

USSR

KASHAFUTDINOV, S. T. and POLYAKOV, N. F., *Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Tekhnicheskikh Nauk*, Issue 1, No 3, 1973, pp 74-80

the windward portion of the jet experiences flow-around in a manner analogous to that of the frontal portion of a solid body, with a region of velocity reduction being formed; 3) in the leeward portion, as a result of spatial shift of velocities on the lateral jet boundaries, there are formed two oppositely-rotating vortexes; these appear at the outlet of the nozzle in a region of significant rarefaction; 4) discharge through the nozzle is uneven. In the windward portion, on account of retardation it is reduced; in two sections of the leeward portion, under the effect of rarefaction in the vortexes it is increased by 3-4% in comparison with discharge from a quiet medium; 5) regions of the leeward portion of the jet, corresponding to maximal discharge rate, have high ejective capability, and create the greatest rarefactions on the surface from which the jet flows; and 6) on account of increased turbulence in the vortexes and the medium, there is a conjunction of air from the transverse flow with the jet; owing to intensive dissipation of energy in the vortexes, pressure in the medium is lowered, despite velocity retardation.

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USSR

UDC: 537.31

POLYAKOV, N. N., KUKUY, A. S., GOLUBEV, V. I., PAVLOV, N. I., Gor'kiy
Physicotechnical Research Institute

"Checking the Homogeneity of Semiconductor Single Crystals From Measurements of Their Resistivity"

Moscow, Izv. AN SSSR: Ser. Fizicheskaya, Vol 36, No 3, Mar 72, pp 607-613

Abstract: Correction factors are calculated to account for the dimensions of the specimen and probe position in resistivity measurements by the four-probe method on rectangular and cylindrical single crystal semiconductors. The results of computer calculations are presented in tables and curves. It was found that reducing the thickness of a specimen past half the distance between probes does not affect the measurement results. It was also found that the specimen can be considered infinitely thick beyond a thickness of five times the distance between probes.

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USSR

UDC: 537.31

KON'KOV, V. L., KUKUY, A. S., POLYAKOV, N. N., Gor'kiy Physicotechnical
Research Institute

"Measuring Conductivity and the Hall Coefficient of Semiconductor Single
Crystals by the Four-Probe Method"

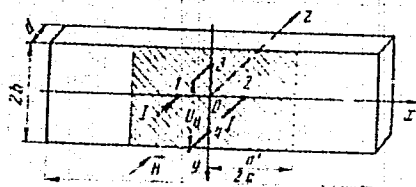
Moscow, Izv. AN SSSR: Ser. Fizicheskaya, Vol 36, No 3, Mar 72, pp 603-606

Abstract: The paper discusses a method of direct measurement of the Hall coefficient and conductivity of semiconductors in the form of long single crystal strips. The geometry of the measurement set-up is shown in the figure. Current I is sent through probes 1 and 2, and EMF U_H (Hall voltage) is taken off from probes 3 and 4. The constant magnetic field H is directed orthogonally to the plane of the specimen. Measurements are made in the steady state on direct current. A formula is derived for determining the Hall EMF in terms of the applied current and the dimensions of the specimen. The theoretical results were confirmed experimentally by measurements on germanium and silicon single crystals.

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USSR

KON'KOV, V. L. et al., IAN SSSR: Ser. Fiz., V 36, 1972, pp 603-606



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USSR

UDC 538.632

KON'KOV, V. L., PAVLOV, N. I., and POLYAKOV, H. N.

"Measuring the Conductivity of Nonuniform Semiconductor Layers by the Probe Method"

Tomsk, Izvestiya VUZ--Fizika, No. 10, 1971, pp 33-38

Abstract: The nonuniform semiconductor layers discussed in this article are those which have undergone diffusion, epitaxy, or ion bombardment for investigation of their physical characteristics, and in which the conductivity varies with depth. The authors theoretically examine the possibility of using the four-probe method of measuring the conductivity of such layers and develop a simple formula for the conductivity which can be used for determining its average value under the conditions of that method. They also consider some of the relationships for the change in conductivity that are most often encountered in measurement practice and derive a formula for the error in their theoretical computation. They are associated with the Gor'kiy Physical-Technical Research Institute.

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P Semiconductor Technology

UDC 637.311.33:538.63

USSR

POLYAKOV, N. N., and RUSTSOVA, R. A., Gorkiy Physico Technical Institute

"Measuring Conductivity and Hall Emf of Rectangular Semiconductor Specimens Using a Tester With a Square Arrangement of Probes"

Moscow, Zavodskaya Laboratoriya, No 10, 1970, pp 1207-1210

Abstract: Formulas are derived for calculating conductivity and the hall emf of rectangular semiconductor specimens using a tester with a four probes arranged in a square. Correction multipliers are tabulated. The position of the tester on the surface of the specimen is varied by switching with an external circuit.

USSR

P
UDC 538.63:621.315.5

POLYAKOV, N. N., KONKOV, V. L.

"Measurement of the Hall Mobility of Current Carriers of High-Resistance Semiconductor Epitaxial Layers by the Probe Method"

Izvestiya Vysshikh Uchebnykh Zavedeniy Fizika, No 6, 1970, pp 85-98

Abstract: A multiprobe method is proposed for measuring the Hall mobility of the current carriers of high-resistance semiconductor epitaxial layers. By means of the solution of the appropriate boundary value problem a formula is obtained for computing the Hall mobility of the current carriers on the basis of the results of probe measurements. Tables of values have been compiled for the multiplier contained in the formula, which depends upon the configuration of the specimen and the position of the probes.

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1/2 015 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--GRANULAR AMMONIUM NITRATE -U-

AUTHOR--(05)--SHAKHOVA, N.A., AKSELROD, L.S., MUKHINA, A.N., SHELMAHENKO,
G.V., POLYAKOV, N.N. P
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,370
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(9)
DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AMMONIUM NITRATE, CHEMICAL PATENT, CRYSTAL, FLUIDIZED BED

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/1453

STEP NO--UR/0482/70/000/000/0000/0000

TRC ACCESSION NO--AA0126984

UNCLASSIFIED

272 015

UNCLASSIFIED

PROCESSING DATE--27NOV70

IRC ACCESSION NO--AA0126984

BSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POROUS NH SUB4 NO SUB3 CRYSTALS
ARE PREPD. BY DELIVERING AN 80-5PERCENT CONCD. NH SUB4 NO SUB3 SOLN.
INTO A FLUIDIZED BED AT 85-95DEGREES.

UNCLASSIFIED

1/2 013

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--EQUILIBRIUM ADSORPTION OF VAPORS FROM SUBSTANCES WITH RELATIVELY
LARGE MOLECULES. I. METHODS FOR DETERMINING ISOTHERMS OF ADSORPTION OF
AUTHOR--(04)-NIKOLAYEV, K.M., DUBININ, M.M., POLYAKOV, N.S., SEREGINA, N.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM, 1970, (4), 761-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--GAS ADSORPTION, ISOTHERM, DECANE, BENZENE, ACTIVATED CARBON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0993

STEP NO--UR/0062/70/000/004/0761/0767

CIRC ACCESSION NO--AP0138021

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138021

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADSORPTION ISOTHERMS WERE REPORTED FOR DECANE, C SUB6 H SUB6 AND ME SUB3 CPH ON ACTIVATED C SPECIMENS FROM ROOM TEMP. TO MINUS 195DEGREES. THE WT. DETG. APP. FOR SUCH DETN. IS DESCRIBED IN DETAIL. THE RELATIVELY POORLY VOLATILE SUBSTANCES IN SUCH ADSORPTION TEND TO DISPLACE FROM THE UNHEATED APP. WALLS ANY FOREIGN MATERIALS THAT HAD BEEN PREVIOUSLY ADSORBED THERE AND AS A RESULT, THE ASCENDING AND THE DESCENDING BRANCHES OF THEIR ISOTHERMS ARE NOT COINCIDENT, UNDER SUCH CONDITIONS. FACILITY: INST. FIZ. KHIM., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 541.183

ZOLOTAREV, P. P., DUBININ, M. M., NIKOLAYEV, K. M., POLYAKOV, N. S., and RADUSHKEVICH, L. V., Institute of Physical Chemistry, Acad. Sc. USSR

"Study of the Adsorption Dynamics in a Wide Range of Concentrations. 3 Communication. Fundamentals of the Theory of the Process"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 7, Jul 72, pp 1484-1489

Abstract: In previous papers the general picture of the adsorption dynamics of a series of compounds on active carbon was analyzed. This study is devoted to theoretical considerations. To make the analysis possible, the process has been broken down into three stages: the first stage with instantaneous distribution of the concentrations along the layer; the second -- with various concentrations being shifted at different rates, changing during the process; and the third in which the entire adsorption wave is shifted at a practically constant rate. Mathematical expressions have been derived for the distribution of concentrations along the layer of adsorbent grains for short times with consideration of the effect of longitudinal diffusion. A method has been proposed for the determination of the coefficient of internal mass exchange from the known coefficient of longitudinal diffusion and distribution

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ZOLOTAREV, P. P., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 7, Jul 72, pp 1484-1489

of passage concentrations along the layer. A formula was derived describing the initial portion (area of low concentrations) of the output curves under conditions of stationary front. This curve appears to be a straight line in coordinates: logarithm of relative concentration -- time.

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USSR

UDC 541.183

DUBININ, M. M., NIKOLAYEV, K. M., POLYAKOV, N. S., and PETROVA, L. I.,
Institute of Physical Chemistry, Academy of Sciences USSR

"Study of Adsorption Dynamics in a Wide Range of Penetration Concentrations.
2. Examination of the General Picture of the Adsorption Dynamics Process"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 72, pp
1265-1269

Abstract: The article examines the general picture of the dynamics of benzene vapor adsorption in a wide range of penetration concentrations (from 10^{-5} mg/l to initial concentration) and with varying adsorbent layer lengths (from one grain to 16 cm). It was found that the adsorption process taking place in a layer can be conditionally divided into three stages in the movement of the concentration front over the layer. The first (initial) stage is characterized by the practically instantaneous distribution of concentrations over the length of the layer, resulting in the penetration of the vapor a certain layer length. The second (and longer) stage includes the movement of the concentration front over the layer at various velocities which are characteristic of each concentration and which change during the process. This stage is characterized by non-stationarity of the process, which tends in the limit to a stationary regime (i.e., the third stage).

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USSR

P UDC: 541.183

DUBININ, M. M., NIKOLAYEV, K. M., POLYAKOV, N. S., and SEREGINA, N. I., Institute of Physical Chemistry, Moscow, Academy of Sciences USSR

"Study of Equilibrium Vapor Adsorption of Substances with Relatively Large Molecules
Communication I. Methods for Determination of Isotherms of Vapor Adsorption of Substances with High Boiling Points"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, Vol 4, Apr 1970, pp 761-767

Abstract: An apparatus and methodology for determination of the adsorption and desorption isotherms of nonvolatile vapors at normal temperatures is described. The method consists of evacuation of the adsorbent used at 350-400° for 5-6 hours, cooling to room temperature followed by "washing" of the system with vapors of the material to be adsorbed, to remove from the system gaseous impurities which are adsorbed to a lesser degree. Then the adsorbent is again evacuated as before, until the original weight is obtained. In such a system the adsorption isotherms show an identical adsorption and desorption course.

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UDC 621.385.632

USSR

GOLUBENTSEV, A. F., and POLYAKOV, O. S.

"Study of Noise in Continuous Power TWT"

Elektron. tekhnika. Nauch.-tekh. sb. Elektron. SVCh (Electronics Technology),
Scientific-Technical Collection. Microwave Electronics), 1971, Issue 4, pp
117-126 (from RZh-Elektronika i yeye primeneniye, No 8, August 1971, Abstract
No 8A185)

Translation: Some problems are considered of the theory of amplitude and phase fluctuations of the output signal of a traveling-wave tube in linear operating conditions. In the frequency tuning range of 0.2--6.5 MHz, a study is conducted of the noise factor and the spectral density of the fluctuations of the amplitude and phase of the output signal, using a model of a TWT. The connection is established between the intensity of fluctuations and the noise factor. The calculations conducted and the experimental results show that the noise of the input signal and the additive high-frequency noise can exert a considerable effect on the observed level of amplitude and phase fluctuations of the output signal. 8 ref. 8 summary.

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P
USSR

UDC 621.385.632

POLYAKOV, O. S., KALININA, T. I.

"Suppression of Temporary Harmonics in Traveling-Wave Tubes with the Aid of a Filter-Diplexer"

V sb. Vopr. elektron. tekhniki (Problems of Electronic Technology--Collection of Works), Saratov, 1970, pp 70-73 (from RZ--Elektronika i yeye primeneniye, No 7, July 1970, Abstract No 7A137)

Translation: A method is considered for reduction of the level of harmonics based on use of filter loads when the high-frequency channel [trakt] contains a load in conjunction with a filter-diplexer. With the input matched in a wide band, the filter assures attenuation less than 0.5 db in 25 percent of the frequency band and greater than 20 db outside of its scope, with a level of power going through in a steady regime greater than 500 watt. The filter-diplexer is a combination of band-pass and band-elimination filters. The filter-diplexer which was developed assures a decoupling ≥ 20 db between the input and output at frequencies corresponding to the 2-3 harmonics of the corresponding signal. Use of such a filter-diplexer in the power load of a TWT of continuous operation reduces the level of the higher harmonics to 13--50 db. The stability of operation of a TWT on a filter load is noted. 1 ill. 3 tab. 6 ref. G.B.

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Magnesium

USSR

UDC 669.721.472

POLYAKOV, P. V., ORLOV, A. M.

"Measuring the Interphase Tension at the Magnesium Boundary With Molten Electrolytes"

Sb. tr. Vses. mezhvuz. nauch. konferentsii po teorii protsessov tsvetn. metallurgii (Collected Works of the All-Union Interuniversity Scientific Conference on the Theory of Processes in Nonferrous Metallurgy), Alma-Ata, 1971, pp 309-312 (from RZh-Metallurgiya, No 7, Jul 1971, Abstract No 7G226)

Translation: The method of an embedded drop was used to determine the interphase tension. The electrolyte contained (in %): Fe 0.001, Al 0.001, Ti 0.002; type Nch-1 Mg was used. The experiments were performed in the temperature range of 650-810° with a drop holding time for each temperature of ≥ 15 minutes. The interphase tension was calculated by the following equation: $\sigma = Ad/d$, where d was defined as the function of the diameter of the equator and the distance to the top of the drop. The sharpest increase in the interphase tension is observed in melts containing F-ion. There are 3 illustrations and a 9-entry bibliography.

1/1

1/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--FORMATION OF DROPS OF MAGNESIUM IN THE ELECTROLYSIS OF CHLORIDE
MELTS -U-
AUTHOR--(03)--ORLOV, A.M., POLYAKOV, P.V., TATAKIN, A.N.
COUNTRY OF INFO--USSR
SOURCE--IZVEST. V.U.Z., TSVETNAYA MET., 1970, (1), 39-42
DATE PUBLISHED--70
SUBJECT AREAS--MATERIALS, CHEMISTRY
TOPIC TAGS--MOTLEN CHLORIDE, ELECTROLYSIS, MAGNESIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1552 STEP NO--UR/0149/70/000/001/0039/0042
CIRC ACCESSION NO--AP0125178
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125178

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MECHANISM GOVERNING THE FORMATION OF MG DROPS IN THE ELECTROLYSIS OF CHLORIDE (NACL PLUS KCL PLUS MGCL SUB2) MELTS WITH ELECTRODES OF VARIOUS COMPOSITIONS (C STEEL, CAST IRON, ETC.) WAS STUDIED. THE GRAPHITE CONTAINED IN THE ELECTRODE MATERIALS ACTED AS STABILIZER FOR THE DROPS OF MG ON THE ELECTRODE AND IN THE ASSOCIATED MG EMULSION. THE RELATION BETWEEN THE NUMBER OF DROPS AND THE C.D. WAS IN GENERAL OF A VERY COMPLEX CHARACTER, APPARENTLY AS A RESULT OF THE COALESCENCE OF DROPS ON THE CATHODE.

UNCLASSIFIED

USSR

UDC (621.313.322+621.314.222.6)-182.7

MOROZOV, N. R., ~~POLYAKOV, S. I.~~, YURCHAKOVICH, YE. R.

"Adjustment of the Electric Part of the 200 Megawatt Units of Burshtyn State Regional Electric Power Plant"

Moscow, Maladchn. i eksperim. raboty ORGRES -- V sb. (Adjustment and Experimental Operations of ORGRES /State Trust For the Organization and Rationalization of Regional Electric Power Plants and Networks -- Collection of Works), Vol 39, 1970, pp 260-266 (from RZh-Elektrrotekhnika i Energetika, No 2, Feb 71, Abstract No 2 Ye116)

Translation: Twelve units with a total capacity of 2.4 million kilowatts (including the TGV-200 generator, the K-200-130 turbine, and the TP-100 boiler) have been installed at the Burshtyn GRES /State Regional Hydroelectric Power Station/. Ion excitation of the generators is used. Six units are connected to the 220-kv outdoor distributing system and six to the 330-kv outdoor distributing system. During adjustment operations, the corresponding circuits were analyzed from the point of view of operating relia-

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USSR

MOROZOV, N. R., et al, Naladochn. i eksperim. raboty ORGRES --
V sb., Vol 39, 1970, pp 260-266

bility of the unit and convenience of operation. To reduce the electric testing time for the generator-transformer module, several new test and check procedures were proposed. During adjustment, certain defects were detected, for example, low-quality soldering of the stator winding conductors of generator No 5, deficiencies in the operation of the antivibration gas relays RGChZ-66 and so on. When adjusting the 6-kv medium voltage electrical equipment, the locations of the shields were selected considering the possible self-starting currents of the electric motors. Instead of the RT-521 relay, the synchro shield of a series of electric motors of blocks 1-6 was made from the RMT-562 relay. The shield for the 2,000-kilowatt motors is based on the RMT-565 relay. For the 380-volt electric motors, AV and AVM automatic breakers were used. The sets of shields from the zero sequence current transformers were adjusted considering the maximum load and a single-phase short circuit on the line end.

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USSR

MOROZOV, N. R., et al, Maladochn. i eksperim. raboty OGRRES --
V. sb., Vol 39, 1970, pp 260-266

The shield of the 6/0.4-kv step-down transformers, from a single-phase short circuit to ground in the 0.4-kv network, was made from a relay with the dependence characteristic $RT = Et/2$. To protect the low-power motors, the AP-50 automatic switches with combined tripping devices are provided. SK-32 storage batteries are installed to supply the 220-volt direct current. The generators (in the asynchronous mode and under thermal conditions) were subjected to special tests. It was discovered that the asynchronous mode of operation is not dangerous for the generators of the GRES, and the temperatures of the stator and rotor windings do not exceed the allowable limits. There are two illustrations and a four-entry bibliography.

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1/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THERMAL STRENGTHENING OF ROLLED METALS -U-
AUTHOR--(05)-STARODUBOV, K.F., UZLOV, I.G., SAVENKOV, V.YA., POLYAKOV,
S.N., BORKOVSKIY, YU.Z.
COUNTRY OF INFO--USSR
SOURCE--(TERMICHESKOYE UPROCHNENIYE PROKATA) MOSCOW. METALLURGIYA. 1970.
367 PP
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--CHEMICAL COMPOSITION, METAL ROLLING, METAL HEAT TREATMENT,
STEEL HARDENING

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/1462 STEP NO--UR/0000/70/000/000/0001/0367
CIRC ACCESSION NO--AM0121908
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AM0121908

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

ABSTRACT. TABLE OF CONTENTS: INTRODUCTION
7. CHAPTER I THERMAL STRENGTHENING OF ROLLED METALS (THE
THERMOMECHANICAL AND THERMAL MACHINING OF ROLLED METALS UNDER CONDITIONS
OF MASS PRODUCTION) 14. II THE TECHNOLOGY OF THERMAL STRENGTHENING
OF ROLLED METALS 37. III THE CHEMICAL COMPOSITION OF STEEL FOR
THERMAL STRENGTHENING 190. IV THE STRUCTURE OF THERMALLY
STRENGTHENED STEEL 2. V THE PROPERTIES OF THERMALLY STRENGTHENED
STEEL 248. LITERATURE 358. INFORMATION IS GIVEN ON THE THEORY OF
THERMAL AND THERMOMECHANICAL TREATMENT APPLICABLE TO STRENGTHENING
ROLLED METALS FROM LOW CARBON, MEDIUM CARBON AND ALSO LOW ALLOY STEEL.
THE BOOK IS DESIGNED FOR A WIDE RANGE OF TECHNICAL ENGINEERS AT
INSTITUTES, METALLURGY PLANTS, ENTERPRISES OF THE BUILDING INDUSTRY,
MACHINE CONSTRUCTION.

UNCLASSIFIED

USSR

UDC: 533.95

POLYAKOV, S. P., TVERDOKHLEBOV, V. I.

"Properties of Low-Pressure Jets"

V sb. Vopr. fiz. nizkotemperaturn. plazmy (Problems in the Physics of Low-Temperature Plasma--collection of works), Minsk, "Nauka i tekhn.", 1970, pp 433-435 (from RZh-Mekhanika, No 4, Apr 71, Abstract No 4B108)

Translation: A study was made of the effect which the addition of natural gas has on the parameters of a hypersonic plasma jet -- air and oxygen. The gas flowrate when the plasmatron operates on oxygen is 0.06 g/s, with a corresponding figure of 0.082 g/s for operation on air. The additive was introduced into the jet at a distance of 1 mm from the nozzle tip. The Mach number of the jet is of the order of 2.5. Current-voltage curves are given for a plasmatron together with the excitation temperature distribution lengthwise of the jet under various conditions. It is shown that introduction of the additive has a noticeable effect on the parameters of the jet, this effect being different for air and for oxygen. For an oxygen jet, the temperature of excitation decreases when the additive is introduced, while the temperature increases for air. V. P. Shimchuk.

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USSR

UDC: None

POLYAKOV, S. V., AYZENBERG, Ya. M., and PAPELISHVILI, V. K.

"Multi-Story Earthquake-Proof Building"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 12, 1973, p 95, No 371335

Abstract: The unusual feature of this building is a set of panels fixed to the base supporting columns and detachable in seismic activity. These columns are horizontally flexible. An illustration is supplied.

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Construction

UDC 539.4:624

USSR

POLYAKOV, S. V., KONOVODCHENKO, V. I., SAFARGALIYEV, S. M., GUNINA, R. S.

"Study of the Strength of Brick Masonry of Various Design Types"

V sb. Materialy k Vses. soveshch. po proyektir. i str-vu seismostoyk. zdaniy i sooruzh. (Materials from the All-Union Conference on the Design and Construction of Earthquake-Proof Buildings and Structures -- Collection of Works), Moscow, 1971, pp 115-119 (from RZh-Mekhanika, No 3, Mar 72, Abstract No 3V1224)

Translation: The results of tests of brick masonry of calcined clay brick, ordinary and patterned (with grooves on the side spaces) and also of silicate brick, ordinary, hollow and wavy (with a wavy surface) are given. The normal and tangential adhesion to the masonry was studied on samples, columns of dimensions 25 x 25 x 30 (and 22) cm. The samples of calcined brick were tested under static and pulsation (10 Hz) loads. The samples of silicate brick were tested only under static load. A rise in the strength of adhesion to the masonry was noted for patterned and wavy brick. Tests for central compression were conducted on samples of masonry of dimensions 38 x 64 x 120 cm of clay ordinary and patterned brick with reinforcement and without reinforcement. The strength of the reinforcement of the masonry was much higher than the theoretical values calculated by the formulas from the construction norms and regulations. The bearing

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USSR

OLYANOV, S. V., et al, Materialy k Vses. soveshch. po proyektir. i str-vu seismostoyk. zdaniy i sooruzh., Moscow, 1971, pp 115-119

capacity of the masonry under the action of a transverse load was determined on masonry samples of dimensions 38 x 64 x 120 cm. The samples were anchored in a force field and were subjected to the simultaneous action of horizontal and vertical compressing forces. Dynamic tests of the samples were conducted on a seismic platform. A. S. Arkhipov.

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1/2 015
 TITLE--SOME PROBLEMS IN THE THEORY OF SEISMIC STABILITY -U-
 AUTHOR--POLYAKOV, S.V.
 COUNTRY OF INFO--USSR
 SOURCE--MOSCOW, STROITEL'NAYA MEKHANIKA I RASCHET SOORUZHENIY, NO 2 (68),
 1970, PP 27-32
 DATE PUBLISHED-----70

UNCLASSIFIED

PROCESSING DATE--16OCT70

P

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MECH., IND., CIVIL AND
 MARINE ENGR
 TOPIC TAGS--SEISMICITY, MAPPING, CONSTRUCTION ENGINEERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--1995/0852

STEP NO--UR/0595/70/000/002/0027/0032

CIRC ACCESSION NO--AP0116365

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--16OCT70

2/2 015

CIRC ACCESSION NO--AP0116365
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE ARTICLE IS A BRIEF SURVEY OF THE DEVELOPMENT OF THE THEORY OF SEISMIC STABILITY. IT IS POINTED OUT THAT 11 OF THE REPUBLICS OF THE SOVIET UNION ARE LOCATED IN AREAS WITH CONSIDERABLE SEISMIC ACTIVITY, SO THAT THE PROBLEMS OF RELIABILITY AND ECONOMY OF ANTISEISMIC CONSTRUCTION ARE VERY IMPORTANT TO THE STATE. THE BASIC PRINCIPLES OF THE STATISTICAL SEISMIC THEORY ARE DISCUSSED, AND ONE OF THE SERIOUS DRAWBACKS TO COMPUTATIONS OF THE SEISMIC LOAD ACCORDING TO THIS THEORY IS POINTED OUT, THE DIFFICULTY OF DETERMINING ACCELERATION IN THE MOTION OF FOUNDATIONS. SOME METHODS FOR OVERCOMING THIS DIFFICULTY ARE MENTIONED. DATA ACCUMULATED OVER THE YEARS AND THE RESULTS OF GEOLOGICAL STUDIES HAVE ENABLED SOVIET SCIENTISTS TO PLOT SEISMIC MAPS OF THE USSR WHICH ARE STILL BEING REFINED AND IMPROVED. BECAUSE OF MANY SERIOUS DIFFICULTIES IN THE SEISMIC STATISTICAL THEORY, IT WAS DISCARDED IN FAVOR OF A DYNAMIC METHOD OF CALCULATION OF SEISMIC STABILITY WHICH IS NOW GENERALLY ACCEPTED. ON THE BASIS OF RECENT THEORETICAL AND EXPERIMENTAL WORK WITH THE DYNAMIC SEISMIC THEORY AS A BASIS, CONSTRUCTION SPECIFICATIONS AND REGULATIONS HAVE BEEN DRAWN UP WHICH REFLECT EXPERIENCE IN ENGINEERING ANALYSIS OF THE CONSEQUENCES OF VARIOUS EARTHQUAKES. IN CONCLUSION, THE AUTHOR POINTS OUT SEVERAL AREAS WHERE FURTHER RESEARCH AND STUDY IS NEEDED IN THE FIELD OF SEISMIC STABILITY THEORY.

UNCLASSIFIED

USSR

UDC 669.14.018.298.3

POLYAKOV, S. Ye., Engineer

"Third All-Union Conference on the Application of High-Strength Steel Structures in Machine Building"

Moscow, Svarochnoye Proizvodstvo, No 10, Oct 70, pp 61-62

Abstract: The Third All-Union Conference on the application of low-alloy steel structures with yield points of 50-75 kg/mm² was held 9-11 June 1970 at the Ural Machine Plant imeni S. Ordzhonikidze under the sponsorship of the Scientific Council on the problem "new welding processes and welded structures" of the State Committee of the Council of Ministers USSR for Science and Technology. The purpose of the meeting was to exchange experience and develop measures designed to expand the industrial application of low-alloy, high-strength steels in order to increase the reliability and durability of machines and mechanisms. Over 200 representatives of 56 organizations from 30 cities took part in the work of the conference. Twenty-seven reports were heard. Problems discussed in the reports included: alloying and assurance of stability of properties of high-strength steels; heat treatment of rolled products; application of low-alloy,
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USSR

POLYAKOV, S. Ye., Svarochnoye Proizvodstvo, No 10, Oct 70, pp 61-62

high-strength steels in the manufacture of machine building structures; metallurgical features of the welding of high-strength steels; production of cast parts of high-strength steels; fatigue strength of welded joints of high-strength steel; economic effectiveness of the use of welded structures of high-strength steels; regulation of zonal properties in welded joints; gas cutting of high-strength steels; pre-heating of high-strength steels for welding; and the planning of welded structures of high-strength steels.

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- 15 -

Miscellaneous

USSR UDC 547.495.2+546.185-31'39+546.212/.002.612.3.03

SARBAYEV, A. N., POLYAKOV, TE. V., TYUNINA, H. F., POLYAKOVA, Z. A., and RUCHKOVA, A. KH.

"The Physico-Chemical Properties of Aqueous Solutions of Carboammophos of Grade 1:1"

Moscow, Khimicheskaya Promyshlennost', Vol 48, No 6, Jun 72, pp 437-438

Abstract: The solubilities, density, and vapor pressure in relation to the concentration and temperature in the system $\text{CO}(\text{NH}_2)_2\text{-NH}_4\text{H}_2\text{PO}_4\text{-H}_2\text{O}$ ($\text{N:P}_2\text{O}_5 = 1:1$) were determined experimentally. On the basis of the data obtained, a diagram was plotted (figure) which represents the physico-chemical properties of aqueous solutions of carboammophos 1:1 at concentrations of 0-97% by weight and pressures of 20-760 mm Hg. The diagram covers the total range of existence of aqueous solutions of this fertilizer. By using it, the solubility, concentration, temperature, vapor tension, boiling point, density, and specific volume of carboammophos 1:1 solutions can be determined and also the relation between the liquid and solid phase in the range of saturated solutions of the fertilizer. Because of the hydrolysis of urea, the properties of the system do not correspond to equilibrium. However, the diagram applies if determinations of the experimental characteristic that is used are carried out rapidly.

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USSR

UDC: 681.3.06:51

DELYUKIN, G. V., YEGOROVA, T. G., POLYAKOV, V. A., and TALALAY, M. M.

"Subprograms for Processing Symbolic Information"

Vestn. Khar'kov politekhn. in-ta (Herald of the Kharkov Polytechnical Institute) No 77, 1973, pp 14-16 (from RZh--Avtomatika, telemekhanika i vychislitel'naya tekhnika, No 12, 1973, Abstract No 12B139)

Translation: The deficiencies of glossary capacity in modern and newly designed electronic computers are considered. It is proposed to increase the computer's glossary capacity by introducing new commands or standard subprograms for element-by-element transformation of symbols. The content of most of the programs is described by the command of a hypothetical computer.

Increasing the glossary capacity of the computer permits realization of element-by-element transformation of symbols, eases the associative search for information, and simplifies the modeling of digital devices of any significance on existing computers of the general type. Resume.

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Composite Materials

USSR

UDC 678.539.3+539.4

TARNOPOL'SKIY, YU. M., POLYAKOV, V. A., and ZHIGUN, I. G., Institute of Mechanics of Polymers of the Academy of Sciences Latvian SSR, Riga

"Composite Materials Reinforced by a System of Three Straight Orthogonal Reciprocal Fibers." Part One. Calculation of Elastic Characteristics.

Riga, Mekhanika Polimerov, No 5, Sep/Oct 73, pp 853-860

Abstract: Previously developed methods of the theory of reinforced media for laminated or fibrous materials are used for the study of the effectiveness of a trivariate reinforcement. The suggested methods for the calculation of elastic characteristics are based on the reduction of a three-dimensional structure to a two- or one-dimensional structure by means of introduction of a modified matrix. The properties of the matrix are determined by the modulus of elasticity of the bonding agent and the reinforcement coefficient in one of the three directions. Expressions are derived for the approximate estimate of elasticity characteristics of materials with high-module reinforcement. An essential increase of the transversal modulus of elasticity, if compared with the shear modulus, was disclosed even at an insignificant coefficient of reinforcement in the third direction. The
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USSR

TARNOPOL'SKIY, YU. M., et al., Mekhanika Polimerov, No 5, Sep/Oct 73, pp 853-860

principal gain of the latter consists in the sharp increase of the resistance to interlayer displacement and of the resistance to transversal tear away. Two figures, one table, 17 formulas, eight bibliographic references.

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USSR

UDC 541.11:543.422.25:541.49:547.551:547.822.3:547.1'118

GOLOVNYA, R. V., ZHURAVLEVA, I. L., ZENIN, S. V., POLYAKOV, V. A.,
SERGEYEV, G. B.

"Determining the Thermodynamic Characteristics of the Complex Formation of
Amines with Alkyl and Aryl Phosphates by the Nuclear Magnetic Resonance Method"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 11, 1973,
pp 2595-2597

Abstract: The equilibrium constants, enthalpy variation, entropy variation and chemical shifts were obtained for complex formation of analine with triethyl phosphate and tri-p-tolyl phosphate and piperidine with tri-o,p-xylenyl phosphate. The complex formation of pyridine with triphenyl phosphate was detected. The complex formation of phosphates with amines takes place both by the path of formation of the hydrogen bond $NH...O=P$ and $N^{\ominus}...P^{\oplus}$ bond. A method is proposed for determining the complex formation constants from the nuclear magnetic resonance data for comparable concentrations of the components. The process of complex formation in the given systems follows from the fact that on the addition of phosphates to the amine solution, the signals from the protons of the NH groups shift in the direction of the weak field.

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USSR

UDC 535-31:576.8.06

TYUTIKOV, F. M. and POLYAKOV, V. A.

"Comparison of the Bactericidal Effect of Ultraviolet Radiation on Pathogenic Microorganisms: *Bacterium necrophorum*, *Clostridium botulinum*, and *Listeria monocytogenes*"

Moscow, Doklady Vsesoyuznoy Akad. Sel'sko-Khoz. Nauk, No 5, 1973, pp 36-37

Abstract: Six *Bacterium Necrophorum*, 4 *Clostridium botulinum*, and 10 *Listeria monocytogenes* strains were exposed to ultraviolet light and their resistance evaluated on the basis of the dose-effect curve, slope of the exponential part, LD₃₇ or LD₉₀, and extrapolation number. Virulence, growth phase, type of serotype, and incubation temperature (only in the case of *Listeria*) were also taken into account. No correlation was detected between virulence, type or serotype and degree of resistance to radiation was detected. The curve of inactivation by ultraviolet radiation was sigmoid for most of the strains studied.

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Surgery

USSR

UDC 577.44

POLYAKOV, V. A., Professor, NIKOLAYEV, G. A., Corresponding Member, Academy of Sciences, USSR, and VOLKOV, M. V., Academician, Academy of Medical Sciences USSR

"Biological Welding and Tissue Cutting"

Moscow, Priroda, No 12, 1972, pp 40-45

Abstract: Present methods of cutting tissues, both soft and hard (bones) involve a great deal of physiological trauma to the tissues and the entire organism, and in many instances delay healing. In 1964 studies were commenced at the Moscow Higher Technical College on the application of ultrasound waves to the cutting of biological tissues, as well as their "welding" (fusion). In essence, the approach consisted of transforming ultrasound energy into mechanical oscillations by means of wave guides, which may be variously shaped for different tasks. In the cutting of biological tissues such wave guide "scalpels" move with an amplitude of about 80 μ , and the temperature in the immediate zone varies from 50-170°. Approximation (welding, fusion) of tissues may be accomplished with the appropriate wave guide in the case of bones by solubilizing the collagen matrix and permitting it to fuse. In the latter procedure an adhesive, cyacrin is employed which was developed in 1963 by A. M. Polyakova and O. V. Smirnova.

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USSR

POLYAKOV, V. A., et al, Priroda, No 12, 1972, pp 40-45

Cyacrin is a sterile and nontoxic substance and is gradually resorbed in the living organism. Ultrasound enhances the polymerization of cyacrin and its penetration into the body tissue to a depth of 40-200 μ . The strength of such fused bony tissues varies from 320-580 kg/cm². Histologic studies conducted on animals have shown that tissues sectioned in this manner heal normally, going through all of the characteristic cellular stages. The application of these procedures to man began 5 years ago, and up to the present time over 800 patients have been treated in such manner in surgery of soft and bony tissues. Although attention must be given to unforeseen side effects or disadvantages that may become apparent, it seems that the application of the ultrasound procedures should open up new therapeutic vistas in surgery.

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USSR

UDC 616.71-089:615.846

POLYAKOV, V. A., Department of Traumatology, Central Order of Lenin Institute for the Advanced Training of Physicians, and VOLKOV, M. V., Chair of Orthopedics and Rehabilitation, Central Order of Lenin Institute for the Advanced Training of Physicians

"Cutting of Bones and Soft Tissues by Ultrasound in Reconstructive Surgery"

Leningrad, Vestnik Khirurgii imeni I. I. Grekova, Vol 106, No 4, Apr 71, pp 71-74

Abstract: The use of various saws, chisels, osteotomes, etc. during surgery has serious drawbacks. These include the formation of cracks and splinters in the bones being cut and the difficulty of operating in restricted or inaccessible places. These drawbacks can be avoided by the use of ultrasound saws or knives which operate by means of waveguides. The latter transform electrical oscillations into mechanical oscillations. More than 200 experiments have been done in the laboratory of the Department of Traumatology of the Central Institute for the Advanced Training of Physicians on the cutting of bones by various methods. Long-term experiments on animals did not show any harmful influence of ultrasound in the required dosages on the organism. More than fifty operations of the

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USSR

POLYAKOV, V. A., and VOLKOV, M. V., Vestnik Khirurgii imeni I. I. Grekova, Vol 106, No 4, Apr 71, pp 71-74

following types have been performed on surgical patients: trepanation of the skull, resection of various bones due to tumors or fractures, removal of transplants and beds for them, etc. The ultrasound saw has particularly great advantages during work in a limited operating field. It permits the cutting of a bone through a 2-3 cm opening. Ultrasound equipment is also much less traumatic than standard mechanical methods due to the small amount of pressure needed on the instrument. The ultrasound knife is particularly indicated in the removal of scars of all sorts and in plastic surgery. The equipment, however, requires further development and improvement.

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1/2 035

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--EFFECT OF HIGHLY DISPERSED OXIDE INCLUSIONS ON THE RECRYSTALLIZATION OF NICHROME -U-

AUTHOR--(03)-ANTSIFEROV, V.N., SALNIKOV, B.V., POLYAKOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--IZVEST. V.U.Z. TSVETNAYA MET., 1970, (2), 137-139

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--X RAY DIFFRACTION ANALYSIS, CRYSTALLIZATION, COLD WORKING, METAL WORKING, OXIDE, NICHROME ALLOY, ALUMINUM OXIDE, ZIRCONIUM OXIDE, METAL HEAT TREATMENT, HARDNESS, METAL INCLUSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1499

STEP NO--UR/0149/70/000/002/0137/0139

CIRC ACCESSION NO--AT0130428

UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0130428

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RECRYSTALLIZATION OF NI-CR ALLOYS CONTG. VARIOUS PROPORTIONS OF HIGHLY DISPERSED OXIDES (ZRO SUB2 AND AL SUB2 O SUB3) WAS STUDIED BY X RAY DIFFRACTION AND HARDNESS AND MICROHARDNESS MEASUREMENTS AFTER HOT EXTRUSION, AND AGAIN AFTER ORDINARY COLD WORKING. HOT EXTRUSION OF THE OXIDE CONTG. MATERIAL PROMOTED THE CREATION OF A STABLE STRUCTURE NOT SOFTENING AT HIGH TEMP. (700DEGREESC). COLD WORKING, HOWEVER, DISRUPTED THE STABILITY OF THE HOT EXTRUDED MATERIAL.

UNCLASSIFIED

1/2 038 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--GENERATION IN THE 2.8 MU M RANGE INVOLVING VIBRATIONAL ROTATIONAL
TRANSITIONS IN THE HF MOLECULE -U-
AUTHOR-(03)-DOLGOVSAVELYEV, G.G., POLYAKOV, V.A., CHUMAK, G.M.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 4, PP 1197-1203
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--MOLECULAR KINETICS, PULSE SIGNAL, ILLUMINATION,
ELECTROMAGNETIC WAVE GENERATION, GAS PRESSURE, URANIUM HALIDE, FLUORIDE,
HYDROGEN, FLUORINE, ROTATIONAL SPECTRUM, HYDROGEN FLUORIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/1524 STEP NO--UR/0056/70/058/004/1197/1203
CIRC ACCESSION NO--AP0106280

UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106280

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GENERATION OF WAVES IN MOF SUB6 PLUS H SUB2, UF SUB6 PLUS H SUB2 AND F SUB2 PLUS H SUB2 MIXTURES AT PRESSURES UP TO 120 MM HG IS INVESTIGATED. IT IS SHOWN THAT FOR A 10 MU SEC ILLUMINATION PULSE THE GENERATION DURATION IN F SUB2 PLUS H SUB2 MIXTURE IS MUCH LARGER. THIS SIGNIFIES THAT FORMATION OF INVERSE POPULATION OCCURS AS A RESULT OF A CHEMICAL REACTION.

FACILITY: INST. YADERNOY FIZIKI SIBIRSKOGO OTD. AN SSSR.

UNCLASSIFIED

Acc. Nr: APO054288

Ref. Code: ZIR 9115

PRIMARY SOURCE: Ortopediya, Travmatologiya i Protezirovaniye,
1970, Nr 3, pp 34-37

ULTRASOUND OSTEOSYNTHESIS AND RECONSTRUCTION OF THE BONE TISSUE

Polyakov, V. A.

Some problems of the ultrasound osteosynthesis are discussed in the article. In experiments on animals it was established that ultrasonic fusion of bones ensures rapid and sufficiently solid union of the bone fragments, and has no influence on the processes of bone tissue regeneration.

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REEL/FRA
19831426

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1/2 006 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--POSSIBLE USE OF VARIOUS PRINCIPLES OF IMPROVING THE ADHERENCE OF
PRINTING INKS FOR METALS AND GLASS -U-
AUTHOR--(04)-GUREVICH, YE.I., KARPILOVSKIY, P., POLYAKOV, V., GRINEVA, YE.
COUNTRY OF INFO--USSR
SOURCE--POLIGRAFIYA 1970, (2), 33-5
DATE PUBLISHED-----70
SUBJECT AREAS--METHODS AND EQUIPMENT
TOPIC TAGS--PRINTING INK, ALUMINOSILICATE GLASS, ADHESION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/0725 STEP NO--UR/0543/70/000/002/0033/0035
CIRC ACCESSION NO--AP0134460
UNCLASSIFIED



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CIRC ACCESSION NO--AP0134460

UNCLASSIFIED

PROCESSING DATE--27NOV70

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

ABSTRACT. THE USE OF

POLY(ALUMINOPHENYLSILOXANE)

AS THE HARDENER FOR EPOXY RESINS USED IN

PRINTING INKS FOR NONPOROUS

SURFACES IS DESCRIBED.

UNCLASSIFIED

USSR

UDC 621.5

ANTSIFEROV, V. N., and POLYAKOV, V. A., Perm' Polytechnical Institute

"Effect of Dispersion Inclusions of Al_2O_3 on the Shrinkage of Nichrome During Sintering"

Kiev, Poroshkovaya Metallurgiya, No 11, Nov 70, pp 22-27

Abstract: It is shown that the conditions of preparing compositions on a nichrome base containing dispersion inclusions affect the flow of the sintering process. A dependence was established between the creep rate of the sintering process and the inter-particle interval. Powders of chemically pure aluminum oxide of $\gamma-Al_2O_3$ modification and nichrome powder of the following composition (wt. %): nickel -- base, Cr -- 21.73; Ti -- 0.02; C -- 0.07; Si -- 0.08; Fe -- 0.09; Mn -- 0.05; and S -- 0.004 were used in the work as the original materials.

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USSR

KUKINOV, A. M., POLYAKOV, V. G., UDACHIN, G. F., KHOROVA, L. A.

"Experiment on Recognition of Manuscript Numerals Using a Tracking Scan"

Opoznavaniye i Opisaneye Liniy [Recognition and Description of Lines --
Collection of Works], Moscow, Nauka Press, 1972, pp 108-118 (Translated
from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract
No 3 V707 by the authors).

Translation: A model is described of an automaton for reading of non-
stylized manuscript arabic numerals. The model calls for a tracking
scan of a pattern around its outside contour, recognition using a system
of characteristics and a nonparametric method of production of the
decision rule.

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USSR

UDC 621.384.633.8

POLYAKOV, V.I., RODICHOV, F.V., STEPANCHUK, V.P.

"Small-Size Microtron"

Zh.tekhn.fiz. (Journal Of Technical Physics), 1971, 41, No 8, pp 1667-1671
(from RZh--Elektronika i yeye prizeniye, No 12, Dec 1971, Abstract No 12a254)

Translation: The description and characteristics are presented of a microtron with an energy of 5.8 Mev, operating at a 3.2-cm wavelength. The cylindrical cavity of the microtron is excited from a waveguide of 12.5 x 28.6 mm cross section through an iris coupling with the lateral side of the cavity. A magnetron with a pulse power of 240 kw is used for excitation. The pulse duration amounts to 1 microsec and the repetition frequency is 830 Hz. 6 ref. R.M.

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USSR.

UDC 911.3.616.981.455(574)

KONDRASHKIN, G. A., PUGACHEV, Yu. A., KONDRASHKINA, K. I., KALYAZINA, I. M.,
PROSHIN, V. G., LUK'YANOVA, A. D., KORCHEVSKAYA, V. A., KORCHEVSKIY, P. G.,
and POLYAKOV, V. K.

"Landscape-Epidemiological Regional Division Into Tularemia Districts in the
Trans-Ural Area of Western Kazakhstan"

V sb. Probl. osobo opasn. infektsiy (Problems of Especially Dangerous In-
fections -- collection of works) Byp. 5(15), Saratov, 1970, pp 91-105 (from
RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.96)

Translation: The Trans-Ural area of Western Kazakhstan consists of four land-
scape-epidemiological areas: the Barbastau-Ileko-Utvinskiy area (steppe),
the Chelkaro-Ankatinskiy area (dry steppe), the Chiderty-Ulenty-Buldurtinskiy
area (semi-desert), and the Kaldygayty-Uil'skiy area (semi-desert-desert).
Each area is described. Characteristic for the steppe and dry steppe areas
is the steppe type of tularemia focus; while the estuary semi-desert type
of tularemia focus is typical for the semi-desert. The prolonged epizootic
"calm" of tularemia foci in the Trans-Ural area is due to the progressive
drying out of once extensive local river delta floods. Because of cattle
slaughter, xerophyt plants take over with river land turning to desert.

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SSR

KONDRASHKIN, G. A., et al., Probl. osobo opasn. infektsiy (Problems of Especially Dangerous Infections -- collection of works) Vyp. 5 (15), Saratov, 1970, pp 91-105 (from RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.96)

The projected irrigation of the Trans-Ural area by construction of the Volga-Ural canal may activate local native tularemia foci. Numerical tables are provided for small mammals and their ectoparasites in the areas defined.

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Acc. Nr.

AP0041532

Abstracting Service:

CHEMICAL ABST. 4/70

Ref. Code

UR0366

89964z Unsaturated dioxo derivatives of biphenyl and p-terphenyl. Tsukerman, S. V.; Polyakov, V. K.; Nikitchenko, V. M.; Lavrushin, V. F. (Khar'kov Gos. Univ. im. Gor'kogo, Kharkov, USSR). *Zh. Org. Khim.* 1970, 6(1), 135-8 (Russ).
 The crotonic condensation of aldehydes with 4-OHCC₆H₄C₆H₄-CHO-4' (I) or 1,4-(4-OHCC₆H₄)₂C₆H₄ (II) gave, resp., 4-RCH:CHCOC₆H₄C₆H₄COCH:CHR-4' (Ia) or 1,4-(4-RCH:CHCOCOC₆H₄)₂C₆H₄ (IIa). The reactions of I proceeded in iso-PrOH contg. KOH below, or at room temp. giving 32-53% Ia (R is Ph, 4-MeC₆H₄, 4-MeOC₆H₄, 2,4,6-Me₃C₆H₂, 4-Me₂NC₆H₄, 4-ClC₆H₄, 4-BrC₆H₄, 4-O₂NC₆H₄, or 4-PhC₆H₄). The reactions of II required refluxing at ≤200° in HOCH₂CH₂OH and gave 27-90% IIa (R is Ph, 4-MeC₆H₄, 4-MeOC₆H₄, 4-Me₂NC₆H₄, 4-ClC₆H₄, 4-BrC₆H₄, or 4-O₂NC₆H₄). Ia (R is 2,4,6-Me₃C₆H₂ or 4-Me₂NC₆H₄) and IIa (R is Me₂NC₆H₄) are luminescent. Correlations were obtained between Hammett σ consts. of R and ir spectra of Ia.

CPJR

REEL/FRAME
19751400

Titanium

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USSR

UDC: 621.791:669.295

RUSSO, V.L. (Doctor of Techn. Sciences), KUDOYAROV, B.V. and ISKOZ, B.B. (Candidates of Techn. Sciences), NIKOLAYEV, A.A., POLYAKOV, V.M., BARKAN, Z.M., LYAMIN, A.M., and GRINFEL'D, R.A. (Engineers)

"Semi-Automatic Butt Welding of Heavy-Gage Titanium Alloys Without Grooving"

Moscow, Svarochnoye Proizvodstvo, No 10, Oct 71, pp 20-21

Abstract: The most advanced welding techniques are those which provide high-capacity joints with geometric shapes offering maximum strength of the weld metal interlayer on contact with the much stronger base metal. This article discusses manual consumable-electrode welding technology for butt joints of titanium alloy plates, 20 to 100 mm thick. The test material was VP5 titanium alpha-alloy (base metal) with a tensile strength from 75 to 82 kg/mm². VP1 alloy was the filler wire (tensile strength 40-43 kg/mm²). A formula is given for calculating the value at which the weld joint tensile strength will be equal to that of the base metal. A curve is shown to demonstrate the effect of interlayer dimensions on the tensile strength of the weld. The mechanical properties of the interlayer are generally determined by two factors: the properties of the filler or electrode metal (weld metal) and the share of the base metal in the weld metal. Ultrasonic quality control of the test welds revealed faulty fusions in some weld areas. Use was made of a special jig

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USSR

RUSSO, V. L., et al, Svarochnoye Proizvodstvo, No 10, Oct 71, pp 20-21

to maintain the angle of the electrode to the weld, prevent vibrations, and monitor a constant welding rate. The welding was done on a PGT-2 semi-automatic welder. The mechanical properties of both the weld metal and the joint on specimens (6 mm in diameter) include a tensile strength of 64.6 kg/mm², a yield point of 56.5 kg/mm², an elongation of 14 percent, an area reduction of 39.2 percent, a notch toughness (round notch) of 9.8 kg/mm², and a bending angle of 120° (on specimens with longitudinal welds). The value at which the weld joint is equal in tensile strength to that of the base metal was established at 0.1 to 0.35 and the ratio is

$$\frac{\sigma_m}{\sigma} = \frac{t.s.}{t.s.}$$

USSR

UDC 621.791.753.93:621.014.3:669.295

KUDÓYAROV, B. V., Candidate of Technical Sciences, and NIKOLAYEV, A. A.,
POLYAKOV, V. M. and YAVNO, E. I., Engineers

"Semiautomatic Pulse-Arc Welding of Titanium Alloys Using Consumable
Electrode in Inert Gas"

Moscow, Svarochnoye Proizvodstvo, No 11, Nov 70, pp 17-19

Abstract: The authors of this article have developed equipment and technology for semiautomatic pulsed-argon welding of titanium alloys capable of solving problems encountered earlier in this work. The "Impul's-1" device provides for reliable feed of the welding wire and good quality protection of the welding bath. The best results as concerns stability of arc and external formation of welded bead are produced when helium is used as the protective gas. The mechanical properties of the welded seams and joints are equivalent to the properties produced by manual argon-arc welding. The use of the semiautomatic pulsed arc welding device allows the productivity of labor to be increased and the welding deformations to be decreased, mechanizing the welding of structures of titanium and its alloys in all positions.

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- 90 -

USSR

UDC:669.017:539.434

KONOPLENKO, V. P., PLEKHANOV, V. A. and POLYAKOV, V. N., Moscow
Engineering Physics Institute

"The Accumulation of Deformation and Changes in the Nature of Rupture
of KH18N12T Steel During Thermal Cycling Loading"

Kiev, Problemy Prochnosti, No 2, Feb 74, pp 38-40

Abstract: The change in the nature of rupture of KH18N12T steel during thermal cycling loading is studied as a function of the unidirectional accumulation of deformations after various degrees of hardening. It is shown that with preliminary exhaustion of ductility of the material, the probability of brittle fatigue rupture increases.

1/1

POLYAKOV, V. N.

Respiration
Physiology

So: JPRS 54768
22 Dec 71

DOC 612-014-6641546-264-31

REACTION OF THE HUMAN BODY DURING BREATHING OF GAS MIXTURES CONTAINING 3-9% CO₂

Article by I. I. Kalliman, V. N. Polyakov, and N. A. Stepanov, Moscow, *Kosmicheskaya Biologiya i Meditsina*, Krasnodar, Vol 5, No 5, 1971, subtitled for publication 20 February 1970, pp 17-21

A relatively small number of investigations has been devoted to the toxic effect of carbon dioxide on the human body. The literature gives cases of poisoning of human subjects by CO₂ (I. A. Vigdorshik, A. M. Karmov, A. K. Baskin, and B. S. Nalichenko; A. N. Trer'yakov), but none of these studies give any precise data on the CO₂ and O₂ content in the inhaled air and this naturally considerably lowers the value of these observations.

Eulenberg feels that 6 percent is the limiting CO₂ concentration in air whose breathing does not induce considerable functional impairments. Ye. A. Vigdorshik, citing Weil, assumes that breathing a mixture containing 5-6 percent CO₂ can cause fatal poisoning. Plury and Zernik cite data from Lemane, who believes that there is a lethally dangerous concentration of 4.0-4.5 percent CO₂ when the exposure is 30 minutes and N. V. Lazarev believes that a lethal outcome is possible when there is a 3 percent CO₂ content in the breathed air, not mentioning the duration of exposure.

A. N. Kazin believes that the admissible time for man's exposure in an atmosphere with 2-3 percent CO₂ is limited to 10-20 minutes. Bower, S. G. Zhurov, et al, and Schaefer have under similar conditions noted only moderate impairments in the principal physiological functions even with a more prolonged exposure to CO₂ in these concentrations. V. S. Koslitsky, on the basis of his own observations, concluded that 2-hour breathing of a gas mixture containing 4 percent CO₂ is suitably tolerable for a healthy man both at rest and when performing light physical work (300 kg-w/minute). White, et al, and Brown feel that it is admissible to breathe air containing 6.8 percent CO₂ for 10 minutes.

Brown, Madans, Pollock, et al, feel that the breathing of a gas mixture containing 12-15 percent CO₂ can be tolerated by man for only

1/2 037

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--MECHANISM OF THE REACTION OF MOLYBDENUM TRIOXIDE AND TUNGSTEN

TRIOXIDE WITH CARBON -U-

AUTHOR--(04)-PAVLOV, YU.A., SHEBOLDAYEV, S.B., MESHCHERYAKOV, G.YA.,
POLYAKOV, V.P.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(4), 26-30

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CHEMICAL REACTION MECHANISM, GRAPHITE, TUNGSTEN TRIOXIDE,
MOLYBDENUM OXIDE, ELECTRON DIFFRACTION, PHASE COMPOSITION, METAL
REDUCTION, OXIDE FILM, CARBON MONOXIDE, PHYSICAL DIFFUSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0807

STEP NO--UR/0148/70/013/004/0026/0030

CIRC ACCESSION NO--AT0132903

UNCLASSIFIED

2/2 037

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132903

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTERACTION WAS STUDIED OF METALS WITH GRAPHITE UNDER THE CONDITIONS WHEN THE OXIDE IS BROUGHT IN CONTACT WITH THE REACTION SURFACE ONLY BY THE TRANSFER OF ITS VAPOR PHASE PARTICLES. THE OXIDE PELLETS (45 MM DIAM. AND 10 MM LENGTH) WERE PREPD. BY PRESSING WO SUB3 AND MOO SUB3 POWDERS; THESE WERE FURTHER CALCINED IN AN O STREAM FOR THE PURPOSE OF HOMOGENIZING THE COMPN. TABLETS MADE OF GRAPHITE AG 1500 WERE USED AS THE CARBONACEOUS REDUCER. FOR MOO SUB3, THE TEMP. RANGE INVESTIGATED WAS 380-750DEGREES, FOR WO SUB3 IT WAS 800-1050DEGREES. ELECTRON DIFFRACTION ANALY. SHOWED THAT THE DEPOSITED LAYER IS INDEED MOO SUB3. AT THE TESTING TEMP. OF 640DEGREES, THE FOLLOWING 2 PHASES FORM: MO SUB2 O SUB3 AND MO SUB4 O SUB11, WITH THE LAYER BOUNDING GRAPHITE CONSISTING ENTIRELY OF THE MO SUB2 O SUB3 PHASE. THE RESULTS INDICATE A REDN. MECHANISM, WITH COUNTER DIFFUSION OF THE O OF THE OXIDE AND THE C TAKING PLACE THROUGH THE LAYER OF THE REACTION PRODUCTS. SINCE MO SUB2 O SUB3 DOES NOT INTERACT WITH C UP TO 750DEGREES, THE SUBSEQUENT REDN. OF MOO SUB3 CAN BE BROUGHT ABOUT BY THE DIFFUSION OF C THROUGH THE MO SUB2 O SUB3 FILM. O OF THE OXIDE CAN ALSO DIFFUSE TO THE CONTACT SURFACE BETWEEN THE OXIDE PHASE AND THE GRAPHITE UNDER THE ACTION OF THE EMERGING CONC. GRADIENT. THE REDN. PROCESS IS ACCOMPANIED BY AN INCREASE IN THE THICKNESS OF THE REACTION PRODUCT LAYER. IN CASE OF THE REDN. OF WO SUB3, THE INFLUENCE MUST BE CONSIDERED OF CO WHICH FORMS BY THE REGENERATION REACTION, WHICH AT TEMPS. IN EXCESS OF 800DEGREES GOES ON AT A RAPID RATE.

FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 621.318:549.731(088.8)

P
POLYAKOV, V. P., BERESTOVAYA, I. K.

"A Ferrite Material"

USSR Author's Certificate No 250331, filed 21 Dec 67, published 9 Jan 70 (from RZh-Radiotekhnika, No 6, Jun 70, Abstract No 6B198 P)

Translation: This patent introduces a material for waveguide channel elements. The material is distinguished by improved thermal stability of saturation magnetization. The composition is given by the formula $Y_{3-2x}Ca_2Fe_{5-y-x}Ga_yV_xO_{12}$, where $0.2 < x < 0.3$; $0.45 < y < 0.55$. N. S.

1/2 016

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--REACTION OF VANADIUM PENTOXIDE, MOLYBDENUM TRIOXIDE, AND TUNGSTEN TRIOXIDE WITH CARBON AND CARBON MONOXIDE -U-
AUTHOR--YELYUTIN, V.P., PAVLOV, YU.A., POLYAKOV, V.P., SHEBOLDAYEV, S.B.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1), 37-40

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--VANADIUM PENTOXIDE, MOLYBDENUM OXIDE, TUNGSTEN COMPOUND, CARBON, CHEMICAL REDUCTION, METAL OXIDE, CARBON MONOXIDE, ISOTOPE EXCHANGE, CHEMICAL REACTION MECHANISM

CONTROL MARKING--NO RESTRICTIONS.

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1981/0981

STEP NO--UR/0363/70/005/001/0037/0040

CIRC ACCESSION NO--AP0050973

UNCLASSIFIED

2/2 059

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0050937

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CERAMIC AND METALLIC COATINGS AFFECT THE DECREMENT OF OSCILLATIONS AND CORRESPONDINGLY THE HIGH TEMP. STRENGTH OF REFRACTORY ALLOYS SUBJECTED TO VIBRATION. TWO STEEL GRADES, AN AUSTENITIC AND A MEDIUM ALLOYED STEEL WITH A FERRITIC BASE, HAVE BEEN INVESTIGATED IN THE AS CAST STATE TO DET. THE DECREMENT OF OSCILLATIONS DURING FLEXURAL VIBRATION. SPECIMENS HAVE BEEN COATED WITH (1) A CERMET LAYER OF CR-NI-SI-O, (2) SILICATE ENAMEL, (3) ELECTROLESS NI. THE ENAMEL COATING GIVES A HIGHER DECREMENT COMPARED WITH AN UNCOATED SPECIMEN ONLY AT TEMPS. GREATER THAN 600DEGREES. IN THE OTHER 2 CASES THE SAME EFFECT APPEARS EARLIER AND IS MORE IMPORTANT; THE PRESENCE OF A NI COATING AT 550-600DEGREES GIVES A DECREMENT 1.5-2 TIMES HIGHER.

UNCLASSIFIED

1/2 034

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--PHYSICO-CHEMICAL FEATURES OF THE REACTION OF MOLYBDENUM TRIOXIDE AND TUNGSTEN TRIOXIDE WITH GRAPHITE -U-

AUTHOR--(05)--YELYUTIN, V.P., PAVLOV, YU.A., SHEBOLADEV, S.B., POLYAKOV, V.P., MESHCHERYAKOV, G.YA.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(1), 73-5

DATE PUBLISHED-----70

P

SUBJECT AREAS--MATERIALS

TOPIC TAGS--TUNGSTEN COMPOUND, METAL OXIDE, GRAPHITE, CHEMICAL REACTION, MOLYBDENUM OXIDE, THERMAL DIFFUSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1085

STEP NO--UR/0020/70/191/001/0073/0075

CIRC ACCESSION NO--AT0119944

UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0119944

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MOO SUB3 AND WO SUB3 WERE HEATED UNDER VACUUM AT VARIOUS TEMPS. WITH GRAPHITE. A REACTION OCCURRED ON THE SURFACE OF THE GRAPHITE GIVING OXIDE LAYERS CONTG. MO SUB2 O SUB3 AND MO SUB4 O SUB11 (410-640DEGREES) AND W SUB18 O SUB49, W SUB20 O SUB58, AND W (750-1050DEGREES). THE COMPN. OF THE OXIDE LAYERS AND THE DISTRIBUTION OF W AND MO ON THE GRAPHITE SURFACE WERE DETD. THE THICKNESS OF THE OXIDE LAYERS WAS DETD. AT VARIOUS TEMPS. AND REACTION TIMES (1-12 HR). AT LOWER TEMP. THE FILMS WERE VERY THIN. AT 440DEGREES AND 510DEGREES, MOO SUB3 VAPORS WERE REDUCED TO MO SUB2 O SUB3. AT 640DEGREES THE RATE OF EVAPN. OF MOO SUB3 AND THE NO. OF PARTICLES ON THE GRAPHITE SHARPLY INCREASED. THE FORMATION OF A LAYER OF MO SUB2 O SUB3 HAMPERED FURTHER REDN. OF MOO SUB3 AND LED TO THE FORMATION OF MO SUB4 O SUB11, PROBABLY BY REACTION OF MO SUB2 O SUB3 WITH CO FORMED IN THE REACTION. AT HIGH TEMP. (1050DEGREES) MO SUB2 O SUB3 REACTED WITH GRAPHITE TO GIVE MOC. THE REACTION OF WO SUB3 WITH GRAPHITE GAVE A NONHOMOGENEOUS OXIDE LAYER CONTG. W METAL. AT 900-1050DEGREES A HEAVY LAYER OF W SUB20 O SUB58 FORMED. DIFFUSION PROCESSES PLAY AN IMPORTANT PART IN THESE REACTIONS. FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

USSR

POLYAKOV, V. S. and SHCHERBAK, V. T.

"The Problem of Processing of the Results of a Study"

K Voprosu Obrabotki Rezul'tatov Issledovaniya [English Version Above],
Leningrad Polytechnical Institute, Leningrad, 1972, 16 pages (Translated from
Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V761 DEP).

Translation: An algorithm and program are presented, written in ALGOL and designed for the TA-IM translator, for determination of the analytic form of the solution of mechanics problems in the form of number files. The analytic dependence, approximately describing the number file in question, is sought in the form of an exponential polynomial with minimal (within the limits of the permissible error of approximation) number of terms. The possibility is studied of processing number files of both one and several independent variables. As an example, a file of values of the load factor of a split bearing is processed.

Authors' view

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USSR

UDC 622.82:654.9

MALIN, V. A., POLYAKOV, V. S. and SUMENKO, A. I.

"A Radio Signalling Method of Detecting Endogenic Fires"

Tr. Vost. NII po vezopasn. rabot v gorn. prom-sti (Proceedings of the Eastern Scientific Research Institute on Work Safety in the Mining Industry), No 16, 1972, pp 210-214 (RZh-Avtomatika Telemekhanika i Vychislitel'naya Tekhnika, No 3, Mar 73, Abstract No 3, A347 by the authors)

Translation: It is shown that the temperature of the coal in worked-out areas of a mine can be monitored remotely, and various types of apparatus which have been developed to detect endogenic fires arising in worked-out areas of coal mines are presented. Reliability of monitoring is ensured by the use of sensors of a new design and a single-wire communications channel. Two illustrations.

1/1

USSR

UDC 622.412.1:543.272.08

POLYAKOV, V. S., GORDEYEV, A. T., and KILIN, A. L.

"A GIK-1 Type Instrument for Detecting Hydrogen, Methane, and Carbon Dioxide in a Mine Atmosphere"

Tr. Vost. NII po bezopasn. rabot v gorn. prom-sti (Works of the Eastern Scientific Research Institute of Work Safety in the Mining Industry), Vol 12, 1972, pp 248-253 (from Referativnyy Zhurnal -- Metrologiya i Izmeritel'naya Tekhnika, No 2, 1973, Abstract No 2.32.1037 by V.S.K.)

Translation: The authors present the block diagram, description, and technical characteristics of the GIK-1 instrument, which is used for simultaneous and discrete detection of methane, hydrogen, and carbon dioxide in the atmosphere of mines and shafts. The instrument's operating principle is based on a measurement of the difference between the light refraction indices of the gas sample being investigated and a like amount of pure air, as quantitatively determined by the displacement of the interference bands with respect to their original (zero) positions. The amount of spectrum displacement is proportional to the value of the refractive index of the gas mixture being investigated, which itself changes proportionally to the percentage content of methane, hydrogen, and carbon dioxide in the mixture. The percentage limits for measuring the concentrations of the gases are: methane -- 0-6; H₂ -- 0-6;
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USSR

POLYAKOV, V. S., et al., Tr. Vost. NII po bezopasn. rabot v gorn. prom-sti, Vol 12, 1972, pp 248-253

CO₂ -- 0-6; methane + CO₂ -- 0-6; methane + H₂ -- 0-12. Detection error is +0.3 percent. Experimental models of the GIK-1 were subjected to industrial tests over a period of 2 months in Uralkaliy's mines, during which time more than 700 H₂, CO₂, and CH₄ detection tests were carried out. The test results were positive, and the GIK-1 is recommended for industrial use. An experimental group of 25 of these instruments must now be produced for the Uralkaliy association. (2 illustrations; 1 table)

2/2

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USSR

UDC: 550.380:621.317.444

TEREKHIN, Yu. V., PROSTUN, O. A., POLYAKOV, V. V., KROVOTYNTSEV, V. A.

"Automated Marine Proton Magnetometer APM-1"

Mor. Gidrofiz. Issled. [Marine Hydrophysics Studies -- Collection of Works], No 1(57), Sevastopol', 1972, pp 106-114 (Translated from Referativnyy Zhurnal Metrologiya i Izmeritel'naya Tekhnika, No 4, 1973, Abstract No 4.32.1336).

Translation: A description is presented of a marine automated proton magnetometer, the APM-1, developed at the Marine Hydrophysics Institute, Academy of Sciences, UkSSR, and tested in the 24th cruise of the research vessel *Mikhail Lomonosov*, as well as the second cruise of the research vessel *Akademic Vernadskiy*. Results are presented from studies of various types of sensors and selection of the optimal version of a sensor of several possible versions. The basic units in the devices are described, and results of determination of deviation, convergence of indications and metrological tests are presented.

1/1

- 140 -

1/2 026

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE--PRINCIPLES OF REANIMATION UNDER THE EMERGENCY SERVICE CONDITIONS

AUTHOR--(02)--STANKUZEVICH, N.A., POLYAKOV, V.V.

P

COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 5, PP 104-110

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TUPIC TAGS--INJURY, TRAUMATIC SHOCK, FIRST AID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1990/0579

STEP NO--UR/0589/70/104/005/0104/0110

CIRC ACCESSION NO--AP0108794

UNCLASSIFIED

2/2 026

CIRC ACCESSION NO--AP0108794

UNCLASSIFIED

PROCESSING DATE--09OCT70

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

ABSTRACT. ON THE EXAMPLE OF ANALYSIS OF
RENDERING URGENT AID TO 84 INJURED PATIENTS THE EFFICACY OF REANIMATION
MEASURES IN SHOCK, STAGE II-III, AND TERMINAL CONDITIONS HAS BEEN
DEMONSTRATED. FACILITY: LENINGRADSKOY STANTSII SKOROY
MEDITSINSKOY POMOSHCHI.

UNCLASSIFIED

1/2 014

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--MICROWAVE SPECTROSCOPY OF FORMALDEHYDE -U-

AUTHOR--(04)-KRUPNOV, A.F., GERSHTEYN, L.I., SHUSTROV, V.G., POLYAKOV, V.V.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(3), 480-6

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MICROWAVE SPECTROSCOPY, FORMALDEHYDE, ROTATIONAL SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1997/0802

STEP NO--UR/0051/70/028/003/0480/0486

CIRC ACCESSION NO--AP0119709

UNCLASSIFIED

2/2- 014

UNCLASSIFIED

PROCESSING DATE--23OCT70

SIRC ACCESSION NO--AP0119709

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ROTATIONAL SPECTRUM OF HCHO WAS STUDIED IN THE FREQUENCY RANGE 350-580 GHZ. FREQUENCIES OF 29 LINES WERE MEASURED CORRESPONDING TO THE TRANSITIONS J YIELDS J PLUS 1 (J EQUALS 4 YIELDS 5, J EQUALS 5 YIELDS 6, J EQUALS 6 YIELDS 7, J EQUALS 7 YIELDS 8). ON THE BASIS OF THE EXPTL. RESULTS COR. VALUES OF CENTRIFUGAL CONSTS. WERE USED FOR CALCN. OF THEORETICAL SUB,MM SPECTRUM OF HCHO. THE CALCD. SPECTRUM AGREED WELL WITH THE EXPTL. ONE (ROOT MEAN SQUARE ERROR 3 TIMES 10 PRIME NEGATIVE 6). ALSO MORE PRECISE ROTATIONAL CONSTS. B SUB0 (38835.369 PLUS OR MINUS 0.004 MHZ) AND C SUB0 (34003.282 PLUS OR MINUS 0.004 MHZ) WERE CALCD.

UNCLASSIFIED

Acc. Nr: **AP0047195**

Ref. Code: **UR0511**

PRIMARY SOURCE: Stomatologiya, 1970, Vol 49, Nr 1, pp 76-78

S. M. Budalua, L. L. Kolesnikov, V. V. Polukov — THE TOPOGRAPHY OF TEMPERATURE INDICES OF THE ORAL CAVITY

S u m m a r y. The paper sets forth data of the temperature of the oral cavity according to topographical zones. The temperature was determined in 362 areas. Each area is characterized by a definite temperature level. The temperature rises from the middle of the alveolar arch to its branches. The authors give a characteristics of the temperature of teeth, mucous membrane of the palate and other regions. The referred to investigations of the topographical peculiarities of temperature indices of the oral cavity are of clinical importance.

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REEL/FRAME
19790694

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USSR

UDC:669.18:-147:621.746

POLYAKOV, V. V., SHORSHIN, V. N., NEKHAYEV, V. P., KVITKO, M. P., SINEL'NIKOV, V. A., FILATOV, Yu. V., YUGOV, P. I., and USTYUZHANIN, V. D.

"Study of Technology of Melting in an Oxygen Converter and Pouring of Type K-76 Rail Steel in a Continuous Casting Unit"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 123-132

Translation: Results are presented from a study of a new, progressive metallurgical process--the production of railroad rails of high-quality ingots produced by continuous casting in combination with melting of rail steel in an oxygen converter.

It is assumed that the process is promising for further increases in the strength of railroad rails and reduction of the expense of their production. 5 figures; 4 tables; 5 biblio. refs.

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- 20 -

USSR

UDC 534.252.082.75-8(068.8) (47)

KRASNIKOV, YE.N., POLYAKOV, V.YE., POTAPOV, A.I. (Leningr.inzh.-stroit.in-t--
Leningrad Civil Engineering Institute)

"Piezoelectric Transducer"

USSR Author's Certificate No 301181, filed 8 Sept 69, published 29 July 71
(from RZh:Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2A478P)

Translation: A piezoelectric transducer is proposed which can be used in ultra-
sonic devices (defectoscopes, measurers of velocity and attenuation of elastic
waves) which are used for nondestructive quality inspection and determination of
the physicommechanical properties of polymeric materials and products. The trans-
ducer contains an oscillator, an electrical delay line, a unit [blok] for
division of the signal, and a piezoelectric vibrator. With the object of ob-
taining pulses with a duration equal to half of the oscillation period of the
piezoelement, the piezoelectric vibrator is formed of three elements with
equal acoustic resistance, the outside of which are piezoactive and connected
with outputs of the unit for division of signals; one output of the unit direct-
ly and the other across the electrical delay line connected to the output of the
oscillator, and the central element serves as the mechanical half-wave delay line.
The circuit of the transducer is presented. 1 ill. L.K.

1/1

- 86 -

1/2 019 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--PHASE SENSITIVE DEVICE BASED ON MAGNETIC RESISTORS -U-
AUTHOR-(02)-PCLYAKOV, V.YE., SKUTELNIKOV, V.I.
COUNTRY OF INFO--LSSR
SOURCE--MOSCOW, ELEKTRICHESTVO, NO. 3, 1970, PP 80-81
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--PHASE DETECTOR, RESISTOR, MAGNETIC EFFECT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1999/1208 STEP NO--UR/0105/70/000/003/0080/0081
CIRC ACCESSION NO--AP0123172
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NC--AP0123172

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PHASE SENSITIVE NETWORK BASED ON
MAGNETIC RESISTORS HAVING NO BALLAST RESISTANCE AND THEREFORE OF LOW
CONSUMPTION IS DESCRIBED. THE DEVICE IN QUESTION MAY BE USED IN
AUTOMATIC UNITS AND IN PARTICULAR IN DEVISING A POWER FLOW DIRECTION
RELAY.

UNCLASSIFIED

1/2 007

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--SURFACE CONDUCTIVITY OF CLAY MINERALS -U-

AUTHOR--(03)-OVCHARENKO, F.D., POLYAKOV, V.YE., ALEKSEYEV, O.L.

COUNTRY OF INFO--USSR

SOURCE--UKR. KHIM. ZH. 1970, 36(2), 170-2

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--CLAY, ION CONCENTRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1828

STEP NO--UR/0073/70/036/002/0170/0172

CIRC ACCESSION NO--AP0123617

UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123617

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SURFACE COND. DOES NOT VARY MARKEDLY WITH THE CONC. OF THE ION. IT DECREASES IN ORDER FOR MONTMORILLONITE, Palygorskite, TO VERMICULITE AND FOR NH SUB4 PRIME POSITIVE, CA, MN, CO, TO CU. THE COEFF. OF EFFECTIVENESS, ALPHA EQUALS 2 PLUS KAPPA SUBSIGMA KAPPA SUBUPSILON, KAPPA SUBSIGMA EQUALS SURFACE COND. KAPPA SUB NEGATIVE KAPPA SUBUPSILON, KAPPA EQUALS SP. COND. OF THE FREE SOLN., DECREASES TOWARD 1 AS THE CONC. INCREASES SINCE KAPPA SUBUPSILON INCREASES WHILE KAPPA SUBSIGMA REMAINS CONST. FACILITY: INST. KOLLOID. KHIM. KHIM. VODY, KIEV, USSR.

UNCLASSIFIED

Acc. Nr.: MT0046530

Ref. Code: UR 0144

USSR

UDC 62-507

POLYAKOV, VALENTIN, YEFIMOVICH, Candidate of Technical Sciences, Professor
of the Ural Polytechnical Institute, SHARNIN, YURIY KONSTANTINOVICH,
Postgraduate of the Ural Polytechnical Institute

"Problem of Planning and Designing Logical Potential Circuits Using Transistor Elements Series ET"

Novocherkassk, Izvestiya Vysshikh Uchebnykh Zavedeniy, Elektromekhanika
(News of the Institutions of Higher Learning, Electromechanics), No 1,
1970, pp 23-26 (from Izvestiya Vysshikh Uchebnykh Zavedeniy, Elektromekha-
nika, No 1, 1970, p 112)

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4

Reel/Frame
19781787

AT0046530

Translation: A procedure is proposed for determining the number of logical ET-LOI elements required for realizing the functions of disjunction and conjunction for any number of arguments. This offers the possibility of selecting the minimum form of the logical part of automation devices. An illustration of determining the number of logical elements for 18 input variables is presented. It is demonstrated that the selected number of elements is minimal. There is 1 table, 2 illustrations and a 3-entry bibliography.

2/2

19781788

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USSR

UDC: 535.37+535.822.9

ARISTOV, A. V. and POLYAKOV, Ya. S.

"Investigating the Luminescence of Organic Luminophors by the Phosphorescent Microscopy Method"

Minsk, Zhurnal Prikladnoy Spektroskopii, No 2, 1973, p 339, first annotation

Translation: Using a phosphorescent microscope, authors investigated the luminescent characteristics of standard solutions of uranium and unsubstituted rhodamine at a temperature of 88° K. The device used recorded the luminescence spectrum with a quantum output of about 10^{-5} . An extended afterglow of the investigated solutions was detected, the principal part of which was delayed fluorescence. The ratio of the intramolecular transition velocity constants $T \rightarrow S_0$ and $T \rightarrow S'$ was calculated under the experimental conditions. It is shown that the probability of the $S' \rightarrow T$ transition in the uranium solutions is much higher than that for the unsubstituted rhodamine, which result agrees closely with the results obtained earlier.

1/1

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USSR

UDC 669.715'725'721(088.8)

3

FRIDLYANDER, I. N., GULIN, A. N., SANDLER, V. S., YATSENKO, K. P., KOLESNIKOVA, V. I., POLYAKOV, YE. S., YUDIN, A. F.

"Deformable Alloy Based on Aluminum"

USSR Author's Certificate No 310946, filed 24 Mar 70, published 1 Oct 71 (from RZh-Metallurgiya, No 4, Apr 72, Abstract No 41627P)

Translation: A deformable alloy based on aluminum is proposed with the following composition: 15-40% Be, 1.5-8% Mg, 0.2-2.5% Li, and Al for the rest. In order to increase the corrosion strength, 0.1-0.6% Si can be introduced into the alloy. In order to increase the strength and plasticity, up to 0.2% Zr, Mn, Cr, and Ti introduced separately or jointly can be added. The proposed alloy permits variation of the properties within broad limits: σ_B 40-65 kg/mm², δ 9-12%, ψ 8-13% (the pressed ingots after quenching and aging). The alloy containing 24.4% Be, 4.3% Mg, 1.9% Li, and the rest Al after heat treatment has γ 2.3 g/cm³, E 13,650 kg/cm², σ_B 59.5 kg/mm², δ 11.3%, ψ 11.5%. The heat treatment conditions are as follows: quenching from 450°, 40 minutes and aging at 120°, 24 hours. The proposed alloy is obtained by the method of melting and casting in a vacuum and in an inert environment with subsequent deformations. Obtaining the intermediate products is possible by the powder metallurgy methods. The material can

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RILYANDER, I. N., et al., USSR Author's Certificate No 310946, filed 24 Mar 70,
published 1 Oct 71

be used in rigid structural elements in which the defining factors are a combination of lightness, high rigidity with high strength at operating temperatures to 120-150° and under short-term effects, to 400°.

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USSR

UDC: 53.07/.08+53.001.5

POLYAKOV, Ye. V., VERESHCHAGIN, L. F., KONYAYEV, Yu. S., Editorial Staff
of the Journal "Pribory i Tekhnika Eksperimenta"

"Entropy Diagram and Indicator Chart for a 16 000-Bar Hydraulic Compressor"

Teplovaya i indikatornaya diagrammy gidravlicheskogo kompressora na 16 000 bar. AN SSSR (cf. English above. Academy of Sciences of the USSR), Moscow, 1971, 21 pp, ill., bibliography of 10 titles, No 3612-71 Dep. (from RZh-Fizika, No 4, Apr 72, Abstract No 4A132 DEP)

Translation: A study is made of entropy diagrams and indicator charts for a 16 000-bar hydraulic compressor. The curves were plotted by means of specially developed temperature and pressure pickups. The resultant graphs are used as a basis for drawing conclusions on the polytropic processes of compression and expansion, the degree of perfection of the seals, and the effect of the clearance and nature of operation of the delivery valve on the productivity of a hydraulic compressor. Authors' abstract.

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USSR

UDC 621.771

VERESHCHAGIN, L. F., GUREVICH, YA. B., DMITRIYEV, V. N., KONYAYEV, YU. S.,
and POLYAKOV, YE. V., Moscow

"High-Temperature Gas Extrusion of Metals"

Moscow, Fizika i Khimiya Obrabrabotki Materialov, No 4, Jul/Aug 72, pp 85-91

Abstract: An apparatus is described for extruding various materials at gas pressures to 10 kbars in the temperature range 20°-1000°C. The process of heating the blank under high gas pressures by passing a current through the blank was examined. Heating the preparations was shown to be feasible, with rates to 70°/sec, during which the deviation from a linear increase was not more than ±25°C. The amount of the initial heating of the gas was determined during its compression to 7 kbars in the apparatus. The processing of structural steels is feasible with the apparatus described.

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USSR

UDC 533.6.07+536.24+536.33

KONIKOV, A. A., NIKOLAYEV, G. N., and POLYAKOV, Yu. A. (Moscow)

"Heat Exchange Behind a Reflected Shock Wave in a Two-Phase Gas-Dynamic Stream"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 2, 1973, pp 127-136

Abstract: Measurements were made of the heat fluxes into a wall that reflected a shock wave that propagated in air containing a suspension of aluminum oxide particles having a size on the order of 1 micron. A shock tube was used, provided with a special pneumatic system for creating a gas-dust medium. The equipment used for measuring the heat fluxes was based upon the employment of thin-film resistance thermometers, and satisfied the requirements that were dictated by the short duration of the working process.

The range of shock-wave velocities in the two-phase medium embraced values of V_s from 3 to 6 km/sec. Radiant and conductive heat fluxes to the reflecting wall were measured. The measurement results were compared with the data of control experiments with pure air and with calculated values of heat fluxes from nondusty air at equal shock-wave velocities. It was

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USSR

KONIKOV, A. A., et al., Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 2, 1973, pp 127-136

established that the radiation of shock-heated gas is intensified by an order of magnitude as a consequence of the ionization of aluminum atoms that appear as a result of thermal decay of the aluminum oxide vapors. 5 figures. 9 references.

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USSR

UDC: 536.12

POLYAKOV, Yu. A., BARANOV, V. I.

"Impulse Method of Studying Heat Flux Curves in High Temperature Solar Energy Conversion Apparatus"

Moscow, *Teplotfizika Vysokikh Temperatur*, Vol 11, No 1, Jan-Feb 73, pp 156-160.

Abstract: A method is presented for measurement and design of a module with film heat receptors, and results of determination of heat flux curves in the focal plane of the radiant energy concentrator are presented. Brief exposure of the sensors allows high heat flux levels (over 10 kw/cm²) to be measured. Experimental results comparable with calorimetric measurements are presented. The authors note the high speed of the method suggested. Simultaneous recording of heat fluxes at several points in the focal plane yields a true picture of the distribution of heat flux, determined over a very short time interval; therefore, the method does not require corrections for changes in radiation flux.

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SR

UDC 681.332.65

POLYAKOV, YU. A., BIRYUKOVA-SAVICHEVA, N. V., and KOROLEV, O. I.

"Generator of Random Numbers Following a Given Distribution Law"

[Tr.] Mosk. in-t neftekhim. i gaz. prom-sti ([Works] of Moscow Institute of the Petrochemical and Gas Industry), 1971, vyp. 92, pp 325-330 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 5, May 72, Abstract No 5B202 by V. R.)

Translation: The article describes a random-number generator designed for use in the digital-computer solution of problems by the Monte Carlo method. The generator is an electronic circuit consisting of two principal functional parts: a generator of random numbers following a uniform distribution law and a functional converter. The random-number generator has five identical channels, each of which is designed to produce one random bit sign. The noise generator is a three-stage amplifier of the transistor noise. The random value of the binary variable is formed on a flip-flop with a complementing input, which receives a random number of pulses determined by the noise envelope. Random codes are converted to analog voltages, which are fed to a diode nonlinearity block, where the given functional dependence is realized.

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USSR

POLYAKOV, YU. A., et al., [Tr.] Mosk in-t neftekhim i gaz. prom-sti, 1971,
vyp. 92, pp 325-330

Errors not exceeding 1-2 percent are obtained for many distribution laws
(including the exponential and Rayleigh laws). Two illustrations. Bibliog-
raphy with five titles.

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USSR

UDC 669.721.046.4

POLYAKOV, Yu. A., KOROTKOV, Yu. A., GULYAKINA, A. Ye.

"Processing of Carnallite Powder in Rotating Furnaces"

Tr. Vses. N.-i. i Proekt. In-ta Alyumin., Magn. i Elektrod. Prom-sti [Works of All-Union Scientific Research and Planning Institute for the Aluminum, Magnesium and Electrode Industry], No 79, 1971, pp 37-42, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G246 by G. Svodtseva).

Translation: A method is developed for processing powder by briquetting and charging the briquettes into a furnace together with the initial carnallite. In order to eliminate the possibility of removal of incompletely dehydrated chunks, the briquettes must be made smaller. This is done by briquetting the powder using a roller press with smooth rolls, producing a pressed strip 400-600 mm wide and 4-4 mm [sic -- Tr] thick. As it leaves the rolls, the pressed strip is broken into chunks of various shapes and delivered to the cold end of the furnace drum. Dehydration of the carnallite and powder occurs practically without changing the quality of the product or increasing the yield of powder from the drum. 8 Biblio. Refs.

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USSR

UDC 669.721.472(088.8)

REZNIKOV, I. L., ZUYEV, N. M., IVANOV, A. B., POLYAKOV, YU. A., FRANTAS'YEV, N. A., TATAKIN, A. N., SOLYAKOV, S. P., and KARAVAYNYI, A. I., All-Union Scientific Research and Design Institute of Aluminum, Magnesium, and Electrode Industry, Solikamskiy Magnesium Plant

"Method of Preparing Refined Electrolyte for Magnesium Production"

USSR Author's Certificate No 259401, filed 4 Sep 68, published 15 May 70 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11 G134 P)

Translation: A method is proposed for preparing a refined electrolyte for magnesium production, which includes enrichment of a reversible electrolyte with chlormagnesium initial raw material and refining by means of electrolytic and heat treatment, and also with the help of reducing agents and gases. To increase the degree of refining of the electrolyte and improve the technological indicators, the reversible electrolyte is separated into several streams, one of which is fed to the beneficiation with chlor-magnesium raw material, and the remaining ones are added to the obtained chloride melt enriched with $MgCl_2$ after refining. The enrichment of reversible electrolyte with chlormagnesium raw material produces 25-50% concentration of $MgCl_2$ at melt temperatures of $450-650^\circ$. The concentration of $MgCl_2$ in the refined electrolyte is maintained at 10-25%. 1/1

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USSR

UDC 669.721.48(088.8)

BIRYUKOV, L. V., MIRONOV, A. M., SERGEYEV, V. V., POLYAKOV, Yu. A., and ZABOYEV, Yu. I.

"Method of Processing Wastes"

USSR Author's Certificate No 273441, Filed 13/08/66, Published 7/09/70
(Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract No 2 G190 P)

Translation: A method is suggested for processing wastes from the production of Mg to carnallite and Cl₁, including absorption of hydrogen chloride by water, absorption of chlorine by lime producing HCl and CaCl₂, decomposition of the calcium chloride by the hydrochloric acid, producing concentrated Cl₂ and a CaCl₂ solution, addition of MgO and carbonization, separation of the MgCl₂ solution produced from the CaCO₃, addition of spent electrolyte, and evaporation and dehydration of the solution to separate the carnallite. To increase the extraction of concentrated Cl₂, the chlorinated CaO is decomposed at pH 2-3 at a residual pressure in the apparatus of 10-20 mm Hg, while the spent electrolyte is introduced into the MgCl₂ solution in melted form by spraying.

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Magnesium

USSR

UDC 669.721.046.4(088.8)

REZNIKOV, I. L., POLYAKOV, Yu. A., KHASIN, L. B., PONYATENKO, V. V.,
KOROTKOV, Yu. A., RUDAKOV, V. A., and DUNAYEV, D. V.

"Method of Dehydration of Magnesium Chloride"

USSR Author's Certificate No 272569, Filed 30/04/68, Published 27/08/70
(Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract
No 2 G181 P)

Translation: A method is suggested for dehydration of $MgCl_2$ by fusion. To increase the productivity of the apparatus and improve the sanitary conditions, the initial salt is pressed into a strip under a pressure of over 600 kg/cm^2 , ground, and classified, then the fraction of ground salt over 1 mm in size is melted. The salt melt thus produced is agitated by air.

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