2/2 016 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0111501

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLY(ETHYLENE TEREPHTHALATE) (I) FILMS AND POLY(TETRAFLUOROETHYLENE) (II) FILMS WERE POLARIZED BY HEATING TO 110DEGREES AND 135DEGREES, RESP., IN POLARIZING FIELDS FOR SIMILAR TO 1 HR AND THEN BY ALLOWING THEM TO COOL IN THESE FIELDS TO ROOM TEMP. THE POLARIZATION, MEASURED BY THE RATIO OF THE INDUCED TO THE ORIGINAL CHARGE D., PERSISTED FOR LARGER THAN OR EQUAL TO 8 MONTHS AND LASTED LONGER FOR II THAN FOR I FILMS. THE POLARIZATION AND ITS DURABILITY INCREASED WITH THE FILM THICKNESS AND THE POLARIZING FIELD STRENGTH. WEAK HETEROCHARGING (SIMILAR TO 10 PRIME NEGATIVE10 COULOMB-CM PRIME2) WAS OBSD. ONLY IN THE CASE OF I FILMS AT SMALLER THAN OR EQUAL TO 50 KV-CM FIELD STRENGTHS. IN THE CASE OF II THE FILMS HAD ONLY CHARGES OF THE SAME SIGN. THE NEW EXPTL. AND THE LITERATURE DATA, GIVEN FOR OTHER ELECTRETS, ARE DISCUSSED IN TERMS OF THE SWAN GUBKIN THEORY.

UNCLASSIFIED

USSR

UDC 547.446+547.447+541.651

ZITSMANIS, A. Kh. and AREN, A. K., Riga Polytechnic Institute

"2-(γ-Amino-β-Hydroxypropyl- and β-Oxopropyl)-2-Substituted-1,3-Indandiones"

Riga, Izvestiya Akademii Nauk Latviiskoi SSR, Seriya Khimicheskaya, No 4, 1970, pp 462-466

Abstract: The Prevot reaction with 2-allyl-2-substituted 1,3-indandiones leads to the formation of 2-(γ-iodo-β-acetoxypropyl)-2substituted 1,3-indandiones, which react with amines to form 2-(γ-amino-β-hydroxypropyl)2--substituted 1,3-indandiones. The latter can be oxidized by chromic oxide to the corresponding 2-(γ-amino-β-oxopropyl)-2-substituted derivatives. The infrared spectra of these compounds are characterized by the absorption bands of β-dicarboxylic groups in the 1748-1700 cm^{-1} region and by the absorption bands of hydroxyl groups in the 3305-3210 cm^{-1} range. Acetylation of 2--(γ-amino-β-hydroxypropyl)-2-substituted 1,3-indandiones with p-toluoene-sulfochloride led to the corresponding tosylate. The secondary hydroxyl group in the β-hydroxypropyl derivatives is easily converted into a keto group.

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USSR UDC 547.446+547.447+541.651

ZITSMANIS, A. Kh. and AREN, A. K., Riga Polytechnic Institute

"2-(γ-Amino-β-Hydroxypropyl- and β-Oxopropyl)-2-Substituted-1,3-Indandiones"

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USSR

UDC 669.187.2

KUZNETSOV, L. K., Candidate of Technical Sciences, TULIN, N. A., Candidate of Technical Sciences, ZHAVORONKOV, K. P., Engineer, LABUNOVICH, O. A., Engineer, and ZINUROV, I. YU., Engineer

"Working Experience of a 100-ton Electric Furnace with Uprated Transformer and Improved Short Mains"

Moscow, Stal', No 3, Mar 73, pp 236-238

Abstract: Transformers of 29, 15 and 32 Mv-amp uprated nominal power, permitting temporary overloading up to 45 Mv-amp, were installed on two 100-ton electric furnaces at the Chelyabinsk Metallurgical Plant. Modernization of short mains ensured a more uniform power distribution by phases and decreased induction losses. The conditions of melting stainless and structural steels are discussed. For greater effectiveness, further modernization measures must be carried out. One figure, four bibliographic references.

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(12)

USSR UDC 533.92:621.039.61

ALEKSIN, V. F., BIRYUKOV, O. V., VISHNEVETSKIY, V. N., GEORGIYEVSKIY, A. V., GROT, Yu. I., DIKIY, A. G., ZISER, V. Ye., KITAYEVSKIY, L. KH., KONOTOP, P. I., POGOZHEV, D. P., PELETMINSKAYA, V. G., SERGEYEV, Yu. F., SMIRNOV, V. G., SUPRUNENKO, V. A., TOLOK, V. T., and TARAN, V. M.

"Development and Synthesis of the "Uragan" Stellarator and Investigation of Magnetic Surfaces of High Shear"

Kiev, Fizika Plasmy i Problemy Upravlyayemogo Termoyadernogo Sinteza (Plasma Physics and Problems in Controlled Thermonuclear Synthesis -- collection of works) "Naukova dumka," No 3, 1972, pp 73-112

Abstract: After an initial section devoted to a review of the literature on the magnetic surfaces of toroidal stellarators and the principles of stellarators in general, the authors analyze the "Uragan" specifically. In particular, this paper is concerned with the problems involved in choosing the parameters of the magnetic system for the racetrack stellarator to obtain magnetic surfaces with high shear. This last term is defined as the extent of crossing of the magnetic lines of force. The synthesis and adjustment of the magnetic system are also examined, and

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(13)

USSR

ALEKSIN, V. F., et al., Fizika Plasmy i Problemy Upravlyayemogo Termoyadernogo Sinteza, "Naukova dumka," No 3, 1972, pp 73-112

the results are given of an investigation into the instrument's magnetic surfaces. Computations worked out on an electronic computer for the design of the magnetic system are described, and differences between the "Uragan" and the "Sirius" stellarators are indicated. A comparative table of the parameters for various types of stellarator is given; it shows that the "Uragan" is one of the more powerful thermonuclear machines, with a high shear value for its substantial 10 koersted magnetic field intensity. This article is liberally illustrated with photographs and line drawings and has a bibliography of 51 titles.

2/2

USSR UDC: 621.396.6

FEL'DMAN, N. B., TYULYAYEVA, N. G., ZIVZAKH, R. M., KUZNETSOVA, G. A.

"Effect Which Grain Orientation has on the Parameters of TsTS-22 Piezoceramic"

Elektron. tekhnika. Nauch.-tekhn. sb. Radiokomponenty (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 5, pp 96-99 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V387)

Translation: The authors study the effect of TsTS-22 ceramic grain size on fundamental parameters and the temperature coefficient of the resonance frequency. It is shown that an increase in grain size entails an increase in the permittivity and piezoelectric activity of the ceramic.

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USSR UDC: 519.2:621.391

ZIYAKAYEV, R. G., SEMENOV, V. S.

"Statistical Approach to Signal Detection in Flaw Detection"

Tr. Sib. fiz.-tekhn. in-ta pri Tomsk. un-te (Works of the Siberian Physicotechnical Institute Affiliated With Tomsk University), 1970, vyp. 51, pp 202-208 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V296)

Translation: It is noted that the part of the statistical theory of communications which deals with signal detection is fully applicable to the purposes of radioscopy. For this reason, the article contains a brief exposition of the well known principles of signal detection theory. The class of topics covered is indicated by the section titles: "Average Risk and Plausibility Relation", "Optimum Receiver for a One-Dimensional Random Quantity", "Optimum Receiver for a Signal Given as a Function of Time", "Optimum Receiver for the Case of Nonadditive Interference". Ya. Kogan.

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USSR UDC 621.351

ROMANOV, V. V., ZIYATLY, V. D., AGAGUSEYNOV, K. YU.

"Internal Resistance of Chemical Current Sources"

Uch. zap. Azerb. in-t nefti i khimii (Scientific Reports of the Azerbaydzhan Petroleum and Chemistry Institute), 1971, series 9, No 6, pp 89-92 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 6L223)

Translation: As a result of analyzing the laws of change in the internal resistance of chemical current sources it was established that the internal resistances determined for any current strength are unsuitable for calculations for other values of the discharge current. The measurements show that different chemical current sources have a different nature of internal resistance with respect to alternating currents. Along with the active component, the internal resistance always contains a reactive component. The total internal resistance as a function of frequency can have a capacitive-inductive, purely inductive or purely capacitive nature.

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USSR

ABIDOV, A. A., Professor, ZAKIROV, N. A., Candidate of Medical Sciences and ZIYAUTDINOVA, S. Z., Laboratory of Genetics of Vaccinal Strains, Tashkent Scientific Research Institute of Vaccines and Sera

"Characteristics of Auxotrophic Mutants of Enteropathogenic E. coli Serotypes"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 2, 1971, pp 62-65

Abstract: Autotrophic mutants were isolated from three strains of pathogenic serotypes of E. coli -0111:B4:H2, o55:B5:H6, and 026:B6:H11 - under the influence of ultraviolet radiation or N-methyl-N'-nitro-N-nitrosoguanidine (the more potent mutagen). The various amino acid requirements for growth of the mutants on a minimum medium were identified and tabulated. None of the mutants differed from the original strains in morphological, cultural, or biochemical properties. Study of the mutants in the agglutination reaction with homologous coli sera showed that most of the mutants retained the serological properties of the original strains. A few lost them and in some the serological properties were intensified, especially those induced by N-nitrosoguanidine.

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Acc. Nr: AP0051938 Ref. Code: UR0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 2, pp 110-112

ISOLATION OF AUXOTROPHIC MUTANTS FROM THE CULTURES OF PATHOGENIC SEROTYPE O111 : B4 : H2 OF B. COLI TREATED WITH N-METHYL-N'-NITRO-N-NITROSOGUANIDIN

N. A. Zakirov, S. Z. Ziyautdinova

Institute of Vaccines and Sera, Ministry of Health of the USSR, Tashkent

The authors isolated 55 auxotrophic mutants from the cultures of pathogenic serotype O111 : B4 : H2 of E. coli treated with N-methyl-N'-nitro-N-nitrosoguanidin. Investigation of the food requirements of the mutants isolated indicates that 27 of them are mono- and 13 are polyauxotrophic. In 15 mutants, requirements for individual food factors failed to be established. In some mutants, biochemical characteristics (capability to fermentate maltose) also changed compared to the initial strain. Investigation of serological characteristics allowed to establish that one group of mutants retained some antigens of the initial strain while the other completely lost them. Thus, nitrosoguanidin exerts considerable mutagenic action on bacteria of pathogenic serotype O111 : B4 : H2 of B. coli, especially on their antigenic structure.

REEL/FRAME
19820421

USSR

UDC 632.95

ZIYAYEV, A. A., OTROSHCHENKO, O. S., SADYKOV, A. S., TOLKACHEVA, G. A., AKBAROV, KH. A., and KHODZHAYEVA, T. A.

"A Method of Making β-β'-Di-[piperidyl-2- (or 1-Methylpiperidyl-2)] Disodium- γ, γ'-Dihydrodipyridyl Carbamate"

USSR Author's Certificate No 343975, filed 13 Jul 70, published 14 Aug 72 (from RZh-Khimiya, No 10, May 73, Abstract No 10N614P by N. Y. Lebedeva)

Translation: β, β'-Di-(piperidyl-2)-disodium- γ, γ'-dihydrodipyridyl carbamate (I) and β, β'-di-(1-methylpiperidyl-2)-disodium- γ, γ'-dihydrodipyridyl carbamate (II) are synthesized by reacting anabasine (III) or N-methylanabasine (IV) respectively with dispersed metallic sodium in an organic solvent in a molecular nitrogen atmosphere at 50-60°C. Example: 50 g of III or IV are added to a suspension of 10 g of Na in PhMe, the reaction mass is agitated in a stream of N_2 at 50-60°C until the sodium dissolves, and treated with CO_2. The resultant mass is evaporated, the residue is washed with n-hexane and filtered giving compound I or II with a yield of 90%, the melting point of I is above 400°C, molecular weight 456; the melting point of II is above 400°C, molecular weight 486. The values of R_f are given for I and II as well as IR-spectral data. I and II can be used as herbicides, and

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USSR

ZIYAYEV, A. A., et al., USSR Author's Certificate No 343975, filed 13 Jul 70, published 14 Aug 72

also in synthesizing mono- and polyesters containing physiologically active fragments in the macromolecule.

USSR

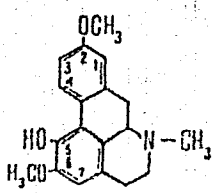
UDC: 547.944/945

ZIYAYEV, R., ABDUSAMATOV, A., YUNUSOV, S. Yu., "Order of the Red Banner of Labor" Institute of the Chemistry of Plant Materials, Uzbek SSR Academy of Sciences

"Lirinin -- a new Alkaloid From Liriodendron Tulipifera"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 1, 1973, pp 67 72

Abstract: A new alkaloid which the authors have named "lirinin" was isolated from the alkaloid sum (chloroform extraction) of leaves of the tulip tree (Liriodendron tulipifera) with empirical formula $C_{19}H_{21}O_2N$, melting point 152-154°C (alcohol), $[\alpha]_D^{22}$ -- 55°C (c 0.089, chloroform). Analysis of UV, IR, NMR and mass spectra shows that lirinin has the structure of 5-hydroxy-2,6-dimethoxyaporphine



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USSR

UDC 547.944/945

ZIYAYEV, R., ABDUSAMATOV, A., YUNUSOV, S. YU., Order of the Red Banner of Labor Institute of the Chemistry of Plant Substances of the Uzbek SSR Academy of Sciences

"Alkaloids of Verbascum Songoricum"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 6, 1971, pp 853-854

Abstract: A study was made of Verbascum songoricum Shrenk. (Scrophulariaceae family) gathered at Chimgan of Tashkent Oblast during various periods of vegetation and each organ separately. The total alkaloids in percent by weight of the dry plant are presented for each of the organs. Ultraviolet, infrared and mass spectrographic data show that anabasin, plantagonin, acetamide and a base with a melting point of 195-196° were isolated. This is the first time anabasin was isolated from Scrophulariaceae.

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USSR

ZIYAYEVA, Z. T.

"The Problem of Optimization in Estimation of Probability Density"

Izv. AN UzSSR. Ser. Fiz.-Mat. N. [News of Academy of Sciences, UzSSR, Physics-Mathematical Sciences Series], 1973, No 1, pp 30-35 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V200, by the author).

Translation: Suppose $x_1, x_2, \ldots, x_n$ is a stable Markov process, the stable and initial distributions coincide; f(x) is the initial probability density of values of the process, defined relative to the Lebesgue measure. For estimate of f(x), a study is made of the form

$$f_n(x) = \frac{1}{h(n)} \int_{-\infty}^{\infty} K\left(\frac{x-y}{h(n)}\right) dF_n(x) =$$

$$= \frac{1}{nh(n)} \sum_{j=1}^{n} K\left(\frac{x-x_j}{h(n)}\right).$$

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USSR UDC 615.616.24-003.656.6

FEYGIN, B. G., KHAMITOVA, V. Z., ZIZANGIROVA, L. A.

"Problem of the Effect of Titanium Admixture in Quartz on the Development of Silicosis"

Tr. NII krayev. patol. KazSSR (Works of the Scientific Research Institute of Marginal Pathology of the Kazakh SSR), 1972, No 23, pp 147-151 (from RZh--Farmakologiya, Khimioterapevticheskiye Sredstva. Toksikologiya, No 3, Mar 73, Abstract No 3.54.893)

Translation: A dose of 0.5 ml of suspension containing 25 ml of Ti and 25 mg of quartz (first group) or 30 mg of quartz (second group) was administered daily intratracheally to male rats for 12 months. After one month, fine-focal inflammatory alterations of the interstitial type with round-celled and histocytic infiltration of the alveolar septa were observed in the lungs of the animals of the first group. After six months the inflammatory alterations in the lungs were accompanied by the development of large centers of cellular proliferation, nodular and perivascular cellular accumulations. After 9 and 12 months, attenuation of the inflammatory process was noted with normalization of the histologic picture

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FEYCIN, B. G., et al., Tr. NII krayev. patol. KazSSR, 1972, No 23, pp 147-151

of the lungs. In the animals of the second group, the development of the typical silicosis picture was observed: infiltrative-proliferative part in the septum inter-alveolarium, then individual silicotic nodes of the lymphocytes, epithelial cells, compressed vessels and bronchi, then generalization of the process with partial deterioration of the lung tissue. It is considered that Ti does not intensify the silicosogenic properties of Si.

USSR

UDC 627.824.33:624.042.6.001.24

LOMIZE, G. M., Doctor of Technical Sciences, IVASHCHENKO, I. N., Candidate of Technical Sciences, ISAKHANOV, YE. A., ZKHAROV, M. N., Engineers

"The Deformability, Strength and Creep of Clayey Soils in Cores of High Head Water Dams"

Moscow, Gidrotekhnicheskoye Stroitel'stvo, No 11, Nov 70, pp 26-31

Abstract: The article gives a general formulation of the question of calculation of the cores of high head water dams and the problem of research on the initial equations of the stress-deformed state in the regions before and after the limit. It is shown that the stress-deformed state must be evaluated for various load trajectories, and that the influence of creep processes in various load regimes within time must also be studied. Results of experimental study of the deformability of clayey soils under conditions of simple and complex (according to Il'yushin) loading with a stationary position of the axis of the main stresses and

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USSR

LOMIZE, G. M., Gidrotekhnicheskoye Stroitel'stvo, No 11, Nov 70, pp 26-31

with a turn of these axes are set forth, as well as results of research on creep in two loading regimes in time: at a constant rate of deformation or at a constant stress velocity. 14 figures, 3 tables, 2 footnote bibliographic references, 7 bibliographic entries.

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1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EFFECT OF SULFHYDRYL GROUPS AND DISULFIDE BONDS ON THE QUALITY OF THE FLOUR FROM DIFFERENT STRAINS OF WHEAT -U-
AUTHOR-(02)-ZKAHAROVA, S.A., KAZAKOV, YE.D.

CCUNTRY OF INFO--USSR

SOURCE--PRIKL. BIOKHIM. MIKROBIOL. 1970, 6(2), 127-32

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--WHEAT, BPROCESSED PLANT PRODUCT, PROTEIN, FOOD TECHNOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/1997 STEP NO--UR/0411/70/006/002/0127/0132

CIRC ACCESSION NO--AP0127392

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127392

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FLOUR ISOLATED FROM STRONG (BEZOSTAYA 1) AND WEAK (ALBIDUM 43) WHEAT KERNELS IN 1967 WAS TREATED BY VARIOUS HYDROTHERMAL PROCEDURES (HEATING, COOLING, AND STEAM). THE MIXING ABILITY OF FLOUR FROM STRONG WHEAT GRAINS (THE ABILITY TO INCREASE BAKING STRAIN OF THE FLOUR FROM WEAK WHEAT) DEPENDED DIRECTLY ON THE RATIO OF SS TO SH GROUPS AND NOT ON THE TOTAL AMT. OF THESE GROUPS IN THE FLOUR FROM STRONG WHEAT STRAINS. DIRECT HYDROTHERMAL TREATMENT OF THE KERNELS BEFORE MILLING INCREASED THE BAKING VALUE OF THE FLOUR IN BOTH TYPES OF WHEAT. NO ADDITIVE PROPERTIES WERE OBSD. DURING MIXING OF FLOUR FROM BOTH WEAK AND STRONG WHEAT KERNELS. THE HYDRATION CAPACITY OF GLUTEN FROM ALBIDUM 43 WHEAT FLOUR INCREASED DURING HYDROTHERMAL TREATMENT. GLUTEN ELASTICITY MEASURED ON THE PEK 3A SCALE DECREASED IN ALL WHEAT STRAINS DURING HYDROTHERMIC TREATMENT.

FACILITY: MOSK. TEKHNOL. INST. FOOD IND., MOSCOW, USSR.

UNCLASSIFIED

USSR UDC 621.311.25:621.362:538.41.001.2

KUGUSHEV, N. M., ZLATIN, D. A., PETROV, Yu. A., MAKIN, S. A.

"Design and Construction of Electric Power Plants With Magnetohydrodynamic Generators"

Tr. Vses. proyektn. in-ta "Teploelektroproyekt" (Works of the All-Union State Institute for the Design and Planning of Electrical Equipment for Heat Engineering Installations), 1970, vyp. 9, pp 95-110 (from RZh-Elektrotekhnika i energetika, No 9, Sep 70, Abstract No 9A119)

Translation: A brief exposition is given of the characteristics of practical utilization of the MHD method of energy conversion. Possible technological diagrams of electric power plants with MHD generators are described as well as methods for further developments along these lines. Consideration is given to the planning of new nonstandard equipment, a brief description of the characteristics of systems for control, automation and protection of equipment, as well as basic solutions for putting together the main building. Four illustrations, bibliography of four titles.

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1/3 011 UNCLASSIFIED PROCESSING DATE--020CT70

TITLE--DENITRATION OF SULFURIC ACID IN THE PRODUCTION OF AMMONIUM SULFATE -U-

AUTHOR-(05)-ZLATIN, L.YE., TRONDINA, G.I., ARTAMONOV, YU.P., SHETEYN, A.L., YUKHNOVETS, YU.D.

COUNTRY OF INFO--USSR

SOURCE--KOKS KHIM. 1970. (3), 45-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--INDUSTRIAL PRODUCTION, AMMONIUM SULFATE, NITROBENZENE, COKE, GAS, UREA, SULFURIC ACID, DENITRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1386 STEP NO--UR/0068/70/000/003/0045/0047

CIRC ACCESSION NO--AP0109455

UNCLASSIFIED

2/3 011 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0109455

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WHEN THE SPENT H SUB2 SO SUB4, TAKEN FROM PHNO SUB2 PRODUCTION FOR (NH SUB4) SUB2 SO SUB4 MANUF. IN COKE-CHEM. PLANTS, IS CONTAMINATED WITH N OXIDES, IT CONTAMINATES THE COKE GAS AND THE USE OF THIS GAS FOR NH SUB3 SYNTHESIS IS PREVENTED. THE N OXIDES IN THE COKE GAS FOR THIS SYNTHESIS SHOULD BE SMALLER THAN 8 CM PRIME3-M PRIME3, AND THE GAS CANNOT BE USED IF IT CONTAINS LARGER THAN OR EQUAL TO 10-12 CM PRIME 3 OXIDES-M PRIME3. LAB. DENITRATION OF THE ACID WITH UREA REDUCED THE N OXIDES HARPLY BY THE REACTION: 2HNO SUB2 PLUS (NH SUB2) SUB2 CO YIELDS 3H SUB2 O PLUS CO SUB2 PLUS 2N SUB2. IN PHNO SUB2 PLANTS, THIS REACTION WAS SLOW. SINCE THE SPENT H SUB2 SO SUB4, OF 72PERCENT STRENGTH, CONTAINED OTHER KNOWN COMPDS., SYNTHETIC SOLNS. WERE PREPD. TO DET. THE EFFECT OF EACH OF THESE ON DENITRATION. DURING A 17 HR PERIOD AND IN 72.4-2.6PERCENT H SUB2 SO SUB4, THE DENITRATION WAS SATISFACTORY IN THE PRESENCE OF THE H SUB2 SO SUB4, HNO SUB3, AND THE N OXIDES. THE PHNO SUB2 CONTENT WAS 0.3PERCENT OF THE H SUB2 SO SUB4 AND THE PROCESS WAS COMPLETE EVEN AT HIGHER HNO SUB3 AND THE H SUB2 SO SUB4 CONCNS. IN THE PHNO SUB2 PLANT, THE SPENT H SUB2 SO SUB4 AND THE UREA WERE INTRODUCED SIMULTANEOUSLY AND COMPRESSED AIR WAS USED FOR MIXING. THE FORCED AIR ALSO REMOVED THE N FORMED FROM THE H SUB2 SO SUB4 TREATMENT, THUS ACCELERATING THE REACTION. SULFATE SEPN. FROM THE DENITRATED ACID DID NOT INCREASE THE N OXIDES IN THE COKE GAS. THE UREA WHICH DID NOT REACT WITH THE OXIDES BUT ENTERED THE MOTHER LIQUOR WITH THE ACID WAS BENEFICIAL, SINCE IT IMPROVED THE PARTICLE SIZE COMPN. OF THE (NH SUB4) SUB2 SO SUB4.

UNCLASSIFIED

3/3 011 UNCLASSIFIED PROCESSING DATE--02OCT70
CIRC ACCESSION NO--AP0109455
ABSTRACT/EXTRACT--FACILITY: KEMEROY, KOKSOKHIM. ZAVOD., KEMEROVO, USSR.

UNCLASSIFIED 89

USSR UDC 612.826.4

ZLATIN, R. S.

"Physiological Characteristics of Chemoreceptors of the Posterior Hypothalamus"

Kiev, Fiziologichniy Zhurnal, No 5, 1973, pp 586-592

Translation of abstract: Changes in electrical activity of the motor cortex, motor response threshold, and respiratory rate were studied in chronic experiments on five rabbits with electrostimulation of structures of the posterior hypothalamus against a background of preliminary subcutaneous injection of chlorpromazine (5 mg/kg) or scopolamine (0.5 mg/kg) and in experiments on 12 rabbits with injection of carbachol or norepinephrine (100 µg) into structures of the posterior hypothalamus through chronically implanted chemitrodes (as modified by the author). The ascending influences of the posterior hypothalamus on the electrical activity of the motor cortex were found to be determined mainly by cholinergic mechanisms, while the influences on the motor component of the orienting reflex are chiefly adrenergic in nature. The author draws the general conclusion that the structures of the posterior hypothalamus are heterogeneous with respect to function and chemoreception and that this heterogeneity is manifested in both ascending and descending influences.
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USSR

UDC 612.8.015.1

MAKARCHENKO, A. F., ROYTRUB, B. A., ZLATIN, R. S., GENIS, Ye. D., and KOSTYUK, O. I., Institute of Physiology imeni A. A. Bogomolets, Academy of Sciences Ukrainian SSR, Kiev

"Acetylcholinesterase Activity in Hypothalamic and Cortical Structures During the Action of Pharmacological Agents"

Kiev, Neyrofiziologiya, Vol 5, No 1, Jan/Feb 73, pp 47-53

Abstract: Acetylcholinesterase (AChE) activity in rat brain was recorded continuously by the automated electrometric method. In intact rats aged 1 month, AChE activity is highest in the sensory and motor cortex, while various lower levels are assumed in the posterior hypothalamus, anterior hypothalamus, and hippocampus. With advancing age (6, 12, and 24 months), the center of AChE activity is shifted to the posterior hypothalamus, and there is a general decrease in AChE activity per gram of tissue. Adrenaline, injected subcutaneously in a dose of 300 mcg/kg, redistributes AChE activity within 15 min, shifting the maximum to the anterior hypothalamus. An identical dose of chloral hydrate reduces AChE activity and equalizes it in all these structures. The histochemical method, though good for determining the location of AChE in cell organelles, is unable to detect small variations in AChE activity. Since

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MAKARCHENKO, A. F., et al, Neyrofiziologiya, Vol 5, No 1, Jan/Feb 73, pp 47-53

AChE activity reflects the physiological activity of the given structure, the electrometric method is recommended for determinations of the functional state of nervous tissues.

2/2

USSR UDC 612.826+612.822.3

ZLATIN, R. S. and KULIKOV, M. A., Department of the Physiology of the Diencephalon and Laboratory of Statistical Analysis and of Modeling Physiological Processes, Institute of Physiology imeni A. A. Bogomolets, Academy of Sciences Ukrainian SSR, Kiev

"Changes in Electrical Activity of Posterior Hypothalamus and Motor Cortex in the Presence of Various Pharmacological Agents"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 59, No 1, 1973, pp 16-27

Abstract: In rabbits, certain neurotropic drugs induce significant changes in the power of the electromagnetic radiation of the brain. Namely, chloral hydrate (60-100 mg/kg, rectally) reduces beta waves in the posterior hypothalamus and intensifies delta waves and reduces alpha waves in the motor cortex. Aminazine (5 mg/kg, subcutaneously) intensifies delta waves and reduces beta waves in the motor cortex. Scopolamine (0.4-0.5 mg/kg, subcutaneously) reduces beta waves and intensifies delta waves in the motor cortex. And carbacholine (0.03 mg/kg, subcutaneously) reduces delta waves and intensifies alpha waves in the posterior hypothalamus, and reduces delta and gamma waves and intensifies beta waves in the motor cortex. However, as far as the frequency spectra are concerned, the shifts induced by any one compound are much smaller and proceed in the same

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ZLATIN, R. S. and KULIKOV, M. A., Fiziologicheskiy Zhurnal SSR imeni I. M. Sechenov, Vol 59, No 1, 1973, pp 16-27

direction in both areas. It is therefore concluded that the pharmacological agents applied do not disrupt the functional correlation existing between the posterior hypothalamus and the motor cortex.

USSR

UDC 612.826.014.423:615.473.2

ZLATIN, R. S., Department of Physiology of the Diencephalon, Institute of Physiology imeni O. O. Bogomolets, Academy of Sciences, Ukrainian SSR, Kiev

"A New Modification of Cannula Electrodes (Chemitrodes) for Implantation Into the Subcortex of the Rabbit Brain"

Kiev, Fiziologicheskiy Zhurnal, No 5, 1972, pp 698-700

Abstract: A new modification of a "chemitrode" based on the "needle to needle" principle is proposed. The chemitrode consists of a guide cannula and an injection cannula contained in a Plexiglas joint. The two cannulas form parts of a coaxial electrode with the electrodes 0.5 mm apart. The device can be used in a chronic experiment to supply the brain structure under study with a microquantity of some pharmacologic agent in a minute volume of solution and at the same time derive the electrical activity of the structure in bipolar fashion.

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USSR UDC 611.8:534.612.1

ALEKSANDROV, L. N., DYSKIN, YE. A., ZLATISKAYA, N. N., KONKIN, I. F., DEV, I. D., TIKHONOVA, L. P., FILATOV, A. I., and SHADRINA, N. S., Department of Normal Anatomy, Military-Medical Academy imeni S. M. Kirov

"Condition of Some Nerve Structures After Exposure to Powerful Shock Waves"

Leningrad, Arkhiv Anatomii, Gistologii i Imbriologii, No 10, 1971, pp 12-20

Abstract: Cats were exposed to a powerful shock wave with an excess pressure of 0.1 to 10 kg/cm^2 lasting about 0.1 sec. The effect was not lethal and after the experiment the animals were externally indistinguishable from normal cats. They were sacrificed at various times during the 30 days following exposure to the shock wave and the nerves in the walls of the vena cava, digestive organs, dura and pia mater of the brain and spinal cord, pancreas, and thyroid were histologically examined. The medullated fibers and preterminal portions of the receptors underwent the most distinct changes. The axial cylinders were swollen and the contours uneven. Along the course of the fibers were solitary or multiple varicosities. These reactive changes were largely reversible. However, some of the nerve elements proved to be quite resistant to the shock wave, notably the nonmedullated fibers, some afferent structures (e.g., diffuse receptors), and encapsulated cell bodies.

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1/2 038 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--THE VIBRATIONAL SPECTRUM, THE OPTICAL CONSTANTS, AND THE IONICITY OF THE BOND OF CDGEAS SUB2 IN CRYSTAL AND AMORPHOUS PHASES BY IR
AUTHOR-(04)-ZLATKIN, L.B., MARKOV, YU.F., STEKHANOV, A.I., SHUR, M.S.

COUNTRY OF INFO--USSR

SOURCE--I. PHYS. CHEM. SOLIDS 1970, 31(3), 567-71

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--VIBRATION SPECTRUM, OPTIC PROPERTY, IR SPECTRUM, CHEMICAL BONDING, CRYSTAL STRUCTURE, CADMIUM COMPOUND, GERMANIUM COMPOUND, ARSENIC COMPOUND, CRYSTAL LATTICE STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1396 STEP NO--US/0000/70/031/003/0567/0571

CIRC ACCESSION NO--AP0107869
UNCLASSIFIED

2/2 038 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0107869

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IR REFLECTIVITY IS INVESTIGATED IN THE FREQUENCY REGION FROM 2 TO 75 MU FOR T EQUALS 295DEGREESK. CHANGES OF THE VIBRATIONAL SPECTRUM TAKE PLACE IN THE REGION OF THE LATTICE REFLECTION WHILE CLEAR CORRELATION EXISTS IN THE REGIONS OF SMALL (SMALLER THAN 25 MU) AND LARGE (GREATER THAN 60 MU) WAVELENGTHS BETWEEN THE OPTICAL CONSTS. OF CDGEAS SUB2 IN THE CRYSTAL AND AMORPHOUS PHASES. THE DISPERSION OF N AND THE DIELEC. CONST. WERE CALCD. BY KRAMERS KRONIG AND DISPERSION ANAL. AND THE VIBRATIONAL FREQUENCIES DETD. THE QUAL. AND QUANT. PARAMETERS OF THE IONICITY OF THE BOND HAVE BEEN ESTD. THE CHEM. BOND IN CDGEAS SUB2 IS IONIC COVALENT WITH LARGER DEGREE OF COVALENT PART. FACILITY: A. F. IOFFE PHYS. TECH. INST., LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 669.15-194.2:620.171:519.272

SHEVTSOV, A. L., and ZLATKIN, L. Z., Omsk

"Effect of Chemical Composition on the Mechanical Properties of 32Kh06L Steel"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 3, May-Jun 71, pp 143-147

Abstract: The effect of the chemical composition of 32Kh06L steel (GOST 7823-65) on its mechanical properties was investigated on club-shaped samples (GOST 977-58) which were improved by tempering in water from 900°±20°C). The impact strength was determined on 10 x 10-mm notched samples. A correlation dependence between the indices of mechanical properties and chemical composition was established on the basis of mathematical processing of data on 500 industrial melts. The results obtained (regression equations, correlation coefficients, authenticity of the dependence) show that tensile strength, yield point, impact strength, and hardness have an authentic correlation dependence on the majority of the chemical elements of the 32Kh06L steel. An analysis of the regression equations and dependencies of mechanical properties on C, Mn, Cr, Ni, and P shows that chemical elements affect differently -- in terms of intensity -- the mechanical properties of steels. Carbon has the greatest influence on mechanical properties, followed by Mn and Cr, and then hydrogen. Equations of multiple correlation are also derived, which make it possible to obtain for actual cases the optimal mechanical characteristics.

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USSR UDC: 518.5:681.3.06

ZLATKIS, V. M., KUCHGANOV, V. N.

"On a Method of Precognition of Complex Images"

V sb. Avtomat. ustroystva ucheta i kontrolya (Automatic Devices for Computation and Checking--collection of works), vyp. 6, Izhevsk, 1970, pp 89-101 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V782)

Translation: This paper deals with one method of preprocessing and rough recognition of complex images. The essence of the method is illustrated by analyzing portraits of people. The problem is to indicate on the portrait the region of the eyebrows, eyes, nose and mouth, and to find certain characteristic points on these features. Knowledge of the location of such points enables speeding up the following stage -- final recognition and improvement of accuracy. An algorithm for isolating a skeleton silhouette is described in detail. V. Mikheyev.

USSR

UDC 51:155.001.57:681.3.06

ZLATKIS, V. M.

"Construction of Description of Halftone Images"

Avtomat. Ustroystva Ucheta I Kontrolya, [Automatic Accounting and Control Devices--Collection of Works], No 6, Izhevsk, 1970, pp 175-185, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V679 by V. Mikheyev).

Translation: One possible method of using structural methods for construction of the description of halftone images is presented. In the first stage, the problem is stated of reducing the redundancy of the initial description and related separation and input of contour elements of halftone images to a digital computer. A method is suggested for separating a contour by digital computer, the corresponding program is described and the sequence of its performance on the Minsk-1 computer is presented. In the second stage, a convenient and economical method of describing contour images is presented, consisting in approximation of the contour by sectors of identical length and representation of the contour as a graph, the lines of which correspond to these sectors. In order to eliminate redundancy in the graph, chains are separated, corresponding to sectors of constant curvature of the contour image. Relationships between individual contours of the image of the object are taken into consideration.

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USSR

UDC51:155.001.57:681.3.06

ZLATKIS, V. M., KAZAKOV, V. S., KUCHUGANOV, V. N., LOSEV, I. R., MOCHENOV, S. V.

"Image Input-Output Device for Minsk-1 Computer"

Avtomat. Ustroystva Ucheta I Kontrolya, [Automatic Accounting and Control Devices--Collection of Works], No 6, Izhevsk, 1970, pp 164-174, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V682).

Translation: Problems are studied of creating and operating image input-output devices for small computers. The device is based on the FTA-PM phototelegraph apparatus with slight modifications and practically no modifications to the Minsk-1 computer. The input of an image is performed from a sheet 220 mm in width with unlimited length, and the output in onto electrochemical paper. The resolving capacity of the apparatus is 3-4 lines per mm, the operating speed is 120 lines per minute. Operation is performed at a carrier frequency of 1,900 Hz. Input and output of the image is performed by sectors 64 x 7 mm or 128 x 14 mm in size with resolution into 250 x 31 elements, with brightness quantized to [single-digit number eligible--Er] levels. A block diagram and functional diagram of the device are presented and the operation of the individual units is described. It is noted that this device has been used for successful operation of algorithms for recognition of printed characteristics, algorithms for classification of complex images according to their skeletal outline have been studied, a method of probabilistic coding of halftone images has been tested and experiments have been performed on the separation of con-

USSR UDC51:155.001.57:681.3.06

ZLATKIS, V. M., KAZAKOV, V. S., KUCHUGANOV, V. N., LOSEV, I. R., MOCHENOV, S. V.,
Avtomat. Ustroystva Ucheta I Kontrolya, No 6, Izhevsk, 1970, pp 164-174.

tours of images from photographic portraits of people.

1/2 015 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--MECHANISM OF THE ACTION OF SALTS DURING THE SYNTHESIS OF AROMATIC POLYAMIDES IN AMIDE SALT SYSTEMS -U-

AUTHOR-(04)-FEDOROV, A.A., SOKOLOV, L.B., ZLATOGORSKIY, N.L., GRECHISHKIN, V.S.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN. SER. B 1970, 12(3), 205-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, POLYAMIDE COMPOUND, MOLECULAR WEIGHT, NMR, LITHIUM COMPOUND, MAGNESIUM CHLORIDE, ALUMINUM CHLORIDE, ZINC CHLORIDE, STRONTIUM CHLORIDE, CADMIUM CHLORIDE, ELECTRONEGATIVITY, AMIDE, HYDROGEN BONDING, PROTON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0316 STEP NO--UR/0460/70/012/003/0205/0208

CIRC ACCESSION NO--AP0111510

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111510

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTERACTIONS OF THE METAL SALTS LICL, LIBR, LII, LINO SUB3, LISCN, MGCL SUB2, ALCL SUB3, SRCL SUB2, ZNCL SUB2, AND COCL SUB2 AND HCL WITH BENZANILIDE (I) IN ACNME SUB2 SOLNS. AND THE INFLUENCE OF THE SALTS ON THE MOL. WT. OF POLY(P,PHENYLENETEREPHTHALAMIDE) (II) SYNTHESIZED IN ACNME SUB2 SOLNS. WERE STUDIED BY A HIGH RESOLUTION NMR METHOD. CHEM. SHIFT INCREMENTS OF I AMIDE PROTONS DECREASED IN THE ORDER OF DECREASING ELECTRONEGATIVITY OF THE LI SALT ANIONS TO O AND THEN INCREASED IN THE ORDER OF INCREASING ELECTRONEGATIVITY OF THE CATIONS OF THE OTHER SALTS. DECREASES IN I SOLY. FOLLOWED THE SAME ORDER OF DECREASING LI SALT ANION ELECTRONEGATIVITY. APPARENTLY, THE STRONGER THE H BONDS BETWEEN SALT ANIONS AND AMIDE GROUP PROTONS, THE GREATER IS I SOLY. AND THE FARTHER DOWNFIELD THE AMIDE PROTON SIGNAL. THE SIZE OF THE CHEM. SHIFT OF THE AMIDE PROTONS CAUSED BY DIFFERENT SALTS INCREASED LINEARLY WITH INCREASING MOL. WT. OF II SYNTHESIZED IN ACNME SUB2 IN THE PRESENCE OF THESE SALTS. PRESUMABLY, INCREASED INTERACTION BETWEEN SOLVENT AND POLYMER PROMOTED HIGHER MOL. WTS.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203820004-0"

USSR

ZLATOPOL'SKIY, Z.

"Advance Against Cancer"

Riga, Sovetskaya Latvia, 4 Dec 70, p 4

Abstract: In an interview Professor S. A. Giller, Director of the Institute of Organic Synthesis, Academy of Sciences, Latvian SSR, and Candidate of Medical Sciences V. M. Bramberg discussed preparations synthesized at the Institute and used in the fight against cancer. Among these is Fluorafur, an original Soviet preparation for use in the treatment of several types of malignant neoplasms. The preparation has been clinically tested in the USSR and abroad and has been approved by the Pharmacological Committee of the Ministry of Health USSR. A permit for its production on an industrial scale has been granted. Manufacture of the preparation is now being organized in the USSR and a number of foreign countries. Other original preparations include: Furagin (Furazidin) and Solafur; imiphos, for treatment of erythema; and methynidione, for treatment of epilepsy. Steps are being taken to organize the production of thiophosphamide (ThioTepa) and Cyclophosphane, drugs widely used in oncological practice.
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USSR

ZLATOLPOL'SKIY, Z., Sovetskaya Latvia, 4 Dec 70, p 4

The achievements already made in research on cancer make it possible to hope that solution of the problem is near. Important work on cancer is being carried out at the Scientific Research Institute of Experimental and Clinical Medicine, Ministry of Health Latvian SSR. Studies have established that no single preparation can be relied upon to produce similar results when applied to all cases of cancer. Prior to the administration of an anti-cancer preparation it is essential to determine the form, type, and stage of the disease, its localization, the histological structure of the tumor, and the indications and contraindications for the use of the drug. Latvian chemists are doing their utmost to develop and produce new preparations which can be successfully applied to control the disease.

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USSR

UDC 629.7.017:658.562.001.24

ZAGRUTDINOV, G. M., and ZLATOUSOV, S. V.

"On One Method for Increasing Instrumental Confidence in the Results of Automated Controls"

Kazan', Tr. Kazan. aviats. in-ta (Transactions of the Kazan' Aviation Institute) Vyp 146, 1972, pp 45-54 (from Referativnyy Zhurnal--Metrologiya i Izmeritel'naya Tekhnika, No 1, 1973, Abstract No 1.32.111)

Translation: A system of automated control is considered, the reliability of which is characterized by the probability of the appearance of accurate results. A method for increasing the confidence in the results of control using multiple measurements is analyzed. For the system of automated control, the probability of malfunctions of which does not equal zero, the authors propose a processing of partial results of multiple measurements, on the basis of majority logic with subsequent averaging, by excluding the influence of malfunctions and random errors in the final result. The increase in the probability of accuracy of the final result using multiple measurement is computed for different coefficients of variation of the controlled parameter. The possibility of solving several types of problems which will be encountered in the projected system of automated control is indicated with the aid of graphs and a table. (2 tables; 3 illustrations; 5 bibliographic entries)

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USSR

UDC 629.78.017:658.562.001.24

ZAGRUTDINOV, G. M., ZLATOUSTOV, S. V.

"Calculation of Instrumental Reliability of Results of Automatic Testing"

Tr. Kazan. Aviats. In-ta [Works of Kazan Aviation Institute], No 134, 1971, pp 72-78, (Translated from Referativnyy Zhurnal, Raketostroyeniye, No 2, 1972, Abstract No 2.41.160 from the Resume).

Translation: For tested parameters with various coefficients of formation of tolerances (z) and with various ratios of measurement error to tolerance for the parameter ($\delta_{meas}/\delta_{par}$), the basic components of instrumental reliability of the results of automatic testing are calculated -- the probability of false "useable" and "unuseable" decisions (ρ_1 and ρ_0 respectively), resulting from random errors in the measurement channels of the automatic testing systems. The graphic dependence of probabilities ρ_0 and ρ_1 on z and $\delta_{meas}/\delta_{par}$ is established. The possibility is shown of solving certain typical problems encountered in the stage of development of automatic control systems using the graphic dependences presented is demonstrated. 4 Figures; 1 Table; 3 Biblio. Refs.

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USSR

UDC: 681.332.65

ZLATOUSTOV, S. V., KHAIROV, R. M., Kazan' Aviation Institute

"A Method of Producing a Pulse Train"

USSR Author's Certificate No 285046, filed 2 Dec 68, published 30 Dec 70 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, Oct 71, Abstract No 10B222 P)

Translation: In conventional methods of obtaining sequences of pulses with random durations having a controllable distribution function, use is ordinarily made of the controllability of the distribution of a random number sequence. However, it is difficult to orient the use of probability-controllable random number sequences to the predetermined probability of the selected duration of the random-duration pulse sequence because of the strong conditional dependence of the probability of appearance of a specific duration or the finiteness of the sampling time. In the method of obtaining a random-duration pulse train as introduced by this patent, the sum of sawtooth and noise voltages is compared with the sum of DC and noise voltages, after which the absolute value of the random error for the time duration of

USSR

ZLATOUSTOV, S. V., KHAIROV, R. M., Soviet Patent No 285046

the comparison is isolated. The selection, control, and restoration of the probability distribution function for the isolated random-duration pulse sequence is accomplished by varying the rise time of the sawtooth voltage. Two illustrations.

USSR

UDC: 621.316.84

ZLATOUSTOV, S. V., OSTROVA, S. O., and ASADULLINA, V. R.

"Measuring Current Noise in Quality Control of Thin-Film Resistors"

Kiev, Izvestiya VUZ -- Radioelektronika, Vol. 13, No. 9, 1970, pp 1124-1128

Abstract: In view of the fact that resistors comprise about 30-40% of all the components in most electronic circuitry and that they are growing smaller with advances in miniaturization, their quality control is important. This article gives the results of experiments performed to find a relationship between the current noise level of thin-film resistors and their quality, and whether use of current noise level as an index to the reliability of resistors is justified. A block diagram of the noise meter circuit is shown. This version had to be used in place of standard equipment for measuring resistor noise since standard equipment has insufficient sensitivity for resistors with such low power ratings.

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ZLATOUSTOV, S.V., et al, Izvestiya VUZ - Radioelektronika, Vol 13, No 9, 1970, pp 1124-1128

The authors' analysis of the results of the experiment showed a high correlation between resistor noise and quality, with the noisiest resistors exhibiting the poorest quality, to the extent that the reliability of resistors can be predicted on the basis of their showing in this test. In these experiments, the noise level was measured in microvolts per volt of applied voltage in a band of 10 kHz. The authors conclude that 100% control can be attained in control automation using the modulation noise meter they propose in thin-film resistor assembly line manufacture.

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USSR

ZLENKO, A. A., PROKHOROV, A. M., SYCHUGOV, V. A.

"A Thin-Film Laser With Magnitude-Modulated, Distributed Feedback"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 18, No 3, 5 Aug 73, pp 156-160

Abstract: A method is proposed for tuning the emission frequency of a thin-film laser with distributed feedback by using spatial modulation of the amount of feedback in the film. The amount of distributive feedback is determined by the amplitude of the periodic variations in the effective index of refraction or amplification factor. If these amplitudes are spatially modulated with period $\Lambda' \gg \Lambda$, then lattices with periods $\Lambda_n = \Lambda(1 \pm n\Lambda/\Lambda')$ will be formed in the film along with the lattice of period Λ, where $n = 1, 2, 3...$ If the wavelength of the emission determined by these lattices falls into the amplification band of the film, then emission should be stimulated on this wavelength with the corresponding pumping. Thus the emission frequency could be tuned by varying the period Λ'. This principle of modulation is experimentally demonstrated by a setup with a rotatable wire grid.

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UDC: None

USSR

ZLENKO, A. A., PROKHOROV, A. M., SYCHUGOV, V. A., and SHIPULO, G. P.

"Exciting LaF_3-Nd^{3+} Crystals with Monochromatic Light"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 59, No 9, 1970, pp 785-789

Abstract: The relaxation time of the particles from the 0.53 μ absorption band of Nd^{3+} ions at the $^4F_{3/2}$ level is determined, and the transverse cross section of the induced radiation in LaF_3-Nd^{3+} crystals is measured in lasers pumped with monochromatic light. The determination of this time is important since it has a definite effect on the operation of the laser. The results of a numerical solution of the problem of exciting laser oscillations in a four-level system with the relaxation time taken into account, pumped by a light pulse lasting 50 ns, are obtained. These results are found from a curve showing the laser radiation as a function of time, through the use of a computer. Formulas are derived to determine the relaxation time from measurements of the time interval between the first two peaks of the laser radiation curve after the pumping pulse. The authors express their gratitude to M. V. Dmitruk and to V. V. Osiko for the LaF_3-Nd^{3+} crystals, and to Ye. M. Dianov for his comments and discussion.

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UDC 621.396.622

USSR

ZLENTSOV, A. V., KHAKHALKIN, V. N., SHEVTSOV, E. A.

"Selection of Optimum Coupling With the Resonator in a Photoparametric Converter"

Tr. Mosk. elektrotekhn. in-ta svyazi (Works of the Moscow Institute of Electrical Communications Engineering), 1970, vyp., pp 10-15 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10D306)

Translation: The authors consider the circuit of a photoparametric converter based on a photodiode located in a resonator which is one of the loads of a balanced waveguide bridge. The optimum coupling of the waveguide resonator with an arm of the waveguide bridge is calculated. The curve for the change in detector power as a function of the amount of coupling has a maximum close to critical coupling. It is recommended that the coupling coefficients be selected somewhat greater than 1 on the basis of the signal-to-noise ratio. The signal-to-noise level is determined by the converted frequency fluctuations of the klystron oscillator. The maximum signal-to-noise ratio is observed at a rather small imbalance of the bridge. A. K.

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1/2 027 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--THE OPERATION OF STEAM LINES MADE FROM 12MKH AND 15 KHM STEELS AT HIGH PRESSURE ELECTRIC POWER STATIONS AFTER A STANDARD SERVICE LIFE -U-

AUTHOR-(05)-ZLEPKO, V.F., MAZEL, R.YE., KRUTASOVA, YE.I., ZAKHAROVA, A.I., VORONOV, N.P.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, TEPLOENERGETIKA, NO. 2, 1970, PP 55-58

DATE PUBLISHED--------70

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

TOPIC TAGS--LOW ALLOY STEEL, ELECTRIC POWER PLANT, THERMOELECTRIC POWER PLANT, STEAM BOILER, STEAM TURBINE, STEEL PIPE, PIPE LINE, CHROMIUM STEEL, MOLYBOENUM STEEL, RESEARCH FACILITY, ALLOY DESIGNATION/(U)12MKH LOW ALLOY STEEL, (U)15KHM LOW ALLOY STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0355 STEP NO--UR/0096/70/000/002/0055/0058

CIRC ACCESSION NO--AP0117592

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117592

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BASED ON PROLONGED TESTS, CONDITIONS WERE ESTABLISHED UNDER WHICH STEAM LINES MADE FROM 12MKH AND 15KHM STEELS, WHICH HAD OPERATED 100,000 HOURS, COULD BE AUTHORIZED FOR FURTHER OPERATION. ONE TABLE, SEVEN ILLUSTRATIONS, BIBLIOGRAPHY CONTAINS THREE CITATIONS. FACILITY: ALL UNION INSTITUTE OF HEAT ENGINEERING AND THE EASTERN BRANCH OF THE ALL UNION INSTITUTE OF HEAT ENGINEERING.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--CRITERIA OF OPERATIONAL DEPENDABILITY OF THE 12KH1MF STEEL -U-

AUTHOR--ZLEPKO, V.F., ZAKHAROVA, A.I.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, ELEKTRICHESKIYE STANTSII, NR 4, 1970, PP 32-34

DATE PUBLISHED--------70

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

TOPIC TAGS--LOW ALLOY STEEL, ALLOY DESIGNATION, STEEL PIPE, STEAM BOILER, RELIABILITY/(U)12KH1MF LOW ALLOY STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1412 STEP NO--UR/0104/70/000/004/0032/0034

CIRC ACCESSION NO--AP0104726

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104726

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE 12KH1MF STEEL IS WIDELY USED IN MANUFACTURING STEAM PIPES AND THEREFORE PROBLEMS OF CORRECT PROGNOSIS AND EVALUATION OF OPERATIONAL DEPENDABILITY OF STEAM PIPES WHICH HAD WORKED FOR A LONG TIME ARE OF GREAT IMPORTANCE. IT IS SUGGESTED THAT THE FACTOR OF STRUCTURAL CHANGES OF STEEL BE USED AS A CRITERION OF OPERATIONAL DEPENDABILITY.

UNCLASSIFIED

1/3 011 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--ALL UNION CONGRESS OF VOLCANOLOGISTS -U-

AUTHOR--ZLIBIN, B.I.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, ZEMLYA I VSELENNAYA, NO 1, 1970, PP 79081

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--VOLCANOLOGY, GEOCHEMISTRY, MAGMA, VOLCANIC ROCK, EARTH CORE, GEOLOGIC CONFERENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0044 STEP NO--UR/0384/70/000/001/0079/0081

CIRC ACCESSION NO--AP0108421

UNCLASSIFIED

3/3 011 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0108421

ABSTRACT/EXTRACT--HOWEVER, SOME SPEAKERS EXPRESSED A DIFFERENT OPINION: VOLCANIC LAVAS (PARTICULARLY ACIDIC LAVAS SATURATED 65-75 PERCENT WITH SILICA) WERE FORMED AS A RESULT OF MELTING OF ANCIENT ROCKS OF THE EARTH'S CRUST. CONVINCING MATERIALS WERE PRESENTED AT THE CONFERENCE WHICH SHOW THAT KAMCHATKA, THE KURILE ISLANDS, ARMENIA AND TRANSCARPATHIA ARE PARTICULARLY RICH IN CONSTRUCTION, CERAMIC AND CHEMICAL RAW MATERIALS OF VOLCANIC ORIGIN. MUCH ATTENTION WAS GIVEN TO THE USE OF THERMAL WATERS AND SUPERHEATED STEAM; MANY OF THE SPEAKERS FEEL THAT THEY ORIGINATE AT DEPTHS IN THE EARTH WHERE MAGMA IS FORMED.

2/3 011 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0108421

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THIRD ALL UNION CONGRESS OF VOLCANOLOGISTS MET ON 28 MAY 1968 AT L'VOV; IT WAS ORGANIZED BY THE ACADEMY OF SCIENCES USSR, THE INSTITUTE OF VOLCANOLOGISTS SIBERIAN DEPARTMENT ACADEMY OF SCIENCES USSR, INSTITUTE OF GEOLOGICAL SCIENCES ACADEMY OF SCIENCES UKRAINIAN SSR AND L'VOV STATE UNIVERSITY. FIVE YEARS HAVE ELAPSED SINCE THE LAST CONGRESS. THE MANY REPORTS DEALT WITH THE GENERAL PROBLEMS OF VOLCANISM AND ITS RELATIONSHIP TO THE EARTH'S INTERIOR, INVESTIGATIONS IN THE FIELD OF PETROLOGY AND GEOCHEMISTRY OF VOLCANIC PRODUCTS, FORMATION AND USE OF ORE MINERALIZATION AND THERMAL WATERS IN VOLCANIC REGIONS AND SPECIFIC MATERIALS ON THE GEOLOGY OF REGIONS WITH RECENT STRONG VOLCANISM (KAMCHATKA, KURILE ISLANDS, ARMENIA, CAUCASUS, CRIMEA, CARPATHIANS). MANY REPORTS DEALT WITH THE POSSIBLE DEPTHS OF MAGMA BENEATH MODERN VOLCANOES. IT WAS FOUND THAT IN SUCH AN ACTIVE VOLCANIC PROVINCE AS THE KURILE KAMCHATKA REGION, THE FOCI OF VOLCANOES IN MOST CASES ARE AT DEPTHS FROM 40 TO 110 KM. ASEISMIC REGIONS, WHICH EVIDENTLY ARE A REFLECTION OF A MOLTEN STATE OF MATTER, ARE SITUATED DIRECTLY BENEATH THE ACTIVE VOLCANOES OF KAMCHATKA AND REACH A DEPTH AS GREAT AS 130 KM. IF IT IS TAKEN INTO ACCOUNT THAT THE THICKNESS OF THE EARTH'S CRUST FOR THE KURILE KAMCHATKA PROVINCE IS NOT GREATER THAN 10-35 KM, THE MAGNETIC ORIGIN OF LAVAS IS OBVIOUS. THIS CONCLUSION IS CONFIRMED BY GEOCHEMICAL DATA ON THE DISTRIBUTION AND RATIO OF SOME RARE ELEMENTS IN VOLCANIC ROCKS, AS WELL AS THE ISOTOPIC COMPOSITION OF ELEMENTS IN THE GASES ACCOMPANYING THE EJECTED MATTER.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203820004-0"

UNCLASSIFIED

Acc. Nr: AP0043696 Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 3, pp 952-961

EFFECT OF QUANTIZED MAGNETIC FIELD ON INTER-ELECTRON COLLISIONS IN SEMICONDUCTORS AND NONLINEAR GALVANOMAGNETIC PHENOMENA

A. M. Zlobin, P. S. Zyryanov

An expression for the current in a semiconductor located in crossed strong electric and quantized magnetic fields is found by the density matrix technique by taking into account electron-electron collisions. It is shown that the efficiency of inter-electron collisions strongly decreases on quantization of the cyclotron orbits. A condition of applicability of the effective electron temperature concept is derived. The necessity of taking into account the Hall field (if it is present in the problem) in the energy balance is mentioned.

REEL/FRAME
19770100

UDC 553.697

USSR

ZLOBIN, V.

"Study of a Jet System in a Transverse Flow in a Channel"

Tallin, Izvestiya Akademii Nauk Estonskoy SSR -- Fizika-Matematika, Vol 20, No 1, 1971, pp 66-76

Abstract: This article contains a discussion of results of an experimental study of the development of a system of circular isothermal jets flowing out of holes in a thin wall normal to the uniform flow in a rectangular channel. A study of a similar flow, with high values of the hydrodynamic parameter $q_\mu \geq 50$, had been made earlier, but for application to problems encountered in engineering the results obtained had to be extended to smaller values of the hydrodynamic parameter and relative step size. In this paper the development of the jet system was studied in the range of variation of q_μ = 4-36 and $\bar{s} = 2.0-\infty$. An effort is made to determine the effect of the restriction created by the opposite (with respect to the plane of expansion of the jet) wall of the channel on the development of the jet system. The velocity and temperature axes of the jets are studied and compared. It is demonstrated that the difference between them is especially significant in the case of flow of a

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USSR

ZLOBIN, V., Izvestiya Akademii Nauk Estonskoy SSR -- Fizika-Matematika, Vol 20, No 1, 1971, pp 66-76

system of jets and for small values of the hydrodynamic parameter. A study of the development and blending of a single jet is also performed. It is noted that in the experiment the temperature and velocity axes were measured simultaneously. The measurements were performed in cross sections normal to the velocity axis of the jet, and in the system of jets, with the exception of the adjustment experiments, the measurements of the axes were performed on the jet in the center of the channels. For purposes of the experiment the velocity or temperature axis was the line in the midplane of the jet along the flow on which the values of the corresponding variables were maximal.

The development of the jet system was studied for three fixed values of $q_\mu \approx 4$, 16, and 36 and for relative step sizes $\bar{s} = 2.0$, 4.0, and 8.1. With a decrease in relative step size from ∞ to 4 the rate of occurrence of the jets decreases monotonically; however, with a decrease in the relative step size to 2.0, a sharp increase in the rate of occurrence is observed. The mechanism of this effect is explained. The study of the development of the temperature axes of the jet systems demonstrated that beginning with some point, they

USSR

ZLOBIN, V., Izvestiya Akademii Nauk Estonskoy SSR -- Fizika-Matematika, Vol 20, No 1, 1971, pp 66-76

flatten out sharply along the direction of flow, and in some cases they tend to drop as a result of the stable eddy in the rear of the jet. From the corresponding measurements of the velocity axis, this eddy does not encompass the active part of the jet, which continues to rise monotonically. It is noted that it is possible to consider that the velocity axis determines primarily the aerodynamics of the flow, and the position of the temperature axis is affected by the size of the circulation zones which, in turn, is determined by the magnitude of the relative step size in the hydrodynamic parameter.

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UDC 621.372.832.8

USSR

SHUKEYLO, YU. A. and ZLOBIN, V. A.

"Determining the Thermal Stressed State of the Ferrite Element of a Phase Circulator"

Elektron. tekhnika. Nauch.-tekhn. sb. Ferrit. tekhn. (Electronics Technology. Scientific-Technical Collection of Articles. Ferrite Technology), 1971, vyp.4 (31), pp 115-119 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 B151)

Translation: The authors present the calculations of the stress field in a ferrite element. The calculations were conducted on a computer. Results of the calculations are given in the form of graphs. Original article: three illustrations and five bibliographic entries. Resume.

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USSR

UDC: 53.07/.08+53.001.5

KOLYADA, V. M., ZLOBIN, V. G., All-Union Scientific Research Institute of Analytical Instrument Building

"A Method of Measuring the Transverse Distribution of Ion Beam Density"

USSR Author's Certificate No 306591, Division H, filed 12 Dec 70, published 21 Jul 71 (from RZh-Fizika, No 4, Apr 72, Abstract No 4A488 P)

Translation: A method is proposed for measuring the transverse distribution of ion beam density. The method is distinguished by high resolution and is based on cathodic vaporization of a target. Resolution is increased by aiming the ion beam at a single-crystal or amorphous target, measuring the profile of the vaporization spot by the interference method, and determining the distribution of beam density from the depth of individual sections in the vaporized section. K. N. Korol'.

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USSR

UDC 8.74

GRIGOR'YEV, V. L., ZLOBIN, V. I., KURGANOV, V. D.,

"Filtration of Images in Pattern Recognition"

V sb. Avtomat. upr. i vychisl. tekhn. (Automatic Control and Computer Technology -- Collection of Works), No. 10, Moscow, "Mashinostroyeniye", 1972, pp 116-140 (from RZh-Matematika, No 9, Sep 72, Abstract No 9V671)

Translation: Possible forms of noise in the input of iso-object information into a computer are analyzed. A critical review of several known methods of filtration is given. Single anisotropic filtration of discrete images is investigated. A new form of a recurrent filter having many advantages over known anisotropic filters was developed, and investigated. A procedure for measuring the intensity of noise and the automatic change depending on the value obtained for the filter aperture is proposed and investigated. A high-speed device was developed for measuring the intensity of noise in images of three-dimensional objects. A systematic study of the double filtration of images was conducted. The structures of filters of the first and second stages were determined. Recommendations are made concerning the parameters of a single smoothing device. 15 ref. Authors abstract.

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USSR

VOLKOVYSKIY, V. L., ZLOBIN, V. K., KOROLEV, Ye. P.

"The Scale Conversion of Images"

Tr. Ryazan. Radiotekhn. In-ta [Works of Ryazan Institute of Electronic Engineering], 1972, No 36, pp 184-191 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V825 by the authors).

Translation: Problems of continuous scale conversions are studied as associated with output of images from digital computers. Program and apparatus methods of scaling are suggested.

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USSR UDC 8.74

ZLOBIN, V. K., ZLOBINA, N. V., KURGANOV, V. D.

"Computer Modeling of the Automatic Scanning of Three-Dimensional Objects for Recognition Purposes"

V sb. Avtomat. upr. i vychisl. tekhn. (Automatic Control and Computer Technology -- Collection of Works), No. 10, Moscow, "Mashinostroyeniye", 1972, pp 221-228 (from RZh-Matematika, No 9, Sep 72, Abstract No 9V675)

Translation: A technique is described for the computer modeling of the automatic scanning of three-dimensional objects for recognition purposes. A block diagram is given for a subprogram for showing some object for recognition with a given a priori probability, obtaining the angles of view of this object under the condition that the probabilities of their values are distributed according to a preassigned law, determining the values of the properties of the projection of the object corresponding to these angles, etc. The necessity of solving this problem always arises in the absence of actual equipment for the input of information to the computer. Authors abstract.

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UDC 8.74

USSR

GRIGOR'YEV, V. L., ZLOBIN, V. K., KURGANOV, V. D.

"Filtration of Images in Pattern Recognition"

V sb. Avtomat. upr. i vychisl. tekhn. (Automatic Control and Computer Engineering -- collection of works), Vyp. 10, Moscow, Mashinostroyeniye Press, 1972, pp 116-140 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V671)

Translation: Possible forms of noise during input of iso-objective information to a digital computer are analyzed.

A critical analysis of some of the known filtration procedures is presented. A study was made of single anisotropic filtration of digitalized patterns.

A new type of recurrent filter has been developed which has a number of advantages by comparison with the known anisotropic ones, and it is investigated.

A procedure is proposed and investigated for measuring the intensity of noise and automatic variation as a function of the magnitude of the filter aperture obtained.

A high-speed device was developed for measuring the noise intensity in the patterns of three-dimensional objects. A systematic study of double filtration of the patterns is presented. The structures of the filters of the first and second stages are defined.

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USSR

GRIGOR'YEV, V. L., et al., Avtomat. upr. i vychisl. tekhn., Vyp. 10, Moscow, Mashinostroyeniye Press, 1972, pp 116-140

Recommendations are made with respect to selecting the parameters of a single smoothing device. The bibliography has 15 entries.

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UDC 8.74

USSR

ZLOBIN, V. K., ZLOBINA, N. V., KURGANOV, V. D.

"Digital Computer Simulation of the Process of Automatic Scanning of Three-Dimensional Objects During Recognition of Them"

V sb. Avtomat. upr. i vychisl. tekhn. (Automatic Control and Computer Engineering -- collection of works), Vyp. 10, Moscow, Mashinostroyeniya Press, 1972, pp 221-228 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V675)

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The necessity for solving the investigated problem always arises in the absence of real equipment for data input to a computer.

1/1

USSR UDC 681.327.11

ZLOBIN, Yu. P., KESSEL', Ye. L., State All-Union Central Scientific Research Institute of Large-Scale Automation

"A Device for Recording and Reproducing Information"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 36, Soviet Patent No 288412, class 42, filed 14 Jan 69, published 3 Dec 70, p 154

Translation: This Author's Certificate introduces a device for recording and reproducing information. The device contains modules for recording and reading out cadence pulses and information signals, counters, a coincidence circuit, a delay line, and an adder. As a distinguishing feature of the patent, the accuracy of information reproduction is improved by combining the gaps of the magnetic heads in the units for recording and reading out the cadence pulses and information signals on a single axis. The outputs of the cadence pulse readout units are connected to the reset inputs of the counters, and through a coincidence circuit and delay line to the input of an adder, and the outputs of the information signal readout units are connected to the corresponding counting inputs of the counters, the outputs of the counters being connected by digital place to the inputs of the adder.

1/1

Acc. Nr: AP0038116 Ref. Code: UR 0326

PRIMARY SOURCE: Fiziologiya Rasteniy, 1970, Vol 17, Nr 1, pp 155-161

PROTOPLASM SEPARATION AND HECHT LINES AS A MEANS FOR DIAGNOZING FROST RESISTANCE OF WINTER WHEAT

F. S. ZIOBINA

Kirov Pedagogical Institute

Weakly frost resistant winter wheat plants (Gorkovchanka and Lutescence 116 varieties), intermediate frost resistant (Eritrosperum 529 and Kirovskaya 2) and highly frost resistant varieties (Gorkovskaya 52 and Zorka) were grown in field conditions during 1965-66 and 1966—67. The degree of protoplasm separation and presence of plasmadesma and Hecht lines were studied by phase contrast microscopy in transverse sections prepared from November to March from the tillering nodes. The number of cells with separated protoplasm increased with decrease of temperature of the air and soil during the autumn and became smaller in the spring. Protoplasm separation was higher in highly frost resistant varieties than in those of intermediate or low resistivity. Protoplasm separation is clearly correlated to disappearance of the plasmodesmas and Hecht lines. It is concluded that the number of cells with separated protoplasm may be a criterion for quantitative assessment of the degree of dormancy and frost resistivity of winter wheat plants.

UDC 8.74

USSR

ZLOBIN, V. K., ZLOBINA, N. V., KURGANOV, V. D.

"Computer Modeling of the Automatic Scanning of Three-Dimensional Objects for Recognition Purposes"

V sb. Avtomat. upr. i vychisl. tekhn. (Automatic Control and Computer Technology -- Collection of Works), No. 10, Moscow, "Mashinostroyeniye", 1972, pp 221-228 (from RZh-Matematika, No 9, Sep 72, Abstract No 9V675)

Translation: A technique is described for the computer modeling of the automatic scanning of three-dimensional objects for recognition purposes. A block diagram is given for a subprogram for showing some object for recognition with a given a priori probability, obtaining the angles of view of this object under the condition that the probabilities of their values are distributed according to a preassigned law, determining the values of the properties of the projection of the object corresponding to these angles, etc. The necessity of solving this problem always arises in the absence of actual equipment for the input of information to the computer. Authors abstract.

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UDC 8.74

USSR

ZLOBIN, V. K., ZLOBINA, N. V., KURGANOV, V. D.

"Digital Computer Simulation of the Process of Automatic Scanning of Three-Dimensional Objects During Recognition of Them"

V sb. Avtomat. upr. i vychisl. tekhn. (Automatic Control and Computer Engineering -- collection of works), Vyp. 10, Moscow, Mashinostroyeniya Press, 1972, pp 221-228 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V675)

Translation: A procedure is described for digital computer simulation of the process of automatic scanning of three-dimensional objects during recognition of them. A block diagram is presented for a subprogram which permits presentation of the object for recognition with a given a priori probability, obtaining of the scanning angles of the object under the condition that the probabilities of their values are distributed by a law given in advance, determination of the values of the properties of the projection of the object corresponding to these angles, and so on.

The necessity for solving the investigated problem always arises in the absence of real equipment for data input to a computer.

1/1

1/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--INDUSTRIAL EQUIPMENT FOR DRYING IN A FLUIDIZED BED -U-

AUTHOR-(02)-KAGANEVICH, YU.YA., ZLOBINSKIY, A.G.

COUNTRY OF INFO--USSR

SOURCE--INDUSTRIAL EQUIPMENT FOR DRYING IN A FLUIDIZED BEDD (PROMYSHLENNYYE USTANOVKI DLYA SUSHKI V KIPYASHCHEM SLOYE) LENINGRAD,
DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DEHYDRATION, FLUIDIZED BED, DRYING OVEN, AUTOMATIC CONTROL SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1719 STEP NO--UR/0000/70/000/000/0001/0174

CIRC ACCESSION NO--AM0130579
UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AM0130579
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: PREFACE 3. CHAPTER I. GENERAL CHARACTERISTICS OF DRYING AND DEHYDRATION IN A FLUIDIZED BED 5. II. INDUSTRIAL EQUIPMENT FOR DRYING AND DEHYDRATION 55. III. DESIGN AND CALCULATION OF FLUIDIZED BED DRIERS 107. IV. DESIGN OF FLUIDIZED BED APPARATUS AND STANDARD CIRCUITS OF EQUIPMENT 144. V. AUTOMATIC CONTROL OF DRYING IN FLUIDIZED BED APPARATUS 163. THE BOOK DEALS WITH CERTAIN RULES OF THE DRYING PROCESS IN A FLUIDIZED BED. GIVEN ARE METHODS IN ENGINEERING CALCULATION AND FUNDAMENTAL PRINCIPLES OF OPERATION AND DESIGN OF INDUSTRIAL EQUIPMENT FOR DRYING IN A FLUIDIZED BED. THE BOOK WAS WRITTEN FOR ENGINEERS, TECHNICIANS AND SCIENTISTS EMPLOYED BY THE CHEMICAL INDUSTRY AND RELATED INDUSTRIAL BRANCHES, AS WELL AS INORGANIC CHEMISTRY STUDENTS.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--STUDYING THE RATE OF HARDENING OF BINDING MATERIALS USED FOR MAKING CORES IN HEATED RIGS -U-

AUTHOR-(03)-GERGALOVA, L.M., BORODYANSKIY, L.YE., ZLOBINSKIY, B.A.

COUNTRY OF INFO--USSR

SOURCE--KIEV, TEKHNOLOGIYA I ORGANIZATSIYA PROIZVODSTVA, NO 1, 1970, PP 55-57

DATE PUBLISHED-------70

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

TOPIC TAGS--BIBLIOGRAPHY, FOUNDARY CORE, METAL CASTING, ADHESIVE BINDER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1320 STEP NO--UR/0418/70/000/001/0055/0057

CIRC ACCESSION NO--AP0123279

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0123279
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS STUDY THE RATE OF HARDENING FOR BINDING MATERIALS AND GIVE RECOMMENDATIONS ON DETERMINING THE USEFULNESS OF BINDS FOR PRACTICAL APPLICATION.

UNCLASSIFIED

USSR UDC 534.833.524:546.3

ZLOBINSKIY, B. M., and MURAV'YEV, V. A., Moscow Institute of Steel and Alloys

"Sonic Projection of Metals"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, Jan 74, pp 56-57

Abstract: The effect of physical and mechanical properties on sonic projection of a number of pure metals and alloys was studied. Data are presented for sonic pressure, modulus of elasticity, damping rate, vibration amplitude, and interatomic distances of metals Al, Ni, V, Ta, Nb, Fe, Ti, Zr, Co, and Cu and alloys Ti-Zr, Nb-Ta and Fe-C-Si with particular attention given to Fe-C-Si alloys with a perlitic or ferritic base. Variations in the sonic properties of the alloys showed that these variations are a function of the type of solid solutions or chemical compounds formed in the alloys. It was shown that in most cases sonic pressure is directly proportional to interatomic distance while the relationship of modulus of elasticity to interatomic distance is sporadic. Three figures, two tables, two bibliographic references.

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USSR

UDC: 669:613.6

ZLOBINSKIY, B. M., IOFFE, V. G., ZLOBINSKIY, V. B.

"Flammability and Toxicity of Metals and Alloys"

Vosplamenyayemost' i Toksichnost' Metallov i Splavov, Metallurgiya Press, Moscow 1972, 264 pp.

Translation of Foreword: Metal is the basis of our economy. Millions of workers are involved in the production and processing of metals, and since metals have dangerous properties under certain conditions, which may cause a fire or explosion or may be toxic to the organism, the problem of assurance of production safety is particularly significant. Many metals and alloys can burn. Some oxidize rapidly in the presence of air or moisture, generating sufficient heat to reach the combustion temperature, while others oxidize slowly and the heat liberated is insufficient for combustion. Some metals, particularly magnesium, titanium, sodium, potassium, lithium, hafnium, are considered flammable, due to their capability for relatively easy ignition and maintenance of combustion. Some metals, usually not considered flammable, do ignite and burn in the finely powdered state. Aerogels and aerosols of many metals may ignite or explode; destructive industrial explosions of metal powder have occurred.

The effects of metals on workers have produced many occupational diseases. The interest in assurance of production safety has spawned an interest in the evaluation of the flammable and toxic properties of metals, their alloys and compounds. Studies in this area have been particularly intensive in recent years, with the progress of

USSR

Zlobinskiy, B. M., Ioffe, V. G., Zlobinskiy, V. B., Vosplamenyayemost' i Toksichnost' Metallov i Splavov, Metallurgiya Press, Moscow, 1972, 264 pp.

nuclear and missile technology, powder metallurgy, pyrotechnics and other new branches of industry which utilize metals and various compounds of metals. Deeper studies of the combustion of metals have been required as metals are used in high temperature and corrosive media, in reaction engines, as rocket fuels, etc. The development of nuclear power engineering and missile technology has required more complete explanation of the essence of the processes of high temperature oxidation, mechanisms of ignition and combustion of metals and alloys.

There is particular interest in the study of metals as fuels. This possible use of metals was first suggested in connection with the problem of interplanetary travel by the Soviet scientists Yu. Kondratyuk (Zavoyevaniye Mezhplanetnykh Prostranst'v [Conquering Interplanetary Space], Novosibirsk, 1929) and F. Tsander (Problema Poleta Pri Pomoshchi Reakti'nykh Apparatov [The Problem of Flight Powered by Reaction Engines], ONTI Press, 1932). These studies have been broadly developed only quite recently, in the last 20 to 30 years. Many metals and alloys, their aerogels and aerosols have been studied. This study and production experience have accumulated a great deal of factual material and lead to valuable theoretical conclusions. The studies continue, since the data available are frequently contradictory, many questions remain unanswered, and certain metals and their alloys have not yet been

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USSR

Zlobinskiy, B. M., Ioffe, V. G., Zlobinskiy, V. B., Vosplamenyayemost' i Toksichnost' Metallov i Splavov, Metallurgiya Press, Moscow, 1972, 264 pp.

studied. Systematization of the accumulated data should help their practical use and the development of further studies in this area.

Section I of this monograph is dedicated to studies of the flammability of metals and alloys. Section II studies problems of the flammability of aerogels of metals and alloys, while Section III studies problems of the flammability of aerosols of metals and alloys. Sections II and III discuss the studies, performed primarily at the Moscow Order of Red Banner,Labor Institute of Steels and Alloys, based on the dissertation work performed under the leadership of B. V. Zlobinskiy on the flammability of binary metals and alloys, including the work of Candidate of Technical Sciences N. V. Manuyev (alloys of titanium with aluminum, manganese and silicon), of Candidate of Technical Sciences V. G. Ioffe (alloys of zirconium with titanium and silicon), of Candidate of Technical Sciences Kh. I. Peyrik (alloys of nickel with titanium and aluminum), of Candidate of Technical Sciences V. G. Poyarkov (alloys of aluminum with magnesium), of Candidate of Technical Sciences Ye. I. Popov (alloys of magnesium with lithium and aluminum), of Candidate of Technical Sciences M. M. Mukhametov (alloys of copper with aluminum and silicon), and of B. S. Fedotova (boron and borides).

The problem of assurance of production safety requires that the toxic properties of metals and alloys be studied as well. The dangerous properties of many

USSR

Zlobinskiy, B. M., Ioffe, V. G., Zlobinskiy, V. B., Vosplamenyayemost' i Toksichnost' Metallov i Splavov, Metallurgiya Press, Moscow, 1972, 264 pp.

metals have not yet been determined or studied sufficiently. Section IV studies general problems of the toxicity of metals and their compounds and presents the information which the engineer needs concerning the toxicity of metals and possible estimation of their danger.

Section I of the book was written by Professor B. M. Zlobinskiy, Sections II and II--by B. M. Zlobinskiy and Candidate of Technical Sciences V. G. Ioffe, Section IV--by V. B. Slobinskiy.

The authors are deeply grateful to Doctor of Technical Sciences, Professor V. I. Layner, Doctor of Chemical Sciences, Professor L. A. Shvartsman and Candidate of Medical Sciences R. A. Kucherskiy, who reviewed the manuscript and made valuable suggestions.

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Zlobinskiy, B. M., Ioffe, V. G., Zlobinskiy, V. B., Vosplamenyayemost' i Toksichnost' Metallov i Splavov, Metallurgiya Press, Moscow, 1972, 264 pp.

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USSR

Zlobinskiy, B. M., Ioffe, V. G., Zlobinskiy, V. B., Vosplamenyayemost' i Toksichnost' Metallov i Splavov, Metallurgiya Press, Moscow, 1972, 264 pp.

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USSR

Zlobinskiy, B. M., Ioffe, V. G., Zlobinskiy, V. B., Vosplamenyayemost' i Toksichnost' Metallov i Splavov, Metallurgiya Press, Moscow, 1972, 264 pp.

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USSR

UDC: 669:613.6

ZLOBINSKIY, B. M., IOFFE, V. G., ZLOBINSKIY, V. B.

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USSR

Zlobinskiy, B. M., Ioffe, V. G., Zlobinskiy, V. B., Vosplamenyayemost' i Toksichnost' Metallov i Splavov, Metallurgiya Press, Moscow, 1972, 264 pp.

nuclear and missile technology, powder metallurgy, pyrotechnics and other new branches of industry which utilize metals and various compounds of metals. Deeper studies of the combustion of metals have been required as metals are used in high temperature and corrosive media, in reaction engines, as rocket fuels, etc. The development of nuclear power engineering and missile technology has required more complete explanation of the essence of the processes of high temperature oxidation, mechanisms of ignition and combustion of metals and alloys.

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USSR

Zlobinskiy, B. M., Ioffe, V. G., Zlobinskiy, V. B., Vosplamenyayemost' i Toksichnost' Metallov i Splavov, Metallurgiya Press, Moscow, 1972, 264 pp.

studied. Systematization of the accumulated data should help their practical use and the development of further studies in this area.

Section I of this monograph is dedicated to studies of the flammability of metals and alloys. Section II studies problems of the flammability of aerogels of metals and alloys, while Section III studies problems of the flammability of aerosols of metals and alloys. Sections II and III discuss the studies, performed primarily at the Moscow Order of Red Banner, Labor Institute of Steels and Alloys, based on the dissertation work performed under the leadership of B. V. Zlobinskiy on the flammability of binary metals and alloys, including the work of Candidate of Technical Sciences N. V. Manuyev (alloys of titanium with aluminum, manganese and silicon), of Candidate of Technical Sciences V. G. Ioffe (alloys of zirconium with titanium and silicon), of Candidate of Technical Sciences Kh. I. Peyrik (alloys of nickel with titanium and aluminum), of Candidate of Technical Sciences V. G. Poyarkov (alloys of aluminum with magnesium), of Candidate of Technical Sciences Ye. I. Popov (alloys of magnesium with lithium and aluminum), of Candidate of Technical Sciences M. M. Mukhametov (alloys of copper with aluminum and silicon), and of B. S. Fedotova (boron and borides).

The problem of assurance of production safety requires that the toxic properties of metals and alloys be studied as well. The dangerous properties of many

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metals have not yet been determined or studied sufficiently. Section IV studies general problems of the toxicity of metals and their compounds and presents the information which the engineer needs concerning the toxicity of metals and possible estimation of their danger.

Section I of the book was written by Professor B. M. Zlobinskiy, Sections II and II--by B. M. Zlobinskiy and Candidate of Technical Sciences V. G. Ioffe, Section IV--by V. B. Slobinskiy.

The authors are deeply grateful to Doctor of Technical Sciences, Professor V. I. Layner, Doctor of Chemical Sciences, Professor L. A. Shvartsman and Candidate of Medical Sciences R. A. Kucherskiy, who reviewed the manuscript and made valuable suggestions.

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UNCLASSIFIED

TITLE--THE BASIC PRINCIPLES OF DIAGNOSIS OF THROMBOEMBOLIZATION OF THE PULMONARY ARTERY -U-

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THE BASIC PRINCIPLES OF DIAGNOSIS OF THROMBOEMBOLIZATION OF THE PULMONARY ARTERY

Zlochevskiy, P. M.

Summary

Thromboembolization of the pulmonary artery is a relatively frequent complication which, contrary to previous notions, is commonly characterized by a comparatively slow (subacute) course and initial affection of small pulmonary vessels. According to autopsy materials (1952—1967) of the Central Clinical Hospital of the USSR Ministry of Railroad Communications thromboembolization of the pulmonary artery was established in 7.4 per cent of postmortem cases, with an increased incidence during the last years. The author analyzed an extensive clinical material involving the use of auxiliary methods of investigation (electrocardiological, roentgenoradiotomographic and laboratory). Three variants of the clinical course of thromboembolization of the pulmonary artery were singled out: acute, subacute and recurrent; the author proposes a pathogenetic syndrome classification. The article describes the abdominal syndrome (in right-sided involvement of the diaphragmatic pleura) and the allergic

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syndrome (on the 2nd—5th week of the complication), similar with Dressler's syndrome in myocardial infarction. The stage-by-stage shifts are shown on the electrocardiogram and vectorcardiogram with periods of acute, subacute and reverse development. The paper sets forth an analysis of characteristic changes of the roentgenolomogram, angiopulmonogram, data of radioisotope scanning of the lungs in clinical and experimental conditions, as well as of methods of determining the P_{CO_2} arterioalveolar gradient, coagulography, thromboelastography and biochimical shifts in the blood. Principles of differential diagnosis with myocardial infarction and other pulmonary complications (especially after thoracic operations) are outlined. Emphasis is laid on the necessity of timely recognition of thrombembolization of the pulmonary artery in neurological patients. The author proposes a definite sequence of conducting diagnostic manipulations.

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NEKRASOV, M. M., MANZHELO, V. A., MARTYNYUK, Ya. V., ZLOGODUKH, G. M.

"The Future of Utilizing Piezoelectric Elements in Computer Technology"

Poluprovodn. tekhn. i mikroelektronika. Resp. mezhved. sb. (Semiconductor Technology and Microelectronics. Republic Interdepartmental Collection), 1971, vyp. 6, pp 71-74 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, Oct 71, Abstract No 10B143)

Translation: The authors describe the principal types of piezoelectric elements which have been specifically designed for use in computer technology. Data are given on the basic parameters and field of application of analog piezoelectric elements. The possibilities of constructing high-capacity memory units with ferroelectric pulsed piezoelectric register elements are considered. The access time for readout from such a device is measured in fractions of a microsecond. Bibliography of six titles. N. F.

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USSR UDC 681.142.65

NEKRASOV, M. M., MANZHELO, V. A., MARTYNYUK, YA. V., ZLOGODUKH, G. M.

"Prospects for Using Piezoelements in Computer Engineering"

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No 6, 1971, pp 71-74

Abstract: A study was made of the basic types of piezoelements the designs of which were especially developed for application in computer engineering. Data are presented on the basic parameters and range of application of analog piezoelements. Special attention is given to the ferroelectric piezoelements designed for storing discrete information. The basic principles of constructing a memory of significant capacity using such elements are noted. The reference cycle when reading out of the described memories can be fractions of a microsecond. The length of the write cycle is on the order of a hundred microseconds, which permits application of relatively low writing voltages and simple write shapers. A write cycle frequency of several kilohertz is attainable. The memory circuit based on pulse elements is similar with respect to complexity to a magnetic memory with linear access.

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UDC 621.314.222.6

NEKRASOV, M. M., GUL'TYAYEVA, L. G., and ZLOGODUKH, G. M.

"Piezoceramic Shift-Type Transformers"

Kiev, Izvestiya VUZov SSSR--Radioelektronika, No. 5, 1970, pp 608-613

Abstract: The transformer is an electromechanical device with a double energy conversion capable of transforming an electrical voltage to mechanical oscillations (or the harmonics) caused by the resonance amplification of stresses and voltages. In the simplest case, the piezoceramic transformer is a three-lead component made of a piezoceramic bar with surface electrodes, and consists of an exciter and an oscillator. A periodic electric field applied to the exciter causes the whole bar to oscillate mechanically as a result of the inverse piezoelectric effect. Resonance oscillations and standing waves result at particular frequencies, the natural mechanical frequencies along one of the geometric dimensions. The amplitudes of the elastic stresses and strains are given a resonance amplification, and these stresses set up an electric field at the oscillator electrodes. The equivalent circuit of the piezotransformer is given, and some computational equations are derived. Also shown are diagrams of various arrangements of these transformers. The curve for the transformer coefficient as a

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