2/2 007 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0103118

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RECENT DATA ON THE STRUCTURE OF MIDDLE CAMBRIAN IN TUVA, NEAR SHAGONAR MOUNTAIN ARE LISTED IN THE PAPER. THE AGE OF ULTRABASIC INTRUSIONS IS REVISED. THE CLOSE RELATIONSHIP OF ULTRABASIC ROCKS WITH SEDIMENTS OF LOWER CAMBRIAN ALTYNBULAK ROCK SERIES AND THE PRESENCE OF ULTRABASIC ROCK PEBBLES IN BASAL CONGLOMERATES OF KARABULUN SUITE OF MIDDLE CAMBRIAN TESTIFY THE LOWER CAMBRIAN AGE OF ULTRABASIC INTRUSIONS.

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202910015-9"

USSR

UDC 621.382.002

VERNIKOV, M.A., VORCB'YEV, N.N., MARKOVA, T.A., ROSINA, L.A., SHCHEGLOV, A.S.

"Study Of The Effect Of Thermocompression Regimes On The Electrical Parameters Of Transistors"

Elektron.tekhnika.Nauch.-tekhn.sb. Poluprovodn.pribory (Electronic Technics. Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 4(61), pp 161-166 (from RZh:Elektronika i yeye primeneniye, No 4, April 1972, Abstract No 4B526)

Translation: The study was conducted on planar silicon n-p-n transistors with an epitaxial base. The thermocompression regime was controlled by two parameters --the temperature and pressure at the wedge [jgla], which were varied in the limits 320--390° C and 25--31.3 kg/mm^2, respectively. It is shown that an increase of the temperature and pressure at the wedge leads to a significant instability of the parameter h_{21E} in the course of 500-hour tests on reliability. The mechanism of the effect of remanent strains on the instability of h_{21E} is discussed. It is proposed first to set the temperature and pressure at the minimum level which assures a sufficient mechanical stability, and secondly to maintain the regime with a precision not worse than 5 percent. 4 ill. 17 ref. G.I.

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USSR

UDC 621.98.01

SHCHEGLOV, B. A.

"Effect of Mechanical Properties on the Stampability of Thin Sheet Metals"

Moscow, Kuznechno-Shtampovochnoye Proizvodstvo, No 2, Feb 71, pp 10-12

Abstract: In a study of the effect of mechanical properties on the stampability of thin-sheet metals it is pointed out that the maximum uniform strain before failure depends on the magnitude of n (the work-hardening index); the larger the n, the larger the uniform strain under maximum load before localization. The uniformity of distribution of strains throughout a stamped part also depends on n; the larger the n, the more uniformly the strains are distributed throughout the part; the smaller the peak values and the lower they are (with the same mean integral deformation for a part of given depth), the smaller the plasticity reserve of the metal expended during stamping and, consequently, the higher the dynamic strength of the part during operation.

Various means of determining and calculating n are discussed. A table is presented showing the parameters of the power function $\sigma = C\varepsilon^n$ for some thin-sheet metals from the results of bidirectional tensile testing. Both isotropic and anisotropic metals are analyzed with respect to

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SHCHEGLOV, B. A., Kuznecgno-Shtampovochnoye Proizvodstvo, No 2, Feb 71, pp 10-12

the Bauschinger effect. Formulas for analyzing the yield points and equilibrium conditions of various parts stamped from thin sheet metals are presented.

It is pointed out that inasmuch as parts of complex shape have regions both with bidirectional tension and tension-compression, for successful stamping of them it is necessary that the work hardening index, the uniform elongation, and the coefficient of normal anisotropy by quite large. It is desirable that under conditions of bidirectional tension, the metal be work hardened better than in the case of undirectional tension, that is, that the parameters C and n be larger in the former case than in the latter. In the article C and n are taken as defining the basic mechanical properties of the metal where the work hardening index n is equal to the maximum uniform logarithmic deformation for which necking and a drop in tension begin and for plastic metals $C = \sigma_b (2.72/n)^n$ where σ_b is the

ultimate strength. A formulas is also derived to express the degree of reduction in terms of the coefficient of normal anisotropy.

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USSR UDC 669.71.042.6

KUZNETSOV, K. I., GENISARETSKIY, M. A., GOROKHOV, V. P., SKUCHILOV, A. I., SHCHEGLOV, D. A., FIRSOV, V. M., KOZLOV, K. A.

"Development and Assimilation of Continuous Casting of Large Aluminum Ingots"

Tekhnol. Legkikh Splavov. Nauchno-tekhn. Byul. VILSa [The Technology of Light Alloys, Scientific and Technical Bulletin of the All-Union Institute of Light Alloys], 1970, No. 6, pp. 91-93. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G139 by G. Svodtseva).

Translation: The equipment and technology for casting large T-shaped ingots (I) of Al weighing 1 t were developed in 1963-1964 at the SMK (expansion unknown -- possibility: Siberian Metallurgical Combine). In 1969-1970, about 10,000 tons of large I were processed. The use of these I by metallurgical plants to replace the 15-kg I provides for: 1) complete elimination of manual labor in all loading and unloading operations from casting of I at the manufacturer to charging in the melting furnaces of metallurgical plants; 2) reduction in labor consumption by consumers during unloading of I from railroad cars by a factor of 4 by using lift trucks; 3) halving of storage area requirements; 4) reduction in labor consumption involved in transportation of I from railroad car to casting shop by 1.3 times; 5) reduction in labor consumption during charging into furnace by a factor of 2; 6) reduction in requirements for charging boxes by 40%; 7) reduction in melting time by 10-15%; 8) improvement of quality of metal of I

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USSR UDC 669.71.042.6

KUZNETSOV, K. I., GENISARETSKIY, M. A., GOROKHOV, V. P., SKUCHILOV, A. I., SHCHEGLOV, D. A., FIRSOV, V. M., KOZLOV, K. A., Tekhnol. Legkik Splavov. Nauchno-tekhn. Byul. VILSa, 1970, No. 6, pp. 91-93.

as a result of decreased gas content and increased metal purity with continuous casting. The ratio of the surface area of large I to volume is 6 times lower than that of 15 kg I as a result of which the charge includes less oxide film, which also improves the quality of the metal.

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AM0037531 NUCLEAR SCI. ABST. 1/70 UR 0000 1

3332 (MATT-Trans-92) NEW RESULTS IN THE STUDY OF ANOMALOUS PLASMA RESISTANCE IN THE TM-3 TOKAMAK. Bobrovskii, G. A.; Kislyakov, A. I.; Petrov, M. P.; Razumova, K. A.; Shcheglov, D. A. (Gosudarstvennyi Komitet po Ispol'zovaniyu Atomnoi Energii SSSR, Moscow, Institut Atomnoi Energii). Translated for Princeton Univ., N. J., from report IAE-1905. 16p. Dep. CFSTI.

An investigation was made of discharge conditions in the TM-3 device with a relatively high temperature and low concentration. Under these conditions protons are detected the temperature of which cannot be explained by Coulomb transfers from electrons to ions in a number of cases. The dependence of the anomalous resistance on certain parameters is studied. (auth)

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USSR

TYURIN, A. M., SAPRYKIN, V. A., and SHCHEGLOV, G. A.

"Evaluation of the Possibility of Identification of Pure Tonal Signals by the Human Auditory Analysor"

Moscow, Biofizika, Vol 15, No 5, Sep/Oct 70, p 942

Abstract: A study was made of the sensitivity of the auditory analysor with respect to the frequency, duration, and intensity of the signal. On the basis of the experimental data, a relationship is established for the probability of correct identification of signals as a function of each of these three parameters. It was established that the probability characteristics of identification are subject to a logarithmically normal law. Experimental results and calculations showed that the resolving power of the auditory analysor with respect to frequency and time is such that the relationship sought can be obtained only by means of an essentially nonlinear device. A nonlinear mechanism of augmentation of the degree of perception is discussed, on the assumption that the velocity of propagation of excitation is is function of the intensity of the stimulus applied. (The complete text of the article was filed at VINITI [All-Union Institute of Scientific and Technical Information] under No 1786-70 on 4 June 1970.)

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UDC 678.652'41'21-9

SHARKOVSKIY, V. A., AKUTIN, M. S., KERBER, M. L. SHCHEGLOV, L. L., MATVELASHVILI, G. A., PUKHOVITSKAYA, A. N., MILL', L. T., GREBENNIKOV, A. V., OSTROVSKAYA, A. YE., and DYMARSKAYA, YE. L.

"New Types of Aminoplastics"

Moscow, Plasticheskiye Massy, No 12, Dec 70, pp 53-54

Abstract: The article describes synthesis of fiberglass plastics based on carbamide binders. These binders include a carbamide oligomer modified by polyvinylacetate emulsion during synthesis, and ures-benzoguanamine-formaldehyde oligomer. Fiberglass textolites based on these oligomers and TS-8/3-250 glass treated with lubricant 752 are mechanically strong. In addition to its excellent strength properties, the plastic based on urea-benzoguanamine-formaldehyde oligomer is also water-resistant.

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USSR UDC 669.017:539.67

VIYK, U. I., SHCHEGLOV, N. N., and MASS, V. G.

"A System for Internal Friction Measurements"

Tr. Tallin. ploitekhn. in-ta (Works of Tallin Polytechnic Institute), 1970, A, No 294, pp 99-102 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 31895 by authors)

Translation: A system is described for measuring the logarithmic decrement of vibrations (internal friction) in free torsional vibrations of a steel specimen. The system is used to study plastic deformations which occur in the fatigue testing of steel specimens. Three illustrations. Bibliography with one title.

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USSR

UDC 666.1/.2:620.178.1

PAVLUSHKIN, N. M., KHODAKOVSKAYA, R. YA., and SHCHEGLOVA, O. V., Moscow Chemical Engineering Institute imeni Mendeleyev

"Method of Determining the Microbrittleness of Sitals"

Moscow, Zavodskaya Laboratoriya, Vol 39, No 6, Jun 73, pp 738-740

Abstract: The work of crack formation A_k and establishment of a relationship between A_k and bend strength was attempted in this work in order to determine if they could serve as a criterion of microbrittleness in sitals. Sitals of cordierite composition were heat treated at 900, 950, 1000, 1100 and 1200°C. The work of crack formation was determined by the formula:

$$A_k = C \cdot P_k \sqrt{P_k / H_k} \text{ grams-force-cm}$$

where C--constant depending on geometry of diamond pyramid, i.e., ratio of indentation depth h to diagonal d (calculated such that for h/d = 0.2, C = 0.91); P_k--critical load required to apply to cause formation of crack of specified length; H_k--Vickers hardness of material for load P_k. A crack length of 20 microns was selected as the specified length for test comparison. The method of determining microbrittleness involved measuring total crack length under three loads (100, 150, and 200 grams-force or higher in relation to sital strength, plotting the line of total crack length and determination of critical load P_{k20}

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PAVLUSHKIN, N. M., et al., Zavodskaya Laboratoriya, Vol 39, No 6, Jun 73, pp 738-740

and calculation of microhardness (average of 10 values) for load P_{k20} and the work of crack formation. It was found that A_{k20} for the investigated sitals varied from 1.4 to 2.8 grams-force-cm and bend strength from 7 to 22 kgf/mm^2. Statistical treatment of the obtained data showed that there was a linear relationship between bend strength and total crack length, P_{k20}, and A_{k20}. 3 figures, 7 bibliographic references.

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USSR

UDC: 8.74

ARONOV, G., SHCHEGLOV, V.

"Information Coding and Associative Data Retrieval"

V sb. Elektronno-vychisl. tekhn. i programmir. (Electronic Computer Technology and Computer Programming--collection of works), vyp. 4, Moscow, "Statistika", 1971, pp 73-79 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V1000)

Translation: Some new codes are described which can be used as correcting codes in data transmission systems and in associative retrieval systems. Results are presented from comparison of a code in which redundant symbols correspond to the sum of ones or zeros among the information symbols, with various codes, specifically with a "four-out-of-eight" code. It is found that in some instances it is advisable to use the proposed code with summation whose redundant symbols are expressed by a code with constant weight. Authors' abstract.

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USSR

UDC 621.375.82

BOROVICH, B. L., ZUYEV, V. S., KATULIN, V. A., NOSACH, O. Yu., TYURIN, Ye. L., SHCHEGLOV, V. A.

"On the Propagation of a Light Pulse in a Moving, Two-Level Absorption Medium"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No. 2, Moscow, "Sov. radio", 1972, pp 88-89 (from RZh-Fizika, No 10, Oct 72, Abstract No 10D845)

Translation: A solution is obtained for the transfer equations for a monochromatic pulse of radiation of an arbitrary time form $I_0(t)$ in a two-level absorption medium with a density of active particles N_0 = const and a velocity $v(t)$. It is shown that, depending on the relationships v and $v_0 = 2I_0/N_0$, there exist two modes of propagation of illumination waves with the interface at $v = v_0$. The study is also applicable for a radiation source moving with an arbitrary velocity in the medium. 6 ref. Authors abstract.

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USSR

BASOV, N. G., GROMOV, V. V., KOSHELEV, Ye. L., MARKIN, Ye. P., ORAYEVSKIY, A. N., SHAPOVALOVA, D. S., SHCHEGLOV, V. A., Physics Institute imeni P. N. Lebedev, Academy of Sciences, USSR

"A Continuous-Action DF — CO_2 Chemical Laser"

Moscow, Pis'ma v (Letters to the) Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 13, No 9, 5 May 1971, pp 496-498

Abstract: A report is given on obtaining continuous laser emission in subsonic gas streams. Generation takes place due to CO_2 molecules excited by means of the transmission of energy from oscillatorily excited DF* molecules obtained in the process of a chain reaction of deuterium with fluorine with purely chemical initiation. 2 figures. 2 bibliographic entries.

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Acc. Nr: AP0047029

Abstracting Service: INTERNAT. AEROSPACE ABST 5-70

Ref. Code: UR0057

A70-25112 # Obtaining population inversion of the molecules of the working gas in a mixture with a thermally excited auxiliary gas (Poluchenie inversnoi naselennosti molekul rabochego gaza v smesi s termicheski vozbuzhdennym vspomogatel'nym gazom). N. G. Basov, A. N. Oraevskii, and V. A. Shcheglov (Akademiia Nauk SSSR, Fizicheskii Institut, Moscow, USSR). *Zhurnal Tekhnicheskoi Fiziki*, vol. 40, Jan. 1970, p. 173-180. 8 refs. In Russian.

Calculation of the kinetics of the interaction between a 'cold' (three-level) working gas and a thermally excited (two-level) auxiliary gas within the framework of a model representation, it is shown that population inversion occurs in the working gas, due to resonance quantum exchange. The maximum densities of the 'active' molecules are calculated, and the inversion pulse shape is determined. The vibrational kinetics for the carbon dioxide/nitrogen system are investigated. The dependences of the population inversion on the initial excitation temperature, the temperature of the gas mixture, and the partial pressures of the components of the initial mixture are determined. The population inversion efficiency is calculated. A.B.K.

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REEL/FRAME
19790465

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USSR

BASOV, N. G., ORAYEVSKIY, A. N., SHCHEGLOV, V. A., Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR, Moscow

"Production of an Inverse Population of Working Gas Molecules in a Mixture With a Thermally Excited Auxiliary Gas"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 40, No 1, Jan 70, pp 173-180

Abstract: A model is proposed for calculating the kinetics corresponding to the interaction of a cold three-level working gas and a thermally excited two-level auxiliary gas. It is shown that there is an inverse population as a result of resonance exchange of quanta in the working gas. The limiting densities of the active molecules are calculated and the shape of the inversion pulse is determined. The oscillatory kinetics for a specific binary CO_2-N_2 mixture is discussed. A relationship is obtained between the density of the inverse population and the initial excitation temperature, the temperature of the gas mixture, and the partial pressures of the components of the initial mixture. It is shown that in this case one can achieve efficiencies 3-4 times higher than the limiting efficiencies achieved using thermal excitation. This is attributed to the fact

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BASOV, N. G., et al., Zhurnal Tekhnicheskoy Fiziki, Vol 40, No 1, Jan 70, pp 173-180

that in obtaining the inverse population of working gas molecules in a mixture with thermally excited gas carriers, the energy expended goes only into thermal excitation of the internal degrees of freedom of the auxiliary gas. It is noted that a theoretical study will require further analysis.

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1/2 021 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--OBSERVATION OF THE INSTABILITY OF NONLINEAR FERROMAGNETIC RESONANCE DURING THE ARBITRARY POLARIZATION OF A PUMPING FIELD -U-

AUTHOR-(02)-SURIN, V.V., SHCHEGLOV, V.I.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(3), 953-4

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MAGNETIC PUMPING, FERROMAGNETIC RESONANCE, NONLINEAR EFFECT, MAGNETIC FIELD CONFIGURATION, EXCITATION ENERGY, MAGNETIC POLARIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1982 STEP NO--UR/0181/70/012/003/0953/0954

CIRC ACCESSION NO--AP0105056

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105056

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCE OF THE THRESHOLD OF EXCITATION OF INSTABILITY (AUTOMODULATION) OF THE NONLINEAR FERROMAGNETIC RESONANCE ON THE ANGLE, PHI, BETWEEN THE DIRECTIONS OF THE SUBMAGNETIZING FIELD AND THE PUMPING FIELD WERE DETD. WITH A 9300 MHZ RESONATOR. A SPHERICAL SPECIMEN 1.6 MM IN DIAM. WAS USED. THREE VALUES OF THE SUBMAGNETIZING FIELD WERE USED; H SUB1 EQUALS 1.8, H SUB2 EQUALS 1.9, AND H SUB3 EQUALS 2KOE. AT SOME VALUES OF PHI, THE THRESHOLD OF AUTOMODULATION HAS A MAX., WHILE THE CURVES OF THRESHOLD OF EXCITATION DO NOT HAVE IT. WITH INCREASED SUBMAGNETIZING FIELD, THE POSITION OF THE MAX. OF THE THRESHOLD OF AUTOMODULATION IS SHIFTED TOWARD LOWER VALUES OF PHI. FACILITY: INST. RADIOTEKH. ELEKTRON., MOSCOW, USSR.

UNCLASSIFIED

USSR UDC 681.327.6

SHCHERBOV, V. M.

"An Associative Memory Device"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 33, Soviet Patent No 285061, class 21, filed 30 Oct 68, published 29 Oct 70, p 44

Translation: This Author's Certificate introduces an associative memory device which contains an associative interrogation register, an excess digit register, and matrices of associative tags in code with ones addition made on the basis of memory elements with nondestructive readout, located at the intersections of number lines, recording lines, associative interrogation lines and readout lines. The inputs of the excess digit register are connected to the data outputs of the module for determining the weight of associative tags. As a distinguishing feature of the patent, the device is designed for simplification, improved reliability in operation, and increased storage volume. The unit contains associative tag matrices in code with zeros addition and a zone tag flip-flop whose inputs are connected to the controlling inputs of the module for determining the weight of the associative tags. The corresponding associative interrogation lines and record-

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SHCHEGLOV, V. M., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 33, Soviet Patent No 285061, class 21, filed 30 Oct 68, published 29 Oct 70, p 44

ing lines of the associative tag matrices in code with ones addition and of those in code with zeros addition are connected through rectifiers whose controlling inputs are connected to the corresponding outputs of the zone tag flip-flop.

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USSR UDC: 681.327.6

SHCHEGLOV, V. M.

"An Associative Memory Device"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 9, Mar 71, Author's Certificate No 297072, Division G, filed 20 Feb 69, published 2 Mar 71, pp 162-163

Translation: This Author's Certificate introduces an associative memory of the binary-decimal type which uses codes with fixed weight. The memory contains a control unit, diodes connected through mask register flip-flops to the mask lines, interrogation tag code lines connected to the interrogation tag register, matrices of memory elements which permit nondestructive readout, OR circuits, and lines for setting to "zero" or "one". The number lines of the nondestructive read elements are connected to detectors. As a distinguishing feature of the patent, the device is simplified and operational reliability is improved by connecting the inputs of the interrogation tag register to the outputs of the OR circuits. Some of the inputs of the OR circuits are connected to the interrogation tag code lines, and the other inputs are tied together for each decimal digit into mask lines which are connected through diodes to the line for setting to "zero" or "one". The controlling inputs of the diodes are connected to the control unit.

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USSR UDC: 681.327.66

SHCHEGLOV, V. M.

"An Associative Memory Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 28, 1970, Soviet Patent No 280547, Class 21, filed 17 May 68, pp 41-42

Abstract: This Author's Certificate introduces an associative memory device which contains matrices of magnetic cores threaded by readout bit lines, output number lines and write-enable bit lines. The device also contains a number shift register, gating shapers, number playback amplifiers, an associative interrogation-enable line, an address decoder, rectifiers, an equivalence circuit, a register of associative memory elements on ferrite beads threaded by a write-enable line, a nondestructive readout line, a readout line and output lines. The associative memory device is divided into two parts, e. g. for storing of associative tags and for recording masks. As a distinguishing feature of the patent, the device is simplified and reliability is improved by connecting the unlike outputs of the flip-flops for the first and second digital places of the number shift register through the

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202910015-9"

teristics of one resistor because a number of factors, unequal in their effect on resistors on a single substrate and resistors on different substrates, influence the magnitude of the error. Instead, the relationships for the parameter distributions should be considered individually for elements on the same substrate as well as for films deposited through the same stencil on a series of different substrates. This basic position of the article is justified in a mathematical explanation. The authors used the method of statistical modeling to determine the discard percentage in the assembly-line manufacture of a video amplifier consisting of four resistors, one capacitor, and one transistor made from a hybrid thin-film integrated circuit. The modeling was done on the "Minsk-2" electronic computer with the gain of the circuit as the tolerance criterion.

USSR UDC: 681.327.6

SHCHEGLOV, V. M.

"An Associative Memory"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 5, Feb 71, Author's Certificate No 293269, Division G, filed 18 Oct 68, published 15 Jan 71, p 171

Translation: This Author's Certificate introduces an associative memory which contains associative tag matrices based on memory elements which permit nondestructive readout placed at the intersections of number lines, recording lines, associative interrogation lines and readout lines. The associative interrogation lines are connected to the output of the associative interrogation register. The associative tag code lines are connected to the corresponding inputs of the associative interrogation register. As a distinguishing feature of the patent, the device is simplified, permissible data storage volume is increased and operational reliability is improved by adding a unit for determining the weight of associative tags, a converter which transforms the weight of a tag to a code with constant weight, associative tag weight matrices and an associative tag weight register. The associative tag code lines are connected to the input of the unit for determining the weight of

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SHCHEGLOV, V. M., USSR Author's Certificate No 293269

the associative tags, the output of this unit being connected through the converter which transforms the weight of a tag to a code with fixed weight to the corresponding inputs of the associative tag weight register. The number lines and the readout lines of the matrices of associative tags and the matrices of associative tag weight are connected in series.

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1/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--USE OF BINARY CODE DISCRIMINATION METHOD TO STUDY THE EFFECT OF CARBON DIOXIDE ON METHANOL SYNTHESIS UNDER INDUSTRIAL CONDITIONS -U-

AUTHOR-(02)-SHCHEGLOV, V.N., YEFANKIN, G.A.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. UKR. 1970, (1), 29-31

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CARBON DIOXIDE, METHANOL, CATALYTIC ORGANIC SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1157 STEP NO--UR/0436/70/000/001/0029/0031

CIRC ACCESSION NO--AP0120006

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0120006

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A BINARY CODE DISCRIMINATION ALGORITHM METHOD WAS APPLIED TO 17 INPUT VARIABLES FOR 60 EXPTS. ON MANUFG. MEOH FROM CO AND H. WHEN THE VARIABLE MEDIANS WERE: PRESSURE P EQUALS 297 ATM, INPUT AND OUTPUT TEMPS, T SUB1 EQUALS 323DEGREES AND T SUB2 EQUALS 384DEGREES, FRESH AND CIRCULATING GAS COMPNS. CO SUB2F, H SUBF, CO SUBF, AND N SUBF 2.7, 69.0, 25.4, AND 1.9PERCENT AND CO SUB2C, H SUBC, CO SUBC, N SUBC, AND CH SUB4C 0.6, 75.0, 7.0, 12.1 AND 3.1PERCENT, H SUBF-CO SUBF EQUALS 2.68:1, H SUBC CO SUBC EQUALS 11:1, DURATION OF THE RUN R EQUALS 210DAYS, VOL. INPUT RATE V EQUALS 20,000 HR PRIME NEGATIVE1, AND H SUB2 O CONTENT IN THE CRUDE MEOH W EQUALS 6.4PERCENT, AND A NEG. SIGN ABOVE THE SYMBOL WAS USED TO DESIGNATE VALUES LOWER THAN THE MEDIAN, LOW H SUB2 O CONTENT CORRESPONDED TO 8 VARIABLE COMBINATIONS: PT SUB1 T SUB2, CO SUB2F CO SUB2C, PT SUB2 H SUBF, T SUB1 H SUBF:CO SUBF CO SUB2C, PCO SUBF CO SUB2C, H SUBF N SUBF R, PT SUB2 CO SUB2C CH SUB4C, AND PT SUB2 H SUBF:CO SUBF H SUBC, WHICH APPEARED 10, 8, 7, 7, 6, 6, 6, AND 1 TIMES, RESP., AND HIGH H SUB2 O CONTENT CORRESPONDED TO 7 VARIABLE COMBINATIONS: CO SUBF CO SUB2C CH SUB4C, T SUB1 CO SUB2C N SUBC, PT SUB1 CO SUB2C, T SUB2 H SUBF CO SUB2C, PT SUB1 H SUBF, CH SUB4C N SUBC V, AND H SUBC:CO SUBC R, WHICH APPEARED 12, 9, 8, 7, 3, 3, AND 1 TIMES RESP. THUS, A HIGHLY ACTIVE UPPER CATALYST LAYER TO INSURE HIGHER THAN MEDIAN VALUES OF T SUB2 WAS DESIRABLE TO REDUCE H SUB2 O CONTENT; THE RATE OF FORMATION OF MEOH FROM CO AND H HAS MIN. AT 330-80DEGREES, WHERE EQUIL. FOR THE FORMER REACTION OCCURRED. FACILITY: SEVERODONETSK. FILIAL OKBA, SEVERODONETSK, USSR.

UNCLASSIFIED

USSR

UDC 632.95

SHCHEGLOV, YU. V., NIKISHIN, G. I., DYUSENOV, M. I., VOL'KENSHTEYN, YU. B., SALAMANDRA, L. K., and KOZINA, L. S., All-Union Research Institute of Plant Pathology and Institute of Organic Chemistry, Academy of Sciences USSR

"A Herbicide"

USSR Author's Certificate No 252757, filed 11 June 68, published 25 Feb 70 (From RZh-Khimiya, No 22, 25 Nov 70, Abstract No 22 N708 P by L. Shchelestenko)

Translation: It is suggested that bis-trichlorallyl esters of dicarboxylic acids be used as a herbicide. They have the general formula: $Cl_2C = CClCH_2OOC(CH_2)_n COOCH_2CCl = CCl_2$ where N = an integer from 0 to 2.

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USSR

SHUMAKOV, V., Professor, and SHCHEGLOV, Yu., and BOGORAD, I., Reporters

"It Will Be a Perfect Automatic Device"

Moscow, Literaturnaya Gazeta, 26 Jan 72, p 12

Translation: Four years ago, Christian Barnard made the first heart transplant. Literaturnaya Gazeta has written articles about this kind of operation. In letters to the editor, readers ask us to tell whether this operation has entered clinical practice, which surgeon has made the largest number of transplants, with what results, and is there a search underway for other ways to save people suffering from serious heart illnesses.

Today we tell about research to create an artificial heart. This work is being done at the Scientific Research Institute of Clinical and Experimental Surgery of the Ministry of Health USSR

Literaturnaya Gazeta reporters Yu. Shcheglov and I Bogorad asked Professor V Shumakov, head of the division of transplantation and artificial organs of the Scientific Research Institute of Clinical and Experimental Surgery, to tell about the prospects of creating an artificial heart.

Question: In what stage is work on the artificial heart at the present time?

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SHUMAKOV, V., et al., Literaturnaya Gazeta, 26 Jan 72, p 12

Answer: In a few years, we have created a large number of different types of experimental models of the heart. We have been helped by a number of industrial enterprises and scientific research institutions. I am not afraid to say that some of these models meet fairly high requirements. But all the same we are still at the very beginning of our path. In our country and abroad, those who are creating the artificial heart run into a large number of difficulties. For example, we still do not have material which meets all necessary conditions. The heart makes 40 million cycles a year. What kind of material should be selected to endure such a load for several years!

There are also other difficulties. For example the development of thrombosis. When blood comes into contact with various "nonliving" materials--plastics or metals -- it coagulates and thrombi are formed. Even the non-specialist understands the consequences of this. Several types of surfacing have now been developed which reduce the liklihood of thrombosis, but we are still not fully satisfied.

Finally, we face problems related to the source of power. The size of the artificial heart now corresponds to the heart of an experimental animal and is placed in its heart pocket. However the current source is outside.

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SHUMAKOV, V., et al., Literaturnaya Gazeta, 26 Jan 72, p 12

Its size does not concern us. But when the subject of creating a long-term instrument comes up, miniature power sources are needed and they must be placed in the person's body itself. We are constantly carrying on appropriate research. From this point of view, isotopes are very interesting, particularly plutonium-238.

It sounds almost fantastic to use the power given off by the human organism during metabolism. But in general this is completely realistic.

Question: How do things stand with development of automatic control over the artificial heart?

Answer: Without solving this exceptionally important problem, it is impossible to even think of creating a sufficiently perfect artificial heart. After all, the heart responds very intricately to the organism's needs. For example, when you run the heart beats fast, but when you sleep the frequency of contractions decreases. This happens without our intervention, automatically. The artificial heart should work in the same way.

Together with the Institute of Engineering Cybernetics, our institute is deeply engaged in this problem. It is true that some scientists consider it too early to be thinking about this, they say it is for tomorrow. However, we hold a different point of view.

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USSR

SHUMAKOV, V., et al., Literaturnaya Gazeta, 26 Jan 72, p 12

Question: Can we expect that artificial heart models created by you will be introduced into practice in the near future?

Answer: I think that it is possible to answer that question affirmatively.

Question: In your opinion, what new areas of interest in addition to creating an artificial heart are now exciting scientists?

Answer: I am particularly interested in the problem of creating an artificial liver. The liver is an extremely complex organ, an enormous chemical laboratory whose activity has not been completely studied yet. That is why it is not realistic today to make an artificial liver which could precisely copy the human one. If we were able to propose a model which performed even part of the functions of the actual liver, we would consider this an exceptional success.

Question: The possibility of preserving organs is now being intensively studied. What methods of preservation are, in your opinion, most promising?

Answer: We are working on preservation of the kidney and other organs, in particular the heart. Short-term preservation is now done through extreme temperatures. But this permits us to maintain an organ's vitality for just a short period. We have created an original, small-size apparatus in which it

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SHUMAKOV, V., et al., Literaturnaya Gazeta, 26 Jan 72, p 12

is possible to deliver an organ that has been removed to any point in the country. There the kidney is perfused with special solutions at low temperature. We have raised the "life span" of the removed kidney to 24 hours.

Question: Who helps you design artificial organs and preservation equipment?

Answer: Engineers and mathematicians who are attracted by medicine. For example, they found an algorithm which makes it possible to recognize the degree of vitality of a transplant, and they wired it up on a special computer. Several times we have refused to perform kidney transplants because, using this computer, we determined that irreversible changes have taken place in it and the operation would be doomed to failure.

Question: What ways are there today to solve the problem of the heart transplant?

Answer: Our task is not to perform transplants for their own sake or to demonstrate a virtuoso's technique. Judge for yourself. In Canada, I believe, they calculated the average longevity of patients on whom heart transplants had been performed and patients on whom, for some reason, transplants had not been performed although they came to the clinic for that purpose. It turned out that the first group did not live nearly as long after the operation as

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SHUMAKOV, V., et al., Literaturnaya Gazeta, 26 Jan 72, p 12

the second. That is something for doctors to think about.

With the contemporary state of medicine, are we surgeons able to guarantee longer life or not? In my opinion, this is a very serious problem.

There is a second and equally important side to the matter. Until now the donors have been people for whom specialists had given a diagnosis of so-called cerebral death. In a majority of cases, these patients actually did die. However, in practice, although very rarely, improbable cases still do occur where people with extremely serious injuries who are in a hopeless state recover. Well then, who will guarantee that one of the people from whom it is possible to take a living, beating heart would not have recovered? At the present time, no specialists are, in my opinion, able to do this.

All this naturally leads to a different attitude toward the heart transplant. We will begin to make this kind of operation only when we have appropriate guarantees.

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USSR

UDC: 632.95

SHCHEGLOV, Yu. V., KULIKOV, G. P., KOGAN, V. Sh., PROKOF'YEV, A. N., KOVALENKO, I. S.

"Dialkyl Phosphites -- Synergists of 2,4-Dichlorophenoxyacetic Acid Esters"

Tr. Ul'yanovsk. s.-kh. opytn. st. (Works of the Ul'yanovsk Experimental Agriculture Station), 1971, 5, pp 121-133 (from RZh-Khimiya, No 7, Apr 72, Abstract No 7N642)

Translation: Among the dialkyl phosphites, the most promising synergist with respect to butyl 2, 4-dichlorophenoxyacetate (I) is dibutylphosphite (II). The addition of 5-20% of II to I increases the herbicidal activity of I by a factor of 1.5-2, particularly against annual and perennial dicotyledonous weeds. A mixture of I and II controls perennial rhizome weeds better than does I alone. The addition of II to I does not increase its phytotoxicity for cereal plants. T. A. Kolyayeva.

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USSR

UDC 632.95

SPIRIDONOV, YU. A., SHCHEGLOV, YU. V., SPIRIDONOVA, G. S., MITESHEV, A. I., KHOKHLOV, P. S., BLIZNYUK, N. K., All-Union Scientific Research Institute of Phytopathology

"A Desiccant"

USSR Author's Certificate No 296545, filed 16 Oct 69, published 10 May 71 (from RZh-Khimiya, No 1(II), Jan 72, Abstract No 1N457 P)

Translation: Substances of the general formula $ROC(S)SCH_2COOSn(R')_3$ (I), where R = C_2-C_4-alkyl, R' = C_3-C_4-alkyl or aryl are proposed as desiccants. When introduced into the soil in a dose of 10 kg/ha before seeding, compounds I have no noticeable effect on plants, but when the same dose of the compounds is used for treatment in the vegetative stage, they cause wilting or death. G. A. Belyayeva.

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USSR

UDC 632.954

SOKOLOV, M. S., ZHUKOV, N. P., SHCHEGLOV, YU. V., KASINKIN, A. N., and MUSIKAYEV, D. A., All-Union Scientific Research Institute of Phytopathology

"Determination of the Volatility and Phytotoxicity of Vapors of Hormonal Herbicides"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 3, Mar 70, pp 52-54

Abstract: The article suggests a modification of the "isolated system" method for a comparative estimate of the volatility and phytotoxicity of vapors of hormonal herbicides. This method was used to determine the phytotoxicity of the vapors of six 2, 4-D derivatives, viz. the butyl, butoxyethyl, chlorocrotyl and octyl esters (synthesized at the All-Union Scientific Research Institute of Phytopathology), the trichloroallyl ester (synthesized at the Institute of Organic Chemistry, Academy of Sciences USSR, and tested at the All-Union Scientific Research Institute of Phytopathology) and the triethanolamine salt, using beans as the test plants. The herbicides are ranked as follows in ascending order of phytotoxicity: triethanolamine salt < trichloroallyl ester < butoxyethyl ester < octyl ester < chlorocrotyl ester < butyl ester. It was found that there is a negative correlation between the volatility of a substance and its molecular weight and boiling point.

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1/2 023 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--DETERMINATION OF THE VOLATILITY AND PHOTOTOXICITY OF THE VAPOR FROM HORMONAL HERBICIDES -U-

AUTHOR-(05)-SOKOLOV, M.S., ZHUKOV, N.P., SHCHEGLOV, YU.V., KASIKHIN, A.N., MUSIKAYEV, O.A.

COUNTRY OF INFO--USSR

SOURCE--KHIM. SEL. KHOZ. 1970, 8(3), 212-14

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HERBICIDE, LEGUME CROP, ESTER, VAPOR STATE, TOXICITY, PLANT PHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0183 STEP NO--UR/0394/70/008/003/0212/0214

CIRC ACCESSION NO--AP0130942

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0130942

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN POT EXPTS. BEAN PLANTS WERE HELD IN CLOSED CONTAINERS TOGETHER WITH FILTER PAPER STRIPS, PREVIOUSLY WETTED WITH 0.02PERCENT SOLNS. OF 2,4-D ESTERS IN ETHANOL OR DIOXANE, FOR 24 HR AT 27DEGREES. THE ORDER OF VOLATILITY AS WELL AS PHYTOTOXICITY OF THE ESTERS WERE: TRIETHANOLAMINE SALT SMALLER THAN TRICHLORDALLYL ESTER SMALLER THAN BUTOXYETHYL ESTER SMALLER THAN OR EQUAL TO OCTYL ESTER SMALLER THAN CHLOROOCTYL ESTER SMALLER THAN BUTYL ESTER. A CORRELATION BETWEEN MOL. WT., B.P., AND VOLATILITY WAS FOUND.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--DETERMINATION OF VOLATILITY AND PHYTOTOXICITY OF VAPORS OF HORMONAL HERBICIDES -U-

AUTHOR-(05)-SOKOLOV, M.S., ZHUKOV, N.P., SHCHEGLOV, YU.V., KASIKHIN, A.N., MUSIKAYEV, D.A.

COUNTRY OF INFO--USSR

SOURCE--KHIMIYA V SEL'SKOM KHOZYAYSTVE, 1970, NR 3, PP 52-54

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HERBICIDE, HORMONE, TOXICITY, AROMATIC ESTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1359 STEP NO--UR/0394/70/000/003/0052/0054

CIRC ACCESSION NO--AP0136723

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136723

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PURPOSE OF THE WORK WAS TO DEVELOP A RELIABLE METHOD FOR DETERMINATION OF THE VOLATILITY AND PHYTOTOXICITY OF VAPORS OF ESTER DERIVATIVES OF 2,4-D. BUTYL, BUTOXYETHYL, CHLOROCROTYL, OCTYL AND TRICHLOROALLYL ESTERS WERE USED. AN ASSUMPTION WAS MADE THAT THE PHYTOTOXICITY OF THE ABOVE COMPOUNDS (CHEMICALLY PURE) WAS PRACTICALLY IDENTICAL. THE PHYTOTOXICITY WAS DETERMINED BY A MODIFIED "ISOLATED SYSTEM" METHOD. THE METHOD WAS BASED ON DETERMINATION OF PLANT WEIGHTS AFTER EXPOSURE OF JUST SPROUTED SEEDLINGS TO THE VAPORS FOR 24 HOURS AND THEIR SUBSEQUENT DEVELOPMENT AND GROWTH FOR 10 DAYS. THE RESULTS OBTAINED INDICATED THAT THE METHOD IS RELIABLE WITH 4-12PERCENT ERROR, THAT VOLATILITY OF THE COMPOUNDS TESTED DIFFERS CONSIDERABLY IN REVERSE DEPENDENCE TO THE MOLECULAR WEIGHT AND BOILING POINT OF THE COMPOUNDS, AND THAT THESE HERBICIDES CAN BE ARRANGED ACCORDING TO THEIR INCREASING PHYTOTOXICITY ACCORDING TO THE FOLLOWING SERIES: TRIETHANOLAMINE SALT OF 2,4-D, TRICHLOROALLYL ESTER, BUTOXYETHYL ESTER, OCTYL ESTER, CHLOROCROTYL ESTER, BUTYL ESTER. FACILITY: VSESOYUZNYY NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT FITOPATOLOGII.

UNCLASSIFIED

USSR UDC 632.95

BABIN, V. V., DENISENKOVA, R. N., UGRYUMOV, YE. P., SHCHEGLOV, YU. V., BLIZNYUK, N. K., STREL'TSOV, R. V., and KOLOMIYETS, A. F., Northern Caucasus Scientific Research Institute of Phytopathology; All-Union Scientific Research Institute of Phytopathology, Moscow, Ministry of Agriculture USSR

"Herbicide"

USSR Authors' Certificate No 250603, filed 14 Jun 68, published 26 Jan 70, (from RZh-Khimiya, No 20 (II), 25 Oct 70, Abstract No 20 N601P by N, B. VSEVOLOZHSKAYA)

Translation: Compounds of the general formula /4-Cl-2RC$_6$H$_3$OCH$_2$C(O)O/$_2$ SnBu$_2$ (I) (R = Cl or Me) are not inferior in herbicidal activity to butyl esters of the corresponding aryloxyalkylcarboxylic acids. For example, mustard plants in the six-leaf phase were sprayed with aqueous solutions of I in a does of 50, 100, 250 and 500 g/ha (calculated in acid equivalent). The dose at which the weight of aboveground portions of the plant declines 50% was 53 g/ha for I (R = Cl), whereas that for the butyl ester of 2,4-D was 61 g/ha.

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USSR

UDC 612.53+612.22+612.743

SHCHEGLOVA, A. I., and KALACHEVA, YE. L., Ecological Physiology Team, Institute of Physiology imeni I. P. Pavlov, Academy of Sciences USSR, Leningrad

"Changes in Gas Exchange and Myoelectrical Activity in Rodents During Thermal Adaptation"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 5, 1972, pp 754-760

Abstract: A comparative study of long-term (45 days) thermal adaptation was performed on flat-toothed and white rats, which inhabit warm southern regions, and on white Wistar rats. During adaptation to cold (5°C), O_2 consumption in white rats increases more (up 86%) than in flat-toothed rats (up 56%), while the electrical activity of skeletal muscles in white rats increases less than in flat-toothed rats. Body temperature of gray rats falls by 3.3°C, and the animals lose about 17% of their initial body weight. Body temperature of white rats falls by 2.6°C, but their body weight remains unchanged. During adaptation to heat (25°C), O_2 consumption and body temperature are similar in both types of rats, but flat-toothed rats display more myoelectrical activity yet gain more weight. It is concluded that flat-

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SHCHEGLOVA, A.I., and KALACHEVA, YE. L., Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, Vol 58, No 5, 1972, pp 754-760

toothed rats, which are naturally better adapted to heat, increase their heat production in a cold environment mainly by increasing the tonus and tremor of their skeletal muscles. In white rats exposed to cold, the metabolism of all tissues increases, resulting in greater total oxygen consumption, greater heat production per unit volume of O_2 consumed, and better maintenance of body temperature.

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Acc. Nr: AP0052435

Abstracting Service: CHEMICAL ABST. 5-10

Ref. Code: 4R 0342

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101749t **Antimicrobial fabrics.** Kozinda, Z. Yu.; Gorbacheva, I. N.; Konkin, A. A.; Shcheglova, G. [illegible] (MTI, Moscow, USSR). *Tekst. Prom. (Moscow)* 1970, 30(1), 55–6 (Russ). Wool fabrics modified by grafting with 2-methyl-5-vinylpyridine were treated with 1% aq. soln. of $Cu(OAc)_2$ or $AgNO_3$. Similarly, wool grafted with methacrylic acid was treated with 1% pentachlorophenol or hexachlorophene solns. in MeOH. The grafting increased the tensile strength of the fabric by 18–20%. The bactericidal additives inhibited the propagation of *Staphylococcus aureus* and intestinal bacteria when 1–1.5% Cu or Ag or ≥7.32% chlorinated phenols were present.
CPJR

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REEL/FRAME
19821069

1/2 015 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--EXTRACTION OF AROMATIC HYDROCARBONS BY ACETATES OF NITRO ALCOHOLS -U-

AUTHOR-(04)-DIYAROV, I.N., KOZLOV, L.M., BUREYEVA, R.R., SHCHEGLOVA, L.V.

COUNTRY OF INFO--USSR

SOURCE--KHIM. TEKHNOL. TOPL. MASEL 1970, 15(3) 12-14

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ACETATE, ORGANIC NITRO COMPOUND, HYDROCARBON EXTRACTION, AROMATIC HYDROCARBON, OCTANE, TOLUENE, NONANE, SOLVENT ACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1515 STEP NO--UR/0065/70/015/003/0012/0014

CIRC ACCESSION NO--AP0112509

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0112509

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ACETATES OF NITRO ALCS. HAD A HIGH DISSOLVING CAPACITY AND GOOD SELECTIVITY FOR AROMATIC HYDROCARBONS, BUT THE EXTN. OF THE HYDROCARBONS DECREASED WITH AN INCREASE IN THEIR MOL. WT. THE MOL. WT. OF THE PARAFFINIC HYDROCARBONS IN THE MIXT. HAD THE GREATEST EFFECT ON THE AROMATIC HYDROCARBON CONCN. IN THE EXT. THUS, THE EXTN. OF ISOOCTANETOLUENE (I) AND NONANE (II)-I MIXTS. WITH O SUB2 NCH SUB2 CHMEOAC GAVE EXTS. CONTG. 60.2 AND 83.2PERCENT I, THE SEPN. COEFF. BEING 76.5 AND 61.1 VOL. PERCENT, RESP. IN THE CASE OF II-I AND II-O-XYLENE (III) MIXTS., THE EXTS. CONTAINED 83.2PERCENT I AND 82.2PERCENT III, THE SEPN. COEFFS. BEING 61.1 AND 60.4 VOL. PERCENT, RESP. DUE TO THEIR EXCESSIVE DISSOLVING CAPACITY, THE ACETATES WERE RECOMMENDED ONLY AS COMPONENTS OF SELECTIVE SOLVENTS. WATER DECREASED THE STABILITY OF THE ACETATES.

UNCLASSIFIED

Transformation and Structure

USSR

UDC 669.71'55'721

BER, L. B., VAYNBLAT, YU. M., DAVYDOV, V. G., KHAYUROV, S. S., and SHCHEGLOVA, N. M., All-Union Institute of Light Alloys

"Substructure Changes and Decomposition Processes in the Double Aging of Alloy AD-31 Under the Effect of Plastic Deformation"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 3, 1973, pp 583-590

Abstract: Electron microscopy and mechanical property measurements were employed to study substructure changes and decomposition processes in alloy AD-31 in sheet form with a composition of (in %): 0.73 Mg, 0.57 Si, 0.12 Fe, 0.03 Zn, 0.01 Mn, balance -- Al. The sheets were water quenched from 525°C and rolled in the cold state (30 and 90% reduction) either after quenching or after natural aging for one day. Samples were studied after deformation without subsequent aging and after aging at 155° for five hours. Out of 13 different combinations of quenching, aging and rolling reduction, it was found that the best combination of tensile strength and ductility is achieved by quenching, natural aging for one day, reduction of 90%, and aging at 155°C for 0.5 hours. This treatment yielded a TS of 38.3 kG/mm^2,

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BER, L. B., et al., Fizika Metallov i Metallovedeniye, Vol 36, No 3, 1973, pp 583-590

and elongation of 14.5%. Increasing the aging time from 0.5 hours to 48 hours only reduces strength and ductility. Four figures, two tables, seven bibliographic references.

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USSR

UDC 669.14.018.821

MEL'KUMOV, I. N., KLYUYEV, M. M., PRYANISHNIKOV, I. S., PIVOBAROVA, L. I., and SHCHECLOVA, R. I., Elektrostal' Plant

"Properties of Steels Alloyed with an Excess of Nitrogen"

Moscow, Stal', No 8, Aug 73, pp 749-752

Abstract: The properties of some standard steels were investigated in which nitrogen was added in amounts which exceeded the theoretical limits of its solubility under ordinary conditions. The specific steels studied were: EP222 (Kh21G7AN5), EP618 (Kh25N12AR), EP731 (OOOKh19G10N7AM2), EI835 (Kh25N16G7AR), and EP310 (1Kh15N5AM2). The chemical composition of these steels is given. It was shown that in the process of plasma-arc remelting from the gas phase a greater saturation of the metal with nitrogen is achieved than under conditions of using nitrided ferroalloys. Steel from ingots weighing 400 kg had satisfactory properties, especially increased strength with acceptable ductility. The quantitative effect of nitrogen was investigated and its mechanism refined. Four figures, two tables.

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USSR

UDC: 681.327.11

SHCHEGLOVITOV, A. F., "Giprovodkhoz" All-Union State Institute of Preliminary Study and Design, and of Scientific Research

"A Device for Readout of Visual Information"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 31, 1970, Soviet Patent No 283704, Class 42, filed 31 Mar 69, pp 143-144

Abstract: This Author's Certificate introduces a device for reading out visual information. The device contains two carriers with guide rails along the x and y axes, a feeler securely fixed to one of the carriers for manual outlining of the document, and two reversible counters for coordinate values. As a distinguishing feature of the patent, the device is simplified and operational reliability is improved by securely connecting the gear of each carrier which meshes with the guide rail rack coaxially with another gear which meshes with a lug on a three-armed lever. Two arms of this lever are located close to normally open contacts which are connected with the forward and reverse circuits of the counter as the feeler moves over the document. When the lever is in the neutral position with respect to the teeth on the gear, the third arm of the lever acts to close a contact connected to an interlock which blocks the counting circuits of the coordinate counter.

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1/2 027 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--SEPARATING RARE EARTH AND TRANSPLUTONIUM ELEMENTS FROM URANIUM TARGETS IRRADIATED WITH HEAVY IONS -U-

AUTHOR-(03)-KUSH, V.K., MIKULSKI, J., SZCZEGLOWSKIY, Z.

SHCHEGLOVSKIY, Z.

COUNTRY OF INFO--USSR

SOURCE--RADIOKHIMIYA 1970, 12(2), 401-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--URANIUM, ION BOMBARDMENT, SOLVENT EXTRACTION, RARE EARTH ISOTOPE, TRANSURANIUM ELEMENT, ORGANIC PHOSPHATE, PHOSPHORIC ACID, ORGANIC ACID, ORGANIC OXIDE, ALIPHATIC PHOSPHOROUS COMPOUND, CHEMICAL SEPARATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1423 STEP NO--UR/0186/70/012/002/0401/0405

CIRC ACCESSION NO--AP0133375

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133375

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A RAPID METHOD IS PROPOSED FOR SEPG. RARE EARTH AND TRANSPLUTONIUM ELEMENTS FROM U TARGETS IRRADIATED WITH HEAVY IONS BY USING AN EXTN. WITH TRIBUTYL PHOSPHATE (I), TRI N OCTYLPHOSPHINE OXIDE (II), AND DI 2 ETHYLHEXYLPHOSPHORIC AICD (III). A PROCEDURE IS ALSO DESCRIBED FOR THE PREPN. OF THE THIN LAYER SPECIMENS, FOR ALPHA SPECTROSCOPY MEASUREMENTS. THE U TARGET TOGETHER WITH 5 MG AL IS DISSOLVED IN A HCL HNO SUB3 MIXT., THE SOLN. IS EVAPD., DISSOLVED IN 4 M HCL, AND EXTD. BY I. THE AQ. PHASE IS THEN EXTD. WITH 5PERCENT TOLUENE SOLN. OF II, THE SEPD. AQ. PHASE IS EVAPD. TO DRYNESS, THE RESIDUE IS DISSOLVED BY 0.01M HCL, AND EXTD. BY 50PERCENT SOLN. OF III. RE EXTN. FO THE SEPD. METALS FROM THE ORG. PHASE SI CARRIED OUT BY CONCD. HCL, THE AQ. PHASE IS NEUTRALIZED BY CONCD. NH SUB4 OH TO PH EQUALS 1 AND ELECTROLYZED FOR 3 MIN AT 0.8 A BY USING PT ANCDE, PT OR AU CATHODE (THICKNESS 0.3 MM AND SURFACE 0.8 CM PRIME2). A 90PERCENT YIELD OF TRANSPLUTONIUM ELEMENTS (CONTG. 50PERCENT INITIALLY PRESENT RARE EARTH METALS) IS OBTAINED. THE WHOLE SEPN. OF TRANSPLUTONIUM ELEMENTS REQUIRES 15-20 MIN.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--BASIC PROBLEMS IN THE DEVELOPMENT OF STEAM TURBINES WITH SUPERCRITICAL PARAMETERS -U-

AUTHOR-(S)SHCHEGLYAYEV, A.V. (DECEASED)

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, TEPLOENERGETIKA, NO. 2, 1970, PP 2-5

DATE PUBLISHED--------70

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

TOPIC TAGS--STEAM TURBINE, RESEARCH FACILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0357 STEP NO--UR/0096/70/000/002/0002/0005

CIRC ACCESSION NO--AP0117594

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117594

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROBLEMS OF THE FURTHER PERFECTION OF DOMESTIC (SOVIET) TURBINE UNITS ARE STUDIED IN DETAIL.

FACILITY: MOSCOW POWER ENGINEERING INSTITUTE.

UNCLASSIFIED

USSR

UDC 669.15'26'28-194:620.186

VINITSKIY, A. G., YANENSKIY, N. YE., MOSHNYAGUL, V. V., KOGAN, G. M., SHCHEGLYUK, P. S., and POKRYSHKINA, V. A., Kirovograd Institute for Agricultural Machine Building

"Influence of Structure on the Wear Resistance of Stamps Made of Kh12M Steel"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 2, 1971, pp 74

Abstract: The influence of the structure of Kh12M steel on the wear resistance was studied as applicable to conditions of operation of dies and matrices of stamps for cutting and punching of transformer steel. It was found that Kh12M steel with austenitic structure has higher wear resistance under dry friction conditions with dynamic loading than hardened martensitic steel. Hardening from 1180-1200°C in oil and tempering at 180-220°C for 1.5-2 hr represent the optimal heat treatment mode for Kh12M steel.

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USSR

UDC 632.95

ISMAYLOV, R. G. A., GUSEYNOV, D. M., MEKHTIYEV, S. D., SHCHEGOL', Sh. S., ISAYEVA, F. G. A., KONYSHEV, I. N.

"Plant Growth Regulator"

USSR Author's Certificate No 334961, Filed 30/07/69, Published 24/05/72 (Translated from Referativnyy Zhurnal Khimiya, No 24(II), 1972, Abstract No 24N643 P, by T. A. Belyayeva)

Translation: It is suggested that the Na-salt of octyltoluic acid (I) be used as a plant growth regulator. I is produced by alkilation of xylenes with diisobutylene with subsequent oxidation of tert-octylxylene with O_2 and neutralization of the acid with an aqueous solution of NaOH or soda. The influence of I on the coleoptiles of wheat sprouts and the growth of winter wheat roots is demonstrated.

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1/2 010 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--ON CERTAIN GENERAL REGULARITIES OF INDIVIDUAL RESPOND OF TYPHOID FEVER BACTERIA STRAINS TO L TRANSFORMING EFFECT OF PENICILLIN -U-

AUTHOR--SHCHEGOLEV, A.G.

COUNTRY OF INFO--USSR

SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 3, PP 235-240

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TYPHOID FEVER, PENICILLIN, BACTERIA MUTATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/0471 STEP NO--UR/0297/70/015/003/0235/0240

CIRC ACCESSION NO--AP0100949

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100949

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PECULIARITIES OF INDIVIDUAL RESPONDS OF 27 STRAINS OF TYPHOID FEVER BACTERIA TO L TRANSFORMING EFFECT OF PENICILLIN WERE STUDIED AND GENERAL REGULARITIES OF THE RESPONDS IN VARIOUS STRAINS WERE REVEALED. FIVE MAIN TYPES OF THE CULTURE RESPONDS TO PENICILLIN WERE FOUND, (A) PRODUCTION OF HETEROMORPHIC FORMS IN RESPONSE TO THE PRIMARY EFFECT OF PENICILLIN, (B) PRODUCTION OF HETEROMORPHIC FORMS AND VIABLE L VARIANTS, (C) PRODUCTION OF VIABLE L FORMS WITHOUT ZONES OF HETEROMORPHIC GROWTH, (D) PRODUCTION OF VIABLE L VARIANTS DURING PASSAGES OF HETEROMORPHIC FORMS, (E) PRODUCTION OF NON VIABLE L COLONIES. IT WAS SHOWN THAT DURING L TRANSFORMATION AND STABILIZATION IN L FORM STRAINS OF TYPHOID FEVER BACTERIA MAY HAVE DIFFERENT TYPES OF L GROWTH AND ALONG WITH COLONIES OF TYPES ZV AND ZA PRODUCE GRANULAR MICROFORMS, WHICH ARE TRANSPLANTED DURING SUBPASSAGES AND DO NOT REVERSE ON MEDIA WITHOUT PENICILLIN. OUT OF THE GENERAL NUMBER OF THE CULTURES TESTED 24 STRAINS FORMED VIABLE L VARIANTS.

UNCLASSIFIED

SHCHEGOLEV, G. M.

(1)

JPRS 60634
27 November 1973

LAMINAR-FLOW LIQUID-METAL MAGNETOHYDRODYNAMIC SYSTEMS AND SYNCHRONOUS GENERATION OF ELECTRIC POWER

[Article by Ye. T. Bazeyev, V. Ye. Pavlenko, G. M. Shchegolev, Institute of Technical Thermophysics of the Ukrainian SSR Academy of Sciences, L. G. Batusyy, K. I. Kim, I. M. Postnikov, Electrodynamics Institute of the Ukrainian SSR Academy of Sciences, Kiev, USSR; Warsaw, IAEA Symposium on Electricity from Magnetohydrodynamics, 1968, pp 1635-1646]

The primary difficulties when implementing liquid-metal magnetohydrodynamic generators by the known designs consist in accelerating the liquid-metal to high velocities before the channel, which is connected with high losses to friction in the two-phase nozzle and channel. If the expansion of the vapor (gas) is transferred to the channel, then the electrical conductivity of the flow (the vapor-liquid mixture) is significantly reduced. The magnetohydrodynamic generator in which the liquid-metal flow is separated into segments (liquid pistons) moving as a result of expansion of the medium (vapor or gas) between them appears to be much more prospective. Our preliminary experiments have demonstrated the possibility of obtaining a piston-like (laminar) flow. The utilization of this principle permits: 1) organization of the acceleration process without shocks and mutual slipping of the phases; 2) maximum reduction of the thermal contact surface between the phases and an increase in the thermodynamic efficiency of the cycle, realizing it in a broader temperature range; 3) realization of a constant flow velocity in the channel; 4) the production of electric power by a synchronous magnetohydrodynamic generator. The application of the synchronous principle combined with the described method of accelerating the liquid-metal permits the consideration that high-power generators can be built. The thermodynamic cycles of liquid-metal magnetohydrodynamic generators can be divided into two groups with respect to condensation temperature; high-temperature generators designed for use

USSR

SHCHEGOLEV, G. M., Candidate of Technical Sciences

"Plasma Magnetohydrodynamic Generators With the Use of Oxygen and Aerodynamic Protection"

Kiev, Vestnik Akademii Nauk Ukrainskoy SSR, No 11, Nov 71, pp 19-25

Abstract: The Institute of Technical Thermophysics, Academy of Sciences Ukrainian SSR, for several years has been working on a method for protecting the MHD generator duct by the injection of an inert gas through its walls. Several MHD duct designs have been proposed in which the electrode or insulating walls are to be porous or formed with protection against the destructive effect of the plasma stream by the injection of gas (aerodynamic protection). To study some of the questions involved, the Division of Technical Thermodynamics of the Institute made an analytical investigation of the power efficiency of power station schemes which have an MHD generator with aerodynamic duct-wall protection, as well as an experimental investigation to determine the effect of the injection of neutral gases (nitrogen, argon) on the electrical characteristics of porous generator electrodes. A comparison was made of the power efficiency of schemes with injection and with external cooling. The Institute of Technical Thermophysics in conjunction with the Institute of Mechanics of Moscow State University carried

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USSR

SHCHEGOLEV, G. M., Vestnik Akademii Nauk Ukrainskoy SSR, No 11, Nov 71, pp 19-25

out experiments to determine the effect of the injection of pure nitrogen and argon on the electrical parameters of porous cermet electrodes. The porous materials for the experimental electrode specimens were developed and prepared by the Institute of Problems of Material Science, Academy of Sciences Ukrainian SSR, with the participation of the Institute of Technical Thermophysics.

The results indicate that there is an 80- to 100-fold decrease in the erosive wear of materials as compared to erosion without injection, the cathodic potential drop is not intensified and depends only on the temperature and properties of the electrode material, and the current density range in which a stable arcless operating mode is possible expands somewhat. The power efficiency of an MHD generator with aerodynamic protection matches a cycle with external duct cooling even under the most adverse assumptions. Aerodynamic protection is very effective from the standpoint of eliminating duct erosion and corrosion and, to a lesser extent, also improves conditions for the passage of current.
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USSR

SHCHEGOLEV, G. M., Vestnik Akademii Nauk Ukrainskoy SSR, No 11, Nov 71, pp 19-25

Favorable conditions exist at the Academy of Sciences Ukrainian SSR for intensive research on MHD generators with aerodynamic protection as a result of the experimental MHD generator base created in conjunction with the Ministry of Power Engineering and Electrification Ukrainian SSR, as well as the possibility of cooperation between the Institutes of Electrodynamics, Problems of Material Science, and Technical Thermophysics. The main test stand of the experimental base is an MHD generator, rather large for a test stand, but small for an industrial prototype. Important areas of research for the future include a study of duct wall surface effects and the study of flows in ducts through whose walls the protective gas is injected.

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USSR

UDC [621.362:538.4]-225.98.017.001.24

OSADCHIY, V.K., SHCHEGOLEV, G.M.

"Effect Of Temperature Of Channel Walls Protected By A Nitrogen Blast On The Efficiency Of A Magnetohydrodynamic Electrical Power Plant Scheme"

V sb. Teplotekhn.probl.pryamogo preobrazov.energii (Heat-Engineering Problems Of Direct Energy Conversion--Collection Of Works), Issue 2, Kiev, "Nauk.dumka," 1971, pp 22-29 (from RZh--Elektrotekhnika i energetika, No 12, Dec 1971, Abstract No 12A175)

Translation: The results are presented of an analysis of the effect of the temperature of the walls of a magnetohydrodynamic (MHD) generator protected by a nitrogen blast [vduv] on the efficiency of the oxygen cycles of a MHD electrical power plant. The computations were made under conditions of thermal protection only of the walls, i.e., maintenance of a given temperature of the walls (constant along the channel) for wall temperatures of 1100, 1400, 1700, and 2000° K. The conclusion is made that under certain conditions a scheme with a blast is not inferior to a scheme with an external water-cooling channel. 5 ill. 12 ref.
[In-t Tekhnich. teplofiziki AN USSR, Kiyev--Institute Of Industrial Thermophysics, Academy of Sciences, UkrSSR, Kiev]
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USSR

UDC [621.362:538.4]-225.98.001.24

OSADCHIY, V.K., SHCHEGOLEV, G.M.

"Averaging Of The Pressure And Temperature Of A Gas Flow With Respect To The Cooled Surface Of The Channel Of A Magnetohydrodynamic Generator"

V sb. Vopr.tekhn.teplofiz (Problems Of Industrial Thermophysics--Collection Of Works), No 3, Kiev, "Nauk.dumka," 1971, pp 84-87 (from RZh--Elektrotekhnika i energetika, No 12, Dec 1971, Abstract No 12A198)

Translation: During fulfillment of an engineering analysis of the channels of a magnetohydrodynamic generator the necessity appeared for consideration of the changes of both the electrical characteristics and of the gasdynamical parameters of the plasma flow along the channel. In order to obtain reliable data, the channel is ordinarily divided into separate parts, an increase in the number of which increases the precision of the analysis but leads to its complication. It is possible to reduce the analysis (mechanical or "manual") by the introduction of mean integral parameters which make it possible to obtain a given precision with a smaller number of analyzed parts. In the extreme case, it is possible to perform such averaging for the channel as a whole. In the present

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USSR

OSADCHIY, V. K., SHCHEGOLEV, G. M., Vopr. tekhn. teploriz (Problems Of Industrial Thermophysics--Collection of Works), No 3, Kiev, "Nauk. dumka," 1971, pp 84-87 (from RZh--Elektrotekhnika i energetika, No 12, Dec 1971, Abstract No 12A198)

work an attempt is made to determine the mean integral values of the pressure and temperature. As an argument by which averaging of the plasma parameters P and T was performed, a surface of the channel f was selected owing to the fact that averaged-out magnitudes are necessary for an analysis of the heat exchange between the plasma and a wall which has a constant temperature. 1 ill. 1 ref.

2/2

USSR

UDC 621.762.001

SLEPTSOV, V. M., SHCHEGOLEV, G. M., KUKOTA, YU. P., and PRSHEDROMIRSKAYA, YE. M.

"Decreasing the Erosive Wear of Refractory Joints in Plasma Fluxes by Means of Thermochemical Protection"

V sb. Tugoplavk. karbidy (The Refractory Carbides -- Collection of Works), Kiev, "Nauk. Dumka," 1970, pp 231-233 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G372 by authors)

Translation: The article considers the effectiveness of using thermochemical portection to decrease corrosive and erosive wear of refractory joints in high-temperature fluxes. The technology of producing porous materials is described. A device has been created for testing the resistance of materials in plasma fluxes. The authors present profiles of the concentration above the porous channel wall during the injection of carbon dioxide into the air-stream. Two illustrations.

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USSR

UDC: 537.312.62

KRAINSKIY, I. S., SHCHEGOLEV, I. F., RUBTSOV, V. A.

"A Solenoid With Compensating Coils With H_c of 52,000 Bi/cm"

Moscow, Sverkhprovodyashchiye splavy i soyedin.--sbornik (Superconductive Alloys and Compounds--collection of works), "Nauka", 1972, pp 177-185 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12D568 [résumé])

Translation: The paper presents the results of development and experimental verification of a superconducting solenoid with highly homogeneous magnetic field. Various types of superconductor-superconductor contacts are studied. The minimum resistance of clamped contacts is $6.9 \cdot 10^{-9}$ Ω. A superconductive welded contact is made with high critical parameters. The stability of the magnetic field of a solenoid with welded contact is better than $4 \cdot 10^{-8}$ over an 8-hour period. Magnetic field homogeneity is $3.6 \cdot 10^{-7}$ in a specimen 4 mm in diameter and 4 mm long. Three illustrations, two tables, bibliography of four titles.

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USSR

UDC: 537.312.62

KRAINSKIY, I. S., MAZOKHIN, S. S., SOKOLOV, V. I., SHCHEGOLEV, I. F., ENMAN, V. K.

"A Vacuum Installation for Making the Compound Nb_3Sn by a Continuous Method With Diffusion of Tin Into a Niobium Base From a Melt"

V sb. Probl. sverkhprovodyashchikh materialov (Problems of Superconducting Materials--collection of works), Moscow, "Nauka", 1970, pp 124-130 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D540)

Translation: The article contains a constructive description of an installation designed for continuous production of a thin layer of Nb_3Sn compound on niobium stock (band, wire, cable) of considerable length as it is drawn through a bath with a melt of tin heated to 950-1050°C in a vacuum at a predetermined pulling rate. When the pulling rate is increased or the temperature of the molten tin is reduced, niobium stock covered with a thin layer of tin may be produced, the Nb_3Sn compound being produced by subsequent heat treatment. The installation provides a high vacuum, a wide range of pulling rates (0.72-570 m/hr) and controllable molten tin temperature, and can be used to study the effect of various factors on the critical characteristics of superconductors with Nb_3Sn compound. Critical characteristics are presented for the first experimental specimens of superconducting strip made on the installation. Four illustrations, one table, bibliography of four titles. Authors' abstract.

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USSR

UDC 537.312.62+533.599

KRAINSKIY, I. S., MAZOKHIN, S. S., SOKOLOV, V. I., SHCHEGOLEV, I. F., and ENMAN, V. K.

"Vacuum Installation for Production of Nb_3Sn by Continuous Method by Diffusion of Tin in Niobium Base from Melt"

Problemy Sverkhprovodyashchikh Materialov [Problems of Superconducting Materials — Collection of Works], Moscow, Nauka Press, 1970, pp 124-130

Translation: A constructive description is presented of an installation in which a continuous process of formation of a thin layer of the compound Nb_3Sn on a niobium profile [strip, wire, cord] of great length is performed by drawing through a bath of melted tin at 950-1,050°C in a vacuum at a predetermined drawing rate. If the drawing rate is increased or the bath temperature is decreased, the installation can be used to produce a niobium shape coated with a thin layer of tin without formation of the compound Nb_3Sn, which is formed upon later heat treatment. The installation, which can produce a high vacuum and can provide a wide range of speeds (0.72-570m/hr) and an adjustable tin melt temperature, allows the study of the influence of various factors on the critical characteristics of superconductors of the compound Nb_3Sn to be performed.

Critical characteristics of this first experimental specimens of superconducting strip produced on the installation are presented.

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USSR

UDC 51:330.115

SHCHEGOLEV, I. R.

"Study of Certain Models of Economic Growth"

Kibernetiku -- na Zluzhbu Kommunizmu. T. 6 [Cybernetics in the Service of Communism, Vol 6 -- Collection of Works], Moscow, Energiya Press, 1971, pp 113-132, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V706 by D. Epshteyn).

Translation: Two-sector and single-sector economic models are studied. The first model includes the sector of production of the means of production and the sector of production of consumer goods. Assuming that the return from production funds per unit labor resource f(K/L) is stablized with sufficiently high K/L, it is proven that the best trajectory from the standpoint of maximization of consumer goods per unit of population is the trajectory over which the values of K_i/L_i (i = 1, 2), where u is the share of investment in the first sector, v is the share of labor resources occupied in the first sector are constants. Similar properties are also proved for the single sector model with delay. A two sector with conversion is studed, where the first sector produces the means of production and consumer goods, while the second sector produces armament. The influence of the conversion factor (the share attributed to armament in the production of the first sector following the corresponding rearmament -- conversion) and the necessary quantity of armament per

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USSR

UDC 51:330.115

SHCHEGOLEV, I. R., Kibernetiku -- na Zluzhbu Kommunizmu. T. 6, Moscow, Energiya Press, 1971, pp 113-132.

unit time on the relationship between sectors, and the consumption per unit population is studied. Approximate calculations are presented using the model with conversion.

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USSR

UDC: 535.14:621.001

BOROVICH, B. L., ZUYEV, V. S., KATULIN, V. A., NOSACH, O. Yu., TYURIN, Ye. L., SHCHEGLOV, V. A.

"Concerning Propagation of a Light Pulse in a Moving Two-Level Absorbing Medium"

Moscow, Kvantovaya Elektronika, Sbornik Statey, No 2(8), 1972, pp 88-89

Abstract: A solution is found for equations of propagation of a monochromatic pulse with arbitrary time dependence $I_0(t)$ through a two-level absorbent medium with density of active particles $N_0 = \text{const}$ and velocity $v(t)$. It is found that depending on the ratio of v and $v_0 = 2I_0/N_0$, there are two modes of wave propagation with interface at $v = v_0$. The analysis is also applicable to a source of emission moving with an arbitrary velocity in the medium. Bibliography of six titles.

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Magnesium

USSR

UDC 661.311.12.3:66.093.6

FRANTAS'YEV, N. A., SHCHEGOLEV, V. I., and MUZHZHAVLEV, K. D., All-Union Aluminum-Magnesium Institute

"Dehydration of Magnesium Chloride Crystallohydrates"

Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy--Chernaya Metallurgiya, No 4, 1973, pp 47-50

Abstract: This work was devoted to an investigation of a number of questions concerning the final dehydration of the low hydrates of magnesium chloride and the production of a raw material, suitable for electrolysis. The investigations showed that during remelting of the crystallohydrates, close in composition to dihydrate magnesium chloride, in a treated electrolyte the losses of $MgCl_2$ in producing a melt containing 40% $MgCl_2$ amounted to 33-72%, being increased with the rise of temperature. The degree of $MgCl_2$ hydrolysis during remelting amounted to 14.5-27.5%, which exceeds the magnitude of hydrolysis during the dehydration of artificial and synthetic carnallite. Hydrolysis in the case of melting a mixture of magnesium chloride crystallohydrates and the electrolyte is increased by 2-5% in comparison with the variant of remelting crystallohydrates in the treated electrolyte. From the viewpoint of raw material savings it was more profitable to produce an anhydrous product with a lower

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USSR

FRANTAS'YEV, N. A., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy--Chernaya Metallurgiya, No 4, 1973, pp 47-50

content of $Mg\ Cl_2$. The more economic variant of producing an anhydrous synthetic carnallite is remelting a mixture of salts in a chlorinator with chloridation of the $MgCl_2$ hydrolysis products, which makes it possible to lower consumption of raw material and electrical energy. 4 figures, 5 bibliographic references.

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Instrumentation and Equipment

USSR

UDC 669.721.046.4(088.8)

REZNIKOV, I. L., SOLOV'YEV, Yu. V., and SHCHEGOLEV, V. I.

"Multichamber Apparatus for Dehydration of Salts"

USSR Author's Certificate No 269008, Filed 17/05/68, Published 11/08/70 (Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract No 2 G180 P)

Translation: This multichamber apparatus for dehydration of salts such as carnallite in a fluidized bed contains vertical chambers with gas distributing gratings, transverse barriers with flow apertures set above them, a charging device and a draining threshold for unloading the prepared material. To intensify the process and eliminate stagnant zones, the total area of the flow-through apertures is 3-4% of the area of the cross section of the chamber at the level of the drain threshold. To decrease carry-over of the material and provide for its zig-zag movement, the chambers are equipped with longitudinal barriers with flow-through apertures placed directly over the gas distributing grating.

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1/2 017 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--SODA FREE PROCESS FOR REMOVING SCALE FROM EVAPORATORS -U-

AUTHOR-(05)-SHCHEGOLEV, V.I., CHERNEGOVA, I.K., SUPRUNCHUK, V.K., AVDEYEVA, A.V., VDOVENKO, I.D.

COUNTRY OF INFO--USSR

SOURCE--SAKH. PROM. 1970, 44(5), 16-19

DATE PUBLISHED-------70

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

TOPIC TAGS--CORROSION INHIBITOR, HYDROCHLORIC ACID, SODA ASH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605046/D12 STEP NO--UR/0339/70/044/005/0016/0019

CIRC ACCESSION NO--AP0143163

UNCLASSIFIED

2/2 017 UNCLASSIFIED

CIRC ACCESSION NO--AP0143163 PROCESSING DATE--11DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE PROCESS CONSISTS OF CIRCULATING AQ. 5-10PERCENT HCL CONTG. 0.5-1PERCENT OF AN INHIBITOR, E.G., A DIALKYLDIMETHYLAMMONIUM CHLORIDE, THROUGH THE EVAPORATOR IN A SPECIAL WAY FOR LESS THAN OR EQUAL TO 5 HR AT 60DEGREES. THIS METHOD REMOVES MORE SCALE AND DRASTICALLY REDUCES THE ANT. OF CORROSION. AN APP. IS DIAGRAMMED AND ITS OPERATION IS DESCRIBED, INCLUDING THE OPTIMUM CONDITIONS FOR CARRYING OUT THE PROCESS. THE PROCESS IS BEING USED IN MANY SUGAR FACTORIES. FACILITY: INST. OBSHCH. NEURG. KHIM., KIEV, USSR.

UNCLASSIFIED

ELECTRONICS

Amplifiers

USSR

UDC 621.385.6

STAL'MAKHOV, V. O., SHCHEGOLEV, V. P.

"To an Evaluation of the Nonlinear Characteristics of a Type M Parametric Amplifier Based on the Fast Cyclotron Waves of a Beam"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 6, pp 166-170 (from RZh--Elektronika i yeye primeneniye, No 10, October 1970, Abstract No 10A163)

Translation: An approximate nonlinear analysis of the pumping zone with a traveling wave of a Type M parametric amplifier based on the fast cyclotron waves of a beam is conducted by the averaging method of P. L. Kapitsa. The trajectories are investigated of electrons in a regime of strong input signals as a function of the phase of the entrance of an electron into the pumping area. The approximate evaluation conducted of the nonlinear properties of an electron-beam Type M parametric amplifier makes it possible qualitatively to calculate the basic characteristics in a saturation regime. 3 ref. Summary.

1/1

USSR

UDC 632.954

SHCHEGLOV, YU. V., KOZINA, L. S., YAKOVETS, V. I., NIKISHIN, G. I., and DYUSENOV, M. I., All Union Scientific Research Institute of Phytopathology, Golitsyn-Moscow Region, Institute of Organic Chemistry, Academy of Sciences USSR, Moscow

"Herbicidal Activity of Substances Containing Trichloroallyl Group. I Communication. 1,1,2-Trichloropropene-1-ol-3 (Trichloroallyl Alcohol), Some of its Analogues and Derivatives"

Moscow, Agrokhimiya, No 5, May 73, pp 129-135

Abstract: The highest herbicidal activity among the chloro derivatives of allyl alcohol is exhibited by 1,1,2-trichloropropene-1-ol-3 (I) and its simple alkyl ethers. These compounds are systemic herbicides penetrating into the plants through the roots. Replacement of the hydroxyl group in trichloroallyl alcohol by various radicals and other groupings leads to the loss or to a drastic change of herbicidal activity. As a rule, the materials loose their ability to penetrate through the roots of the plants. In contrast to (I), trichlorovinylacetic acid exhibits properties of an active systemic herbicide capable of penetrating through the leaves. The parent compound (I) is about 5-10 times as active as allyl alcohol. In a field trial on buckwheat, (I) lowered by 45-55% the total weeds without any undesirable action against the buckwheat. 1/1

UNCLASSIFIED PROCESSING DATE--09OCT70

1/2 013

TITLE--STRUCTURE OF AROMATIC AND HETEROCYCLIC FORMAZANS. I. STRUCTURE AND ABSORPTION SPECTRA -U-

AUTHOR-(05)-BEUNYAGINA, N.P., LIPUNOVA, G.N., NOVIKOVA, A.P., ZEYF, A.P., SHCHEGOLEVA, L.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(3) 619-23

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--UV SPECTRUM, MOLECULAR STRUCTURE, CYCLIC GROUP, THIAZOLE, BENZIMIDAZOLE, PYRIDINE, ABSORPTION SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0366/70/006/003/0619/0623

PROXY REEL/FRAME--1992/1582

CIRC ACCESSION NO--AP0112576 UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112576

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UV SPECTRA OF RNHN:CR PRIME1 N:NR PRIME2 WERE RECORDED AND DISCUSSED (R, R PRIME1, R PRIME2 GIVEN): PH, H, PH; PH, ME, PH; P-O SUB2 NC SUB6 H SUB4, ME, P-O SUB2 NC SUB6 H SUB4; PH, PH, PH; PH, PH, P-ME SUB2 NC SUB6 H SUB4; PH, PH, P-O SUB2 NC SUB6 H SUB4; PH, P-O SUB2 NC SUB6 H SUB4, PH; PH, P-O SUB2 NC SUB6 H SUB4, P-O SUB2 NC SUB6 H SUB4; P-O SUB2 NC SUB6 H SUB4, PH, P-O SUB2 NC SUB6 H SUB4; 1,BENZYL,2,BENZIMIDAZOLINYL, ME, PH; 2, BENZOTHIAZOLYA, ME, PH; 2,BENZOXAZOLYL, ME, PH; 1,BENZYL,2, BENZIMIDAZOLYL, PH, PH; 2,BENZOTHIAZOLYL, PH, PH; 2,BENZOXAZOLYL, PH, PH; 4,(2,PYRIDYL),1,2,4,TRIAZOLYL, PH, PH; AND 1, PHENYLTETRAZOLINYL, PH, PH.

UNCLASSIFIED

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R002202910015-9"

1/2 033 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--COERCIVE FORCE AND STRUCTURE OF AN IRON PLATINUM ALLOY -U-

AUTHOR-(05)-MAGAT, L.M., IVANOVA, G.V., SOLINA, L.V., SHCHEGOLEVA, N.N., SHUR, YA.S.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL METALLOVED. 1970, 29(2), 400-3

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--IRON ALLOY, PLATINUM CONTAINING ALLOY, METAL MICROSTRUCTURE, MAGNETIC COERCIVE FORCE, MAGNETIC ANISOTROPY, CRYSTALLOGRAPHY, PLASTIC DEFORMATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0337 STEP NO--UR/0126/70/029/002/0400/0403

CIRC ACCESSION NO--AP0126093

UNCLASSIFIED

2/2 033 UNCLASSIFIED

CIRC ACCESSION NO--AP0126093 PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE WAS STUDIED FOR FE,PT ALLOYS WITH A HIGH COERCIVE FORCE. THE EFFECT WAS STUDIED OF PLASTIC DEFORMATION AND TEMPERING ON THE COERCIVE FORCE. IN A 1:1 ALLOY, THE MAX. COERCIVE FORCE OCCURRED IN THE SINGLE PHASE ORDERED STATE. THE SIZE OF THE TETRAGONAL PHASE CRYSTALLITES (FOR A MAGNETIC, CRYSTALLOGRAPHIC, ANISOTROPY CONST. OF THE ORDER OF 10 PRIME7 ERGS-CM PRIME3) IS THE MAIN FACTOR DETG. THE VALUE OF THE COERCIVE FORCE.

FACILITY: INST. FIZ. METAL., SVERDLOVSK, USSR.

UNCLASSIFIED

USSR

UDC 669 - 174'24

STEPANOVA, M. V., KOROLEV, F. V., ZOLOTUKHINA, A. M., FIGUROVSKAYA, T. A., BOROK, B. A., and SHCHEGOLEVA, R. P., Moscow Institute of Steel and Alloys of MZOTsM (Moscow Plant for the Processing of Non-Ferrous Metals), Central Scientific Research Institue of Ferrous Metallurgy

"The Effect of Alloying of Carbonyl Nickel on its Recrystallization"

Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, No 1, 1973, pp 150-152

Abstract: Carbonylnickel samples containing W, MgO, Al_2O_3, Zr, and ZrO_2 were cold-deformed with a terminal deformation of 70%. Recrystallization annealing was carried out at 160-800°C (20-degree intervals) with holding times at 30 min. The temperatures of the start and end of recrystallization I (t_r^s and t_r^e, respectively) were determined from the Vickers hardness as a function of annealing temperature, with an experimental error of ± 5°C. The t_r^s and t_r^e of carbonyl nickel without any additivities were 330 and 400°C, respectively. These figures were 660 and 750°C with addition of 0.15% Zr; 500 and 730°C with 0.15% ZrO_2; 540 and 720°C with 4% W; 360 and 510°C with 0.2% MgO; and 400 and 540°C with 0.2% Al_2O_3, respectively. It is evident that the t_r^s increased by 330

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STEPANOVA, M. V., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, No 1, 1973, pp 150-152

and 210°C with the addition of Zr and W, respectively. This can be attributed to a slow formation of the recrystallization centers because of the interaction of dislocations with Zr and W atoms. Due to the fact that the t_r^e was increased from 400 to 750°C when 0.15% Zr was added to carbonyl nickel, it is recommended that the intermediate annealing temperature increased from 600 to 750-800°C.

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USSR UDC 669-138+621.79

BOROK, B. A., SHCHEGOLEVA, R. P., GOLUBEVA, L. S., OSTROVSKAYA, E. N., CHIKUNOV, M. I., and KUNIS, M. I., Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Production Technology of Nickel-Base Brazing Alloys in Powder Form"

Kiev, Poroshkovaya metallurgiya, No 2, May 72, pp 82-88

Abstract: The objective of the study was to develop an optimum production technology for Ni-base alloys in powder form for brazing structures from thin-sheet high-alloy steels. The test materials were powders of PKh12N75S8R-grade Ni-Cr-Si-Fe-B brazing alloy and 6MA--a mixture of 85% of PKh12N75S8R with 15% molybdenum. PKh12N75S8R was successfully used to braze OKh18N10, 1Kh18NT, and Kh25N16G7AR high-alloy steels. The brazing temperature was 1180°C and the secondary melting (unsoldering) temperature--1080°C. Addition of molybdenum (15%) to Kh25N16G7S8R was found to raise the unsoldering temperature by 130°C and ensure a joint tensile strength of 30 kg/mm^2. (1 illustration, 7 tables, 6 bibliographic references)

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USSR

LAVRENT'YEV, I. A., SHCHEGOLEVA, R. P., BOROK, B. A., RYBAL'CHENKO, M. K.

UDC 621.762.2:669.24

"Problem of Using the Waste from Machining Alloys for Powder Metallurgy"

K voprosu ispol'zovaniya otkhodov mekhanicheskoy obrabotki splavov dlya tseley poroshkovoy metallurgii (Problem of Using the Waste from Machining Alloys for Powder Metallurgy), Metallurgy Institute of the USSR Academy of Sciences, Moscow, 1971, 21 pp, ill. 20-entry bibliography, No 3522-71 Dep. (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4G398 DEP)

Translation: Results are presented from the development of a technological process for obtaining KhN55VMTFKYu Ni-alloy powder from shavings -- production waste. The developed technological process was tested in the production of experimental lots of the powder. A study was made of the conditions of obtaining the sintered and deformed alloy and its mechanical properties at room temperature and higher temperatures. Five illustrations, 6 tables, and a 20-entry bibliography.

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USSR

UDC 669.15.018.8

GOLUBEVA, L. S., TUFANOV, D. G., SHCHEGOLEVA, R. P., and RUCH'YEVA, N. A.

"Corrosion Testing of Cermet Stainless Steels"

Sb. tr. Tsentr. n.-i. in-ta chern. metallurgii (Collection of Works of the Central Scientific Research Institute of Ferrous Metallurgy), 1970, vyp 72, pp 128-135 (from RZh-Metallurgiya, No 6, Jun 70, Abstract No 6 I636)

Translation: Kh18N15, Kh22N15, Kh23N18, Kh23N28, Kh30 and 1Kh17N2 cermet deformed stainless steels as regards corrosion resistance in boiling nitric acid [25 and 56-58%), are not inferior to steels of the same composition, produced by melting and forming. 1Kh17N2 deformed martensitic-ferritic steel with a two-phase structure ($\alpha + \gamma$), in comparison with Kh18N15, Kh23N28, etc. austenitic steels and Kh30 ferritic steel, which possess a single phase structure (γ or α), has a considerably lower corrosion resistance. The porosity has a negative effect on the corrosion resistance. Kh18N15 steel's corrosion rate in 25% boiling HNO_3 increases twofold for specimens with 4.4% pores, and 2% for specimens with 2.7% pores, in comparison with compact steel. Such a drastic difference is determined by the change in the nature of porosity -- in specimens with 2.7% pores, only closed porosity is observed. Structural members from sintered stainless steel, designed for work in aggressive media, should have a porosity $\leq$ 3%

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USSR

UDC 616.988.25-022.395.42-084(-21)

CHUDINOV, P. I., NETSKIY, G. I., CHERNUKHA, A. D., YEVSTIGNEYEVA, N. S., PASTUKHOVA, A. N., SHCHEGLOVA, Ye. Ye., and PRIGORODOV, V. I., Omsk Scientific Research Institute of Natural Focus Infections, Ministry of Health RSFSR, and Novosibirskaya Oblast Sanitary Epidemiological Station

"Prevention of Tickborne Encephalitis in a Large City"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 5, 1971, pp 588-591

Abstract: The rapid growth of industrial centers in Western Siberia near endemic regions of tickborne encephalitis has increased the incidence of this disease among some urban populations. For example, in Novosibirsk, a city of approximately half a million people located on the Ob River, four cases were reported in 1955, 108 in 1962, and 141 in 1966. The city is located close to a number of densely wooded, heavily tick-infested areas often visited by hikers, vacationers, etc. However, the number of cases was reduced to 74 in 1969 mainly as a result of systematically dusting the forests most frequented by Novosibirsk residents with DDT (30 to 50 kg of 10% dust per hectare) and by selective vaccination of groups most vulnerable to tickborne encephalitis (geologists, regular hikers, etc.). It was not deemed necessary to provide mass vaccinations.

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SHCHEGOLEVA, V.F.

JPRS 57203

6-73

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110. STUDY OF THE BEHAVIOR OF TELLURIUM IN GALLIUM PHOSPHIDE DURING THE PROCESS OF HORIZONTAL ZONE MELTING

Article by V. F. Shchegoleva, L. I. Martina, Moscow; Materialy III Simpozium Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, No 17 June, 1972, p 82]

The method of radioactive indicators was used to study the tellurium distribution with respect to length of the gallium phosphide crystals obtained during the process of horizontal zone melting.

The effective distribution coefficients of the tellurium were determined experimentally for crystallization rates of 0.038, 0.10 and 0.15 cm/sec equal to 0.049, 0.061 and 0.077 respectively and also the equilibrium distribution coefficient equal to 0.041. The tellurium evaporation factor was defined under the conditions of our experiment as being equal to (2.27-3.00)·10⁻⁴ cm/sec.

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USSR

UDC 669.2:621.774.38

SHCHEGOLEVATYKH, V. D., ALEKSANDROV, A. S., ZAKHAROV, M. F., and ALEKSANDROV, Yu. N.

"Study of the Influence of Pressure on the Strength of Seams Produced by Press Welding"

Moscow, Tsvetnyye Metally, No. 11, Nov 70, pp. 66-71

Abstract: Of the many factors influencing the quality of press welding, the most important are the degree of plastic deformation and the hydrostatic pressure. A method is briefly described for testing the strength of press-welded joints, which was used to study press-welded joints in AV alloy and Al. Graphs illustrate the influence of pressure on weldability of the alloy and the pure metal. It is found that aluminum is more suitable for press welding than the alloy.

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USSR

MAKHIN'KO, V. I., and SHCHEGOL'KOV, V. N., Khar'kov State University imeni A. M. Gor'kiy

"Sensing Element for Polarographic Studies"

USSR Authors' Certificate No 356545, Cl. G 01n 33/16, filed 5 Feb 71, published 23 Oct 72 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 32, 1972, p 123)

Abstract: The device contains a general frame, a thermostatically controlled gas-exchange chamber, a magnetic stirrer, a diffusion membrane and an electrolytic cell. To assure reliable stirring of the studied liquid, maintain constancy of the space between the diffusion membrane and the electrodes of the electrolytic cell, and eliminate membrane damage by the magnetic stirrer, the magnetic stirrer takes the form of helically twisted blades made of an inert material with a built-in magnet of soft iron and revolves in a centering screw and centering washer, which are mounted in the general frame of the sensing element. The diffusion membrane is mounted between the centering

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MAKHIN'KO, V. I., and SHCHEGOL'KOV, V. N., USSR Authors' Certificate No 356545

washer and hermetic-sealing rings, which assure a certain gap between the diffusion membrane and the electrodes of the electrolytic cell, which is joined to the general frame by means of the thread.

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1/2 008 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--COMPOSITION OF MG H SUB2 PO SUB4 SUB2.2H SUB2 O DEHYDRATION PRODUCTS -U-

AUTHOR-(02)-SHCHEGROV, L.N., PECHKOVSKIY, V.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(1) 10-13

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHOSPHATE, DEHYDRATION, MAGNESIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1980/1067 STEP NO--UR/0080/70/043/001/0010/0013

CIRC ACCESSION NO--AP0049260

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0049260

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPNS. WERE DETD. OF MG POLYPHOSPHATES FORMED UPON DEHYDRATION OF MG(H SUB2 PO SUB4) SUB2.2H SUB2 O IN AIR AND IN A STREAM OF WATER VAPOR. IF THE PROCESS IS CARRIED OUT IN AN ATM. OF WATER VAPOR, A DEHYDRATION PRODUCT WITH A SMALL CONTENT OF HIGHLY CONDENSED PHOSPHATES IS OBTAINED.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--THERMAL DEHYDRATION OF A SIMPLE SUPERPHOSPHATE -U-

AUTHOR-(02)-SHCHEGROV, L.N., PECHKOVSKIY, V.V.

COUNTRY OF INFO--USSR

SOURCE--LZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(1), 83-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMAL ANALYSIS, DEHYDRATION, CHROMATOGRAPHIC ANALYSIS, CALCIUM PHOSPHATE, THERMAL EFFECT, CHEMICAL COMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1508 STEP NO--UR/0153/70/013/001/0083/0085

CIRC ACCESSION NO--AT0130437

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0130437

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DTA UP TO 600DEGREES OF SAMPLES OF SIMPLE SUPERPHOSPHATE (20.3PERCENT ASSIMILABLE P SUB2 O SUB5) INDICATES STRONG ENDOTHERMIC EFFECTS AND WT. LOSSES AT 120 AND 200DEGREES, AND A WEAK ENDOTHERMIC EFFECT IN THE RANGE 225-310DEGREES. CHROMATOGRAMS OF ALL SAMPLES HEATED ABOVE 120DEGREES INDICATE THE PRESENCE OF PYROPHOSPHATE; TRIPOLYPHOSPHATE IS PRESENT IN ALL SAMPLES ABOVE 200DEGREES AND TETRAPOLYPHOSPHATE IN SAMPLES ABOVE 310DEGREES. DRYING THE SUPERPHOSPHATE FOR 0.5-2HR AT 80 TO 300DEGREES RESULTS IN A GRADUAL INCREASE IN THE TOTAL P SUB2 O SUB5 CONTENT TO 24.8PERCENT AS THE TEMP. IS INCREASED. THE PERCENT ASSIMILABLE P SUB2 O SUB5, WHEN DRIED IN THE RANGE 80-200DEGREES, IS CONST. AT ABOUT 90-3PERCENT FOR 0.5 HR OF DRYING, AND 82-3PERCENT FOR 2 HR OF DRYING. HOWEVER, AS THE DRYING TEMP. IS INCREASED ABOVE 200DEGREES, THE ASSIMILABLE P SUB2 O SUB5 DROPS SHARPLY TO 8-12PERCENT AT 250DEGREES AND SIMILAR TO 2PERCENT AT 400DEGREES, HIGHLY POLYMD. CA PHOSPHATE BEING FORMED. FACILITY: BELORUSS. TEKHNOL. INST. IM KIROVA, MINSK, USSR.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--USE OF PMR FOR EVALUATING THE CHEMISTRY OF THE DEHYDRATION OF MONOSUBSTITUTED MAGNESIUM, CALCIUM, AND BARIUM ORTHOPHOSPHATES -U-
AUTHOR-(04)-BREKHUNETS, A.G., MANK, V.V., PECHKOVSKIY, V.V., SHCHEGROV, L.N.
COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(3), 509-12

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHOSPHATE, MAGNESIUM COMPOUND, CALCIUM COMPOUND, BARIUM COMPOUND, DEHYDRATION, MAGNETIC RESONANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0329 STEP NO--UR/0368/70/012/003/0509/0512

CIRC ACCESSION NO--AP0119316

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