

2/2 013

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0115687

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REPLACEMENT OF FINE MN ORE WITH
BRIQUETS OF MN ORE IN COMBINATION WITH SULFITE LIQUOR BINDER AND PRESSED
INTO 160-170 G PIECES IN THE CONVENTIONAL CHARGE OF AN OPEN 3 PHASE
FURNACE IMPROVED ITS PERFORMANCE AND REDUCED COSTS. FACILITY:
GRUZ. POLITEKH. INST., TBILISI, USSR.

UNCLASSIFIED

USSR

UDC 616-036.867-053.9

KHVILIVITSKAYA, M. I. and KALININA, Ye. V. Leningrad Scientific Research Institute
For Work Capacity and Organization of the Work for Invalids

"Work Rehabilitation of Aged and Senile Persons"

Moscow, Sovetskaya Meditsina, Vol 33, No 7, Jul 70, pp 65-67

Abstract: It is generally agreed that suitable employment has a beneficial effect on the general physical and mental state of old persons (men aged 60-69 and women aged 55-64) and the senile. The requirement for suitable employment raises a number of questions which should be resolved as soon as possible. A study of aged and senile persons has revealed that, in spite of the gradual deterioration of all organs which is associated with old age, the desire to be active usually remains strong. Most old people who continue to work prefer to continue in the jobs in which they are experienced, regardless of whether intellectual pursuits or manual work in industry or agriculture is involved. Nonetheless, the total work load should be reduced as strength declines. Such an approach will offer work opportunities to those aged individuals who seek but cannot find employment. One possibility is to establish a special work category for the aged, analogous to that for certain disabled persons. Another alternative would be to build special workshops adjacent to homes for the aged with the objective of having short distances between home, job, and eating facilities, and to arrange for both short and extended rest periods during the working day.

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USSR

UDC 621.376.22

NEFED'YEV, Yu. A., ~~KHVILIVITSKIY, T. G.~~, TSEKHAROVICH, G. S.

"A High-Frequency Signal Amplifier With Combined Anode Modulation"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obratsy, Tovarnyye Znaki, No 4, Feb 72, Author's Certificate No 326695, Division H, filed 29 Jul 68, published 19 Jan 72, pp 206-207

Translation: This Author's Certificate introduces a high-frequency signal amplifier with combined anode modulation based on a vacuum-tube triode in a common-grid circuit. The plate circuit contains a parallel LC tank and a plate supply, while the cathode circuit contains an automatic biasing circuit with line-balancing resistor, and a source of high-frequency modulating voltage. As a distinguishing feature of the patent, the possibility of parasitic self-excitation of the amplifier through the grid circuit is prevented by adding a resistor in the automatic biasing circuit connected between the line-balancing potential and the common terminal of the amplifier.

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- 7 -

KHVILIVITSKIY, T. Ya.

SD:JPAS 53378
16 JUNE 71

UDC: 616.895.8-036.8

PATTERNS OF STRUCTURAL TRANSFORMATION OF SOME SYNDROMES DURING TREATMENT OF SCHIZOPHRENICS

NC (Psychiatry)

[Article by T. Ya. Khvilivitskiy, Psychoneurological Institute imeni V.M. Bekhterev, smyagatyi sektor, Vsesoiuznii Nauchno-Issledovatskiy Tsentr Psichicheskoi Meditsiny, Moscow, USSR, No. 3, May 1971, pp 86-90]

We know that I.P. Pavlov saw in the therapeutic process not only a possibility of helping the patient, but also a "therapeutic experiment" which was to be used to investigate the pathogenesis of diseases. Of particular interest, in this respect, are modern psychopharmacological drugs the administration of which in clinical practice has broadened our knowledge in the field of psychopathology and pathogenesis of mental illnesses.

Effective administration of psychotropic agents implies due consideration of the selective action of different substances and the sensitivity to them of different symptoms and syndromes. Therefore, it is probably not by chance that today we see heightened interest in syndromological problems (A. V. Snezhnevskiy; G.K. Babakov; T.Ya. Khvilivitskiy; Pseychani Zeh). For us, the syndrome is important not merely as an "average" entity, not as a ready and static combination of typical symptoms that "go together" (Hobbs), but rather as a psychopathological structure reflecting the essence and pathogenetic basis of a disease. Now we want to find the main, pivotal pathogenetic crystallized center "responsible" for the entire "symptomatic construction" grouped around the syndrome, and to determine the sources of stability of this construction or causes of its dynamic changes. Perhaps one of the most important acquisitions of the psychopharmacological era is that research being done in this direction is based not only on passive clinical observation but also on therapeutic experiments whose purpose is to reproduce the selective effects of psychotropic drugs.

Referring to selectivity, we usually have in mind the action of drugs primarily on the affective or psychomotor sphere. And, in our opinion, their more or less marked influence on the emotional sphere is common to all psychopharmacological agents.

Affectiveness, as the direct expression of normal or pathological activity of specific parts of the brain, constitutes a specific physiological

1/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ANATOMO SURGICAL EVALUATION OF OPERATIVE APPROACHES TO THE BODIES
OF LOWER CERVICAL AND UPPER THORACIC VERTEBRAE -U-
AUTHOR--(02)-KHVISYUK, N.I., KAZITSKIY, V.M.

COUNTRY OF INFO--USSR

SOURCE--ORTOPEDIYA, TRAVMATOLOGIYA I PROTEZIROVANIYE, 1970, NR 6, PP 47-51

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, BEHAVIORAL AND SOCIAL
SCIENCES

TOPIC TAGS--THORACIC-SURGERY, MEDICAL TRAINING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/0917

STEP NO--UR/9115/70/000/006/0047/0051

CIRC ACCESSION NO--AP0129982

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0129982

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NINETY EIGHT EXPERIMENTAL OPERATIONS HAVE BEEN PERFORMED ON 64 CADAVERS OF ADULT SUBJECTS. THESE STUDIES REVEALED THAT APPROACHES ALONG THE ANTERIOR BORDER OF THE STERNOCLEIDOMASTOID MUSCLE, POSTERIOR MUSCLE BORDER, AND THE PARATRACHEAL APPROACH DO NOT ENSURE SUFFICIENT SPACE IN SIMULTANEOUS INTERVENTION ON THE BODIES OF SEVERAL VERTEBRAE OF THE CERVICAL AND UPPER THORACIC SECTIONS. THE APPROACH BY CERVICOSTERNOTOMY PERMITS PERFORMANCE OF RADICAL INTERVENTION ON THE VERTEBRAL BODIES OF THE TRANSITIONAL CERVICO THORACIC SECTION, BUT IS VERY TRAUMATIC. THE AUTHORS PROPOSE A NEW PARATRACHEAL EXTRAPLEURAL APPROACH WHICH PERMITS TO CREATE THE MOST FAVOURABLE CONDITIONS IN THE WOUND AND WHICH IS LESS TRAUMATIC THAN CERVICOSTERNOTOMY. THE USE OF THIS APPROACH IS INDICATED IN RADICAL INTERVENTION SIMULTANEOUSLY ON THE VERTEBRAL BODIES OF THE CERVICAL AND UPPER THORACIC SPINE SECTIONS WITH SUBSEQUENT ANTERIOR SPONDYLODESIS. FACILITY: KAFEDRY ORTOPEDII I TRAVMATOLOGII UKRAINSKOGO INSTITUTA USOVERSHENSTVOVANIYA VRACHEY.

UNCLASSIFIED

USSR

UDC: 8.74

KHVORENKOV, S. G., KUCHMIN, V. M.

"MATMINS Algorithmic Information Model Language"

Uch. zap. Gor'kov. un-t (Scientific Notes. Gor'kiy University), 1972, vyp. 146, pp 79-94 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V612 by V. Ostrovskiy)

Translation: The authors propose an algorithmic language designed for processing economic data. In contrast to COBOL, ALGEM and ALGEC, where the program transcription in the data division contains a comprehensive characteristic of the source and resultant data, there is no data division as such in the MATMINS algorithmic language. The necessary characteristics of all data blocks and documents accessible for use in the program are set up beforehand in machine-oriented form and are continuously present in the system. In this regard, there is no longer any need to describe these data in every problem to be solved. As time passes, the available set of descriptions is periodically revised and enlarged. The proposed algorithmic language is developed in conjunction with other components of the MATMINS enterprise information model, and is intimately

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USSR

KHVORENKOV, S. G., KUCHMIN, V. M., Uch. zap. Gor'kov. un-t, 1972, vyp. 146, pp 79-94

related to them. The MATMINS algorithmic language should be considered as an attempt to create a language for describing data processing algorithms in which an information model performs the functions of the data division. The paper presents a formalized description of the language using metalinguistic formulas. An analysis is made of a detailed example of description of an algorithm for calculating the material requirement for an item in terms of the MATMINS language.

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1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ARSENIC SESQUISELENIDE ARSENIC SESQUITELLURIDE SYSTEM -U-
AUTHOR--(03)-KHOVDSTENKO, A.S., DEBOVSKIY, S.A., LUZHAYA, N.P.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(6), 1705-6
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PHASE DIAGRAM, MICROHARDNESS, ARSENIC COMPOUND, SELENIDE,
TELLURIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/1404 STEP NO--UR/0078/70/015/006/1705/1706
CIRC ACCESSION NO--AP0135078
UNCLASSIFIED

272 011

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0135078

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHASE DIAGRAM AND MICROHARDNESS
DIAGRAM TO THE AS SUB2 SE SUB3 -AS SUB2 TE SUB3 SYSTEM ARE CONSTRUCTED.
THE SYSTEM FORMS EUTECTIC, M. 280DEGREES AND CONTG. 53 MOLE PERCENT AS
SUB2 TE SUB3 AND 2 SOLID SOLNS. THE STUDY DOES NOT CONFIRM FORMATION OF
AS SUB2 SE SUB3 .AS SUB2 TE SUB3.

UNCLASSIFIED

USSR

UDC 533.521

KAGAN, Yu. M., LYAGUSHCHENKO, R. I., and KHVOROSTOVSKIY, S. N.

"Electron Distribution by Energies and Excitation in a Hollow Cathode in a Mixture of Inert Gases"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, No 11, 1973, pp 2332-2339

Abstract: This article is the continuation of three earlier papers by the authors named above, which dealt with the distribution of electrons according to energy and the intensity of the lines, in a hollow cylinder in an inert gas. Since the mixture of two gases is of practical interest, the present paper is concerned with measurements of electron energy distributions in a He-Ar mixture, in a cylindrical cathode with a diameter of 2 cm and a length of 10 cm for a current range of 25-100 ma, the cathode being set coaxially. The pressure relationship for the He and Ar was in three quantities: 2.7 mm Hg, 0.027 mm Hg; 2.7, 0.07; 1, 1.6. As in the three earlier works, the intensity of the He and Ar lines radiated by the whole cathode was measured. To compute these intensities, the authors obtained the electron distribution function $F(\epsilon)$, which is proportional to the number of electrons per energy interval unit close to the energy ϵ . Computed and experimental results are compared.

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USSR

UDC 537.523/.527

KAGAN, Yu. M., LYAGUSHCHENKO, R. I., KHVOROSTOVSKIY, S. N.

"Concerning the Intensities of Ionic and Atomic Lines in a Hollow Cathode"

Leningrad, Optika i Spektroskopiya, Vol 35, No 3, Sep 73, pp 422-426

Abstract: Based on a previously found energy distribution function, a calculation of the number of direct excitations of a number of atomic and ionic levels of helium and argon was made by the authors. The resultant values were compared with the integral intensities of the corresponding lines. It was found that in many instances there is excellent agreement between theory and experiment. The discrepancies observed in some cases are apparently due to failure to account for step-by-step excitations and quenching processes.

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USSR

UDC: 537.521

KAGAN, Yu. M., LYAGUSHCHENKO, R. I., TAROYAN, A. S., KHVOROSTOVSKIY, S. N.,
Leningrad University imeni A. A. Zhdanov

"Concerning the Energy Distribution of Electrons in a Hollow Cathode"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 43, No 7, Jul 73, pp 1488-1495

Abstract: An expression is found for the energy distribution of electrons in a hollow cathode right up to the first excitation potential with regard to elastic collisions of electrons with atoms. Calculated and measured electron energy distributions are compared. The calculated numbers of excitations for triple levels of helium are compared with measured line intensities.

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USSR

UDC: 533.9

KAGAN, Yu. M., LYAGUSHCHENKO, R. I., KHVOROSTOVSKIY, S. N.

"Mechanism Responsible for Formation of the Distribution Function of Electrons in a Hollow Cathode, and Absolute Emission Intensities"

Leningrad, Optika i Spektroskopiya, Vol 33, No 3, Sep 72, pp 430-435

Abstract: A mechanism is proposed for formation of the distribution function of fast electrons in a hollow cathode for the case in which the mean free path of the electrons is appreciably shorter than the dimensions of the cathode. Expressions are found for the distribution function, the number of direct ionizations, and the number of excitations for varicus levels of helium. The results of calculations are compared with the absolute intensities of a series of lines of He I and He II. The results show that the proposed model of formation of the distribution function of electrons gives a fairly close approximation of the absolute intensities for a number of ionic and singlet lines. The discrepancies which are observed for lines emitted from higher levels can be attributed more to the complexity of the balance equations for these levels than to failure of the model.

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USSR

UDC: 8.74

ZHURAVLEV, D. A., MARCHENKO, O. D., KHVOROSTUKHIN, L. A., Moscow Aviation Technology Institute

"Solution of a Special System of Second-Order Partial Differential Equations by the Method of Successive Approximations"

Moscow, Resheniye spetsial'noy sistemy nelineynykh differentsial'nykh uravneniy v chastnykh proizvodnykh vtorogo poryadka metodom posledovatel'nykh priblizheniy (cf. English above), 1972, 10 pp, bibl. 2 titles (manuscript deposited in VINITI 6 Feb 73, No 5459-73 Dep.) (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V660 Dep. by the authors)

Translation: An algorithm is presented for solving a system of two non-linear differential equations with linear boundary conditions in differential form. The problem is solved by reducing solution of the initial problem to sequential solution of a system of second-order linear differential equations. The number of successive steps depends on the rate of convergence of the iteration process, and also on the required accuracy of the calculations. In the final analysis, the problem reduces to solution of a system of linear algebraic equations in which the unknowns are the sought functions at grid intersections.

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USSR

UDC 620.195

TOLSTAYA, M. A., KHVOROSTUKHIN, L. A., LOGVINENKO, V. V., SOLODKINA, V. P.,
and MUKHINA, M. G., Moscow Aviation Technological Institute

"The Effect of Diamond Smoothing of the Surface of Kh18N9T Steel on its
Corrosion and Electrochemical Behavior"

Moscow, Zashchita Metallov, Vol 9, No 1, Jan-Feb 73, pp 16-21

Abstract: An experimental study was made of the corrosion and electrochemical behavior of relaxed specimens of 1Kh18N9T steel after processing their surfaces by the diamond smoothing method. To correlate properties of differently processed surfaces of 1Kh18N9T steel, smoothed and burnished specimens were tested together. The corrosion variations of the tested specimens in 3% NaCl and their anodic polarization curves in solutions of NaCl (0.1 and 3%) and H₂SO₄ are discussed by reference to diagrams. The surface of 1Kh18N9T steel subjected to diamond smoothing was found to possess, in comparison with burnished specimens, a considerably higher anodic polarizability and resistance to general pitting corrosion. A mechanism of this phenomenon is suggested. The experimental data prove conclusively the increased stability of the passive condition of 1Kh18N9T steel in corrosive media after finishing treatment of its surface with a spherical diamond tip. Four figures, one table, eighteen bibliographic references.

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1/2 038 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--INFLUENCE OF DIAMOND BURNISHING ON THE QUALITY OF CHROMIUM COATINGS
-U-
AUTHOR--(03)-METELKIN, A.F., KHVOROSTUKHIN, L.A., MASHKOV, V.N.
COUNTRY OF INFO--USSR
SOURCE--MASHINOSTROENIE, NO. 3, 1970, P. 147-151.
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS
TOPIC TAGS--DIAMOND, CHROMIUM, METAL COATING, SURFACE PROPERTY, WEAR
RESISTANCE, METAL POLISHING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/1400 STEP NO--UR/0418/70/000/003/0147/0151
CIRC ACCESSION NO--AP0130358
UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0130358

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. DISCUSSION OF THE CHARACTERISTICS
FEATURES OF DIAMOND BURNISHING AND ITS INFLUENCE ON THE WEAR RESISTANCE
AND CONTACT ENDURANCE OF CHROMIUM COATINGS. AN ANALYSIS OF THE
GEOMETRICAL SURFACE QUALITY PARAMETERS LEADS TO RELATIONS BETWEEN THE
TRANSVERSE AND LONGITUDINAL SURFACE ROUGHNESSES AND THE BURNISHING
CONDITIONS. EXPERIMENTAL DATA CONCERNING SURFACE HARDENING AND RESIDUAL
STRESSES INDUCED IN THE SURFACE LAYER BY DIAMOND BURNISHING ARE
EXAMINED. THE SUPERIORITY OF A DIAMOND BURNISHED CHROMIUM COATINGS OVER
COATING SUBJECTED TO OTHER TYPES OF SURFACE TREATMENT IS DEMONSTRATED.

UNCLASSIFIED

02 035 UNCLASSIFIED PROCESSING DATE--18OCT70
TITLE--PROTONS POLARIZATION ARISING DURING THE INTERACTION OF 650-840 MEV
PROTONS WITH LITHIUM-7 AND CARBON-12 -U-
AUTHOR--(05)-TENAPETYAN, S.G., KONVALOV, O.G., DEREBCHINSKIY, A.I.,
ZYSALOV, A.A., KHVOROSTYAN, V.M.
COUNTRY OF INFO--USSR

SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(3), 165-8

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--PROTON POLARIZATION, PHOTONUCLEAR REACTION, ELASTIC
SCATTERING, GRAPHITE, LITHIUM ISOTOPE, CARBON ISOTOPE, GAMMA SPECTRUM,
PHOTO EMF

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

COPIES REEL/FRAME--1988/0242

STEP NO--UR/0386/70/011/003/0165/0168

ARC ACCESSION NO--AP0105318

UNCLASSIFIED

72 035 UNCLASSIFIED PROCESSING DATE--16JCT70
RC ACCESSION NO--AP0105318
STRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POLARIZATION, P, OF P WHICH
ARE ELASTICALLY SCATTERED ON NUCLEI OF GRAPHITE ELECTRODES WAS CALCD,
AT ENERGIES OF PHOTOCURRENTS OF 700-900 MEV; P POL RIZATION FOR NUCLEI
OF PRIME7 LI AND PRIME12 C IS CLOSE TO ZERO. IN THE MESON II KINEMATIC
REGION P CHANGES SHARPLY FROM MINUS 0.76 TO 0.48 AS THE PHOTON ENERGY
INCREASED. FOR PHOTONS WITH ENERGIES 650, 715, AND 840 MEV, IN THE
REACTION GAMMA PLUS N YIELDS N PRIME NEGATIVE PLUS P; P EQUALS MINUS
0.74, MINUS 0.16, AND 1.66, RESP. FACILITY: FIZ.-TEKH. INST.,
KHARKOV, USSR.

UNCLASSIFIED

USSR

UDC 621.3.032.266

KHVOROV, M.I., STEPANOV, YU.D., PODRECHNEVA, N.V., SENATOV, O.I.

"Experimental Investigation Of Interaction Of Spiral Electron Flow With Electromagnetic Waves In Two-Dimensional Periodic Delay System"

Elektron. tekhnika. Nauch.-tekhn. sb. Elektron. SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1971, Issue 5, pp 3-9 (from RZh-Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10A26)

Translation: An investigation is conducted of an experimental model of the interaction of spiral electron flows with waves in a two-dimensional periodic delay system. It is shown as a result of the experiments that attainment of synchronism of the electron flow with the electromagnetic waves depends on the values of both the azimuthal and the axial components of the speed of the electron flow. It is established that synchronism with direct and counter waves is attained with substantially equal values of the azimuthal component of the speed of the flow. It is disclosed that with specific relationships of the parameters of the delay system and the electron stream the synchronism voltage does not depend on the frequency. 4 ref. Summary.

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1/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--A DEVICE FOR SIMULATING PULSED INTERFERENCE --U-

AUTHOR--(05)--RAPPOPORT, L.I., KHVOSTENKO, A.I., KULAKOV, N.N., SHAPOSHNIK,
V.I., KIRICHEK, V.A.
COUNTRY OF INFO--USSR

SOURCE--PATENT NO 260291, FILED 4 NOV 68
REFERENCE--MOSCOW, OTKRYTIYA, IZOBRETIENIYA, PROMYSHLENNYYE OBRAZTSY,
DATE PUBLISHED-----70

SUBJECT AREAS--METHODS AND EQUIPMENT, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--PATENT, PULSE EXCITATION, PULSE GENERATOR, PULSE INTEGATOR,
PULSE SIGNAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0735

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

CIRC ACCESSION NO--AA0126443

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AA0126443

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS AUTHOR'S CERTIFICATE INTRODUCES A DEVICE FOR SIMULATING PULSED INTERFERENCE. THE UNIT CONTAINS THE EQUIPMENT TO BE STUDIED, A POWER SUPPLY, CONTROL PULSE GENERATOR, AND SHUNTING DEVICE. AS A DISTINGUISHING FEATURE OF THE PATENT, THE DEVICE IS DESIGNED FOR PRODUCING INTERFERENCE WITH CONTROLLABLE POLARITY, AMPLITUDE, DURATION, AND PRF AND ALSO FOR ELIMINATING THE MUTUAL EFFECT OF THE INTERFERENCE SIMULATOR AND THE EQUIPMENT TO BE STUDIED. AN AUXILIARY DC POWER SUPPLY WITH CONTROLLABLE POLARITY AND AMPLITUDE OF THE OUTPUT VOLTAGE IS CONNECTED IN PARALLEL BOTH WITH THE EQUIPMENT TO BE STUDIED AND WITH ITS POWER SUPPLY BY MEANS OF A COMMUTATOR. THE OUTPUTS OF THE CONTROL PULSE GENERATOR ARE CONNECTED TO THE COMMUTATOR AND SHUNTING DEVICE, WHICH IS CONNECTED TO THE COMMUTATOR AND TO THE AUXILIARY POWER SUPPLY. FACILITY: DONETSKIY NAUCHNO-ISSLEDOVATEL'SKIY I PROYEKTNO-KONSTRUKTORSKIY INSTITUT AVTOMATIZATSII GORN'NYKH MASHIN.

UNCLASSIFIED

USSR

K
UDC 681.333

RAPPOPORT, L. I., KHVOSTENKO, A. I., KULAKOV, N. N., SHAPOSHNIK, V. I.,
KIRICHEK, V. A., ~~DONETSK~~ Scientific Research Institute for the Plann-
ing and Design of Mining Machine Automation

"A Device for Simulating Pulsed Interference"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrazttsy, Tovarnyye
Znaki, No 3, 1970, p 130, patent No 260291, filed 4 Nov 68

Abstract: This Author's Certificate introduces a device for simulating pulsed interference. The unit contains the equipment to be studied, a power supply, control pulse generator, and shunting device. As a distinguishing feature of the patent, the device is designed for producing interference with controllable polarity, amplitude, duration, and prf and also for eliminating the mutual effect of the interference simulator and the equipment to be studied. An auxiliary DC power supply with controllable polarity and amplitude of the output voltage is connected in parallel both with the equipment to be studied and with its power supply by means of a commutator. The outputs of the control pulse generator are connected to the commutator and shunting device, which is connected to the commutator and to the auxiliary power supply.
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USSR

UDO 539.23

KOZLOVSKAYA, V.M., KHVOSTIKOVA, V.D., VELEZHEV, D.K., YEPREMEKO, G.A.

"Structure And Composition Of Films Prepared By Electron Beam Decomposition Of Molybdenum Hexacarbonyl"

Tr. Mosk. in-ta elektron. mashinostr. (Works Of The Moscow Institute Of Electrical Machine Building), 1972, Issue 20, pp 100-107 (from RZh:Elektronika i yeye primeneniye, No 7, July 1972, Abstract No 7A256)

Translation: Deposition of films was performed by electron-beam decomposition of molybdenum hexacarbonyl in Type ELUPO equipment. Electronmicroscope and electron diffraction studies were conducted as well as mass-spectrum analysis of films with an impurity, and the presence of molybdenum carbide in the films was established. M.V.

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USSR

UDC 536.24

STANEVSKIY, A. G., KHVOSTOV, V. I.

"Calculation of Characteristics of Friction, Heat and Mass Transfer in a Turbulent Boundary Layer of a Compressed Gas with a Transverse Flow of Material, the Heat Capacity of Which Depends Strongly on Temperature"

Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 1, 1972, pp 66-68.

ABSTRACT: A process model is used, according to which the complex dependence of enthalpy of injected material on temperature can be represented as an approximation formula. On this basis, a method is suggested allowing phase and chemical transformations to be considered in calculating the characteristics of friction, heat and mass transfer in the turbulent boundary layer of a compressed gas.

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USSR

UDC 536.24

STANEVSKIY, A. G., Engineer and ~~KHIVOSTOV, V. I.~~, Candidate of Technical Sciences, Associate Professor

"Calculation of the Surface Temperature Distribution of a Porous Plate by Supersonic Flow-Past and Uniform Heterogeneous Injection Into the Turbulent Boundary Layer"

(Article presented by Candidate of Technical Sciences V. I. Krutov, Professor of Moscow Higher Technical School imeni N. E. Bauman)

Moscow, IVZ, Mashinostroyeniye, No 2, 1972, pp 75--80

Abstract : On the basis of the theory of limit laws of the turbulent boundary layer, a calculation method is suggested of the temperature distribution by length of a porous plate during its flowing around by a supersonic non-dissociated gas flow and uniform injection into the turbulent boundary gas layer distinct from the initial gas flow by its physical properties. By this method, non-isothermal effects and compressibility and heterogeneity effects

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USSR

SPANEVSKIY, A. G. and KEVOSTOV, V. I., IVUZ, Mashinostroyeniye, No 2, 1972,
pp 75-80

of injection can be taken into consideration. On the basis of calculation results, the suggested method is compared with other methods which use different approximation formulas. It is demonstrated that heat transfer coefficients calculated by the suggested method are in good agreement with calculations from approximation formulas. Three illustr., 23 formulas, seven biblio. refs.

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Titanium

USSR

UDC 541.8:541.11

VASIL'YEV, V. P., VOROB'YEV, P. N., ~~KHVOSTOVA, I. I.~~, and MILOVANOVA, V. A.,
Ivanovo Chemico-Technological Institute, Chair of Analytical Chemistry

"Standard Heat of Solution of $TiCl_4$ in Nitric Acid"

Ivanovo, IVUZ Khimiya i Khimicheskaya Tekhnologiya, Vol 15, No 1, 1972,
pp 47-49

Abstract: The chemistry of titanium, including the thermodynamic properties of its compounds, are of the greatest practical significance. With the use of an improved calorimeter having automatic recording (See V. P. VASIL'YEV et al., Zh. Neorgan. Khimii, 11, 699, 1966), heat of solution, heat of dilution, and heat of destruction of the ampoule, were determined over a wide range of concentration of the HNO_3 solution. The new empirical data made it possible to develop more precise formulas for determining those quantities for the solution of $TiCl_4$ in HNO_3 . All data and formulas, along with graphic representation of the relationship between $TiCl_4$ solution and final HNO_3 concentration, are included in the paper.

1/1

1/2 008 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--PLATINUM CONTENT OF URAL DUNITES -U-
AUTHOR--(02)-FOMINYKH, V.G., KHVOSTOVA, V.P.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(2), 443-5
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--PLATINUM, ROCK, MINERAL DEPOSIT, CHROMITE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1053 STEP NO--UR/0020/70/191/002/0443/0445
CIRC ACCESSION NO--AT0119920

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AT0119920
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DUNITES OF 2 ASSOCNS. ARE KNOWN IN
URALS: (1) DUNITE PYROXENITEGABBRO ASSOCN., THE ROCKS OF WHICH ARE
PRESENT IN SO CALLED PT BEARING BELT OF ULTRABASIC AND BASIC INTRUSIONS
IN URALS, AND (2) DUNITE HARZBURGITE ASSOCN. WHICH IS CONSIDERED PT
BARE. DETNS. OF PT AND PT METAL CONTENTS IN DUNITES OF THESE ASSOCNS.
LED TO CONCLUSION THAT (1) CONTENT OF PT METALS IN DUNITES OF BOTH
ASSOCNS. IS THE SAME AND (2) THE PT METALS ARE DISTRIBUTED IN DUNITES
NONUNIFORMLY AT ELEVATED CONTENTS TYPICAL OF CHROMITE ORES. THE STUDY
OF DISTRIBUTION OF PT GROUP METALS IN VARIOUS ROCKS OF THE SAME MASSIF
SHOWED THAT THEIR CONTENT DOES NOT DEPEND ON THE COMPN. OF ROCK. WITH
MAX. AMTS. DETECTED ONLY IN ROCKS CONTG. CHROMITE VEINLETS.
FACILITY: INST. GEOL. GEOKHIM., SVEROLOVSK, USSR.

UNCLASSIFIED

USSR

UDC 548.535

LERIKMAN, R. M., MURSAYEVA, G. V., NIKANOROV, M. A., and
~~KHVOSTENTSEV, K. I.~~, Institute of Physics of Metals, Academy of
Sciences USSR

"Influence of Plastic Deformation and Alloying With Slight
Amounts of Interstitial Elements on Decomposition of the Meta-
stable β Phase in TC6 Alloy"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 3,
Mar, 71, pp 626-633

Abstract: Electron microscopy and determination of the mechanical
properties are used to study TS6 alloy with various contents of
interstitial impurities in various initial states. It is de-
monstrated that after rolling and aging, the alloy reaches its
maximum strength properties with briefer aging and considerably
smaller dimensions of α phase segregations than after ordinary
aging. The density of residual dislocations in the alloy follow-
ing rolling and aging is still near the density of dislocations
in the deformed state with these types of treatment. With low
1/2

USSR

LERINMAN, R. M., et al., Fizika Metallov i Metallovedeniye,
Vol 31, No 3, Mar 71, pp 626-633

degrees of deformation, a high combination of mechanical properties can be achieved only in the case of the initial polygonized state. The influence of an increased content of interstitial impurities with rolling and aging on the kinetics of decomposition of the ρ phase is significantly weaker than in the case of ordinary aging.

2/2

USSR

UDC 669.295:620.193.91:548.4

LERINMAN, R.M., MURZAYEVA, G.V., NIKANOROV, M.A., and KHVOSTYNTSEV, K.I.,
Institute of Metal Physics, Academy of Sciences USSR

"Effect of Initial Dislocation Structure and Interstitial Impurity Content
on the Microstructure and Properties of Beta-Titanium Alloy TS6 After Aging"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 2, Feb 71, pp 352-357

Abstract: This article is a continuation of works devoted to a study of changes in structure and mechanical properties of TS6 beta-titanium alloy after aging in relation to initial structure and interstitial impurities content. Sheet samples of TS6 alloy of two heats with a differing impurities content were studied. One heat (971) was melted in VEL-3 electrolytic vanadium the other (603) -- in aluminothermic vanadium by electron-beam remelting. Heat 603, in contrast to heat 971, contained 1% Zr. The fine structure and mechanical properties were investigated after heat treating by the following modes: a) quench from 850°C, deformed 40% by rolling and given repeated quenchings from 700, 800, and 900°C (hardened state); b) aging of samples quenched from the above-stated temperatures. Aging was accomplished at 480°C for 2, 10, and 30 hours. In the initial polygonized state particles of the liberated phase, upon aging, were highly dispersed and distributed uniformly, which is the result of alpha-phase particle nucleation into dislocations. In the initial 1/2

USSR

LERINMAN, R.M., et al, Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 2, Feb 71, pp 352-357

recrystallized state for pure melting, the low mechanical properties are dependent on the vast nonuniformity of beta-phase decomposition which leads to the formation of local stresses near the particles at the time of deformation. The measured content of interstitial impurities facilitates obtaining a uniform and more dispersed structure after aging and decreases bordering layers made up of the un-decomposed beta-phase. The best properties of alloy TS6 can be obtained in combination with the initial polygonized state and an optimum content of impurities of interstitial atoms (Tensile Strength = 140 kg/mm^2 , reduction in area = 6%). 3 figures, 1 table, 9 bibliographical references.

2/2

- 63 -

USSR

UDC 548.535

LERINMAN, R. M., MURSAYEVA, G. V., NIKANOROV, M. A., and
~~KHVOSTYNTSEV, K. I.~~, Institute of Physics of Metals, Academy of
Sciences USSR

"Influence of Plastic Deformation and Alloying With Slight
Amounts of Interstitial Elements on Decomposition of the Meta-
stable β Phase in TC6 Alloy"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 3,
Mar, 71, pp 626-633

Abstract: Electron microscopy and determination of the mechanical
properties are used to study TS6 alloy with various contents of
interstitial impurities in various initial states. It is de-
monstrated that after rolling and aging, the alloy reaches its
maximum strength properties with briefer aging and considerably
smaller dimensions of α phase segregations than after ordinary
aging. The density of residual dislocations in the alloy follow-
ing rolling and aging is still near the density of dislocations
in the deformed state with these types of treatment. With low
1/2

USSR

LERINMAN, R. M., et al., Fizika Metallov i Metallovedeniye,
Vol 31, No 3, Mar 71, pp 626-633

degrees of deformation, a high combination of mechanical properties can be achieved only in the case of the initial polygonized state. The influence of an increased content of interstitial impurities with rolling and aging on the kinetics of decomposition of the β phase is significantly weaker than in the case of ordinary aging.

2/2

Industrial

USSR

UDC 532.72;669.015.23

PAAL', L. L., KHYAYAL', K. R.

"On the Hydraulic Essence of Turbulent Diffusion Coefficients"

Tr. Tallin. politekhn. in-ta (Works of Tallin Polytechnical Institute), 1972, No. 330, pp 11-20 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B999)

Translation: The turbulent diffusion process in flow in open channels is considered. Experimental data is used to analyze the turbulent diffusion coefficient in the longitudinal direction k_x as a function of various parameters (hydraulic radius R , friction rate u_* , and average velocity v_{cp}). The following formulas were obtained from processing experimental data:

$$k_x R^{-1} u_*^{-1} = 31000 (R v_{cp} / \nu)^{-0.5}, \quad h_x R^{-1} u_*^{-1} = 16 (v_{cp} / u_*)^{1.25}$$

USSR

PAAL', L. L., KHYAYAL', K. R., Tr. Tallin. politekhn. in-ta, 1972, No. 330,
pp 11-20

The first formula is valid for artificial channel flows with low roughness and the second is suitable for natural channel flows with high roughness. Also analyzed are specific data referring to the coefficient of turbulent diffusion in the transverse direction. 10 ref. V. R. Kuznetsov.

2/2

1/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--PROCEDURE FOR DETERMINING THE QUANTITY OF ADSORBED GAS BASED ON A
CHANGE IN THE SPECIFIC WEIGHT OF THE GAS MIXTURE -U-
AUTHOR--(03)-ASLANOV, SH.S., MAMEDOV, YU.G., KHYDYRKULIEV, B. *R*
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., NEFT GAZ 1970, 13(1), 49-52
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL ANALYSIS, GAS, NITROGEN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1639 STEP NO--UR/0152/70/013/001/0049/0052
CIRC ACCESSION NO--AT0118618
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0118618

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GAS CONDENSATE MIXT. WAS PASSED THROUGH A COLUMN, CONTG. A WELL PACKED 1:1 CLAY SAND BED, UNTIL ITS STAN., WHEN THE MIXT, WAS DISPLACED WITH N AT THE SAME PRESSURE. THE DISPLACEMENT WAS COMPLETED, WHEN THE OUTLET GAS HAD THE SP. GR. OF N. THEN, THE ADSORPTION COLUMN WAS DISCONNECTED AND ITS PRESSURE WAS GRADUALLY DECREASED BY LETTING OUT THE GAS, SAMPLES OF WHICH WERE TAKEN AT DETD. PRESSURES. THE SP. GR. OF THE SAMPLES WAS DETD. AT 1 ATM. AS THE PRESSURE IN THE COLUMN DECREASED, THE SP. GR. OF THE OUTLET GAS DECREASED, VARYING BETWEEN THE SP. GR. OF THE GAS CONDENSATE MIXT. TO THAT OF N, AS THE DESORBED GAS DURING THE PRESSURE DECREASE WAS DISPLACED BY N. HAVING THE SP. GR. OF THE GAS MIXT., THE VOL. SHARE OF THE MIXT. AND N COULD BE DETD. IN A SYSTEM WITH GAS CONDENSATE RATIO 2500:1, AT 301 ATM AND 293DEGREESK, THE SP. GR. OF THE MIXT. DECREASED BY 10PERCENT DUE TO THE DESORBED GAS. THE SHARE OF THE MIXT. IN THE ADSORBENT PORES INCREASED WITH THE PRESSURE DECREASE AND AT 140 ATM, 16PERCENT OF THE PURE VOL. WAS OCCUPIED BY THE GAS. THE HIGHER DESORPTION OCCURRED WHEN THE PRESSURE DECREASED BELOW THAT OF MAX. CONDENSATION (130 ATM). IN CLAY STRATA, GREAT AMTS. OF GAS COULD BE THUS ACCUMULATED DUE TO DIFFUSION AND ADSORPTION, WHICH ARE TO BE TAKEN INTO CONSIDERATION FOR CALCG. THE GAS RESERVES. FACILITY: AZERB. INST. NEFTI KHIM. IM. AZIZBEKOVA, BAKU, USSR.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--THE VELOCITY OF SIGNAL AND THE METRICS OF SPACE TIME IN NONLINEAR
ELECTRODYNAMICS -U-
AUTHOR--(02)-DYK, D.V., KHYEU, N.V. *K*
COUNTRY OF INFO--USSR
SOURCE--TEORETICHESKAYA I MATEMATICHESKAYA FIZIKA, 1970, VOL 2, NR 1, PP
55-66
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--QUANTUM ELECTRODYNAMICS, ELECTROMAGNETIC FIELD, SIGNAL
DETECTION, LORENZ TRANSFORMATION, LAGRANGE EQUATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1978/1228 STEP NO--UR/0646/70/002/001/0055/0066
CIRC ACCESSION NO--AP0046151
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0046151

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS SHOWN THAT IN NONLINEAR ELECTRODYNAMICS THE VELOCITY OF A SMALL TIME DEPENDENT PERTURBATION, WHICH CAN BE CONSIDERED AS A SIGNAL, IN THE PRESENCE OF AN EXTERNAL FIELD DEPENDS UPON THE INTENSITY OF THE LATTER AND CAN BE GREATER THAN THE LIGHT VELOCITY IN A VACUUM. AS A CONSEQUENCE, THE SUCCESSION OF THE EMISSION AND THE DETECTION ACTS FOR THE SIGNAL DEPENDS UPON THE FRAME OF REFERENCE, IF THE USUAL FORM OF THE LORENTZ TRANSFORMATIONS IS VALID. THE POSSIBILITY IS DISCUSSED OF AVOIDING THIS DIFFICULTY BY MEANS OF INTRODUCING OF THE SPACE TIME METRICS DEPENDING ON FIELD OR INTRODUCING A CERTAIN SELECTION PRINCIPLE EXLUDING THE NONLINEAR LAGRANGIANS WHICH MAKE IT POSSIBLE FASTER THAN LIGHT SIGNALS.

UNCLASSIFIED

USSR

UDC: 621.375.826

MALYSHEV, G. F., TROITSKIY, Yu. V., KHANOV, V. A., and KHYUPPENEN, V. P.

"Stabilized Single-Frequency Helium-Neon Laser"

Novosibirsk, Avtometriya, No 5, 1972, pp 86-93

Abstract: A description of a frequency-stabilized He-Ne laser, of 0.63 μ wavelength, is given. The stable passive resonator of this device is inside the laser resonator and is also used for obtaining single-frequency oscillation. A cross-sectional view of the instrument is provided, and an explanation of its operation given. Its construction is based on the single-mode industrially manufactured LG-36A, with the discharge tube and the power source unmodified but with the laser resonator modified by replacing its mirror with a reflecting interferometer, by being lengthened, by increasing the transmission factor of the spherical mirror, and by improving thermal insulation of the resonator from the discharge tube. The automatic frequency tuning system is described and the circuit of its electronic components given. It is noted that this laser's frequency can be smoothly varied and can therefore be stabilized
1/2

USSR

UDC: 621.375.826

MALYSHEV, G. F., et al, Avtometriya, No 5, 1972, pp 86-93

according to the spectral line. The authors express their gratitude to N. N. Kamenev and Yu. G. Vasilenko.

2/2

- 36 -

UDC 576.8.095:622.323

3

USSR

GOL'DENBERG, A. H., KVASHYKOV, YE. I., BOYKO, M. M., LYUBOMIROVA, O. H.,
PAVLENKO, M. I., PYSARCHUK, YE. H., and KHYZHNYAK, O. O., Ivano-Frankovsk.
Central Scientific Research Laboratory, and Institute of Microbiology and
Virology, Academy of Sciences UkrSSR

"Biochemical Processes During Oil Displacement Under the Influence of Bacteria
in Model Experiments"

Kiev, Mikrobiologicheskii Zhurnal, Vol 33, No 2, Mar/Apr 71, pp 234-239

Abstract: Introduction of selected cultures of gas-forming bacteria from the
genus Clostridium together with a molasses medium into an artificial model
of an oil-bearing bed (sand saturated with oil) results in higher displace-
ment of oil as compared to the control (without addition of bacteria). Most
crucial changes in the medium enriched with bacteria occur in 5-7 days at an
optimum temperature of 30°C, that is during the period of most intensive
changes in the nutrient medium and maximum gas production. At that time the
surface tension at the interphase culture medium-air is lowered, the amount
of organic acids and ethanol is increased and the pH of the medium is lowered.
The specific gravity of the oil exposed to bacteria is lowered by 0.0018-
0.0096 g/cm³, and its viscosity is lowered by 0.51-3.02 cst, without any
changes in its fractional composition.

1/1

USSR

UDC 615.285.7:620.193.47:669.35'5

KIBA, N. Z., and PODDUBNAYA, N. P., Zhdanov Plant of Technological Equipment

"Investigation of the Resistance of Brass to Corrosion in Chlorophos Solutions"

Moscow, Meditsinskaya Tekhnika, Vol 5, No 2, Mar/Apr 71, pp 42-44

Abstract: Since manual spray guns used for disinfecting rooms with chlorophos are made of brass, the resistance of this alloy to corrosion was tested by the gravimetric method. Three standard brass samples with different microstructures (density and distribution of alpha and beta phases) were kept in 2.5, 5, 10, and 20% chlorophos solutions (pH 1.0) for a total of 28 days; they were washed, dried and weighed once per week. The results indicated that corrosion increased with increasing strength of the chlorophos solution. Brass rich in the alpha phase (high content of copper) was most resistant, while brass rich in the beta phase (high content of zinc) was least resistant. The recommendation was made to adjust the industrial processing so as to prevent the formation of the beta phase in the form of a solid network around alpha-phase grains but to achieve a most homogeneous microstructure.

1/1

USSR

K

UDC: 621.375.029.52

KIBAKIN, V. M., KISELEV, A. A.

"Problems in Practical Design of Class High-Pressure Amplifiers"

Tr. Gor'kovsk. politekhn. in-ta (Works of Gor'kiy Polytechnical Institute),
1969, 25, No 6, pp 56-58 (from RZh-Radiotekhnika, No 6, Jun 70, Abstract
No 6D88)

Translation: The authors discuss vector problems in the practical design of class high pressure amplifiers, give the results of an experiment which was conducted, and make recommendations on amplifier construction. Amplifiers of this type are used in radio engineering devices where economic considerations are most important. Bibliography of one title. P. U.

1/1

USSR

UDC 621.375:621.396.64(088.8)

K
KIBAKIN, V. M.

"Low Frequency Amplifier"

USSR Author's Certificate No 251012, Filed 23 Nov 67, Published 5 Feb 70 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No D104)

Translation: This author's certificate introduces a schematic for a controlled feed for a powerful two-cycle sonic frequency amplifier with transformers at the input and output. The feed contains a series-connected switching cascade, a trigger and a comparison circuit. The base of the transistor in the comparison circuit (n-p-n) is connected via a semiconductor diode with the end leads of the primary winding of the input transformer, and the emitter is connected via a resistor with the emitters of the transistors of the two-cycle cascade (p-n-p). One of the end leads of the primary winding is connected to the collector of the transistor of the input cascade of the amplifier (p-n-p), and its midpoint is connected to the negative feed.

1/1

-USSR

UDC 539.1.074.3

KIBAL'CHICH, G. A., TSIRLIN, Yu. A.

"Influence of Properties of a Scintillator on Counting Characteristic Plateau"

Monokristally i Tekhnika [Single Crystals and Technology -- Collection of Works], No 5, Khar'kov, 1971, pp 178-186, (Translated from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, No 7, 1972, Abstract No 7.32.1358, from the Resume).

Translation: The influence of the type of scintillator (S) used, the degree of its phosphorescence, conversion effectiveness, light collection, dimensions and shape of the S on the counting plateau (P) is studied. It is shown that the shape of the S has a significant influence on the P of the counting characteristic; this is determined by the form of the differential distribution and ratio of signal and noise amplitudes. Organic S have no phosphorescence, while single crystals of sodium iodide have varying degrees of phosphorescence. Increasing the conversion effectiveness improves P, while increasing the light collection factor may have varying influence on the P. An increase in the dimensions of sodium iodide single crystals improves P. Single crystals with low ratio of height to diameter have good P, while when this ratio is increased to 4-7, P is somewhat worsened. However, at the same time the sensitivity increases and becomes possible to $1/2$

USSR

UDC 539.1.074.3

KIBAL'CHICH, G. A., TSIRLIN, Yu. A., Monokristally i Tekhnika, No 5, Khar'kov, 1971, pp 178-186.

determine the direction of propagation of γ -radiation (γ direction finding). In this case, the counting rate recorded depends on the angle formed by the axis of the S and the direction of propagation of the γ radiation.
5 Figures; 2 Tables; 12 Biblio. Refs.

2/2

66

Alkaloids

USSR

UDC 615.31:582.675.347.074

NAYDOVICH, L. P., ROSTOTSKIY, B. K., and KIBAL'CHICH, P. N., All-Union Scientific Research Institute of Medicinal Plants, Moskovskaya Oblast, Ministry of Health USSR

"Alkaloids of Certain Cultivated Species of the Berberidaceae Family"

Moscow, Farmatsiya, Vol 91, No 5, Sep-Oct 70, pp 47-49

Abstract: Alcoholic extracts of the roots of *Mahonia aquifolia* Nutt (*Berberis aquifolia* Pursh.) from the Berberidaceae family, which was cultivated in the All-Union Institute of Medicinal Plants Botanical Garden, yielded berbamine and berberine. The highest yield of berberine chloride was obtained from the roots, 1.5 g of the product from 100 g of the starting material; the stems gave 0.53 g and the leaves produced 0.35 g of the alkaloid. A crystalline fraction of reduced bases was obtained and according to chromatographic data consisted of four alkaloids. Berberine chloride was also obtained from the roots, leaves and stems of *Berberis vulgaris* L., -- 100 g of the starting material gave 0.64, 0.4 and 0.3 g of the alkaloid respectively.

1/1

1/2 015 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--FUNCTIONAL ORGANIC PEROXIDES. V. HALOACYL PEROXIDES -U-
AUTHOR--(04)--SHREYBERT, A.I., KHARDIN, A.P., KIBALNIKOVA, R.I.,
YERMARCHENKO, V.I.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(3) 466-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, ORDNANCE
TOPIC TAGS--ORGANIC PEROXIDE, EXPLOSIVE, BENZENE DERIVATIVE, SODIUM
COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/1576 STEP NO--UR/0366/70/006/003/0466/0468
CIRC ACCESSION NO--AP0112570
UNCLASSIFIED

2/2 . 015

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112570

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF 2RCOCL WITH NA
SUB2 O SUB2 GAVE 55-60PERCENT (RCO) SUB2 O SUB2 (R IS ME-CCL SUB2, CLCH
SUB2 CCL SUB2, BRCH SUB2 CH SUB2, OR ME SUB2 CCL). SIMILARLY, 2 RC-OCL
REACTED WITH 3ZDONA TO GIVE RCU SUB2 OBZ (R AS ABOVE). THESE COMPS.
EXPLODE DURING SOTRAGE AT 20-5DEGREES.

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UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--SEPARATION AND PURIFICATION OF D,PANTOTHENIC ACID BY AN ION
EXCHANGE METHOD -U-
AUTHOR-(03)-ZHDANOVICH, YE.S., KOZLOVA, G.S., KIBALOVA, N.YU.
COUNTRY OF INFO--USSR
SOURCE--KHIM. FARM. ZH. 1970, 4(2), 27-9
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY
TOPIC TAGS--VITAMIN, CHEMICAL PURIFICATION, ION EXCHANGE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1993/0535 STEP NO--UR/0450/70/034/002/0027/0029
CIRC ACCESSION NO--AP0113426
UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--000070
CIRC ACCESSION NO--AP0113426
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEPN. OF D PANTOTHENIC ACID (I)
FROM A TECH. PRODUCT CONTG. I AS THE ET SUB2 NH SALT AND 15PERCENT BETA
ALANINE (II) WAS EXAMD. TESTS WERE CARRIED OUT USING KU 23 CATION
EXCHANGER (A COPOLYMN. PRODUCT OF POLYSTYRENE WITH DIVINYLBENZENE) (H
PRIME POSITIVE FORM). SORPTION ISOTHERMS OF ET SUB2 NH AND II WERE
FIRST EXAMD. UNDER DYNAMIC AND STATIC CONDITIONS. MOREOVER, THE EFFECT
OF GRAIN SIZE OF THE CATIONITE ON THE SORPTION OF II WAS INVESTIGATED,
THE YIELD OF II AT 20, 40, AND 60DEGREES, AND THE SORPTION OF II AS THE
FUNCTION OF ITS CONC. OVER THE PH RANGE 1.0-6.4. THE SORPTION OF II
INCREASED WITH INCREASING PH. THE SEPN. OF I WAS CARRIED OUT IN A 17
TIMES 290 MM COLUMN AT THE ELUTION RATE 5 ML-MIN. THE CONC. OF I SALT
AND II IN THE SOLN. WAS 0.3-0.4 AND 0.17 EQUIVS.-L., RESP. AT 40 AND
60DEGREES CONCD. ELUATES WERE OBTAINED. THERMAL STABILITY TESTS SHOWED
THAT AT 37 AND 60DEGREES A 5PERCENT I SOLN. BEGAN TO DECOMP. AFTER 32
AND 2 HR, RESP. AT 20DEGREES THE OPTIMUM CONDITIONS WERE AS FOLLOWS:
10 G OF THE DRY CATIONITE, 95 ML 10PERCENT I SALT SOLN., AND VOL. OF THE
ELUATE 170 ML (PH 4.5). THE I AND II CONTENT OF THE ELUATE WAS 0.0378
(88PERCENT YIELD BASED ON I SALT) AND 8.5 TIMES 10 PRIME NEGATIVES
G-ML., RESP. FACILITY: VSES. NAUCH. ISSLED. VITAMIN. INST.,
MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 547.26'118 + 547.442.2

GAZIZOV, T. Kh., KIBARDIN, A. M., PASHINKIN, A. P., and PUDOVNIK, A. N.,
Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy
of Sciences USSR

"Reaction of Dialkyl Acyl Phosphites With Diacetyl"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 12, Dec 73, pp 2626-2631

Abstract: Reactions of dialkyl acyl phosphites with diacetyl and benzyl
was studied showing that basically they yield dialkyl α -methyl- β -methyl- β -
acyloxyvinyl phosphates. As the acid strength of the carboxylic acid
comprising the acyl phosphite is increased, the direction of the reaction
is shifted partially towards the formation of an alkyl carboxylate and a
cyclic alkyl α , β -dimethylvinyl phosphate, respectively.

1/1

- 45 -

USSR

UDC 547.26'118 + 547.442.2

GAZIZOV, T. Kh., KIBARDIN, A. M., PASHINKIN, A. P., SUDAREV, Yu. I., and PUDOVIK, A. N., Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Academy of Sciences, USSR

"Reactions of the Trimethylsilyldiethyl Ester of Phosphorous Acid With Diacetyl"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 3, Mar 73, pp 679-680

Abstract: Reacting trimethylsilyldiethyl ester of phosphorous acid with diacetyl at a temperature below 20° yields diethyl- α -trimethylsiloxy- α -acetoethylphosphonate, b.p. 84-86°/1 mm, d_4^{20} 1.1180, n_D^{20} 1.4335. The structure was confirmed by an independent synthesis from diethyl- α -hydroxy- α -acetoethylphosphonate and trimethylchlorosilane and by IR and NMR^{31P} spectroscopic analysis.

1/1

Nitrogen Compounds

USSR

UDC 547.794:543.51

YEFREMOV, YU. YA., MUSIN, R. G., FUDOVIK, M. A., and ALBARDINA, L. K.,
Institute of Organic and Physical Chemistry imeni A. Ye. Arbutov, USSR
Academy of Sciences, Kazan

"Mass Spectra of Some 1,3,2-Oxazaphospholines"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 7, 1973, pp 894-
897

Abstract: "Mass spectra of 1,3,2-oxazaphospholanes made it possible to determine the pathways of dissociative ionization from the intensity of m/e lines. Intensity of the $m/e = R$ line decreased with an increase in the number of C atoms in the alkoxy radical. Dissociative ionization involved breaking of C-C and P-C bonds in the ring and loss of R^1CHO from the molecular ion. The olefin molecule was primarily formed from the alkoxy group. Loss of the alkoxy group was the most likely process of dissociative ionization of the molecular ion; in the case of the 2-chloro derivative it was the loss of the Cl atom.

1/1

USSR

UDC 541.67+447.31+538.27

SAMITOV, YU. YU., PUDOVIK, M. A., KHAYAROV, A. I., and KIBARDINA, L. K.

"Stereochemistry of Organophosphorus Compounds. III. Nuclear Magnetic Resonance Spectra of ^1H and ^{31}P and the Geometric Isomerism in a Series of 1,2,3-oxaazaphospholanes"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, pp 46-51

Abstract: In containing the studies in the field of the stereochemistry of phosphorus-containing hetero cycles, the presence of stereoisomers in the series of substituted 1,3,2-oxaazaphospholanes was detected in which isomerism is caused by the presence of the chiral carbon atom in the ring and the mentioned property of the P^{III} phosphorus atom. The proof of the presence of the stereoisomers was obtained by the method of gas-liquid chromatography and nuclear magnetic resonance, the conformation of the high-element ring was established by analysis of the nuclear magnetic resonance spectra. The series of 5-ethyl-1,3,2-oxaazaphospholanes which are tabulated were synthesized and investigated. The predominant conformation of the 5-number heterocycle is the form of the envelope with the oxygen atom at the top of the vent.

1/1

USSR

UDC: 53.07/08:539.216.2:621.372.852

VALYUKENAS, V. I., IVASHKA, V. P., and KIBARTAS, V. V.

"Determining the Surface Resistivity of Fine Metallic Layers by Measuring the Transmission Factor in the UHF Range"

Vil'nyus, Litovskiy Fizicheskiy Sbornik, vol 12, No 2, 1972, pp 297-303

Abstract: A method is proposed for determining the surface conductivity or resistivity of fine metal layers from the change in absolute value of the transmission factor, with the properties of the substrate for those layers and the reflection from a matched load taken into account. The theory of the method is developed and the equipment used for the determinations is described. Frequency of the uhf waves used was 9150 MHz, and the layers were of aluminum and chromium, 40-700 Å thick. A block diagram of the equipment is given and the results of the measurements for various types of the Al and Cr specimens are presented in tabular form. The authors, associated with the V. Kapsukas State University at Vil'nyus, express their gratitude to V. Tsukerman for participating in the measurements.

1/1

USSR

UDC: 621.372.853.1.092.22

IVASHKA, V. L., LAUTSYUS, A. S., KIBARTAS, V. V.

"Determining the Surface Resistivity of Thin Metal Layers on Superhigh Frequencies"

Lit. fiz. sb. (Lithuanian Physics Collection), 1970, 10, No 3, pp 385-390
(from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2B218)

Translation: The authors calculate the coefficient of reflection from a system consisting of a thin metal layer and a dielectric substrate accommodated in a rectangular waveguide. Formulas are derived for a type H_{10} wave which interrelate the surface resistivity, parameters of the substrate and modulus of the coefficient of reflection. The results are used as a basis for determining the surface resistivity of thin layers of chromium in the 8-10 GHz range. Bibliography of three titles. Authors' abstract.

1/1

- 105 -

USSR

UDC 621.357.1:66/.847(088.8)

BUDANOV, V. V., ~~KIBENKO, V. D.~~, BUKIN, S. M., PANOV, V. P.

"Electrochemical Procedure for Obtaining Rongalite"

USSR Author's Certificate No 303317, filed 11 Oct 69, published 14 Jul 71 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L286P)

Translation: An electrochemical method of obtaining rongalite using cathode reduction has been patented. It is distinguished by the fact that in order to improve the process, increase the yield and improve the quality of the product, zinc formaldehydebisulfite is reduced at a pH of the electrolyte of 5-6, D_c 5-10 a/dm², a raw materials concentration 2 g-mole/liter in SO₂ at a temperature of 85-100^o, and the zinc formaldehydesulfoxylate formed is converted to the product by known procedures.

1/1

- 12 -

USSR

UDC 621.319.4

ALFEROV, A. S., KUSHNIR, F. V., AL'FAN, E. A., ~~KIBENKO, V. D.~~, VASIL'-
YEV, V. V., DEGTYAR', L. E., SOLOMENCHUK, L. K., TSAIFER, K. M., ZELI-
KOVSKIY, Z. I., Leningrad Electrical Engineering Institute of Communi-
cations imeni Professor M. A. Bonch-Bruyevich

"An Electrical Device"

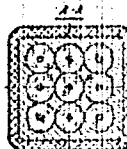
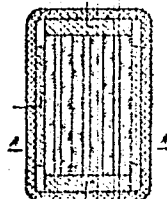
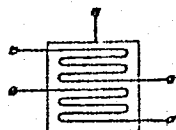
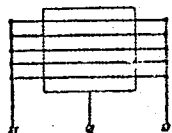
Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 24, Aug 71, Author's Certificate No 311301, Division H, filed 31 Dec
68, published 9 Aug 71, p 188

Translation: This Author's Certificate introduces an electrical device
which contains a resistor and a capacitor. The device is made in the
form of a stack of sections of microwire and insulation coated with a
current-conducting layer, and is equipped with an output. As a distin-
guishing feature of the patent, in order to reduce the natural resistance
and inductance of the capacitor, improve the technological feasibility
of the design and reduce cost, the ends of each section of wire are con-
nected to different leads, which may be two or more in number.

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USSR

ALFEROV, A. S. et al., USSR Author's Certificate No 311301



USSR

UDC: 621.372.85

POKROVSKIY, Yu. A. and KIBEREV, A. M.

"Limiting UHF Devices"

V sb. Vopr. radiotekhniki (Electronic Engineering Problems--collection of works) Tula, Tula Polytechnical Institute, 1970, pp 56-60 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3B180)

Translation: Fundamental conclusions from the theory of single-tuned limiting band pass and rejector filters as well as multi-tuned limiting filters are given. Four illustrations, bibliography of one. V. S.

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USSR

UDC: 621.317.335.3.023

KIBEREV, A. M.

"Measuring Limited UHF Devices"

V sb. Voor. radiotekhniki (Problems in Electronic Engineering--
collection of works) Tula, Tula Polytechnical Institute, 1970, pp
60-63 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3A394)

Translation: Measuring devices are described which are distin-
guished by broad ranges of measured values of dielectric perme-
ability and dielectric constants. Resume

1/1

1/2 025 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--HARDNESS OF STEEL G13 AFTER MECHANICOTHERMAL TREATMENT -U-

AUTHOR-(04)-KRIVOSPITSKIY, V.M., NIKONENKO, A.S., KHARITONOVA, V.F.,
KIBETS, V.L.

COUNTRY OF INFO--USSR

SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (3), 47-8

DATE PUBLISHED-----70

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

TOPIC TAGS--THERMOMECHANICAL TREATMENT, HIGH MANGANESE STEEL, METAL
HARDNESS, ALLOY DESIGNATION, ALLOY COMPOSITION, METAL DEFORMATION,
MATERIAL FRACTURE/(U)G13 HIGH MANGANESE STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1704

STEP NO--UR/0129/70/000/003/0047/0048

CIRC ACCESSION NO--AP0118682

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118682

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPECIMENS FROM STEEL G13 (C 1.18, MN 13.5, SI 0.62, P 0.083, AND S 0.06 WT. PERCENT), SIZE 8 TIMES 8 TIMES 10 MM WERE HEATED IN ACTIVATED CARBON AT 1050DEGREES FOR 20 MIN AND THEN COOLED IN WATER. DEFORMATION BY COMPRESSION FOLLOWED AT THE RATE 1 MM-MIN AND ANNEALING IN A SALT BATH AT 100-800DEGREES. AFTERWARDS SPECIMENS WERE POLISHED MECH. AND ELECTROCHEM. AND HARDNESS WAS DETD. WITH INCREASED DEFORMATION DEGREE UP TO 50PERCENT, THE HARDNESS STARTED TO DECREASE AT 300DEGREES AND THE DECREASE WAS COMPLETED AT 800DEGREES. THE COMPRESSION DEFORMATION INCREASED HARDNESS. HARDNESS OF QUENCHED SPECIMENS INCREASED NEARLY IN LINEAR FASHION WITH INCREASED DEFORMATION DEGREE, WHILE THAT OF HEAT TREATED SPECIMENS INCREASED INTENSELY ONLY AT SMALL DEFORMATION DEGREES. INCREASED TEMP. AND TIME OF ANNEALING CAUSED AN INCREASED BRITTLINESS OF QUENCHED AND TEMPERED STEEL. E.G. AFTER ANNEALING FOR 2 HR AT 450DEGREES THE FRACTURE OCCURRED AT 40PERCENT REDN. DEGREE, WHILE AFTER ANNEALING AT 550DEGREES THIS BREAKDOWN OCCURED AT 20PERCENT REDN. DEGREE. FACILITY: KRIVOROZH. GORNORUD. INST., KRIVOI ROG, USSR.

UNCLASSIFIED

Thermomechanical Treatment

USSR

← JDC 620.178:669.15'74.194

KRIVOSPITSKIY, V. M., NIKONENKO, A. S., KHARITONOVA, V. F., and KIBETS, V. L.
(Krivoy Rog Mining Institute)

"Strength of G13 Steel After Mechanical-Heat Treatment"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 3, 1970, pp 47-48

Abstract: Results are presented of the investigation on the effect of mechanical and heat treatment on the hardness and compression strength of G13 steel. The experimental procedure and technique for production of samples are described. The results show that the nature of hardness variation of samples after heat or mechanical heat treatment is the same. The strength increases as the result of compression. A microscopic nature of plastic deformation was observed at austenite steel compression. At small deformations, straight lines passing through the whole grain were observed, while the grain number with lines increases with deformation. At high degrees of deformation, the deformation lines become undulating, then lines appear along which the destruction develops. Upon deformation of steel, annealed at 500-600°C, lines of deformation were observed at short annealing holding times, while at prolonged annealing times and high degrees of deformation lines were absent. 2 figures, 13 references.

1/1

USSR

UDC 669.18:621.785.53

KIBIN, I. N., ANDEYUSHECHKIN, V. I., AFON'KINA, S. S., and
MINCHEVA, V. R., Moscow Institute of Steel and Alloys

"Titanium Plating of Iron and Steel by Rapid Heating"

Moscow, Izvestiya VUZ, Chernaya Metallurgiya, No 9, 1973, pp
159-161

Abstract: The authors have investigated and developed conditions and modes for titanium plating which allow them to produce, in a short period of time, high-quality diffusion films with a titanium content greater than 30 percent. The investigations were conducted on samples of armco-iron and steel No 20 in the temperature range from 950 to 1200 degrees C with a holding time on the isotherm from 1 to 15 minutes. The saturated samples were subjected to metallographic, x-ray phase, and micro x-ray spectral analyses. The authors investigated the change in H_{μ} and the microthermal emf with depth of the diffusion film. As a result
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USSR

KIBIN, I. N., et al., Izvestiya VUZ, Chernaya Metallurgiya, No 9, 1973,
pp 159-161

they have selected the optimal modes and saturated compositions that allow them to produce titanium-plated films, 40-150 micrometers thick with a titanium content up to 70-80 percent. The article contains 4 illustrations and 5 bibliographic references.

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USSR

UDC: 621.372.630

MESHCHANOV, V. P., KIBIRSKIY, Yu. V., and KUTUZOVA, Ye. N.

"Directivity of Band Couplers With Inner Circular Conductors"

Elektron. tekhnika. Nauchno-tekhn. sb. Kontrol'no-izmerit. apparatura (Electronic Engineering, Scientific-Technical Collection, Control and Measurement Equipment) 1970, No. 3(21), pp 154-157 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3B153)

Translation: A method is considered for improving the directivity of the coupler with ribbon lines and inner circular conductors, involving the connection of grooved line sections between standard conducting coaxial lines and the coupling region. Computations of the coupler are given. The results of the computation are confirmed by the experimental data. Three illustrations, three tables, bibliography of three. H. S.

1/1

USSR

UDC 621.382.2:539.1.074

LITOVCHENKO, P. G., GONCHAR, V. G., ZARAFASH, E. I., DENILOVA,
G. N., and KIBRALO, M. I.

"Some Special Semiconductor Detector Types for Studying Nuclear Reactions"

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No. 4, 1970, pp 122-129

Abstract: Noting that recent articles have been devoted to nuclear reaction detectors made of silicon compensated with lithium and having a sensitivity region thickness of up to 6 mm, the authors describe their experiments using charged particles of higher energy which entered the silicon to a depth of several millimeters. The detectors used by the authors had a resolution of 50-60 kev for alpha particles of Am^{243} with an energy of 5.8 Mev. The better detector specimens with an area of about 2 cm² had a resolution of 30 kev. The plot of the Am^{243} alpha particle spectrum detected by a No. 52 specimen is shown. To prepare detectors of this and other types, the authors used the brand EMB-1000 of silicon, which is obtained from the noncrucible zone of the melt and contains less than $2 \cdot 10^{19}$ oxygen atoms per cc, with the lifetime of

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USSR

LITOVCHENKO, P. G., et al., Poluprovodnikovaya tekhnika i mikroelektronika,
No 4, 1970, pp 122-129

minority carriers varying from 200-400 μ s and a dislocation concentration
of less than $5 \cdot 10^4$ cm^{-2} . A diagram of the cross-section construction of
the planar detector as well as the diagrams of the ring and "hat" types is
shown.

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USSR

UDC 612.89+612.814

~~KIBYAKOV, A. V.~~, KOMAROV, G. P., and GAK, YE. Z., Chair of Normal Physiology,
First Medical Institute, Leningrad

"On the Possible Role of Hydrodynamic Factors in Synaptic Transmission"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 57, No 11,
1971, pp 1,641-1,646

Abstract: One of the many aspects of the process of synaptic transmission of excitation which has not yet been clarified is the question of what kind of forces cause the mass approach of vesicles to the presynaptic membrane. In this article the authors examine the possibility that these forces are the magneto-hydrodynamic forces which are generated during the development of the action potential in the following way: at the moment of transmission of the action potential, large electrical currents are generated and lead directly to the occurrence of high-intensity magnetic fields in the premembrane areas, the voltage of which decreases very rapidly with distance. The interaction of the electrical currents with these magnetic fields generates large magnetohydrodynamic forces, which are directed parallel to the axis of the axon, that is, they will exert a significant impulse pressure on the axoplasm and the vesicles contained in it, causing them to move toward the presynaptic membrane.

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USSR

KICHEYEV, V. Ye.

"The Problem of Optimization of Certain Geometric Parameters of Statically Defined Ribs"

Tr. Kazan. Aviats. In-ta. [Works of Kazan' Aviation Institute], 1971, No 139, pp 47-63, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 V361, by the author).

Translation: An arbitrary rib is studied in static loading. The displacements of elements of the rib have bilateral limitation. The conditions of minimum weight are used to determine the optimal cross sections of rods and coordinates of joints. The loss of stability of compressed rods and the limitation of flexibility are considered. The method of Lagrange factors is used to solve the problem. A number of particular cases are studied, for which analytic solutions are produced. It is suggested that the gradient method be used in the general case to minimize the Lagrange functions.

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AA0052398- KICHIGIN A.F. UR 0482

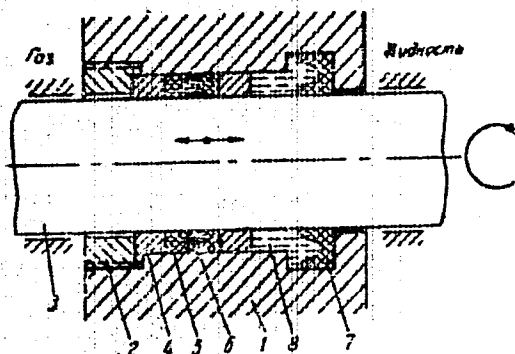
Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 1-70

241850 SEAL for a rod which has reciprocating and rotating motion improves reliability of the seal separating the gas from the liquid. The rod 3 is fitted in the body 1 with a nut 2. The bronze 4, leather 5 and rubber 6 rings and a cup 7 provide a sealing space. The liquid fills the space 8 between them and provides a hydraulic seal. During the operation, when the liquid pressure exceeds the gas pressure the cup 7 will allow the liquid to pass into the space 8. This compresses the rings and prevents the gas escape into the liquid during the stroke. When the rod is stationary, gas is sealed by the rings which are held by the pressure of fluid in the space 8 maintained by the cup 7.

25.1.68 as 1211700/25-8.A.F.KICHIGIN et alia.
KARAG & TECHNICAL INST. (29.8.69) Bul 14/18.4.69.
Class 47f. Int.Cl.F 16j.

19821010

AA0052398



Kichigin, A. F.; Shchepetkin, G. V.; Lazutkin, A. G.; Vakulin, P. N.
Karagandinskiy Politeknicheskii Institut

2/2

19821011

✱

USSR

UDC 539.319:539.219.2

TUL'CHIY, V. I., KICHIGIN, V. G., and BUDAK, V. D., Nikolayev Shipbuilding Institute

"A Plate With Periodically Situated Groups of Arbitrary Reinforced Openings"

Kiev, Prikladnaya Mekhanika, No 6, Jun 72, pp 122-127

Abstract: There is presented the solution of a two-dimensional problem for plates with periodically situated groups of arbitrary openings without angular points, the edges of which are reinforced by complex elastic elements. The problem is solved by a combination of the method of a small parameter and the method of series, and is reduced to the solution of problems similar to those of a problem for a plate with circular openings. For a specific case, it is proved that the obtained system of equations is quasi-regular. Numerical examples are presented. 4 figures. 6 references.

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USSR

UDC 539.3

TUL'CHIK, V. I., KICHIGIN, V. G., SAPRYKINA, L. T., and YURCHENKO, T. A.,
Nikolayev Shipbuilding Institute

"Concerning the Equilibrium of a Plate With Arbitrarily Situated Reinforced
Circular Apertures"

Kiev, Prikladnaya Mekhanika, No 1, 1971, pp 61-67

Abstract: The article deals with the two-dimensional stressed state of an infinite isotropic plate with any number of arbitrarily situated circular openings, the edges of which are reinforced by narrow elastic rings. The boundary conditions are written down with use of the complex Kolosov-Muskhelishvili potentials. By means of the series method in combination with the method of Cauchy-type integrals, the problem is reduced to an infinite quasiregular system of equations, which is realized on a digital electronic computer by the truncation method. The numerical data of some calculations are presented, which make it possible to ascertain the influence of the number of apertures on the stressed state of the plate. 2 figures, 1 table, 4 bibliographic entries.

I/I

USSR

UDC: 536,46:533.6

OSVETINSKIY, S.A., KICHIN, YU.S. and BAKHMAN, N.N.

"Combustion of Solid Fuel in Gas Oxidizer Flow"

Odessa, 11-ya Vses. Konf. po Vopr. Ispareniya, Goreniya i Gaz. Dinamiki Dispersn. Sistem, 1972 (11-th All-Union Conference on Problems of Evaporation, Combustion and Gas Dynamics of Dispersion Systems, 1972), 1972, p 40 (from Referativnyy Zhurnal-Mekhanika, 1973, Abstract No 2B980)

Translation: Combustion of polymethyl-metacrylate with additions of urotropin, hexyl and copper needles in flow of oxygen was investigated. Tests were conducted with cylindrical specimens of $d_H = 8$ mm original inside diameter, 70 mm length made by compacting the mixture polymethylmetacrylate powder with additions. The oxidizer flow density ρv varied from 10 to 40 $\text{gr/cm}^2 \text{sec}$. The combustion chamber pressure was 5-70 atm.

It is shown that by adding hexyl and copper needles to the fuel it is possible to control the effect of pressure and oxidizer flow density on the speed of gasification.

1/1

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USSR

UDC 629.7.036.54-66:536.46

OSVETIRSKIY, S. A., KICHIN, YU. S., and BAKHMAN, N. N.

"The Combustion of a Solid Fuel in a Stream of Gaseous Oxidant"

Odessa, 11-ya Vses. Konf. po Vopr. Ispareniya, Goreniya i Gaz. Finaniki Dispersn. Sistem, 1972 -- Sbornik (11-th All-Union Conference on Problems of the Evaporation, Combustion, and Gas Dynamics of Dispersed Systems, 1972 -- Collection of Works), 1972, p 40 (from Referativnyy Zhurnal -- Aviatsionnyye i Raketnyye Dvigateli, No 1, 1973, Abstract No 1,34.144 Resune)

Translation: A study was made of the combustion of polymethylmethacrylate (PMMA) with additives of urotropine, hexogen, and copper needles in a stream of gaseous oxygen. The experiments were conducted on cylindrical specimens with an initial internal diameter of $d_H = 8$ mm and a length of about 70 mm, obtained by pressing mixtures of powdered PMMA with the additives. The flow density of the oxidant (pv) varied from 20 g/cm² sec to 40 g/cm² sec. The pressure in the combustion chamber was 5 -- 70 physical atmospheres. It was shown that by means of the introduction of hexogen and copper needles into the fuel as additives, it is possible effectively to change the relationship of the gasification rate to the pressure and density of the oxidant flow.

1/1

- 20 -

1/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--GRAPHIC DETERMINATION OF THE VISCOSITY OF MINERAL OILS THICKENED
WITH POLYISOBUTYLENE -U-
AUTHOR--(02)--KICHKIN, G.I., LASHKHI, V.L.
COUNTRY OF INFO--USSR
SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (2), 10-13
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--MINERAL OIL, GRAPHIC TECHNIQUE, LUBRICATING OIL, MOLECULAR
WEIGHT, FLUID VISCOSITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1518 STEP NO--UR/0318/70/000/002/0010/0013
CIRC ACCESSION NO--AP0118505
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118505

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FORMULA $\log V$ EQUALS $(M \exp(0.014 \log M + 0.863)) C^{-67,700}$ (V IS THE RELATIVE VISCOSITY, M IS THE MOL. WT. OF POLYISOBUTYLENE (I), C IS THE CONCN. OF I) WAS EMPIRICALLY DEDUCED TO CALC. V OF A LUBRICATING OIL CONTG. ADDED I. THE VERIFICATION OF THE FORMULA AGAINST V EXPTL. DATA SHOWED THAT IN 37 SAMPLES THE ERROR OF CALCD. V WAS SMALLER THAN OR EQUAL TO 10PERCENT, IN 7 SAMPLES IT WAS 10-15PERCENT, AND IN 2 SAMPLES IT WAS SMALLER THAN 20PERCENT.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--PREPARATION OF UNSATURATED ALCOHOLS BY THE HYDROGENATION OF
ALPHA,BETA UNSATURATED ALDEHYDES IN THE PRESENCE OF AN IRIIDIUM CATALYST
AUTHOR--(05)--KHIDEKEL, M.L., BAKHANDOVA, E.N., ASTAKHOVA, A.S.,
BRIKENSHTEYN, KH.A., SAVCHENKO, V.I.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 499
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--HYDROGENATION, IRIIDIUM, CATALYST, ALDEHYDE, FURAN, BENZENE
DERIVATIVE, ALCOHOL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/0625 STEP NO--UR/0062/70/000/002/0499/0499
CIRC ACCESSION NO--AP0119537
UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0119537
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE PRESENCE OF IR CATALYST,
UNSATD. ALDEHYDES, SUCH AS CH SUB2. CHCHO, MECH:CHCHO, PHCH:CHCHO, AND
FURYLACROLEIN, ARE HYDROGENATED TO UNSATD. ALCS. IN 70-100PERCENT
YIELDS. THE REACTION IS RUN AT NORMAL PRESSURE AND ROOM TEMP. THUS, 3
MILLIMOLAS PHCH:CHCHO IN 10 ML 96PERCENT ETOH WITH 0.5 G 5PERCENT IR-C
GAVE AFTER UPTAKE OF 1 MOLAR EQUIV. H, 100PERCENT PHCH:CHCH SUB2 OH. A
2ND MOLE H WAS TAKEN UP AT A MUCH REDUCED RATE. THE CATALYST MAY BE
REUSED REPEATEDLY. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

Composite Materials

USSR

UDC 620.183:620.17

KIDIN, I. N., LIZUNOV, V. I., and BELYAVSKAYA, V. M., Moscow Institute of Steel and Alloys"

"The Role of Structural Components in Hardening Natural Composite Materials"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 7, 1973, pp 136-140

Abstract: The dependence of the yield point and of the ultimate strength of steel 60 and of steel U8 on the interlaminar distance in sorbite was evaluated. Steel with a fibrous structure possesses a higher hardening factor in deformation than steel with a chaotic disposition of cementite particles. When calculating the strength of a fibrous composite material, not only the strength of the particles of the hardening phase must be accounted for, but also the effect of hardening the matrix at the expense of diminution domains of barrierless motion of dislocations. A good correlation between the calculated and actual strength of the composite results in equal strength of the matrix and iron with the size of cells equal to the interlaminar distance in the steel. Three figures, eight bibliographic references.

1/1

USSR

UDC 669.295:621.785.53

KIDIN, I. N., ANDRYUSHECHKIN, V. I., OPALEV, S. B., POGOZHEV, A. I., Moscow
Institute of Steel and Alloys

"Calorizing Titanium and VT-14 Alloy in Powders With the Use of Electric Heating"

Moscow, IVUZ. Chernaya Metallurgiya, No 5, 1972, pp 139-1422

Abstract: The authors study diffusion calorizing of technically pure titanium VT1-0 and titanium alloy VT-14 with the use of high-speed electric heating. The specimens were flat strips measuring 60 x 5 mm in thicknesses of 0.3-0.6 mm. Calorizing was done at 1000-1100°C for 3-10 minutes. The specimens were heated at rates of 10 and 500 deg/s by direct passage of electric current through them. Temperature was measured by a chromel-alumel thermocouple accurate within ±5 deg. Calorizing was done in powders consisting of a mixture of aluminum (30-70%), aluminum oxide (67-27%) and ammonium chloride (3%). The process was done in argon to prevent oxidation. The structure, phase composition of the diffusion layers and the aluminum content in these layers were studied by methods of metallographic, x-ray radiographic phase and microscopic x-ray spectral analysis, as well as by

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KIDIN, I. N., et al., IVUZ. Chernaya Metallurgiya, No 5, 1972, pp 139-142

measurements of the microhardness and microthermoelectromotive force. It was found that diffusion layers 50-100 μm deep can be produced in 5-10 minutes. The use of electric heating intensifies the process of titanium calorizing. Increasing the rate of electric heating forms deeper diffusion layers. Calorizing increased the thermal stability of pure titanium by a factor of 10, and that of VT-14 alloy by a factor of 5.

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UDC 669.1'24:620.186:539.219.3:669.789

KIDIN, I. N., SHCHERBEDINSKIY, G. V., ANDRYUSHECHKIN, V. I., and VOLKOV, V. A., Moscow Institute of Steel and Alloys

"Diffusion of Carbon in Austenite for an Fe-30% Ni Alloy During Reverse Martensite Transformation"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, Jan 73, pp 8-10

Abstract: The authors studied the effect of varied state of austenite structure on the diffusion of carbon in an austenitic Fe-30% Ni alloy. It was found that the decrease in the diffusion coefficients after the gamma-alpha-gamma transformation was probably associated with the formation of a large number of defects in the austenite structure, which results in slowing down the diffusion process as a result of the interaction of carbon atoms with austenite lattice defects. Experimental data showed the energy of carbon atom-dislocation interaction amounted to $10,600 \pm 1050$ cal/mole. 4 figures, 1 table, 4 bibliographic references.

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UDC 669.14:620.181

KIDIN, I. N., IIZUNOV, V. I., MAKSIMOVA, O. V., and BORODINA, YE. K., Moscow
Institute of Steel and Alloys

"Production of a Composite Material Based on the Ferrite-Martensitic Structure
of Steel 20"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 1,
1973, pp 134-137

Abstract: The possibility of producing natural composite materials based on the layered ferrite-martensitic structure of steel 20 is analyzed. The method consists in heating steel by direct current transmission ($v=100$ deg/sec) up to $750-780^{\circ}\text{C}$ (two-phase region), rolling, and hardening in rollers. After such processing, a low-temperature anneal is carried out. At optimum processing conditions ($\epsilon=40-50\%$, $t_{\text{anneal}}=250^{\circ}\text{C}$), the tensile strength $\sigma^1=155-160$ kg/cm² and the elongation $\delta^1=2-4\%$ at 100% viscous fracture. In this case, the structure consists of a ferritic matrix and sections of annealed martensite ($H=530-550$), oriented along the axis of rolling. The dimensions and the form of martensitic section are determined, as is the volume part of the martensite, which equals $\sim 58\%$. Critical values of σ^* , v , and $1/h$ were $1/2$

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KIDIN, I. N., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 1, 1973, pp 134-137

calculated; it is demonstrated that the produced material conforms to the requirements of composite materials. Four figures, one formula, seven bibliographic references.

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Thermomechanical Treatment

USSR

KIDIN, I. N., LIZUNOV, V. I., BELYAVSKAYA, V. M., and YEREMENKO, V. I., Moscow Institute of Steel and Alloys

"Study of the Mechanism of Hardening of Wire by Electrothermomechanical Treatment"

Moscow, IVUZ Chernaya Metallurgiya, No 3, 1971, pp 129-132.

Abstract: The influence of electrothermal and electrothermomechanical treatment on the structure and properties of wire made of type 60 steel was studied. The electrothermomechanical treatment was found to produce a higher tensile strength (130 kg/mm^2) while retaining a high level of ductility. Electrothermal treatment produced a tensile strength of 126 kg/mm^2 , while ordinary patenting resulted in a strength of 117 kg/mm^2 . Electrothermal and electrothermomechanical treatment significantly improve the structure.

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USSR

KIDIN, I. N., ANDRYUSHECHKIN, V. I., and OPALEV, S. B., Moscow Institute of Steel and Alloys

"The Interaction of Titanium With Rarefied Air During Electric Heating"

Moscow, Izvestiya vysshikh uchebnykh zavedeniy: Chernaya metallurgiya, No 5, 1971, pp 139-142

Abstract: The authors study the interaction of grade VT1-0 commercially pure titanium with the residual gases of laboratory air at a rarefaction of 10^{-1} mm Hg under conditions of rapid electric heating and slow heating in a furnace. The study was conducted using specimens made from annealed, commercial VT1-0 grade titanium (C=0.33%, $N_2 = 0.02\%$, $H_2 = 0.004\%$, Fe = 0.08%, Si = 0.04%, and $O_2 = 0.1\%$) with the following dimensions: 0.1 x 10 x 65 mm. The specimens were electrically heated by passing industrial frequency electric current directly through them. Slow heating was accomplished in an electric resistance furnace. The electric heating rate in the phase transformation temperature range for titanium was 150 degrees/sec. (1.5 degrees/sec. in the case of heating in the furnace). The rate of cooling in the same temperature interval was 50-70 degrees/sec. The phase transformation temperature was 880° C. This was determined by the inflection on the cooling curves. The

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temperature was measured using a chromium-aluminum thermocouple. The interaction of titanium with rarefied air was studied within the 800-1000°C interval. Methods of electric resistance, micro-hardness, and microthermoelectromotive force measurements, along with weight analysis, indicate a great degree of activity in the interaction between the gas medium and titanium in the case of electric heating as opposed to slow heating in a furnace. Under experimental conditions, in addition to the diffusion of oxygen into titanium, a significant quantity of nitrogen also is diffused. Original article: three figures, one formula, and six bibliographic entries.

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USSR

~~KIDIN, I. N., LIZUNOV, V. I., BELYAVSKAYA, V. M., and YEREMENKO, V. I.,~~ Moscow Institute of Steel and Alloys

"Study of the Mechanism of Hardening of Wire by Electrothermo-mechanical Treatment"

Moscow, IVUZ Chernaya Metallurgiya, No 3, 1971, pp 129-132.

Abstract: The influence of electrothermal and electrothermomechanical treatment on the structure and properties of wire made of type 60 steel was studied. The electrothermomechanical treatment was found to produce a higher tensile strength (130 kg/mm^2) while retaining a high level of ductility. Electrothermal treatment produced a tensile strength of 126 kg/mm^2 , while ordinary patenting resulted in a strength of 117 kg/mm^2 . Electrothermal and electrothermo-mechanical treatment significantly improve the structure.

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UDC: 620.178.15.05

KIDIN, I. N., ANDRYUSHECHKIN, V. I., and GORBUNOV, I. P.

"Machine for Determining Residual Stresses on the Basis of
PMT-3 Equipment"

Moscow, Zavodskaya laboratoriya, No. 1, 1971, pp 107-109

Abstract: The description is given of a machine for determining the residual stresses in the surface layers of plastic specimens. The machine has as its basis the PMT-3 microhardness meter, an optical device used to measure the bend in the specimen arising from the removal of a layer in the course of the test, by a special device which continuously and electrolytically scrapes the surface layer of the specimen. A diagram of the device is given together with a detailed explanation of its operation. The machine was tested by measuring the residual stresses in the surface layer of welded type-20 steel plates. The results of these measurements agreed with the results obtained in the literature by other methods. The authors, members of the Moscow Steel and Alloy Institute, claim for their method the advantage that it takes into account the specific nature of the residual stress distribution in the specimens after surface toughening.

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UDC 620.171.32:669.295:669.015.4

KIDIN, I. N., MEDVEDEV, V. V., and KIRIDONOV, E. M., Moscow Institute of Steel and Alloys

"The Effect of Heating Rate on the Mechanical Properties of Cold-Deformed Titanium"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Chernaya Metallurgiya, No 9, 1970, pp 135-136

Abstract: The mechanical properties of cold-deformed VT1-0 titanium were studied under conditions of a continuous high rate of heating and under isothermic conditions after a high rate of heating. Samples of special form and dimensions were made of 0.2 mm thick sheet metal. Experimental and measuring techniques are briefly described. The results show that in a time interval of 1-200 sec before failure, the short-time heat resistance depends substantially on the heating rate. Temperatures for achieving plastic deformations of 0.2%, 0.5%, etc., are higher, the greater the rate of continuous heating.

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UDC 669.11.669.18:621.785.53

KIDIN, I. N., ANDRYUSHECHKIN, V. I., and LEVTANOVA, N. M., Moscow Institute of Steel and Alloys

"Calorizing of Iron in Pastes Using Electric Heating"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Chernaya Metallurgiya, No 9, 1970, pp 137-140

Abstract: A study was made of the effect of a high rate of electric heating on the kinetics of the formation of the structure and phase content of Armco iron in calorizing in pastes at 950-1200°C for 1-10 min. Samples were heated by the contact method at a rate of 10 and 50 deg/sec. The paste composition (88% FeAl + 10% quartz powder (marshallite) + 2%NH₄Cl) makes it possible to obtain the greatest layer thickness. For comparison, heating was conducted in paste at a rate of 10 deg/sec and in a powder mixture at 0.1 deg/sec with a holding time of 15 min to 2 hr. Electric heating makes it possible to intensify the process of metal saturation by aluminum by more than 12 times; the 120-160-mm layer thickness is attained at 1100° in 2-5 min. It was established by metallographic and other methods that electric heating in calorizing produces a

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