature drift is < 5 microvolts/degree, the buildup time constant of the output voltage at the converter output is on the order of 2 microseconds; the output impedance of the converter is 10 kilohms; the digital part of the converter is made from integrated circuits series 217. The converter is executed on one printed textile plate.

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USSR

UDC: 621.373.51.011.222

KARLINSKAYA, B. N., KARLINSKIY, S. I.

"Tunnel-Diode Oscillators With Quartz-Controlled Frequency Stabilization"

Sb. nauch. tr. Kiyev. fil. TsNII svyazi (Collected Scientific Works of the Kiev Affiliate of the Central Scientific Research Institute of Communications), 1970, vyp. 6, pp 176-185 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D347)

Translation: Several tunnel-diode oscillator circuits are presented with quartz-crystal frequency stabilization in which the quartz resonator forms a parallel tank circuit in combination with a parallel-connected capacitance. Formulas are derived for calculating the values of the circuit elements, deviation of the emission frequency from the series resonance frequency of the quartz resonator, and for calculating the instability of the emission frequency. Resumé.

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USSR

K UDC: 621.373.421.13

BONDARENKO, V. G., KARLINSKIY, S. I.

"Frequency Stability of a Bridge Type Tunnel-Diode Quartz-Controlled Self Oscillator"

V sb. Poluprovodn. pribory v tekhn. elektrosvyazi (Semiconductor Devices in Electrical Communications Technology--collection of works), Vyp. 5, Moscow, "Svyaz", 1970, pp 133-152 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7D375)

Translation: An investigation was made into the frequency stability of a bridge type quartz-controlled tunnel-diode self oscillator with a transformer. Expressions are derived to account for the effect of such destabilizing factors as change in supply voltage, changes in the values of the active and reactive circuit elements, and also the current flowing through the resistor. Three illustrations, three tables, bibliography of twelve titles. Resumé.

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USSR

UDC: 621.373.51.011.222

KARLINSKAYA, B. N., KARLINSKIY, S. I.

"Tunnel-Diode Oscillators With Quartz-Controlled Frequency Stabilization"

Sb. nauch. tr. Kiyev. fil. TsNII svyazi (Collected Scientific Works of the Kiev Affiliate of the Central Scientific Research Institute of Communications), 1970, vyp. 6, pp 176-185 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D347)

Translation: Several tunnel-diode oscillator circuits are presented with quartz-crystal frequency stabilization in which the quartz resonator forms a parallel tank circuit in combination with a parallel-connected capacitance. Formulas are derived for calculating the values of the circuit elements, deviation of the emission frequency from the series resonance frequency of the quartz resonator, and for calculating the instability of the emission frequency. Resumé.

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USSR

UDC 621.373.422

KARLINSKIY, S. I.

"A Tunnel-Diode Oscillator"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obratzny, Tovarnyye Znaki, No 5, Feb 72, Author's Certificate No 327563, Division H, filed 12 Aug 69, published 26 Jan 72, p 160

Translation: This Author's Certificate introduces a tunnel-diode oscillator with piezoelectric frequency stabilization and shunting of the tunnel diode by two branches. A piezoelectric resonator and a capacitor are connected in parallel in one of the shunting branches. As a distinguishing feature of the patent, frequency generation stability is improved by connecting a resistor and an inductive impedor in the shunting branch containing the piezoelectric resonator, while the other shunting branch is made up of a series circuit comprised of a resistor and a parallel inductance-capacitance impedor. The frequency characteristics of the two impedors are mutually reciprocal.

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USSR

UDC 678.06:678 029.5:669:678.742.2]01:53

KALNIN', M. M., KARLIVAN, V. P., METRA, A. YA., SOBOLEVSKIY, CH. A., MALERS, I. YA., DZENIS, M. YA., KRAGIS, I. ZH., and REYKHMANNIS, P. K.

"Metalloplastics Based on Modified Polyethylene"

Moscow, Plasticheskiye Massy, No 10, 1972, pp 31-33

Abstract: The technological process of the production of metalloplastics is based on thermal contact [plating] between a pretreated metal base and a film of modified polyethylene. Optimal ranges of the important parameters influencing the properties of metalloplastics are as follows: temperature of thermal contact -- 200-250°C; duration of the contact -- 30-60 sec; filler content -- 8-10 vol-%. The surface of the metal base is cleaned, preheated and passed through a set of rollers where the initial contact with modified polyethylene is made. Final bonding occurs in an induction heating chamber. The material obtained -- the unilateral or bilateral metalloplastic -- shows high anticorrosive properties. It can be processed by several methods such as bending, folding, or die stamping. Surfaces can be joined together by welding or folding and other methods. This material is ideally suited for production of equipment resistant to chemical agents, such as storage or sedimentation tanks. It could be used for production of special pipe lines, ventilation systems, etc. Due to

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USSR

KALNIN', M. M., et al., *Plasticheskiye Massy*, No 10, 1972, pp 31-33

the ability of producing colored surface coatings, it could also be used in automobile, airplane or ship building industry as well as for construction of furniture or specialized equipment.

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USSR

UDC: 681.326

KUZNETSOV, V. A., KONTORER, V. G., TARANENKO, V. A., YANPOL'SKIY, L. S.,
BRUNSHTEYN, Yu. G., KARLOV, A. G.

"A Digital Device for Measurement of Linear Displacements"

Kiev, Mekahnizatsiya i Avtomatizatsiya Upravleniya, No 2, Mar-Apr 73, pp
68-70.

Abstract: The Sevastopol' Instrument Building Institute has developed a device for measurement of linear displacements with output of the results of measurement in digital form. The device consists of a feeler threaded to mate with a revolving driver. As the driver turns to displace the feeler, the number of revolutions of the driver is sensed by counting the number of cycles of changing voltage in the circuit of a coil attached to the driver. The device can measure linear distances with an accuracy of ± 0.05 mm.

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USSR

UDC 621.365.82

ALIMPIYEV, S. S., and KARLOV, N. V.

"The Breakdown of the Super Radiative State of the SF₆ Molecule in the Photon Echo"

Kratkiye soobshch. apo fiz. (Brief Communications on Physics), No 1, 1973, pp 17-21, RZh-Fizika, No 9, Sep 73, Abstract No 9D796

Translation: The photon echo in the excitation of SF₆ by pulsed radiations from a CO₂ laser is investigated. The relationship between the echo signal and the concentrations of gas is measured. It is shown that at high pressures (over 30·10⁻³mm of mercury) this relationship deviates substantially from the quadratic, making it possible to determine the time of breakdown of the superradiative state. Six bibliographic citations, Kh. V.

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- 14 -

USSR

KARLOV, N. V., KARPOV, N. A., et al. (Lebedev Physics Institute, USSR Academy of Sciences)

"Dissociation and Decrease of Light Absorption of a Multilevel Molecular Gas Due to Radiation From a Powerful CO₂ Laser"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, June 1973, pp 2008-2016

Abstract: The interaction between an intense infrared beam and resonantly absorbing gases is investigated. A cascade radiative-collision mechanism of vibrational excitation of a molecular resonance system is considered which leads to dissociation and decrease of the light absorption of the gas. Propagation of the radiation in the medium is accompanied by transparency, dissociation, and recombination waves. Experiments on absorption of 10.6- μ radiation in BCl₃ and SF₆ gases allow one to calculate the characteristic excitation transfer times in a cascade process in the gases and also to evaluate the distribution of the molecule populations with respect to vibrational levels as well as the degree of dissociation, which was 97-99% for an irradiation intensity of about 10 kw/cm². The dependence of the propagation velocity of the transparency wave on the irradiation intensity is found. A stationary decrease of the absorption coefficient should occur when practically all molecules are dissociated.

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USSR

UDC: 621.373.826

KARLOVA, Ye. K., KARLOV, N. V., KUZ'MIN, G. P.

"Self-Modulation of the Emission of a High-Power CO₂ Pulse Laser With Switching of Nonlinear Absorption"

Kratkiye soobshch. po fiz. (Brief Reports on Physics), 1972, No 6, pp 18-23
(from RZh-Radiotekhnika, No 12, Dec 72, abstract No J2D147 by A. K.)

Translation: When power of the order of 1 MW was reached in the cavity of a CO₂ laser, the effect of self-modulation of stimulated emission was observed. By using NaCl or KRS-5 crystals which are fairly transparent in the infrared region with transverse excitation of the cavity, pulses of 10 μs duration were converted to a series of short regular spikes. The resultant effect is attributed to thermal self-focusing in the crystals. The presence of a train of pulses separated by 10-20 μs is determined by thermal relaxation of the medium. To achieve the spike mode of emission, the relaxation time of the absorber must be longer than the time constant of the active medium of the laser.

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USSR

ALIMPIYEV, S. S., KARLOV, N. V., Physics Institute imeni P. N. Lebedev,
Academy of Sciences of the USSR.

"Photon Echo in Molecular Gases BCl_3 and SF_6 "

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 63, No 2(8),
Aug 72, pp 482-490

Abstract: The photon echo effect is studied in molecular gases BCl_3 and SF_6 , and the transverse relaxation time T_2 is measured in these gases. The polarization dependence of the photon echo in SF_6 is studied on several CO_2 laser emission lines, and it is found that the absorbing transition of the Q-branch with higher quantum angular momentum is responsible for formation of the echo on 947.73 cm^{-1} [P(16)] in SF_6 . The transitions responsible for echos on 944.15 cm^{-1} [P(20)] and 945.94 cm^{-1} [P(18)] are also strongly degenerate; however, a more detailed analysis of the phenomenon of photon echo in gases will be required for final identification of the modes of these transitions.

1/1

Instruments and Measurements

USSR

UDC: 621.3.038.8:621.317.1

DUSHECOV, I. I., ~~ZARLOV, N. V.~~, KRYNETSKIY, B. B., MISHIN, V. A.,
and PETROV, R. P.

"Heterodyne Method for Measuring the Diffusion Component of
Laser Mirrors"

Kratkiye soobshch. po fiz. (Short Communications in Physics)
No 10, 1971, pp 10-15 (from RZh--Radiotekhnika, No 4, 1972,
Abstract No 4A311)

Translation: The description is given of a heterodyne method for
determining the diffusion component; its advantages, narrow re-
ception diagram and high sensitivity, make it an effective mea-
surement method. A single-mode CO₂ laser with a 5-W output power
is used. The radiation receiver is a GeHg photoresistor operating
at the temperature of solid nitrogen. The results are given of
measurements of the diffusion component losses for gold mirrors
made by various methods with a coating thickness of 1500 Å, and
an estimate is made of the contribution of the diffusion compo-
nent and of the dimensions of the microscopic inequalities in
the mirror surfaces. A. K.

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Infrared Rays

USSR

UDC 621.396.62.029.7

DUSHKOV, I. I., ~~KARLOV, N. V.~~, KRYNETSKIY, B. B., MISHIN, V. A., PETROV, R. P.

"Application of the Duality Theorem to Investigate the Antenna Characteristics of Superheterodyne Photoreceivers [Infrared Heterodyne Detection]"

Moscow, Radiotekhnika i elektronika, Vol XVII, No 2, 1972, pp 345-350

Abstract: Results are presented from measuring the radiation directivity pattern of a heterodyne receiver of CO₂-laser emission. Application of the heterodyne receiver constricts the directivity pattern to 0.007-0.01 rads.

Figures are presented showing the results of measuring the directivity patterns of the heterodyne receiver in the 10.6 micron range. For comparison of the directivity pattern of direct and heterodyne reception, the directivity was measured for Ge-Au and Ge-Zn-Sb receivers operating as videodetectors. The application of the heterodyne method of reception narrows the directivity pattern by 15 times and provides significant (20 decibels) gain in the signal.

The application of the duality theorem when measuring the directivity pattern of a heterodyne receiver in the infrared range permits quite exact and simple estimation of the antenna characteristics of the optical heterodyne

1/2

USSR

KARLOV, N. V., KONEV, YU. B., and PROKHOROV, A. M., Physics Institute imeni P. N. Lebedev, Academy of Sciences, USSR

"Using Lasers for the Selective Breaking of Chemical Bonds"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 14, No 3, 5 Aug 71, pp 178-181

Abstract: The authors propose using two-stage photoexcitation for the selective breaking of previously chosen molecular chemical bonds. They find that one serious obstacle in solving the problem of selective bond breaking by using laser radiation is the anharmonic oscillations of the molecules. The authors discuss the necessary parameters of the lasers based on a system of equations which is easy to solve but whose solution is difficult to foresee. As a result of their research and computations, the authors find that the photoexcitation of molecular oscillations can substantially increase the rate of photodissociation from wide-band sources of visible light because of the increase in the number of photodissociation channels. The article contains 8 bibliographic entries.

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USSR

UDC: 621.385:530.145.6:623

DUSHKOV, I. I., KARLOV, N. V., KRYNETSKIY, B. B., MISHIN, V. A., PETROV, R. P.

"Antenna Characteristics of a Heterodyne Receiver of CO₂ Laser Emission"

Kratkiye soobshch. no fiz. (Brief Reports on Physics), 1971, No 1, pp 40-44
(from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D487)

Translation: The directivity of a heterodyne receiver of CO₂ laser emission was studied directly and by means of the generalized reciprocity theorem. The gain in the output signal with the use of heterodyne reception is 20 DB. The radiation pattern is narrowed by a factor of 15 to 0.007 radian. A. K.

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- 20 -

MSOR

UDC: 621.378.527.34

~~LAPIN, N. V.~~ and KRYNETSKIY, B. B., Physics Institute imeni P. N. Lebedev of the USSR Academy of Sciences

"A Two-Resonator Maser for Observing Interstellar Hydroxyl"

Moscow, Radiotekhnika i Elektronika, Vol. 15, No 8, 1970, pp 1771-1772

Abstract: The authors present the design and test results for a two-resonator maser which can be easily adjusted in the 1612, 1665, 1667, and 1720 Mc range. The amplifier resonator system at signal frequency is represented by two series connected strip resonators with lumped capacitance. The strips are located in the plane of the wide wall of the waveguide segment with a 14x6 mm cross section. The cavity clearance was filled with mica in order to decrease the micro-background effect associated with the bubbling of boiling helium. The normal quality of each of the resonators at liquid helium temperature is 830. The maser crystals were formed into Π shaped plates 12x6x6 mm and were placed in a high-frequency magnetic field. Each of the resonators can be retuned in the 120 Mc range. This type of maser can operate in conjunction with a cooled circulator. The design of the signal resonator makes it possible to test in it paramagnetic crystals with various dielectric constants. In testing a ruby crystal, the maser has a resonator at a pumping frequency operating at a mode of H_{103} . The maser uses an electromagnet with superconductivity windings. This maser has been used and tested in the modu-

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USSR

KARLOV, N. V. and KRYNETSKIY, B. B., Radiotekhnika i Elektronika, Vol. 15, No 8, 1970, pp 1771-1772

lation radiometer system of the Great Pulkovo Radio-Telescope at the Main Astronomical Observatory under the USSR Academy of Sciences. Up to the installation of the maser the radiometer had an equivalent input noise temperature of 1000°K . After installation of the quantum amplifier the noise temperature of the receiver fell to 126°K . The use of a cooled circulator with the maser made it possible to reduce the total noise temperature of the radiometer to 90°K . The results show the preference of ruby masers for use in radio-astronomical receivers because of the great degree of stability of this type of maser. Original article: two figures, one table, and two bibliographic entries.

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- 127 -

172 019 UNCLASSIFIED PROCESSING DATE--2306170
 TITLE--DETERMINATION OF THE COORDINATES OF SOME GALACTIC SOURCES OF
 ANOMALOUSLY EXCITED HYDROXYL -U-
 AUTHOR--(05)-BYSTROVA, N.V., GOSACHINSKIY, I.V., YEGOROVA, T.M., KARLOV,
 N.V., KRYNETSKIY, B.B.
 COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(4), 791-4

DATE PUBLISHED-----70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--ASTRONOMIC OBSERVATORY, COORDINATE, GALAXY, GALACTIC
 RADIATION, HYDROXYL RADICAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRA--3001/1573

STEP NO--UR/0020/70/191/004/0791/0794

CIRC ACCESSION NO--AT0127069

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--23GCT70

CIRC ACCESSION NO--AT0127069

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RIGHT ASCENSIONS OF 4 SOURCES OF OH RADIATION WERE MEASURED IN 1969 IN THE MAIN ASTRONOMIC OBSERVATORY OF THE ACADEMY OF SCIENCES OF THE U.S.S.R. TWO SOURCES OF RADIATION, DETECTED IN 1968, CLOSELY COINCIDED WITH THE NMLCYG AND VYCA OBJECTS. THE RADIOLINE OF OH IN THESE SOURCES HAD THE HIGHEST INTENSITY AT FREQUENCY OF 1612 MHZ AND ITS PROFILE WAS CHARACTERIZED BY THE PRESENCE OF 2 REGIONS OF RADIATION DIFFERING STRONGLY IN RADIAL VELOCITY. THIS CAN BE RELATED TO ROTATION, EXPANSION, OR COMPRESSION OF A GAS CLOUD. THE POSITION IN EACH RADIAL VELOCITY WAS MEASURED SEP.: RADIATION OF OH LINE WITH RADIAL VELOCITIES OF MINUS 24.2, 18.5, PLUS 21 KM, AND MINUS 10.5, MINUS 6.4, PLUS 45.5, PLUS 49.7, AND PLUS 52.8 KM PER SEC FOR NMLCYG AND VYCA, RESP. OBSERVATION OF W49 AND SGR-B2 SOURCES WAS MADE AT 1655 MHZ. THE LINE OF OH RADIATION IN THE SGR-B2 SOURCE WAS MEASURED AT RADIAL VELOCITY OF PLUS 67.7 KM PER SEC. FACILITY: RYZHKOV, N. P., FIZ. INST. IM. LEBEDEVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 061 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--CLARIFICATION AND DISINTEGRATION OF GASEOUS BORON TRICHLORIDE (BCL
SUB3) BY RADIATION OF A CO SUB2 LASER -U-
AUTHOR--(05)-ARAKELYAN, V.S., KARLOV, N.V., KUZMIN, N.V., PETROV, YU.N.,
STELMAKH, O.M.
COUNTRY OF INFO--USSR

SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, NO 3, MAR 70, PP 634-635

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LASER EXCITATION, CARBON DIOXIDE LASER, BORON FLUORIDE,
ABSORPTION COEFFICIENT, RESONANCE ABSORPTION, GAS DISSOCIATION, GAS
PRESSURE, RADIATION INTENSITY/(U)IKS21 SPECTROPHOTOMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1987/1461

STEP NO--UR/0109/70/000/003/0634/0635

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