

USSR

LYALIKOV, YU. S., et al., *Metody Analiza Pestitsidov*, Izdatel'stvo Nauka, 1972

This collection of conferences papers on analysis of pesticides is the first attempt to put together the most widely used methods for the analysis of insecticides, fungicides, and herbicides.

The authors of papers in this book have used extensively the thin-layer chromatography, colorimetry, spectrophotometry in visible, ultraviolet, and infrared spectral regions, polarography, and gas chromatography for the analysis of these compounds. Gas chromatography makes it possible to increase considerably the sensitivity of analytical methods.

Articles published in this book will be useful for many analytical chemists working in coresponding laboratories.

The editors thank K. F. Novikova, S. V. Makarova, and G. S. Supin for their help during the collection of materials.

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USSR

LYALIKOV, YU. S., et al., *Metody Analiza Pestitsidov*, Izdatel'stvo Nauka, 1972

SIMONOV, V. D., MAMINA, F. A., GERASIMOV, A. I., ALYAMKIN, YU. N., AKHUNOV, T. F., and VYAZOVKINA, G. I. "Determination of the Base Substance in Herbicidal Preparations of Yalan"	138
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USSR

UDC 632.95

SELEZNEVA, T. YE., ~~SISTER, YU. D.~~, SUPIN, G. S.

"Amperometric Titration of Sulfur Containing Biologically Active Substances. Analysis of Cyneb"

Tr. 2-go VSes. sovesich. no issled. ostatkov pestitsidov i profilakt. zagryazneniya imi produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-Union Conference on the Investigation of Pesticide Residues and Preventive Contamination of Food Products, Feeds and Environment), Tallin, 1971, p 249 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N476)

Translation: Cyneb is dissolved in 5 moles of KOH; the solution is neutralized with HCl or HNO<sub>3</sub> to pH 6.8, and is titrated with Hg<sup>2+</sup> or Ag<sup>+</sup> salts on a platinum rotating microelectrode with respect to a saturated Hg<sub>2</sub>Cl<sub>2</sub>-electrode with a potential of +0.6 volts. The relative error in analyzing 10<sup>-7</sup>-10<sup>-5</sup> moles of cyneb in 50 ml of the solution is 0.3-0.6%.

1/1

USSR

UDC 543.275.2.082

OGORODNIKOV, B. I., SITALO, Ye. A., SKITOVICH, V. I., KONSTANTINOV, I. Ye.,

"Development of Method of Determination of Dispersed Composition of Radioactive Aerosols Using FP Filter Material"

Tr. In-t Eksperim. Meteorol. Gl. upr. Gidrometeorol. Sluzhby pri Sov. Min. SSSR [Works of Institute of Experimental Meteorology, Main Administration of Hydrometeorological Service, Counsel of Ministers, USSR], 1972, No 25, pp 76-80, (Translated from Referativnyy Zhurnal, Metrologiya i Izmeritel' naya Tekhnika, No 7, 1972, Abstract No 7.32.902, by V.S.K.).

Translation: A review of the influence of filtration rate, aerosol particle and filter fiber diameter and filter layer thickness on effectiveness of trapping of aerosols. It has been found that the preferential holding of aerosols of a given range of dimensions is possible in successive layers of a filter material if the parameters of the filtering process are changed. The results of experimental determination of the filter characteristics of FPP-3, FPP-70 and FPA-100 materials involving studies of the dispersed composition of artificial radioactive aerosols are presented. 2 Figures; 2 Tables; 5 Biblio. Refs.

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USSR

Corrosion

UDC 669.14.018.293:621.792,  
.053:620.143

VEYNGARTEN, A. M., GOMAN, G. M., GOLOVCHENKO, V. S., KLIMOVA, V. A., and  
SITALOV, V. P.

"Corrosion of Hull Steel Weldments"

Leningrad, Sudostroyeniye, No 6, Jun 73, pp 40-43

Abstract: The influence of the thermal cycle of weldments on the corrosion resistance of shipbuilding steels was investigated on butted specimens of 09G2, 10KHSND, and 4S standard hull steels in rapid-flowing sea water over a period of 1000 hrs. Various methods and welding practices were applied to determine the influence of the character of the thermal effect and of the cooling rate. The investigation results are discussed by reference to diagrams showing the heating and cooling curves in the thermal influence zone of 09G2 steel, the corrosion dependences on the welding energy and the cooling rate, and the corrosion resistance dependence on the condition of the burning off beading weld. The main factors affecting the corrosion resistance are the cooling rate on welding (according to the running welding energy in cal/cm) and the character of structural conversion of steel. At 4500-5000 cal/cm running energy, the resistance of 09G2 steel

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USSR

VEYNGARTEN, A. A., et al., Sudostroyeniye, No 6, Jun 73, pp 40-43

and 4S steel in the thermal influence zone is the same as that of the initial material. To avoid the development of selective corrosion in the thermal influence zone, welding with higher running energies or the use of burning off beads is recommended. Four figures, one table, four bibliographic references.

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USSR

UDC 8.74

SITDYKOV, I. Kh.

"Systems of Geometric Conversions in Automated Design"

Vychisl. tekhn. v mashinostr. Nauch.-tekhn. sb. (Computer Techniques in Machine Design, Scientific-Technical Collection) Dec. 1970, pp 36-48 (from RZh--Matematika, No 8, 1972, Abstract No 8V653)

Translation: The author examines a system of geometric transformations required for automated design. The concepts of "counting start," "counting system," "coordinate," "system of coordinates," are sharpened and classified. Some transformations of coordinates and coordinate systems are defined. Author's abstract

1/1

USSR

UDC: 8.74

SITDYKOV, I. Kh.

"On the System of Geometric Transformations in Automated Design"

Vychisl. tekhn. v mashinostr. Nauch.-tekhn. sb. (Computer Technology in Machine Building. Scientific and Technical Collection), 1970, Dec, pp 36-48 (from RZh-Kibernetika, No 8, Aug 72, Abstract No 8V653)

Translation: The paper deals with a system of geometric transformations necessary for automated design. The concepts of "initiation of readout", "readout system", "coordinate", "coordinate system" are more precisely defined and classified. Some transformations of coordinates and coordinate systems are defined. Author's abstract.

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SITENKO, A. G.

JFRS 55889  
4 MAY 72

PLASMA THEORY (CONFERENCE IN KIEV)

Article by Member-Correspondent Academy of Sciences Ukrainian SSR A. G. Sitenko, Moscow, Vestnik Akademii Nauk SSSR, Russian, No 3, March 1972, pp 107-111

Plasma Physics investigations occupy a notable position in modern science. They are related to the solution of such vital scientific-technical problems as controlled thermonuclear synthesis, development of magnetohydrodynamic conversion of thermal energy to electricity, mastery of space. The importance of problems facing plasma physics, and the tremendous variety of phenomena investigated by this science, determined its intensive development over the last two decades. Now plasma physics is an independent development characterized by close interaction and mutual penetration with allied branches of science. By virtue of the generality of methods employed and internal unity of the fundamental physical laws, this is manifested most completely in the field of theory. The role which the representatives of physics must play is obvious. The first attempt to organize such a meeting was the All-Union conference on plasma theory (Kiev, 19-23 October 1971), the initiators of which were the Institute of Theoretical Physics of the Academy of Sciences USSR and the Scientific Council on the problem of "Plasma Physics" of the Academy of Sciences USSR. More than 250 theoretician-physicists from the various science centers of the Soviet Union, and also 50 foreign scientists from 14 countries, participated in the conference.

In opening the conference, organizational committee chairman, Academician V. L. Larin, formulated the problems facing it and briefly summarized the modern state of plasma theory. The following problems stood before the scientists of the conference: general questions of plasma theory, stability, equilibrium and transfer processes in plasma; its interaction with other waves; turbulence and stochastic processes in plasma; numerical simulation and numerical methods in plasma theory; experimental and theoretical problems in plasma media and general questions of theory and its applications. Several seminars were also organized on various urgent aspects of plasma theory.

USSR

SITENKO, A. G.; FURSA, A. D.; DOTSENKO, I. S. (Institute of Theoretical Physics, Ukrainian Academy of Sciences; Institute of Nuclear Research, Ukrainian Academy of Sciences, Kiev)

"Calculation of the Distortion of Wave Functions during Multiple Analysis of Fast Nucleon Scattering by Nuclei"

Kiev, Ukrainskiy Fizicheskiy Zhurnal; June, 1971; pp 881-93

ABSTRACT: Wave function distortion in the initial and finite states is considered within the framework of the multipole formalism in describing high-energy nucleon scattering by nuclei. The distortional optical potential is calculated on the basis of two-nucleon interaction in accordance with the multiple scattering theory. Numerical calculations were made of the angular distributions under elastic scattering of protons by  $C^{12}$  nuclei as well as under inelastic scattering of protons with excitation of levels  $0^+$ ,  $1^+$ ,  $2^+$ , and  $3^-$  when  $T = 0$

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SITENKO, A. G., et al., *Ukrainskiy Fizicheskiy Zhurnal*, Jun 71, pp 881-893  
and  $1^+$  and  $2^+$  when  $T = 1$  of the  $C^{12}$  nucleus. A comparison with the experimental  
data is made for the proton energy of 185 Mev. The character of the angular  
relationships and absolute magnitudes of the cross sections in most cases is  
in good agreement with the experimental values.

The article includes 41 equations and 10 figures. There are 10 references.

2/2

1/2 035 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ON THE THEORY OF PLASMA ECHO THREE MOMENTUM ECHO OSCILLATIONS -U-  
AUTHOR--(03)--SITENKO, A.G., CHONG, N.W., PAVLENKO, V.N. S  
COUNTRY OF INFO--USSR  
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKDY VIZIKI, 1970, VOL 58,  
NR 4, PP 1377-1383  
DATE PUBLISHED--70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--PERTURBATION, PLASMA OSCILLATION, PLASMA WAVE, VIBRATION  
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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0100311

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. ECHO OSCILLATIONS IN A PLASMA ARISING AS THE RESULT OF SUPERPOSITION OF THREE CONSECUTIVE PERTURBATIONS SEPARATED BY TIME INTERVALS WHICH ARE LARGE COMPARED WITH THE CHARACTERISTIC OSCILLATION DECAY TIME ARE CONSIDERED. THE PERTURBATIONS CHOSEN IN THE FORM OF PLANE WAVES AND THE PERTURBATION WAVE VECTORS ARE ASSUMED TO BE NON COLLINEAR. ECHO OSCILLATIONS OF THE SECOND ORDER ARE THEREFORE IMPOSSIBLE. IT IS SHOWN THAT ECHO OSCILLATIONS OF THE THIRD ORDER SHOULD BE POSSIBLE IF THE PERTURBATION WAVE VECTORS LIE IN A SINGLE PLANE. THE ORIGIN TIME AND SHAPE OF THE THIRD ORDER ECHO OSCILLATIONS ARE FOUND. IT IS SHOWN THAT EVEN IN THE CASE OF LOGITUDINAL PERTURBATIONS THE ECHO OSCILLATION FIELD CONTAINS BOTH LOGITUDINAL AND TRANSVERSE COMPONENTS. A NUMBER OF CONCRETE CASES OF APPEARANCE OF THIRD ORDER ECHO OSCILLATIONS ARE CONSIDERED.

FACILITY: INST. TEORETICHESKOY FIZIKI, AN UKR. SSR.

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172 009

UNCLASSIFIED  
-U-

PROCESSING DATE--27NOV70

TITLE--LECTURES ON SCATTERING THEORY

AUTHOR--SITENKO, A.G.

S

COUNTRY OF INFO--USSR

SOURCE--ITF-70-7 1970. 26P. DEP. CFSTI

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--POTENTIAL SCATTERING, THREE BODY PROBLEM

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PROCESSING DATE--27NOV70

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE BASES OF THE NONRELATIVISTIC THEORY OF POTENTIAL SCATTERING ARE PRESENTED. BOUND STATE SCATTERING IN THE THREE PARTICLE SYSTEM IS CONSIDERED. FACILITY: AKADEMIYA NAUK UKRAINSKOI SSR, KIEV. INSTITUT TEORETICHESKOI FIZIKI.

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PROCESSING DATE--27NOV70

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AUTHOR--SITENKO, A.G.

COUNTRY OF INFO--USSR

SOURCE--ITF-70-8 1970. 54P. DEP. CFSTI

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SUBJECT AREAS--PHYSICS

TOPIC TAGS--POTENTIAL SCATTERING, SPIN SYSTEM, PARTICLE DISTRIBUTION

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PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0127320

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE BASES OF THE NONRELATIVISTIC THEORY OF POTENTIAL SCATTERING ARE PRESENTED. SCATTERING OF PARTICLES WITH SPINS AND POLARIZATION PHENOMENA IN SCATTERING ARE CONSIDERED.

FACILITY: AKADEMIYA NAUK UKRAINSKOI SSR, KIEV, INSTITUT TEORETICHESKOI FIZIKI.

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USSR

UDC 539.1

2

YEGIYAN, K. SH., BOCHEK, G. L., GRISHAYEV, I. A., ALANAKYAN, K. V., KULIBABA, V. I., and SITENKO, M. L., Yerevan Physics Institute, Physicotechnical Institute of the Academy of Sciences Ukrainian SSR

"Apparatus for the Study of Direct Nuclear Reactions Caused by Electrons and Gamma Quanta With an Energy of Up to 300 Mev"

Yerevan, Izvestiya Akademii Nauk Armyanskoy SSR, Vol 5, No 5, 1970, pp 381-391

Abstract: The article gives a description of an apparatus designed for studying nuclear structure and the character of the interactions of electrons and gamma quanta with a maximum energy of up to 300 Mev. A focused beam of the 300-Mev Khar'kov linear accelerator goes from a parallel transfer system over a vacuum electronic conductor into a scattering chamber. Revolving around the latter on a fixed platform are two magnetic analyzers designed to record secondary reaction particles produced by the gamma quanta or electrons. Situated on an extension of the electronic

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USSR

YEGIYAN, K. SH., et al., Izvestiya Akademii Nauk Armyanskoy SSR, Vol 5, No 5, 1970, pp 381-391

conductor after the scattering chamber is a secondary emission monitor for the relative measurement of the electron beam intensity. After the secondary emission monitor the electron beam is absorbed by a burial ground of heavy concrete blocks. The apparatus was tested by measuring the elastic-scattering cross-section for electrons on a free proton in a  $\text{CH}_2$  target. A feature of the apparatus is that it works under a high background level from the electron beam. The calibration measurements performed indicate that the apparatus permits the study of direct nuclear reactions with a cross-section of  $\geq 2 \cdot 10^{-3}$  sq cm/steradian.

The authors thank A. I. ALIKHANYAN, Corresponding Member of the Academy of Sciences USSR, and Professor V. M. KHARITONOV, Sector Chief of Yerevan Physics Institute, for their interest in the work and repeated discussions; N. I. MOCHESHNIKOV, Sector Chief of the Physicotechnical Institute, for his assistance in

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USSR

YEGIYAN, K. SH., et al., Izvestiya Akademii Nauk Armyanskoy SSR, Vol 5, No 5, 1970, pp 381-391

organizing and carrying out the work, E. V. TER-MINASYAN, Chief of the Design Bureau of Yerevan Physics Institute, and Senior Engineer G. G. MAMIKONYAN for designing the apparatus;

L. A. MAKHNENKO, Sector Chief of the Physico-technical Institute, Academy of Sciences Ukrainian SSR, G. A. DEMYANENKO, Chief of the LU-300 Installation, and the entire LU-300 installation staff for their daily assistance in carrying out the experiment; and G. O. OVSEPYAN, D. A. ZARGARYAN, and L. A. SARKISYAN, staff members of Yerevan Physics Institute, for their part in the work of preparing and testing the apparatus and their part in the physical measurements.

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1/2 010

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--A COMPARATIVE ASSESSMENT OF THE RESULTS OF SUBTOTAL RESECTION OF THE STOMACH ACCORDING TO SPECIAL CONSIDERATIONS AND PARTIAL RESECTION

AUTHOR--(03)--SITENKO, V.M., SAMOKHVALOV, V.I., KAZANSKY, D.A.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 5, PP 52-55

DATE PUBLISHED--70

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TOPIC TAGS--SURGERY, STOMACH, CANCER

CONTROL MARKING--NO RESTRICTIONS

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STEP NO--UR/0531/70/000/005/0052/0055

CIRC ACCESSION NO--AP0129392

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PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129392

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

ABSTRACT. A FIVE YEAR SURVIVAL IN A GROUP OF PATIENTS COMPRISING 102 PERSONS SUBJECTED TO SUBTOTAL GASTRIC RESECTION FOR CANCER AMOUNTED TO 47 PER CENT OF CASES. OUT OF 136 PATIENTS WHO SUSTAINED PARTIAL RESECTION 43.3 PER CENT SURVIVED THIS PERIOD. HOWEVER, THIS DIFFERENCE IS STATISTICALLY INSIGNIFICANT. THERE ARE NO DATA WHICH WOULD REVEAL THE ADVANTAGE OF SUBTOTAL RESECTION IN COMPARISON WITH PARTIAL RESECTION DEPENDING ON THE STAGE, ANATOMIC TYPE AND HISTOLOGICAL FORM OF THE TUMOR.

FACILITY: KLINIKA

FAKUL'TETSKOY KHIRURGIY VMOJKA.

UNCLASSIFIED

1/2 014

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--EFFECT OF THE STRUCTURE OF ORGANOPHOSPHORUS INHIBITORS ON THE RATE OF REACTIVATION OF INHIBITED CHOLINESTERASE -U-  
AUTHOR--(03)-AGABEKOVA, I.I., ROZENGART, V.I., SITKEVICH, R.V.

COUNTRY OF INFO--USSR

SOURCE--BIOKHIMIYA 1970, 35(1), 53-7

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SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ORGANIC PHOSPHORUS COMPOUND, CHOLINESTERASE INHIBITOR, PAM ANTIDOTE

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DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0639

STEP NO--UR/0218/70/035/001/0053/0057

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PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117865

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ABILITY OF CHOLINESTERASE INHIBITED BY NORMAL AND BRANCHED HYDROCARBON RADICALS OF VARIOUS ORG. PHOSPHORYLATED INHIBITORS TO BE REACTIVATED BY THE ACTION OF 2-PYRIDINE ALDOXIME METHIODIDE WAS STUDIED. THE REACTION RATE FOR O,ALKYL,S,BUTYLMETHYLTHIOPHOSPHONATES, O,ISOALKYL,S,BUTYMETHYLTHIOPHOSPHONATES, AND O,PINACOLYL,S,BUTYLMETHYLTHIOPHOSPHONATE VARIED INVERSELY WITH THE LENGTH OF THE ALKOXYL RADICAL. THE DECREASED DEGREE OF DEACTIVATION WITH LONG ALKOXYL RADICALS IS PROBABLY DUE TO APPEARANCE OF STERIC INHIBITORS AGAINST APPROACH OF THE REACTIVATOR TO THE PHUSPHORYLATED ENZYME. FACILITY: DEP. BIOCHEM., I. LENINGRAD. STATE MED. INST., LENINGRAD, USSR.

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--SYNTHESIS OF SOME 2 SUBSTITUTED 1-PHENYLMIDAZOLES -U-

AUTHOR--(02)--SITKINA, L.N., SIMONOV, A.M.

S

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (3), 410-11

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC SYNTHESIS, BENZENE DERIVATIVE, IMIDAZOLE, NITROMETHANE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0224

STEP NO--UR/0409/70/000/003/0410/0411

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

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT. TO A SOLN. OF 0.06 G MENO SUB2 IN 1 ML ETOH WERE ADDED DROPWISE AT 0DEGREES, 1 ML 10PERCENT AQ. NAOH, THEN A SOLN. OF 01.7 G I (R. EQUALS CHO) (II) IN ALC., AND THE WHOLE WAS KEPT 30 MIN AT 0DEGREES TO YIELD 0.15 G I (R EQUALS CH(DH)CH SUB2 NO SUB2) (III), M. 115-18.5DEGREES. III WAS DISSOLVED IN A SMALL AMT. AC SUB2 O GN BOILING WATER BATH AND DILD. WITH 3-5 ML H SUB2 O TO YIELD 36PERCENT YELLOW I (R EQUALS CH:CHNO SUB2), M. 147DEGREES (ETOH). A MIXT. OF 0.17 G II AND 0.1 G CH SUB2(CO SUB2 H)SUB2 IN 1.5 ML ANHYD. C SUBS H SUB 5 N WAS HEATED 1 HR CN A BOILING WATER BATH WITH A CATALYTIC AMT. PIPERDINE TO YIELD 52PERCENT I (R EQUALS CH:CHCO SUB2 H), M. 218-19DEGREES (H SUB2 O); PICRATE M. 225-7DEGREES (ETOH). TO A SOLN. OF 0.17 G II AND 0.12 G PHAC IN 1 ML ETOH WAS ADDED DROPWISE AT 0DEGREES 0.25 ML 2PERCENT NAOH, TO YIELD 69PERCENT YELLOW I (R EQUALS CH:CHCOPH), M. 109-10DEGREES (PETROLEUM ETHER). A SOLN. OF 0.17 G II AND 0.24 G PHAC IN 1 ML ETOH WAS HEATED 1 HR CN A BOILING WATER BATH WITH 0.2 ML 20PERCENT KOH TO YIELD AFTER 2 DAYS 72PERCENT I (R EQUALS CH:CBZ SUB2), M. 133-4DEGREES. TO AN EMULSION OF PHC:CMGBR (FRGM 0.96 G MG, 5.45 G ETBR, AND 5.1 G PHC:CH) IN 50 ML ETOH WAS ADDED WITH STIRRING AT 15-20DEGREES A SOLN. OF 4.3 G II IN 80 ML ANHYD. ETHER, AND THE WHOLE REFLUXED 3-4 HR TO YIELD 42PERCENT I (R EQUALS CH(H)C:C:CPH) (IV), M. 121-2DEGREES (HEXANE). TO A SOLN. OF 1.37 G IV IN 20 ML ANHYD. DIOXANE UNDER REFLUX WAS ADDED WITH STIRRING 0.3 G SEG SUB2 (FRESHLY SUBLIMED) AND REFLUX CONTINUED 30 MIN TO YIELD 40PERCENT I (R EQUALS COC:CPH), M. 123-4.5DEGREES (HEXANE); 2,4 DINITROPHENYLHYDRAZONE M. 155-7DEGREES (ETOH).

UNCLASSIFIED

373 014  
CIRC ACCESSION NO--AP0126009  
ABSTRACT/EXTRACT--FACILITY:  
USSR.

UNCLASSIFIED

PROCESSING DATE--20NOV70

ROSTOV NA DONU GOS. UNIV., ROSTOV ON DON,

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--NATURE OF THE INTERACTION OF PHENYL AND IMIDAZOLE RINGS IN  
N,ARYLIMIDAZOLES. IV. DERIVATIVES OF 1-PHENYLIMIDAZOLE WITH SUBSTITUENTS  
AUTHOR--POZHARSKIY, A.F., SITKINA, L.M., SIMONOV, A.M., CHEGOLYA, T.N.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN 1970, (2), 209-13

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZENE DERIVATIVE, IMIDAZOLE, ELECTRON ACCEPTOR, ELECTRON  
DONOR, DIPOLE MOMENT, IONIZATION CONSTANT, UV SPECTRUM, MOLECULAR  
INTERACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1803

STEP NO--UR/0409/70/000/002/0209/0213

CIRC ACCESSION NO--AP0100377

UNCLASSIFIED



CIRC ACCESSION NO--AP0100377  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT. THE UV ABSORPTION SPECTRA OF  
SUBSTITUTED 1-PHENYLIMIDAZOLES WERE RECORDED. THE INTRODUCTION OF  
ELECTRON ACCEPTOR GROUPS INTO THE BENZENE RING EXERTS A BATHOCHROMIC  
SHIFT WHILE THE ELECTRON DONOR GROUPS HAVE LITTLE EFFECT. THE DIPOLE  
MOMENTS  $\mu$  (IN D), IONIZATION CONSTS. (PK SUBA), AND THE RATE CONST. K  
OF THE REACTION WITH ETI (10 PRIME NEGATIVE 6 L. MOLE PRIME NEGATIVE 1 SEC  
PRIME NEGATIVE 1) FOR I WERE (R  $\mu$ , PK SUBA, AND K GIVEN): H, 3.50,  
5.10, 15.7; P-ME, 3.90, 5.24, 19.0; M-ME, 3.73, 5.24, 18.9; OMICRON-ME,  
3.79, -, -; P-BR, 2.20, 4.91, 11.0; P-OH, 5.48, 5.35, 22.6; P-AC, 2.89,  
4.54, 10.8; P-O SUB2 N, 1.55, 3.96, U.8; M-O SUB2 N, 3.63, -, -; P-MED,  
-, 5.23, 19.6. THE IMIDAZOLE GROUP IN I BEHAVES AS AN ELECTRON DONOR.

UNCLASSIFIED

018  
 UNCLASSIFIED  
 TITLE--RAPID CURRENT PREAMPLIFIER FOR USE IN AN ELECTRON COLLIMATING  
 SYSTEM FOR NEUTRONS -U- PROCESSING DATE--16OCT70  
 AUTHOR--(03)-ANDKEYEV, E.A., SITKO, S.P., SHEVCHENKO, V.A.  
 COUNTRY OF INFO--USSR  
 SOURCE--PRIB. TEKH. EKSP. 1970, 1, 132-3  
 DATE PUBLISHED-----70  
 SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR.  
 TOPIC TAGS--NEUTRON BEAM, COLLIMATUR, PREAMPLIFIER, HELIUM ISOTOPE,  
 SEMICONDUCTOR DETECTOR  
 CONTROL MARKING--NO RESTRICTIONS  
 DOCUMENT CLASS--UNCLASSIFIED  
 PROXY REEL/FRAE--1994/1226  
 CIRC ACCESSION NO--AP0115243  
 STEP NO--UR/0120/70/001/000/0132/0133  
 UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0115243  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A FAST ACTING CURRENT PREAMPLIFIER IS DESCRIBED FOR A SURFACE BARRIER TRANSISTORIZED DETECTOR. THE PREAMPLIFIER IS ASSEMBLED FROM HIGH FREQUENCY TRANSISTORS AND IS DESIGNED TO PROVIDE A FINE CORRELATION (ACCORDING TO CO TRAVELLING PRIME3 HE PARTICLES) IN A SYSTEM OF ELECTRONIC COLLIMATION OF N FROM THE D D REACTION WITH A RESOLN. TIME OF SEVERAL NSEC. THE AMPLIFICATION COEFF. EQUALS SIMILAR TO 599, THE TIME OF PULSE INCREASE AT THE OUTLET IS LESS THAN 15 NSEC. THE CURRENT AMPLIFICATION RESULTS IN AN 8 FOLD INCREASE OF SIGNALS FROM PRIME3 HE PARTICLES OVER BACKGROUND NOISE.

FACILITY: KIEV. GOS. UNIV. KIEV. USSR.

UNCLASSIFIED

USSR

UDC: 621.375.4(088.8)

ZAMURUYEV, A. M., KOGUT, A. I., SITNICHENKO, V. M.

"A Transistorized Multistage Power Amplifier"

USSR Author's Certificate No 235183; filed 20 Oct 66, published 10 Aug 70  
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1D94 P)

Translation: This Author's Certificate introduces a transistorized multi-stage power amplifier with feedback circuits between the preliminary and output stages. To increase efficiency, diodes are connected in the feedback circuit with their cathodes connected to the collector of the transistor in the final stage of the amplifier, and their anodes connected to the collectors of the transistors in the amplification stages.

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USSR

UDC 539.4

2

MOLOCHKOV, M. A., IVANENKO, A. A., VEGROV, A. N., SITHICHENKO, V. P., PULYAYEV-SKIY, V. A., KOVESHNIKOV, N. A.

"The Effect of the Stress Concentrator on Fatigue Strength in Male Cone Joints for Titanium Alloy Pipe"

Sb. nauch. tr. Kiev. in-t inzh. grazhd. aviatsii (Collection of Scientific Works of the Kiev Institute of Civil Aviation Engineers), 1971, vyp. 1, pp 78-81 (from RZh-Mekhanika, No 11, Nov 71, Abstract No 11V1112)

Translation: By testing samples of 7M titanium alloy pipe 12 x 1.5 for fatigue, it was demonstrated that stress concentration in the investigated joint is higher than the theoretically calculated concentration. When testing with a frequency of 200 hertz on a 10<sup>7</sup> cycle base, the effective concentration factor was 3.2 with a fillet radius of 0.5 mm. The reduction in fatigue strength is ascribed to significant residual strains reaching 15% in the diameter transition zone.

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UNCLASSIFIED

PROCESSING DATE--04DEC70

030  
TITLE--TEMPERATURE CONSTANCY IN THE MOLECULAR CO LAYER OF THE SOLAR  
ATMOSPHERE -U-  
AUTHOR--(02)-SITNIK, F.G., POLONSKIY, V.V.

S

COUNTRY OF INFO--USSR

SOURCE--ASTRONOMICHESKII ZHURNAL, VOL. 47, NO. 3, 1970, P. 516-619

DATE PUBLISHED-----70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--SOLAR ATMOSPHERE, CARBON MONOXIDE, MOLECULE, SPECTRAL LINE,  
SPECTROGRAPH, TEMPERATURE, TELESCOPE/(U)AIB1 TOWER TELESCOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----F070/605012/B11 STEP NO--UR/0033/70/047/003/0516/0519

CIRC ACCESSION NO--AP0140254

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

2/2 030

CIRC ACCESSION NO--AP0140254

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

ABSTRACT. DETERMINATION OF THE EQUIVALENT SPECTRAL LINE WIDTHS IN THE SOLAR ATMOSPHERE FROM SPECTROGRAMS OF CARBON MONOXIDE MOLECULES TAKEN IN 1964 AND 1965 ON A SOLAR ATB 1 TOWER TELESCOPE. THE TEMPERATURE OF A THIN LAYER OF CARBON MONOXIDE MOLECULES PRESENT IN THE SOLAR PHOTOSPHERE IS FOUND TO BE CONSTANT WITHIN THE ACCURACY OF THE MEASUREMENT OF THE RATIO BETWEEN THE EQUIVALENT LINE WIDTHS. THIS TEMPERATURE IS ESTIMATED TO BE 4920 PLUS OR MINUS 290 K.

FACILITY: MOSKOVSKII GOSUDARSTVENNYI UNIVERSITET, MOSCOW, USSR.

UNCLASSIFIED

UNCLASSIFIED  
RESOLVE OF RCT SUB40 PLUS MARKER OF VACCINIA VIRUS IN DIFFERENT  
METHODS OF INACTIVATION OF THE DONOR VIRUS -U-  
AUTHOR-(02)-SITNIKOV, B.S., GENDON, YU.Z.  
PROCESSING DATE--30OCT70

COUNTRY OF INFO--USSR

SOURCE--VOPROSY VIRUSOLOGIII, 1970, NR 3, PP 278-283

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--VIRUS, BIOLOGIC MUTATION, UV RADIATION, FORMALDEHYDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--2000/1851

STEP NO--UR/0402/70/000/003/0278/0283

CIRC ACCESSION NO--AP0125462  
UNCLASSIFIED



2/2 022

CIRC ACCESSION NO--AP0125462  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT. "RESCUE" OF RCT SUB40 PLUS MARKER OF VACCINIA VIRUS WAS STUDIED IN CROSSING OF RCT SUB40 MINUS MUTANT OF VIRUS WITH RCT SUB40 PLUS STRAIN INACTIVATED BY DIFFERENT FACTORS. TREATMENTS AFFECTING MOSTLY THE NUCLEIC COMPONENT OF THE VIRUS WERE USED: ULTRAVIOLET RAYS, FORMALDEHYDE, HYDROXYLAMINE, NITROUSACID AND PHOTODYNAMIC EFFECT OF METHYLENE BLUE. VACCINIA VIRUS PARTIALLY INACTIVATED BY THESE FACTORS WAS FOUND TO SHOW A PHENOMENON OF MULTIPLE REACTIVATION. USING THE DEVELOPED METHOD OF CROSSING WHICH PERMITTED TO EVALUATED QUANTITATIVELY THE RATE OF "RESCUE" OF RCT SUB40 PLUS MARKER OF VACCINIA VIRUS, IT WAS FOUND THAT UPON INACTIVATION OF THE VIRUS WITH ULTRAVIOLET RAYS THE RATE OF "RESUCE" OF THE RCT SUB40 PLUS MARKER WAS 10 PRIME NEGATIVE 4.5-10 PRIME NEGATIVE 3.8, UPON INACTIVATION WITH FORMALDEHYDE 10 PRIME NEGATIVE 5.1 TO PRIME NEGATIVE 4.7, AND THAT NO "RESCUE" OF THE RCT SUB40 PLUS MARKER WAS OBSERVED AFTER TREATMENT OF THE VIRUS WITH HYDROXYLAMINE, NITROUS ACID AND BY THE PHOTODYNAMIC EFFECT OF METHYLENE BLUE. IT MAY BE SUGGESTED THAT THE ABSENCE OR PRESENCE OF "RESCUE" OF THE RCT SUB40 PLUS MARKER UNDER THESE EXPERIMENTAL CONDITIONS IS DUE TO DIFFERENT SENSITIVITY OF THAT PART OF THE VIRUS GENOME WHICH CODES THIS MARKER TO INACTIVATING TREATMENTS.

FACILITY: MOSKOVSKIY NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT VIRUSNYKH PREPARATOV.

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0108988

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TS SUB40 MARKER OF VACCINIA VIRUS WAS EXAMD. FOR RESISTANCE TO UV LIGHT, FORMALDEHYDE (I), HYDROXYLAMINE (II), NITROUS ACID (III), AND THE PHOTODYNAMIC EFFECT OF METHYLENE BLUE (IV). EXPTS. WERE PERFORMED WITH TS SUB40 STRAIN OF VACCINIA VIRUS AND ITS TS PRIME NEGATIVE SUB40 MUTANT. TS PRIME POSITIVE SUB40 STRAIN WAS TREATED WITH UV LIGHT, I, II, III, OR IV FOR COMPLETE INACTIVATION. THEN, CROSS REACTIVATION EXPTS. WERE CARRIED OUT. NATIVE TS PRIME NEGATIVE SUB40 MUTANT WAS MIXED WITH INACTIVATED TS PRIME POSITIVE SUB40 STRAIN IN A 1:1 RATIO. AFTER PLATING AND INCUBATION AT 40DEGREES, THE PLAQUES THAT APPEARED COULD ONLY BE DUE TO THE RESCUE OF THE GENOME CODING TS PRIME POSITIVE SUB40 MARKER INTO TS PRIME NEGATIVE SUB40 MUTANT GENOME. THE FREQUENCY OF PLAQUE FORMATION INDICATED THE DEGREE OF RESISTANCE TO THE INACTIVATING FACTOR. WHEN I AND UV LIGHT WERE USED AS INACTIVATING AGENTS PLAQUES WERE OBSD., BUT NOT FOR II, III, AND IV. THEREFORE, THE TS SUB40 MARKER OF VACCINIA VIRUS IS MORE RESISTANT TO THE ACTION OF I AND UV LIGHT.

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UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--RESISTANCE OF THE REGION OF DNA CODING TS SUB40 MARKER OF VACCINIA VIRUS TO SEVERAL INACTIVATING FACTORS -U-

AUTHOR--GENDON, YU.Z., SITNIKOV, B.S.

CIA-RDP86-00513R002203020016-5"

COUNTRY OF INFO--USSR

SOURCE--ARCH. GESAMTE VIRUSFORSCH. 1970 29(1) 101-4

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--VIRUS, FORMALDEHYDE, HYDROXYLAMINE, UV LIGHT, CHEMICAL RESISTANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1990/0787

STEP NO--AU/0000/70/029/001/0101/0104

CIRC ACCESSION NO--AP0108988

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UNCLASSIFIED

UDC: 681.325(088.8)

USSR

S  
SITNIKOV, D. S.

"A Time Scale Converter"

USSR Author's Certificate No 249784, filed 18 Mar 68, published 25 Dec 69 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7A204 P)

Translation: The proposed converter, which may be used for measuring unit time intervals, contains a master oscillator, switching unit, frequency dividers, and shapers. As a distinguishing feature of the patent, the converter is simplified by connecting the master oscillator to the switching unit, which is connected to the inputs of the frequency dividers and the outputs of the shapers; the shaper inputs are the inputs for the instrument and the "reset terminals" for the frequency dividers. The outputs of the frequency dividers are the instrument outputs.  
E. L.

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USSR

UDC 536.521.082.52

KILADZE, N. SH., SITNIKOV, E. K., AFANAS'YEV, YU. S.

"A Sensitive Photoelectric Brightness Pyrometer"

Trudy Instituta Sistem Upravleniya AN GruzSSR (Works of the Institute of Control Systems, Academy of Sciences, Gruzinskaya SSR), No 2, 1970, pp 5-11 (from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 12, 1970, Abstract No 1232.607 by V. S. K.)

Translation: In the article are presented the method of calculation, a description of the operating principle, and a description of the arrangement of a photoelectric pyrometer for measuring the temperature of bodies of small area, developed at the Institute of Electronics, Automation, and Remote Control of the Academy of Sciences, Gruzinskaya SSR. The operation of the pyrometer is based upon a comparison of the radiation of the surface, the temperature of which is being measured, with the radiation of a standard lamp that has been graduated by standard pyrometer. The range of measured temperatures is from 1000 to 2000°C, the measurement exactness is to within  $\pm 1\%$ , the minimum area of 1/2

USSR

KILADZE, N. SH., et al, Trudy Instituta Sistem Upravleniya AN GruzSSR, No 2, 1970, pp 5-11

radiating surface is  $0.5 \text{ mm}^2$ , the average wave length of the measurement is  $6800 \text{ \AA}$ , the width of the spectrum band is  $70 \text{ \AA}$ .  
2 illustrations, 2 bibliographic entries.

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" 108 "

USSR

UDC: 621.791.756:546.821

STEPANOV, V. V., and SITNIKOV, I. I.

"Electroslag Welding of Titanium Alloys Using Combined Electrodes"

Kiev, Avtomaticheskaya Svarka, No 11, Nov 70, pp 66-67

Abstract: The objective of this study was to analyze the economic aspects of welding titanium alloys ( $\delta = 50-100$  mm). The experiments involved the use of both consumable and nonconsumable electrodes, and an A-612-based experimental automatic welder powdered from a TShS-1000 a-c source. The titanium alloy was OT4  $\delta = 20-30$  mm. The nonconsumable electrodes were tungsten rods 10 and 12 mm in diameter; VT1-00 titanium wire 3 and 4 mm in diameter served as the consumable electrode. The consumption of the 10-mm tungsten electrode, the tungsten content in the weld, and the mechanical properties of the weld metal including elongation (%), tensile strength, reduction in area (%), and impact strength are cited in tabular form. The experimental data on welding rates and linear energy indicate the potentialities of electroslag welding with the use of combined electrodes.

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USSR

MATVEYEV, YU. M., ZAYONCHIK, L. I., SITNIKOV, L. L., OSTRYAKOV, V. V.

"Strain Study of Mechanically Inhomogeneous Bodies Using Optically Sensitive Coatings"

Moscow, Zavodskaya Laboratoriya, Vol XXXVII, No 4, 1971, pp 468-471

Abstract: A study is made of the stress-strain state of mechanically inhomogeneous bodies using optically sensitive coatings. The effect of mechanical inhomogeneity of the medium on the stress-strain state and the nature of development of the zones of plastic flow are estimated. The layer of coatings applied to the reflecting surface of a bimetal sample, and the optical effect is established in the form of a Moray pattern and the isochrome pattern. The penetration of the zone of plastic flow as a function of the degree of relative reduction during the process of reducing homogeneous discs made of soft and hard lead-antimony alloys and bimetal discs is plotted, and the kinetics of development of the normal stresses in the center of a disc are illustrated for two inhomogeneity diagrams.

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USSR

UDC: 681.325.5

IVANOV, G. A., SITNIKOV, L. S., TOKOVENKO, S. Ye., UTYAKOV, I. L.

"A Frequency Subtractor"

USSR Author's Certificate No 292234, filed 6 Oct. 69, published 2 Mar 71  
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, Oct  
71, Abstract No 10B369 P)

Translation: Frequency subtractors are known which contain a storage element and a transistorized switch. The proposed device is distinguished from conventional units by the fact that it contains a comparator, a resistive divider in the collector of the transistor, and a diode, and the storage element is made as a capacitive accumulator circuit whose output is connected through the diode to the collector of the transistorized switch and through the comparator to the centertap of the resistive divider. This improves the operational reliability of the device and simplifies it. One illustration.

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Microelectronics

USSR

UDC: 621.382.8:317

BORISOV, K. G., Engineer, ~~SITNIKOV, L. S.~~, Doctor of Technical Sciences,  
UTYAKOV, L. L., Candidate of Technical Sciences

"New Possibilities for Constructing Universal Count Decades Based on Integrated Circuitry"

Moscow, Pribory i Sistemy Upravleniya, No 4, Apr 72, pp 28-29

Abstract: The article deals with synthesis of universal decades with pulse-position data representation based on integrated circuitry (chiefly transistor-transistor logic). Some of the possibilities for increasing the degree of large-scale integration are also considered. A schematic diagram of the pulse-position decade is given and its operation is described.

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USSR

UDC 159:681.2.085.36

KUZEMKO, V. S., SITNIKOV, L. S.

"Operator Errors During Operation with Digital Display Devices and Methods for Their Elimination"

Izmeritel'naya Tekhnika, No 11, 1971, pp 71-73.

ABSTRACT: Up to the present time, the parameters of digital display devices have rarely been coordinated with the psychophysiological properties of operators. This has resulted from a number of factors, in particular the conception that digital readout has no characteristic subjective error, as well as the unavailability of the required recommendations. A comparative analysis of information characteristics of digital and analogue readout, performed in this work, indicates that the following measures should be taken to increase the effectiveness of perception of digital display devices: utilization of information redundancy to create a three dimensional visual model corresponding to the equivalent analogue reading by adding one or more dimensions; elimination of unnecessary information (noise) from readout by means of an indication register; separation of the dynamics of change of indications.

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USSR

UDC: 621.374.5(088.8)

VOLKOGON, V. P., SITNIKOV, L. S., UTYAKOV, L. L.

"A Wide Pulse Shaper"

USSR Author's Certificate No 265185, filed 4 Mar 68, published 17 Jun 70  
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1G264 P)

Translation: The proposed transistorized wide pulse shaper utilizes the effect of charge accumulation in PN junctions. The device contains a saturated shaping stage with a transistor switch as a controlling leakage resistance, and a matching emitter follower. To reduce the duration of the trailing edge of the shaped pulses, the output of the emitter follower is connected through a differential network to the base of the switching transistor.

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USSR

UDC: 621.314.26

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BABAK, O. V., BIGUN, Ya. F., BOLOTOV, B. V., SITNIKOV, L. S., UTYAKOV, L. L.,  
KHOPEVNEKO, M. G., Institute of Electrodynamics, Academy of Sciences of  
the UkrSSR

"A Pulse Frequency Divider"

USSR Author's Certificate No 251000, filed 20 May 68, published 30 Jan 70  
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11,  
Nov 70, Abstract No 11A183 P)

Translation: This Author's Certificate introduces a pulse frequency divider based on a storage core made of a ferromagnetic material with rectangular hysteresis loop. To insure the possibility of regulating the division coefficient, the storage core with its windings is placed between the poles of a core of magnetically hard material. The control winding of this second core is connected to a key coincidence gate through a pulse shaper circuit. A pulse with fixed amplitude and duration is fed to the input of the magnetic divider. Before arrival of the first pulse, the core of the divider is in a state of negative magnetization and the shaper transistor is in the cutoff state. The first and each subsequent pulse increase the level of magnetization of the core up to the saturation point. When this happens, the tran-

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BABAK, O. V., et al., USSR Author's Certificate No 251000

'sistor is switched to the active state and it shapes an output pulse. The circuit then returns to the initial state. The division coefficient of the frequency divider can be varied by changing the magnetization of the magnetically hard core, thus changing the hysteresis loop of the core with rectangular characteristics. One illustration. N. S.

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USSR

UDC: 621.317.755

SITNIKOV, L. S., TOKOVENKO, S. Ye., UTYAKOV, L. L., YAKOVLEV, V. T.

"A Time-Mark Generator for a Cathode-Ray Oscilloscope"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 4, Feb 71, Author's Certificate No 292243, Division H, filed 20 Jan 69, published 6 Jan 71, pp 150-151

Translation: This Author's Certificate introduces a time-mark generator for a cathode ray oscilloscope. The device contains a pulse light source, a shaper, series-connected capacitor storage counters with two inputs, a source of stable-frequency signals and a selector switch. As a distinguishing feature of the patent, in order to simplify the device, connected to one of the inputs of the capacitor storage counters is a series circuit comprised of a synchronizing pulse oscillator and reference phase pulse oscillator. The output of this last pulse oscillator is connected through a synchronizer to a coincidence module whose second input is connected through the selector switch to the outputs of the capacitor storage counters, and the output of the coincidence module is connected to the shaper.

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1/3 027 UNCLASSIFIED # PROCESSING DATE--23OCT70  
TITLE--CERTAIN POSSIBILITIES OF APPLICATION OF PRINCIPLES OF OPTO  
ELECTRONICS FOR IMPROVEMENT OF MEASURING INSTRUMENTATION -U-  
AUTHOR--(05)-BOGOSLAVSKIY, G.E., MOLCHANOV, A.A., OLEKSENKO, P.F.,  
SVECHNIKOV, S.V., SITNIKOV, L.S.  
COUNTRY OF INFO--USSR

5

SOURCE--MOSCOW, IZHERITEL'NAYA TEKHNIKA NO 1, JAN 70, PP 5-8  
DATE PUBLISHED----JAN70

SUBJECT AREAS--METHODS AND EQUIPMENT, ELECTRONICS AND ELECTRICAL ENGR.,  
PHYSICS  
TOPIC TAGS--ELECTROOPTIC MEASURING EQUIPMENT, ELECTRIC MEASURING  
INSTRUMENT, ELECTROLUMINESCENCE, PHOTORESISTOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1997/0393

STEP NO--UR/0115/70/000/001/0005/0008

CIRC ACCESSION NO--AP0119338

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119338

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS ARTICLE PRESENTS THE RESULTS OF INVESTIGATIONS ON THE POSSIBILITIES OF APPLYING THE PRINCIPLES OF OPTO ELECTRONICS TO THE DESIGN OF ELECTRIC MEASURING INSTRUMENTS AND CONVERTERS OF VARIOUS PHYSICAL VALUES INTO VOLTAGE AND FREQUENCY. THE ADVANTAGES OF OPTO ELECTRONIC METERING DEVICES WITH RESPECT TO POINTER TYPE INSTRUMENTS ARE STRESSED. ONE OPTO ELECTRONIC SHIFT REGISTER BASED ON THE USE OF AN INTERNAL PHOTO EFFECT PHENOMENON AND ELECTROLUMINESCENCE IS DESCRIBED AND ITS SCHEMATIC DIAGRAM IS GIVEN. THE DESIGN CALCULATIONS OF THIS REGISTER ARE PRESENTED. THEY ARE REDUCED TO A CALCULATION OF THE ELECTROLUMINESCENCE AND PHOTORESISTOR LAYERS PARAMETERS, TO DETERMINATION OF THE STRUCTURAL FEATURES RELATED TO THE TRANSMISSION OF LIGHT FLUX AND, CONSEQUENTLY, OF VOLTAGE. TESTS OF THE REGISTER PROTOTYPE, CONDUCTED JOINTLY BY THE INSTITUTE OF SEMICONDUCTORS OF THE UKRAINIAN ACADEMY OF SCIENCES AND THE DESIGN BUREAU OF THE KIEV "TOCHELEKTROPRIBOR" PLANT, CONFIRMED ITS EFFICIENCY. THE OPTO ELECTRONIC DEVICES, WHICH ARE THE DEVELOPMENT OF THE SHIFT REGISTER SUCH AS: 1) A METERING DEVICE WITH NO MECHANICAL JOINT, BUT WITH A CODED OUTPUT, ENSURING THE DELIVERY OF DATA TO A DIGITAL DEVICE; AND 2) A DEVICE FOR AUTOMATIC PARTICLE COUNTING AND DETERMINING THEIR SIZE, ARE DESCRIBED. THIS DEVICE ALLOWS THE SORTING OF DATA ON OBJECT PRESENCE AS WELL AS ON ITS SURFACE, WITHOUT USING A COMPLEX APPARATUS OF STATISTICAL APPROXIMATION, USED IN THE ANALOG DEVICES.

UNCLASSIFIED



3/3 027

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119338

ABSTRACT/EXTRACT--A WORKING MODEL OF AN OPTO ELECTRONIC DECODER FOR TWO DECADES, WITH OUTPUT ON GAS DISCHARGE INDICATORS OF 10 TIMES 40 TIMES 30MM OVERALL DIMENSIONS, WITHOUT HIGH VOLTAGE TRANSISTORS, WAS CONSTRUCTED RECENTLY BY THE INSTITUTE OF SEMICONDUCTORS TOGETHER WITH THE INDEPENDENT DESIGN BUREAU OF THE KIEV "TOCHELEKTROPRIBOR" PLANT. THE ADVANCED TECHNOLOGY OF SUCH DECODERS TOGETHER WITH THE REDUCTION OF THEIR DIMENSIONS MAKES IT POSSIBLE TO ENVISAGE THE REDUCTION OF THEIR PRICES. IT IS CONCLUDED THAT AMONG THE MULTIPLE WAYS OF IMPROVING THE MEASURING INSTRUMENTS, THE APPLICATION OF OPTO ELECTRONIC PRINCIPLES IS A VERY PROMISING ONE.

UNCLASSIFIED

USSR

UDC: 681.142.07

SITNIKOV, O. P., SUKHAREV, Yu. P., Ural Polytechnical Institute imeni  
S. M. KIROV

"A Device for Generating Pseudorandom Signals"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki,  
No 6, Feb 72, Author's Certificate No 328442, Division G, filed 24 Jun 69,  
published 2 Feb 72, p 151

Translation: This Author's Certificate introduces a device for generating pseudorandom signals. The device contains a binary counter based on flip-flops, mod-2 adders, DC amplifiers, kipp oscillators, and switches. As a distinguishing feature of the patent, in order to generate signals with a uniform, broad, discrete spectrum, one input of each mod-2 adder is connected to the output of the flip-flop for the least significant digit of the counter, the two other inputs are connected to the outputs of the flip-flops for the two most significant digits of the counter, and the outputs of the mod-2 adders are connected to the inputs of the corresponding switches. The other inputs of the switches are connected to the corresponding source of DC voltage, and the switch outputs are connected to

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USSR

SITNIKOV, O. P., SUKHAREV, Yu. P., USSR Author's Certificate No 328442

the input of the first operational amplifier. Connected in the feedback circuit of the amplifier is a switch whose controlling input is connected to the output of the first kipp oscillator. The input of this kipp oscillator is connected to the input of the second kipp-oscillator and to the controlling input of another switch connected in the input circuit of a second operational amplifier. The other input of the second kipp oscillator is connected to a mod-2 adder, which is connected, in turn, to the outputs of the flip-flops of the two least significant digits of the binary counter.

2/2

- 80 -

4

UDC 621.374.33

USSR

VIGDORCHIK, V. G., DARKOV, S. K., KORTEVA, T. V., MEYERSON, S. I., POPOV, V. A., SITNIKOV, O. P., TRYKOV, Yu. V., OSTRYY, Kh. Ya.

"A Magnetic Digital Element"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 21, Jul 71, Author's Certificate No 308518, Division H, filed 16 Feb 70, published 1 Jul 71, pp 207-208

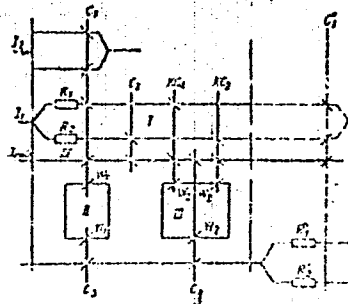
Translation: This Author's Certificate introduces a magnetic digital element which contains information, compensation and two switching cores. The device has a recording circuit, a coupling loop with flux quenching on resistors, and a ready circuit for the switching cores. As a distinguishing feature of the patent, in order to increase speed, improve stability, extend the range of ambient temperature variation and simplify the power supply system, the element is equipped with resistors in the coupling loop, dynamic excitation and dynamic magnetizing cores, one additional winding on each of the switching and compensation cores, and also two additional windings on the information core. The primary windings of the dynamic excitation and dynamic magnetizing cores are connected in series in the circuit of one of the excitation currents. The series-connected auxiliary windings of the switching cores and

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USSR

VIGDORCHIK, V. G., et al., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 21, Jul 71, Author's Certificate No 308518, Division H, filed 16 Feb 70, published 1 Jul 71, pp 207-208

the secondary winding of the dynamic excitation core form a loop for dynamic excitation of the switching cores. The series circuit comprised of the secondary winding of the dynamic magnetizing core and one of the auxiliary windings of the information core forms a loop for dynamic excitation of the information core, and the auxiliary winding of the information core and the third winding of the dynamic excitation core are connected in series to the ready winding of the switching core.



2/2

USSR

UDC: 621.391.8:519.27

SITNIKOV, O. P., GLYZIN, V. I.

"Instrumental Analysis of Random Processes Based on Fourier-Walsh Expansions"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T 3 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 3), Novosibirsk, 1970, pp 64-66 (From RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A55)

Translation: The authors point out the disadvantages of the method of correlation analysis of random processes using multiplication correlators. Consideration is given to an analyzer of characteristics of a stationary ergodic random process based on expansion of this process in an orthogonal basis of Walsh functions. The operating system of the analyzer consists of a Walsh function generator, a sign multiplication element, an integrator with zero-order extrapolator, a dispersion measuring device, and a control circuit. A passive low-frequency filter may be substituted for the integrator with extrapolator. Two illustrations, bibliography of three titles. N. S.

1/1

- 24 -

USSR

UDC 669.046.5

SITNIKOV, V. F., VERKHOVITSEV, E. V., VASIL'YEV, N. Ye., ZHDANOVICH, K. K. and UPSHINSKIY, Ye. A.

"Development of the Technology for High-Quality Alloy Steel Making in Martin Furnace With Deoxidation and Alloying in Ladle With Liquid Alloy and Simultaneous Refining With Synthetic Slag"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISIS). (Collection of Works. Modern Problems of Steel Quality), (Moscow Institute of Steel and Alloys). Izd-vo "Metallurgiya," No 61, 1970, pp 250-252

Translation of Abstract: Results are presented on the joint treatment of martin steel in a ladle by liquid alloys and synthetic slags, resulting in a substantially increased assimilation of the alloying elements, in a high degree of desulfurization and dephosphorization, and in reduction of steel contamination by nonmetallic impurities. The quality of metal obtained is similar to that produced in electric furnaces. 2 tables.

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- 41 -

USSR

UDC 621.357:621.79.027

BAYSUPOV, I. A., ~~SITNIKOV, V. G.~~

"Electrochemical Milling of Heat-Resistant Alloys"

V sb. Novoye v elektrofiz. i elektrokhim. obrabotke materialov (What's New in Electrophysical and Electrochemical Treatment of Materials --- collection of works), Leningrad, Mashinostroyeniye Press, 1972, pp 31-35 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L303)

Translation: In studying the electrochemical form milling of EP-164, EP-291, EI-893, EI-765, EI-428, ZhS-6K and 15Kh11MPL heat-resistant alloys, metallic, metal-abrasive and metal-diamond discs are used as the rotating cathodes. It was demonstrated that the highest precision of obtaining the given dimensions is provided by electro-diamond milling.

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USSR

UDC 539.214;539.374

SITNIKOV, Ye. I., GANAGO, O. A., VEL'BOY, V. F.

"Study of the Stress-Deformation State of Cylindrical Stamps Considering Rigidity of the Bottom"

Sb. nauch. tr. Chelyabinsk. politekhn. in-ta (Collection of Scientific Works of Chelyabinsk Polytechnical Institute), 1972, No. 111, pp 63-69 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V477)

Translation: Stamps having an opening in the bottom portion and a rigidity of this portion commensurable with the rigidity of the wall are considered. Analysis of the stress-deformation state is made by a variation method considering rigidity of the bottom. 5 ref.

Pathology

USSR

UDC 616.9-022.38-039:616.3-008.1001.33

BANKHANEN, V. D., DENISOV, K. A., ARTEMOV, A. A., SITNIKOVA, G. M., SHAFTALA, V. A., and KHILINSKIY, V. P., Chair of Nutritional Hygiene and Epidemiology Donets Medical Institute imeni A. M. Gor'kiy, and Department of Nutritional Hygiene, Donets Municipal Sanitary Epidemiological Station

"Classification of Food Poisoning and Principles Underlying Its Compilation"

Moscow, Voprosy Pitaniya, No 6, Nov/Dec 71, pp 54-58

Abstract: Problems concerning classification of food poisoning and criteria to be considered are discussed, including the evolution of concepts of etiology, mechanisms of transmission, pathology and symptomatology, treatment and prevention, and data on international classification. A classification is proposed in which food poisonings are divided into four etiological categories: bacterial, nonbacterial, fungal, and of unclarified nature. According to the pathogenesis, the bacterial category is subdivided into two groups: toxininfections and bacterial toxicoses; while the nonbacterial category is subdivided into three groups specifying the pathogenic agents: additives, products inedible by man, and products which become temporarily or partly toxic

1/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--DITETRACYCLINE AGAINST INFECTIONS -U-  
AUTHOR--(05)-LAZAREVA, E.N., BELOZEROVA, O.P., KRYUCHKOVA, A.P., EFIMOVA,  
T.I., SITNIKOVA, L.V. S  
COUNTRY OF INFO--USSR  
SOURCE--GER. OFFEN. 1,804,400  
DATE PUBLISHED--14MAY70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--TETRACYCLINE, EYE DISEASE, MOLECULAR STRUCTURE, PATENT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--2000/0001 STEP NO--GY/0000/70/000/000/0000/0000  
CIRC ACCESSION NO--AA0123801  
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE---13NOV70

CIRC ACCESSION NO--AA0123801

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE COMPD. (I), USEFUL AGAINST INFECTIONS, ESP. EYE INFECTIONS, WAS PREPD. FROM (II), HCHO, AND PHCH SUB2 NHCH SUB2 CH SUB2 NHCH SUB2 PH (III), IN ISO-BUGH OR TERT-BUGH AT 74-80DEGREES. THUS, II 65.18, III 13.52, AND 40PERCENT HCHO 8.4 G GAVE 45.85 G I. I IS LESS ACTIVE THAN II. FACILITY: ALL UNION SCIENTIFIC RESEARCH INSTITUTE OF ANTIBIOTICS.

UNCLASSIFIED

MATHEMATICS

Differential & Integral Equations

USSR

UDC 517.946

SITNIKOVA, Ye. G.

S

"The Three-Sphere Theorem for High-Order Elliptical Equation"

Matematicheskiiy Sbornik, Vol 82 (124), No 2 (6), June 1970, pp 213-219

Abstract: In a sphere  $Q \subset R^n$  of unit radius there is considered a uniformly elliptical equation of the order of  $2m$  with simple complex characteristics and with coefficients from  $C^{2m}$  which satisfy a supplementary condition. A theorem concerning continuous dependence on the initial data is solved; this theorem is an analog of Hadamard's theorem concerning three circles in the theory of analytical functions.

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Acc. Nr: AP0051914

Ref. Code: UR0425

PRIMARY SOURCE: Vrachebnoye Delo, 1970, Nr 2, pp 49-53

FAMILIAL IDIOPATHIC NEPHROPHTHISIS

A. P. Peleshchuk and I. G. Silnitskaya (Kiev)

The clinical symptoms and course of nephrophthisis are described in 5 patients from three families but not consanguinally connected. Though the clinical picture was rather typical, the disease was diagnosed only with development of total chronic renal insufficiency. The authors single out two stages in nephrophthisis. Not only pediatricians should be familiar with this disease because the patients survive usually to adult age. Disorders of ammoniogenesis are of significance. Recommendations on treatment of nephrophthisis are given.

REEL/FRA  
19820397

USSR

UDC: 536.532

KURKA, O. T., SITNITSKIY, Yu. I., CHUCHMAN, T. S.

"Automatic Compensation Contactless Temperature Meter for Rotating Surfaces"

Kontrol'no-Izmeritel'naya Tekhnika. Resp. Mezhved. Nauch.-Tekhn. Sb. [Testing and Measurement Techniques. Republic Interdepartmental Scientific and Technical Collection], 1972, No 12, pp 89-92 (Translated from Referativnyy Zhurnal Metrologiya i Izmeritel'naya Tekhnika, No 12, 1972, Abstract No 12.32.939, by V. S. K.).

Translation: An automatic meter for measurement of the temperature of rotating surfaces is described, which operates on the principle of compensation of energy radiated by the object of measurement by energy radiated by a nonmoving comparison surface, the heater power of which is automatically set according to the signal of a null indicator in a tracking system. The automatic temperature meter developed includes four units (U): 1) the sensor U, including the comparison surface and electric heater, thermal cell (null indicator) and thermocouple measuring the comparison surface temperature; 2) the electronic U for amplification of the signals of the thermal cell and control of the reversing motor of the power U; 3) the power U, regulating the comparison surface heater power; 4) the secondary device -- a series-produced automatic potentiometer. 2 figures, 3 biblio. refs.

1/1

Forming

USSR

UDC 621.735.043.016.2

SITNOV, V. V.

"Experience in Drop Die Forging of Aluminum Alloy Forgings"

Moscow, Kuznechno-Shtampovochnoye Proizvodstvo, No 8, Aug '71, pp 41-42

Abstract: Aluminum alloy forgings made by drop die forging are divided into the following three groups: 1) rods with a swelling; 2) forgings which are circular or noncircular in plan, forged by preliminary upsetting or flattening; 3) piston- or socket-type forgings, in the deformation of which extrusion predominates. The article deals with the experience in producing forgings of the above types. Because of low technological ductility in the forging of aluminum alloys, productivity is two to three times less than in the case of identical steel forgings. Thus, whereas it takes 8-9 blows to forge a bearing base from alloy D1, it takes 3-4 blows to forge the identical part from steel 45Kh.

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UNCLASSIFIED

PROCESSING DATE--13NOV70

1/2 038

TITLE--ESTIMATING THE BRITTLNESS OF STEEL BY REFERENCE TO THE FORM OF THE

FRACTURE -U-

AUTHOR--(05)--ARONE, R.G., BERNSHTEYN, S.V., SOKOLOVSKY, P.I., KAKHMANOV

A.S., SITNOVA, N.V.  
COUNTRY OF INFO--USSR

SOURCE--METALLOVEDENIE I TERM. OBRABOT. METALLOV, 1970, (1), 70-72

DATE PUBLISHED-----70

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

TOPIC TAGS--METAL BRITTLNESS, MATERIAL FRACTURE, BIBLIOGRAPHY, PLASTIC DEFORMATION, CARBON STEEL, ALLOY STEEL, MICROSCOPY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--2000/0861

STEP NO--UR/0129/70/000/001/0070/0072

CIRC ACCESSION NO--AP0124524

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

2/2 036

CIRC ACCESSION NO--AP0124524

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADVANTAGES AND DISADVANTAGES OF ESTIMATING THE BRITTLINESS OF C AND ALLOY STEELS BY ANALYSING THE FORM OF THE FRACTURE IN TENSILE TEST SAMPLES ARE DISCUSSED. ANY ESTIMATE OF THE ENERGY CAPACITY OF THE RUPTURE PROCESS BASED SOLELY ON THE EXTERNAL APPEARANCE OF THE FRACTURE IS VERY ROUGH, SINCE IT TAKES NO ACCOUNT OF MICROSCOPIC PLASTIC DEFORMATIONS.

UNCLASSIFIED

172 036  
 TITLE--THERMALLY IMPROVED STEEL 17G2SF FOR GAS PIPELINE PIPES OF LARGE  
 DIAMETER -U-  
 AUTHOR--LEYKIN, I.M., LITVINENKO, D.A., MATROSOV, YU.I., SITNOVA, N.Y.  
 COUNTRY OF INFO--USSR  
 SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (2) 9-12  
 DATE PUBLISHED-----70

UNCLASSIFIED

PROCESSING DATE--11SEP70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ALLOY DESIGNATION, LOW ALLOY STEEL, STEEL PIPE, SHEET METAL,  
 IMPACT STRENGTH, METAL CRACKING, CRACK PROPAGATION, METAL AGING,  
 STRAIN/(U)17G2SF LOW ALLOY STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
 PROXY REEL/FRAME--1988/1309

STEP NO--UR/0129/70/000/002/0009/0012

CIRC ACCESSION NO--AP0106086

UNCLASSIFIED

2/2 036

CIRC-ACCESSION NO--AP0106086

UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IMPROVED SHEET STEEL 17G2SF, FOLLOWING ANNEAL AT 500-50DEGREES, RESULTS IN LIMITS OF STRENGTH UP TO 80 KG-MM PRIME2, YIELD 65-70 KG-MM PRIME2 WITH HIGH PLASTICITY, IMPACT STRENGTH ALPHA SUBN PRIME NEGATIVE40 LARGER THAN OR EQUAL TO 10 KG,M-CM PRIME2, ALPHA SUBN PRIME NEGATIVE80 LARGER THAN OR EQUAL TO 8 KG,M-CM PRIME2, AND CRACK DEVELOPMENT FUNCTION SIMILAR TO 2.5 KG,M-CM PRIME2. RAISING THE ANNEALING TEMP. TO 600-30DEGREES INCREASES THE CRACK GROWTH FUNCTION FROM 3.5 KG,M-CM PRIME2 AND PRESERVES THE LIMITS OF STRENGTH LARGER THAN 70 KG-MM PRIME2. STEEL 17G2SF, IN THE THERMALLY IMPROVED CONDITION, HAS LITTLE SUSCEPTIBILITY TO STRAIN AGING. STEEL 17G2SF IS RECOMMENDED FOR THE PRODUCTION OF THERMALLY STRONG PIPES WITH A BREAKING POINT OF 70 KG-MM PRIME2 FOR USE AS GAS LINES IN NORTHERN REGIONS AS WELL AS A QUALITY HIGH STRENGTH STEEL WITH YIELD OF LARGER THAN 50-60 KG-MM PRIME2 FOR USE IN METAL CONSTRUCTION.

UNCLASSIFIED

USSR

UDC: 621.396.677

SITNYANSKIY, B. D.

"Active Antennas"

Sb. nauchn. tr. Vladimir. politekhn. in-t (Collected Scientific Works. Vladimir Polytechnical Institute), 1970, vyp. 9, pp 63-67 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6B19)

Translation: Direct use of active elements in antenna structures is considered. Six illustrations, bibliography of six titles. Resumé.

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- 17 -

USSR

UDC 578.083

ZHDANOV, V. M., Academician, Academy of Medical Sciences USSR, SITO, A. F., and  
DERKACH, Yu. S., Institute of Virology imeni D. I. Ivanovskiy, Academy of  
Sciences USSR, Moscow

"Identification of the Information RNA of Newcastle Disease Virus"

Moscow, Doklady Akademii Nauk SSSR, Vol 193, No 1, Jul/Aug 70, pp 211-214

Abstract: The specificity of virus-induced RNA was studied, using chicken fibroblasts which were incubated to determine the content of 18 S-RNA. A portion of this preparation was infected with Newcastle disease virus and subsequently treated to remove the virus and isolate the RNA in its pure form (18 S-RNA). The portions of 18 S-RNA obtained from noninfected and infected cultures were incubated in a protein-rich medium; 18 S-RNA from infected cultures induced protein synthesis more intensely than that from noninfected cultures. Subjecting both specimens to various scientific tests showed that the RNA isolated from the infected portion had a specific effect on the formation of its products, leading to the conclusion that it is the information RNA in the synthesis of ribonucleoproteins (S-antigen).

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USSR

UDC 576.858.75.098.396.332

ZHDANOV, V. M., BUKRINSKAYA, A. G., AND SITO, A. F., Institute of Virology  
imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow

"Characteristics of Sendai Virus RNA as Studied in Polyacrylamide Gels"

Moscow, Voprosy Virusologii, No 1, Jan/Feb 71, pp 77-81

Abstract: Viral and virus-induced RNA of Sendai virus (strain No 960) was studied by electrophoresis in polyacrylamide gels. Labeling with  $H^3$  - or  $C^{14}$  -uridine was used to evaluate the molecular weights of various RNA forms. Close to 10 RNA forms (molecular weights ranging from 170,000 to 12,000,000) were discovered in cells which had been infected by Sendai virus. Among these were a newly formed viral RNA, a replicative form, a replicative intermediate form as well as RNA (molecular weight of the order of 8,500,000) occupying an intermediate position between the viral and the replicative form. Several RNAs with molecular weights below that of viral RNA were found. It is pointed out that some of the gel fractions reported may consist of impure materials or of degradation products.

1/1

USSR

UDC: 8.74

SITOVENKO, V. A.

"On the Problem of Automating Counting and Distinguishing of the Images of Objects"

Avtomatika i vychisl. tekhn., 1972, No 6, pp 67-72 (from RZh-Kibernetika, No 5, May 73, abstract No 5V831 by the author)

Translation: The paper discusses some problems of counting singly connected figures and distinguishing singly connected and multiply connected figures for purposes of further analysis of a structure. Figures are classified as simple and complex, defined as a function of the complexity of the algorithms for distinguishing them. An algorithm is considered for distinguishing binary images of figures which requires four "memory" cells for its realization and utilizes scanning digital conversion of coordinates as the basic operation. It is pointed out that the given algorithm can be realized as a specialized device which operates in real time with a television pickup with standard broadcast scanning.

1/1



USSR

SITOVENKO, V., Junior Scientific Associate at the Institute of Electronics and Computer Technology, Academy of Sciences Latvian SSR

"Electronics in the Service of Mankind"

Riga, Sovetskaya Latvija, 17 Oct 71, p 2

Abstracts: Many of the mysteries of the microcosm have been and are being revealed with the help of the microscope and electronics. A television electron microscope with a semiautomatic measuring device attached, TASI-1, developed at the Institute of Electronics and Computer Technology, Academy of Sciences Latvian SSR, measures the dimensions of the microobjects under observation, projects these on a screen, and taps them for feeding into an electronic computer, AM-1, an automatic analyzer, was developed at the Institute of Biophysics, Academy of Sciences USSR, under the guidance of Doctor of Physicomathematical Sciences G. P. Ivanitskiy. The device, without human participation, calculates the number of visible micro-objects, measures them, and projects the results in cipher and graphic forms on a screen. The entire process is accomplished in a few seconds. Instruments for the automation of chromosome investigation permitting the detection of hereditary diseases and their control are being developed. Newly developed electronic instruments are

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USSR

SITOVENKO, V., Sovetskaya Latvya, 17 Oct 71, p 2

permitting a new approach to the problem of the prophylactic investigation of masses of the population with the object of detecting and treating even such dangerous diseases as malignant tumors in their early stages of development.

2/2

USSR

UDC 778.37

DUBOVIK, A. S., SITSINSKAYA, N. M., and KONAKOVA, M. B., Institute of Physics of the Earth

"The SFR-Mikro High-Speed Microscopic Photography Camera"

Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii, Vol 17, No 3, 1972, pp 174-177

Abstract: The Institute of Physics of the Earth has developed the SFR-Mikro camera on the basis of the series-produced Soviet SFR camera, by means of the introduction of minor changes in its optical system. The instrument can be used as a photographic recorder, with magnification of from 1 to 26X and as a time magnifier with a range of from 1 to 118X. The basic technical specifications are presented, among which is included the information that at a mirror rotation of 3000 to 7500 rpm the camera takes 25,000 to 625,000 frames per second using a two-row lens insert and high-speed lens insert, and 100,000 to 2,500,000 frames per second using a four-row lens insert; the frame diameter is 10 mm with a high-speed lens insert and a two-row lens insert, and it is 5 mm with a four-row lens insert. Optical diagrams of both variants are presented, as well as results of tests on a working model. 2 tables, 2 figures. 5 references.

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1/2 009

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--POLAROGRAPHIC CATALYTIC CURRENT OF HEPTAVALENT TECHNETIUM -U-

AUTHOR--SITSYN, V.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1290-3

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTROLYTIC REDUCTION, TECHNETIUM, CATALYSIS, CHEMICAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0944

STEP NO--UR/0078/70/015/005/1290/1293

CIRC ACCESSION NO--AP0137972

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137972

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

ABSTRACT. CATALYTIC POLAROGRAPHIC WAVES,

CAUSED BY CATALYTIC EVOLUTION OF II AND BY ANINTERACTION WITH THE

PRODUCTS OF ELECTROCHEM. REDUCED TE, ARE DISCUSSED. AT THE MAX.,

CATALYTIC CURRENT IS DIRECTLY PROPORTIONAL TO THE CONC. OF TE (VII)

AND, THEREFORE, CAN BE USED FOR ANAL. PURPOSES.

FACILITY: INST.

FIZ. KHIM., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 621.311.1

BOGUSH, I. A., Engineer, and I. P. SIUDA, Professor, Doctor of  
Technical Sciences

"Possibility of Remote Transmission of Reactive Power Over Lines  
Without Intermediate Connections"

Minsk, Izvestiya VUZ - Energetika, No. 5, 1971, pp 14-16

Abstract: The authors, associated with the Order of the Labor Red Banner Polytechnical Institute imeni S. Ordzhonikidze of Novocherkassk, consider some of the reactive power levels to be obtained from long-distance lines without intermediate connections. They assert that the technical possibilities and economic advantages of using reactive power have not yet been adequately studied. Finding an expression for the maximum output power at the receiving end of the line, they present curves for determining the parameters of the maximum power transmission at the line's point of origin. As an idea of how these parameters vary, they plot their curves as functions of the line length from data computed for a line of 500 kV with 3 x ACO-500 conductors. To illustrate their handling of the variation in transmitted power and voltage at the receiving end of the line, they use a line 500 km long, made of these conductors and carrying 500 kv. Curves of the voltage as a function of the power in this example are given.

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UDC 621.396.08

SIUKAYEV, A.V.

"Integrated Telemetry and the Error Thereof"

Uch. zap. Yugo-Osetin. gos. ped. in-t. Ser. fiz.-mat. i biol. N. (Scientific Notes of Yugo-Osetinskiy State Pedagogical Institute: Physiocomathematical and Biological Sciences Series), 1970, 15, pp 277-285 (From RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, Jan72, Abstract No JA283 by V.F.)

Translation: The article considers a new integrated telemetry receiver (ITR) with digital output. The ITR was developed and put into service at the telemechanics laboratory of Donbass-Energo (Donbass Power System) Regional Power Administration. The ITR operates with a TNCh-2 transmitting subassembly without any alterations. Total error of the receiver and indicator has been reduced from 3% to 0.6% as compared with the old model. 1 illustration. Bibliography with two titles.

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1/2 029  
 TITLE--ON MECHANISM OF ELECTRON SCATTERING IN INP -U- PROCESSING DATE--30OCT70  
 UNCLASSIFIED  
 AUTHOR--(02)--GALAVANOV, V.V., SIUKAEV, N.V.  
 COUNTRY OF INFO--USSR  
 SOURCE--PHYSICA STATUS SOLIDI, 1970, VOL 38, NR 2, PP 523-530  
 DATE PUBLISHED-----70

S

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRON SCATTERING, HALL MOBILITY, SINGLE CRYSTAL PROPERTY,  
 ELECTRON DENSITY, ELECTRON PHONON INTERACTION, IMPURITY LEVEL, HALL  
 CONSTANT, TEMPERATURE DEPENDENCE, ELECTRON MOBILITY, PHOSPHIDE, INDIUM  
 COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
 PROXY REEL/FRAME--1989/1009

STEP NO--GE/0030/70/038/002/0523/0530

CIRC ACCESSION NO--AP0107525

UNCLASSIFIED



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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0107525

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HALL MOBILITY OF ELECTRONS WAS STUDIED IN N-INP SINGLE CRYSTALS IN THE TEMPERATURE RANGE FROM 77 TO 1000DEGREEK AT ELECTRON CONCENTRATIONS  $N$  EQUALS 2 TIMES  $10^{15}$  TO 2 TIMES  $10^{17}$  CM PRIME NEGATIVE3 AND MOBILITIES  $\mu$  EQUALS 3 TIMES  $10^3$  TO 4.3 TIMES  $10^4$  CM PRIME2-VS. THE RESULTS AGREE WELL WITH CALCULATIONS FOR THE MIXED MECHANISM OF ELECTRON SCATTERING ON OPTICAL PHONONS,  $\mu_{SUB0}$  EQUALS  $(100 - \text{SQUARE ROOT OF } T) (\text{EXP } (500 - T) \text{ MINUS } 1)$ . AND ACOUSTIC PHONONS,  $\mu_{SUBA}$  EQUALS 6.53 TIMES  $10^7$  CM PRIME T PRIME NEGATIVE3 HALVES CM PRIME2-VS (THE DEFORMATION POTENTIAL IS ASSUMED TO BE EQUAL TO 21 EV). SCATTERING ON IONS AND NEUTRAL IMPURITY ATOMS IS IMPORTANT IN SPECIMENS WITH  $N$  GREATER THAN 5 TIMES  $10^{15}$  CM PRIME NEGATIVE3 AT LOW TEMPERATURES. THE CONCENTRATION OF NEUTRAL IMPURITY ATOMS DOES NOT EXCEED  $10^{14}$  CM PRIME NEGATIVE3 IN PURE SPECIMENS, WHILE IN SPECIMENS WITH  $N$  GREATER THAN  $10^{16}$  CM PRIME NEGATIVE3  $N_{SUBN}$  REACHES THE VALUE OF  $10^{16}$  CM PRIME NEGATIVE3 AND MORE. THE RESULTS OF THE HALL COEFFICIENT DEPENDENCE ON THE MAGNETIC FIELD STRENGTH (0.3 TO 20 KOE) AT 77 AND 300DEGREEK SHOW THAT THE HALL FACTOR  $A$  ( $R$  EQUALS  $A - NES$ ) APPROXIMATES  $L$  IN ALL THE SPECIMENS WITH THE EXCEPTION OF PURE SPECIMENS WHERE  $A$  APPROXIMATELY EQUAL TO 1.13 AT 77 DEGREEK. THESE RESULTS AGREE WELL WITH THE CONCLUSIONS DRAWN FROM THE ANALYSIS OF TEMPERATURE AND CONCENTRATION DEPENDENCES OF MOBILITY.

FACILITY: A. F. IOFFE PHYSICO TECHNICAL INSTITUTE. FACILITY: NORTH  
 ACADEMY OF SCIENCES OF THE USSR, LENINGRAD.  
 OSSETIA STATE UNIVERSITY, ORDZHONIKIDZE.

UNCLASSIFIED

USSR

UDC 621.382.2

IMENKOV, A. N., <sup>S</sup>SIUMAYEV, R. V., KHADIKOV, M. K., Leningrad  
Physico Technical Institute imeni A. F. Ioffe, Leningrad, Academy  
of Sciences USSR; North Ossetian State University imeni K. L.  
Khetagurov, Ordzhonikidze, Ministry of Education RSFSR

"Temperature Relations of the Electrical Properties of Tunnel  
p-n-Junctions in InP"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970,  
pp 886-891

Abstract: Electrical properties of tunnel p-n-junctions in InP  
between 77-340°K were investigated to determine current mechan-  
isms at various voltages and parameters of the semiconductor in  
the n- and p-region. In the presence of inverse voltages the  
current predominates as a result of the direct tunnel effect  
of the conduction band -- light hole band. The effective mass  
of the electrons in the light hole band was determined. With  
forward voltages in the negative resistance section the current  
is basically caused by the tunnel effect of the conduction band --  
impurity acceptor band. In the second ascending section of the  
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IMENKOV, A. N., et al., Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970, pp 886-891

voltampere characteristic, the current obviously arises from tunneling from the deep impurity level. Monocrystalline plates of p-InP alloyed with Zn, with a current carrier concentration basically of  $p = 7.8 \cdot 10^{18} \text{ cm}^{-3}$  and a mobility of  $\mu_p = 30 \text{ cm}^2/\text{v} \cdot \text{sec}$  at 295°K were used in the experiment.  $I_{\text{max}}/I_{\text{min}}$  depends much less on temperature than in the tunnel p-n-junctions made of GaAs and Ge. The characteristic voltages  $V_{\text{max}}$ ,  $V_{\text{min}}$  and  $V_r$  decrease with an increase in temperature;  $dV_{\text{max}}/dT$  is very large and larger than expected as a result of variation in depth of the Fermi levels.

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USSR

UDC 681.3

MALINOVSKIY, B. N., GULYAYEV, V. A., SIVACHENKO, E. M.

"Testing Arithmetic Operations in a Modulo 2. Digital Control Computer"

Kibernet. Tekhnika. Vyp. 6, [Cybernetic Equipment, No. 6--Collection of Works],  
Kiev, 1970, pp 4-13, (Translated from Referativnyy Zhurnal Kibernetika, No 5,  
1971, Abstract No. 5V612).

No Abstract.

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USSR

UDC 681.323(088.8)(47)

PALADIN, A. V., IVANOV, V. A., GULYAYEV, V. A., and SIVACHENKO, P. M.,  
(Institute of Cybernetics of the Ukrainian SSR Academy of Sciences)

"A Digital Control Automaton with Monitoring"

USSR Author's Certificate No 357563, Kl G 06 f 11/08, filed 22 Jun 70,  
published 13 Dec 72 (from RZh Avtomatika Telemekhanika i Yuchislitel'naya  
Tekhnika, No 10, Oct 73, Abstract No 10 B191 P)

Translation: The authors propose a digital control automaton with monitoring, containing memory circuits, connected with hybrid circuits and a flipflop output unit; logical circuits; and flipflops. The instrument is different in that the efficiency of monitoring is improved by dividing the flipflops of the output unit into small n-space groups, with the zero outputs of the output unit flipflops in each group connected to the inputs of the corresponding multi-input "AND" circuits.

The outputs of all the multi-input "AND" circuits are connected through inverters in pairs to the inputs of the dual input "AND" circuits, the outputs of which are connected to the inputs of "OR" circuits. The outputs of the "OR" circuits are connected to the input of the monitoring flipflop. The zero out-  
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PALADIN, A. V., et al., USSR Author's Certificate No 357563, Kl G 06 f 11/08,  
filed 22 Jun 70, published 13 Dec 72

puts of similar types of flipflops in the output unit of all groups are connected to the inputs of small n-input "AND" circuits, connected to the zero inputs of the recording flipflops, the outputs of which are connected to the inputs of a parity checking circuit.

The output of the parity checking circuit and the zero output of the monitoring flipflop are connected to the inputs of the output "AND" circuit connected to the zero input of the final flipflop. One of the outputs of the memory circuits is connected to the input of a correction flipflop, the outputs of which are connected to the inputs of the parity checking circuit. One illustration.

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USSR

UDC: None

MALINOVSKIY, B. N., SIVACHENKO, P. M., GULYAYEV, V. A., PALAGIN,  
A. V., and YAKOVLEV, Yu. S.

"Digital Computing Device"

Moscow, Otkrytiya. izobreteniya, promyshlennyye obraztsy, tovar-  
nyye znaki, No 9, 1973, p 164, No 368605

Abstract: To improve the reliability of the digital device de-  
scribed in this patent, it is supplied with two logic circuit  
units each consisting of two logic cells for summation, modulo two and two  
logic OR cells. The switching cores of the cells direct the signal to record-  
ing and memory addresses. Other circuits in the assembly are described in  
some detail.

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USSR

UDC 681.3

MALINOVSKIY, B. N., SIVACHENKO, P. M., BONDARENKO, L. T.

"Certain Problems in the Planning of a Basic Control Machine"

1-ya Nauchno-tekhn. Konferentsiya Spets. Konstrukt. Byuro Mat. Mashin i Sistem  
[First Scientific and Technical Conference of the Special Design Bureau for  
Mathematical Machines and Systems -- Collection of Works], Kiev, 1970, pp 108-  
119, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract  
No 6 V571 by V. Mikheyev).

Translation: Problems of the selection of basic technical parameters for digital control equipment are studied. Two possible approaches are discussed: using one series produced universal control machine and using individual specialized high-reliability digital devices. A method is suggested for determining the necessary number of logic cells for the creation of a processor combining arithmetic and logic operations in the memory device. The authors base themselves on the necessity of producing the maximum possible speed with little increase in equipment volume.



1/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--THYROID FUNCTION IN MENTAL STRESS -U-  
AUTHOR--(02)-POLISHCHUK, I.A., SIVACHENKO, T.P.  
COUNTRY OF INFO--USSR  
SOURCE--VKACHEBNOYE DELO, 1970, NR 6, PP 46-49  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--PSYCHOLOGIC STRESS, THYROID GLAND, FUNCTION, SCHIZOPHRENIA,  
PSYCHOSIS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3002/1749 STEP NO--UR/0475/70/000/006/0046/0049  
CIRC ACCESSION NO--AP0129117  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0129117

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS INDICATE THAT PATIENTS WITH PRESENILE AND SENILE PSYCHOSES, OLIGOPHRENS SHOW A REDUCTION OF THYROID FUNCTION. IN SCHIZOPHRENIA, CYCLOTOMY THE THYROID FUNCTION WAS MOSTLY WITHIN NORMAL LEVELS BUT IN SOME OF THEM ABNORMAL THYROID FUNCTION WAS SEEN (INCREASE OF DECREASE DEPENDING ON THE STAGE OF THE DISEASE). IT IS CONCLUDED THAT INVESTIGATION OF THYROID FUNCTION IN PSYCHOTIC DISEASES MAY BE OF VALUE IN BETTER UNDERSTANDING OF THE MAIN PATHOLOGICAL PROCESS AND OF HELP IN PLANNING ADEQUATE TREATMENT. FACILITY: KAFEDRA PSIKHIATRII I MEDITSINSKOY RADIOLOGII KIYEYSKOGO INSTITUTA USJVERSHENSTVOVANIYA VRACHEY.

UNCLASSIFIED

USSR

UDC 621.311.22

SIVACHEV, K. A., Candidate of Technical Sciences, Neymark, B. A., Engineer, and Candidate of Technical Sciences, All-Union Institute of Heat Engineering imeni F. Ye. Dzerzhinskiy, Moscow Branch of All-Union State Institute for the Planning of Electrical Equipment for Heat Engineering Installations

"Topping Plant SKR-100 for 300 kgsec/cm<sup>2</sup> and 550°C at Kashirsk State Regional Electric Power Plant"

Moscow, Teploenergetika, No 6, Jun 73, pp 8-12

Abstract: The modernization project of Kashirsk State Regional Electric Power Plant, by means of installation of the preconnected SKR-100 topping plant with the 100-Mw turbine R-100-300 to the acting part of medium compression of the Power Plant, was carried out by the Moscow Branch of All-Union State Institute for the Planning of Electrical Equipment for Heat Engineering Installations. The principle outfit of the topping plant, its heating schema particulars, and the selection of steel brands for parts working at supercritical steam parameters are described;

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