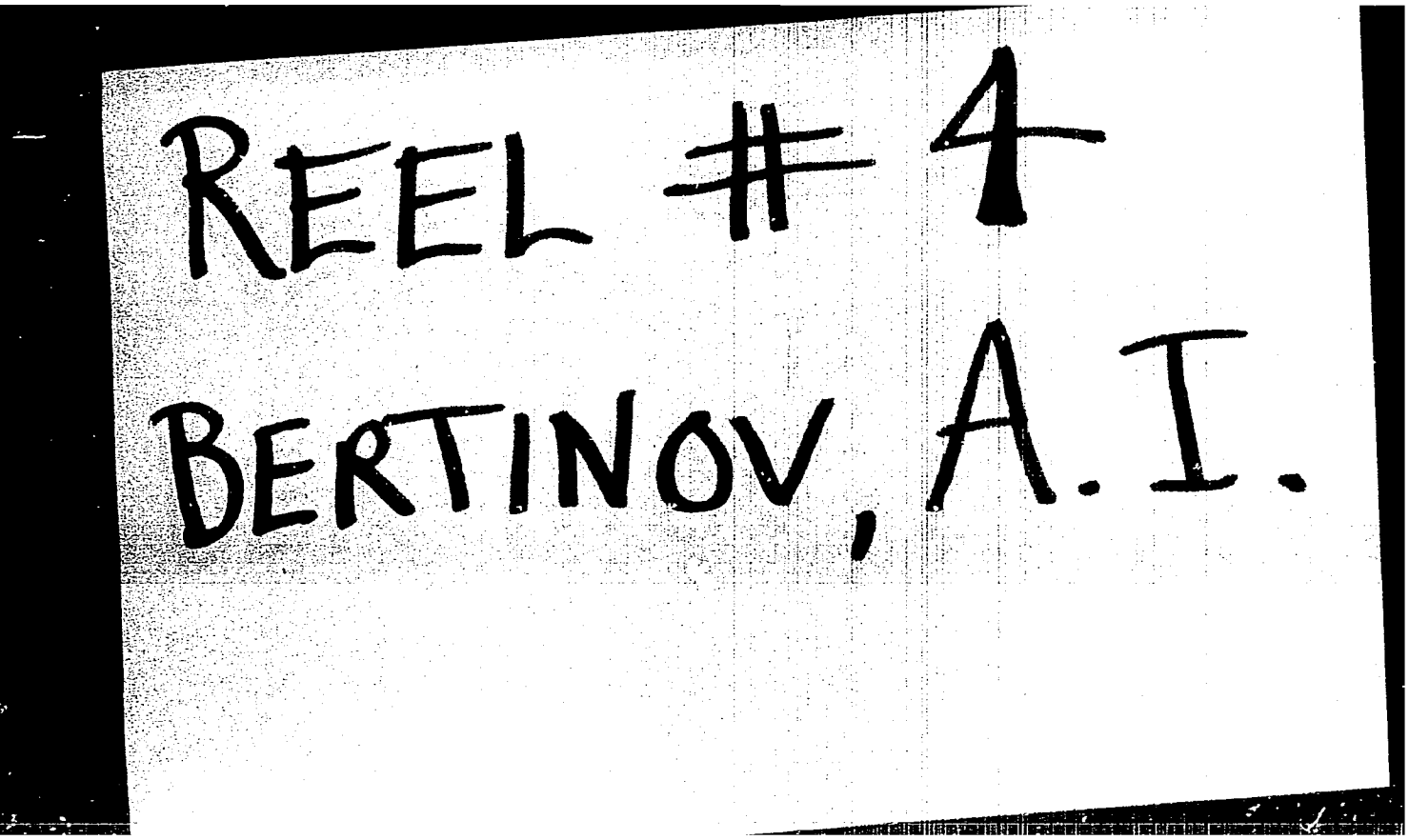

USSR

UDC [621.3.011.2.017.2:621.3.044.3+536.483]001.24

BERTINOV, A. I., ALIYEVSKIY, B. L., SHERSTYUK, A. G., ORLOV, V. L., and ALABIN, G. P.

"Electrical Losses and Resistance of Cryogenic Inductors Allowing for the Magnetoresistance Effect"

Moscow, Izvestiya Akademii Nauk SSSR, Energetika i Transport, No 6, 1972, pp 72-77

Abstract: Powerful magnetic-field inductors based on hyperconductors of very pure metals at cryogenic temperatures are being used in electrical engineering and physics equipment and considered for use in electric power transmission lines. The authors present a graphical analytic procedure for determining the electrical losses P and resistance R of aluminum, beryllium, and copper circular inductor coils of rectangular cross section, allowing for the magnetoresistance effect caused by the transverse plane-meridional coil field. Experimental values of the resistivities as a function of the transverse magnetic field induction at low constant temperatures are used to calculate approximating polynomial functions. The procedure involves 1) selecting coil material coefficients from a table (or precalculating them) in accordance with the operating temperature, 2) finding other coefficients from a family of curves

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USSR

BERTINOV, A. I., et al., Izvestiya Akademii Nauk SSSR, Energetika i Transport, No 6, 1972, pp 72-77

based on the coil cross-section outer radius and width, and 3) calculating P and R as a function of the geometrical inductor dimensions, number of turns w, current density, space factor K_z, and above coefficients. A Nayri-2 electronic computer was used in the calculations. The method is illustrated by a cryogenic aluminum-wire solenoid having 1.1 cm and 3.56 cm inner and outer cross section radii, 4 cm width, w = 124, and k_z approximately 0.37. A cryostat with liquid helium at a temperature T = 4.2° K was utilized for the experiments. The authors attribute some difference in the calculated and observed data to unstable magnetoresistance over the winding length. The effect of the intrinsic magnetic field with a 350 A current produces nearly a 6-fold increase in the coil R and P. A simplified peak estimate of the magnetoresistance based on a maximum solenoid induction of about 0.96·T yields a 1.5 fold increase in the resistance by comparison with the actual values. The authors recommend this procedure for engineering use when designing cryogenic inductors.

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USSR

UDC: [621.313.32:537.312.62]001.24

[redacted], MIRONOV, O. M., Moscow

"Selecting the Principal Dimensions of a Synchronous Generator With Superconducting Magneto"

Moscow, Izv. AN SSSR: Energetika i Transport, No 4, Jul/Aug 72, pp 29-38

Abstract: A principal design equation is derived for a synchronous machine in which account is taken of the limiting critical relation between current density and magnetic field for the superconducting material of the field winding. A criterion is proposed for determining the principal characteristics of the generator. It is found that the leakage coefficient of the magnetic circuit in a synchronous generator with superconductive field winding assuming maximum power per unit volume of the magneto is about 0.60-0.75. An increase in the relative inside diameter of the magneto increases the outside diameter of the field winding and reduces the space taken up by the superconductor. Engineering methods are proposed for calculating the dimensions of the armature to give the required leakage coefficient of the magnetic circuit and relative inductive reactance of the armature winding.

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USSR

UDC: [621.313.32.011.23:536.483]001.24

BERTINOV, A. I., MIRONOV, O. M., GOLOVKIN, A. V., Moscow

"Inductive Reactances of a Cryogenic Synchronous Machine With Ferromagnetic Shield"

Moscow, Izv. AN SSSR: Energetika i Transport, No 4, Jul/Aug 72, pp 61-65

Abstract: The principal inductive reactances of the straight sections of windings are determined in a synchronous machine with cryogenic cooling of the windings and with a magnetic-circuit shield. Engineering methods for calculating the inductive reactances are presented. The results of the studies are compared with the parameters of similar machines without a shield. It is found that a ferromagnetic shield over the windings of the generator increases the emf by a factor of 1.4-1.9 over machines without shielding. The ferromagnetic shield has practically no effect on the inductive reactances of differential scattering.

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USSR UDC: [621.313.32.011.3/045.7:536.483]001.24

BERTINOV, A. I., MIRONOV, O. M., MOKIN, V. S., Moscow

"Coefficients of Induction of a Cryogenic Synchronous Machine With Damper System"

Moscow, Izv. AN SSSR: Energetika i Transport, No 4, Jul/Aug 72, pp 56-60

Abstract: The self-inductance of a damper system in a cryogenic synchronous machine without magnetic circuit is calculated. The mutual coefficients of the induction of damper and coils are determined and curves are presented for the mutual inductances as functions of the relative geometric dimensions of the machine. It is found that the self-inductance of the damper and its mutual inductance with the coils are independent of the absolute values of machine diameters. As the thickness of a winding increases, its mutual inductance with the damper decreases. As the number of poles of the machine is increased, the self-inductance of the damper increases and its mutual inductance with the windings decreases. With a variation in the ratio of outside to inside diameter of the damper wall between 1 and 1.1, its self-inductance varies little, and can therefore be taken as constant in designing two-pole and four-pole machines.

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USSR UDC: 537.5.62

BERTINOV, A. I., TYUTIN, V. K., and KHVESYUK, V. I., Moscow Aviation Institute imeni S. Ordzhonikidze

"Methods for Determining the Fields of the Coefficients of Radiation of an Ionized Gas in Rectangular Channels"

Moscow, Teplofizika Vysokikh Temperatur, Vol 10, No 1, Jan-Feb 1972, pp 35-40

Abstract: The authors study the problem of determining the local coefficients of radiation of an ionized gas. A general expression is derived which relates integral intensities and the local coefficients of radiation $\varepsilon(x,y)$ for flows of arbitrary cross section. In the case of flows of rectangular cross section, this expression reduces to a system of linear algebraic equations. A simplified method is proposed for determining radiation coefficients. This method is suitable in those cases where $\varepsilon(x,y)$ can be presented in the form of the product of two functions each of which depends only on one argument. The authors thank D.A. But for his helpful discussion and comments. Original article: 14 formulas, three figures, and five bibliographic entries.

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USSR

UDC: 512.25/.26+519.3:330.115

AVETISYZN, Dzh. A., BERTINOV, A. I., GOLUBKOV, Yu. A.

"Application of the Principle of Dynamic Programming to the Problem of Optimizing a Function of Many Variables"

V sb. Avtomatizir. elektroprivod v nar. kh-ve (Automation of Electric Drive in the National Economy--collection of works), T. 1, Moscow, "Energiya", 1971, pp 19-21 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V627)

Translation: The paper deals with the possibilities of constructing algorithms for direct search of the optimum based on R. Bellman's recurrent formulas. The set of resultant equations, in a number equal to the number of variables in the function to be optimized, provides the possibility of constructing computational algorithms of direct search for the maximum which are readily computerizable. Comparative estimates show the preferability for use of these algorithms to find a localized optimum. Their basic advantages are simplicity and identical search process both inside and outside the search region. Bibliography of six titles. Authors' abstract.

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1/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--FORM COEFFICIENT OF SUPERCONDUCTIVE SYNCHRONOUS MACHINE FIELD -U-

AUTHOR-(04)-BERTINOV, A.I., GOLOVKIN, A.V., YEGOSHKINA, L.A., MIRONOV, O.N.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROTEKHNIKA (ELECTRICAL ENGINEERING), 1970, NO 1, PP 43-46

DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR,

TOPIC TAGS--SYNCHRONOUS GENERATOR, FERROMAGNETIC SUPERCONDUCTIVITY, MAGNETIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0250 STEP NO--UR/0292/70/000/001/0043/0046

CIRC ACCESSION NO--AP0120887
UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0150967

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE USE OF SUPERCONDUCTIVE EXCITATION WINDINGS FOR SYNCHRONOUS MACHINES LEADS TO NEW CONFIGURATIONS WHICH REQUIRE MODIFICATION OF THE FUNDAMENTALS OF SUPERCONDUCTIVE MACHINE THEORY. IN THIS STUDY A SIGNEL EXPRESSION IS OBTAINED FOR DETERMINING THE RADIAL COMPONENT OF THE MAGNETIC FIELD INTENSITY IN CLOSED FORM AND THE FORM COEFFICIENT OF THE SUPERCONDUCTIVE SYNCHRONOUS MACHINE FIELD IS DETERMINED. THE DISTRIBUTION OF THE MAXIMUM OF THE MAGNETIC FIELD INTENSITY RADIAL COMPONENT ALONG THE RADIUS IS GIVEN AS A FUNCTION OF THE NUMBER OF POLE PAIRS AND THE RATIO OF THE GEOMETRIC DIMENSIONS OF THE EXCITATION WINDING. THE ANALYSIS SHOWS THAT THE HIGHER HARMONICS HAVE THE HIGHEST VALUE WITHIN THE WINDING.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--ELECTROMECHANICAL START UP TIME CONSTANT OF A WAVE TYPE ELECTRIC MOTOR -U-

AUTHOR-(03)-BERTINOV, A.L., VARLEY, V.V., KOLOSKOV, M.S.

B

COUNTRY OF INFO--USSR

SOURCE--IZV. VUZ. ELEKTROMEKHANIKA, JAN. 1970, P. 51-56

DATE PUBLISHED----JAN70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--SERVOMOTOR, TRANSIENT ELECTROMAGNETIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0144/70/000/000/0051/0056

PROXY REEL/FRAME--1986/0372

CIRC ACCESSION NO--AP0102384

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--02OCT70

2/2 010

CIRC ACCESSION NO--AP0102384

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE TRANSIENT RESPONSE CHARACTERISTICS OF A NEW SERVO ELECTRIC MOTOR WHICH INVOLVES A COMBINATION OF AN ELECTROMECHANICAL ENERGY CONVERTER WITH WAVE TRANSMISSION. THE MOTOR IS CHARACTERIZED BY THE PRESENCE OF TWO MOMENTS: (1) THE MOMENT CREATED BY THE FORCES OF A ROTATING ELECTROMAGNETIC FIELD, AND (2) THE MOMENT ARISING AT THE OUTPUT TRANSMISSION SHAFT DUE TO THE CONVERSION OF WAVE DEFORMATION INTO SLOW ROTATION. THE ENERGY METHOD IS USED TO CALCULATE THE MOMENT OF INERTIA OF AN ELASTIC ROTOR DURING WAVE DEFORMATION. THE SYNCHRONOUS ELECTROMAGNETIC MOMENT AT THE STATOR SURFACE, WHICH CAUSES A DISPLACEMENT OF THE DEFORMATION WAVE, IS ALSO CALCULATED. EXPRESSIONS ARE OBTAINED FOR THE ELECTROMECHANICAL START UP TIME CONSTANTS OF REACTIVE WAVE MOTORS AND WAVE MOTORS WITH EXCITATION. EXPERIMENTAL RESULTS ARE OUTLINED, AND IT IS SHOWN THAT THE RESPONSE OF A WAVE MOTOR IS MUCH FASTER THAN THAT OF AN ASYNCHRONOUS ELECTRIC SERVO MOTOR WITH A HOLLOW ROTOR.

UNCLASSIFIED

USSR

UDC 539.89 +
532.78

BERTMAN, A. A., YEPANCHINTSEV, O. G., Academician SAMARIN, A. M.(deceased), CHERPOV, D. B. and SHENYAYEV, A. Ya., Institute of Metallurgy imeni A. A. Baykov, Abademy of Sciences USSR

"Structure and Properties of Cast Iron Crystallized under High Pressure"

Moscow, Doklady Akademii Nauk SSSR (Proceedings of the Academy of Sciences USSR), Vol. 195, No. 1, p 67-70, 1970

Abstract: Experiments have shown that pressures of the order of 1000 atmospheres applied to melts during cooling markedly affect crystallization of metal and improves its structure. This is especially true for alloys, including cast iron, having so-called colloidal microinhomogeneities. The structure and properties of cast iron melted and crystallized under pressures of 3 to 30 kbar are studied. Barothermic tests were made on gray cast iron having the eutectic composition of 3.8% C, 2% Si, 0.3% Mn, 0.25% S, and 0.15%P. The sample was heated to 1200°C under 30 kbar pressure. The test pressure was applied by a 200-ton press and was reached in 3 minutes, whereupon the sample was heated. The sample melted at approximately 1190°C and was held at 1200°C for 1 to 2 minutes. Then the sample was cooled slowly (~ 3 deg/sec) or rapidly (~ 200 deg/sec) to room temperature.
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BERTMAN, A. A., et al, Doklady Akademii Nauk SSSR, Vol. 195, No. 1, pp 67-70, 1970

Pressure was then removed. The initial structure of the samples was perlitic, with branching inclusions of graphite. After barothermic processing, the graphite inclusions disappeared. Slowly-cooled samples exhibited a structure typical of pre-eutectic white cast iron with primary austenitic dendrites and ledeburite. Elevated pressure noticeably increases the quantity of austenite and produces a fine structure. Metallographic analysis showed a dark component at the boundaries of the austenite dendrites and fine inclusions of a light phase. The dark phase was enriched with Si; and the light, with Mn. Both contained carbon. The structure of the fast-cooled sample resembled tempered steel and had dark needle-like components reminiscent of martensite. The hardness of the slowly-cooled samples increased by a factor of almost 3 as compared to the original metal, and wear resistance increased sharply. Orig. art. has 8 refs.

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USSR UDC 535.34-15

BERTSEV, V. V., BULANIN, M. O., and KOLOMIYTSEV, T. D.

"Infrared Spectra of Cryosystems. I. Linear Molecules"

Leningrad, Optika i Spektroskopiya, Aug 73, pp 277-282

Abstract: Consideration is given to the possibilities of employing the spectroscopy of low-temperature condensed systems (cryosystems) for obtaining new information on the spectra and force field of molecules.

Liquefied gases such as argon, oxygen, and nitrogen are more inert than all the solvents usually employed in infrared spectroscopy. They are transparent in a wide spectral range and, consequently permit observation of the spectra of greatly diluted solutions in large optical layers. This compensates for the main drawback of liquefield gases as a solvent, namely their low solvent action. The spectroscopy of cryosystems is a valuable means for research, particularly in cases where it is not possible to resolve the fine rotational structure of the oscillatory bands.

Measurements were taken of the frequencies, half-widths, and intensities of bands in the infrared spectra of linear molecules (CO_2, COS, N_2O, and CS_2) in solutions of O_2 and Ar at 90°K, and a comparison was conducted with spectra in the gas phase. 5 tables. 14 references.

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USSR UDC: 621.396.69:621.316.8

BLOKHIN, Yu. I., KEDROV, Ye. M., BERUCHKO, N. I.

"Working Capacity of Thin-Film Resistors in the Pulse Mode With a Pulse Duration of More Than 500 μsec"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiodetali (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 1 (18), pp 67-71 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V337)

Translation: The authors describe the results of determination of the working capacity of thin-film resistors operating in the pulse mode with a pulse duration from 500 μsec to 20 msec. A method is proposed for calculating the maximum permissible amplitudes of pulses and overloads for bulk thin-film resistors for various average power levels and the above-mentioned pulse duration range. Bibliography of 3 titles. Ye. M.

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BERUKSHTIS, G. K.

JPRS 55554

28 March 1972

UDC 669:620.193.2.001.5

CORROSIVE STABILITY OF METALS AND METAL COATINGS UNDER ATMOSPHERIC CONDITIONS

[Foreward to book by G. K. Berukshtis and G. B. Klark; Moscow, Korrozionnaya Ustoychivost' Metallov i Metallicheskikh Pokrytiy v Atmosfernykh Usloviyakh, Russian, 1971, signed to press 6 July 1971, pp 3-4]

Atmospheric corrosion is one of the most widespread forms of corrosive destruction of metals. Approximately 80 percent of the total amount of metal in the form of structures, machines, and devices are used under atmospheric conditions. The national economy sustains great losses because of the premature breakdown of a series of metal items caused by corrosion. Occasionally even insignificant corrosive destruction can cause a costly construction, device, or mechanism to become inoperative. Thus, for example, a layer of corrosion products on the contacts of electrical circuits can change their contact resistance and disrupt the proper operation of the entire system. A hardly noticeable tarnishing on mirror surfaces, resulting from corrosion, sharply diminishes the parameters of different optical devices, and lasers especially.

The rate of corrosive destruction of various metal items in the atmosphere is determined by ambient conditions, that is, meteorological factors and pollution of the air with corrosive active gasses and saline admixtures.

At the present time, the theory of atmospheric corrosion applicable to actual conditions, is in a formative stage and there is no practical scientifically sound method for strict quantitative computation of the corrosion rate of metals for any climatic area. In other words, from purely theoretical concepts, one cannot numerically forecast what the rate and distribution of corrosion will be in one metal or another under different atmospheric conditions. The latter creates the need for prolonged corrosion testing at corrosion stations especially established for this goal.

Hundreds of corrosion stations are at work in the USSR and abroad at which various metallic systems and protective means are tested.

USSR UDC: 669:620.193.2.001.5

BERUKSHTIS, G. K. and KLARK, G. B.

Corrosion Resistance of Metals and Metal Surface Coatings Under Atmospheric Conditions (Korrozionnaya ustoychivost' metallov i metallicheskikh pokrytiy v atmosfernykh usloviyakh), Moscow, "Nauka" Press, 1971, 160 p., 127 illustrations, 47 tables, 217 bibliographic references.

The book correlates the results of corrosion tests performed on metals and metal surface coatings over a period of years in various climatic zones of the USSR, explaining the role of meteorological factors and aggressive air contaminants (SO_2, Cl and others) in the corrosion of metals. Data on the physicochemical properties of atmospheric corrosion products are cited and an analysis of the effect of metal dissolution products on corrosion rates is presented. Much consideration is given to problems of scientific substantiation of predicting atmospheric corrosion rates on the basis of meteorological characteristics with allowance for contamination by industrial gases and sea water aerosols. The edition is intended for a wide circle of specialists associated with branch institutes, manufacturing establishments, and corrosion laboratories; it may also serve as an educational aid for students and those doing graduate work in various types of corrosion and metal protection techniques.

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USSR

BERUKSHTIS, G. K., and KLARK, G. B., Corrosion Resistance of Metals and Metal Surface Coatings Under Atmospheric Conditions, Moscow, "Nauka" Press, 1971, 160 page

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BERUKSHTIS, G. K., and KLARK, G. B., Corrosion Resistance of Metals and Metal Surface Coatings Under Atmospheric Conditions, Moscow, "Nauka" Press, 1971 160 page

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USSR

UDC 621.762.002.5(088.8)

BERUL', G. M., and NAYGUZ, N. I., Odessa Press Plant

"Method of Automatic Hydraulic System Control"

USSR Authors' Certificate No 266565, Cl. 59a, 19, (F 04 b), filed 19 Oct 65, published 14 Jul 70 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G473P by G. Derkacheva)

Translation: A method is suggested for automatic control of a P/M hydraulic press system through the use of a pump of variable efficiency and a valve to support pressure. In order to increase efficiency of the system while preserving constancy of pressure, system control is effected by comparing the amount of consumption in the overflow main of the supporting valve with that prescribed, by means of the comparator controlling the pump regulator.

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1/2 031 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--ELECTRICAL, PHOTO, AND THERMOELECTRIC PROPERTIES OF THIN FILMS OF ALKALI METAL ANTIMONY SULFIDES AND SELENIDES -U-

AUTHOR-(05)-GNIDASH, N.I., SUKHORUKOVA, L.N., KUZNETSOV, M.S., FINKELSHTYN, YA.G., BERUL, S.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 237-40

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--THIN FILM SEMICONDUCTOR, PHOTOCONDUCTIVITY, THERMOELECTRIC PROPERTY, ABSORPTION SPECTRUM, ALKALI METAL COMPOUND, ANTIMONY COMPOUND, SULFIDE, SELENIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1999 STEP NO--UR/0363/70/006/002/0237/0240

CIRC ACCESSION NO--AP0105073

UNCLASSIFIED

CIRC ACCESSION NO--AP0105073

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELEC., PHOTOELEC., AND THERMOELEC. PROPERTIES OF THIN FILMS PREPD. BY VACUUM SPUTTERING OF TERNARY COMPDS. OF THE A PRIMEI B PRIMEV C SUB2 PRIMEVI TYPE (WHERE A PRIMEI EQUALS LI, NA, K, OR CS; B PRIMEV EQUALS SB; AND C SUB2 PRIMEVI EQUALS S OR SE) WERE STUDIED. THE TERNARY COMPDS. WERE PREPD. BY INTERACTING SB SUB2 S SUB3(SB SUB2 SE SUB3) WITH THE FLUORIDES OF THE ALKALI METALS. THE FILMS OBTAINED HAVE SEMICONDUCTOR PROPERTIES. A NOTICEABLE PHOTOCOND. IS OBSD. FOR THE ALKALI METAL SB SELENIDES. FOR THE LATTER, SPECTRAL DISTRIBUTION CURVES FOR THE PHOTOCOND. WERE OBTAINED, FROM WHICH IT FOLLOWS THAT THE MAX. OF THE PHOTOCOND. LIE IN THE VISUAL SPECTRAL REGION NEAR THE LONG WAVELENGTH ABSORPTION EDGE OF THESE SUBSTANCES. MANY OF THE THIN FILMS ARE CHARACTERIZED BY A RELATIVELY LARGE DIFFERENTIAL THERMAL EMF. FACILITY: KHAR*KOV. POLITEKH. INST. IM. LENINA, KHARKOV, USSR.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002200410001-1"

1/2 033 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--EPR SPECTRA OF SILICA GEL IRRADIATED IN A REACTOR AT LOW TEMPERATURES -U-
AUTHOR-(03)-BERULAVA, B.G., NADIRASHVILI, L.SH., TSETSKHLADZE, T.V.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(2), 369-71

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SILICA GEL, RADIATION EFFECT, ELECTRON PARAMAGNETIC RESONANCE, ETHYLENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1401 STEP NO--UR/0020/70/190/002/0369/0371

CIRC ACCESSION NO--AT0128800

UNCLASSIFIED

2/2 033 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0128800

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SILICA GEL (I) WAS IRRADIATED WITH GAMMA RADIATION FROM A NUCLEAR REACTOR AT 120DEGREESK WITH DOSES FROM 3 TO 60 MEGARADS. EPR SPECTRA WERE MEASURED AT 77DEGREESK AT X BAND. I HAD A SPECIFIC AREA OF 600 M PRIME2-G. SAMPLES WERE EVACUATED 10 HR AT 300DEGREESK. SOME WERE THEN FILLED WITH C SUB2 H SUB6 AT 300 TORR. SPECTRA WERE RECORDED IMMEDIATELY AFTER IRRADN. AND SEVERAL DAYS LATER (STORED AT 77DEGREESK). WITH A 40 MEGARADS DOSE, THE SIGNALS FROM BOTH THE VACUUM TREATED AND THE C SUB2 H SUB6 FILLED SAMPLES WERE INHOMOGENEOUSLY BROADENED. THE SPECTRUM OF THE VACUUM TREATED SAMPLE HAD 3 COMPOENTS (POORLY RESOLVED) WITH G VALUES 2.0080, 2.0045, AND 2.0017, AND WITH CENTER LINE WIDTH 11.5 G. RESOLN. IMPROVES WITH A LOWER DOSE. THE C SUB2 H SUB6 CONTACTED SAMPLE HAS A SINGLE LINE, G EQUALS 2.0015, LINEWIDTH EQUALS 2.3. THE H DOUBLET IS OBSD. WITH A EQUALS 504 G, LINEWIDTH 3 G. AT 10 MEGARADS THE RADICAL YIELD FROM THE C SUB2 H SUB6 CONTACTED SAMPLE IS 0.05 THAT OF THE VACUUM TREATED. FOR THE C SUB2 H SUB6 CONTACTED SAMPLE, THE G EQUALS 2.0017 SIGNAL IS DUE TO AN ELECTRON IN AN O VACANCY, THAT AT 2.0080 TO A POS. HOLE. THE H ATOM SIGNAL IS SIMILAR TO 6PERCENT OF THE TOTAL RADICAL YIELD. THE G EQUALS 2.0080 AND 2.0045 LINES DISAPPEAR IN THE VACUUM TREATED SAMPLES, BUT NOT THE G EQUALS 2.0015 LINE. FACILITY: INST. FIZ., TBILISI, USSR.

UNCLASSIFIED

USSR

UDC: 536.23

VARGAFTIK, N. B., VOSHCHININ, A. A., BERZHENTSEV, V. V., STUDNIKOV, Ye. L., Moscow Aviation Institute imeni S. Ordzhonikidze

"Experimental Determination of the Thermal Conductivity of Sodium Vapor"

Moscow, Teplofizika Vysokikh Temperatur, Vol 11, No 2, Mar/Apr 73, pp 422-423

Abstract: A previous paper (Vargaftik, N. B., Voshchinin, A. A., Teplofizika Vysokikh Temperatur, Vol 5, No 5, 1967) gave the results of measurements of the thermal conductivity of sodium vapor by the method of coaxial cylinders. In these experiments, the fraction of radiant heat transfer was 20-40%. To reduce the percentage of radiation, the authors of this paper made a new installation with a working gap of 0.2 mm instead of the 0.6 mm used in the previous research. The measurements were made at 1095 K and 2000-50000 N/m^2. In spite of the relatively low pressures, the concentration of diatomic molecules varied considerably (from 1 to 10%). The thermal effects of the reaction were considerable, affecting both the thermal conductivity and the effective heat capacity. The results of the experiments are tabulated. The experimental error is about 6%. It is

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USSR

VARGAFTIK, N. B. et al., Teplofizika Vysokikh Temperatur, Vol 11, No 2, Mar/Apr 73, pp 422-423

found that at about 1100 K (the principal isotherm) the ratio of thermal conductivities of sodium vapor at 50000 and 10000 N/m^2 is about 1.30, which agrees well with data in the literature obtained by another method.

2/2

USSR UDC 656.259.2

BERZIN, M.A., GIZHDEU, V.V., LAZARENKO, YU. V., LAZER, V.S., OSTASHKOV, YE.G., PLAVNIK, YA. YU., and SOKOLOV, V.F., Design Office of the Main Administration of Signaling and Communication, Ministry of Railroads

"A Device for Monitoring a Locomotive's Transit of Block Section Boundaries"

USSR Authors' Certificate No 297522, Cl. B 61 l 3/20; B 61 l/08, filed 12 Sep 69, published 20 May 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, Jan 72, Abstract No 1A383P)

Translation: A device is suggested for monitoring a locomotive's transit of block section boundaries. It contains locomotive pick-up coils connected via a filter to an amplifier input, a rectifier unit whose input is connected to the aplifier output, OR circuits, a flip-flop, and an actuating unit. For purposes of simplification the device contains code separation units, the output of the rectifier unit being connected to the inputs of the code separation units, with the outputs of the code separation units connected to the inputs of the corresponding OR circuits, the outputs of the OR circuits connected to the flip-flop inputs, and the flip-flop output connected to the actuating unit input. 2 illustrations.

1/1

BERZIN, YA. YA.

SO: JPRS 59254
18 JUNE 73

UDC 621.317.36

COMPUTATION OF UNRELIEVED ELECTROMAGNETIC FORCES OF ATTRACTION OF THE ROTOR OF AN ELECTRIC MOTOR

[Article by Ya. Ya. Berzin', Leningrad, Moscow Higher Technical School imeni N. E. Bauman; Leningrad, Izvestiya VUZ. Priborostroyeniye, Russian, No 3, 1973, pp 57-60]

This article gives an algorithm for computing unrelieved electromagnetic forces of attraction of a rotor in small type EDG electric motors, the curve of the dependence of the unrelieved forces of attraction of the rotor on the nonuniformity of the air gap between the rotor and the stator, and recommendations for selecting the maximally allowable nonuniformity in the air gap between the rotor and the stator.

In investigating small type EDG electric motors it was established that the level of their vibrations depends to a significant degree on how much the forces of attraction of the rotor are unrelieved, which in turn depends on the uniformity in the air gap between the rotor and the stator (see the Bibliography).

In type EDG electric motors the nonuniformity in the air gap between the rotor 1 and the magnetic shunt 2 (Figure 1) reduced into the stator 3 is basically determined by the deviations from cylindricity of the inner surface of the shunt, the outer surface of the rotor, the deviation from coaxiality of the rotor and the shunt, and the eccentricity of the rotor on the shaft.

Computation of the unrelieved electromagnetic forces of attraction is done using formulas (see the Bibliography) corresponding to Figure 1.

1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--NEODYMIUM 144 LEVELS EXCITED DURING THE CAPTURE OF THERMAL NEUTRONS -U-

AUTHOR-(03)-BERZIN, YA.YA., KRUMINYA, A.YE., PROLOFYEV, P.T.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(2), 449-53

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--NUCLEAR ENERGY LEVEL, CONVERSION ELECTRON SPECTRUM, NEODYMIUM ISOTOPE, THERMAL NEUTRON, NEUTRON ABSORPTION, BETA SPECTROMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0219 STEP NO--UR/0048/70/034/002/0449/0453

CIRC ACCESSION NO--AP0105295

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105295

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONVERSION SPECTRA WERE MEASURED FOR THE E EMITTED IN THERMAL N CAPTURE BY THE PRIME143 ND NUCLEUS TO OBTAIN MORE ACCURATE MULTIPOLARITIES AND LEVEL ENERGIES. THE MEASUREMENTS MADE WITH A BETA SPECTROMETER HAVING A RESOLN. OF 0.1-0.4PERCENT. THE TARGETS HAVE THICKNESSES OF 1.5 AND 3.3 MG-CM PRIME2 FOR E ENERGIES 150-900 AND 900-1800 DEV, RESP. ALTOGETHER, 47 LINES ARE TABULATED AND INTENSITIES ARE GIVEN WITH ERRORS OF 20-50PERCENT. AN INTERPRETATION OF THE LEVELS AT 696, 1315, 1510, 1560, 1520, 2295, 1792, 2093, 2369, 2866, 3027, AND 3126 KEV IS GIVEN. INTERNAL CONVERSION COEFFS. WERE DETD. FOR THE VARIOUS TRANSITIONS.

FACILTIY: INST. FIZ., RIGA, USSR.

UNCLASSIFIED

USSR UDC 621.382.3

PUNDUR, P.A., AKMENTYN'SH, YA.YA., BERZIN'SH, A.A., DANE, B.YA., ZOBENS, V.YA., KOKORISH, YE. YU., KURMIT, YA. A.

"Silicon Low-Noise High-Frequency Unencapsulated Transistors"

Elektron. tekhnika. Nauchno-tekhn. sb. Mikroelektronika (Electronic Technology. Scientific-Technical Collection. Microelectronics), 1970, Issue 2(25), pp 81-86 (from RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 4B245)

Translation: The construction, technology, and principal parameters are described of silicon planar unencapsulated low-noise high-frequency n-p-n type transistors for hybrid circuits.

1/1

USSR UDC 534

BERZIN'SH, Ya. P., BIBA, Ya. A.

"Problems of Synthesizing a Single-Mass Impact-Oscillation System With Polyharmonic Excitation"

V sb. Konf. po kolebaniyam mekh. sistem. Tezisy dokl. (Conference on Oscillations of Mechanical Systems. Abstracts of the Reports), Kiev, "Nauk. dumka", 1971, p 9 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10A285)

Translation: The paper deals with the dynamics of unilateral and bilateral impact-oscillatory systems subjected to polyharmonic external effects. It is proved that the rate of impact with respect to the fixed end limit in the unilateral system depends on the constant component of expansion of the external force in a Fourier series, and is independent of the remaining harmonic components of the series.

It is shown that an additional impact on the other side of the mass can increase the impact velocity with respect to the main end limit. The theoretical conclusions are confirmed by the results of modeling of a bilateral springless impact-oscillatory system on the MNB-1 analog computer.

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UDC 615.21:547.665

USSR

AREN, A. K., BERZINYA, I. A., GEYTA, L. S., and GERMANE, S. K., Institute of Organic Synthesis Ac. Sc. Latvian SSR

"2-[γ-(N-Arylpiperazino)propyl]-2-arylindandiones-1,3 and -indandiols-1,3"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 4, No 12, Dec 70, pp 6-10

Abstract: In continuation of the search for neuro- and psychotropic agents, a series of title compounds was synthesized. To 2.3 g sodium dissolved in 200 ml of n-propanol, 22.5 g 2-phenylindandione-1,3, 24 g 1,3-dibromopropane, and 14.9 g NaI are added and refluxed for 8-10 hrs. The solution is then cooled, poured into water, the separated oil phase is dissolved in benzene, washed with sodium bicarbonate solution and dried over magnesium sulfate. Benzene is evaporated and the 2-(γ-bromopropyl)-2-phenylindandione-1,3, m.p. 88° is isolated by chromatography on an alumina column. Analogously 2-(γ-chloropropyl)2-(p-methoxyphenyl)-indandione-1,3, b.p. 160-70°/10^{-2} mm Hg, and 2-(γ-hydroxypropyl)-2-phenylindandione-1,3, m.p. 78° were prepared. To convert these intermediates to 2-[γ-(N-arylpiperazino)-propyl]-2-arylindandiones-1,3, above compounds were dissolved in benzene and respective N-arylpiperazines in benzene were added, the mixture being refluxed for

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USSR

AREN, A. K., et al, Khimiko-Farmatsevticheskiy Zhurnal, Vol 4, No 12, Dec 70, pp 6-10

0.5-1 hr, cooled, and filtered. The precipitated hydrochloride is saturated with HCl, the product filtered, suspended in water, aqueous ammonia is added and the only product crystallized in alcohol. Pharmacological studies showed all compounds to exhibit tranquilizing activity, the most active being the m-substituted arylpiperazine derivatives. All of the indandio-1,3 derivatives exhibited toxicity which increased with the increased number of methyl groups between the diketo group and N-arylpiperazine.

2/2

USSR

BERZINYA, R. P., KLOTYN'SH, E. E., et al (Physicoenergy Institute of the Latvian Academy of Sciences)

"Silicon Surface Layer Investigation After RF Glow Discharge Treatment"

Riga, Izvestiya Akademii Nauk Latviyskoy SSR: Seriya Fizicheskikh i Tekhnicheskikh Nauk, May-June 1973, pp 25-28

Abstract: Silicon with an electron concentration of $4.8 \cdot 10^{13} cm^{-3}$ was etched by an rf glow discharge. The depth of the rf glow discharge treatment was studied by surface recombination rate measurements with subsequent layer removal.

There were silicon samples in which the surface recombination rate increased or decreased after the rf glow discharge treatment. For the first samples the depth of the layer with the modified surface recombination rate was several microns. The thickness of the modified layer increased when the samples were coated with copper before the rf glow discharge treatment.

The article includes two tables. There are four bibliographic references.

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USSR

UDC 537.312.62

VERESHCHAGIN, L. F., Academician, KONYAYEV, YU. S., BEREZOV, E. M., and VELLER, M. V., Institute of High-Pressure Physics, Academy of Sciences USSR, Akademgorodok, Podol'skiy Rayon, Moskovskaya Oblast

"Variation in the Superconducting Transition Temperature of Strained Niobium Stannide"

Moscow, Doklady Akademii Nauk SSSR, Vol 203, No 6, 1972, pp 1270-1271

Abstract: The authors subjected rods 1.5-3 mm in diameter made of Nb-Sn alloy (64 wt. percent Nb), containing Nb_3Sn as the principal phase, to plastic strain and studied the dependence of the superconducting transition temperature T_c on the amount of strain. The strain was applied on a two-stage hydroextrusion device in the 30-60 kbar extrusion pressure range with a counterpressure of 15-20 kbar. The strains reached $\varepsilon = 65$ percent. T_c was determined by the inductive method. It was found that there is already a sharp decrease in T_c at light reductions ($\varepsilon = 20$-30 percent) with a significant expansion of the transition range. An analysis of X-ray photographs taken

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VERESHCHAGIN, L. F., et al., Doklady Akademii Nauk SSSR, Vol 203, No 6, 1972, pp 1270-1271

by the powder method showed that with increased strain there is broadening of the interference lines and a decrease in their intensity.

To find how T_c is affected by stresses occurring during strain, a number of anneals of varying duration were carried out at 300-900° C. It was found that the anneals significantly increase the superconducting transition temperature. There is a 3-5 percent increase in the T_c of strained specimens after annealing at 900°. Annealing of the initial specimens does not cause any sharp change in T_c. The appearance of the X-ray photographs of all specimens annealed at temperatures up to 700° C does not change; beginning with 900° there is a decrease in the width and an intensification of the Ni_3Sn line intensity, indicating internal stress relief and possibly an increase in the tin content of the compound.

The authors thank Ye. S. Itskevich and V. A. Vlasov for affording the opportunity to perform the T_c measurements.

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USSR

BERZON, V. Ye.,

"Planning Properties of Language at the Level of the Structure of Cohesive Text"

Nauch.-tekhn. Inform. Sb. Vses. In-t. Nauch. i Tekhn. Inform [Scientific and Technical Information, Collection of All-Union Inst. of Sci. and Tech. Inform., 1971, Series 2, No 12, pp 5-8, 31 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V602 by the author).

Translation: It is demonstrated in this article that the property of planability of a language generally obtains for the syntactic structure, and is also true at the level of the structure of cohesive text. Examples are presented demonstrating the fulfillment of the three properties of general planability in supersyntactical structures. Certain possibilities for utilization of this property in various procedures of automatic information processing are listed, in particular in algorithms for automatic convolution of text.

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USSR

ELECTRICAL ENGINEERING

Circuit Elements UDC 621.318.43

USSR

BESEDIN, A. I., GAYDOV, N. T., ROZHDESTVENSKIY, V. F., YAKOVLEV, G. M.

"A Choke"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 22, 1970, Soviet Patent No 275188, Class No 21, filed 11 Nov 68, p 45

Abstract: This Author's Certificate introduces a choke which contains a ribbon core, fitted with a winding and located in a hermetically sealed container made from a nonmagnetic heat-conducting material and filled with grease. As a distinguishing feature of the patent, heat removal from the choke is improved by placing the choke winding inside a core made in the form of two tubes helically formed from tape of a magnetically soft material such as iron-nickel alloy. This core is mounted together with insulating sleeves inside the container which is used as the heat-removing radiator and the housing for the choke.

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1/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--THE USE OF COMPUTING EQUIPMENT IN PLANNING THE MATERIAL TECHNICAL SUPPLY OF THE UKRAINIAN SSR -U-

AUTHOR-(02)-LAPCHENKO, YU., BESEDIN, V.

B

COUNTRY OF INFO--USSR

SOURCE--KIEV, EKONOMIKA SOVETSKOY UKRAINY, NO 1, JAN 70, PP 92-96

DATE PUBLISHED----JAN70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--CAPITAL CONSTRUCTION, INDUSTRIAL PRODUCTION, MATHEMATIC METHOD, COMPUTER APPLICATION, INDUSTRIAL PLANNING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1287 STEP NO--UR/0563/70/000/001/0092/0096

CIRC ACCESSION NO--AP0104625

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0104625

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS ARTICLE IS A DETAILED HISTORICAL ACCOUNT OF THE EXPERIENCE OF THE UKRAINIAN SSR IN DEVELOPING AND INTRODUCING SYSTEMS FOR THE COORDINATION OF INDUSTRIAL PRODUCTION AND CAPITAL CONSTRUCTION PLANS WITH MATERIAL TECHNICAL SUPPLY PLANS THROUGH THE USE OF MATHEMATICAL METHODS AND MODERN ELECTRONIC COMPUTING EQUIPMENT.

UNCLASSIFIED

USSR UDC: 669.15-194:621.753.58

SHATAGIN, O. A., BESPOINA, E. B., SLADKOSHTEYEV, V. T., KHALEMSKIY, S. F., Ukrainian Scientific-Research Institute of Metals, Kharkov

"Gas Porosity with Horizontal Continuous Casting of Carbon Steels"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 12, 1973, pp 39-41.

Abstract: Gas porosity is widely developed in horizontal continuous ingots. The reasons for the development of elevated porosity of the axial and upper zones of square ingots are studied. The method of vacuum melting is used to determine the composition of the gas in the pores. Strong deoxidation and degassing of metal during pouring is used to produce billets which, following rolling with various degrees of compression, fully satisfy the requirements of the state standards. The studies showed that the primary reason for the development of porosity during continuous horizontal casting of steel is hydrogen. It is recommended that the metal be degassed during pouring by bubbling an inert gas through the liquid metal in the receiver.

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1/2 029 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--INFLUENCE OF THE TEMPERATURE FIELD PROFILE ON THE RELAXATION OF RESIDUAL STRESSES DURING LOCAL HEATING OF RING SHAPED WELDS -U-

AUTHOR-(05)-PODSTRIGACH, YA.S., GORIACHEVA, Z.I., BURAK, YA.I., BESEDINA, L.P., KAZAKOVA, L.A.

COUNTRY OF INFO--USSR

SOURCE--FIZIKO KHIMICHESKAIA MEKHANIKA MATERIALOV, VOL. 6, NO. 1, 1970, P 42-45

DATE PUBLISHED--------70

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

TOPIC TAGS--RESIDUAL STRESS, METAL RING, THERMAL STRESS, WELD JOINT, STRESS RELAXATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0936 STEP NO--UR/0369/70/006/001/0042/0045

CIRC ACCESSION NO--AP0116445

UNCLASSIFIED

2/2 029 UNCLASSIFIED

CIRC ACCESSION NO--AP0116445 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE DEPENDENCE OF THERMAL STRESSES ON THE TEMPERATURE FIELD PROFILE DURING LOCAL AXISYMMETRICAL HEATING OF RIGID CYLINDRICAL SHELLS. THIS PROBLEM REDUCES TO THE DETERMINATION OF TEMPERATURE FIELDS WHICH, AT A GIVEN TEMPERATURE LEVEL AND WIDTH OF THE HEATING ZONE, GUARANTEE A RELATIVELY LOW LEVEL OF MAXIMUM STRESSES. AN EXPERIMENTAL STUDY IS MADE OF THE USE OF EXTREMUM TEMPERATURE FIELDS FOR LOCAL STRESS RELIEF OF RING SHAPED WELDS. FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR, FIZIKO MEKHANICHESKII INSTITUT, LVOV, UKRAINIAN SSR.

UNCLASSIFIED

USSR

UDC 539.377

POIS'TRIGACH, YA. S., BESEDINA, L. P.

"Concerning the Link Between Temperature Stresses and Dislocation Stresses in Shells of Revolution"

Kiev, Prikladnaya Mekhanika, No 8, 1970, pp 3-8

Abstract: The article deals with temperature fields which do not bring about stresses in the case of arbitrary deformation of shells of revolution. The problem of finding temperature stresses which can be effected by means of discrete dislocations is solved. From the conditions of compatibility of the purely thermal constituents of the deformation components of the central surface and the single-valued nature of purely thermal shifts and turns, the result is obtained that temperature fields which are only linear with respect to Cartesian coordinates do not bring about stresses in a free shell of revolution. The temperature fields which, in the shell under consideration, bring about stresses which correspond to dislocation stresses, are determined. The corresponding dislocation stresses and moments in a closed spherical shell are found.

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1/2 017 UNCLASSIFIED PROCESSING DATE--090CT70
TITLE--ON OCCURRENCE OF HYMENOLEPIDOSIS IN KAZAKHSTAN AND ALMA-ATA -U-

AUTHOR--BESEDINA, T.K.

B

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA PARAZITOLOGIYA I PARAZITARNYYE BOLENZI, 1970, VOL 39, NR 2, PP 161-164
DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PARASITIC DISEASE, SANITATION, DISEASE INCIDENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/1447 STEP NO--UR/0358/70/039/002/0161/0164

CIRC ACCESSION NO--AP0109507
UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0109507

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN KAZAKHSTAN, HYMENOLEPIDOSIS CONSTITUTES 49PERCENT OF THE TOTAL NUMBER OF INCASIONS DETECTED WITH PREDOMINANT INVOLVEMENT OF CHILDREN. OCCURRING ALL OVER THE REPUBLIC, HYMENOLEPIDOSIS IS MORE PREVALENT IN THE SOUTH INCLUDING THE CITY OF ALMA-ATA WHERE IT ACCOUNTS FOR 40PERCENT AMONG OTHER HELMINTHIC DISEASES. AS A RESULT OF INCREASING WELFARE OF THE POPULATION AND REALIZATION OF SANITARY AND SPECIAL THERAPEUTIC MEASURES THE INCIDENCE OF HYMENOLEPIDOSIS IN THE KAZAKH SSR HAS BEEN REDUCEDFROM 1955 TO 1967 2.4 FOLD, AND IN ALMA-ATA 6.6 FOLD. FACILITY: KAZAKHSKIY INST. EPIDEMIOLOGII I MIKROBIOLOGII, ALMA-ATA.

UNCLASSIFIED

USSR

UDC 576.852.215.077.3.073.4

BESEDNOVA, N. N., Vladivostok Institute of Epidemiology and Microbiology

"Application of the Fluorescent Antibody Method to Detect Pseudotuberculosis Agent"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 3, 1973, pp 28-32

Abstract: Fluorescent serum was prepared by immunizing rabbits with killed virulent Y. pseudotuberculosis strain No 603, serotype 1 and treating the hyperimmune serum with fluorescein isothiocyanate, and subsequently its specificity was tested on several bacteria. Fluorescence was intense with Y. pseudotuberculosis serotype 1, weak with serotypes 2 and 3, and moderate with serotypes 4 and 5, moderate with Salmonella serotype B and with E. paracoli only when the serum was at full strength, and absent with other Salmonella, Escherichia, and Proteus species tested. When stored at -20°C the serum maintained its activity for at least 1.5 years. No fluorescence was detected in organ smears from uninfected animals. Smears from various organs of white mice infected with Y. pseudotuberculosis serotype 1 were subjected to the fluorescent antibody method up to 30 days after infection, and results were compared with bacteriological analyses. Antibodies could be detected longer in internal

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USSR

BESEDNOVA, N. N., Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 3, 1973, pp 28-32

organs with lymph nodes by immunofluorescence, for about the same period by both methods in peritoneal exudate and the spleen, and longer in the blood by bacteriological analysis. In general the fluorescent antibody method was found to be adequately precise and rapid, considerably sensitive and specific, and surpassed bacteriological methods in effectiveness.

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USSR B UDC 621.791:546.821

BESEDNYY, V. A., Engineer, and SHELENKOV, G. M., Engineer

"Welding of Very Thick Titanium Sheets Along a Slit"

Moscow, Khimicheskoye i Neftyanoye Mashinostroyeniye, No 2, Feb 70, p 27

Abstract: A description is given of a method for increasing the efficiency of manual argon arc slit welding with a nonconsumable electrode for use with short seams of titanium plates. The following mechanical properties of the welded joint are obtained: tensile strength -- 43.5 kg/mm^2, impact toughness -- 18.4 kg·m/cm^2, bending angle -- 120, and hydrogen content in wt. % -- 0.0027. The slit welding technique decreases the weight of deposited metal 2-3 times, reduces the consumption of expensive welding materials (welding wire, argon, and tungsten), and results in a 2-3 fold increase in the productivity of the welding process.

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USSR

BESEKERSKIY, V. A., GORDEYEV, V. G., OSTROMUKHOV, Ya. G.
"Theory of the Two-Rotor Gyroscopic Orbit"

Upr. Dvizhushchimisya Ob'yektami. Tr. IV Vses. Soveshch. po Avtomat. upr. Tbilisi, 1968 [Control of Moving Objects, Works of Fourth All-Union Conference on Automatic Control, Tbilisi, 1968 -- Collection of Works], Moscow, 1972, pp 87-98, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 A72, author's view).

Translation: Based on a study of the initial differential equations of a two-rotor gyroorbit and the composition of interference at the output of the vertical-line constructor, as well as in the gyroorbit itself, the basic theoretical relationships are presented for the process of construction of the instantaneous orbital system of coordinates in the correction (normal orientation) mode and gyroscopic memory mode. As the most important results of analysis, the author's note the transformation of the spectrum of noise defined by the natural drift of the gyroscopes, a result of the modulating properties of the two-rotor gyroorbit, as well as the more favorable operating conditions in the gyroscopic memory mode than in a single-rotor gyroorbit. The differences in the noise spectra at the output of the orbital coordinate system constructor based on a single-rotor and on a two-rotor gyroorbit allows them to be effectively combined. 5 Biblio. Refs.
1/1

USSR UDC 62-50

BESEKERSKIY, V. A., and POPOV, Ye. P.

"Theory of Automatic Control Systems"

Teoriya Sistem Avtomaticheskogo Regulirovaniya, Moscow, Nauka Press, 1972, 768 pp

Translationof Annotation: This book is a monograph devoted to a systematic presentation of the theory of automatic regulation and control. The book contains all of the most important sections of the theory of automatic control: the theory of ordinary and special linear systems and the theory of nonlinear, adaptive, and digital systems. The book is designed for teachers and students specializing in the area of automatic regulation and control but can also be used by engineers and scientific workers for independent study of theoretical problems. 39 tables, 524 figures, 153 bibliographic references.

Table of Contents

USSR

BESEKERSKIY, V. A., and POPOV, Ye. P., Teoriya Sistem Avtomaticheskogo Regulirovaniya, Moscow, Nauka Press, 1972, 758 pp

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USSR

BESEKERSKIY, V. A., and POPOV, Ye. P., Teoriya Sistem Avtomaticheskogo Regulirovaniya, Moscow, Nauka Press, 1972, 768 pp

USSR

BESEKERSKIY, V. A., and POPOV, Ye. P., Teoriya Sistem Avtomaticheskogo Regulirovaniya, Moscow, Nauka Press, 1972, 768 pp

4/4

Equipment
Gyroscopic

USSR

UDC: 629.78.017.2

BESEKERSKIY, V. A., GORDEYEV, V. G., OSTROMUKHOV, Ya. G.

"Theory of a Two-Rotor Precessing Orbit"

Moscow, Upr. dvizhushchimisya ob"yektami. Tr. IV Vses. soveshch. po avtomat. upr. Tbilisi, 1968--sbornik (Control of Moving Objects. Works of the Fourth All-Union Conference on Automatic Control. Tbilisi, 1968--collection of papers), 1972, pp 87-98 (from RZh-Raketostroyeniye, No 10, Oct 72, abstract No 10.41.66)

Translation: Basing their analysis on an investigation of the initial differential equations of a two-rotor precessing orbit, as well as on the composition of the interferences acting on the output of the vertical plotter and in the precessing orbit itself, the authors present basic theoretical relations for the process of constructing a running orbital system of coordinates in the correction (normal orientation) and the gyroscopic memory modes. By way of principal results of the analysis, the authors note that the spectrum of interference due to inherent drifts of the gyroscopes is changed by the modulating properties of the two-rotor precessing orbit, and also by working conditions in the gyroscopic memory mode which are more ad-

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USSR

BESEKERSKIY, V. A. et al., Upr. dvizhushchimisya ob"yektami. Tr. IV Vses. soveshch. po avtomat. upr. Tbilisi, 1968--sbornik, 1972, pp 87-98

vantageous than in a single-rotor precessing orbit. The difference in the interference spectra at the output of orbital coordinate systems plotters constructed on the basis of using single-rotor and two-rotor precessing orbits enables realization of further effective combination of the two. Bibliography of five titles. Résumé.

2/2

1/2 017 UNCLASSIFIED PROCESSING DATE--090CT70
TITLE--ON OCCURRENCE OF HYMENOLEPIDOSIS IN KAZAKHSTAN AND ALMA-ATA -U-

AUTHOR--BESEDINA, T.K.

B

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA PARAZITOLOGIYA I PARAZITARNYYE BOLENZI, 1970, VOL 39, NR 2, PP 161-164
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PARASITIC DISEASE, SANITATION, DISEASE INCIDENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1417 STEP NO--UR/0258/70/039/002/0161/0164

CIRC ACCESSION NO--AP0109907
UNCLASSIFIED

USSR

UDC 539.377

POSTNIKOV, M. S., BESEDINA, L. P.

B

"Concerning the Link Between Temperature Stresses and Dislocation Stresses in Shells of Revolution"

Kiev, Prikladnaya Mekhanika, No 8, 1970, pp 3-8

Abstract: The article deals with temperature fields which do not cause thermal stresses in the case of arbitrary deformation of shells of revolution. The problem of finding temperature stresses which can be effected by means of discrete dislocations is solved. From the conditions of compatibility of the purely thermal constituents of the deformation components of the central surface and the single-valued nature of purely thermal shifts and turns, the result is obtained that temperature fields which are only linear with respect to Cartesian coordinates do not bring about stresses in a free shell of revolution. The temperature fields which, in the shell under consideration, bring about stresses which correspond to dislocation stresses, are determined. The corresponding dislocation stresses and moments in a closed spherical shell are found.

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2/2 017 UNCLASSIFIED PROCESSING DATE--09OCT70
CIRC ACCESSION NO--AP0109507
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN KAZAKHSTAN, HYMENOLEPIDOSIS CONSTITUTES 49PERCENT OF THE TOTAL NUMBER OF INCASIONS DETECTED WITH PREDOMINANT INVOLVEMENT OF CHILDREN. OCCURRING ALL OVER THE REPUBLIC, HYMENOLEPIDOSIS IS MORE PREVALENT IN THE SOUTH INCLUDING THE CITY OF ALMA-ATA WHERE IT ACCOUNTS FOR 40PERCENT AMONG OTHER HELMINTHIC DISEASES. AS A RESULT OF INCREASING WELFARE OF THE POPULATION AND REALIZATION OF SANITARY AND SPECIAL THERAPEUTIC MEASURES THE INCIDENCE OF HYMENOLEPIDOSIS IN THE KAZAKH SSR HAS BEEN REDUCEDFROM 1955 TO 1967 2.4 FOLD, AND IN ALMA-ATA 6.6 FOLD. FACILITY: KAZAKHSKIY INST. EPIDEMIOLOGII I MIKROBIOLOGII, ALMA-ATA.

UNCLASSIFIED

USSR UDC 576.852.215.077.3.073.4

BESEDNOVA, N. N., Vladivostok Institute of Epidemiology and Microbiology

"Application of the Fluorescent Antibody Method to Detect Pseudotuberculosis Agent"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 3, 1973, pp 28-32

Abstract: Fluorescent serum was prepared by immunizing rabbits with killed virulent Y. pseudotuberculosis strain No 603, serotype 1 and treating the hyperimmune serum with fluorescein isothiocyanate, and subsequently its specificity was tested on several bacteria. Fluorescence was intense with Y. pseudotuberculosis serotype 1, weak with serotypes 2 and 3, and moderate with serotypes 4 and 5, moderate with Salmonella serotype B and with E. paracoli only when the serum was at full strength, and absent with other Salmonella, Escherichia, and Proteus species tested. When stored at -20°C the serum maintained its activity for at least 1.5 years. No fluorescence was detected in organ smears from uninfected animals. Smears from various organs of white mice infected with Y. pseudotuberculosis serotype 1 were subjected to the fluorescent antibody method up to 30 days after infection, and results were compared with bacteriological analyses. Antibodies could be detected longer in internal

USSR

BESEDNOVA, N. N., Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 3, 1973, pp 28-32

organs with lymph nodes by immunofluorescence, for about the same period by both methods in peritoneal exudate and the spleen, and longer in the blood by bacteriological analysis. In general the fluorescent antibody method was found to be adequately precise and rapid, considerably sensitive and specific, and surpassed bacteriological methods in effectiveness.

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USSR

BESEKERSKIY, V. A., GORDEYEV, V. G., OSTROMUKHOV, Ya. G.
"Theory of the Two-Rotor Gyroscopic Orbit"

Upr. Dvizhushchimisya Ob'yektami. Tr. IV Vses. Soveshch. po Avtomat. upr. Tbilisi, 1968 [Control of Moving Objects, Works of Fourth All-Union Conference on Automatic Control, Tbilisi, 1968 -- Collection of Works], Moscow, 1972, pp 87-98, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 A72, author's view).

Translation: Based on a study of the initial differential equations of a two-rotor gyroorbit and the composition of interference at the output of the vertical-line constructor, as well as in the gyroorbit itself, the basic theoretical relationships are presented for the process of construction of the instantaneous orbital system of coordinates in the correction (normal orientation) mode and gyroscopic memory mode. As the most important results of analysis, the author's note the transformation of the spectrum of noise defined by the natural drift of the gyroscopes, a result of the modulating properties of the two-rotor gyroorbit, as well as the more favorable operating conditions in the gyroscopic memory mode than in a single-rotor gyroorbit. The differences in the noise spectra at the output of the orbital coordinate system constructor based on a single-rotor and on a two-rotor gyroorbit allows them to be effectively combined. 5 Biblio. Refs.
1/1

USSR

UDC 62-50

BESEKERSKIY, V. A., and POPOV, Ye. P.

"Theory of Automatic Control Systems"

Teoriya Sistem Avtomaticheskogo Regulirovaniya, Moscow, Nauka Press, 1972, 768 pp

Translationof Annotation: This book is a monograph devoted to a systematic presentation of the theory of automatic regulation and control. The book contains all of the most important sections of the theory of automatic control: the theory of ordinary and special linear systems and the theory of nonlinear, adaptive, and digital systems. The book is designed for teachers and students specializing in the area of automatic regulation and control but can also be used by engineers and scientific workers for independent study of theoretical problems. 39 tables, 524 figures, 153 bibliographic references.

Table of Contents

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BESEKERSKIY, V. A., and POPOV, Ye. P., Teoriya Sistem Avtomaticheskogo Regulirovaniya, Moscow, Nauka Press, 1972, 768 pp

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USSR

BESEKERSKIY, V. A., and POPOV, Ye. P., Teoriya Sistem Avtomaticheskogo Regulirovaniya, Moscow, Nauka Press, 1972, 768 pp

4/4

Equipment
Gyroscopic

USSR

UDC: 629.78.017.2

BESEKERSKIY, V. A., GORDEYEV, V. G., OSTROMUKHOV, Ya. G.

"Theory of a Two-Rotor Precessing Orbit"

Moscow, Upr. dvizhushchimisya ob"yektami. Tr. IV Vses. soveshch. po avtomat. upr. Tbilisi, 1968--sbornik (Control of Moving Objects. Works of the Fourth All-Union Conference on Automatic Control. Tbilisi, 1968--collection of papers), 1972, pp 87-98 (from RZh-Raketostroyeniye, No 10, Oct 72, abstract No 10.41.66)

Translation: Basing their analysis on an investigation of the initial differential equations of a two-rotor precessing orbit, as well as on the composition of the interferences acting on the output of the vertical plotter and in the precessing orbit itself, the authors present basic theoretical relations for the process of constructing a running orbital system of coordinates in the correction (normal orientation) and the gyroscopic memory modes. By way of principal results of the analysis, the authors note that the spectrum of interference due to inherent drifts of the gyroscopes is changed by the modulating properties of the two-rotor precessing orbit, and also by working conditions in the gyroscopic memory mode which are more ad-

1/2

USSR

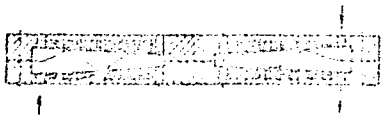
UDC: 621.65[?].3

BESELIN, A. I.

"An Electromagnetomechanical Pump"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 12, Apr 72, Author's Certificate No 334402, Division F, filed 12 May 7[illegible], published 30 Mar 72, p 137

Translation: This Author's Certificate introduces an electromagnetomechanical pump with elastic diaphragm securely fastened to permanent magnets or ferromagnetic elements which interact with the traveling electromagnetic field of the external stator. This field causes deformation of the diaphragm in the form of the traveling wave. As a distinguishing feature of the patent, the delivery and head of the pump are increased by placing the elastic diaphragm in the working channel of the pump with the liquid to be transferred. This channel is located in the gap between the poles of the magnetic circuits of the stator.



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USSR

BESHANOV, A. M., et al., Radiotekhnika i Elektronika, Vol XVI, No 2, February 1971, pp 399-403

Thus, it is found that it is possible to manufacture a neuristor line with an active element (thyristor) stepsize no greater than 100 microns based on plane-epitaxial technology. The neuristor pulse length is 100-50 nanoseconds. Providing coupling of the neuristor line thyristors through the lower base leads to the fact that the neuristor pulse encompasses less than 1 cascade. This makes it possible to vary the propagation rate as pointed out above. Within certain limits the scanning rate depends weakly on the bias and has a maximum for a load capacitance of about 100 picofarads.

2/2

USSR

UDC: 51

BESHENKOVSKIY, B. L., SERGEYEV, Yu. A., VOLYNETS-RUSSET, E. Ya.

"Problems of Determining the Effect on the National Economy Resulting From the Acquisition of Licenses in Associated Sectors"

Problemy opredeleniya narodnokhozyaystvennoogo effekta ot priobreteniya litsenziy v sopryazhennykh otraslyakh Tr. TsNII patent. inform. i tekhn.-ekon. issled., ser. 2 (cf. English above. Works of the Central Scientific Research Institute of Patent Information and Technical-Economic Research, Series 2), Moscow, 1971, 106 pp, ill. 30 k. (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V883 K)

Translation: An analysis in the spirit of an intersectoral balance sheet.

1/1

1/2 013 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--PERCARBONATES CONTAINING PERALKYL GROUPS -U-

AUTHOR-(03)-TROFIMOV, N.N., BESHENOVA, YE.P., ETLIS, V.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(3), 462-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMAL DECOMPOSITION, ORGANIC PEROXIDE, CARBONYL CHLORIDE, CARBONATE, CARBON DIOXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1575 STEP NO--UR/0366/70/006/003/0462/0465

CIRC ACCESSION NO--AP0112569

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--09OCT70
CIRC ACCESSION NO--AP0112569
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF ROO-CH SUB2 CHR PRIME1 OH IWTH COCL SUB2 GAVE ROOCH SUB2 CHR PRIME1 O SUB2 CCL (I). REACTING I WITH NA SUB2 O SUB2 GAVE (ROOCH SUB2 CHR PRIME1 O SUB2 C) SUB2 O SUB2 (R AND R PRIME1 GIVEN): TERT-BU, H; TERT-BU, ME; PHCME SUB2, H. THE REACTION OF I (R EQUALS TERT-BU) WITH (BZOO) SUB2 BA GAVE TERT-BUOOCH SUB2 CH SUB2 O SUB2 CO-OBZ. THE THERMAL DECOMPN. OF (TERT-BEOOCH SUB2 CH SUB2 O SUB2 C) SUB2 O SUB2 (II) IN BENZENE GAVE CO SUB2, TERT-BUOOCH SUB2 CH SUB2 OH (III), TERT-BUO-OCH SUB2 CHO, AND HCHO. IN CUMENE AT 60DEGREES, II DECOMPD. TO CO SUB2, III, AND TERT-BEOOCH SUB2 CH SUB2 O SUB2 COCME SUB2 PH, AND IN ISO-PROH, II GAVE CO SUB2, III, AND ACETONE.

UNCLASSIFIED

USSR UDC 632.951:633.32

BESHKUROV, V. P., YERMAKOV, A. V., Lipetsk Experimental Station

"Effectiveness of Insecticides against Clover Seedlings Pests"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 12, Dec 70, pp 31-33

Abstract: The effect of various preparations on seedling pests has been reported: on the clover seed eater weevil, sweet clover weevil, various [illegible] of aphids, and on useful insects. Maximal harvest of clover [illegible] be obtained under conditions prevailing in Lipetsk [illegible] were treated with sevine and diptorex. Sevine and diptorex were effective against pests with oral gnawing apparatus and not effective against aphids; on the other hand, carbophos, trichlorometaphos-3, and hexachloran destroyed the aphids but were inactive against pests with oral gnawing apparatus. It was found that the most effective was the use of vophatox against the complex of clover seedling pests.

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1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--AUTOMATIC CONTROL OF THE PREPARATION OF A CATALYST FOR PRODUCING SYNTHETIC FATTY ACIDS -U-

AUTHOR-(04)-BESITSKIY, R.M., MASLOVA, N.M., RUSINOV, I.YE., PLATUKHIN, V.M.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERAB. NEFTEKHIM. (MOSCOW) 1970, (2), 38-40

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AUTOMATIC CHEMICAL PROCESS CONTROL, MANGANESE, CATALYST, HYDROGEN ION CONCENTRATION, FATTY ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0437 STEP NO--UR/0138/70/000/002/0038/0040

CIRC ACCESSION NO--AP0119373

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119373

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTOMATION IS BASED ON PH CONTROL IN THE REACTION MIXT. FOR PREPG. THE MN CATALYST. A PH METER WITH GLASS ELECTRODE IS USED TO CONTROL A CONCN. OF 0.1-0.5PERCENT NAOH IN THE MIXT., THE ABS. ERROR BEING 0.05PERCENT. EXPTL. RESULTS ARE PRESENTED. FACILITY: SHEBEKIN. KHIMKOMB., SHEBEKINO, USSR.

UNCLASSIFIED

USSR

UDC 538.245

KALININ, V. M. and BESKACHKO, V. P., Sverdlovsk Agricultural Institute

"On the Question of the Curie Point of Fe-Ni Invar Alloys Alloyed with a Third Component"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 1, 1973, pp 73-78

Abstract: The effect of Re, Co, Cu, P, Cr, Al, and C on the Curie point of Fe-Ni alloys with an FCC lattice was investigated over a wide range of compositions. It was shown that Co, C and P increase T_c in the entire interval of compositions while Re, Cr and Al lower T_c and Cu increases the T_c of low-nickel invars and lowers the T_c for high-nickel invars. A linear relationship of $T_c^2 \sim (c-c_c)$ exists for all the alloys. On the basis of a model of the collective electrons a theoretical concentration relationship of T_c was obtained which was close to the critical concentration c_o. Three figures, one table, eleven bibliographic references.

1/1

BESKID, M.

MEDICINE

SCIPAS 541364
23 OCT 71

UDC: 616.441-006.44

HISTOCHEMISTRY OF THE HUMAN THYROID

[Article by M. Beskid (Medicine), Institute for the Advanced Training of Physicians, Warsaw; Moscow, Meditsinskaya Akademiya Meditsinskikh Nauk SSSR, Russian, pp 31-34]

In 1956, at the conference of endocrinologists in Stockholm, Leszkowski was the first to report on a new type of thyroid cancer, which he designated as hyaline cancer, thereby stressing the most vivid microscopic trait of this cancer (Leszkowski, 1957). Three years later, Hazard et al. described the same type of tumor, calling it medullary or solid cancer with amyloidosis of the stroma. In 1964, we published a paper furnishing some histochemical characteristics of these tumors. According to our findings, in the initial phase, the hyaline substrate consisting of granules and droplets has a high optical density and contains neutral and acid mucopolysaccharides, glycogen, and a small quantity of proteins. At later stages, the hyaline substrate consists of mucopolysaccharides and glycogen. A large quantity of amyloid is present.

Williams assumed that this type of cancer developed from parafollicular cells (C cells) that produce thyrocalcitonin. At that time this hypothesis was not backed by experimental data. Tubiana et al. were the first to show the role of thyrocalcitonin-producing cells in human pathology. Soon after them, Gaillite et al., Rioco et al. (1968), and Gullion et al. described several cases of thyrocalcitonin-producing thyroid tumors.

A typical feature of C cells is their capacity to take up and accumulate selectively substances that are precursors of biogenic amines, such as 5-hydroxytryptophan (5-HT) and dioxyphenylalanine (DOPA). In the cells, biogenic amines are transformed into fluorescent substances under the influence of formaldehyde fumes.

The purpose of the present study was to demonstrate fluorescent amines of malignant C cell neoplasms of the thyroid. Two cases of C cell thyroid cancer served as our material. We made serial sections on a cryostat. A study was made, in unfixed sections, of α-glycerophosphate dehydrogenase activity as a C cell marker, in other sections we studied autofluorescence and primary fluorescence of biogenic amines after formaldehyde treatment by the method of Falck et al. We also studied the capacity of the cells of these

BESKID, M.

MEDICINE

So: JPRS 54304
22 OCT 71

UDC: 616.441-006.55

THYROCALCITONIN-PRODUCING ADENOMA OF THE HUMAN THYROID

[Article by M. Beskid, Institute for the Advanced Training of Physicians, Warsaw; Moscow, Vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No 8, 1971, pp 27-30]

C cells which produce thyrocalcitonin are a normal component of the human and animal thyroid. They have high activity of α-glycerophosphate dehydrogenase, nonspecific esterase, and cholinesterase, and they also are capable of absorbing and accumulating biogenic amines. There are few works dealing with a study of these cells in the human thyroid. It was observed that C cells are the source of so-called hyalina (Laskowski; Beskid) or solid cancer with stromal amyloidosis (Hazard et al.). It was demonstrated that C cells are encountered in the thyroid in the presence of diverse pathological states (Beskid and Roncla-zewska).

The purpose of our work was to investigate human thyroid adenoma that produces thyrocalcitonin.

Twelve surgically removed thyroid adenomas served as the material for our study. Serial sections were made of unfixed pieces in a cryostat, and a study was made of activity of α-glycerophosphate dehydrogenase as a C cell marker using the method of Wattenberg and Lounn, as well as of succinate dehydrogenase and lactate dehydrogenase with nitrotetrazolium blue according to Pearse (1962). Naphthol-AS-acetate and fast red TR salts were used to demonstrate nonspecific esterase in material fixed in Baker's fluid (4°). Sections were also stained with hematoxylin-eosin. In one adenoma, thyrocalcitonin was demonstrated by the method of Gudmundsson et al. The isolated substance was administered to female rats weighing 45-55 grams, and 30 minutes later the blood calcium level was determined; from this determination was made of presence of thyrocalcitonin.

The patients presented no signs of dysfunction of the thyroid; their blood calcium, phosphate, and cholesterol levels were normal, and the adenomas were clinically resected adenomas were "cold" (Figure 1).

Histological examination revealed that the adenomas consisted of so-called water-clear cells with mildly hematoxylin staining nuclei and pale pink homogeneous cytoplasm. The cellular margins were clearcut. Some of these cells were

USSR UDC 616-099:614.824

ALEKSANDROV, V. N., BESKHOKHLOV, D. I., and DAVYDOV, O. V.

"Pathogenesis of Powder Gas Poisoning"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 7, 1970, pp 28-30

Abstract: Animal experiments were conducted to determine the accumulation of pyruvic acid in the blood and the changes of catalase activity of hemolyzed blood resulting from a 15 sec exposure to hydrogen peroxide. It was established that the pyruvic acid level in the blood, representing the accumulation of incompletely oxidized glycolysis and gylcogenolysis products, showed an increase after exposure to the powder gases which was directly proportional to the concentration of the gas and to the duration of the exposure. This increase, which is evidently due to a disturbance of oxidation-reduction processes, should be taken into consideration in designing prophylactic or antitoxic agents. The catalase activity of hemolyzed blood also dropped significantly after the animals were exposed to poison gases for 15 min. This decrease was more directly proportional to exposure time than to concentration.

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1/2 008 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--USE OF HYDROCYCLONES TO CLEAN DYE SOLUTIONS -U-

AUTHOR-(02)-SUBBOTIN, N.P., BESKIN, L.Z.

COUNTRY OF INFO--USSR

SOURCE--TEKST. PROM. (MOSCOW) 1970, 30(3), 77-8

DATE PUBLISHED---- ----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DYE, CYCLONE SEPARATOR, CHEMICAL PURITY, ORGANIC SULFUR COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1234 STEP NO--UR/0342/70/030/003/0077/0078

CIRC ACCESSION NO--AP0128650

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128650

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SULFUROUS DYES WERE PURIFIED (DEGREE OF PURIFICATION 97PERCENT) IN SPECIALLY DESIGNED HYDROCYCLONES. A CROSS SECTIONAL DIAGRAM OF THE CLARIFICATION APP. AND ITS MODE OF OPERATION WERE PRESENTED. OPTIMUM PURIFICATION CONDITIONS WERE DETD.

FACILITY: GPI-T, IVANOVO, USSR.

UNCLASSIFIED

BESKIN, N.M.

Images of Spatial Figures

BESKIN, V. A.

JPRS 53137

14 May 1971

ACTINOMETRIC INSTRUMENTS ABOARD SOVIET METEOROLOGICAL SATELLITES

[Article by V. A. Beskin, V. V. Zenkov, D. S. Orman, V. P. Timanin, B. V. Kheyfets, V. A. Khrustaliov and G. I. Shustov, Moscow, Trudy Tsentral'noy Aerologicheskoy Observatorii, Eighth Svoskunoy Atmosfery, Russian, No 100, 1970, submitted 30 June 1969, pp 125-135]

It is known [1] that the equipment of Soviet meteorological satellites consists of two types of actinometric instruments.

The first type is a narrow-angle scanning instrument (luclimeter) with an instantaneous field of view of 4° × 5° with an operating viewing angle of ±66° from the vertical to the plane perpendicular to the flight trajectory of the satellite.

The second type is a wide-angle instrument (a flux density meter) with a viewing angle of 120-140°.

The instruments are duplicated in order to improve the operating reliability.

The energy brightnesses of the narrow-angle instrument are measured in three spectral ranges(0.3-3, 8-12 and 3-30 microns) over two independent channels; the 8-12 and 3-30 micron ranges are combined in one measuring channel, and they are selected by changing the corresponding optical filters.

In the 0.3-3 micron channel, the instrument operates as a single-beam system, and in the 3-30 and 8-12 micron channel, as a dual-beam system. The earth-space modulation method is used in the last channel; the measurable radiation is compared with the radiation of outer space.

The density of the radiant flux from the Earth into outer space is measured by the wide-angle nonscanning instrument in two spectral ranges: 0.3-3 and 3-30 microns.

The modulation level for the 3-30 micron channel is determined by the modulator temperature, which in the steady-state mode is approximately equal

USSR UDC: 911.3.616.831-002

BAROYAN, O. V., MEDVEDEVA, G. I., SHATKIN, A. A., PICHUSHKOV, A. V., BESKINA, S. R., ARUTYUNOVA, I. A., MARTYNOVA, V. R.

"Immunological-Epidemiological Research on Tick-Borne Encephalitis"

V sb. Materialy XV Vses. s'yezda epidemiologov, mikrobiologov i infektsionov, tezisy dokl. Ch. I (Proceedings of the 15th All Union Conference of Epidemiologists, Microbiologists and Specialists in Infectious Disease, Thesis Reports Part I -- collection of works) Moscow, 1970, pp 186-187 (from RZh-36. Meditsinskaya geografiya, No 1, Jan 71, Abstract No 1.36.86)

[No abstract]

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USSR

UDC 615.917

BESKOROVAYNAYA, E. A.

"Variation of the Blood Cell Elements under the Conditions of Chronic Effects of Polychloropinene under Experimental Conditions"

V sb. Gigiyena primeneniya toksikol. pestitsidov i klinika otravl. (Hygiene of the Application and Toxicology of Pesticides and the Clinical Aspects of Poisoning -- collection of works), vyp. 9, Kiev, 1971, pp 128-131 (from RZh-Farmakologiya. Khimiterapevticheskiye sredstva. Toksikologiya, No 2, Feb 72, Abstract No 2.54.779)

Translation: In rats with a daily intraperitoneal injection of aqueous emulsion of polychloropinene for 4 months in a dosage of 1/10 DL_{50}, in 30-45 days, moderate anemia, leucocytosis and eosinopenia were noted. The phenomena of anisocytosis were depicted, and erythrocytes with a transparent zone and individual homohistoblasts were encountered. Three to 4 months later, a shift in the white blood picture to the left was observed as a result of the appearance of metamyelocytes. In the rod neutrophils, swelling, diffuseness and lack of clarity of the structure of the nucleus and blurring of the grain structure of the cytoplasm were noted. The number of lipides and glycogen in the leucocytes (histochemical study) increased, and their distribution in the cell also changed. In addition, a reduction in activity of the cytochromoxydase, succinatedehydrogenase and peroxydase activities were established in the leucocytes. USSR, Vinnitsa, Medical Institute.

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USSR

UDC 577.1:615.7/9

BESKOROVAYNAYA, E. A.

"Change in Cellular Elements of the Blood Under Conditions of Chronic Action of Polychloropinene in an Experiment"

V sb. Gigiyena primeneniya, toksikol. pestitsidov i klinika otravl. (Pesticides -- Safety Measures in Using, Toxicology, and the Poison Clinic -- collection of works), vyp. 9, Kiev, 1971, pp 128-131 (from RZh-Biologicheskaya Khimiya, No 9, May 1972, Abstract No 9F2233)

Translation: Thirty to forty-five days after a daily administration of 1/10 LD_{50} of a water emulsion of polychloropinene to rat stomach, anemia was observed, accompanied by a reduction in the number of erythrocytes and a drop in the level of hemoglobin. Leucocytosis was noted with an increase in the number of neutrophils, as well as moderate lymphocytosis, monocytosis and eosinopenia. Leucopenia was observed 3-4 months after beginning administration of polychloropinene. Polychloropinene caused an increase in the amount of lipides and glycogen in leucocytes, which is especially pronounced by the 30-40th day of the experiment; also noted are changes in the nature of the distribution of lipids and glycogen in the cells. By the 30-45th day of the experiment, a reduction was observed in the activity of cytochrome oxidase,

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USSR

BESKOROVAYNAYA, E. A., Gigiyena primeneniya, toksikol. pestitsidov i klinika otravl. (Pesticides -- Safety Measures in Using, Toxicology, and the Poison Clinic -- collection of works), vyp. 9, Kiev, 1971, pp 128-131 (from RZh-Biologicheskaya Khimiya, No 9, May 1972, Abstract No 9F2233)

succinate dehydrogenase and peroxidase in the leucocytes of the blood. In the late stages of poisoning (3-4 months), a further depression is observed in the activity of oxidative enzymes. P. Popov.

2/2

1/2 017 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--EFFECT OF MOLECULAR STRUCTURE ON THE ADSORPTION AND ELECTROOXIDATION OF ALIPHATIC ALCOHOLS -U-

AUTHOR-(05)-VASILYEV, YU.B., YANCHUK, B., NIKOLOV, I., BESKUROVAYNAYA, S.S., BAGOTSKIY, V.S.

COUNTRY OF INFO--USSR

B

SOURCE--ELEKTROKHIMIYA 1970, 6(4), 597-601

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ADSORPTION, ALIPHATIC ALCOHOL, MOLECULAR STRUCTURE, DEHYDRATION, ELECTROCHEMICAL EFFECT, OXIDATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1293 STEP NO--UR/0364/70/006/004/0597/0601

CIRC ACCESSION NO--AP0134967

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134957

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ME TO HEXYL ALIPHATIC ALCS. WERE STUDIED. THE ADSORPTION OF THESE ALCS. ON SMOOTH PT AT LOW TEMP. (25DEGREES) IS RELATED TO A LOSS OF 2 H ATOMS LOCATED NEAR THE ALPHA,C. BRANCHING OF THE MOLS. OR THE PRESENCE OF CONSTUTENTS AT THE ALPHA,C LOWERS THE ADSORPTION. THE ADSORPTION AT LOWER TEMPS. RESULTS FROM DEHYDROGENATION AT THE ALPHA,C, THAT AT 50-80DEGREES FROM DEHYDROGENATION OF THE RADICALS OF THE MOL., AND THAT AT 90-100DEGREES BY VIRTUE OF C C BOND BREAKING. THE POLARIZATION CURVES OF ELECTROOXION. OF THE ALCS. SHOW THAT THE MAX. UNSTEADY STATE CURRENT IN ALL CASES CHANGED WITH THE ELECTRODE COVERAGE. GENERALLY, AS THE CHAIN OF THE ALC. LENGTHENED, THE RATE OF DEHYDROGENATION AS WELL AS THE RATE OF ELECTROOXION. DECLINED. FACILITY: INST. ELEKTROKHIM., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 615.917

BESKOROVAYNYY, A. P.

"Morphologic and Certain Histochemical Changes in the Liver under the Chronic Effect of Polychloropinene"

V sb. Gigiyena primeneniya toksikol. pestitsidov i klinika otravl. (Hygiene of the Application and Toxicology of Pesticides and the Clinical Aspects of Poisoning — collection of works), vyp. 9, Kiev, 1971, pp 131-133 (from RZh-Farmakologiya. Khimiterapevticheskiye sredstva. Toksikologiya, No 2, Feb 72, Abstract No 2.54.750)

Translation: In rabbits with a daily intraperitoneal injection of polychloropinene in a dose of 1/10 DL_{50} for 4 months, under microscopic examination, dystrophic and focal necrotic changes in the liver cells were discovered. With an increase in the duration of the experiment, enrichment of the liver stroma with collagenic fibers took place. In 17 out of 20 rabbits, lymphoid-histiocytic infiltrates were detected around the vessels and bile ducts. A progressive reduction in the glycogen content and a reduction in the succinatedehydrogenase activity in the hepatocytes were noted. This was considered a consequence of the developing hypoxia. USSR, Vinnitsa, Medical Institute.

1/1

USSR

UDC: 534.87

BESKOROVAYNYY, B. M., GALANENKO, V. B., KARNOVSKIY, M. I., Kiev Polytechnical Institute

"Space-Time Correlation and Directivity of Ocean Reverberation in the Case of Spaced Emitter and Receiver"

Moscow, Akusticheskiy Zhurnal, Vol 18, No 2, Apr-Jun 72, pp 192-196

Abstract: The directional and correlation properties of volumetric reverberation are investigated for the case of spatially separated emitter and receiver. Expressions are derived for the space-time correlation function of the reverberation field in a region of space located at an arbitrary distance from the emitter. It is shown that the directivity of the field and its spatial correlation function vary with time.

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USSR UDC: 621.317.75(088.8)

BESKORSAYA, N. P., SEDIKOV, Kh. N.

"A Device for Observing Processes of Build-Up of Magnetic Flux in the Deflecting System of a Cathode Ray Tube"

USSR Author's Certificate No 265198, filed 28 Dec 67, published 23 Jun 70 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2A376)

Translation: Existing devices for observing processes of build-up of the magnetic flux in the deflecting system of a cathode-ray tube are suitable for only one coil in the system. A distinguishing feature of the proposed device is that the inputs of the three coils in the deflecting system to be checked are connected to logic circuits. Each circuit consists of an OR gate and several AND gates to which the voltage from the outputs of the last digits in an eight-place counter is sent. This enables observation of the build-up processes simultaneously in all coils of the deflecting system. E. L.

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1/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--DEMOUNTABLE, INTERNALLY FILLED COUNTER FOR MEASURING LOW LEVELS OF GAS ACTIVITY -U-

AUTHOR-(04)-BESKORSKIY, A.I., ELAKOV, L.S., GOYKHBERG, YE.YA., BORISOV, I.YA.

COUNTRY OF INFO--USSR

B

SOURCE--PRIB. TEKH. EKSP. 1970, 1, 64-5

DATE PUBLISHED-------70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--BETA PARTICLE DETECTOR, COUNTING CIRCUIT, TRACE ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1225 STEP NO--UR/0120/70/001/000/0064/0065

CIRC ACCESSION NO--AP0115242

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--18OCT70

CIRC ACCESSION NO--AP0115242

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COUNTER IS CONSTRUCTED ACCORDING TO A SCHEME GIVEN BY G. OSTLUND (1962). THE ELEC. CIRCUIT AND PARAMETERS ARE GIVEN. THE DEMOUNTABLE COUNTER OF BETA RADIATION HAS A WORKING VOL. OF 1 l. MIN. MEASURABLE ACTIVITY EQUALS 5 TIMES 10 PRIME NEGATIVE12 CI-L.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--END WINDOW MINIATURE COUNTER FOR SOFT BETA RADIATION -U-

AUTHOR-(04)-BESKORSKIY, A.I., PERUYSHEV, E.V., MADUYEV, V.L., CHECHETINA, N.A.

COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, 1, 66-7

DATE PUBLISHED-------70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--BETA PARTICLE DETECTOR, GAMMA BACKGROUND, MICA, RADIATION COUNTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1881 STEP NO--UR/0120/70/001/000/0066/0067

CIRC ACCESSION NO--AP0108211

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0108211

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MINIATURE BETA COUNTER WITH AN END WINDOW IS DESCRIBED WHICH IS CONVENIENT FOR CONTROLLING BETA RADIATION ON GAMMA BACKGROUND NOISE IN VACUUM. THE DIMENSIONS AND THICKNESS OF THE MICA WINDOW OF THE COUNTER ARE SIGNIFICANTLY SMALLER THAN IN INDUSTRIAL VERSIONS OF SIMILAR DEVICES. THE CONSTRUCTION AND PARAMETERS ARE GIVEN.

UNCLASSIFIED

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USSR

BRSKORSKIY, A. I.; et al

"Miniature End-Window Counter of Soft Beta Radiation"

Moscow, Pribory i Tekhnika Eksperimenta; January-February, 1970; pp 66-7

A A A

ABSTRACT: A miniature β-counter with an end-window convenient for monitoring β-radiation against a gamma background and capable of operating under conditions of vacuum is described. The dimensions and thickness of the mica window of the counter are considerably less than in commercial samples of similar instruments. The construction and parameters of a miniature counter of soft β-radiation are presented.

The article includes three figures. Figure 1 is a plan drawing of the counter, with dimensions in millimeters. Figure 2 shows the counting characteristics of a counter for various temperatures, taken with a 4.7-Mohm resistor

BESKORSKIY, A. I., et al., Pribory i Tekhnika Eksperimenta; January-February, 1970; pp 66-7

in the anode of the counter. Figure 3 shows the efficiency of two counters with a stream of low-energy electrons: an experimental counter and the SBT-9 counter.

There is one bibliographic reference.

USSR

UDC: 681.327.11

BESKOV, B. A., KURBATOV, G. M., Moscow Institute of Railway Transportation Engineers

"A Device for Registering Information"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 29, 1970, Soviet Patent No 281693, Class 42, filed 20 Jun 69, p 130

Abstract: This Author's Certificate introduces a device for data registration which contains a cathode ray tube, digital-analog converters, logic circuits, reversible coordinate counters, diodes, a cadence pulse oscillator, and reception register which includes a modulation flip-flop, a sign flip-flop, diodes, and increment counters. As a distinguishing feature of the patent, the operational reliability of the device is improved by connecting the output of the cadence pulse oscillator through diodes to the inputs of the reversible coordinate counters and the increment counters respectively, the increment counter outputs being connected to the second inputs of the diodes.

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1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--SOLUBILITY IN UREA,COBALT NITRATE,COBALT SULFATE,WATER SYSTEMS AT 40DEGREES -U-

AUTHOR-(02)-KONDRATYEVA, N.G., BESKOV, S.D.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1090-3

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COBALT COMPOUND, NITRATE, SOLUBILTIY, SULFATE, UREA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1112 STEP NO--UR/0078/70/015/004/1090/1093

CIRC ACCESSION NO--AP0123014

UNCLASSIFIED