

Instruments and Measurements

USSR

UDC: 621.37/39(075)

KVASNITSKIY, V. N., LEVINTOV, A. G., YURIN, O. N.

"Electric Circuits in Radio Electronics and Instrument Building"

Elektricheskiye skhemy v radicelektronike i priborostroyenii (cf. English above), Moscow, "Svyaz'", 1971, 191 pp, ill. 77 k. (From RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A13 K)

Translation: All types of circuits which incorporate a unified system of design documentation are considered in the book. Recommendations are introduced on compiling circuit documentation for various groups of articles. A method is described for automatic circuit design by computer. The book is written for engineering and technical workers dealing with problems of creating and checking out circuit documentation, and may be useful for college and university students. A. K.

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1/2 007 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--SOME TRENDS IN DEVELOPMENT OF SCIENTIFIC FOUNDATIONS FOR
STANDARDIZATION -U-
AUTHOR-(02)-KVASNITSKIY, V.N., LEVINTOV, A.G.
COUNTRY OF INFO--USSR
SOURCE--STANDARTY I KACESTVO, 1970, NR 5, PP 39-41
DATE PUBLISHED-----70
SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES
TOPIC TAGS--STATE OF STANDARIZATION, MATHEMATIC METHOD, ACCURACY STANDARD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/0108 STEP NO--UR/0422/70/000/005/0039/0041
CIRC ACCESSION NO--AP0122374

UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0122374

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS DEFINE THE AIMS OF THE SCIENCE OF STANDARDIZATION. THEY STRESS THE IMPORTANCE OF MATHEMATICS IN THE CREATION OF FUNDAMENTAL BASIS FOR STANDARDIZATION. THE OBJECT AND MAJOR WAYS OF DEVELOPMENT OF THE THEORY OF STANDARDIZATION ARE SIGNLED OUT AND A NUMBER OF URGENT PROBLEMS ARE FORMULATED.

UNCLASSIFIED

1/2 031 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--DEUTERON GENERATION ON NUCLEI BY HIGH ENERGY PROTONS -U-

AUTHOR--(05)-GORYACHEV, YU.M., KANAVETS, V.P., LEVINTOV, I.I., MORDZOV,
B.V., NIKIFOROV, N.A.
COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(3), 629-35

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PARTICLE PRODUCTION, DEUTERON, PROTON BOMBARDMENT, SECONDARY
EMISSION, DIFFERENTIAL CROSS SECTION, BERYLLIUM, CARBON, ALUMINUM,
COPPER, TITANIUM, SILVER, GOLD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1991/1063

STEP NO--UR/0367/70/011/003/0629/0535

CIRC ACCESSION NO--AP0110753

UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0110753

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CROSS SECTIONS FOR THE PRODUCTION OF D, P, AND PI POSITIVE MESONS HAVE BEEN MEASURED IN THE INTERACTION OF 6.8-GEV-C P WITH BE, C, AL, CU, TI, AG, AND AU NUCLEI. THE SECONDARY PARTICLES WITH A MOMENTUM OF 1.23 GEV-C HAVE BEEN REGISTERED AT 15 MILLIRADIANS IN THE LAB. SYSTEM. THE DEPENDENCE OF THE DIFFERENTIAL CROSS SECTIONS ON THE MASS NO., A, OF THE NUCLEI CAN BE PUT IN THE FORM $D \propto A^{-2}$ σ_{D-0P} $D \propto A^{-1}$ IS SIMILAR TO A χ^2 , WHERE χ^2_{SUBD} EQUALS 1.24 PLUS OR MINUS 0.01, χ^2_{SUBP} EQUALS 0.69 PLUS OR MINUS 0.03, AND χ^2_{SUBPI} POSITIVE EQUALS 0.45 PLUS OR MINUS 0.03. THE OBTAINED RESULTS MAY BE BROUGHT INTO CONSENT WITH THE BUTLER PEARSON MECHANISM OF THE D PRODUCTION IF THE ABSORPTION OF D AND N IN THE NUCLEUS IS TAKEN INTO ACCOUNT. FACILITY: INST. TECH. EKSP. FIZ., MOSCOW, USSR.

UNCLASSIFIED

2 pp 5 59068
6.72

LEVINSON, D I

111-8. CHARACTERISTIC FEATURES OF THE GROWTH OF SINGLE GERMANIUM CRYSTALS

Article by N. I. Astasov, G. V. Fedorov, D. I. Levinson, A. V. Stepanov, Physicochemical Institute of the USSR Academy of Sciences, Leningrad, *Journal of Crystal Growth*, 1974, p 323

When growing shaped single crystals by the Stepanov procedure, a close relation is observed between the shape of the melt column, the thermal field in the crystal and the "wet column" and the crystallographic orientation of the crystal. As the practice of growing shaped single crystals demonstrates, the configuration of the seed crystal is not the shape forming factor. The final form of the crystal is determined by the outline of the shape forming hole and the position of the crystallization front. However, in the initial growth stage, the shape of the seed crystal is realized both for shaping the melt column and for the thermal fluxes through the crystal-melt interface.

The presence of octahedral planes capable of severe faceting changes the shape of the crystallization front and the shape of the melt column. It turns out that the structural and electrical properties of germanium single crystals depend to a strong degree on the above indicated crystallization parameters.

When growing monocrystalline rods of germanium from 2 to 10 mm in diameter and with orientations of $\langle 100 \rangle$, $\langle 110 \rangle$, $\langle 111 \rangle$, $\langle 211 \rangle$, $\langle 221 \rangle$, $\langle 321 \rangle$, the degree of faceting of the single crystals varied from 90 to 3 percent. Controlling the crystallization parameters (the thermal field of the melt column and the crystal, the shape of the melt column), it was possible to obtain monocrystalline rods of germanium with a clean 12 surface finish. The dislocation density in them was from $1 \cdot 10^4$ to 10^5 cm^{-2} .

The distribution of the alloying admixtures in shaped single crystals in the general case is subject to the same laws as are observed when growing single crystals from a melt. However, when growing sharply alloyed single crystals by the Stepanov procedure, there is no long-period banding or short-period stable banding. The presence of the enclosing device permits a significant decrease in the intensity of the growth bands.

USSR

UDC: 53.082

KUSHCH, V. V., KUKUY, A. S., ANTONOV, P. I., LEVINSON, D. I.

"A Device for Measuring the Resistivity of Single Crystal Rods by a Noncontact Method"

Moscow, Izv. AN SSSR: Ser. Fizicheskaya, Vol 36, No 3, Mar 72, pp 601-602

Abstract: A device is proposed which uses a noncontact capacitance method for checking the volumetric distribution of resistivity in cylindrical germanium specimens. The measure of resistivity is the amplitude of the voltage taken off from a measurement loop into which the study specimen is introduced through capacitive electrodes. In the proposed device, the measurement results are made more reliable by providing for automatic tuning of the measurement loop to resonance with the supply generator by adding a correcting variable capacitor with the rotor mechanically connected to one of the coupling electrodes. A comparison of measurement results with data obtained by the two-probe method shows a deviation of no more than $\pm 10\%$. The repeatability of the device as evaluated by the coefficient of variation of repeated measurements at a single point was less than 1%.

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USSR

UDC: 537.31

OKUN', L. S., KAGANOVSKIY, I. P., LEEFIKHOVA, Ye. Ye., ZATULOVSKIY, L. M.,
CHAYKIN, P. M., LEVINSON, D. I., All-Union Scientific Research Institute
of Electrothermal Equipment

"Investigation of Resistivity Distribution in a Single Crystal Germanium
Strip by the Single-Probe Method"

Moscow, Izv. AN SSSR: Ser. Fizicheskaya, Vol 36, No 3, Mar 78, pp 614-618

Abstract: The distribution of resistivity is studied by single-probe mea-
surements on a single crystal germanium strip with spacing down to 10 μ .
The strips were grown by the Stepanov method in directions $\langle 110 \rangle$ and $\langle 112 \rangle$,
the plane of the strip being (111). The specimens were doped with Ga and
Sb for p - and n -conductivity respectively. It was found that the longi-
tudinal nonhomogeneity is greater than the transverse nonhomogeneity, and
that both types of nonhomogeneity increase with a reduction in the dis-
crete measure of step. The distribution of nonhomogeneity in the resist-
ivity of longitudinal specimens is basically periodic with a periodicity
of 350-400 μ , depending on the conditions of growth. In transverse speci-
mens the distribution was found to be more random with a periodicity of
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JUN', L. S. et al., IAN SSSR: Ser. Fiz., V 36, 1972, pp 614-618

100-125 μ . Fine impurity bands of about 10 μ were observed which are apparently due to the periodicity of the crystallization process occasioned by liberation of the latent heat of fusion. The higher homogeneity observed in p-germanium is attributed to the weaker relation between the effective coefficient of distribution of Ga and periodic fluctuations in growth rate.

USSR

UDC 53.082

KUSHCH, V. V., KUKUY, A. S., ANTONOV, P. I., ~~LEVINSON, D. I.~~

"Device for Measuring the Specific Resistance of Shaped Single Crystals by a Contactless Method"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No 3, 1972,
pp 601-602

Abstract: The application of contactless methods to control the specific resistance of shaped single crystals of different geometries is discussed. It is noted that the application of the contactless capacitance method to control the distribution of the specific resistance over cylindrical single crystals of small diameter not only raises the speed of measurement but makes it possible to avoid losses of costly materials associated with the surface treatment of crystals in probe measurements. The essence of the method is that the voltage amplitude taken from a measuring circuit, into which the sample is introduced through capacitance connecting electrodes, serves as a measure of the specific resistance. A necessary condition for obtaining reliable results has been tuning the measuring circuit to resonance with the generator supplying this circuit, this is ultimately achieved by changing the capacitance of the connection between the electrodes and the sample being studied. This article
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USSR

KUSHCH, V. V., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya,
No 3, 1972, pp 601-602

describes a device which makes it possible to avoid the operation of manual tuning of the capacitance of the connection by introducing a variable correcting capacitor into the circuit, the rotor of which is mechanically connected with one of the connecting electrodes. A diagram and description of the device are given. The measuring properties of the device were evaluated on industrial cylindrical germanium single crystals of diameter 8-9 mm, and the measurements obtained by the contactless method coincide with an accuracy of $\pm 10\%$ with measurements obtained by the two-probe method.

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USSR

UDC 621.382.2

DUDNIK, YE.P., YEREMIN, V.K., LEVINSON, D.I., RYVKIN, B.M., STROMAN, N.B.
SUBASHIYEVA, V.P., TISNEK, N.I. [Physico-Technical Institute imeni A.F. Ioffe,
Academy Of Sciences, USSR, Leningrad]

High-Resolution Counters Of Germanium With Radiation-Induced Defects

Fizika i tekhnika poluprovodnikov, Vol 6, No 4, Apr 1972, pp 779-781

Abstract: The characteristics are presented of counters obtained as usual on the basis of germanium with $N_D - N_A \sim 10^{12} \text{ cm}^{-3}$ but with a decrease of more than one order of magnitude of the background of impurities and defects N_f . The amplitude spectrum of a specimen of ^{137}Cs is shown. The resolution of the counters at this line is less than $R = 1.2$ percent. The dependence is shown of the constant capture time on the electrical field intensity. 2 fig. 13 ref. Received by editors, 5 Nov 1971.

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USSR

UDC: 621.375.7

GERSENSHTEYN, M. Ye., LEVINSON, F. A., BELOV, A. A., TETEL'BAUM, B. I.

"Three-Frequency Parametric Circuit as a Negative Capacitance"

Moscow, Radiotekhnika i Elektronika, Vol. 16, No 6, Jun 71, pp 990-995

Abstract: This paper discusses conditions for realizing negative capacitance in the video frequency range by means of a three-frequency parametric circuit, which is of interest for operation of a parametric video amplifier from a negative circuit. It is shown that in the case of a certain detuning of the output circuit relative to the pumping frequency and fairly low amplitude of the second harmonic, negative capacitance may be realized in a predetermined video frequency range in the nonlinear capacitance spectrum. A formula is derived for the maximum possible negative capacitance. Experimental and theoretical curves are compared for the insertion capacitance at the input of a parametric video amplifier for various values of detuning of the output tank and output circuit parameters.

The analysis shows that realization of negative capacitance in the form of a three-frequency parametric circuit requires positive detuning of the output circuit, and a very low coefficient of modulation of the nonlinear capacitance.

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... K. Ye., et al, Radiotekhnika i Elektronika, Vol. 16, No 6,
... 1971

... with respect to the second harmonic. The negative capacitance may be kept
... constant over the predetermined video frequency range.

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USSR

UDC: 654.91/.92:62-783.2

LEVINSON, S. V., BEZZUBOV, V. I.

"One Method of Construction of Group Signalling Circuits in Power Supplies"

Tr. Nauch-Tekhn. Konf. Kaluzh. Obl. Pravl. Nauch-Tekhn. O-Va Radiotekhn., Elektron. i Svyazi [Works of Scientific and Technical Conference of Kaluga Oblast Administration of the Scientific and Technical Society of Electronic and Communications Engineers], Kaluga, 1971, pp 16-20 (translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 3, 1972, Abstract No 3 A302 by A. B.)

Translation: A method is described for constructing circuits for group signalling of the level of voltage in power supplies having several input voltages, in which the current through the voltage dividers which are the signal sensors is independent of the tested voltage. The sensor used is a Schmitt flip-flop, the actuating device is a keyed amplifier stage with a load in the collector circuit. 4 figures; 4 referenses.

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USSR

UDC: 621.762.2:669.1'24(088.8)

PUTIMTSEV, B. N., GRATSIAOV, Yu. A., KOZLOV, A. G., MINCHER, A. N.,
LEVINZON, V. Kh., STERLIN, R. G., BAKANOVA, T. P., BIKEZIN, K. P., MIKHEYEV,
V. V.

"Method of Production of Iron-Nickel Alloy Powders"

USSR Author's Certificate Number 343771, Filed 7/04/71, Published 11/08/72
(Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract
No 8G394P).

Translation: A method is suggested for embrittlement of Fe-Ni alloys,
designed for the production of powders by mechanical grinding. Fe-Ni alloys
are embrittled by introduction of S to the initial melt. In order to increase
the dispersion and technological properties of the powders, 0.03-0.07 wt %
oxygen is also introduced to the initial melt, with a ratio of oxygen to S of
2.0-7.0.

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USSR

UDC 621.762.22

PUTIMTSEV, B. N., ~~LEVINSON, V. Kh.~~ Central Scientific Research Institute for Ferrous Metallurgy imeni I. P. Bardin

"Production of Powders by Mechanical Grinding of Iron-Nickel Alloys Containing Sulfur"

Poroshkovaya Metallurgiya, No 1, 1972, pp 6-10.

Abstract: Alloy type 80N2M is used as an example to show the promise for the production of iron-nickel alloy powders by mechanical grinding of sulfur-embrittled compact alloys. The optimal sulfur content in 80N2M alloy is established for formation of fine grain during hot rolling and effective grinding of the hot-rolled alloy in mechanical impact mills. The physical and technological properties of iron-nickel alloy powders produced by combined reduction of oxides, spraying of melted streams, and mechanical grinding of hot-rolled alloy embrittled with sulfur are compared. Alloy type 80N2M is used as an example to show the advantages of the method of mechanical grinding for the preparation of powders with high volumetric mass and pycnometric density, as a basis for the creation of high-permeability magneto dielectrics.

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LEVIT, A.P.

CHEMICAL TRANS.

SINGLE-ELECTRON TRANSFER AND CHEMICAL TRANSFORMATIONS
(Conference in Rostov-on-Don)

Article by G. I. G. of Chemical Science, Z. V. Fodor, Rostov,
Vostok Akademii Nauk SSSR, Russian, No 9, September 1971, pp
107-106

A conference on the role of electron transfers in chemical reactions was held in Rostov-on-Don on 22-25 May. It was organized by the Northern Caucasus Scientific Center of the Higher School; about 40 reports were presented. Participating in the conference were the leading chemical institutes of the AS USSR and the Russian Academy of Sciences, and also Rostov-on-Don, Moscow, Leningrad and Gorkiy universities.

Chemical reactions are usually regarded as the rupture and formation of bonds, that is, the rearrangement of the skeletal placement of atoms or atomic arrangements is preceded by the transfer of electrons from one of the reacting molecules to the other. The study of that stage, which has become possible through the use of new instrumental methods of investigation, especially of electron paramagnetic and nuclear magnetic resonance, expands concepts of the reaction mechanism as a sequence of elementary stages known to us.

As a result of electron transfer new particles appear, not known to organic chemistry of the past. The properties of those products were examined in a number of reports. Hemoglobin, cytochrome C and other enzymes with Fe(II) after electron transfer give non-equilibrium forms in which the iron has already gone over into the state Fe(II) but the protein part still retains its previous configuration (R. M. Davydov). The transformation of 4-4-dinitro-cis-stilbene into an anion-radical is accompanied by complete cis-trans-isomerization. Destruction of the symmetry of the molecule leads to establishment of equilibrium: 4-nitro-cis-stilbene in the presence of electron transfer gives a mixture

- 143 - JFS 6061, 30 2-73

J. Van
22 SEP 1971
ANM/1115

(26)

The α -aryl methyl leaves the cell and cleaves the hydrogen from the solvent

Andriyenko [Ac 1964] [N.D. 1964]

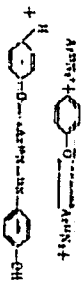
---Ar Radicals No.

The α -(trichloromethyl) mercury, as is evident from the formation of the α -aryl methyl mercury cation.

It is known that the reaction of alkyl ions and α -trichloromethyl mercury with perchlorylfluoride leads to the corresponding fluoro- and chloro-derivatives. L. V. Gorbunova et al. showed that in that reaction the initial phase is a free-radical reaction involving a radical of the solvent (R \cdot) and the α -trichloromethyl radical of mercury. The authors demonstrated the role of perchlorylfluoride in another well-known reaction -- radical hydrogenation. During the reaction of perchlorylfluoride with triethylsilane there is a displacement of the hydride ion and the formation of an α -trichloromethyl carbonium ion. Hexachloroantimonate of triethylcarbonium in these conditions gives triethylmethane. But if the hexachloroantimonate of triethylchlorophenyl-carbonium is introduced into the reaction, the end product proves to be the free triethylchlorophenylmethyl radical. The first stage of the reaction of silane with the carbonium ion evidently is a single-electron transfer with the formation of the radical pair carbonium radical -- silane cation-radical. If the formed carbonium radical is highly reactive, it reacts with the silane cation-radical in the cell of the solvent, giving the hydrogenation product. But if the radical has low reactivity, the process ends in the stage of electron transfer.

The participants in the conference noted the role of the formation of molecular complexes in reactions with electron transfer. I. A. Levchenko and G. B. Serdyukov have established that perchloroacetic acid forms with nitro-acceptor complexes capable of hemolytic decomposition (which is equivalent to electron transfer). In the dark that reaction proceeds slowly and is controlled only by thermal factors. During intense irradiation with light with a wavelength corresponding to the absorption band of the complex the process is completed in several seconds. The components of the complex, taken separately, do not change photochemically. G. V. Komlin et al. studied the reaction of quinoxaline with salts of aryl diazonium. The obtained results indicate that the active center which reacts with the diazonium cation is the silanone radical; the arylation of quinoxaline proceeds by a chain mechanism.

9. Yu. Oshibayev, H. H. Johnson et al. arrived at the conclusion that the aromatic σ -nitrobenzene formed from aryl diazonium salts under the effect of donor groups have a π -level. The kinetics of the reaction of diazonium salts with heterophenous acid can be described by equations of electrical propagation and termination of the chains. For different aryl diazonium the rate of electron transfer and nitrogen coupling vary substantially (M. A. Modyev). It can be assumed that in the presence of nitrogen coupling at first there is electron transfer, and later the reaction of radicals to form the aromatic nucleic resonance of π to control the reaction of $C_{60}H_{12}N_2$ with sodium phenolate in an acetone-methyl alcohol mixture. In the first moment after the addition of alcohol mixture strong positive polarization of the signal belonging to the dye was observed. The signal from the starting diazonium salt also was polarized. They consider that this indicates reversibility of the first stage of the following equation:



The role of electron transfers proves to be deciding also for another heterolytic reaction -- nucleophilic substitution at an aromatic carbon atom. S. H. Shyn, L. V. Byukhovetskiya et al. substantiated the scheme of transformation of p-nitrochlorobenzene into p-nitroanisole, which takes into consideration the presence in the reaction mixture of anion-radicals of the initial end products and also includes acts of chain transfer through electron exchanges. An important feature of the scheme is that it organically combines newly formulated concepts with already known ones, leading in the end to the usual precursor of the substitution product -- a sigma-complex. Consequently, heterolytic reactions are not purely ionic, but they cannot be regarded as purely radical.

The participants in the conference emphasized that revelation of the role of electron transfers is a very important task, as it permits more profoundly understanding the essence of chemical transformations and, on the basis of that, more correctly selecting the conditions of reactions and increasing the yield of useful products.

USSR

UDC 621.81.001.5(47+57)

LEVIT, G. O., BAKHTIAROV, V. A., MAKAROV, A. I., and FINAROV, D. P.

"State of the Art in Studies to Generalize the Experience of Planning and Operating Complex-Purpose Reservoirs in the USSR"

Tr. koordinats. soveshchaniy po gidrotekhn. (Works of the Coordinating Meetings on Hydroengineering), No 59, 1970, pp 3-9 (from RZh-Elektrotekhnika i Energetika, No 2, Feb 71, Abstract No 2 D37)

Translation: The studies of the given problem started in 1966 are participated in by 31 institutes. The basic areas of this research, the organizations participating in it and the results obtained are described. The forms and procedure for publication of the USSR Reservoir Cadaster have been worked out as it is developed. All the reservoirs are divided into three groups: >50 million m³ in volume, the thermal electric power plant reservoirs and reservoirs 10-50 million m³ in volume. As methods of improving the effectiveness of using reservoirs have been developed, an effort has been made to create a procedure for planning and designing complex reservoirs. The basic difficulty consists in the absence of a united approach by the cooperating institutes to the providing of a basis for optimal operating conditions of the reservoir and a united point of view with respect to the

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USSR

LEVIT, G. O., et al., Tr. koordinats. soveshchaniy po gidrotekhn. (Works of the Coordinating Meetings on Hydroengineering), No 59, 1970, pp 3-9 (from RZh-Elektrotekhnika i Energetika, No 2, Feb 71, Abstract No 2 D37)

procedure used to estimate losses in various branches on deviating from these operating conditions. The results of research to improve the procedure for forecasting variations of natural conditions when creating reservoirs have been described in greatest detail. The dependence of the intensity of reformation of the reservoir shores on their operating conditions, the variation of ice conditions when building the reservoirs, and the variation of channel reformations when regulating runoff have been noted. The development of methods of planning measures and determining expenditures when building reservoirs has been carried to the level of procedural instructions. The research has led to the conclusion that land evaluation must be reduced to the cost of measures to conserve the agricultural production balance while insuring a net profit. The increasing role of engineering protection of the land and increased requirements on sanitary by-passes have been established. The future research goals are formulated. There is 1 table.

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USSR

UDC 621.762.002.5(088.8)

LEVIT, I. A., BATRAKOV, P. D., VAGANOV, B. M.

"Automatic Multiple Tube Electric Arc Furnace"

USSR Author's Certificate No 272491, filed 18 Jun 66, Published 2 Sep 70
(from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G473P)

Translation: An electric arc furnace for obtaining powders by reduction contains mechanisms for charging and unloading the furnace and mechanisms for charging and unloading the troughs. For simultaneous charging or unloading of all the furnace tubes and to insure complete automation of its operation, the furnace is equipped with a holder with clamps for the troughs the number of which corresponds to the number of furnace tubes and a conveyor for moving it.

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1/2 C17 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--THERMAL EFFECTS OF YEAST CULTIVATION -U-
AUTHOR--(02)-LEVIT, KH.D., GALASHOV, G.I. L
COUNTRY OF INFO--USSR
SOURCE--KOLEBOPEK. KONDITER. PROM. 1970, 14(1), 35-7
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--FOOD TECHNOLOGY, YEAST, FERMENTATION, TEMPERATURE CONTROL

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0038 STEP NO--UR/0344/70/014/001/0035/0037
CIRC ACCESSION NO--AP0181241

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0131243

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SCHEME IS PRESENTED FOR THE
CALCULATION OF HEAT PRODUCTION IN THE FERMENTATION TANKS DURING THE CON.
PRODUCTION OF BAKER'S YEAST. A 50PERCENT YIELD OF DRIED YEAST BIOMASS
RELATIVE TO THE AMT. OF CONSUMED GLUCOSE, IS TAKEN AS A BASIS FOR THE
THERMOCHER. CALCNS., GIVING A VALUE OF 920 CAL-KG OF CONSUMED MOLASSES.
THE SCHEME IS USEFUL FOR THE REGULATION OF PROPER COOLING OF THE
FERMENTATION TANKS IN THE PROCESS OF YEAST PRODUCTION.

UNCLASSIFIED

I/2 039 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--VIBRATIONS AND BALANCING OF AIRCRAFT ENGINE ROTORS -G-
AUTHOR--(02)-LEVIT, M.YE., ROYZMAN, V.P.
COUNTRY OF INFO--USSR
SOURCE--(VIBRATSIYA I UKAVNOVESHIVANIYE ROTOROV AVIADVIGATELEY) MOSCOW,
MASHINOSTROYENIYE, 1970, 171 PP
DATE PUBLISHED----- 70
SUBJECT AREAS--PROPULSION AND FUELS
TOPIC TAGS--SHAFT VIBRATION, AIRCRAFT ENGINE, JET ROTOR, ENGINE
MAINTENANCE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0243 STEP NO--UR/0000/70/000/000/0001/0171
CIRC ACCESSION NO--AM0132508
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

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CIRC ACCESSION NO--AM0132508

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

ABSTRACT. PREFACE 3. INTRODUCTION 5.
CHAPTER I THEORETICAL PRINCIPLES OF BALANCING OF ELASTICALLY DEFORMABLE
ROTORS 12. II METHODS FOR BALANCING OF ELASTICALLY DEFORMABLE ROTORS
41. III CERTAIN SPECIAL BALANCING METHODS 82. IV EQUIPMENT AND
APPARATUS FOR INVESTIGATION OF AIRCRAFT ENGINES AND BALANCING OF THEIR
ROTOR SYSTEMS 113. V EXAMPLES FOR INVESTIGATIONS OF VIBRATIONS AND
BALANCING 159. BIBLIOGRAPHY 170. THE BOOK CONTAINS A REVIEW OF
CONTEMPORARY METHODS FOR BALANCING OF AIRCRAFT ROTORS FACTORS WHICH
EFFECT THE LEVEL OF VIBRATIONS OF ENGINES. CONSIDERABLE ATTENTION IS
GIVEN TO THE COMPLEX METHOD FOR INVESTIGATION OF AIRCRAFT ENGINE
DYNAMICS AS A STAGE PRECEDING THE SELECTION OF THE METHOD FOR ROTOR
BALANCING. GIVEN ARE RESULTS OF INVESTIGATIONS OF VIBRATIONS OF FULL
SCALE GAS TURBINE AIRCRAFT ENGINES, THEIR COMPRESSORS AND TURBINES.
GIVEN ARE SOLUTIONS TO PROBLEMS CONNECTED WITH AUTOMATION OF BALANCING
PROCESSES AND DEVELOPMENT OF NEW BALANCING METHODS, AS WELL AS
EQUIPMENT.

UNCLASSIFIED

USSR

UDC 620.181.539.374;546.74.75

LEVIT, V. I., SURKOV, YU. P., SOKOLKOV, YE. N., and ZHURAVEL', L. V., Institute of Physics of Metals, Academy of Sciences USSR

"Aging of KhN77TYuR Alloy After Plastic Flow"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 29, No 6, Jun 70, pp 1198-1203

Abstract: A study is made, using methods of electrical resistance and transmission electron microscopy, of the processes of decay of a saturated solid solution in the KhN77TYuR alloy with different dislocation structures produced by deformation at different temperatures. For estimating the effect of distribution of dislocations on the processes of subsequent aging those degrees of deformation at 20 and 1080°C were selected, which in all deformed specimens ensured a yield point of 44-47 kg/mm². Changes in mechanical properties and structure in the process of aging are determined. It is shown that the higher strength properties after high-temperature thermomechanical treatment are due mainly to the increased density of emissions of the intermetallide γ' -phase. In addition, the notched form of the boundaries of grains and the separation of carbides on such boundaries impede the intergrain disintegration and ensure adequate ductility. The authors thank N. A. Kompaneytsev for help in conducting tests on mechanical properties, R. R. Romanova and R. A. Karabanyan for help in preparing and checking of thin foil, and S. H. Petrova for valuable suggestions during discussion.

1/1

Acc. Nr:

AA0108689

LEVITAN E.A.

Ref. Code:

UR 0482

Abstracting Service:
Soviet Inventions Illustrated, Section I Chemical, Derwent, 3/70

244361 WATER SEAL FOR RISERS IN WALKING FURNACE
 is a water box (3) with a hole for the risers, each of which carries a box fitted on top with a scale guard (4). A trough (6) in the fixed water box is coupled to a system of troughs (7) used for rinsing purposes. Scale from the water seal falls on to the guard on the moving box and so off into the troughs. Scale water from these is passed out. The scale lumps build up in the hearth hole which is framed with metal plates (2) so that the lumps are crushed under the action of the riser tubes (1).

12.4.68 as 1233643/22-1. GOLISHEV.YU.L., E.A.LEVITAN.
 B.B.SRUCHENEVSKII. STAL'PROEKT INST. (10.10.69)
 Bul 18/28.5.62. Class 18c. Int.Cl. C 21 d.

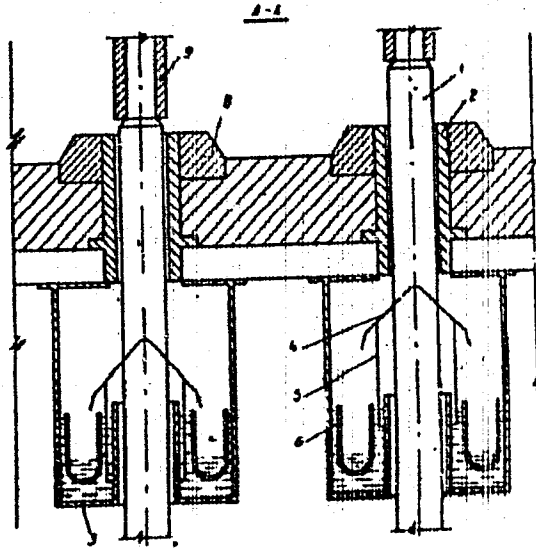
1/3

18

REEL/FRAME

19900411

Acc. Nr.: AA0108689



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REEL/FRAME
19900412

B S

AA0108689

AUTHORS: Levitan, E. A.; Golishev, Yu. L.; Struchenevskiy, B. B.
Gosudarstvennyy Soyuznyy Institut "Stal'proyekt"

19900413

Acc. Nr:

LEVITAN E.A.

Ref. Code:

AA0108684

Abstracting Service: 3-70

UR 0482

Soviet Inventions-Illustrated, Section I Chemical, Derwent,

244363 WALKING BEAM FURNACE with load-bearing beam (1)
fitted with heat resistant steel mounts (2)
spaced by more than a mount length so that when the
billets move, their points of contact with the mounts
will lie between mounts after each step travelled by
the walking beam. This ensures heating of the colder
parts of the metal slab, even heating along the slab
length and general improvement in structure as a result
of this.

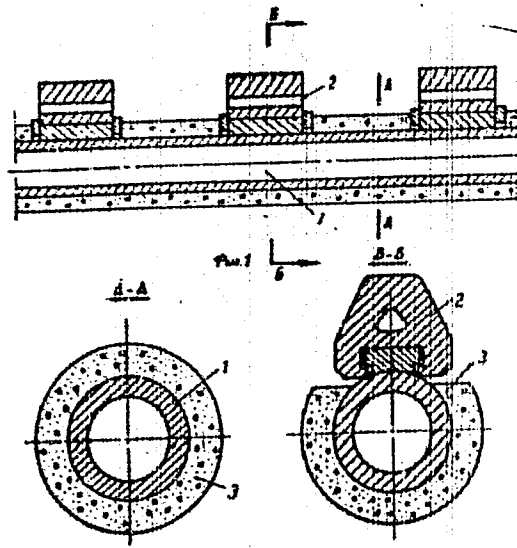
11.3.68 as 1223798/22-1. GOLISHEV, YU. L., E.A. LEVITAN,
E.B. STRUCHENEVSKII. STAL' PROEKT INST. (10.10.69) Bul 18/
28.5.69. Class 18c, 31a. Int. Cl. C 21 d, F 21 b.

1/3

18

REEL/FRAME
19900396

Acc. Nr.: AAO 108684



2/3

REEL/FRAME
19900397

135

AAO 108684

AUTHORS: Golishev, Yu. L.; Levitan, E. A.; Struchenevskiy, B. B.

Gosudarstvennyy Soyuznyy Institut "Stal'proyekt"

8/1/71

19900398

USSR

UDC: 51:155.001.57:681.3.06

LEVITAN, E. G., STARKUS, K. K.

"Method of Recognizing Figures and Symbols in the 'OCR-A' Font"

V sb. Avtomatika i vychisl. tekhn. (Automation and Computer Technology--
collection of works), No 3, Vil'nyus, "Mintis", 1971, pp 101-111 (from
RZh-Kibernetika, No 12, Dec 71, Abstract No 12V1019)

Translation: A method is given for machine recognition of figures and
symbols in the OCR-A font. The procedure is insensitive to considerable
variations in the thickness of the outline of a symbol and to imperfections
in printing. The results of an experimental check of the method are pre-
sented. Authors' abstract.

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USSR

UDC 621.391

OKULICH-KAZARINAS, Ya. A., LASHAS, A. V., LEVITAN, B. G.

"A Device for Memorizing the Images of Symbols"

Vil'nyus, Nauchnyye trudy vysshikh uchebnykh zavedeniy Lit. SSR. Avtomatika i vychislitel'naya tekhnika (Scientific Works of Institutions of Higher Education of the Lithuanian SSR. Automation and Computer Technology), No 2, 1970, "Mintis", pp 99-103

Abstract: The paper describes a memory device developed at Kaunas Polytechnical Institute and designed for visual observation of symbols read out by the "RUTA-701" machine. The electrical data of the elements and modules of the memory device, as well as the requirements for control signals give an idea of the feasibility of using it in other instances of adjustment or monitoring. Three illustrations, bibliography of two titles.

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- 105 -

USSR

LEVITAN, G. I."Algorithmic Method of Testing Control Computers"

Informatsionnye Materialy. Nauch. Sovet po Kompleks. Probl. "Kibernetika"
AN SSSR [Information Materials Scientific Council on the Complex Problem
"Cybernetics" Academy of Sciences USSR], No 3(50), 1971, pp 78-85, (Trans-
lated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V516
by V. Mikheyev).

Translation: A method is studied for testing digital computers, based on the
following principle of redundant coding of computer data processing algorithms.
Let x_1, \dots, x_m be the initial data and y_1, \dots, y_n be the results of calcula-
tions. Then the nonredundant (fixed) algorithm is represented by the rela-
tionship

$$y_i = f_i(x_1, \dots, x_m), \quad i = 1, \dots, n. \quad (1)$$

Variable z_j are introduced, related to y_i and to each other by certain fixed
relationships

$$\begin{aligned} \varphi_i(z_1, \dots, z_s) &= y_i, \quad i = 1, \dots, n, \\ \psi_k(z_1, \dots, z_s) &= 0, \quad k = 1, \dots, r. \end{aligned} \quad (2)$$

USSR

LEVITAN, G. I., Informatsionnye Materialy. Nauch. Sovet po Kompleks. Probl. "Kibernetika" AN SSSR, No 3(50), 1971, pp 78-85.

After substitution of (1) into (2), a system of equations is produced

$$\begin{aligned} \varphi_i(z_1, \dots, z_s) &= f_i(x_1, \dots, x_m), & i &= 1, \dots, n, \\ \psi_k(z_1, \dots, z_s) &= 0, & k &= 1, \dots, r. \end{aligned}$$

which is assumed solvable relative to z_j :

$$z_j = F_j(x_1, \dots, x_m), \quad j = 1, \dots, s.$$

Series-parallel connection of operators F , ϕ and ψ produces a redundant algorithm characterized by two transforms, one of which F_ϕ is equivalent to the initial algorithm:

$$\varphi_i[F_i(x_1, \dots, x_m), \dots, F_s(x_1, \dots, x_m)] = f_i(x_1, \dots, x_m),$$

while the other, F_ψ is an identity, equal to zero with all values of initial data

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USSR

LEVITAN, G. I., Informatsionnye Materialy. Nauch. Sovet po Kompleks. Probl. "Kibernetika" AN SSSR, No 3(50), 1971, pp 78-85.

$$\varphi_k [F_1(x_1, \dots, x_m), \dots, F_l(x_1, \dots, x_m)] = \\ = \Phi_k(x_k, \dots, x_m) = 0, k=1, \dots, l.$$

Operator F performs expanded transformation of the initial information, operators ϕ and ψ perform decoding and testing of the results of digital computer calculations. The mode of linear digital regulation is described. The reliability of the information tested is quantitatively evaluated by the quantity $R = 1 - qp_n$, where q is the probability of appearance of serious errors, p_n is the conditional probability that they will be missed.

3/3

1/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--CHANGES IN THE MICROBIAL COMPOSITION OF FECEs, CONTENTS OF
DIFFERENT PORTIONS OF THE LARGE INTESTINE AND THE TERMINAL PART OF THE
AUTHOR--(021)-LEVITAN, M.KH., MARKO, O.P.
COUNTRY OF INFO--USSR
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 5, PP 40-42
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DIGESTIVE SYSTEM DISEASE, LARGE INTESTINE, LESION,
MICROBIOLOGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0001 STEP NO--UR/0504/70/042/003/0040/0042
CIRC ACCESSION NO--AP0120701
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--16OCT70

2/2 023

CIRC ACCESSION NO--AP0120701

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

ABSTRACT. DURING BACTERIOLOGICAL STUDY OF
 FECES, CONTENTS OF DIFFERENT PORTIONS OF THE LARGE INTESTINE AND THE
 TERMINAL PART OF THE ILLIUM THE DATA TESTIFYING TO THE DEVELOPMENT OF
 DYSBACTERIOSIS PHENOMENA WERE OBTAINED IN 88 INVESTIGATIONS OF PATIENTS
 WITH NONSPECIFIC ULCEROUS COLITIS. THE DEPTH OF BACTERIAL SHIFTS
 DIRECTLY DEPENDED UPON THE SEVERITY OF THE CLINICAL COURSE OF THE
 DISEASE AND SPREAD OF THE PATHOLOGICAL PROCESS IN THE INTESTINE. THE
 ALTERED MICROFLORA OF THE LARGE INTESTINE AND APPEARANCE OF
 MICROORGANISMS IN THE PORTIONS WHERE THEY ARE ENCOUNTERED IN HEALTHY
 INDIVIDUALS UNDOUBTEDLY SERVE AS A FACTOR PREVENTING THE REGENERATIVE
 PROCESS IN THE INTESTINE IN PATIENTS WITH ULCEROUS COLITIS.
 FACILITY: N-I LABORATORIYA PO PROKTOLGII I KLINIKA MINISTERSTVA
 ZDRAVOOKHRANENIYA RSFSR, MOSCOW.

UNCLASSIFIED

USSR

UDC 538.4:621.362

KUZNETSOVA, T. D., LEVITAN, Yu. S., MURAV'YEV, Ye. V., PANEVIN, I. G.

"Laminar Magnetohydrodynamic Boundary Layer on a Current-Conducting Surface in the Presence of Lateral Velocity Components and Bulk Retardation Forces"

Magnitnaya Gidrodinamika (Magnetohydrodynamics), No 4, 1971, pp 36-42

Abstract: A study is made of stationary laminar flow of an incompressible liquid with constant electroconductivity and viscosity in a cylindrical coaxial channel with solid electrodes located in an external magnetic field that has both tangential and longitudinal components. The Hall constant and the magnetic Reynolds number are small. Due to axial symmetry, the electric field vector has only longitudinal and transverse components. Using Ohm's law and continuity, impulse, and Maxwell's equations for the external electrical and magnetic fields, the authors show that in a given axial plane the flow is dependent on the varying lateral velocity component, inasmuch as the radial pressure gradient varies along the length of the channel. Also, the longitu-

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USSR

KUZNETSOVA, T. D. et al, Magnitnaya Gidrodinamika, No 4, 1971,
pp 36-42

dinal gradient varies across the channel radius. Under given conditions a meridian vortex develops with a zone of reverse flow near the central electrode. Radial variations in the tangential magnetic field and radial current flux also affect the flow.

The development of a boundary layer in the coaxial channel with rotating flow is simplified to the consideration of a flow in a plane slit-type channel with a lateral velocity component. Assuming a short channel and a large Reynolds number, the authors reduce the problem to a boundary layer approximation, which permits calculation of the flow parameters in the center and in the boundary layer. Fluid injection through the walls is assumed to be weak, and only lateral velocity interaction with the longitudinal magnetic field is treated. The assumptions and simplifications yield simple equations for the laminar boundary layer that describe the skewed flow of the electroconductive liquid on a current-carrying plate.

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USSR

KUZNETSOVA, T. D. et al, Magnitnaya Gidrodinamika, No 4, 1971,
pp 36-42

Self-similar transformations and automodeling techniques fail to hold for fluid injection through the wall, and consequently the Runge-Kutta method is used, with numerical calculation carried out on a BESM-2M digital computer. Results are shown in graphic form by families of curves for the lateral velocity profile. The similarity to flows with retardation is noted. The difference is that when the transverse velocity gradient reaches zero, the main flow separates from the wall and reverse flow is observed, but the longitudinal velocity profile is not affected. Flow retardation and separation from the wall are found to be functions of transpiration rate.

The authors thank A. V. Gubarev for valuable discussions. Orig. art. has 8 figs. and 8 refs.

3/3

1/2 012 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--LIQUID AND LIQUID EQUILIBRIUM IN WATER, CYCLOHEXANE AND C SUB1
THROUGH C SUB5 MONOCARBOXYLIC ACID SYSTEMS -U-
AUTHOR-(04)-GORODETSKIY, I.YA., LEVITANAITE, R., LEGUCHKINA, L.A.,
ZARECHNOVA, A.V.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(1), 115-20
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--FLUID EQUILIBRIUM, CYCLOHEXANE, WATER, CARBOXYLIC ACID,
FORMIC ACID, TITRATION, BUTYRIC ACID
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1984/1359 STEP NO--UR/0080/70/043/001/0115/0120
CIRC ACCESSION NO--AP0100022
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--19SEP70

CIRC ACCESSION NO--AP0100022

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISTRIBUTION OF FORMIC (I), ACETIC (II), PROPIONIC (III), BUTYRIC, AND VALERIC ACIDS BETWEEN WATER/ AND CYCLOHEXANE (IV) WAS DETD. AT 65DEGREES BY USING ISOTHERMAL TITRN. THE RESULTS ARE TABULATED AND PLOTTED AS TERNARY EQUIL. DIAGRAMS. INCREASING THE NO. OF C ATOMS IN THE ACID REDUCED ITS SOLY. IN THE AQ. LAYER AND INCREASES ITS SOLY IN THE IV LAYER. WATER CAN BE USED TO EXT. I, II, AND III FROM THE PRODUCTS OF THE OXIDN. OF IV.

UNCLASSIFIED

172 009 UNCLASSIFIED PROCESSING DATE--30DCT70
TITLE--TANNING OF LEATHER -U-

AUTHOR--(03)-YAREMCHUK, N.A., LEVITAS, I.E., BRANDYBURA, I.M.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,601
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(9)
DATE PUBLISHED--03MAR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--TANNING MATERIAL, LEATHER, PATENT, FORMALDEHYDE, UREA,
CHROMIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1995/1087 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0116553

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AA0116553

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO EXCLUDE THE SOFTENING PROCESS AND IMPROVE LEATHER QUALITY, IT IS TANNED BY DECALCIFYING AND WASHING; THEN THE CLEAN RAW HIDES ARE TANNED WITH CR SALTS IN THE PRESENCE OF HCHO CONDENSATION PRODUCTS OF THE HYDROLYZATE OF COLLAGEN, UREA, AND NH SUB4 SALTS. FACILITY: LVOV POLYTECHNIC INSTITUTE.

UNCLASSIFIED

USSR

UDC: 537.226+537.311.33]: [537+535

LEVITAS, I. S., POZHELA, Yu. K., and SASHCHUK, A. P.

"Galvanomagnetic Recombination Effect in Alternating Electric and Magnetic Fields"

Vil'nyus, Litovskiy Fizicheskiy Sbornik, No 5, 1972, pp 825-834

Abstract: The galvanomagnetic recombination effect is defined as the phenomenon occurring in semiconductors with both signs of current carrier when there is a loss of equilibrium of current carriers in a magnetic field due to the different velocities of surface recombination in facing boundaries. A table is given for assistance in the computation of the electric and magnetic fields and for the transformation of alternating into direct signals as applied to certain particular cases, without taking the phase shift into account. The authors also measured some characteristics of sensors of the galvanomagnetic recombination effect in alternating magnetic and electric fields at frequencies less than the critical value; results of the measurements are given in the form of curves. One of the functions of this article is to indicate the broad possibilities of using sensors of the effect for measuring magnetic fields in linear signal multiplication circuits.

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1/2 020 UNCLASSIFIED
TITLE--THIAMIDATION OF POLYACRYLONITRILE -U-

PROCESSING DATE--13NOV70

AUTHOR--(04)--LEVITES, L.M., GABRIYELIAN, G.A., KUORYAVTSEV, G.I., ROGOVIN,
Z.A.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(4), 309-13

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ACRYLONITRILE, CHEMICAL REACTION RATE, COPOLYMERIZATION,
THIOL, AMIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/1241

STEP NO--UR/0460/70/012/004/0309/0313

CIRC ACCESSION NO--AP0134915

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

2/2 020

CIRC ACCESSION NO--AP0134915

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

ABSTRACT. REACTIONS OF POLYACRYLONITRILE WITH H SUB2 S IN HCONME SUB2 OR IN ME SUB2 SO IN THE PRESENCE OF NH SUB4 SH, ME SUB2 NH, ET SUB3 N, (HCOH SUB2 CH SUB2) SUB3 N, OR PYRIDINE GROUPS DEPENDED ON THE AMINE BASICITY AND TEMP. THE THIOAMIDATION RATE AND DEGREE OF CONVERSION WERE HIGHER IN ME SUB2 SO THAN IN HCONME SUB2. THE REACTION GAVE ACRYLONITRILE THIOACRYLAMIDE COPOLYMERS CONTG. 50-5PERCENT CSNH SUB2 GROUPS. FACILITY: MOSK. TEKST. INST.,

MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 621.396.6:621.315.5

LEVITIN, I. B., KHARLAMOVA, T. Ye., KONTSEVICH, A. I.

"Effective Emissivity of Some Electrovacuum Metals"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Technology. Scientific and Technical Collection. Materials), 1970, vyp. 3, pp 16-19 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V417)

Translation: In connection with the introduction of non-contact methods of studying temperature fields in electronic radio equipment, it is necessary to have information on the emissivity of the different materials used, in particular for electrovacuum metals. In this paper, the authors have measured the effective emissivity of Ta, Nb, Ni, Mo, Ti and Kovar and the temperature dependence of emissivity in the 40-200°C temperature range. The measurements were made with the IKR-1 radiometer, using a plate covered with a dense thin film of soot from burning transformer oil as the conventional black reference body. The measurement results given show that the effective emissivity for all the above-mentioned metals increases with rising temperature, the increase being chiefly linear with the exception of titanium. Two illustrations, one table, bibliography of 13 titles. H. S.

1/1

USSR

UDC: 8.74

LEVITINA, M. K.

"Concerning Certain Grammars With Global Substitution Rules"

Nauch.-tekhn. inform. Sb. Vses. in-t nauch. i tekhn. inform.
(Scientific and Technical Information. Collection. The All-
Union Institute of Scientific and Technical Information),
1972, ser. 2, No 3, pp 32-36, 40 (from RZh-Kibernetika, No
8, Aug 72, Abstract No 8V694)

Translation: The paper deals with two types of grammars which generate classes of languages intermediate between context-free and contextual languages. One of these classes (A-languages) is also generated by index and conditional N-grammars. An example is given which demonstrates that inclusion of A-languages in the class of index and conditional N-languages is rigorous. Proof is given of the equivalence of the other class -- MA-languages -- to the class of Rosenkrantz program languages. Author's resumé.

1/1

- 78 -

1/2 023

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--RESISTANCE OF A YEAST LIKE FUNGUS PULLULARIA PULLULANS (DE BARY) BERK, TO THE LETHAL AND MUTAGENIC ACTION OF UV AND X RAYS -U-
AUTHOR--(03)-KOVALTSOVA, S.V., ZAKHAROV, I.A., LEVITIN, M.M.

COUNTRY OF INFO--USSR

SOURCE--TSITOLOGIYA: 12: 233-7, FEB 1970

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FUNGUS, UV RADIATION BIOLOGIC EFFECT, X RAY EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1999/0299

STEP NO--UR/9053/70/012/000/0233/0237

CIRC ACCESSION NO--AP0122501

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--160CT70

CIRC ACCESSION NO--AP0122501

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESISTANCE OF A YEAST LIKE FUNGUS PULLULARIA PULLULANS TO UV AND X IRRADIATION WAS COMPARED WITH THAT OF DIPLOID STRAINS OF SACCHAROMYCES CEREVISEAE. THE RESULTS OBTAINED REVEALED A HIGH RESISTANCE OF P. PULLULANS TO LETHAL UV AND X IRRADIATION; AT UV AND X IRRADIATION LD SUB90 WAS FOUND TO BE 10,000 ERG-MM PRIME2 AND 170 TO 225 KR, RESPECTIVELY. AT THE SAME TIME, FOR DIPLOID STRAINS OF YEAST THE CORRESPONDING VALUES WERE 3000 ERG-MM PRIME2 AND 85 KR. THE HIGH RESISTANCE OF P. PULLULANS WAS ALSO REVEALED FOLLOWING THE MUTAGENIC ACTION OF UV LIGHT (INDUCTION OF REVERSIONS TO ADENINE INDEPENDENCE). P. PULLULANS WAS REGARDED AS AN ORGANISM EXTREMELY RESISTANT TO IRRADIATION. FACILITY: ALL UNION RESEARCH INST. OF PLANT PROTECTION, LENINGRAD.

UNCLASSIFIED

USSR

UNC 582.28+632.4

LEVITIN, M. M., All-Union Institute of Plant Protection

"Advances and Problems in the Genetics of Phytopathogenic Fungi"

Leningrad, Mikologiya i Fitopatologiya, No 6, 1971, pp 538-539

Abstract: The paper read before the Mycology Section of the All-Union Botanical Society (23 March 1971) discusses mutability, heterokaryosis, parasexual process, and genetics of virulence, especially the mutability of the pathogenicity character, mutations of resistance to currently used fungicides and antibiotics, mutagenic effect of fungicides, and so forth.

1/1

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--INDUCED NONCOLLINEAR MAGNETIC STRUCTURE IN RARE EARTH FERRITE
GARNETS -U-
AUTHOR--(05)-BELOV, K.P., CHERNIKOVA, L.A., TALALAYEVA, YE.V., LEVITIN,
B.Z., KUDRYAVTSEVA, T.V.
COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 6, PP 1923-1927
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--FERRITE, GARNET, RARE EARTH METAL, MAGNETIC STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0423

STEP NO--UR/0056/70/058/006/1923/1927

CIRC ACCESSION NO--AP0121097

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0121097

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE APPEARANCE OF NONCOLLINEAR MAGNETIC STRUCTURES IN RELATIVELY WEAK FIELDS (UP TO 20 KOE) COULD BE OBSERVED AS A RESULT OF MAGNETOCALORIMETRIC EFFECT MEASUREMENTS IN G_0 , DY , OR H_0 FERRITE GARNETS CARRIED OUT IN THE VICINITY OF THE COMPENSATION TEMPERATURE. IT IS SHOWN THAT MEASUREMENT OF THE MAGNETOCALORIMETRIC EFFECT OPENS A NEW POSSIBILITY OF INVESTIGATION OF NONCOLLINEAR SPIN STRUCTURES INDUCED BY AN EXTERNAL FIELD.
FACILITY: MOSKOVSKIY GOSUDARSTVENNYI UNIVERSITET IM. M. V. LOMONOSOVA.

UNCLASSIFIED

172 017 UNCLASSIFIED PROCESSING DATE--20NOV70
 TITLE--SELECTION OF RAW MATERIAL FOR THE PRODUCTION OF ZINC ALUMINATE FOR
 ILLUMINATION ENGINEERING APPLICATIONS -U-
 AUTHOR--LEVITIN, TS.M.
 COUNTRY OF INFO--USSR
 SOURCE--PRGM. UKR. 1970, (2), P. 30
 DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--ZINC COMPOUND, ALUMINATE, THERMODYNAMICS, CHEMICAL PRODUCTION,
 CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRA--3001/0705

STEP NO--UR/0436/70/000/002/0030/0030

CIRC ACCESSION NO--AP0126417
 UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--20NOV70

2/2 017

CIRC ACCESSION NO--AP0126417

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

PRODUCTION OF HIGH QUALITY ZN₂O SUB₂ O SUB₄ WERE STUDIED AND

THERMODYNAMIC EQUATIONS FOR A SOLID PHASE REACTION AT 1100-1250DEGREES,

BASED ON CHEAPLY AVAILABLE RAW MATERIALS, TECH. ALIQUISUB₃ AND COM. ZINC

WHITE, GIVEN.

USSR.

ABSTRACT, THE PHYS. CHEM. PARAMETERS FOR THE
FACILITY: ODESS. DAKOKRASOCH. ZAVOD, ODESSA,

UNCLASSIFIED

USSR

UDC: 629.78.051

FEDOSOV, Ye. A., BATKOV, A. M., LEVITIN, V. F., SKRIPKIN, V. A.

"General Problems in Guidance Theory"

Moscow, Upr. dvizhushchimisya ob'yektami. Tr. IV Vses. soveshch. po avtomat. upr. Tbilisi, 1968--sbornik (Control of Moving Objects. Works of the Fourth All-Union Conference on Automatic Control. Tbilisi, 1968--collection of papers), 1972, pp 8-29 (from RZh-Raketostroyeniye, No 10, Oct 72, abstract No 10.41,157)

Translation: A united approach to design of spacecraft control systems is proposed. Formulation of the general problem of guidance is discussed. A linear guidance system is used to illustrate the general features and specific characteristics of systems of remote control, self-guidance and autonomous guidance. The problem of optimizing the guidance system is considered, and an analysis is made of the specifics of solutions for cases of different sources of information with account for different types of energy limitations. An investigation is made of the influence of reaction on the characteristics of the guidance system. Methods are outlined for analyzing a guidance system with regard to absence of complete information on vehicle characteristics. Four illustrations, bibliography of two titles. Résumé.

1/1

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USSR

UDC 621.762.224:669.14.018.253

PETROV, A. K., ~~LEVITIN, V. V.~~, MIROSHNICHENKO, I. S., AKIMENKO, V. B., ANDREYEVA, A. YA., BATENEVA, M. K., GOLOVKO, V. A., LABUNOVICH, O. A., ORLOV, YU. G., and ORMAN, R. Z., Ukrainian Scientific Research Institute of Special Steels, Alloys and Ferroalloys, Dnepropetrovsk State University

"Study of Atomized Powders of High-Speed Steel and Blanks Made of Them"

Poroshkovaya Metallurgiya, No 3, Mar 71, pp 9-14

Abstract: This work was performed in order to study the structure of powders of high-speed steel produced by atomizing of liquid steel with a stream of pure argon applied to a stream of metal through a slit diaphragm at a pressure of 6-8 atm. For comparison, one melt was atomized using compressed air at 14-16 atm under industrial conditions. The structure and phase composition of the initial powder, powder after heat treatment, and blanks made from the powder were studied. Blanks produced by

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USSR

PETROV, A. K., et al., Poroshkovaya Metallurgiya, No 3, Mar 71,
pp 9-14

hydrostatic pressing with subsequent sintering had a fine-grain structure with evenly distributed carbides. The structure corresponded to a hardness of 65 HRC after tempering at 560° and 61 HRC after tempering at 620°. This indicates the possibility of producing blanks from atomized powders of high speed steel.

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- 62 -

USSR

PETPOV, A. K., et al., Poroshkovaya Metallurgiya, No 3, Mar 71,
pp 9-14

hydrostatic pressing with subsequent sintering had a fine-grain structure with evenly distributed carbides. The structure corresponded to a hardness of 65 HRC after tempering at 560° and 61 HRC after tempering at 620°. This indicates the possibility of producing blanks from atomized powders of high speed steel.

2/2

- 62 -

Nickel

USSR

UDC 539.376+539.25+539.26

LEVITIN, V. V., and ORZHITSKAYA, L. K., Ukrainian Scientific Research Institute of Special Steels, Alloys and Ferroalloys

"Substructure of Nickel in the Process of Creep"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 4, Oct 70, pp 843-850

Abstract: Determinations of the angle of disorientation, the dimension of blocks, and the density in sub-boundaries were made according to changes in the intensity of scattering of X-rays directly in the creep process. Using the method of diffraction microscopy, a study was made of the type of dislocations, and of the nature of formation and development of the block structure. It was assumed that the steady-state creep is controlled by the motion of screw dislocation with thresholds. The density of the moving dislocations was estimated. NP2 brand nickel containing (wt. %) 0.02 Cu; 0.02 Fe; 0.002 Zn; 0.0014 S was used in the investigation. Wire specimens 0.7 mm in diameter were annealed in vacuum ($\sim 10^{-3}$ mm Hg) 1030°C over a period of 3 hrs. The average grain size after annealing was 0.01 cm.

1/1

Photoelectric Effect

USSR

~~LEVITIN, Ye. I.~~, SEREBRYANIK, Ye. B., ZAYDEL', I. N., SHERHMEYSTER, Ye. I.,
KUZIN, N. I., OSOKIN, G. V., BARANOVA, G. M.

"Method of Production of Photoelectron Devices"

USSR Author's Certificate No 274247, filed 13 Nov 67, published 24 Sep 70
(from RZh--Elektronika i yeye primeneniye, No 5, May 1971, Abstract No
5A185P)

Translation: A method is patented for production of a photoelectron device with a multialkaline photocathode. Maximum sensitivity is assured by inclusion of multiple heatings in the process of producing the photoelectron device. Sensitizing of the photocathode by oxygen is performed after each heating. The operations are repeated until a steady value of the sensitivity of the photocathode is obtained. T. F.

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USSR

UDC 612.53+612.74

BERNSHTEYN, V. A., SINAYSKIY, M. M., GRUYEVA, L. G., LEVITINA, T. A., and LAZUTINA, T. P., Chair of Physiology, Extension of the Smolensk Institute of Physical Culture, Malakhovka, Moskovskaya Oblast

"Some Aspects of Thermoregulation During Muscle Work"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 59, No 5, 1973, pp 819-827

Abstract: The investigation was performed on 12 athletic students pedaling a bicycle ergometer at a work load of 15 kgm/min/kg body weight for 30 min. At this rate of work, heart rate increases to a maximum of 174 beats/min, pulmonary ventilation to 730 ml/kg/min, and oxygen consumption to 30 ml/kg/min. During the so-called controlled hyperthermia which develops under minimum to moderate thermoinsulation, deep body temperature (measured in the ear near the tympanic membrane) rises uniformly from a control of 37.0°C to 39.4°C. However, excessive thermoinsulation (wearing a thick jacket) causes an additional uncontrolled rise in deep body temperature to a peak of 40.0°C. Skin temperature on the forehead rapidly increases during the first 9 minutes from 35.5 to 39.4°C, to exceed deep body temperature by 1.2°C, but falls subsequently to 37.7°C at the 30th minute. Sweating on the forehead begins with the local rise in temperature and then becomes proportional to deep body temperature and

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USSR

BERNSHTEYN, V. A., et al., Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov,
Vol 59, No 5, 1973, pp 819-827

thermoinsulation (from 0.2 mg/cm²/min in 3 minutes to 4.9 mg/cm²/min in 30 min). Even though not all the sweat evaporates, it is concluded that in steady-state work done with light thermoinsulation at a normal room temperature, about 3/5 of the total heat loss is due to evaporation of sweat.

2/2

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USSR

UDC 517.9:533.7

GOL'DIN, V. Ya., KALITKIN, N. N., LEVITAN, Yu. L., and ROZHEDESTVENSKIY, B. L.

"Computing Two-Dimensional Flows from Detonations"

Moscow, Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, No 6, 1972, pp 1606-1611

Abstract: Under the assumption that the explosion of each element of a space in an explosive material occurs instantaneously, a difference method for calculating the two-dimensional gas dynamics resulting from a detonation is developed. It is noted that there is a difficulty in the two-dimensional case that does not exist in the unidimensional case: the strong distortion in the Lagrangian grid occurring in the computation. As a result, only the regions with an axis of symmetry are considered, with the explosion originating at a point on the axis. Three grid configurations spherical, rectangular, and triangular are described. A system of equations for the two-dimensional gas dynamics is given in terms of Lagrange variables, and the structure of the difference system using the quadrangular grid as an example is developed. The results obtained were compared with a known self-modeling solution, and a close agreement between the two was shown.

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USSR

GOL'DIN, V. Ya., et al., Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, No 6, 1972, pp 1606-1611

The authors express their appreciation to B. D. Moiseyenko for his discussion of the work and to I. A. Govorukhin for his assistance with its formulation.

2/2

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LEVITAN, Yu. L.

Subv

JPRS 58699
10 April 1973

UDC: 517.953.1.7

CALCULATION OF TWO-DIMENSIONAL FIBRS WITH DETONATION

Article by V. Ya. Gol'din, R. M. Volliko, Yu. L. Levitan, N. I. Podolskiy, A. I. Hosenov, Akademiya Nauk SSSR. Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, Moscow, Vol. 12, No. 5, November-December 1972, translated in press 23 January 1973, pp. 1508-1511

A difference method is developed for calculation of two-dimensional gas-dynamics problems with detonation, using the Lagrange variables. Three versions of difference plans are studied, corresponding to various configurations of the squares of a grid. A comparison is presented with the self-similar solution of the problem of a point explosion, showing the satisfactory accuracy of the calculations.

1.1. Detonation Model

Two-dimensional detonation develops in a number of problems, for example the explosion of a non-spherical charge, the initiation of an explosion on the surface of a charge, explosion in a compact, limited medium. As we know, detonation is a complex phenomenon [1]. A strong shock wave travels through the explosive. The heating of the explosive in the shock wave causes rapid chemical reactions liberating large quantities of energy. This energy sustains the process of propagation of the shock wave.

Accurate calculation of chemical reactions is necessary in problems concerning failure of detonation; we note, however, that the reactions themselves and their constants are generally unknown. When commercial charges of high energy explosives detonate, we can limit ourselves to a simple gas-dynamic model of detonation [2]. In this model, the equation of state of the explosive in front of the shock wave has no influence on the parameters of the detonation wave (velocity, pressure, etc.). For definiteness, we will describe the explosive by its shock adiabatic curve:

$$p = c_1(\rho/\rho_0)^{\gamma} - (\rho/\rho_0)^{\beta}$$

where the values of the coefficients c_i and n may not agree with the actual values and change over broad limits. We will assume that the explosion of each element of volume of the explosive (only occurs instantaneously at a certain moment in time. The condition of explosion of a cell is an increase in the density in the cell. If the value of density ρ reaches a certain critical value (ρ_{cr}), the cell explodes.

In most problems, strong shock waves do not move through the explosion products (EP). In these problems, entropy can be considered practically constant and we can take the true isentrope as the equation of state of the EP:

$$p = \rho^{\gamma} \exp(-\frac{p}{\rho c_p})$$

defined experimentally and theoretically. Thus, we write the equation of state as

$$p = \rho^{\gamma} \exp(-\frac{p}{\rho c_p})$$

where the explosion corresponds to a transition from $c = 0$ to $c = 1$ (assuming that $\rho = \rho_{cr}$).

This model of detonation is convenient for use in gas-dynamic calculation plans, based on spreading of strong explosions by introducing mathematical viscosity. It is natural to select plans based on Lagrange coordinates, in order to avoid spreading of contact surfaces. The difference plan is constructed as was done in [1]. Similar difference plans for two-dimensional gas dynamics problems were also studied by other authors, for example, Schultz, Wilcox, A. Jaisriyev, E. G. Staronov and Ye. V. Melnikovskaya. In the two-dimensional case, a difficulty in principle arises which does not arise in the one-dimensional case. This difficulty is the strong distortion of the difference grid during the course of calculation. This fact forced us to use different versions of grids in calculation. In the following, we will study only areas which have an axis of symmetry, when the explosion is initiated at one of the points on this axis. To initiate an explosion, at the initial moment we will assume increased density in several cells near the point of the explosion and, consequently, increased pressure in these cells.

2. Difference Grids

Let us describe three configurations of grids, which we will arbitrarily call spherical, rectangular and triangular.

a. Spherical grid. If an explosion is initiated at an internal point in the explosive, the detonation wave is at first an expanding sphere. It is natural to use this symmetry to construct the difference grid.

USSR

UDC 621.79

LEVITINA, E. I., and TATARINOVA, T. S., Leningrad

"Vacuum Aluminizing of Metals. Bonding of Platings"

Moscow, Fizika i Khimiya Obrabotki Metallov, No 1, Jan-Feb 71, pp 46-49

Abstract: The effect of oxide films and the processing conditions in a glow discharge on the vacuum bonding of aluminum platings to various metals has been investigated. It is demonstrated that preheating of the metal surface in air before aluminizing favors the elimination of organic impurities and the adsorbed moisture and provides a good bonding of the plating to the base metal. The oxide films generated during preheating do not interfere with a good bonding. Principles of the heating effect and the effect of the processing conditions in a glow discharge on the bonding of aluminum platings are analyzed.

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1/2 029 UNCLASSIFIED
TITLE--MODERN CONCEPTS OF BRAIN SULFATIDES -U-
AUTHOR--LEVITINA, M.V.
COUNTRY OF INFO--USSR
SOURCE--USP. SCUREM, BIOL. 1970, 69(1), 113-25
DATE PUBLISHED-----7C

PROCESSING DATE--20NOV70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BRAIN, TISSUE PHYSIOLOGY, METABOLISM, MITOCHONDRION, FATTY
ACID, CHEMICAL ANALYSIS, SULFUR COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--300270428

STEP NO--UR/0221/70/059/001/0113/0125

CIRC ACCESSION NO--AP0127999

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0127999

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. THE METHODS OF SULFATIDE SEPN. FROM BRAIN TISSUE AND THEIR QUAL. DETN. ARE REVIEWED. SYNTHESIS OF NERVE TISSUE SULFATIDES, AND THEIR DISTRIBUTION IN THE GRAY AND WHITE BRAIN MATTER, MYELIN, AND MITOCHONDRIA ARE DISCUSSED. DETAILS ON THE PROBLEM OF QUAL. CHANGE, AND FATTY ACID CONTENT OF SULFATIDES, AS WELL AS THEIR BRAIN METABOLISM IN THE PROCESS OF ONTOGENETIC DEVELOPMENT IS CONSIDERED. FACILITY: INST. EVOL. FIZIOL. BIOKHM. IM. SECHENOVA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--020CT70
TITLE--A STUDY ON MYCELIUM COMPOSITION OF ACTINOMYCES STREPTOMYCINI GROWN
ON A DEFINED MEDIUM WITH GLUCOSE OR STARCH -U-
AUTHOR--(03)-LEVITOV, M.M., KOLESNIKOVA, N.A., GORSKAYA, S.V.
COUNTRY OF INFO--USSR
SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 1, PP 91-94
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ACTINOMYCES, STREPTOMYCIN, POLYSACCHARIDE, CARBOHYDRATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/1730 STEP NO--UR/0220/70/039/001/0091/0094
CIRC ACCESSION NO--AP0109691
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0109691

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY ON MYCELIUM COMPOSITION OF ACTINOMYCES STREPTOMYCINI GROWN ON A DEFINED MEDIUM WITH GLUCOSE OR STARCH HAS SHOWN THAT THE MYCELIUM GROWN ON THE MEDIUM WITH GLUCOSE CONTAINED MORE NITROGEN AND NUCLEIC ACIDS THAN THE MYCELIUM GROWN ON STARCH. THE MYCELIUM, GROWN ON THE MEDIUM WITH STARCH, WAS ENRICHED WITH CARBOHYDRATES, ESPECIALLY WITH POLYSACCHARIDES. SINCE LESS AMOUNT OF STREPTOMYCIN WAS PRODUCED ON THE MEDIUM WITH STARCH, SOME COMPETITION CAN BE SUGGESTED TO TAKE PLACE BETWEEN SYNTHESIS OF POLYSACCHARIDES AND THAT OF ANTIBIOTIC, TAKING INTO CONSIDERATION CARBOHYDRATE NATURE OF THE LATTER.

UNCLASSIFIED

1/2 005 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--A STUDY OF TRANSAMIDINASE ACTIVITY WITH RESPECT TO STREPTOMYCIN
BIOSYNTHESIS -U-
AUTHOR--(02)-PENZIKOVA, G.A., LEVITOV, M.M. L
COUNTRY OF INFO--USSR
SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 2, PP337-342
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--STREPTOMYCIN BIOSYNTHESIS, TRANSAMIDINASE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1985/0397 STEP NO--UR/0220/70/039/002/0337/0342
CIRC ACCESSION NO--AP0100833

UNCLASSIFIED

2/2 005

UNCLASSIFIED

PROCESSING DATE--1BSEP70

CIRC ACCESSION NO--APO100883

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MYCELIUM OF ACT. STREPTOMYCINI 773, PRODUCING STREPTOMYCIN, CONTAINED TRANSAMIDINASE WHICH ACTIVITY RISED DURING CULTURAL GROWTH IN PARALLEL WITH ANTIBIOTIC ACTIVITY. TRANSAMIDINASE ACTIVITY WAS COMPARED IN THE GENETICALLY DIFFERENT STRAINS PRODUCING STREPTOMYCIN AND IN THE MUTANTS WITH IMPAIRED BIOSYNTHESIS OF THIS ANTIBIOTIC. SOME CORRELATION WAS ESTABLISHED BETWEEN THE LEVELS OF ENZYME AND ANTIBIOTIC ACTIVITY. TRANSAMIDINATION REACTION AND STREPTOMYCIN BIOSYNTHESIS WERE CARRIED OUT BY THE NON ACTIVE MUTANTS DUE TO STIMULATING FACTORS OF NON ENZYME NATURE. THESE DATA SUGGEST THE NECESSARY PARTICIPATION OF TRANSAMIDINASE IN STREPTOMYCIN BIOSYNTHESIS.

UNCLASSIFIED

USSR

UDC 616.938-08:615-092

NIKIFOROV, V. N., Professor, SHCHERBAK, Yu. F., Candidate of Medical Sciences,
LEVITOV, T. A., Docent, and MARCHUK, L. M.

"Modern Fundamentals of Pathogenetic Therapy of Cholera"

Moscow, Sovetskaya Meditsina, Vol 33, No 7, Jul 70, pp 10-17

Abstract: Patients with algid cholera suffer from acute intoxication, acidosis, loss of body fluids and salts, and disrupted intermediary metabolism, and therefore require immediate treatment. A study was undertaken in which 66 cholera patients were divided into several groups and treated with bacteriophages (administered enterally or intramuscularly), with or without intramuscular tetracycline. For each group, an appropriate control subgroup was treated with a placebo. Blood tests and stool analyses were performed on each patient before and during the treatment. The bacteriophages were found to be no more effective than the placebo. Tetracycline definitely improves the condition of the patient, however. The basic treatment is still intravenous administration of salt solutions (rehydration), accompanied by enterally administered tetracycline. Immediate intravenous infusion of 5-4-1 salt solution (5 g NaCl, 4 g NaHCO₃, and 1 g KCl per liter of double distilled water) is recommended. The total dose shall be about 10 percent of the patient's body weight or, more precisely: $4 \times 10^3 \times (\text{specific } 1/2$

USSR

NIKIFOROV, V. N. et al, Sovetskaya Meditsina, Vol 33, No 7, Jul 70, pp 10-17

gravity of patient's plasma - 1.025) x patient's weight in kilograms = milliliters of salt solution to be administered. The solution should be infused as follows: first liter over a period of 10 min, second liter, 20 min, and the remainder, 30-60 min. The solution is subsequently infused in volumes equal to the total loss of body fluids (feces, urine, and vomitus). If EKG disturbances develop, the 5-4-1 solution should be temporarily replaced with 6-4 solution (6 g NaCl and 4 g NaHCO₃ per liter of double distilled water). No cardiovascular drugs are necessary. Initial, drastic recovery is observed 20-25 minutes after treatment is begun; 8-12 hours later, patients are able to sit up in bed and eat. Tetracycline becomes effective after 24 hours, helping the body to rapidly eliminate the Vibrio comma.

2/2

Television

USSR

UDC 551.594.221.001.4

GORIN, B.N., Candidate Of Technical Sciences; LEVITOV, V.I., Dr. Of Technical Sciences, Professor; SHKILEV, A.V., Engineer (all from Power Engineering Institute imeni G.M. Krzhizhanovskiy)

"Lightning Discharges At Ostankinskiy Television Tower"

Elektrichestvo, No 2, Feb 1972, pp 24-29

Abstract: The results are presented of observations conducted from June 1968 to October 1970 (i.e., during approximately 2.5 thunderstorm seasons) of strikes by lightning of the Ostankinskiy television tower (537 m) of the All-Union Radio-Television Transmitting Station in Moscow. Discharges at the television tower were recorded with the aid of discharge counters located directly on the television tower and of automatic photorecorders located close to the television tower and aimed at it. In 1970, combined with the photorecorders, oscillographic measurements were made with the aid of an automatic oscillographic device of the pulses of intensity of the magnetic field of the major stage of the lightning during discharges at the television tower. Some results are given of the oscillographic registration of the pulses of intensity. An account is given of the direction of subsequent comprehensive studies of lightning which will be conducted with the aid of photographic, electron-optical, oscillographic and other

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USSR

GORIN, B. N., et al., Elektrichestvo, No 2, Feb 1972, pp 24-29

apparatus with the use of the television tower as a fixed striking point. The authors note the great assistance rendered them by the administration and staff of the All-Union Radio-Television Transmitting Station. S.G. Obolduyev, M.A. Peskin, and G.S. Sakharova assisted in the observations. The authors are grateful to the workers of the Central High-Altitude Hydrometeorological Observatory for the presentation of data concerned with meteorological parameters. 6 fig. 5 ref. Received by editors, 21 Oct 71.

2/2

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USSR

UDC 621.793.3:669.245'701(088.8)

LEVITSKAS, YE. V., PROKOPCHIK, A. YU.

"Procedure for Chemical Deposition of Nickel-Boron Alloy"

USSR Author's Certificate No 306197, filed 23 Mar 70, published 23 Jul 71 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 6L308P)

Translation: In order to improve the coating quality and reduce the operating temperature, a procedure is proposed for chemical deposition of Ni-B alloy in a solution containing ethylenediaminediborane as the reducing agent. The composition of the solution was as follows: 15-20 grams/liter of $\text{NiCl}_2 \cdot 6\text{H}_2\text{O}$, 0.02-0.1 gram/liter of $\text{Na}_2\text{S}_2\text{O}_3$, 12-18 ml/liter of ethylenediamine (100%), 2.5-6 grams/liter of NaOH, 0.5-2.5 grams/liter of ethylenediaminediborane, a temperature of 30-70°, a pH of 12.7-13, and $S/V = 2 \text{ dm}^2/\text{liter}$. The coatings obtained contain 0.5% B, they have magnetic properties and are distinguished by high hardness (1,500 kg/mm² in the initial state). It is recommended that the proposed procedure be used when applying coatings to plastics.

1/1

Analytical Chemistry

MIKHNO, V. V., and LEVITS'KA^{VA} G. K., Zaporozh'ye Medical Institute, Zaporozh'ye

"PAPER Electrophoresis for the Determination of Galantamine and Securinine in Forensic Chemical Investigations"

Kiev, Farmatsevtichnyi Zhurnal, Vol 26, No 6, Nov-dec 78, pp 26-31

Abstract: Procedures were developed for the quantitative determination by paper electrophoresis of galantamine and securinine in solutions of the hydrobromide and nitrate, respectively, and solutions obtained by extracting with oxalic acid biological material treated with solutions of these alkaloids. The optimum conditions for electrophoresis were use of 2M formic acid as an electrolyte, pH 2, a potential of 300 V, and a current strength of 0.64-0.72 mA per 1 cm of the paper strip. Dragendorff's reagent was used for identifying the alkaloids on the electrophoretogram. Because the length of the path of the alkaloids differed, it would be possible to determine both of them in a mixture of the two. On elution of the alkaloids from the electrophoretogram with 0.1 N HCl, their content was determined spectrophotometrically. The absorption maximum was a 289 and 256 nm for galantamine and securinine, respectively, Beer's law applied at 10-100 μ g/ml for galantamine and 0.2-20 μ g/ml for securinine.

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1/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--SATURATED VAPOR PRESSURE OF MERCURY TELLURIDE -U-

AUTHOR--(04)--LEVITSKAYA, T.O., VANYUKOV, A.V., KRESTOVNIKOV, A.N., BYSTROV,
V.P.
COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 559-60

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MERCURY COMPOUND, TELLURIDE, VAPOR PRESSURE, THERMAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1996/0834

STEP NO--UR/0363/70/006/003/0559/0560

CIRC ACCESSION NO--AP0118010

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NU--AP0118010
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SATD. VAPOR PRESSURE FOR HGTE
WAS DETD. OVER COMPNS. CORRESPONDING TO THE HG AND TE BOUNDARIES OF THE
HOMOGENEITY REGION, USING THE STATIC COMPENSATION METHOD. THE PRESSURE
OVER HGTW ENRICHED WITH HG IS CONSIDERABLY HIGHER THAN THE PRESSURE OVER
HGTE ENRICHED WITH TE. THE VAPOR PRESSURE ABOVE HGTE SATD. WITH TE
REMAINS CONST. AT 460-560DEGREES INDICATING A CONST. COMPN. OF THE SOLID
PHASE; ABOVE THIS POINT, IT BEGINS TO INCREASE, ATTESTING TO ENRICHMENT
OF THE SOLID PHASE BY TE AT HIGHER TEMPS. THE HEAT OF FORMATION FOR
HGTE IS 16.7 KCAL-MOLE AND THE HEAT OF FUSION, 8.9 KCAL-MOLE. THE M.P.
OF HG SUB1-% TE WAS 668DEGREESC, WHICH IN GOOD AGREEMENT WITH THE DTA
CURVES; THE CORRESPONDING PRESSURE IS 12.5 ATM. FACILITY: MOSK.
INST. STAL SPLAVOV, MOSCOW. USSR.

UNCLASSIFIED

1/2 034 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--NEUTRAL DEFECTS IN MERCURY TELLURIDE -U-

AUTHOR--(03)--LEVITSKAYA, T.D., VANYUKOV, A.V., KRESTOVNIKOV, A.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 556-8

DATE PUBLISHED--70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--SINGLE CRYSTAL, CRYSTAL LATTICE DEFECT, HALL EFFECT, THERMAL EFFECT, IONIZATION, CHEMICAL BONDING, MERCURY COMPOUND, TELLURIDE, CRYSTAL GROWTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROX// REEL/FRAME--1994/1889

STEP NO--UR/0363/70/006/003/0556/0558

CIRC ACCESSION NO--AP0115708

UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115708

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY OF THE KINETICS OF ANNEALING OF HGTE SINGLE CRYSTALS GROWN BY THE BRIDGMAN TECHNIQUE INDICATES THAT THEY CONTAIN NEUTRAL DEFECTS. THIS IS ILLUSTRATED WELL BY COMPARING THE CHANGE IN THE TEMP. DEPENDENCE OF THE HALL COEFF. AND THE CURRENT CARRIER MOBILITIES AS A FUNCTION OF THE ANNEALING TIME AT VARIOUS TEMPS. THE OBSD. RAPID CHANGE IN THE PROPERTIES AT 204 AND 300DEGREES CAN BE CAUSED ONLY BY THE IONIZATION OF NEUTRAL DEFECTS ALREADY EXISTING IN THE CRYSTALS. DEFECTS THAT ARE NEUTRAL AT 204DEGREES BECOME IONIZED AT 353.5DEGREES, WHICH IS REFLECTED IN THE HALL CONST. AND THE CARRIER MOBILITY VALUES. SHORT TERM HIGH TEMP. TREATMENT OF SAMPLES ANNEALED AT 358.5DEGREES DOES NOT CHANGE THE PROPERTIES OF THE HGTE. THUS, NEUTRAL DEFECTS ARE PRESENT IN HGTE AFTER CRYSTN. BY THE BRIDGMAN METHOD, WHICH INHIBIT THE DIFFUSION OF HG INTO THE CRYSTAL WHICH REMAINS NEUTRAL TO SIMILIAR TO 360DEGREES BUT IONIZES AT HIGHER TEMPS. INASMUCH AS IONIZATION OF THESE DEFECTS LEADS TO AN INCREASE IN THE ACCEPTOR CONC., THEY APPARENTLY REPRESENT EXCESS TE ATOMS. MORE LIKELY THAN NOT, THIS TYPE OF DEFECT IS ASSOCD. WITH THE CHANGE IN THE POSITION OF EXCESS TE IN THE LATTICE, POSSIBLY WITH THE EMERGENCE OF TE-TE BONDS. FACILITY: MOSK INST. STALI SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

LEVITSKAYA, T. D.

TPRS 59008
6-78

4

11-13. THERMODYNAMIC ANALYSIS OF THE GROWTH PROCESSES OF ZINCITE CRYSTALS

Article by I. V. Fedorova, G. A. Kobayin, S. B. Lantshaya, N. R. Koz'mintseva, Novosibirsk; Novosibirsk, III Simpozium po Povedeniya Reala i Sostoyaniya, Kolymovodstvovskiy K'leat'ov I P'is'ma, Kuznetsk, 1977, June, 1977, p 23)

Using a computer, a thermodynamic analysis was made of the ZnCl₂-H₂O-Q₂-K₂ system. The equilibrium partial pressures of the components and the limiting yields of ZnO in the process of hydrodynamic oxidation of zinc chloride were calculated.

LEVITSKAYA, T.D

5085 59868
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V-11. GROWTH OF ZINC OXIDE CRYSTALS IN THE ZnO solid-H₂-O₂-H₂ and ZnO solid-H₂-O₂-H₂ SYSTEM

Abstract by T. D. Levitskaya, T. G. Pav'lova, I. I. Stoyanov, Zhurnal Khimicheskoi Fiziki, 47, No. 12, p. 2287, 1972, 12 p. (Russian) English translation available from the National Technical Information Administration, Springfield, Illinois, 1972, p. 621

A thermodynamic analysis was performed on the ZnO solid-H₂-O₂-H₂ system, and an experimental study was made of the crystallization process in this system.

The hydrogen flow diluted with nitrogen passes over a heated zinc oxide, reducing it and transporting it into the crystallization zone, to which the mixture of oxygen and nitrogen is fed. The quantity, size and perfection of the zinc oxide crystals depend on the process temperature and the oxygen and hydrogen concentrations.

The feeding of water vapor together with hydrogen into the reduction zone promotes a decrease in the number of fine acicular crystals and growth of larger perfect crystals. With a duration of the process of 50-70 hours, well faceted crystals of rhombic form were obtained which are elongated along the c axis 3-4 mm in diameter and 20-30 long.

The replacement of oxygen by water in the oxidation zone changes the crystallographic direction of the predominant crystal growth; the crystals have the shape of a three-sided prism extended along the a-axis and with dimensions of 1 x 1 x 10 mm.

In the general case where a flow of hydrogen, water and nitrogen passes over the heated zinc oxide and oxygen, water, nitrogen are fed into the crystallization zone, the form of crystal growth is determined by the ratio of the component concentrations in both flows.

The process temperature of crystallization of quite perfect crystals is reduced to 1100°C by comparison with 1300°C-1400°C used in similar processes.

AAC047084

Levitskiy, A.K.

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

241515 STATOR WINDING ARRANGEMENT OF ELECTRICAL MACHINES

with liquid cooling is reduced in size and provides more reliable electrical connections. The basic solid conductors (1) of winding (2) are bent and form two separate groups to facilitate good electrical connections. The hollow conductors (3) are brought out beyond the junction of two groups to be joined electrically. The rest of the bunch is filled with conductors (4). The coolant is admitted via hermetic joint (5,7) to which the hollow conductors are soldered.

30.1.67 as 1130120/24-7. V.S.KIL'DISHEV et al. (19.9.69)
Bul 14/18.4.69. Class 21d1. Int.Cl. H 02k.

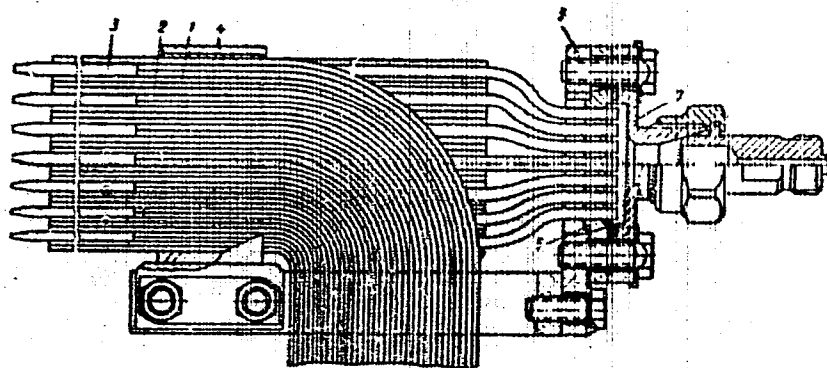
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19790560

AA0047084

AUTHORS: Kil'dishev, V. S.; Krashchenko, A. I.; Levitskiy, A. K.; Sergeyev, A. V.;
Stanislavskiy, L. Ya.



19790561

3/2

1/2 024 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--ENZYMATIC DIAGNOSIS OF ACUTE PANCREATITIS -U-
AUTHOR--(04)-LEVITSKIY, A.P., SYNOVETS, A.S., DEKHTYAR, A.L., TSVIRKUN,
F.M.
COUNTRY OF INFO--USSR L
SOURCE--KHIRURGIYA, 1970, NR 2, PP 94-98
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PANCREAS, ENZYME ACTIVITY, AMYLASE, BLOOD SERUM, URINE,
DIAGNOSTIC METHOD, DIGESTIVE SYSTEM DISEASE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--1983/1328 STEP NO--UR/0531/70/000/002/0094/0098
CIRC ACCESSION NO--AP0054212
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054212

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS INVESTIGATED THE ACTIVITY OF AMYLASE (SMITH AND ROE MICROMETHOD), PROTEASE (UTKINYKH LYNBOVTSEVYKH METHOD IN SHIERGE'S MODIFICATION) AND LIPASE (LEVITSKY'S COLORIMETRIC MICROMETHOD) IN THE BLOOD SERUM OF CATS WITH EXPERIMENTAL ACUTE PANCREATITIS. THERE WERE A SIGNIFICANT RISE OF THE ACTIVITY OF PANCREATIC LIPASE, INESSENTIAL INCREASE OF THE PROTEASE LEVEL, SHORT TERM RISE AND SUBSEQUENT SHARP DECLINE OF THE AMYLASE ACTIVITY. IN THE DETERMINATION OF THE REFERRED TO ENZYMES IN THE BLOOD SERUM AND AMYLASE IN THE URINE OF PATIENTS WITH ACUTE PANCREATITIS THE AUTHORS NOTED A SIGNIFICANT INCREASE IN THE ACTIVITY OF LIPASE AND AMYLASE AND AN INSIGNIFICANT INCREASE OF THE PROTEASE ACTIVITY. A STABLE ACTIVITY RISE WAS OBSERVED IN RESPECT TO LIPASE, THE BLOOD AMYLASE ACTIVITY SEVERAL DAYS AFTER THE ONSET OF THE DISEASE DROPPED ALMOST TO NORMAL VALUES, HOWEVER THE URINARY LEVEL OF AMYLASE WAS STATISTICALLY SIGNIFICANT ABOVE NORMAL LEVELS. THE AUTHORS ALSO DETERMINED THE BLOOD SERUM ACTIVITY OF LIPASE AND AMYLASE, AND URINARY LEVEL OF AMYLASE IN PATIENTS WITH ACUTE CHOLECYSTITIS, APPENDICITIS AND GASTRODUODENAL PEPTIC ULCER. THE NONSPECIFICITY OF THE ACTIVITY OF BLOOD AMYLASE WAS ESTABLISHED. THE INCIDENCE OF RISE OF THE BLOOD SERUM ACTIVITY OF LIPASE IN ACUTE PANCREATITIS AMOUNTED TO 90PERCENT OF CASES, THAT OF URINARY AMYLASE, 70PERCENT. FOR THE DIAGNOSIS OF ACUTE PANCREATITIS THE AUTHORS RECOMMEND THE DETERMINATION OF BLOOD SERUM PANCREATIC LIPASE ALONG WITH THAT OF URINARY AMYLASE.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--RADIATION GROWTH OF URANIUM DURING LOW BURN UPS -U-

AUTHOR--(04)-KONOBEYEVSKIY, S.T., PANTELEYEV, L.D., LEVITSKIY, B.M.,
NASKIDASHVILI, I.A.
COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. 1970. 28(4), 326-32

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--URANIUM, IRRADIATION, CRYSTAL LATTICE DEFORMATION, LATTICE
DEFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0558

STEP NO--Uk/0089/70/028/004/0326/0332

CIRC ACCESSION NO--AP0137644

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137644

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

ABSTRACT. RADIATION GROWTH OF U AT MINUS 150DEGREES AND 160DEGREES WAS STUDIED IN THE 1ST STAGES OF IRRADN., US BEING THERMALLY PRETREATED AT VARIOUS TEMPS. 20-620DEGREES. THE INITIAL STAGE OF GROWTH WAS THE RESULT OF THE FORMATION OF INDIVIDUAL DEFECTS CAUSING THE ANISOTROPIC DEFORMATION OF THE ALPHA U LATTICE IN THE TOTAL VOL. OF THE METAL, NOT ONLY IN THE NEIGHBORHOOD OF THE THERMAL PEAKS. OWING TO VACANCIES FORMED DURING THE KNOCK OUT OF ATOMS BY FISSION FRAGMENTS, THE CONTRACTION INSIDE THE ZIGZAG LIKE LAYERS OF ALPHA U LATTICE TOOK PLACE AND THE DISPLACED ATOMS WERE SITUATED IN POSITIONS WITH THE COORDINATION NO. OF 5, PYRAMIDAL DEFECTS, OR 4 OR 6, OCTAHEDRAL DEFECTS; VOL. AND AXIAL DEFORMATIONS CAUSED BY THE FORMER DEFECTS EXCEEDED MANY TIMES THOSE ARISING WHEN OCTAHEDRAL DEFECTS WERE FORMED. IN THE PRESENCE OF LATTICE IMPERFECTIONS, THE PYRAMIDAL DEFECTS WERE FORMED PREDOMINANTLY. IN THE 1ST STAGE OF GROWTH, PARTIAL RECOMBINATION OF DEFECTS TOOK PLACE WHICH REDUCED THEIR AMT. IN U DEFORMED AT LOW TEMPS., DISPLACED ATOMS WERE PREVENTED FROM RECOMBINING OWING TO THEIR ADSORPTION ON VARIOUS LATTICE IMPERFECTIONS, WHICH EXPLAINED THE HIGH RATE OF GROWTH IN THESE SPECIMENS. WHEN THE LOCAL CONC. OF DEFECTS REACHED A SUFFICIENTLY HIGH VALUE, THE FORMATION OF THEIR COMPLEXES STARTED OWING TO THE FIELD OF TENSION. THE STAGE WHEN AN EQUIL. BETWEEN THE NO. OF FORMED INDIVIDUAL DEFECTS AND THE NO. OF DEFECTS FORMING THEIR COMPLEXES WAS REACHED CORRESPONDED TO THE LINEAR COURSE OF THE RADIATION GROWTH CURVE.

UNCLASSIFIED

1/2 023
UNCLASSIFIED
TITLE--ON THE REACTION TO HEMODIALYSIS IN THE EARLY POSTOPERATIVE PERIOD
IN PATIENTS AFTER TRANSPLANTATION OF THE KIDNEY -U-
AUTHOR--(03)-YARMOLINSKIY, I.S., LEVITSKIY, E.R., GORYAYNOV, V.A.
PROCESSING DATE--13NOV70
COUNTRY OF INFO--USSR
SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 4, PP 83-88
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DIALYSIS, KIDNEY, ORGAN TRANSPLANT, CARDIOVASCULAR SYSTEM,
HEMORRHAGE, HYPERTENSION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0068
STEP NO--UR/0497/70/048/004/0083/0088
CIRC ACCESSION NO--AP0132362
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132352

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN 20 PATIENTS AFTER
 TRANSPLANTATION OF CADAVERIC KIDNEY IN THE EARLY POSTOPERATIVE PERIOD
 117 HEMODIALYSES WERE PERFORMED DURING WHICH THERE WERE NOTED SUCH
 COMPLICATIONS AS: PYROGENIC REACTION, CARDIOVASCULAR INSUFFICIENCY,
 HEMORRHAGE, HYPERTENSION. STERILIZATION BY BOILING PRODUCES THE LEAST
 NUMBER OF PYROGENIC REACTIONS. CARDIOVASCULAR INSUFFICIENCY WAS
 OBSERVED IN 3 OUT OF 20 PATIENTS AND IN ALL CASES TERMINATED LETHALLY.
 HEMORRHAGE OCCURRED ONLY WHEN HEMODIALYSIS WAS CARRIED OUT WITH GENERAL
 HEPARINIZATION (IN 3 OUT OF 5 CASES); IN THE REMAINING 112 HEMODIALYSES
 WITH REGIONAL HEPARINIZATION THIS COMPLICATED WAS NOT ENCOUNTERED.
 HYPERTENSION DEVELOPED ONLY IN 4 PATIENTS ON THE 6TH TO 8TH HOUR OF THE
 PROCEDURE, THIS REQUIRED A REDUCTION OF THE TIME OF HEMODIALYSIS. THE
 CAUSES OF COMPLICATIONS MAY BE DUE TO THE REACTION OF THE PATIENTS AND
 TECHNICAL FAULTS DURING THE INSTITUTION OF HEMODIALYSIS.
 FACILITY: N-I INSTITUT KLINICHESKOY I EKSPERIMENTAL'NOY KHIRURGII
 MINISTERSTVA ZDRAVOOKHRANENIYA SSSR, MOSKVA.

UNCLASSIFIED

USSR

UDC 621.382.016.35

ZARUDSKIY, V. F., LEVITSKIY, K. B., NAUMENKO, V. G., UKHIN, N. A.

"Comparative Results of Neutron Irradiation of Medium-Power High-Frequency Diffusion and Diffusion-Ion NPN Silicon Transistors"

Moscow, Poluprovodnikovyye Pribory i ikh Primeneniye, No 24, Izd-vo "Sovetskoye Radio", 1970, pp 27-30

Abstract: The authors study neutron irradiation of NPN silicon transistors made by double diffusion of dopants into an epitaxial layer, and by single diffusion of boron with subsequent ion injection of phosphorus to produce the emitter junction. It is shown that the radiation resistance of both types of transistors is determined by the radiation properties of the material of the base layer and is independent of the technological procedure used to make the emitter junction. The results also show that ion doping has considerable promise as a technological procedure for making transistors with optimum radiation resistance. One figure, one table, bibliography of four titles.

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