Acc. Nr.: AP0042557 Ref. Code: JURd293

JPRS 50162

Effect of Spaceflight Factors on Barley Seeds

(Abstract: "Effect of Spaceflight Factors on Barley Seeds," by K. P. Garina and N. I. Romanova; Moscow, Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 158-159)

A study was made of the effect of spaceflight factors on air-dried seeds of bifarious barley, variety MOS-121. The experimental seeds were in spaceflight for five days with a maximum distance of about 300 km from the earth. The control seeds were at the cosmodrome but did not participate in the flight. After the experiment ended the experimental and control seeds were cultivated in Petri dishes in tap water at +24°C. The rootlets, attaining 8-10 mm in length, were fixed in a mixture of absolute alcohol (3 parts) and glacial acetic acid (1 part). In fixing the experimental rootlets allowance was made for the possibility of a stimulating effect of spaceflight factors on their rate of growth. Analysis of anaphase and early telaphase in the primary rootlets revealed a statistically reliable increase in the number of chromosomal rearrangements in the experiment in comparison with the control. In the control in 3,209 examined anaphases there were 87 different rearrangements, that is, 2.71 percent, whereas in the experiment in 3,524 anaphases the corresponding figure was 3.97 percent. The difference

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was statistically reliable. Thus, in the experimental study there was no increase in the number of chromosomal rearrangements. However, the number of individual fragments increased with statistical reliability. There was an increase in the number of cells with multiple breakages of chromosomes and other impairments in mitosis. In addition to chromosomal changes, detected in a cytogenetic analysis, there was a stimulating effect of space-flight factors on the germination and sprouting energy of seeds. For example, the germination of seeds in the control was 42.85 percent and in the experiment it was 68.57 percent. The experimental seeds began to sprout considerably earlier than the control seeds; the rate of growth of rootlets and sprouts was accelerated. The rootlets of the experimental seeds attained lengths from 1 to 2 cm 45 hours after wetting and the control seeds after 54 hours.

19760529

USSR

UDC: 534.632:621.317.77

MILOV, V. A. and GARINA, T. N.

"Phase Meter for Measuring the Speed of Sound in Heterogeneous Materials"

Leningrad, Priborostroyeniye, No 1, 1972, pp 31-35

Abstract: The phase meter described in this paper measures the speed of sound in nonhomogeneous materials by converting the phase shift between continuously transmitted and received signals of 1 kHz in a time interval compensated by the delay of a tunable slave multivibrator. The extent of the coincidence between pulses produced by two other multivibrators is estimated by a microammeter, and the phase shift or the delay time is read out from a variable resistor in the circuit of the tunable multivibrator. Choice of frequency of 1 kHz for the testing signal is dictated by the principle that in studying polydispersive materials, it is sometimes best to use a signal of wavelength much longer than the dimensions of the nonhomogeneities. A description is given of precautions taken to reduce distortions in the signal at the point of contact of the transducer and the material under test. A block diagram and schematic of the phase meter are presented together with a cross-sectional diagram of the transducer. The authors are members of the Leningrad Engineering-Building Institute.

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USSR UDC 539.3

LIGAY, L. B., CHUDAYEV, Ya. F., GARIPOV, M. Sh.

"Bending of a Square Plate With Two Restrained and Two Free Edges"

V sb. Materialy k predstoyashch. nauch.-tekhn. konf. Sib. metallurg. in-t. Sekts. stroit. proiz-va. Vyp. 3 (Materials for a Forthcoming Scientific-Technical Conference. Siberian Metallurgical Institute. Construction Industry Section. No. 3 -- Collection of Works), Novokuznetsk, 1972, pp 200-206 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V189)

Translation: The stress-deformation state of a thin elastic square plate under the action of a uniformly distributed surface of a load perpendicular to the middle of the surface is discussed. Two adjacent edges of the plate are rigidly constrained and the two others are free. The differential equation from the theory of plates is solved on a computer by the grid method with a step equal to 1/8 of the length of a side of the plate. Values of the bends of the plate are given in tabular form. G. K. Aksentyan.

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USSR UDC: 517.9:532

GARIPOV, R. M.

"Asymptotic Behavior of Cauchy-Poisson Waves"

V sb. Nekotor. probl. mat. i mekh. (Some Problems of Mathematics and Mechanics--collection of works), Leningrad, "Nauka", 1970, pp 135-145 (from RZh--Matematika, No 5, May 71, Abstract No 5B496)

Translation: The three-dimensional Cauchy-Poisson problem for an infinite basin filled with an ideal incompressible liquid is formulated within the linear theory of surface waves, assuming that an infinitely long straight ridge of uniform cross section extends along the bottom of the basin. The asymptotic behavior of the solution of such a problem with large time values is studied. S. Sekerzh-Zen'kovich.

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Acc. Nr: AT0043978 Ref. Code: UR0000

PRIMARY SOURCE: Geofizicheskiy Sbornik, Kiev, 1970, Nr 33, pp 55-60

DETERMINATION OF THE AGE OF ROCKS IN ZMEINY ISLAND IN THE NORTH-WESTERN PART OF THE BLACK SEA (ACCORDING TO THE DATA OF THE PALEOMAGNETIC INVESTIGATIONS)

I. A. Garkalenko, L. G. Gladchenko, K. I. Anferova, A. N. Trètyak

(Ministry of Geology, Ukrainian SSR, Trust «Dnieprogeophysics», Institute of Geophysics, Academy of Sciences, Ukrainian SSR)

Summary

The article deals with the result of determining the age of the sedimentary rocks of Zmeiny island by the paleomagnetic method; an attempt is made to solve the problem concerning the southern continuation of the Russian platform within the limits of the Black Sea water area.

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On the basis of the literary data and using the results of the paleomagnetic determinations, a conclusion is made that the rocks of Zmeinyy island deposited within the limits of the Russian platform (its marginal part) and, consequently, the north-western part of the Black Sea water area up to the Odessa abyssal fracture is arranged within its limits and contains the platform deposits, beginning from the Lower Paleozoic period.

The supposed southern border of the Russian platform is in the Sfintul George cape latitude.

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19770413

Acc. Nr.: AR0103065

Ref. Code: UR 0000
JPRS 49937

Deep Structure of Lowland Crimea

(Abstract: "New Information on the Deep Structure of Lowland Crimea and the Sivash' Area on the Basis of Data from Geophysical Investigations," by I. I. [redacted], B. S. Nikiforuk and V. P. Boronin; Kiev, Geofizicheskiy Sbornik AN Ukr SSR, No 30, 1969, pp 36-44)

From: Moscow, Referativnyy Zhurnal, Geofizika, Svodnyy Tom, No 1, 1970, 1G277

Data from seismic prospecting by the refracted waves correlation method, supplemented by materials from electric prospecting, gravimetric and magnetometry surveys, were used in compiling a tectonic map of the northern part of lowland Crimea and the Sivash' area. The article is accompanied by diagrams of the block structure of the region. The Northern Black Sea fault separates the southern margin of the Russian platform from the Scythian block and the Novoselkovskiy fault separates the Dzhankoyskiy block of the Odessa-Sivash' downwarp from the Yevpatoriya-Simferopol' uplifted block of the Paleozoic basement. Ancient submeridional faults break these sublatitudinal structural elements into individual blocks. The zone of the Sivash' gravity minimum corresponds to a buried projection of the Precambrian basement and it therefore is part of the Russian platform. Bibliography of 21 items.

Reel/Frame
19661152

Acc. Nr.: AP0046778 Ref. Code: UR0125

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USSR UDC 621.791.03.96

SKACHKO, YU. N., MOSHKIN, V. F., GARKALYUK, R. I., POPOV, N. V., MEDVEDEV, A. N., SKORUPSKIY, B. P, KORSHUNOV, V. A.

"High-Frequency Welding of Spiral-Seam Pipe with Butt Seam Joining"

Kiev, Avtomaticheskaya Svarka (Automatic Welding), No 1, 1970, pp 63-65 (from Avtomaticheskaya Svarka, No 1, 1970, p 80)

Translation: This article contains a study of the characteristic features of strip formation and upsetting during high-frequency welding of spiral-seam pipe with butt seam joining. New forming schemes and new designs of the mechanical units of tube welding mills are proposed. The peculiarities of welding pipe are investigated in the case of disturbance of the geometry of the initial tape. There are 4 illustrations and a 6-entry bibliography.

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Reel/Frame
19790082

1/2 044 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ISOLATION OF A LONGITUDINAL OSCILLATION MODE IN SOLID STATE LASERS -U-

AUTHOR-(05)-GALAKTIONOVA, N.M., GARKAVI, G.A., YEGOROVA, V.F., MAK, A.A., FROMZEL, V.A.

COUNTRY OF INFO--USSR

SOURCE--OPTIKA I SPEKTROSKOPIIA, VOL. 28, APR. 1970, P. 751-758

DATE PUBLISHED----APR70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SOLID STATE LASER, RESONATOR, SINGLE MODE LASER, LUMINESCENCE SPECTRUM, LINE BROADENING, LASER PUMPING, NEODYMIUM GLASS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1225 STEP NO--UR/0051/70/028/000/0751/0758

CIRC ACCESSION NO--AP0124879

UNCLASSIFIED

2/2 044 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124879

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYTICAL DETERMINATION OF THE CONDITIONS UNDER WITH A SOLID STATE LASER WITH A COMPLEX RESONATOR WILL OPERATE IN A SINGLE AXIAL MODE (CONDITIONS UNDER WHICH NO OTHER AXIAL MODES CAN BE EXCITED BECAUSE OF THEIR LARGE LOSSES). THE ANALYSIS IS PERFORMED FOR ACTIVE MEDIA VARYING IN THE NATURE OF LUMINESCENT LINE BROADENING, AND ABOVE THRESHOLD PUMPING POWERS. THE INFLUENCE OF THE NATURE OF LUMINESCENT LINE BROADENING ON THE SELECTIVE CHARACTERISTICS OF A RESONATOR CONTAINING A FABRY PEROT ETALON IS EXAMINED, SHOWING THAT INHOMOGENEOUS BROADENING MAKES IT DIFFICULT TO OBTAIN A SINGLE AXIAL MODE. THE THEORETICAL RESULTS ARE VERIFIED BY EXPERIMENTS PERFORMED WITH A PULSED NEODYMIUM GLASS LASER AT ABOVE THRESHOLD PUMPING POWERS.

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1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CHANGES IN SANDY PODZOLIC SOILS UNDER THE INFLUENCE OF CULTIVATION -U-

AUTHOR--GARKUSHA, I.F.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK BELORUSS. SSR 1970, 14(1), 61-4

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SOIL TYPE, NITRIFICATION, CALCIUM OXIDE, MAGNESIUM OXIDE, PHOSPHORUS OXIDE, POTASSIUM OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1807 STEP NO--UR/0250/70/014/001/0061/0064

CIRC ACCESSION NO--AT0125419

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0125419

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BESIDES NEG. AGRONOMIC PROPERTIES SUCH AS LOW NUTRIETN AND ORG. MATTER CONTENT, INSUFFICIENT BASE SATN., AND LCW ABSORBING CAPACITY, THE SANDY PODZOLIC SOILS ARE TYPIFIED BY A GOOD AERATION, BY FRIABLE STATE, BY INTENSE BIOL. ACTIVITY, BY GOOD THERMAL CONDUCTIVITY, AND BY THEIR FAST DRYING IN THE SPRING, MAKING THEM ACCESSIBLE TO CULTIVATION EARLIER THAN OTHER SOILS. EFFECTS OF CULTIVATION WERE INVESTIGATED IN FIELD EXPTS. WITH EMPHASIS ON THE SOIL FORMING PROCESS, TO THE MORPHOL. PROPERTIES, AND TO GENETIC TYPE CONCERNED. BY CULTIVATION THE DEPTH OF THE HUMUS LAYER WAS INCREASED AND THE PODZOLIC A SUB2 HORIZON WAS GRADUALLY TRANSFORMED INTO AN ARABLE LAYER WITH A FAIR HUMUS CONTENT, WITH ENSUING CHANGES OF COLOR AND STRUCTURE. BY CULTIVATION, THE CONTENT OF ORG. MATTER, OF N, CAO, MGO, P SUB2 O SUB5, AND K SUB2 O WERE RAISED. THE CONTENT OF PARTICLES SMALLER THAN 0.001 MM WAS INCREASED, AND THE EXCHANGE AND HYDROLYTIC ACIDITY REDUCED. NITRIFICATION ACTIVITY AND OTHER FORMS OF MICROBIAL ACTIVITY WERE ENHANCED, FURTHER CONTRIBUTING TO THE LEVEL OF AVAILABLE NUTRIENTS. FACILITY: BELORUSS. SEL'SKOKHOZ AKAD., MINISK, USSR.

UNCLASSIFIED

USSR

GARKUSHA, N. G., DVORNIKOV, V. I., SHILINGOVSKIY, N. I.

"Dynamic Processes in the Brake Cables When a Lift Container is Stopped by Parachute in a Rigidly Reinforced Channel"

Stal'n. Kanaty., No 9 [Steel Cables, No 9 -- Collection of Works], Kiev, Tekhnika Press, 1972, pp 319-321, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 V1162, by the author's).

Translation: The dynamic loads arising in brake cables and rigid reinforcing wires when a lift container is stopped by PKL parachute traps are studied. It is assumed that the brake cable is a viscoelastic rod with a rigidly attached upper end and free lower end, and that the parachute provides instantaneous "dead" capture with any finite velocity of the container.

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Luminescense

(8)

USSR UDC 661.143:546.431'821'185(088.8)

GUGEL', B. M., LODYGIN, N. A., GOLUBEV, I. F., KHIZHA, V. S., BLYAKHMAN, E. A., KUTSENKO, N. A., SIDOROV, M. D., ZVYAGIN, V. B., VAKHRAMOV, V. P., AGAPOV, V. I., GARKUSHA, V. A., KHUSAINOVA, R. S.

"Phosphor for Low-Pressure Luminescent Tubes"

USSR Author's Certificate No 336342, filed 19 May 70, published 22 May 72 (from RZh-Khimiya, No 2(II), Feb 73, Abstract No 2L148P)

Translation: In order to increase the light yield of the tubes, the proposed phosphor includes the following: barium-titanium phosphate, calcium halophosphate, strontium and magnesium orthophosphate and magnesium fluorogermanate. The barium-titanium phosphate, the calcium halophosphate, the strontium orthophosphate, magnesium orthophosphate and magnesium fluorogermanate are introduced in the following proportions by weight: 4-6:2.5-4:0.4-0.8:0.13-0.25 respectively. As an example, let us take weighed samples of 4.36 kg of barium-titanium phosphate, 3.84 kg of calcium halophosphate, 0.40 kg of magnesium-strontium orthophosphate and 0.24 kg of magnesium fluorogermanate. Put them in a porecelain cylinder and mix for 1 hour. A suspension is prepared from the mixture obtained and it is applied to the tubes.

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USSR

UDC: 661.143:546.41'385

GARKUSHA, V. A., GUGEL', B. M.

"Synthesis of Antimony- and Manganese-Activated Calcium Halophosphate Free of Antimonates"

Sb. nauch. tr. VNII lyuminoforov i osobo chist. veshchestv (Collected Scientific Works of the All-Union Scientific Research Institute of Phosphors and Extra Pure Materials), 1971, vyp. 5, pp 21-25 (from RZh-Khimiya, No 7, Apr 72, Abstract No 7L169)

Translation: The presence of antimonates in a luminescent calcium halophosphate composition is evidence that the composition contains structural defects which reduce its luminescence yield in fluorescent lamps. Therefore methods of making the phosphor free of antimonate are of considerable practical importance. Adding antimony in the form of $CdO \cdot Sb_2O_4$ makes it possible to synthesize apatite at 800-900°C, all the antimony being present in the form of Sb^{3+}. Resumé.

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USSR

UDC: 620.17

SHATINSKIY, V.F., GARLINSKIY, R.N., and KRAVCHUK, O.I.

"The Apparatus for Tensile Tests of Metals and Alloys at Elevated Temperatures and Extra-High Vacuum"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 7, No 5, 1971, pp 66-68

Abstract: The apparatus for testing specimens for tensile strength and creep under vacuum of up to 10^{-10} mm of mercury and temperatures up to 1200°C is described.

This apparatus consists of an inner and an outer casing. The inner casing is 300 mm diameter, 700 mm long. The inner casing is evacuated to 10^{-6} to 10^{-12} mm Hg by means of a mechanical pump, two diffusion pumps and a sorption pump in series. The space between the two casings is evacuated to 10^{-4} mm Hg. The specimen is located in the inner chamber and is connected to two

SHATINSKIY, V. F., et al, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 7, No 5, 1971, pp 66-68

water cooled steel tension bars. It is heated by an electric heater. These bars are sealed to the walls by means of stainless steel bellows so as to avoid friction. All other mechanical penetrations are sealed by metallic packing. Copper gaskets seal the bolted joints. Electric penetration are sealed by metal-ceramic insulators.

Removable heads are provided on both casings for accessability to the inner chamber.

This apparatus is used for tests of strength and creep when the surface effects of corrosion and diffusion have to be eliminated.

USSR

UDC 51

GARMASH, I. I.

"On the Problem of Designation"

V sb. Primeneniye mat. v ekon. (The Application of Mathematics in Economics--collection of works), No 8, Leningrad, Leningrad University, 1973, pp 103 - 108 (from RZh Matematika No 12, 1973, item No 12 V581)

Translation: Given a non-negative m x n matrix $A = (a_{ij})$ (here $m \leq n$). The problem of designation for a rectangular matrix requires us to determine a m-transposition $j_1, j_2, \ldots, j_m$ of the numbers $1, 2, \ldots, n$, which will minimize the linear goal function

$$\sum_{i=1}^{m} a_{ij_i} .$$

Supplementing matrix A until it is square makes it possible to reduce the problem of designation for a rectangular matrix to an ordinary problem of optimal designation (for a square matrix). When m is much less than n, this procedure leads to a noticeable increase in the dimensionality of the initial matrix, which in many cases is undesirable. This work suggests an algorithm for solving the problem of designation for a rectangular matrix without filling

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GARMASH, I. I., V sb. Primeneniye mat. v ekon., No 8, Leningrad, Leningrad University, 1973, pp 103 - 108

it out to make it square. The algorithm consists of two stages. In the first step the ordinary problem of optimal designation for some basic set of m columns is solved, for example, by the Hungarian method. In the second step a variation of the method of sequential plan improvement is used (based on the application of the idea of alternating chains). The suggested algorithm can be used for correcting solutions to optimal designation problems with changing initial data.

Abstract by Yu. Finkel'shteyn.

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1/2 027 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--ELECTROSLAG WELDING OF CYLINDERS WITH WELDING BOTTOMS -U-

AUTHOR-(02)-SEMENOV, V.P., GARMASH, N.K.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, SVAROCHNOYE PROIZVODSTVO, NO. 5, 1970, PP 42-43

DATE PUBLISHED--------70

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

TOPIC TAGS--STEEL WELDING, ALLOY STEEL, WELDING EQUIPMENT, METALLURGIC PLANT, MACHINERY MANUFACTURING PLANT, CYLINDRIC SHELL STRUCTURE/(U)A74 WELDING DEVICE, (U)TSHS3000 3 WELDING TRANSFORMER, (U)25GS ALLOY STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605041/811 STEP NO--UR/0135/70/000/005/0042/0043

CIRC ACCESSION NO--AP0142721

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0142721

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LARGE CYLINDERS OF THIS TYPE CANNOT BE MADE BY SEAMLESS FORGING BECAUSE OF INEFFICIENT OR UNAVAILABLE PRESS FORGING OR FURNACE EQUIPMENT. THEY ARE THEREFORE MADE BY WELDING FORGED SHELLS AND A BOTTOM. THIS ARTICLE IS DEVOTED TO CYLINDERS OF THIS TYPE, MANUFACTURED BY NOVOKRAMATOR PLANT, AND GIVES THE DETAILS OF ITS CONSTRUCTION. THE CYLINDER IS MADE OF 25GS STEEL, ALLOYED IN A MARTIN FURNACE, AND CAST IN A VACUUM. THE MECHANICAL CHARACTERISTICS OF THE CYLINDER SHELL ARE GIVEN IN ADDITION TO A PROFILE AND CROSS SECTION VIEW OF THE CYLINDERM AND THE WEIGHT AND CHEMICAL COMPOSITION OF ITS VARIOUS PARTS. BECAUSE OF THE CYLINDERS' LARGE DIMENSIONS, THE WELDING WAS DONE ON EQUIPMENT OF THE A-741 TYPE, WITH THE WELDING CURRENT FED FROM TWO TSHS-3000-3 TRANSFORMERS CONNECTED IN PARALLEL. MEASUREMENTS WERE MADE OF THE DEFORMATIONS CAUSED DURING WELDING. THE RESULTS OF THESE MEASUREMENTS PERMITTED A 25PERCENT REDUCTION IN TECHNICAL ALLOWANCES IN THE MECHANICAL PROCESSING UNDER WELDING OF CYLINDER PRODUCTS AFTER THE INITIAL CYLINDER. FACILITY: NOVOKRAMATOR MACHINE CONSTRUCTION PALNT IMENI V. I. LENIN.

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USSR UDC: 8.74

GARMASH, V. A., PROKOPENKO, S. T.

"Digital Computer Modeling of the Process of Substituting a One-Time Commutation Mode for an Isolated Commutation Mode"

Moscow, Sist. raspredeleniya inform.--sbornik (Information Distribution Systems--collection of works), "Nauka", 1972, pp 220-227 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V634 [authors' abstract])

Translation: A procedure is described for reducing the process of isolated commutation to a one-time mode in which all customers in a certain time segment who are arriving in the system, as well as those which are remaining in the system for this time without service, are accepted for service. The results of statistical modeling of the process on a digital computer are presented.

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USSR

MARTYNENKO, O. G., BAYRASHEVSKIY, B. A., GARMIZE, L. KH., SENCHUK, L. A.

"Damping the Rotary Motion of Flow Along a Round Tube under Conditions of Constant Twist of It at the Input"

Minsk, Issled. termogidrodinamich. svetovodov (Thermodynamic Light Guide Research), 1970, pp 123-132 (from RZh-Mekhanika, No 11, Nov 70, Abstract No 11B800)

Translation: Procedures for creating rotary motion of a flow in a cylindrical connecting pipe as a result of twisting of the flow at the inlet were investigated as applied to the problem of improving the operation of the gas lens of a light guide. The dependence of the intensity of the twist on the parameters of the cylindrical coil is revealed for location of it at the walls of the input section of the channel or in the previously included convergence channel section with a degree of constriction $n = 5$. The flow twisting scheme for tangential approach of the air with a flow rate G_T is estimated for variation of the relative flow

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MARTYNENKO, O. G., et al, Issled. termogidrodinamich. svetovodov, 1970, pp 123-132

rate in the range of G_T/G_{total} = 0.33-1. It is demonstrated that it is possible to obtain a small twist of the flow which corresponds to the optimal operating conditions both by means of coils and by tangential approach of the air.

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UDC 678.7.001.5"313"

USSR

GARMONOV, I. V., All Union Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev

"Forty Years of the All Union Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev"

Moscow, Kauchuk i Rezina, No 2, 1971, pp 1-6

Abstract: The article reviews the activity of the All Union Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev (originally Experimental Plant B in Leningrad) during the period from 1930 to 1970, with special emphasis on the post-World War II period. The Institute is now a major scientific research center with branches in Voronezh and Kazan'. The Institute itself has six doctors and 122 candidates of sciences on its staff. The Experimental Plant of the Institute employs a large staff of skilled workers and engineering and technical personnel. In the postwar period work was begun on the production of divinyl by the two-stage dehydrogenation of butane. The catalyst K-5 was created (S. M. MONOZON), and is now widely used in the dehydrogenation of butane, isopentane, isobutane into corresponding olefins, diene hydrocarbons for the synthesis of rubber. Basic research was conducted on the mechanism of divinyl formation from alcohol

USSR

GARMONOV, I. V., Kauchuk i Rezina, No 2, 1971, pp 1-6

(YU. A. GORIN). Work on the synthesis of butadiene-styrene rubbers by radical (emulsion) polymerization included the development of conditions for the copolymerization of butadiene and styrene at 50°C ("hot" rubbers) and 5°C ("cold" rubbers). Methods for controlling the molecular weight and molecular-weight distribution of a copolymer were studied, resulting in the development of a method for the production of butadiene-styrene oil-filled rubber. In conjunction with the Voronezh Branch of the Institute, the Scientific Research Institute of Monomers for Synthetic Rubber and plant central scientific research laboratories, industrial methods were developed for producing various types of butadiene-styrene (methyl styrene) rubbers (B. A. DOLGOPLOSK, I. Ya. PODDUBNYY, I. I. RADCHENKO, S. I. FISHER, A. M. PERMINOV, A. Ye. KALAUS, M. A. RABINERZON).

An industrial method for the production of frostproof lithium-butadiene rubber was developed by M. A. KRUPYSHEV, N. A. GLAGOLEVA, A. M. ZENITOV and F. P. FILIMONOV. Work begun before the war on the polymerization of isoprene with lithium and organic compounds thereof was resumed in 1948 under the direction of A. A. KOROTKOV. At the same time theoretical and applied research, with

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USSR

GARMONOV, I. V., Kauchuk i Rezina, No 2, 1971, pp 1-6

the participation of plant central scientific research laboratories, was carried out under the direction of B. A. DOLGOPLOSK on the production of cis-1,4-polybutadiene. In 1964 the Soviet Union launched the first two plants for the production of isoprene and isoprene rubber and one plant for the production of butadiene rubber according to plans of the State Planning and Scientific Research Institute of the Synthetic Rubber Industry. Staff members of the Institute actively engaged in research on the synthesis of cis-1,4-polyisoprene included A. A. KOROTKOV, M. A. KRUPYSHEV, D. P. FERINGER, V. A. KORMER, K. B. PIOTROVSKIY, G. F. LISOCHKIN, N. G. PAVLOV, V. N. REYKH et al, and on the synthesis of cis-1,4-polybutadiene B. A. DOLGOPLOSK, V. A. KROL', G. A. PARFENOVA, A. K. LILEYEVA, B. V. MAMONTOV et al. The organization of the industrial production of stereoregular isoprene and butadiene rubbers was the most important scientific and technical achievement of the Institute staff in the postwar period. In 1970 the output of stereoregular rubbers constituted 30 percent of the total synthetic rubber production in the Soviet Union, and it will grow even more in the current five-year period.

In the last few years the Institute has worked with plants to improve

USSR

GARMONOV, I. V., Kauchuk i Rezina, No 2, 1971, pp 1-6

individual stages in the production of SKI and SKD rubbers, widen the product assortment, improve their quality and technical and economic production indicators. The Institute has worked with the Institute of Petrochemical Synthesis, Academy of Sciences USSR, to create new catalytic systems for stereospecific polymerization of dienes. A catalytic system was developed on the base of π-allyl nickel complexes for the production of better-quality cis-polybutadiene (B. A. DOLGOPLOSK, V. A. KORMER et al). An original method was devised for producing diolefin polymers or diolefin-styrene copolymers with or without functional groups (G. N. PETROV et al). Both of these processes have been patented in a number of countries. The Institute and its Voronezh branch have developed catalytic systems using organolithium compounds for the synthesis of butadiene-styrene rubbers possessing increased elasticity, frost and abrasion resistance. The Institute has developed a catalytic system and conditions for the production of ethylene-propylene rubbers and has worked on the selection of a third monomer (I. A. LIVSHITS, K. U. NERUSH, D. I. SHLIFER, L. M. KOROBOVA et al), resulting in the organization of pilot production and the issuance of documents for the industrial production of this type of rubber.
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USSR

GARMONOV, I. V., Kauchuk i Rezina, No 2, 1971, pp 1-6

The Institute and its Voronezh Branch have developed production methods for various block copolymers (G. N. PETROV, V. P. SHATALOV, G. M. TOLSTOPYATOV, G. M. SINAYSKIY et al). Large pilot-produced batches of butadiene- and styrene-based block copolymers have been turned out for extensive testing in various sectors of industry. The Institute has created a new type of thermoelastoplastics based on emulsion rubbers containing functional carboxyl groups -- ionthermoelastoplastics. On the basis of work done by the Institute the synthetic rubber industry is turning out eight brands of oil-resistant butadiene-nitrile rubbers which are superior to analogous foreign brands in a number of basic indicators. The next task is improving the production process for butadiene-nitrile rubbers is to replace Nekal with biodegradable emulsifiers which have been developed (I. I. RADCHENKO, V. Ya. ANDAKUSHKIN, S. L. FISHER, N. G. SUCHKOVA, V. N. BERESNEV, A. M. PERMINOV). Acrylate rubbers are being produced on a pilot scale.

The Institute has developed methods and processes for the production of various solid and liquid organosilicon rubbers, which are being turned out on an industrial or pilot-production scale. Methods have been developed for the

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GARMONOV, I. V., Kauchuk i Rezina, No 2, 1971, pp 1-6

radiation vulcanization of heterosiloxane rubbers. The greatest contribution to the development of organosilicon rubber production methods has been made by A. L. KLEBANSKIY, I. K. STAVITSKIY, A. V. KARLIN, Yu. V. TRENKE, S. N. BORISOV, E. V. KOGAN, K. A. RZHENDZINSKAYA, Ye. G. KAGAN. The Institute has studied the synthesis of new organofluorine compounds and their polymerization. A production process has been developed for fluororubber with a glass transition temperature 20°C below that of Viton-type rubber (I. M. DOLGOPOL'SKIY, A. V. TUMANOVA, V. V. BERENBLIT, R. B. RABINOVICH). Research is under way on the synthesis of other organosilicon and fluororubbers capable of functioning in even a wider temperature range.

The Institute has developed a method and conditions for the production of different types of millable and casting urethane rubbers (N. P. APUKHTINA, D. Sh. KOROTKINA, A. Ye. KALAUS, V. N. VINOGRADOV, N. L. DEREVYAGINA). Work done by the Institute has resulted in the industrial output of about 20 types of butadiene-styrene and other types of synthetic latexes (A. V. LEBEDEV, N. A. FERMOR, A. B. PEYZNER et al). The successful development of production methods for various synthetic rubbers and latexes has been promoted by work

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USSR

GARMONOV, I. V., Kauchuk i Rezina, No 2, 1971, pp 1-6

done at the Institute on the structure of synthetic rubbers in relation to production conditions and the physical properties of polymers (under the direction of I. Ya. PODDUBNYY and A. I. MAREY), the stabilization of synthetic rubbers (under the direction of K. B. PIOTROVSKIY), chemical production control (under the direction of N. A. ISAKOVA), the anti-corrosion protection of production equipment (under the direction of A. I. LABUTIN).

7/7

UDC 678.7.001.5"313"

USSR

GARMONOV, I. V., All Union Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev

"Forty Years of the All Union Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev"

Moscow, Kauchuk i Rezina, No 2, 1971, pp 1-6

Abstract: The article reviews the activity of the All Union Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev (originally Experimental Plant B in Leningrad) during the period from 1930 to 1970, with special emphasis on the post-World War II period. The Institute is now a major scientific research center with branches in Voronezh and Kazan'. The Institute itself has six doctors and 122 candidates of sciences on its staff. The Experimental Plant of the Institute employs a large staff of skilled workers and engineering and technical personnel. In the postwar period work was begun on the production of divinyl by the two-stage dehydrogenation of butane. The catalyst K-5 was created (S. M. MONOZON), and is now widely used in the dehydrogenation of butane, isopentane, isobutane into corresponding olefins, diene hydrocarbons for the synthesis of rubber. Basic research was conducted on the mechanism of divinyl formation from alcohol

USSR

GARMONOV, I. V., Kauchuk i Rezina, No 2, 1971, pp 1-6

(YU. A. GORIN). Work on the synthesis of butadiene-styrene rubbers by radical (emulsion) polymerization included the development of conditions for the copolymerization of butadiene and styrene at 50°C ("hot" rubbers) and 5°C ("cold" rubbers). Methods for controlling the molecular weight and molecular-weight distribution of a copolymer were studied, resulting in the development of a method for the production of butadiene-styrene oil-filled rubber. In conjunction with the Voronezh Branch of the Institute, the Scientific Research Institute of Monomers for Synthetic Rubber and plant central scientific research laboratories, industrial methods were developed for producing various types of butadiene-styrene (methyl styrene) rubbers (B. A. DOLGOPLOSK, I. Ya. PODDUBNYY, I. I. RADCHENKO, S. I. FISHER, A. M. PERMINOV, A. Ye. KALAUS, M. A. RABINERZON).

An industrial method for the production of frostproof lithium-butadiene rubber was developed by M. A. KRUPYSHEV, N. A. GLAGOLEVA, A. M. ZENITOV and F. P. FILIMONOV. Work begun before the war on the polymerization of isoprene with lithium and organic compounds thereof was resumed in 1948 under the direction of A. A. KOROTKOV. At the same time theoretical and applied research, with

2/7

UDC 678.7.001.5"313"

USSR

GARMONOV, I. V., All Union Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev

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Moscow, Kauchuk i Rezina, No 2, 1971, pp 1-6

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2/7

UDC 678.7.001.5"313"

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Moscow, Kauchuk i Rezina, No 2, 1971, pp 1-6

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2/7

USSR

UDC 621.371.332.3:551.463.7:538.3

AFANAS'YEV, K.L., BOL'SHAKOV, E.V., GARNAKER'YAN, A.A., LEPENDIN, L.F., LOBACH, V.T., TIMONOV, V.V., CHERSPANTSSV, S.F.

"To The Problem Of Measuring The Height Of Sea Waves By The Radar Method From Aircraft"

Tr. Taganrog. radiotekhn. in-ta (Works Of The Taganrog Radio Engineering Institute), 1971, No 22, pp 148-158 (from RZh: Radiotekhnika, No 2, Feb 72, Abstract No 2G15)

Translation: The theoretical bases are stated of the radar method of measuring the height of waves. It is shown that in order to increase the precision of measurement it is necessary to have a tunable transmitter or some fixed radiation frequencies (3 are sufficient). A measuring unit is described, constructed on the basis of a pulse radar station of the meter range; technical data are presented. An analysis of the results obtained during flight tests shows that the discrepancy between these results and the data obtained with the aid of a wave graph does not exceed 10--12 percent. The defect of the method is the impossibility of determining the character of the waves and the length of a wave. 1 ill. 2 tab. 4 ref. N.S.

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USSR

UDC 621.371.332.3:551.465.7:538.3

LOBACH, V.T., GARNAKER'YAN, A.A., POLOZHENTSEV, R.G., TIUKOV, E.S., INKOVSKIY, A.A.

"Experimental Investigation Of The Statistical Characteristics Of Radar Signals Reflected From Disturbed Sea Surface And Small-Sized Surface Objects"

Tr. Taganrog. radiotekhn. in-ta (Works Of The Taganrog Radio Engineering Institute), 1971, No 22, pp 14-23 (from RZh:Radiotekhnika, No 2, Feb 72, Abstract No 2G14)

Translation: The correlation intervals and the variation factor were measured of signals reflected from a disturbed sea surface and small-sized surface objects. A block diagram is presented of a measuring device with use of the "Donets" marine radar station (λ = 3.2 cm). An analysis is given of the results obtained; it is shown that they can be used for measurement of the degree of roughness of the sea and for evaluation of the effectiveness of detection of small-sized objects on a background of reflections from the sea surface. 1 ill. 2 tab. 3 ref. N.S.

1/1

USSR UDC: 621.396.697:621.375

GARNAKER'YAN, A. A.

"Analysis of the Operation of the Intermediate Frequency Amplifiers in Marine Radar Installations Under Conditions of Probe-Pulse Overload, and Methods of Eliminating This Overload"

Sb. nauchn. tr. Vladimir. politekhn. in-t (Collected Scientific Works of Vladimir Polytechnical Institute), 1970, vyp. 9, pp 89-96 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5G38)

Translation: Expressions are found for the envelopes at the output of stages of an overloaded IF amplifier, and the increase in pulse duration at the output of a typical IF amplifier is found as compared with the duration of the input pulse. The necessary power attenuation of the leakage pulse to eliminate overload is determined. The circuit diagram of the device is presented. Three illustrations, two tables, bibliography of three titles. Resumé.

1/1

USSR UDC: 778.533.83

GARNOV, V. V. and SINITSKAYA, N. M., Institute of Physics of the Earth imeni O. Yu. Schmidt, Academy of Sciences, USSR

"A Miniature High-Speed Raster Camera on the Basis of a Standard Photographic Camera"

Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematofotografii, Vol I, No 1, Jan-Feb 72, pp 17-21

Abstract: The article deals with screen (raster) cameras with mechanical image scanning. Note is taken of their particularities, and consideration is given of their favorable qualities and drawbacks. Proceeding from an analysis of the existing screen cameras with mechanical scanning, it is proposed that a new form of recording behind the screen lenses be employed; this permits the dimensions of the disks to be decreased by a factor of 5-10. The combination of a miniature disk with an air turbine makes it possible considerably to decrease the dimensions of the instrument and to simplify the scanning mechanism to the greatest possible extent. On the basis of this scanning mechanism, the Institute of Physics of the Earth, Academy of Sciences, USSR has constructed the miniature high-speed screen camera Moskva-R, developed on the basis of the design of the industrially produced wide-size camera "Moskva." Any other

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USSR

GARNOV, V. V. And SINITSKAYA, N. K., Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematofotografii, Vol I, No 1, Jan-Feb 72, pp 17-21

camera with a frame size of not less than 60 x 60 mm may be used. A general view of the camera is shown in the article. Scanning with respect to time is accomplished by the rotation of a miniature air turbine, coaxially situated with the lens opening. The hub of the turbine has one opening, which moves in a circle during rotation of the turbine, and acts as an aperture diaphragm. The camera can photograph up to sixty thousand frames per second. 4 figures. 8 references.

- END -

CSO: 1861-W

2/2

1/2 022 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--PROPHYLACTIC APPLICATION OF DRY POLYVALENT DYSTENTERY BACTERIOPHAGE WITH PECTIN IN CHILDREN'S PRE SCHOOL INSTITUTIONS -U-

AUTHOR-(05)-SOLODOVNIKOV, YU.P., PAVLOVA, L.I., MELYANOV, P.I., GARNOVA, N.A., NOGIEVA, YU.B.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 5, PP 131-137

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PROPHYLAXIS, BACTERIOPHAGE, DYSENTERY, EPIDEMIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0139 STEP NO--UR/0016/70/000/005/0131/0137

CIRC ACCESSION NO--AP0114535

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0114535

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS PRESENT THE RESULTS OF STRICTLY CONTROLLED EPIDEMIOLOGICAL TRIAL ON THE STUDY OF THE EFFICACY OF DRY POLYVALENT DYSENTERY BACTERIOPHAGE WITH PECTIN IN CHILDREN'S PRE SCHOOL INSTUTIONS OF YAROSLAVL. THE CHILDREN WERE GIVEN BACTERIOPHAGE DAILY DURING THE MONTHS FROM JUNE TO OCTOBER. THIS LED TO DECREASE OF THE INCIDENCE OF THE FOLLOWING DISEASES IN THE GROUP UNDER STUDY: OF BACTERIOLOGICALLY CONFIRMED DYSENTERY, 2.5 TIMES, OF CLINICALLY AND BACTERIOLOGICALLY CONFIRMED DYSENTERY, 2.3 TIMES, AND OF THE SUM TOTAL OF ACUTE INTESTINAL DISEASES, 2.1 TIMES. FACILITY: TSENTRAL'NYY INSTITUT EPIDEMIOLOGII, GOR'KOVSKIY INSTITUT EPIDEMIOLOGII I MIKROBIOLOGII, YAROSLAVSKAYA GORODSKAYA SANITARNO-EPIDEMIOLOGICHESKAYA STANTSIYA.

UNCLASSIFIED

USSR

UDC 547.785.5+541.49+288.4

KOGAN, V. A., OSIPOV, O. A., CHUB, N. K., GARNOVSKIY, A. D., BURLOV, A. S., TSUPAK, Ye. B., and POLUNIN, A. A., Rostov-na-Donu State University

"Complex Compounds of Copper With Heterocyclic Aldoximes"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 3, Mar 72, pp 581-584

Abstract: A series of new polynuclear compounds of copper with heterocyclic aldoximes synthesized from benzimidazole were produced for the first time. Ultimate analysis and magnetochemical measurements are used to determine the composition of the compounds and the presence of an exchange interaction with perchlorate anions. Differences in the composition and properties of the complexes are determined as they are related to the nature of the anion. The IR spectra of the compounds are studied and a hypothesis is proposed for the point of coordination of the ligand with copper.

1/1

USSR G UDC 547.551.4 + 541.49

GARNOVSKIY, A. D. KOLODYAZHNYY, YU. V., ALIYEVA, S. A., KROKHINA, N. F., GRANDBERG, I. I., OSIPOV, O. A., and PRESNYAKOVA, T. M., Rostov-on-Don State University and All-Union Agricultural Academy imeni K. A. Timiryazev

"Complex Compounds of Metals With Nitrogen-Containing Ligands. XIX. Complexes of Tin Tetrachloride With 1-Pyridylpyrazoles and Their 5-Hydroxy(amino) Derivatives"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 5, May 70, pp 1114-1120

Abstract: Continuing their study of complexing in systems with several donor centers, the authors studied the interaction of tin tetrachloride with 1-(α, β or γ-pyridyl)pyrazoles and their 5-hydroxy and amino derivatives. The dipole moments of the resultant complexes were determined and their IR spectra studied for purposes of solving the question of the configuration and tautomerism of the ligands. A comparative study was made of the IR spectra of ligand and complex molecules in order to establish the localization site of the coordination bond.

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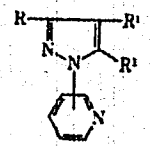
Acc. N: GARNOVSKIY A D Abstracting Service: CHEMICAL ABST. Ref. Code: Alc100370 5730 UR 0409

110632b Nitrogen-containing biheterocyclic systems. I. Dipole moments and structure of 1-pyridylpyrazoles. Alieva, S. A.; Kolodyazhnyi, Yu. V.; Garnovskii, A. D.; Osipov, O. A.; Grandberg, I. I.; Krokhina, N. F. (Rostov.-na-Donu Gos. Univ., Rostov-on-Don, USSR). *Khim. Geterotsikl. Soedin.* 1970, (1), 45–9 (Russ). The dipole moments of 1-pyridylpyrazoles and their amino derivs. were detd. in C_6H_6 at 25° with 5×10^{-4}–2×10^{-3} mole fraction. Comparison of exptl.



and vectorially calcd. dipole moments shows that 1-pyridyl pyrazoles, and 1-(3- or 4-pyridyl)5-aminopyrazoles have nonplanar configuration; the planar angle between the pyrazole and pyridine rings was calcd. For 1-(2-pyridyl)-5-aminopyrazoles the planar trans configuration is assumed due to intramol. H

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bonding. The following data were obtained (R, R^1, R^2, position attachment of pyridine ring, and planar angle between two rings given): Me, H, Me, 2, 58°; Me, H, Me, 3, 84°; Me, H, Me, 4, 0°; Pr, Et, NH_2, 3, 66°; $PhCH_2$, Ph, NH_2, 3, 56°; *p*-MeC_6H_4, H, NH_2, 3, 80°; Et, Me, NH_2, 4, 0°; Me, H, Cl, 1, 0°; Me, H, NH_2, 2, 0°; $PhCH_2$, Ph, NH_2, 2, 0°; Et, Me, NH_2, 2, 0°; Pr, Et, NH_2, 2, 0°; *p*-$H_2NC_6H_4$, H, NH_2, 2, 0°.

S. K. Banerjee

19841796

1/2 015 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--DIPOLE MOMENTS OF STEREOISOMERIC BETA-CHLOROVINYLMERCURY CHLORIDES
-U-
AUTHOR-(03)-KOLODYAZHNYY, YU.V., GARNOVSKIY, A.D., OKHLOBYSTIN, O.YE.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(6), 1322-3 (PHYS. CHEM)

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DIPOLE MOMENT, ISOMER, VINYL COMPOUND, ORGANOMERCURY COMPOUND, CHLORINATED ALIPHATIC COMPOUND, DIELECTRIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0215 STEP NO--UR/0020/70/191/006/1322/1323

CIRC ACCESSION NO--AT0132487

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0132487

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING DIPOLE MOMENTS (IN D) WERE CALCD. FROM DIELEC. DATA IN C SUB6 H SUB6 AT 25DEGREES: CIS CLCH:CHHGCL 2.92; TRANS ISOMER 1.81; AND 1:1 MIXT. OF THE ISOMERS (M. 78DEGREES) 2.79. SINCE THE VALUE OF THE DIPOLE MOMENT IN THIS MIXT. IS CLOSE TO THAT OF THE PURE CIS FORM, THIS METHOD IS UNDERSIARBLE FOR IDENTIFICATION PURPOSES. FACILITY: ROSTOV.-NA-DONU GOS. UNVI., ROSTOV-CN-DON, USSR.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--CHELATE COMPOUNDS OF ARENEAZO,2,IMIDAZOLES. NEW EXAMPLE OF COMPLEXES WITH A METAL CHELATE JUNCTION POINT OF THE M PLUS 4N TYPE -U-
AUTHOR-(05)-GARNOVSKIY, A.D., KUZNETSOVA, L.I., ANDREYCHIKOV, YU.P., OSIPOV, O.A., SIMONOV, A.M.
COUNTRY OF INFO--USSR

SOURCE--ZH. OBSH. KHIM. 1970, 40(3), 710-11

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC AZOLE COMPOUND, ORGANIC COMPLEX COMPOUND, ACETATE, DIPOLE MOMENT, BROMINATED ORGANIC COMPOUND, HETEROCYCLIC OXYGEN COMPOUND, BENZENE DERIVATIVE, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/2022 STEP NO--UR/0079/70/040/003/0710/0711

CIRC ACCESSION NO--AP0132282
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132282

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A 2:1 MIXT. (MOLAR) OF ARENEAZO,2,IMIDAZOLES AND APPROPRIATE METAL ACETATES IN MEOH GAVE I (M, COLOR, AND DIPOLE MOMENT GIVEN): NI PRIME POSITIVE POSITIVE, BROWN, 3.18; CO PRIME POSITIVE POSITIVE, GREEN, 4.40; AND II: CU PRIME POSITIVE POSITIVE, YELLOW BROWN, 2.04; NI PRIME POSITIVE POSITIVE, RED BROWN, 3.43; CO PRIME POSITIVE POSITIVE, BROWN, 4.76. IN THE SOLID STATE, EVIDENTLY THE STRUCTURE OF I IS A TETRAHEDRAL ARRANGEMENT, IN WHICH HALF OF THE MOL. IS ROTATED AT RIGHT ANGLES TO THE OTHER ABOUT THE HORIZONTAL AXIS. POSSIBILITY OF POLYMERIC OCTAHEDRAL STRUCTURE FROM FURTHER COORDINATION OF THE METAL WITH THE N PRIME3 ATOM OF IMIDAZOLE IS ALSO POSSIBLE, HOWEVER. FACILITY: ROSTOV.-NA-DONU GOS. UNIV., ROSTOV-ON-DON, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--NITROGEN CONTAINING BIS HETEROCYCLIC SYSTEMS. IV. SYNTHESIS AND STRUCTURE OF 5,HYDROXY,AMINO,1,BENZAZOLYLPYRAZOLES -U-

AUTHOR-(05)-GARNOVSKIY, A.D., KOLODYAZHNYY, YU.V., GRANOBERG, I.I., ALIYEVA, S.A., KROKHINA, N.F.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (5), 660-3

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HETEROCYCLIC OXYGEN COMPOUND, PYRAZOLE, THIAZOLE, DIPOLE MOMENT, ORGANIC SYNTHESIS, MOLECULAR STRUCTURE, HYDRAZINE ORGANIC COMPOUND, HYDROXYL RADICAL, AMINE DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605012/E02 STEP NO--UR/0409/70/000/005/0660/0663

CIRC ACCESSION NO--AP0140304

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140304

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

5,HYDROXY,1,(BENZAZOL,2,YL)PYRAZOLES (I) WERE PREPD. BY REFLUXING A MIXT. OF 0.05 MOLE APPROPRIATE HYDRAZINE AND 0.05 MOLE RCOCHR PRIME1 CO SUB2 R PRIME2 OR PHCH SUB2 C(:NH)CHPHCN (II) IN 50 ML TERT BUOH, 5 ML H SUB2 O, AND 5 ML ACOH 12 HR. THUS PREPD. WERE THE FOLLOWING I (R, R PRIME1, R PRIME2, Y, PERCENT YIELD, AND M.P. GIVEN): PH, H, OH, S, 73, 201DEGREES; PH, CH SUB2 PH, OH, S, 76, 165DEGREES; CH SUB2 PH, PH, OH, NH, 63, 224DEGREES; AND CH SUB2 PH, PH, OH, NCH SUB2 PH,-,-. REFLUXING EQUIMOLAR AMTS. 2,HYDRAZINOBENZOTHIAZOLE, II, AND 30PERCENT HCL IN ISO PROH GAVE 60PERCENT

5,AMINO,4,PHENYL,3,BENZYL,1,(BENZTHIAZOL,2,YL)PYRAZOLE (I) (R EQUALS CH SUB2 PH, R PRIME1 EQUALS PH, R PRIME2 EQUALS NH SUB2, Y EQUALS S), M. 163DEGREES. DIPOLE MOMENT AND IR STUDIES SHOW THAT I EXIST BOTH INT HE CRYST. FORM AND IN SOLN. MAINLY IN HYDROXY AND AMINO FORMS, WHICH ARE STABILIZED BY INTRAMOL. H BONDING. FACILITY: ROSTOV.-NA-DONU GOS. UNIV., ROSTOV-ON-DON, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--COMPLEXES OF METALS WITH SOME NITROGEN CONTAINING LIGANDS. XVIII. COMPLEXES OF ZINC WITH 1,5,DIBENZIMIDAZOLYLFORMAZANS -U-
AUTHOR-(03)-OGLOBLINA, R.I., BEDNYAGINA, N.P., GARNOVSKIY, A.D.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 367-72

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--METAL COMPLEX COMPOUND, ZINC COMPLEX, BENZIMIDAZOLE, HETEROCYCLIC NITROGEN COMPOUND, POLYNUCLEAR HYDROCARBON, MOLECULAR STRUCTURE, DIPOLE MOMENT, ABSORPTION SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1394 STEP NO--UR/0079/70/040/002/0367/0372

CIRC ACCESSION NO--AP0116842
UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0116842

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MIXING APPROPRIATE 1,5,BIS(1,ALKYL,2,BENZIMIDAZOLYL), 3,ALKYLFORMAZANS WITH ZN CHLORIDE OR ACETATE GAVE COMPLEXES I (R AND R PRIME1 SHOWN, RESP.): PHCH SUB2, ME, M. 280-5DEGREES; SAME WITH ADDED ME SUB2 CO OF CRYSTN., M. 280-5DEGREES; ME, ME, M. 295-8DEGREES; ET, ME, M. 290-3DEGREES; PHCH SUB2, PR, M. 293-8DEGREES; AND II PHCH SUB2, ME, M. 178-80DEGREES; SAME WITH ADDED ZN(OH) SUB2, M. 210-15DEGREES; REACTION OF THE FORMAZANS WITH ZN(OAC) SUB2 IN ME SUB2 CO GAVE II, PHCH SUB2, ME, M. 180-2DEGREES; MONOHYDRATE OF II, ET, ME, M. 188-90DEGREES. ABSORPTION SPECTRA ARE GIVEN. THE DIPOLE MOMENTS AND THE SPECTROSCOPIC DATA INDICATED THAT COMPLEXES OF TYPE I WHICH HAVE LOW SOLY. IN NONPOLAR SOLVENTS, HAVE THE STRUCTURE SHOWN; THE COMPLEXES OF TYPE II WITH DIPOLE MOMENTS OF 1.5-2 D ARE THUS SHOWN TO BE TRUE CHELATES WITH TETRAHEDRAL STRUCTURE TYPICAL OF ZN PRIME POSITIVE POSITIVE COMPLEXES. THUS, AZOLYLFORMAZANS MAY FORM WITH METALS EITHER CHELATES OR MOL. COMPLEXES WITH DATIVE BONDS MAINLY AT THE HETERO-N ATOMS, OR CYANINES WITH ZNCL SUB2. FACILITY: URAL. POLITEKH. INST., SVERDLOVSK, USSR.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--KINETICS OF THE DECOMPOSITION OF A CHROMIUM SOLID SOLUTION IN SILICON -U-

AUTHOR-(03)-BENDIK, N.T., GARNYK, V.S., MILEVSKIY, L.S.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(1) 190-5

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--SOLID SOLUTION, CHEMICAL DECOMPOSITION, THERMAL EFFECT, CHEMICAL REACTION KINETICS, CHROMIUM, SILICON, ELECTRON PARAMAGNETIC RESONANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1980/0241 STEP NO--UR/0181/70/012/001/0190/0195

CIRC ACCESSION NO--AP0048520

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0048520

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DECOMPN. OF THE SOLID SOLN. OF CR IN SI WAS INVESTIGATED BY EPR. ANAL. OF THE EXPTL. CURVES OF THE DECOMPN. IN TERMS OF THE DIFFUSION THEORY OF HAM POINTS TO THE EXISTENCE OF DEFECTS OF VARIOUS SYMMETRIES ON WHICH SEPN. OF CR FROM THE SOLN. TAKES PLACE. THE D. WAS EVALUATED FROM 10 PRIME6 TO 10 PRIME7 CM PRIME NEGATIVE2. THE TEMP. DEPENDENCE OF THE DIFFUSION COEFF. OF CR IN SI WAS INVESTIGATED AT 900-1250DEGREES, WHICH IS GIVEN BY THE EXPRESSION D EQUALS 0.01 EXP(MINUS 23,000-RT). THE TEMP. DEPENDENCE OF THE CONST. OF DECOMPN. TIME TAU CAN BE DESCRIBED BY THE EXPRESSION TAU EQUALS 2.7 TIMES 10 PRIME NEGATIVE9 EXP(21,000-RT).

1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--EFFECT OF NORADRENALIN ON THE REGIONAL BRAIN BLOOD FLOW DEPENDING ON THE INITIAL STATE OF MIDDLE ARTERIAL PRESSURE -U-
AUTHOR-(02)-GABRIYELYAN, E.S., GARPER, A.M.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 49, NR 6, PP 9-11
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BRAIN, BLOOD CIRCULATION, BLOOD PRESSURE, NOREPINEPHRINE, KRYPTON ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0712 STEP NO--UR/0219/70/049/006/0009/0011

CIRC ACCESSION NO--AP0131311
UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0131311
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AS EVIDENCED FROM MEASURING THE BRAIN BLOOD FLOW IN DOGS EMPLOYING KR PRIME 85 DURING MILD HYPOTENSION, INFUSION OF NORADRENALIN LESSENS THE BRAIN BLOOD FLOW, PROVIDING THE LATTER BEING NORMAL. UNDER HEAVY HYPOTENSION, DUE TO DISTRUBANCES IN AUTOREGULATION OF THE BRAIN BLOOD FLOW, INFUSION OF NORADRENALIN IS FOLLOWED BY AN INCRESE IN THE REGIONAL BRAIN BLOOD FLOW.
FACILITY: DEPARTMENT OF PHARMACOLOGY, YEREVAN MEDICAL INSTITUTE; AND WELLCOME SURGICAL RESEARCH LABORATORY, UNIVERSITY OF GLASGOW.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--STATE AND PERSPECTIVES OF RADIOLOGIC STUDIES -U-

AUTHOR-(03)-AFANASYEV, G.D., BRANDT, S.B., GARRIS, M.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR. SER. GEOL. 1970, (4), 69-84

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--NUCLEAR GEOPHYSICS, RADIOACTIVE DECAY, GEOLOGY, POTASSIUM ARGON DATING, RADIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0568 STEP NO--UR/0011/70/000/004/0069/0084

CIRC ACCESSION NO--AP0137653
UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137653

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW IS PRESENTED WITH 35 REFS. IT INCLUDES THE DATA ON CONSTS. OF RADIOACTIVE DECAY, CHARACTER OF GEOL. INFORMATION OBTAINED BY K-AR DATING AS DEPENDENT ON GEOSTRUCTURAL ENVIRONMENT, AND PLOTTING OF ISOCHRON FOR RB-SR METHOD AND CONCORDANCE CURVE FOR U-PB METHOD. FACILITY: INST. GEOL. RUD. MESTOROZHD., PETOGR., MINER. GEOKHIM., MOSCOW, USSR.

UNCLASSIFIED

USSR

GARSEVANISHVILI, V. R., KADYSHEVSKIY, V. G., MIR-KASIMOV, R. M., SKACHKOV, N.B.,
Joint Institute of Nuclear Research

"A Concept of the Relativistic Amplitude of Scattering at High Energies"

Moscow, Teoreticheskaya i Matematicheskaya Fizika, Vol 7, No 2, May 1971,
pp 203-216

Abstract: A concept of the realativistic amplitude of scattering at high energies is presented in the framework of the quasi-potential approach. The key point in the entire consideration is Fourier analysis of the three-parameter, non-Abelian translation group embedded as a subgroup in the Lorentz group. The concept presented is a generalization of the eikonal approximation in quantum mechanics. 29 bibliographic entries.

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DEPARTMENT OF THE ARMY
U.S. ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER
220 SEVENTH STREET NE.
CHARLOTTESVILLE, VIRGINIA 22901

In Reply Refer to:
FSTC-HT-23-1337-72
DIA Task No. T70-23-01

Date: 27 December 1972

TRANSLATION

ENGLISH TITLE: NUTRITION OF POLAR EXPLORERS AT SOVIET ANTARCTIC STATIONS

FOREIGN TITLE: O Pitanii Polyarnikov na Sovetskikh Antarcticheskikh Stantsiyakh

AUTHOR: V. F. Garshenin

REQUESTOR: AAST-GE Mr. Dibbern

SOURCE: "Voprosy Pitaniya, No. 5, 1971 TRANSLATOR: AESI K-1977
pp 32-35

LANGUAGE: Russian

COUNTRY: USSR

KEY WORDS:

ARCTIC CLIMATE
FOOD TECHNOLOGY
NUTRITION
CALORIC CONTENT
POLAR AREA

COUNTRY CODE: UR

SUBJECT CODE: 06

GARSHENIN, V.F.

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UDC 621.382.333.34

USSR

BURKHANOV, SH.D., BASHIROV, A.M., GARSHENIN, V.V., GORCKHOV, V.A., RODOV, V.I.

"Investigation Of The Causes For Breakdown Of Thyristors During Operation In A Pulse Regime"

V sb. Poluprovodn. pribory v tekhn. elektrosvyazi (Semiconductor Devices In Electrical Communications Technology--Collection Of Works), Moscow, "Svyaz'," 1970, pp 145-157 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2B246)

Translation: It is shown that loss of efficiency of a thyristor in a pulse regime results as a consequence of burning through in the p-n-p-n structure of a channel 0.1--0.3 mm in diameter, while one of the possible causes for this is thermal generation of the carriers. 9 ill. 10 ref. S.A.

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UDC: 621.391.883.2

USSR

GARSKOV, G. Kh.

"Interference Immunity of a Channel With Obliteration When There is Interference in the Synchronization Channel"

Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR (Works of Academic Institutions of Communications. Ministry of Communications of the USSR), 1971, vyp. 53, pp 113-120 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3A27)

Translation: The paper deals with the effect which fluctuations of output pulses of the synchronization system have on the probability of an error and the probability of obliteration for a filtered FM reception system in a binary symmetric erasing channel. Analytical expressions are given for the probability of error and the probability of obliteration as functions of the fluctuation in the position of the test pulse, assuming a normal law of distribution of characteristic times of signal recovery in the case of pulse interference. Resumé.

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USSR

UDC 547.57

KOZLOV, N. S., PAK, V. D., GARTMAN, G. A., and BALYKOVA, I. A.

"The Direction of the Reaction of Arylidenemethylamines with Diphenyl and Dialkyl Phosphites"

Leningrad, Zhurnal Obshchey Khimii, Vol 43, No 11, Nov 73, pp 2360-2363

Abstract: It had been established in earlier work by Kozlov et al (Izv. AN Beloruss. SSR. Ser. Khim., No 3, 95,1967; No 2, 199, 1968; No 2, 113, 1968) that aminophosphonic esters are the principal products of the reaction of aromatic azomethines with diphenyl and dialkyl phosphites. In this instance the reaction of arylidenemethylamines RC_6H_4 CH=NMe with diphenyl and dialkyl phosphites was studied. In the majority of cases monophenyl- and monoalkyl-phosphite ammonium complexes of azomethines formed: RC_6H_4 CH=NMe + $(R'O)_2POH$ + $H_2O \rightarrow (RC_6H_4\ CH\text{-}\overset{+}{N}HMe)\overset{-}{O}P(OR')OH$ (I) + R'OH. In some instances, however, aminophosphonic esters formed under identical conditions from arylidenemethylamines and dialkyl phosphites: RC_6H_4 CH=NMe + $(R'O)_2$ POH $\rightarrow RC_6H_4\ CHNHMe$ (II). The dual

$O{=}P(OR')_2$

direction of the reaction of arylidenemethylamines can be explained by the

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USSR

KOZLOV, N. S., et al., Zhurnal Obshchey Khimii, Vol 43, No 11, Nov 73, pp 2360-2363

higher basicity of arylidenemethylamines as compared with aromatic azomethines. As a result, the nucleophilic activity of the azomethines was reinforced. The properties of the compounds I and II that were synthesized are listed in tables.

USSR

UDC 681.325.65

GARTSUYEV, V. M., and D'YACHENKO, YU. B.

"Increment Code Approximation Device"

USSR Authors' Certificate No 311265, Cl. G 06 f 5/00, G 06 j 1/02, filed 27 Oct 69, published 11 Oct 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 5, May 72, Abstract No 5B193P)

Translation: The proposed increment code approximation device contains a clock-pulse generator, a counter, a shift increment register, coincidence circuits, OR circuits, and a delay line. The device is distinguished by the fact that, to improve its dynamic properties, it includes a second counter, an indicator flip-flop, a control flip-flop, and a decoder. The clock-pulse line is connected to the control inputs of two coincidence circuits and the input of the second counter. The output of the first coincidence circuit is connected to the input of the information shift in the increment register. The output of the second circuit is connected to the units input of the control flip-flop, the units output of which is connected to inputs of the third and fourth coincidence circuits. The output of the third coincidence circuit is connected to the units input of the indicator flip-flop. The output of the fourth coincidence circuit is connected through one of the OR circuits to the

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USSR

GARTSUYEV, V. M., et al., USSR Authors' Certificate No 311265

"zero" input of the shift increment register. The output of the fifth coincidence circuit, whose control inputs are connected to the "zero" outputs of the digits of the first counter, is connected to the units input of the low-order digit of the shift increment register. The outputs of the digits of the second counter are connected through the decoder and the other OR circuit to the input of the first counter. The zero inputs of both counters, the flip-flops, and the shift increment register are connected to the scale factor signal line.

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USSR UDC: 621.317.77

GARTVICH, V. A., KHAUSTOV, V. V., SHATUNOV, Ye. A.

"A Phase Meter Installation for Measuring Phase Shift of Phase-Keyed Signals in the Dynamic Mode"

V sb. Raschety radiotekhn. skhem i proyektir. radioapparatury (Calculations of Radio Circuits and Design of Radio Equipment--collection of works), Omsk, 1970, pp 85-86 (from RZh-Radiotekhnika, No 6, Jun 70, Abstract No 7A281)

Translation: The article presents the technical specifications of a phase meter installation which has been developed. The unit is designed for signals having a sine waveform clipped by straight horizontal lines; the signals are phase keyed at a rate of 1000 bauds and have a frequency in the range of 50-400 kHz. Measurement accuracy is 2-5°. A block diagram of the device and some technical characteristics are given. Bibliography of two titles. E. L.

1/1

USSR

UDC: 621.317.77:621.317.755

GARTVICH, V. A.

"A Simple Method of Making a Remote Electric Scale for a Phase Meter With Oscilloscope Display"

V sb. Raschety radiotekhn. skhem i proyektir. radioapparatury (Calculations of Radio Circuits and Design of Radio Equipment--collection of works), Omsk, 1970, pp 83-84 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A318)

Translation: It is pointed out that a simple method of making an electric scale which is controllable with respect to sweep position is to use a conventional "slave" marker generator for linear scales which is synchronized by the sweep voltage; the advantages of this method are presented. The most obvious of these advantages shows up in the case of phase multiplication of the scanning voltage. A method of obtaining the effect of remote scales is given. Bibliography of one title. E. L.

1/1

1/2 013 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--ACCURATE DETERMINATION OF THE DENSITY OF WEAK SOLUTIONS AT VARIOUS TEMPERATURES -U-

AUTHOR-(05)-TERESHKEVICH, M.O., GARUS, L.I., DLUGACH, R.YE., KUPRIK, A.V., VOLKOVA, S.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970 43(1) 167-70

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--FLUID DENSITY MEASUREMENT, TEMPERATURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0300 STEP NO--UR/0080/70/043/001/0167/0170

CIRC ACCESSION NO--AP0113230

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0113230

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A FLOTATION METHOD IS DESCRIBED FOR RAPID DETN. OF D. WITH AN ACCURACY OF 10 NEGATIVE PRIME5 G-CM PRIME3. THE D. OF SEVERAL HOLLOW QUARTZ FLOATS OF 10-12 MM LENGTH AND 1-2 MM DIAM. WAS CALIBRATED BY DETN. OF THE TEMP. AT WHICH THEY WOULD JUST FLOAT IN H SUB2 O. THE FLOATS WERE USED TO DET. THE D. OF AQ. SOLNS. OF K SUB2 CR SUB2 O SUB7 IN THE CONCN. RANGE 0.1 MINUS 0.2 G-L. AND TEMP. RANGE 10-35DEGREES. FACILITY: DNEPROPETROVSK. GOS. UNIV., DNEPROPETROVSK, USSR.

UNCLASSIFIED

USSR UDC 616.36-092.9-085.849.19

LAGUNOVA, I. G., SAVCHENKO, Ye. D., GARVEY, N. N., LIKHOVETSKAYA, L. L., SHAMAYEVA, G. G., KLIMOV, A. D., and MOGUTOV, V. I., Moscow, Scientific Research Institute of Roentgenology and Radiology, Ministry of Health RSFSR

"The Effects of Neodymium Laser Irradiation on the Rat Liver"

Leningrad, Voprosy Onkologii, Vol 18, No 1, 1972, pp 91-94

Abstract: Single irradiation of a 2 by 5 mm abdominal area over the rat liver with pulsed neodymium laser rays with initial energy of 100-200 joules and incident density of 1000-4000 joules/cm^2 causes local injury to the liver tissue, ranging from degenerative changes to complete necrosis. Destruction of blood vessels occurs in the central zone and paralytic vasodilation with edema in the peripheral zone. Proliferation of fibroblasts begins after 5 days, and a capsule is formed around the injured area. Connective tissue cells and bile capillaries grow toward the necrotic center along with blood vessels. Eventually, hepatocytes, lymphocytes, and macrophages appear. On the 20th day, the necrotic area is filled with patches of new hepatic parenchyma. After stronger irradiation (3000-4000 joules/cm^2), the injury is more severe and recovery slower.
1/1

USSR

UDC 621.38.002

GARYAINOV, S.A., RZHANOV, V.G., SHERGOL'D, YE.K.

"Problems Of Protection Of Unhoused Semiconductor Devices And Integrated Circuits"

V sb. Mikroelektronika (Microelectronics--Collection Of Works), Moscow, Izd-vo "Sovetskoye Radio," No 4, 1971, pp 141-151

Abstract: The over-all problem is considered of the protection of non-housed semiconductor devices used in hybrid microcircuits from the effect of the environment. The significant shortcomings are shown of compounds of epoxy resins, various varnishes, etc., used at present for protection of such devices. A method is described for creation of a protective covering based on thin glass films. 4 fig. 4 tab. 7 ref.

1/1

GARYAYEV, P.P.

JPRS 57991
16 Jan 73

[illegible]

METHODS FOR [illegible] ORGANIC SUBSTANCES FROM SOILS WITH [illegible] TO PROBLEMS OF [illegible]

[Article by [illegible], Institute of [illegible] [illegible] Academy of Sciences; [illegible] [illegible], Russian, No 9, [illegible]]

The literature on the [illegible] matter [illegible] reviewed. The data cited are appraised for their technical applicability to biochemical analysis of the surface matter of Mars.

The problem of detecting life on other planets, especially Mars, is very closely related to an understanding of the essence of life. No [illegible] understanding, however, exists in this field. [illegible] with equal validity that the essence of life consists in metabolism, in the capability for self-reproduction, in the resistance to entropy, in irritability, in self-organization, and so on. It is still unclear where lies the boundary between the animate and the inanimate, just as it is unclear what is an elementary life system: bacteria, mycoplasma, or virus? A paradoxical situation takes shape [illegible], lacking reliable information on how life [illegible] and consequently not having an accurate understanding of what life is, we nonetheless attempt to find extraterrestrial life. This contradiction, however, should be removed by precisely a search of this type, whose ultimate goal consists in an understanding of how life arose on the scale of the universe.

The indisputable fact that living matter has a specific chemical composition is one of the essential aspects of the search for extraterrestrial life. Any living being is built from a host of organic substances [illegible] among which are proteins, nucleic acids, lipids, and carbohydrates. [illegible] form analysis of Martian soil by an automatic biological station should be aimed at identifying these compounds. The detection of proteins, nucleic acids, lipids, carbohydrates, chlorophyll-type compounds, hydrocarbons, organic acids, and so on in Martian soil to a high degree of probability would indicate the presence of life on the surface of Mars.

All these considerations now make particularly interesting certain methodological works by soil scientists studying soil organic matter.

USSR

UDC 669.168:669.162.2

RYABCHIKOV, I. V., GARYAYEV, S. G., PODOL'SKIY, T. V., ALEKSANDROV, A. P., and ZAKHARCHENKO, E. V.

"Silicothermal Method for Obtaining Ferrosilicocalcium and Magnesium Alloys Based on It"

Moscow, Stal', No 2, Feb 71, pp 134-136

Abstract: This paper describes experiments performed in making alloys of ferrosilicocalcium and magnesium by the silicothermal method, which has the advantages of permitting the mechanization and automation of alloying processes in closed furnaces. The experiments were performed in an electric furnace of 1200 kVA power and a closed furnace of the SKB-6063 type at voltages of 60-85 and 89 volts respectively, and a current of 6.5 and 13 kA. The furnace charge was 65-75% ferrosilicates, lime, calcined dolomite, baryte ore, silicoaluminum production slag, and fluorspar. The experimental alloys showed that the concentration of magnesium and calcium in the melt depends primarily on the proportion of the charge components, the order in which they are loaded into the furnace, the electrical specifications, and the amount of electrical energy consumed per ton of charge. 1/2

USSR

RYABCHIKOV, I. V., et al, Stal', No 2, Feb 71, pp 134-136

A diagram showing a device for introducing the magnesium into the molten metal is given.

2/2

USSR

UDC 576.311.1

GARYEYEV, P. P., KHARCHUK, O. A., and POGLAZOV, B. F., Laboratory of Bioorganic Chemistry, Moscow State University imeni M. V. Lomonosov, Moscow

"Study of Denaturation of Some Structural Virus Proteins by the Method of Optical Rotatary Dispersion"

Moscow, Biokhimiya, Vol 37, No 6, Nov-Dec 72, pp 1210-1214

Abstract: Aqueous solutions of tobacco mosaic virus protein had an optical activity spectrum in the 230-350 mμ range typical for proteins in organic solvents. The protein denatured to the maximum extent with alkali had an optical activity spectrum characteristic for proteins in aqueous solutions. Solutions corresponding to intermediate stages of denaturation showed a stepwise transition from a virtual organic solvent solution state to an aqueous solution state. The spectra, which were determined on a spectropolarimeter, reflected the relative content of the α-helix on the surface of the protein. In the undenatured globular protein, the α-helix sections were hidden within the globules - i.e., they were in a medium resembling an organic solvent. As denaturation proceeded, the globules unfolded and the contacts of the α-helix parts with H_2O increased.

1/1

USSR

UDC 577.3

SEMENOV, M. A., GASAN, A. I., and MALEYEV, V. Ya., Institute of Radiophysics and Electronics, Academy of Sciences UkSSR, Kharkov

"Study of Thermal Destruction of T_2 Phage and Its Components by Infrared Spectroscopy and Adiabatic Calorimetry"

Moscow, Doklady Akademii Nauk SSSR, Vol 198, No 6, 1971, pp 1,449-1,451

Abstract: Heating of lyophilized T_2 phage and its structural components (protein fragments and DNA) produced spectral changes at three different temperature intervals. At 48°C there was a slight increase in optical density in the region of 1620 cm^{-1}, which ceased at T = 58°C (region A). Optical density in this spectral region increased still more at T = 65°C and ended at T = 73°C (region B). Similar spectral changes occurred at these temperature intervals when a suspension of fragments was heated. Since optical density increases at 1620 cm^{-1} with thermal denaturation of proteins, the spectral changes observed in regions A and B in the case of T_2 phage are assumed to be due to conformational changes in the protein coat. A further elevation of the temperature to 75 to 85°C (region C) resulted in spectral changes characteristic of the destruction of the secondary structure of DNA: increased absorption at frequencies of 1590,

1/2

1/2 013 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SODIUM, CALCIUM MAGNITUDE OF SULFATE, METAPHOSPHATE SYSTEM -U-

AUTHOR-(04)-BERGMAN, A.G., VYSOTSKIY, V.M., GASANALIYEV, A.M., TRUNIN, A.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 917-19

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHASE DIAGRAM, SOLID SOLUTION, MULTICOMPONENT CHEMICAL MIXTURE, SODIUM COMPOUND, CALCIUM COMPOUND, PHOSPHATE, SULFATE, EUTECTIC MIXTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1718 STEP NO--UR/0078/70/015/003/0817/0819

CIRC ACCESSION NO--AP0115547
UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0115547

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PROJECTION OF THE PHASE DIAGRAM OF NA, CA MAGNITUDE CF SO SUB4, PO SUB3 WAS CONSTRUCTED. THIS IS A NONDIAGONAL IRREVERSIBLE RECIPROCAL SYSTEM, HAVING 3 EUTECTICS AT 715, 610, AND 571DEGREES AND 2 POINTS OF SOLID SOLN. DECOMPN. AT 800 AND 700DEGREES. IN THE PRESENCE OF A 3RD COMPONENT, THE SOLID SOLNS. OF NA AND CA SULFATES DECOMP. BY A COMPLEX REACTION.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--NA, TL, CA PARALLEL TO SO SUB4 SYSTEM -U-

AUTHOR-(02)-GASANALIYEV, A.M., MALTSEV, V.T.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(6), 1688-90

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHASE DIAGRAM, SULFATE, SODIUM COMPOUND, THALLIUM COMPOUND, CALCUIM COMPOUND, CHEMICAL STABILITY, X RAY DIFFRACTION ANALYSIS, THERMAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1408 STEP NO--UR/0078/70/015/006/1688/1690

CIRC ACCESSION NO--AP0135082

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0135082
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PHASE DIAGRAM OF TERNARY SYSTEM NA, TL, CA PARALLEL TO SO SUB4 IS CONSTRUCTED BY USING THERMAL VISUAL, X RAY DIFFRACTION, AND OPTICAL METHODS. THE PRESENCE OF TL SUB2 SO SUB4 MARKEDLY AFFECTS THE DECOMPN. OF NA SUB2 SO SUB4 CASO SUB4 SOLID SOLNS. BUT INDUCES STABILITY OF NA SUB2 SO SUB4 .CASO SUB4, GLAUBERITE, WHICH DOES NOT FORM IN THE CORRESPONDING BINARY SYSTEM. FACILITY: ROSTOV. INZH.-STROIT. INST., ROSTOV, USSR.

UNCLASSIFIED

USSR

UDC: 621.315.592

GASANLI, Sh. M., YEMEL'YANENKO, O. V., NASLEDOV, D. N., and TALALAKIN, G. N.

"Peculiarities of Current-Carrier Migration in p-GaAs Crystals With Deep Impurity Levels"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 2053-2056

Abstract: The results are given of experiments performed with p-type GaAs crystals doped with Mn, Co, Ni, and Cr. In addition to the Hall effect and the electrical conductivity, the change in resistance of the specimens in a transverse magnetic field was measured. It was found, in this brief communication, that in crystals with Mn and Co, the carrier migration occurred in the usual way. In crystals with Ni and Cr, and to some extent in strongly compensated crystals with Co, the migration shows peculiar variations. A table of the specimens and their characteristics at temperatures of 100-500° K is given. It is also found that there is a sharp drop in mobility at low temperatures in crystals of the $A^{III}B^{V}$ type, containing deep levels or impurities tending to form clusters. The authors note that the observed migration effects are not connected with surface conductivity influences.
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UDC: 621.315.592

USSR

GASANLI, Sh. M., YEMEL'YANENKO, O. V., LAGUNOVA, T. S., and NASLEDOV, D. N.

"The Nature of Negative Reluctance in Gallium Arsenide"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 2010-2014

Abstract: Experiments are described for investigating n-type GaAs crystals doped with such substances as donors, acceptors, without full compensation of the donors, amphoterics, ferromagnetics, to clarify the effect of the individual impurity on the negative reluctance of the specimen. The experimental results are compared with the results of current theory, and the effect of impurity compensation on the negative reluctance is considered. The following elements were used for the doping: S, Se, Sn, Si, Cu, Ni, and Cr; these were introduced into the GaAs specimens at concentrations of 0.001-0.5%, the electron concentration after doping was 10^{15}-10^{18} per cm^3, and the mobility was 1000-6000 $cm^2/V \cdot sec$ at room temperature. It was found that the negative reluctance is independent of the doping substance and is a function only of the concentration of small donor levels.
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1/2 032 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--OPTICAL PROPERTIES OF INSB SUBX MINUS INTE SUB1 NEGATIVE X SOLID SOLUTIONS -U-

AUTHOR-(04)-GASANLY, N.M., ALIYEV, M.I., KUKHARSKIY, A.A., SUBASHIYEV, V.K.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 576-8

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--OPTIC PROPERTY, IR SPECTRUM, POLYCRYSTAL, INDIUM ANTIMONIDE, ABSORPTION COEFFICIENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1712 STEP NO--UR/0449/70/004/003/0576/0578

CIRC ACCESSION NO--AP0120424

UNCLASSIFIED

2/2 032 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120424

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INFRARED SPECTRA WERE OBTAINED FOR COARSE, POLYCRYST. SAMPLES OF (INSB) SUBX MINUS (INTE) SUB1 NEGATIVE X SOLID SOLNS. PRODUCED BY DIRECT MELTING OF THEIR COMPONENTS AND HOMOGENIZATION BY HEATING FOR 200 HOURS AT 450DEGREES. THE VALUE OF X RANGED FROM 0.999 TO 0.99999. CURVES INDICATE THE SPECTRAL RELATION OF REFLECTION AND TRANSMISSION COEFFS. IN THE 2-25 MU RANGE AS WELL AS THE RELATION BETWEEN THE EFFECTIVE MASS OF CONDUCTION ELECTRONS AND COMPN. THE EFFECTIVE MASS INCREASED FROM 0.013 AT X EQUALS 0.99999 TO 0.063 AT X EQUALS 0.999. THE ABSORPTION COEFF. ALPHA (H OMEGA) WAS OBTAINED FROM TRANSMISSION SPECTRA; THE ABSORPTION CROSS SECTION OF LIGHT FOR ELECTRONS, (ALPHA DIVIDED BY N), IN THE COMPN. RANGE 0.85 SMALLER THAN OR EQUAL TO 0.85 SMALLER THAN OR EQUAL TO X SMALLER THAN OR EQUAL TO 0.999, OBTAINED AT 7 MU, CHANGED FROM 4.3 TIMES 10 PRIME NEGATIVE17 TO 7 TIMES 10 PRIME NEGATIVE17 CM PRIME2. FACILITY: INST. POLUPROV., LENINGRAD, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--CONDENSATION OF ALKYLPHENOLS WITH FORMALDEHYDE IN THE PRESENCE OF OXALIC ACID DURING THE PREPARATION OF A BENZOFURANCARBOXYLIC ACID

AUTHOR-(04)-ALLAKHVERDIYEV, G.A., RZAYEV, R.G., NAMAZOV, I.I., GASANOV, D.G.

COUNTRY OF INFO--USSR

SOURCE--AZERB. NEFT. KHOZ.1970, (3), 34-5

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--CONDENSATION REACTION, PHENOL, FORMALDEHYDE, OXALIC ACID, FURAN, AROMATIC CARBOXYLIC ACID, CORROSION RATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1796 STEP NO--UR/0487/70/000/003/0034/0035

CIRC ACCESSION NO--AP0135361

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135361

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OPTIMUM CONDITIONS FOR CONDENSING ALKYLPHENOLS WITH CH SUB2 O (RATIO 100:25) WERE IN THE PRESENCE OF 0.5 PARTS HC SUB2 CCO SUB2 H AT 98DEGREES. CONDENSATION IN THE PRESENCE OF HCL WAS MORE EFFECTIVE BUT THE CORROSION RATE WAS 10 TIMES THAT WITH HO SUB2 CCO SUB2 H. THE PRODUCTS OF THE 2 METHODS WERE SIMILAR.

UNCLASSIFIED

USSR

UDC 539.384/.385

BAKHTIYAROV, I. A., ALIYEV, K. A., GASANOV, E. E.

"Twisting of Prismatic Beams Weakened by a Nonaxial Cylindrical Cavity"

Uch. zap. Azerb. in-t nefti i khimii (Scientific Notes of Azerbayzhan Institute of Oil and Chemistry), 1972, Series 9, No. 4, pp 57-62 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V78)

Translation: The problem of the twisting of prismatic rods, the cross section of which is a doubly connected region bounded from the outside by an ellipse or a right polygon with smoothed angles and from within by an eccentrically located circumference, is solved. The outer contour is reflected on a unit circumference with the aid of a two-term function of a complex variable. The stress function is compiled in the form of the sum of two infinite series that are regular in the region considered. Determination of the coefficients of the series is reduced to a simultaneous solution of two groups of systems of infinite algebraic linear equations. Particular examples of the problem are given, where the external contour is an ellipse, a curvilinear square, or a curvilinear hexagonal. 6 ref. K. V. Solyanik-Krassa.

1/2 023 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--ELECTRON PARAMAGNETIC RESONANCE OF NITROGEN DIOXIDE AT HIGH PRESSURES -U-
AUTHOR-(03)-GASANOV, E.M., KIM, S.KH., TSOY, T.G.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK UZB. SSR, SER. FIZ.-MAT. NAUK 1970, 14(1), 79-80

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--EPR SPECTRAL LINE, NITROGEN OXIDE, HIGH PRESSURE EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1801 STEP NO--UR/0166/70/014/001/0079/0080

CIRC ACCESSION NO--AP0118768
UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0118768

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EFFECT OF PRESSURE ON THE WIDTH AND INTENSITY OF THE EPR SIGNAL OF NO SUB2 WAS STUDIED. THE LINEWIDTH INCREASED WITH PRESSURE; 250 OE AT 650 TORR. INTENSITY OF EPR LINE WAS PROPORTIONAL TO THE PARTIAL PRESSURE OF NO SUB2 IN THE GAS.

FACILITY: INST. YAD. FIZ., TASHKENT, USSR.

UNCLASSIFIED

USSR UDC 628.58:549.74

ABDULLAYEV, G. B., GASANOV, G. G., MEKHTIYEV, M. A., DZHAFAROV, A. I., MAZANOV, D. M., BABAYEV, R. A., SADYKHOV, S. T., TEPLYAKOVA, G. V., and RAGIMOV, R. N.

"Radioprotective Effect of Selenium"

Baku, Doklady Akademii Nauk Azerbaydzhanskoy SSR, No 3, 1973, pp 12-17

Abstract: Sodium selenite administered to Wistar rats 20 minutes after X-irradiation at 490 rad had little protective effect, the survival rate and average life-span being insignificantly higher than in the controls (50% survival rate by day 30). However, the same dose of the compound administered 30 minutes prior to irradiation (intraperitoneally, subcutaneously, or perorally) had a markedly protective effect; the survival rate was 90% and the average life-span 28±3.6 days. When sodium selenite was combined with vitamins E (as an antioxidant) and A (to promote the retention of vitamin E in the body), the protective effect was even more pronounced, the survival rate and average life-span being significantly higher than in the controls (given selenium but not the vitamins).

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USSR

UDC 591.18.591.51

GASANOV, G. G., and KHANUKAYEV, E. M.

"Characteristics of Motivational-Emotional Behavior, EEG and Consumption of Water by Rabbits on Conditions of Water Deprivation"

Baku, Izvestiya Akademiya Nauk Azerbaydzhanskoy SSR, Seriya Biologicheskikh Nauk, Vol 3, 1973, pp 91-96

Abstract: This study presents the results of experiments describing the changes in electrical activity of the brain of rabbits under conditions of water deprivation. The experiments were conducted on rabbits of 2.8 - 3 kilograms in weight under conditions of free behavior fed on dry rations. The amount of water drunk by the rabbits was measured. The study considered the reaction to searching for water, singleness of purpose in approaching the drinking bowl, and the quality of the emotional composition of the animal in overcoming the obstacles. The experiments were conducted under conditions of free access to water and food, in periods of water deprivation; and under conditions of saturation after water deprivation.

Behavior associated with searching for and drinking water is noted after 4 hours of water deprivation. Under artificially created obstacles to attain water, the rabbits did not show signs of "anxiety." However,

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USSR

GASANOV, G. G., and KHANUKAYEV, E. M., Izvestiya Akademiya Nauk Azerbaydzhanskoy SSR, Seriya Biologicheskikh Nauk, Vol 3, 1973, pp 91-96

after deprivation of water for 24 hours, the anxiety is sharply increased. After deprivation, the frequency and amount of water consumed is increased.

In conditions of water deprivation there are three types of changes in the electrical activity of the brain: neocortical in the sensory motor cortex, hippocampal in the hippocampus and amygdaloidal in the amygdala, and in the anterior hypothalamus. These changes disappear after water deprivation.

Oncology

UDC 577.391:616.0064.577.15/17

USSR

ABDULLAYEV, G. B., GASANOV, G. G., RAGIMOV, R. N., TEPLYAKOVA, G. V., MEKHTIYEV, M. A., and DZHAFAROV, A. I., Institute of Physiology, Institute of Physics, and Institute of Roentgenology and Oncology

"Selenium and Tumor Growth Under Experimental Conditions"

Baku, Doklady Akademii Nauk Azerbaydzhanskoy SSR, No 3, 1973, pp 18-24

Abstract: In mice and rats with transplanted tumors (M-1 sarcoma, Ehrlich's ascitic tumor, and Geren's carcinoma), a single injection of sodium selenite significantly retarded the growth of the tumor, especially if the injection was given when the tumor could barely be felt. The inhibition of tumor growth was even more pronounced when sodium selenite was combined with X-irradiation. In addition, the compound increased the animals' tolerance for radiation. When the animals received the tumor suspension after it had been treated with sodium selenite and heated to 40° for 2 hours, tumors did not begin to appear until 12 to 21 days after inoculation compared to 9 days in the control (given the tumor suspension treated with sodium selenite at room temperature). The inhibitory effect of the selenium compound is attributed to its ability to stimulate the production of endogenous antioxidants and lower the oxygen concentration of the tissues.

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