USSR

UDC 539.311

ANDREYEV, L. B., D'YACHENKO, V. YE., PROKOPALO, YE. F., Dnepropetrovsk State University

"The Stability of a Cylindrical Shell, Supported on an Elastic Base, During Axial Compression"

Kiev, Prikladnaya Mekhanika, Vol 8, No 2, Feb 72, pp 33-39

Abstract: An investigation is made of the axisymmetric stability of a longitudinally compressed cylindrical shell of arbitrart length with arbitrary boundary conditions, and a bilateralelastic base. The shape of the curved surface is not given in advance, but is calculated simultaneously with determination of the critical load. An algorithm is worked out for calculating the critical load and the form of stability loss for fastening and hinge support of the ends. Consideration is given to the limit case of an absolutely rigid base. The problem is solved in linear formulation by the method of dynamic programming. Results of tests made on steel shells with an inserted rigid cylinder are compared with the calculation data. Four figures, 1 table, 9 references.

1/1

USSR

UDC 669.14

PROKOPCHENKO, YE. A., OMEL'YANENKO, N. T., and CHERVONEV, L. S., Zaporozh'ye Pedagogical Institute

"Temperature Relationship of Magnetic Susceptibility in Fe-Si Alloys Coated With Nickel Films"

Kiev, Metallofizika, No 39, 1972, pp 89-91

Abstract: Results are presented of an investigation into the temperature relationship of maximum differential susceptibility in an Fe-Si alloy coated with films of galvanically deposited nickel. It was established that with increased temperature a third maximum χ appears which does not correspond to $\chi_{max} \uparrow \downarrow$ and $\chi_{max} \uparrow \rightarrow$. The appearance of the third susceptibility maximum was apparently associated with the decreased volume of columnar domains and the primary increase in the volume of locking domains. 1 figure, 5 bibliographic references.

1/1

USSR

UDC 669.14.018:583

MIROSHNICHENKO, F. D., and PROKOPCHENKO, Ye. A., Zaporozh'ye Pedagogical Institute

"On the Effect of Nickel Films on Magnetic Properties of Iron Silicide Alloy"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 6, Jun 71, pp 1191-1197

Abstract: The effect of nickel films on magnetic properties of iron silicide alloy was experimentally investigated. It was found that nickel films of supercritical thickness, deposited by galvanization on specimens of iron silicide alloy, changed the domain structure of the alloy involving a substantial change of its magnetic properties. A method of calculating the main magnetic parameters of specimens covered with a nickel film of supercritical thickness is demonstrated. Calculation results agree satisfactorily with the experimental data. The latter are discussed by reference to diagrams showing the magnetostriction dependence on the magnetic induction, the effect of tensile strength on the coercive force and residual induction, and the permeability

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USSR

MIROSHNICHENKO, F.D., et al, Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 6, Jun 71, pp 1191-1197

dependence on the external load. Data of the observed anisotropic effect of nickel surface films on magnetic properties of transformer steel are presented. They demonstrate also the decreased magnetostriction in specimens cut perpendicularly to rolling. Five illustr., one table, 14 biblio. refs.

2/2

1/2 038 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--EFFECT OF SURFACE OXIDE FILMS ON THE MAGNETIC PROPERTIES OF TRANSFORMER STEELS -U-

AUTHOR-(04)-PROKOPCHENKO, YE.A., MIROSHNICHENKO, F.D., KRUTSILO, I.K., MUSHTAYEV, V.F.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(2), 267-71

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--TRANSFORMER STEEL, MAGNETIC PROPERTY, TECHNICAL STANDARD, STEEL SHEET, OXIDATION, SILICON ALLOY, SINGLE CRYSTAL, ANISOTROPY, ETCHED CRYSTAL, COLD ROLLING, OXIDE FILM/(U)GOST E320 TRANSFORMER STEEL, (U)GOST E330 TRANSFORMER STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1926

STEP NO--UR/0048/70/034/002/0267/0271

CIRC ACCESSION NO--AP0115740

UNCLASSIFIED

2/2 038 UNCLASSIFIED

CIRC ACCESSION NO--AP0115740 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SERIES OF EXPTS. WAS PERFORMED TO STUDY THE EFFECT OF SURFACE OXIDE FILMS 3-5 MU THICK, OBTAINED BY THERMAL OXION. IN AIR, ON THE REDISTRIBUTION OF DISLOCATION IN AND THE MAGNETIC PROPERTIES OF SOVIET TRANSFORMER STEELS GOST E320 AND E330. PLATE SPECIMENS 250 TIMES 20 TIMES 0.35 MM CUT OUT OF COLD ROLLED TRANSFORMER STEEL PLATES AT ANGLES OF 0, 55, AND 90DEGREES WITH RESPECT THE THE ROLLING DIRECTION WERE SUBJECTED TO MAGNETIC MEASUREMENTS AND EXPOSED TO AIR AND (OR) HIGH PURITY AR AT VARIOUS ELEVATED TEMPS. THEN THE FILM THICKNESS WAS DETD. AND THE MAGNETOSTRICTION, COERCIVE FORCE, REMANENT INDUCTION, AND SP. MAGNETIC LOSSES OF THE SPECIMENS WERE MEASURED AGAIN. ANISOTROPY OF THE MAGNETIC PROPERTIES WAS ALSO STUDIED AS THE SPECIMENS CUT AT THE 3 DIFFERENT ANGLES (LONGITUDINALLY, TRANSVERSELY, AND AT 55DEGREES) FROM THE ENROLLED PLATE WERE CONSIDERED TO BE QUASI SINGLE CRYSTALS CUT ALONG THE (100), (110), AND (111) CRYSTALLOGRAPHIC PLANES, RESP. IN SUPPLEMENTARY EXPTS. THE THICKNESS OF THE OXIDE FILM WAS CHANGED BY ETCHING OR ADDNL. ANNEALING. THE PRESENCE OF AN OXIDE LAYER ON THE SURFACE OF THE FESI ALLOYS IMPROVED THEIR MAGNETIC PROPERTIES FROM THE STANDPOINT OF TRANSFORMER APPLICATION, LOWERING THEIR MAGNETOSTRICTION, COERCIVE FORCE, REMANENT INDUCTION, AND SP. LOSSES. AN ANISOTROPY OF THE EFFECT OF THE SURFACE FILM ON THE MAGNETOSTRICTION AS WELL AS ON THE OTHER MAGNETIC PARAMETERS OF THE TRANSFORMER STEELS WAS FOUND. FACILITY: ZAPOROZH. GOS. PEDAGOG. INST., ZAPOROZHE, USSR.

UNCLASSIFIED

USSR

UDC 621.793.3;669.245'781(088.8)

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

"Procedure for Chemical Deposition of Nickel-Boron Alloy"

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

Translation: In order to improve the coating quality and reduce the operating temperature, a procedure is proposed for chemical deposition of Ni-B alloy in a solution containing ethylenediaminediborane as the reducing agent. The composition of the solution was as follows: 15-20 grams/liter of $NiCl_2 \cdot 6H_2O$, 0.02-0.1 gram/liter of $Na_2S_2O_3$, 12-18 ml/liter of ethylenediamine (100%), 2.5-8 grams/liter of NaOH, 0.9-2.5 grams/liter of ethylenediaminediborane, a temperature of 30-70°, a pH of 12.7-13, and S/V = 2 dm^2/liter. The coatings obtained contain 0.5% B, they have magnetic properties and are distinguished by high hardness (1,500 kg/mm^2 in the initial state). It is recommended that the proposed procedure be used when applying coatings to plastics.

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USSR

UDC 621.793.3:669.245'28'781

VAL'SYUNENE, YA. I., PROKOPCHIK, A. YU., KIMTENE, D. P., and VILUTENE, V. A.

"Preparation of Tri-Component Ni Coatings by Chemical Methods"

Kaunas, Tr. AN LitSSR (Works of the Academy of Sciences LitSSR), No 2(69), Series B, 1972, pp 3-16 (from Referativnyy Zhurnal -- Khimiya, No21(II), 1972, Abstract No 21L313 by E. Z. Napukh)

Translation: Conditions for the chemical deposits of coatings and some physical and mechanical properties of Ni-B alloys containing Mo, W, Fe, and Re are discussed. Alloys under consideration can be deposited under industrial conditions from alkaline solutions containing Ni^{2+}, reducer $NaBH_4$, stabilizer $K_2S_2O_5$, ethylenediamine (individually or mixed with tartarates), and Na_2MoO_4, K_2WO_4, $NaReO_4$, or $FeSO_4$ salts, depending on the alloy composition. The concentration of Re in individual alloy reached 20 weight %, Mo 7 weight %, W 9 weight %, Fe 60 weight %. The concentration of B in all cases was from 3 to 7 weight %. All alloys were semilustrous, with low porosity, and their microhardness after thermal treatment was within 1050-1500 kg/mm^2. All of them were nonmagnetic, with the exception of Ni-Fe-B alloy.

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P

Phytology

USSR

UDC 779.934

ZELEPUKHA, S. I., and PROKOPCHUK, A. F., Institute of Microbiology and Virology, Academy of Sciences Ukrainian SSR, and Krasnodar Scientific Research Institute of Food Industry

"Antimicrobial Activity of Extracts Obtained from Plants with Liquid Carbon Dioxide"

Kiev, Mikrobiolohichny Zhurnal, No 2, Mar/Apr 70, pp 268-270

Abstract: Purified and crushed plant particles were extracted with carbon dioxide at a pressure of 60-65 atm at 20-28°C for 15-60 min. The micellae were filtered off, the gas evaporated at 30-35°C, and the anhydrous extract was collected, yielding liquid or oily residue with odors specific for various plants. Twenty spices and medicinal plants were studied and all showed some antibacterial and antifungal properties in a dilution of 1:2,500 to 1:10,000. Only the extract from hop cones exhibited activity against gram-positive bacteria at a dilution of 1:100,000 to 1:250,000, probably because of its content of soft resins and α-acids. In sub-bacteriostatic doses, these agents failed to potentiate the activity of penicillin, streptomycin, levomycetin, erythromycin, biomycin or framycin against Staphylococcus aureus No 209.

USSR

UDC 537.521.7:621.315.61

ODYNETS, L. L., PLATONOV, F. S., PROKOPCHUK, Ye. M.

"Electrical Breakdown of Oxide Films on Aluminum"

Moscow, Radiotekhnika i Elektronika, Vol 26, No 9, Sep 71, pp 1739-1740

Abstract: The authors studied the electrical breakdown of Al_2O_3 films made by anodizing 99.996% pure aluminum in an aqueous solution of boric acid (30 grams per liter) and sodium tetraborate (0.05 gram per liter) at 70°C. Films 140-5600 Å thick were studied. The experiments were conducted in a vacuum of $5 \cdot 10^{-5}$-10^{-6} mm Hg at temperatures of -180 — +300°C. It was found that the electric strength of the films decreases with a rise in temperature. The electric field strength at breakdown of the film is asymmetric for opposite polarities, but this asymmetry decreases at temperatures in excess of 200°C. At comparatively low temperatures, an abrupt increase in the electric strength is observed for films thinner than about 2000 Å. This effect is not observed at 300°C. The experimental results show that breakdown of anodized films at moderately high temperatures is due to impact ionization by electrons.

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USSR

UDC 622.311.22:658.57.001.8

PROKOPENKO, A. G.

"Experimental, Adjustment, and Research Progress of the Southern Division of the ORGRES (State Trust for Organization and Rationalization of Regional Electric Power Plants and Networks) -- Results and Tasks"

Moscow, Naladochniye i Eksperimental'nyye Raboty ORGRES -- Sbornik (Adjustment and Experimental Projects of the ORGRES -- Collection of Works, No 39, 1970, pp 3-15 (from Referativnyy Zhurnal, Teploenergetika, No 1, 1971, Abstract No 1G35 by Yu. A. Mironova)

Translation: A survey of starting, adjustment, and experimental projects on domestically produced units. Since 1960, the Southern Department has been specializing on projects for the efficient combustion of gas and mazut in boiler combustion chambers. Due to the development of a design for a portable chromatographic analyzer, data have been obtained which permit reconsideration of the rules governing the combustion of gas and mazut, in particular the general rules governing the relationship of chemical incompleteness of combustion to the excess of air in the combustion chamber, the presence of a critical surplus of air at which this chemical

USSR

PROKOPENKI, A. G., Naladochniye i Eksperimental'nyye Raboty ORGRES -- Sbornik (Adjustment and Experimental Projects of the ORGRES -- Collection of Works, No 39, 1970, pp 3-15 (from Referativnyy Zhurnal, Teploenergetika, No 1, 1971, Abstract No 1G35 by Yu. A. Mironova)

incompleteness of combustion appears. On the basis of a chromatograph, instruments were created, as well as sequences for automation of the combustion process with a critical air surplus and correction with respect to chemical incompleteness of combustion. The relationship of the intensity of low-temperature corrosion and accumulations on the heating surfaces to air surpluses in the combustion chamber has been confirmed. The obtained experimental material made it possible for specific recommendations to be given to electric power plants with regard to the efficient combustion of sulfurous mazut. 4 figures.

2/2

USSR

UDC 615.43:535.242+547.944/945

NIKOLAYEVA, A. G., PROKOPENKO, A. P., and KRIVENCHUK, P. Ye., Zaporozh'ye Medical Institute; Khar'kov Scientific Research Institute of Pharmaceutical Chemistry

"Spectrophotometric Determination of Alkaloids of the β-Carboline Series in the Bark of Elaeagnus Angustifolia"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 6, 1970, pp 708-711

Abstract: The authors describe a spectrophotometric method of determining the amount of 1-methyl-β-carboline (harman) and 1-methyl-1,2,3,4-tetrahydro-β-carboline (tetrahydroharman) in the bark of Elaeagnus angustifolia (the Russian olive). It was found that harman in concentrations of 0.1-1 mg per 100 ml and tetrahydroharman in quantities of 0.5-2.4 mg per 100 ml conform to Bouguer-Lambert-Beer light absorption. The mean relative error of the method lies in the range of ±0.82-±1.05%. The alkaloids were extracted from the plant material by ethanol, and the content of harman and tetrahydroharman was determined after separation by thin-layer chromatography. Experimental studies show that the predominant alkaloid during the budding stage is tetrahydroharman, and that the concentration of this alkaloid then gradually decreases, reaching a minimum in the fruit-bearing stage. The concentration of harman increases toward the end of vegetation.

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PROKOPENKO, I.V.

JPRS 59208
6-73

XIV-11. STUDY OF THE STRUCTURAL PERFECTION OF THE HETEROEPITAXIAL Si-Ge SYSTEM

[Article by V. I. Vasilevskaya, I. Datsenko, Ye. K. Nikolskiy, I. V. Prokopenko, A. V. Stadnik, Kiev; Novosibirsk, III Simposium po Protsessam Rosta Kristallov i Plenok, Russian, 12-17 June 1972, p 201]

The structural perfection of the heteroepitaxial Si-Ge systems obtained by the method of sublimation of Si on the Ge substrate in the temperature range of 600-650° C at a growth rate of 0.1 microns/minute was investigated using the x-ray topographic diffractometric and metallographic methods. It was demonstrated that the degree of structural perfection of Si films on Ge is lower than the Ge films on Si. A sharp increase in the halfwidth of the rocking curves of the double-crystal spectrometer obtained from the film and the substrate was detected by comparison with the values characteristic of ideal crystals. The x-ray topography, however, did not reveal clear fragmentary structure characteristic of Ge films grown on Si substrates. The cause of this phenomenon is discussed.

USSR

UDC 612.017.1.014.482

PROKOPENKO, L. G., Kursk Medical Institute

"Stimulation of Biosynthesis of Gamma-M and Gamma-G Antibodies After X-Ray Irradiation"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 5, 1970, pp 74-76

Abstract: The purpose of the work was to study the effect of homologous gamma-globulin (5 mg) and large doses of antigen (up to 3 billion E. coli cells) on the production of gamma-M and gamma-G antibodies in irradiated (1,000 r) rabbits. Administration of homologous gamma-globulin to irradiated and vaccinated animals stimulated the production of gamma-M antibodies, and accelerated the appearance of gamma-G antibodies. Increased immunizing doses of antigen intensified the formation of gamma-M antibodies in the irradiated animals, but had no effect on the production of gamma-G antibodies.

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USSR

UDC 615.371:576.8-097.5

PROKOPENKO, L. G. and CHALYY, G. A., Kursk Medical Institute

"Effect of 7S Antibodies on the Primary and Secondary Immune Responses"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 12, 1971, pp 45-50

Abstract: Experiments were performed on 92 rabbits immunized with sheep erythrocytes or human serum proteins to study the effect of 7S antiserum antibody formation after the first and second inoculations of antigen. Injection of antiserum simultaneously with the antigen reduced the intensity of formation of 19 S antibodies and slowed the accumulation of 7S antibodies. However, when the antigen was given 20 days before the inital injection of 7S antiberum, the latter stimulated the formation of 19S and 7S antibodies. Both the inhibitory and stimulatory effects of the antiserum were antigen-specific. An immunestimulatory effect could be produced by administering low doses of antiserum simultaneously with the initial injection of antigen. Injection of 7S antiserum simultaneously with the second injection of antigen 10 days after the inital immunization had no effect on the total titers but inhibited the formation of 7S antibodies. When the second immunization was carried out 20 days after the first, the intensity of antibody formation was not affected, but the formation of 19S and 7S antibodies was somwhat prolonged.

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USSR

UDC 911.3:616.936(47+57)

RASHINA, M. G., SARIKYAN, S. Ya., DUKHANINA, N. N., PROKOPENKO, L. I., LYSENKO, A. Ya., and ZHUKOVA, T. A.

"Results of the Anti-Malaria Campaign in the USSR"

V sb. Vopr. med. parazitol. (Problems of Medical Parasitology -- collection of works), Moscow, 1970, pp 6-30 (from RZh-Meditsinskaya Geografiya, No 2, Feb 71, Abstract No 2.36.82, by A. Belyaev)

Translation: In 1967, 91 malaria foci were registered in the USSR (these are locations where 1 local or imported case was reported), among these were six active residual points, seven inactive residual points, 47 new potential points, four new active points, and 16 foci in large cities where transmission is impossible. The number of brought-in cases increases with each year. In 1959, they amounted to 0.7% of the total number of cases, in 1963 they were 45.5%, in 1966 59.5%, in 1967, 60.2%. Malaria was brought in from 56 countries, among them 36 African countries, 16 Southeast Asian countries and four Latin American countries. Tropical malaria predominated. Because of the long duration of 4-day malaria, cases of this form continue to appear (154 cases during 1958-1966).

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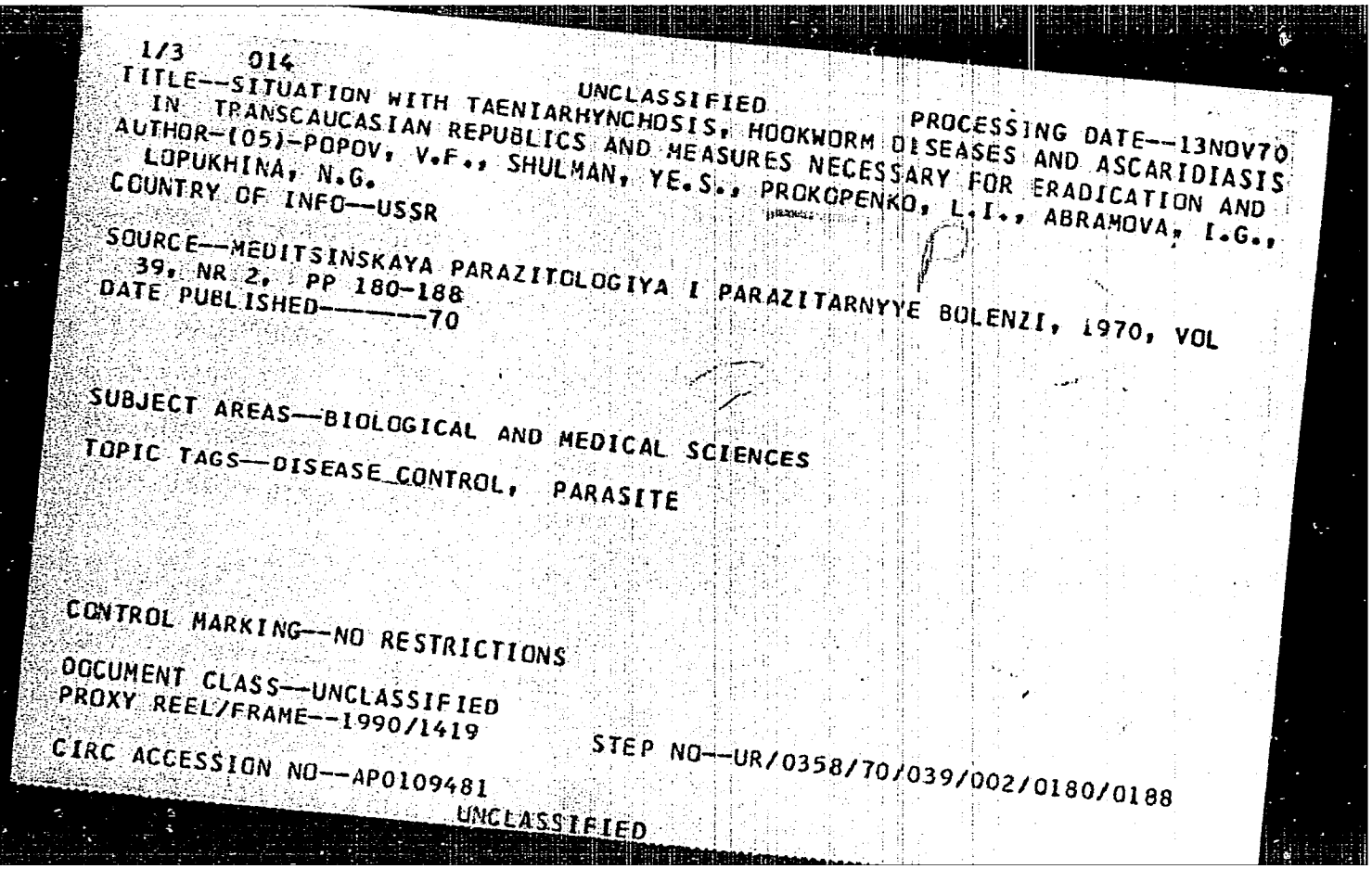

1/3 014 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SITUATION WITH TAENIARHYNCHOSIS, HOOKWORM DISEASES AND ASCARIDIASIS IN TRANSCAUCASIAN REPUBLICS AND MEASURES NECESSARY FOR ERADICATION AND
AUTHOR-(05)-POPOV, V.F., SHULMAN, YE.S., PROKOPENKO, L.I., ABRAMOVA, I.G., LOPUKHINA, N.G.
COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA PARAZITOLOGIYA I PARAZITARNYYE BOLENZI, 1970, VOL 39, NR 2, PP 180-188
DATE PUBLISHED----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DISEASE CONTROL, PARASITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/1419 STEP NO--UR/0358/70/039/002/0180/0188
CIRC ACCESSION NO--AP0109481
UNCLASSIFIED

2/3 014 UNCLASSIFIED

CIRC ACCESSION NO--AP0109481 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DECREEE OF THE USSR MINISTRY OF PUBLIC HEALTH NO. 230 OF MARCH 20, 1967 PROVIDES FOR A NUMBER OF MEASURES FOR INCREASING THE PACE OF ERADICATION AND REDUCTION OF INCIDENCE OF A NUMBER OF INFECTIOUS AND PARASITIC DISEASES IN THE SOVIET UNION. FROM YEAR TO YEAR THE RANGE OF EXAMINATIONS OF THE POPULATION FOR DETECTION OF HELMINTHIC DISEASES INCREASES IN THIS COUNTRY. THE AMOUNT OF WORK DONE FOR CONTROL OF HELMINTHIC DISEASES HAS INCREASED SIGNIFICANTLY IN REPUBLICS OF THE TRANSCAUCASUS WHICH, ALONGSIDE WITH INCREASING OF MATERIAL WELFARE OF THE PEOPLE, IMPROVEMENT OF THEIR SANITARY CULTURE, CONTINUOUSLY IMPROVING SANITARY CONDITIONS OF INHABITED AREAS RESULTED IN 1967 IN 2.1 FOLD REDUCTION IN THE INCIDENCE OF HELMINTHIC DISEASES IN THE POPULATION OF THE AZERBAIJAN AND THE ARMENIAN SSR, AND 2.8 FOLD REDUCTION IN THE GEORGIAN SSR AS COMPARED WITH THE LEVEL OF INCIDENCE IN 1950. EVEN THOUGH AS A RESULT OF MUCH WORK DONE IN SANITATION OF THE POPULATION FROM TAENIARHYNCHOSIS AND ASCARDIASIS THE INCIDENCE OF THESE HELMINTHIC DISEASES HAS BEEN REDUCED SEVERAL TIMES, IT IS STILL MUCH HIGHER THAN THE AVERAGE INDEX FOR THE SOVIET UNION. THE INCIDENCE OF HOOKWORM DISEASES IN THE POPULATION OF THE AZERBAIJAN SSR AND PARTICULARLY OF THE GEORGIAN SSR IN 1967 ALSO REDUCED SEVERAL TIMES AS COMPARED WITH THAT IN 1959, BUT ERADICATION OF THIS HELMINTHIC DISEASE REQUIRES STILL MUCH WORK TO BE DONE.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530006-1"

3/3 014 UNCLASSIFIED

CIRC ACCESSION NO--AP0109481 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--THE MAIN CONDITIONS FOR ERADICATION AND REDUCTION OF THE INCIDENCE OF HELMINTHIC DISEASES IN THE TRANSCAUCASIAN REPUBLICS INCLUDE, FIRST OF ALL, IMPROVEMENT IN THE ORGANIZATION OF HELMINTHIC DISEASE CONTROL MEASURES WITH ENLISTING OF COOPERATION OF THE GENERAL MEDICAL NETWORK, IMPROVEMENT IN THE GUIDANCE OF THIS WORK ON THE PART OF PUBLIC HEALTH MINISTRIES AND CHIEF PHYSICIANS OF DISTRICTS, DETECTION AND SANITATION OF ALL PATIENTS WITH TAENIARHYNCHOSIS, PARTICULARLY AMONG CATTLE BREEDERS, INTRODUCTION OF LABELLING AND VITAL DIAGNOSIS OF MEASLES IN CATTLE IMPROVEMENT OF VETERINARY AND SANITARY CONTROL IN PLACES OF CATTLE SLAUGHTER, MARKED IMPROVEMENT IN THE SANITARY CONDITIONS OF VILLAGES AND CATTLE BREEDING FARMS, IMPROVEMENT OF SANITARY EDUCATION OF THE POPULATION, DETECTION AND SANITATION OF ALL MICROFOCI OF HOOKWORM DISEASES, SANITATION OF MICROFOCI OF ASCARIDIASIS PARTICULARLY IN INTENSIVE FOCI. FACILITY: GLAVNOYE SANITARNO-EPIDEMIOLOGICHESKOYE UPRAVLENIYE MINISTERSTVA ZDRAVOOKHRANENIYA SSSR. FACILITY: INSTITUT MEDITSINSKOY PARAZITOLOGII I TROPICHESKOY MEDITSINY IM. YE. I. MARTSINOVSKOGO MINISTERSTVA ZDRAVOOKHRANENIYA SSR, MOSCOW.

UNCLASSIFIED

USSR

UDC: 8.74

GARMASH, V. A., PROKOPENKO, S. T.

"Digital Computer Modeling of the Process of Substituting a One-Time Commutation Mode for an Isolated Commutation Mode"

Moscow, Sist. raspredeleniya inform.--sbornik (Information Distribution Systems--collection of works), "Nauka", 1972, pp 220-227 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V634 [authors' abstract])

Translation: A procedure is described for reducing the process of isolated commutation to a one-time mode in which all customers in a certain time segment who are arriving in the system, as well as those which are remaining in the system for this time without service, are accepted for service. The results of statistical modeling of the process on a digital computer are presented.

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USSR

MISKARLI, A. K., MAKOV, N. N., and PROKOSHEV, V. A., Institute of Inorganic and Physical Chemistry

"Study of Ion-Exchange Sorption on Cations on Azerbaydzhan SSR Bentonites"

Baku, Doklady Akademii Nauk Azerbaydzhanskoy SSR, Vol 26, No 8, 1970, pp 26-29

Abstract: The article describes results of a study of regularities in the ion-exchange sorption of microquantities of cesium, strontium and calcium on Azerbaydzhan SSR bentonite from macrocomponent solutions. Equivalence of cation exchange on bentonite with a linear and a convex isotherm is established and exchange reaction constants are determined.

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GOLOVANOV, V. A., KRASNOV, YE. S., MERKIN, E. I., OSNOVINA, G. O., POLYAK, N. M., PROKOPENKO, V. G., and ERLIKH, E. I.

UDC 621.372.85

"Adhesives for the Ferrites of Super-High Frequency Instruments"

Elektron. tekhnika. Nauch.-tekhn. sb. Ferrit. tekhn. (Electronics Technology. Scientific-Technical Collection of Articles. Ferrite Technology), 1971, vyp.4 (31), pp 111-114 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 B154)

Translation: The authors study problems associated with the selection of an adhesive for mounting ferrite inserts in high power level, super-high frequency instruments. Test results are also presented for various working conditions. Original article: one table and three bibliographic entries. Resume.

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USSR

UDC 538.22:537.7:669.15:74.84-194

LYSAK, L. I., ANDRUSHCHIK, L. O., STORCHAK, N. A., and PROKOPENKO, V. G., Institute of Metal Physics, Academy of Sciences Ukr SSR

"Method for Studying the $k' \rightarrow \alpha_m$ Transition on the Basis of the Change in Physical Properties of Hardened Steels at Low Temperatures"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 3, Sep 70, pp 661-663

Abstract: The task of this work was the production of experimental data by a magnetometric method, as well as the measurement of the electrical resistance to confirm the fact that the change in R observed upon heating of steels quenched in liquid nitrogen is a result of the superimposition of two processes -- the increase of R resulting from formation of additional portions of k'-martensite from residual austenite and the reduction in R resulting from the $k' \rightarrow \alpha_m$ transition. A decrease in electrical resistance at below -100° was observed in manganese and rhenium steels, which could have been explained only by the structural changes related to the occurrence of the $k' \rightarrow \alpha_m$ conversion in these steels. The results of the experiments indicate that in order to study the $k' \rightarrow \alpha_m$ transition, the physical properties must be measured directly at the experimental temperatures, since cooling in liquid nitrogen for measurement of these properties leads to formation of additional martensite.

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USSR

PROKOPENKO, V. I.

"The Role of Information in an Antagonistic Conflict"

Zh. Vychisl. Mat. i Mat. Fix. [Journal of Computer Mathematics and Mathematical Physics], 1972, Vol 12, No 6, pp 1406-1419 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V495, by the author).

Translation: The role of information in an antagonistic game is studied. It is assumed that one of the players receives information on the fact that the move selected by his opponent belongs to a certain subset of strategies. The value of the information is understood in the sense of Sakaguchi (RZhMat, 1961, 5V98). The influence of the value of the information on the best guaranteed result is studied.

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USSR

UDC: 621.314

KASPEROVICH, A. N., MANTUSH, O. M., PROKOPENKO, V. I.

"Operation of Synchronized 'Voltage-Frequency' Converters"

Novosibirsk, Avtometriya, No 5, 1971, pp 79-85

Abstract: The operation of a synchronized voltage-frequency converter is analyzed, and experimental data concerning its operation is given. It contains a passive RC integrator amplifier which acts as a comparator amplifier, and its sensitivity is determined by the amplifier drift, one of the causes of which is heating in the circuit's input transistor stages. A block diagram of the converter is given and its operation explained. The basic causes of the appearance of nonlinear phenomena of the "dead zone" type are discussed. Since no reservations concerning the type of power supply for the circuit were made in the assumptions on which the analysis was based, the results of the latter are in general valid for synchronized circuits of this type. Results of experiments with the device, achieved in a testing period of 0.1 s, indicate that the synchronized circuit has excellent metrological characteristics.

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Acc. Nr: AP0036810 Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 1, pp 18-21

NOSOGEOGRAPHICAL ASPECT OF TYPHOID CARRIER STATE AND OPISTHORCHIASIS

P. Ye. Kravchenko, B. A. Zamotin, V. I. Prokopenko, A. A. Klimshin

Territorial distribution of typhoid carriers and of the extent of affection of the population with opisthorhiasis proved to coincide in graphic map analysis. Among the patients suffering from opisthorhiasis typhoid carrier state proved to be almost 5 times more frequent than among those free of this invasion.

D.M.

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REEL/FRAME

USSR UDC 621.385:530.145.6:67

KRYLOV, K.I., PROKOPENKO, V.T., BOGDANOV, M.P.

"CO_2 Laser For Experimental Surgery"

[Nauch.tr.] Leningr. in-ta usoversh. vrachey im. S.M. Kirova ([Scientific Works] Leningrad Institute For The Improvement Of Doctors imeni S.M. Kirov), 1971, Issue 97, pp 41-44 (from RZh--Radiotekhnika, No 9, Sept 1971, Abstract No 9D505)

Translation: A CO_2 laser in a continuous regime is described. A mixture of CO_2--N_2--He is continuously pumped through a discharge tube, between the electrodes of which a glow discharge is excited. The gas-discharge tube 1.8-m long and 50-mm in diameter fabricated from molybdenum glass has water cooling and is jointed with the terminal units [blok] by means of sylphons. The supply of 50-Hz alternating current takes place across a ferroresonance stabilizer, a step-up transformer, and a ballast resistance. The resonator is formed by plane and spherical (R = 16.2 m) mirrors. The focusing lens (BaF_2, F = 150 mm) makes it possible to concentrate the beam at a spot 0.5 mm in diameter with a power density up to 35 watt/mm^2. [Leningrad Institute Of Precision Mechanics And Optics.] 3 ill. 14 ref. V.I.

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USSR UDC 621.385:530.145.6:57

KHROMOV, B.N., KRYLOV, K.I., KOROTKEVICH, N.S., CHSOVA, YE.YE., PROKOPENKO, V.T., BOGDANOV, M.P.

"Test Of The Use Of A Laser During Surgical Operations (Experimental Studies)"

[Nauch.tr.] Leningr. in-ta usoversh. vrachey im. S.M. Kirova ([Scientific Works] Leningrad Institute For The Improvement Of Doctors imeni S.M. Kirov), 1971, Issue 97, pp 64-67 (from RZh--Radiotekhnika, No 9, Sept 1971, Abstract No 9D509)

Translation: The paper describes the use of a laser for dissection of soft tissues and organs of animals with the aid of a laser at the Department [kafedra] Of Operational Surgery of the Leningrad Institute For The Improvement Of Doctors. The continuous operation CO_2 laser with a power up to 20 watts had a 0.5 mm wide beam. The depth of the cut amounted to 10 mm (liver of a dog). Cutting off parts of the organs took place unsatisfactorily; the surface of the cut was dry and of a chestnut brown color with longitudinal stripes proceeding into the interior. Coagulated tissue is disposed on the line of the cut and in the adjoining tissues necrotic and necrobiotic changes develop with subsequent replacement of their connecting tissues and formation of a scar. 1 ill. 1 tab. V.I.

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USSR

UDC 621.383.292+621.383.52

BAZYLENKO, V. A., VORONIN, E. S., PROKOPENKO, V. Ye., STARKOV, G. S., Physics Department, Moscow State University

"On Selecting Photoreceivers for Reception of Weak Signals Against a Noisy Background"

Moscow, Pribory i Tekhnika Eksperimenta, No 4, Jul/Aug 71, pp 109-192

Abstract: The paper deals with the registration capacity of photoreceivers, which is defined as the minimum ratio of the signal power to the background power when the background is predetermined and the signal-to-noise ratio is equal to unity. Experimental data are given on the registration capacity of photomultipliers and photodiodes on wavelengths of 0.63 and 1.15 μ. Three types of photomultipliers with oxygen-silver-cesium cathodes (FEU-22, -62, and -83) and four types of germanium photodiodes (FD-1, -3, -3A and -6G) were studied. It was assumed that the photoreceivers have only shot noise. The emission source was a 170 W DC incandescent lamp. Curves are given for registration capacity as a function of operating conditions and quantum yield. It is found that the registration capacity of photodiodes on a wavelength of 0.63 μ at an emission power of 10 μW is about 20 times as high as the registration capacity of a photomultiplier, the factor increasing to 100 for a

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BAZYLENKO, V. A., et al., Pribory i Tekhnika Eksperimenta, No 4, Jul/Aug 71, pp 190-192

wavelength of 1.15 μ. In conclusion, the authors thank Yu. A. Il'inskiy and V. S. Solomatin for constructive criticism and constant interest in the work.

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1/2 015 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--ELASTIC SCATTERING OF PROTONS ON NUCLEI OF AVERAGE ATOMIC WEIGHT -U-

AUTHOR-(03)-PROKOPENKO, V.S., TOKAREVSKIY, V.V., SHCHERBIN, V.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(1), 126-35

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--PROTON SCATTERING, ELASTIC SCATTERING, DIFFERENTIAL CROSS SECTION, COULOMB INTERACTION, ANGULAR DISTRIBUTION, ZINC ISOTOPE, COPPER ISOTOPE, NICKEL ISOTOPE, IRON ISOTOPE, COBALT ISOTOPE, CHROMIUM ISOTOPE, VANADIUM ISOTOPE, TITANIUM ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0239 STEP NO--UR/0048/70/034/001/0126/0135

CIRC ACCESSION NO--AP0105315

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105315

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE BEAM OF 6.9-MEV P ACCELERATED IN A CYCLOTRON WAS FOCUSED BY A QUADRUPOLE LENS TO THE SCATTERING CHAMBERL. TARGETS WERE FREE LAYERS ENRICHED BY THE CORRESPONDING ISOTOPE. THE DIFFERENTIAL CROSS SECTION OF ELASTIC SCATTERING IN UNITS SIGMA-SIGMA SUBR (SIGMA IS DETD. EXPTL., SIGMA SUBR IS THE COULOMB CROSS SECTION) AS A FUNCTION OF THE ANGLE THETA IS GRAPHICALLY REPRESENTED FOR THE FOLLOWING NUCLEI: PRIME45 SC, PRIME46 TI, PRIME48 TI, PRIME49 TI, PRIME50 TI, PRIME51 V, PRIME50 CR, PRIME52 CR, PRIME56 FE, PRIME58 FE, PRIME59 CO, PRIME58 NI, PRIME60 NI, PRIME62 NI, PRIME64 NI, PRIME63 CU, PRIME65 CU, PRIME64 ZN, PRIME66 ZN, PRIME67 ZN, PRIME70 ZN. AT ANGLES THETA SUBK SMALLER THAN 40DEGREES THE ELEC. INTERACTION PREDOMINATES AND, THEREFORE, SIGMA-SIGMA SUBR IS CLOSE TO 1. AT ANGLES 40-80DEGREES A SEVERE DECREASE IN DIFFERENTIAL CROSS SECTIONS OCCURS WHICH IS APPROX. THE SAME FOR ALL NUCLEI. IF THE ANGLE OF SCATTERING IS SIMILAR TO 80DEGREES ALL CURVES HAVE A DEEP MIN. THE GREATEST DIFFERENCES IN CROSS SECTIONS ARE OBSD. AT ANGLES THETA LARGER OR EQUAL TO 90DEGREES. AN ANAL. OF ALL EXPTL. DATA IN THE FRAME OF THE OPTICAL MODEL WAS PERFORMED. BY ASSUMING THAT AT P ENERGY OF 6.9 MEV THE ABSORPTION OCCURS MAINLY IN THE NUCLEAR SURFACE THE COMPLEX POTENTIAL WITH 6 PARAMETERS WAS CHOSEN. IT IS CONCLUDED THAT THE (PN) CHANNEL EXHIBITS THE MOST SUBSTANTIAL INFLUENCE ON THE DEPTH OF THE REAL PART OF THE POTENTIAL.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--SELF HEALING OF CRACKS IN POLYMERS. I. EFFECT OF TEMPERATURE AND CROSSLINKS ON THE SELF HEALING OF CRACKS IN POLY,VINYL ACETATE -U-
AUTHOR-(04)-MALINSKIY, YU.M., PROKOPENKO, V.V., IVANOVA, N.A., KARGIN, V.A.
COUNTRY OF INFO--USSR

SOURCE--MEKH. POLIM. 1970, 6(2), 271-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYVINYL ACETATE, THERMAL EFFECT, POLYMER CROSSLINKING, TRANSITION TEMPERATURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0914 STEP NO--UR/0374/70/006/002/0271/0275

CIRC ACCESSION NO--AP0134643
UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134643

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UNSTRESSED POLY(VINYL ACETATE) (I) UNDERWENT RAPID SELF HEALING AT THE APEX OF THE CRACKS AT TEMPS. CLOSE TO THE GLASS TRANSITION TEMP. AND FLOW POINT (T SUB1). THE EFFECT OF I CROSSLINKING ON THE "REST" COEFF. (BETA) SUGGESTED THAT THE RAPID INCREASE IN BETA AND T SUB1 WAS DUE TO ENHANCED DIFFUSION AND RELAXATION. CROSSLINKING OF I LOWERED BETA AND THE TEMP. AT WHICH MAX. SELF HEALING OCCURRED. THE HIGHLY ELASTIC AND PLASTIC MECHANISMS OF SELF HEALING WERE DISCUSSED. FACILITY: NAUCH.-ISSLED. FIZ-KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

UNCLASSIFIED

TITLE--DIRECT PROCESSES IN THE (N,2N) REACTION ON HEAVY NUCLEI -U-

PROCESSING DATE--09OCT70

AUTHOR-(04)-YEZHOV, S.N., OLKHOVSKIY, V.S., PROKOPETS, G.A., STRIZHAK, V.I.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(1), 122-30

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--NEUTRON SCATTERING, HEAVY NUCLEAUS, DIFFERENTIAL CROSS SECTION, BISMUTH, LEAD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1976/0429 STEP NO--UR/0367/70/011/001/0122/0130

CIRC ACCESSION NO--AP0042465

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0042465

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION (N,2N), AT E SUBN EQUALS 14 MEV, ON HEAVY NUCLEI IS REGARDED AS A DIRECT SCATTERING PROCESS, WITH KNOCK OUT, BY USING THE DISTORTED WAVE METHOD, IN THE BORN APPROXN., AND BY TAKING INTO ACCOUNT THE IDENTITY OF THE N. GENERAL FORMULAS ARE DERIVED, THEREFROM, FOR THE REACTION AMPLITUDE T SUBFI. THE FORMULA IS PHYS. IN ACCORDANCE WITH THE DIRECT KNOCK OUT OF THE N FROM THE NUCLEUS TARGET BY THE IMPINGING N, IN THE DISTORTED EFFECTIVE FIELD OF ALL THE OTHER N, BY TAKING INTO ACCOUNT PAULI'S PRINCIPLE. THE DOUBLE DIFFERENTIAL CROSS SECTION FPR TJE MIC;EO RO,E209 BI AND PRIME208 PB IS CALCD. AND COMPARED TO EXPTL. VALUES. THERE IS A GOOD CORRELATION BETWEEN THEORETICAL AND EXPTL. RESULTS. FACILITY: KIEV. GOS. UNIVL, KIEV, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--EQUILIBRIUM EQUATIONS OF A PLATE OF VARIABLE THICKNESS -U-

AUTHOR-(02)-GOTLIB, TS.A., PROKOPOV, V.K.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, PRIKLADNAYA MATEMATIKA I MAKHANIKA, NO 2, 70, PP 332-338

DATE PUBLISHED--------70

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

TOPIC TAGS--DIFFERENTIAL EQUATION, GEOMETRY, POTENTIAL ENERGY, CAUCHY PROBLEM, CIRCULAR PLATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO-----FD70/605041/C01 STEP NO--UR/0040/70/000/002/0332/0338

CIRC ACCESSION NO--AP0142723
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--11DEC70

2/2 015

CIRC ACCESSION NO--AP0142723

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DIFFERENTIAL EQUILIBRIUM EQUATIONS OF A PLATE OF VARIABLE THICKNESS ARE ESTABLISHED BY THE SYMBOLIC METHOD OF A. I. LUR'YE, USING THE FORMULAS OF CAUCHY FOR THE EQUILIBRIUM CONDITIONS ON THE ENDS OF A PLATE. FUNCTIONS CHARACTERIZING THE GEOMETRIC AND FORCE BOUNDARY CONDITIONS ARE DERIVED ON THE BASIS OF THE PRINCIPLE OF THE MINIMUM OF THE POTENTIAL ENERGY. DISCUSSED ARE RECTANGULAR PLATES, PLATES SYMMETRICAL TO THE INITIAL PLANE, AND PLATES WITH THE LOWER SURFACE AS BASE. THE AXISYMMETRIC PROBLEM OF THE EQUILIBRIUM OF A CIRCULAR PLATE OF VARIABLE THICKNESS IS ALSO DISCUSSED.

UNCLASSIFIED

Acc. Nr. AP0045077 Abstracting Service 5/70 Ref. Code:
.. INTERNAT. AEROSPACE ABST. UR 0198

A70-23291 # Application of a symbolic method to the derivation of the equations in two-dimensional elasticity theory in polar coordinates (Primenenie simvolicheskogo metoda k vyvodu uravnenii ploskoi zadachi teorii uprugosti v poliarnykh koordinatakh). A. V. Kostarev and V. K. Prok[illegible] Leningradskii Politekhnicheskii Institut, Leningrad, USSR). *Prikladnaia Mekhanika*, vol. 6, Jan. 1970, p. 69-76. In Russian.

Application of Lur'e's (1955) method of obtaining solutions in symbolic notation to the two-dimensional problem in elasticity theory for a circular segment. The stresses and displacements are expressed through operators from four initial functions. The differential equations and boundary conditions for these functions are obtained with the aid of Prokopov's (1965) principle of minimum potential energy, using integral stress characteristics as the generalized forces.

V.P.

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REEL/FRAME
19771990

USSR

UDC 613.295+614.31]-78:576.851.513

PROKOPOVA, L. L., Chair of Nutritional Hygiene, Kiev Medical Institute imeni A. A. Bogomolets

"The Viability of Bacillus cereus in Cooked or Chilled Food Products"

Moscow, Gigiyena i Sanitariya, No 8, 1971, pp 50-53

Abstract: Experiments were conducted to determine the survival capacity and propagation of Bacillus cereus in cooked and chilled foods. Two series of experiments were conducted, with vegetative forms of the bacillus grown on meat-peptone at 37°C in test series one; and three strains of spores isolated from the soil and other extraneous substances used in series two. Samples of raw food products -- meat, sausages, macaroni, and fresh vegetables or cooked were chilled and then inoculated with Bacillus cereus in doses of 100 and one million cells per gram of finished foods. The processed foods products were then stored at 4-6 and 16-18°C for periods of 6, 12, and 24 hours, and then examined for their Bacillus cereus content. It was found that cooking and chilling does not free the food products from either the spores or the vegetative forms of Bacillus cereus. No significant increase in the Bacillus cereus content of the finished food products stored at 4-6°C takes place. The Bacillus cereus content increases by a factor of 100-1000 in

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PROKOPOVA, L. L., Gigiyena i Sanitariya, No 8, 1971, pp 50-53

foods stored at 16-18°C; and food products improperly processed or stored may be subject to intense propagation of the Bacillus, and become a source of toxic infection.

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USSR

UDC 616.981.513-022.38

DUCHINSKIY, B. M., and PROKOPOVA, L. L., Kievskaya Oblast Sanitary Epidemiological Station

"Etiological Role of Bac. cereus in Food Poisoning"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 10, Oct 70, p 141

Translation: Since 1968, in the diagnosis of food poisoning, the laboratories of the sanitary-epidemiological institutions in Kievskaya Oblast have been studying samples submitted for the presence of such a conditionally pathogenic microorganism as Bac. cereus, whose etiological significance in food poisoning has now been established. In this communication, a case of food poisoning in which the etiological role of Bac. cereus was highly probable is described.

Thirteen persons were poisoned by eating meat (cutlets and chops) which, prior to consumption, had been kept for 6 hours under conditions conducive to the growth of microorganisms. The clinical picture was characterized by a short incubation period (4-6 hours) and a mild form of the disease. Symptoms common to all patients were abdominal pain and nausea. Three patients had frequent,

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DUCHINSKIY, B. M., and PROKOPOVA, L. L., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 10, Oct 70, p 141

liquid stools, without admixture of blood. One patient vomited. An increase in temperature up to 37-37.3°C was observed in two patients. After immediate medical aid was given, the patients felt considerably better. The symptoms of the disease disappeared within 12 hours.

Laboratory tests were performed on samples of the liquid with which the stomachs of the patients had been washed, on samples of the raw meat cut from the carcass and of processed meat from which the cutlets and chops were made, and on samples of the leftover cutlets and chops, both semiprepared and completely prepared for consumption. Bacteriological investigation revealed neither the pathogenic microflora of the intestinal group nor the pathogenic staphylococci. Neither were any enteropathogenic intestinal bacilli found. However, all samples contained intestinal bacilli, while some samples (prepared chops) contained intestinal bacilli and Proteus vulgaris. Samples of the prepared product, semiprepared products, raw processed meat, and meat from the carcass also contained a gram-positive, spore-forming microorganism. Its concentration in the prepared cutlets and chops was 7×10^6 and 5×10^5 per gram, respectively. The microbe was identified as Bac. cereus on the basis of its morphological and biological properties.

USSR

DUCHINSKIY, B. M., and PROKOPOVA, L. L., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 10, Oct 70, p 141

The isolated Bac. cereus strain displayed a strong hemolytic and lecithinase activity, diluted gelatin within the first 24 hours after inoculation, peptonized milk, and reduced nitrates. It fermented glucose, mannose, sucrose, and glycerol, with formation of acids; maltose and lactose were not fermented within 24 hours.

When white mice were intraperitoneally administered a filtrate of a day-old culture of Bac. cereus, they died within 24 hours. The isolated strain proved pathogenic for 20-gram white mice after intraperitoneal and oral administration. The animals became passive and developed diarrhea in 4 hours, and died in 24 hours. Bac. cereus was isolated from the blood, liver, spleen, and intestinal content of the dead mice. Tests performed to check whether the intestinal bacillus and Proteus vulgaris isolated from the food samples were pathogenic for white mice resulted in no death of the laboratory animals.

No determinations were made to establish the presence of Bac. cereus in samples obtained from the patients, no blood samples were taken from the patients, and no agglutination reaction was performed on the isolated strain

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USSR

DUCHINSKIY, B. M., and PROKOPOVA, L. L., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 10, Oct 70, p 141

to confirm the diagnosis. Nevertheless, the latency period, the nature and duration of the disease, and the information recorded in the case history to the effect that the patients had consumed meat containing Bac. cereus which proved very toxic and pathogenic for laboratory animals was a valid reason for us to assume that the observed toxic infection was associated with the infestation of food with the above-mentioned microbe. The intestinal bacillus and Proteus vulgaris, which were isolated from the food samples simultaneously with the Bac. cereus, evidently magnified the pathogenic effects of Bac. cereus and made the course of the disease more severe in some patients.

The above-described case of food poisoning indicates that Bac. cereus may cause toxic infections, and that tests for the presence of this microbe in all cases of food poisoning should be performed in the bacteriological laboratories of our sanitary-epidemiological stations.

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USSR

UDC: 621.396.6:621.315.61(088.8)

PROKOPOVA, T. V., ZOLOTAREV, L. L., ZAVARZINA, Z. Ya., GLOBA, G. G., PEYKAROVA, A. A., SUND'YA, G. A.

"A Photosensitive Electrical Insulating Lacquer"

USSR Author's Certificate No 270940, filed 15 Dec 67, published 18 Aug 70 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2V506)

Translation: This Author's Certificate introduces an electrical insulating photosensitive lacquer based on epoxidized rubber stock with the addition of thermo- and photopolymerization initiators, a plasticizer and a modifier.

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1/2 026 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--CHROMIUM NICKEL OXIDE CATALYST PREPARATION CONDITIONS -U-

AUTHOR-(03)-KUTANOV, I.P., YERMOLENKO, YE.N., PROKOPOVICH, A.A.

COUNTRY OF INFO--USSR

SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. KHIM. NAVUK 1970, (2), 124-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THERMAL ANALYSIS, X RAY STUDY, CHROMIUM OXIDE, NICKEL OXIDE, HEAT EFFECT, CATALYST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2028 STEP NO--UR/0419/70/000/002/0124/0127

CIRC ACCESSION NO--AP0125616

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125616

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THREE SAMPLES OF MIXED CR(OH) SUB3,NI(OH) SUB2 CATALYSTS WERE EXAMD. BY DTA AND X RAY ANAL. A MECH. MIXT. OF WET HYDROXIDES AND A MECH. MIXT. OF DRY HYDROXIDES EXHIBITED IDENTICAL DTA PATTERNS WITH 2 ENDOTHERMAL EFFECTS, ONE BEGINNING AT 70DEGREES WITH A MAX. AT 140DEGREES CORRESPONDING TO THE DESORPTION OF FREE OR ADSORBED H SUB2 O AND THE OTHER LESS PRONOUNCED BEGINNING A 210DEGREES WITH A MAX. AT 230DEGREES CORRESPONDING TO THE EVOLUTION OF H SUB2 O FORMED FROM OH GROUPS. AN EXOTHERMAL EFFECT BEGINNING AT 320DEGREEES WITH A MAX. AT 340DEGREES IS DUE TO THE CRYSTN. AND PARTIAL OXIDN. OF CR SUB2 O SUB3. A FINAL WEAK ENDOTHERMAL EFFECT WAS OBSD. AT 600DEGREES CORRESPONDING TO THE DESORPTION OF O, WHICH WAS ADSORBED DURING THE EXOTHERMAL EFFECT AT 340DEGREES. SAMPLES HEATED IN VACUUM DID NOT EXHIBIT THIS EFFECT. THE DTA DIAGRAM OF THE CATALYST PREPD. BY SIMULTANEOUSLY COPPTG. THE HYDROXIDES FROM NITRATE SOLNS. WITH NH SUB3 DIFFERS FROM THE DESCRIBED PATTERN BY A SHARP SEPN. OF THE 1ST 2 ENDOTHERMAL EFFECTS; THE 2ND ONE IS WELL DEVELOPED AND MUCH DEEPER WITH A MAX. AT 200DEGREES. X RAY POWDER PATTERNS OF ALL SAMPLES AT SMALLER THAN 350DEGREES SHOWED AN AMORPHOUS PATTERN. FOR SAMPLES HEATED TO 340DEGREES, THEY WERE ALL IDENTICAL WITH MAX. AT 2.17, 2.49, 2.67, AND 3.64 ANGSTROM. AT 600DEGREES THEY CONTAINED ADDNL. MAX. AT 2.08, 2.51, AND 2.95 ANGSTROM. FACILITY: INST. FIZ. ORG. KHIM., MINSK, USSR.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--ALKALINE AUGITITIC LAVAS FROM THE FLOOR OF THE PACIFIC OCEAN,
ALKALINE AUGITITIC LAVAS FROM PACIFIC OCEAN FLOOR -U-
AUTHOR-(02)-PROKOPTSEV, N.G., MURDMAA, I.O.

COUNTRY OF INFO--USSR, PACIFIC OCEAN

SOURCE--MOSCOW, DOKLADY AKADEMII NAUK SSSR, VOL 191, NO 2, 1970, PP
446-448
DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MECH., IND., CIVIL AND
MARINE ENGR
TOPIC TAGS--OCEAN BOTTOM SAMPLING, LAVA/(U)VITYAZ OCEANOGRAPHIC SHIP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0272 STEP NO--UR/0020/70/191/002/0446/0448

CIRC ACCESSION NO--AT0108575
UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AT0108575

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SAMPLES OF UNUSUAL NONFELDSPATHIC ULTRABASIC EXTRUSIVE ROCKS WHICH IN COMPOSITION CAN BE REGARDED AS AUGITITES WERE COLLECTED DURING THE 430 VOYAGE OF THE RESEARCH VESSEL "VITYAZ'" IN 1968 SOUTH OF THE COOK ISLANDS FRAGMENTS OF AUGITITIC LAVAS CONSTITUTE THE NUCLEI OF MANGANESE NODULES. NODULES WITH NUCLEI OF AUGITITIC LAVAS WERE COLLECTED AT DEPTHS OF 4.5-5 KM IN THE NORTHERN PART OF THE SOUTHERN BASIN OF THE PACIFIC OCEAN IN A REGION WITH HIGHLY DISSECTED HILLY RELIEF OF THE OCEAN FLOOR. THE FRAGMENTS WERE EITHER ON THE SURFACE OF ZEOLITIC CLAYS OR ON EXPOSED SLOPES AND TOPS OF LOW SUBMARINE RIDGES, PROBABLY OF VOLCANIC ORIGIN (MINIMUM DEPTH OVER THE PEAKS 4-4.5 KM). FINDS OF THESE AUGITITIC LAVAS WERE FOUND HUNDREDS OF KILOMETERS APART. THE LAVA FRAGMENTS HAVE AN ISOMETRIC ANGULAR FORM; THEY USUALLY DO NOT EXCEED 3-5 CM IN DIAMETER. SMALL FRAGMENTS OF LAVAS OF AUGITITIC COMPOSITION WERE ENCOUNTERED IN PALAGONITIC TUFFS. THE AUGITITIC LAVAS HAVE BEEN MODIFIED TO DIFFERENT DEGREES BY SECONDARY PROCESSES OF UNDERWATER "WEATHERING" AND PALAGONITIZATION. IN ALL CASES THEY HAVE A VESICULAR TEXTURE, ALTHOUGH SOME SLAGLIKE FRAGMENTS ARE FOUND. ROUNDED BUBBLES 1-2 TO 4-6 MM IN DIAMETER CONSTITUTE FROM 10-20 TO 50-60PERCENT OF THE ROCK VOLUME. TO A GREATER OR LESSER DEGREE THEY ARE FILLED WITH A MICROAGGREGATE OF ZEOLITES. THE AUGITITIC LAVAS CONSIST PRIMARILY OF TITANOAUGITE WITH A SECONDARY QUANTITY OF TITANOMAGNETITE AND OLIVINE. THESE ALKALINE AUGITITIC LAVAS OF UNDERWATER ERUPTIONS ARE SPATIALLY ASSOCIATED WITH ALKALINE OLIVINE BASALTS.

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USSR

ADO, YU. M., ZHURAVLEV, A. A., LOGUNOV, A. A., MYAE, E. A., NAUMOV, A. A., PISAREVSKIY, V. YE., ROGOZINSKIY, V. G., TUSHABRAMISHVILI, K. Z., SHUKEYLO, I. A., BOYKO, S. N., KOMAR, YE. G., MALYSHEV, I. F., MOZIN, I. V., MONOSZON, N. A., MOZALEVSKIY, I. A., SPEVAKOVA, F. M., STOLOV, A. M., TITOV, V. A., VODOP'YANOV, F. A., KUZ'MIN, A. A., KUZ'MIN, V. F., MINTS, A. L., RUBCHINSKIY, S. M., UVAROV, V. A., GUTNER, B. M., ZALMANZON, V. B., PROKOP'YEV, A. I., and TEMKIN, A. S.

"Some Results of the Overall Adjustment and Start-up of the 70-Gev Proton Synchrotron of the Institute of High-energy Physics"

Moscow, Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

Abstract: The physical part of the plan for the 70-Gev proton synchrotron was executed by the Institute of Theoretical and Experimental Physics. The electromagnet with feed system, the vacuum chamber, and the injection devices were developed at the Scientific Research Institute of Electrophysical Apparatus imeni D. V. Yefremov. The radioelectronic systems for acceleration process control and generation of

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ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

the accelerating field, as well as the radiotechnical measurement and beam observation systems, were developed by the Radiotechnical Institute of the Academy of Sciences USSR. "Tyazhpromelektroproyekt" [State Planning Institute for the Planning of Electrical Equipment for Heavy Industry] designed the general-purpose electrotechnical devices and cable connections. The plan for the construction complex of the accelerator was developed by the State All-Union Planning Institute. The construction of the accelerator was under the general supervision of the State Committee for the Use of Atomic Energy USSR. The adjustment of individual systems and the overall adjustment and start-up of the accelerator were carried out by the Institute of High-energy Physics and the developers of the accelerator systems. The basic beam work was done by the Institute of High-energy Physics with the participation of the Radiotechnical Institute. The construction of the accelerator was begun in 1960, and all the basic construction and assembly work was completed at the beginning of

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ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

1967. At the initial stage of construction, before the formation of the Institute of High-energy Physics in 1963, the work was coordinated by the Institute of Theoretical and Experimental Physics. The linear accelerator injector was started on 28 July 1967, the operation of the individual systems was adjusted by September 1967, and the physical start-up of the accelerator was accomplished on 14 October.

A description is given of the work done to adjust the annular electromagnet (including the electromagnet cooling and feed systems), the injection system (consisting of matching channel and injection device), the vacuum system, the radioelectronic system (including the accelerating field generation system, the acceleration process control system, and the radiotechnical measurement system), and the beam observation system (which provides for beam observation in the first revolution and during acceleration). In the physical start-up of the accelerator the main efforts were directed towards obtaining accelerated protons of the planned energy, and the problem of obtaining high

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ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

intensity of the accelerated proton was not raised.

The article gives a listing of the principal parameters of the proton synchrotron, as well as a schedule of the individual stages of the start-up of the accelerator. Photographs include a view of the part of the ring hall in the beam injection area and a general view of the hall of ignitron rectifiers.

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1/2 013 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--SIMPLIFICATION OF COMPLEX CHEMICAL TYPESETTING -U-

AUTHOR--PROKOPYEV, P.

COUNTRY OF INFO--USSR

SOURCE--POLIGRAFIYA 1970, (3), 45

DATE PUBLISHED-------70

SUBJECT AREAS--METHODS AND EQUIPMENT

TOPIC TAGS--PRINTING MACHINERY, STRUCTURE FORM, GRAPHIC TECHN QUE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0723 STEP NO--UR/0543/70/000/003/0045/0045

CIRC ACCESSION NO--AP0134458

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134458

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PUBLISHING HOUSE CHIMIYA TOGETHER WITH THE ALL UNION RES. INST. VNIIOPIT RECENTLY DEVELOPED A COMPLETE SET OF SIMPLIFIED CHEM. TYPESETTING ELEMENTS RANGING FROM 8 TO 48 POINTS, ALONG WITH ALL NECESSARY PUNCHES AND MATRICES. THIS LARGELY INCREASED THE PRODUCTIVITY OF TYPE SETTERS AND THE QUALITY OF CHEM. FORMULA TYPE SETTING. FOR A STRUCTURAL FORMULA WHICH HITHERTO REQUIRED 25 TYPESETTING ELEMENTS ONLY 7 ELEMENTS ARE NEEDED WHEN THE SIMPLIFIED METHOD IS USED.

UNCLASSIFIED

USSR

GOL'DANSKIY, V. I. and PROKOP'YEV, Ye. P.

"Positron States in Ideal Ionic Crystals"

Leningrad, Fizika Tverdogo Tela, vol. 13, No. 10, October 1971, pp 2955-2964

Abstract: The positron states in ideal ionic crystals are considered in this article. It has been reliably established that annihilation from quasi-positronium must be taken into account along with the annihilation of positrons, connected with anions, in ionic crystals. The authors therefore begin their theoretical analysis by considering the positron annihilation characteristics and using the Schrödinger equation describing positron motion by analogy with the equation for the electron. Comparing the experimental and computed lifetimes and half-widths of the correlation curves, they find that the annihilation of positrons unconnected in the positronium atom contributes to the component with the lifetime τ_0 in those ionic crystals in which three components, each with its lifetime, are observed. Tables of these experimental and computed values are given. The kinetics of the annihilation process is also discussed. The work was done in the Institute of Chemical Physics, Moscow.

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1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--POSSIBLE USE OF POSITRON ANNIHILATION FOR CHARACTERIZING EXCITON STATES OF ICNIC CRYSTALS -U-

AUTHOR--PROKOPYEV, YE.P.

COUNTRY OF INFO--USSR

SOURCE--IZV. TIMIRYAZEV. SEL'SKOKHOZ. AKAD. 1970, (1), 227-30

DATE PUBLISHED----------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--POSITION, PARTICLE ANNIHILATION, EXCITAON, IONIC CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0998

STEP NO--UR/9058/70/000/001/0227/0230

CIRC ACCESSION NO--AP0124657

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124657

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DERIVATIONS OF FORMULAS ARE PRESENTED, WHEREBY THE EXPTL. OBTAINED LONG LIFETIME TAU SUB2, OF POSITRONS IN IONIC CYRSTALS CAN BE USED TO DET. THE RADIUS OF THE EXCITION STATE AND THE BINDING ENERGY OF THE POSITRON. THE RADIUS IS DETD. FROM THE FORMULA 0.53-(0.15 TIMES 10 PRIME NEGATIVE10 N PRIME3-TAU SUB2 PRIME) PRIMEONE THIRD, WHERE N IS THE MOL. D. EXPRESSED IN 10 PRIME NEGATIVE22 CM PRIME3. THE BINDING ENERGY OF THE POSITRON IS EXPRESSED BY THE FORMULA MINUS 13.56(0.15 TIMES 10 PRIME NEGATIVE10 N SUB3-TAU SUB2) PRIMEONE THIRD-E.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--POSITRON ANNIHILATION IN QUARTZ IRRADIATED BY FAST NEUTRONS -U-

AUTHOR-(04)-BARTENEV, G.M., TSYGANOV, A.D., VARISOV, A.Z., PROKOPYEV, YE.P.

COUNTRY OF INFO--USSR

SOURCE--FIZIKI, 1970, VOL 58, NR 6, PP 1904-1910

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--POSITRON, PARTICLE ANNIHILATION, QUARTZ, NEUTRON IRRADIATION, PHOTON EMISSION, ANGULAR DISTRIBUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0029 STEP NO--UR/0056/70/058/006/1904/1910

CIRC ACCESSION NO--AP0120729

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0120729
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF FAST NEUTRON IRRADIATION ON THE ANGULAR DISTRIBUTION OF ANNIHILATION V QUANTUM PAIRS IN CRYSTAL AND FUSED QUARTZ IS INVESTIGATED. IT IS FOUND THAT THE HALFWIDTH OF THE CORRELATION CURVES CORRESPONDS TO THE VARIATION OF THE QUARTZ DENSITY. FROM AN ANALYSIS OF VARIOUS POSITRON STATES IN QUARTZ PRECEDING ANNIHILATION AND ON BASIS OF THE EXPERIMENTAL DATA IT IS CONCLUDED THAT VARIATION OF THE HALF WIDTH IS DUE TO THE APPEARANCE IN THE CORRELATION CURVES OF A NARROW COMPONENT WHOSE INTENSITY DEPENDS ON THE RADIATION DOSE. THE NARROW COMPONENT IS DUE TO ANNIHILATION DECAY OF PARA POSITRONIUM ATOMS PRODUCED IN IRRADIATED QUARTZ.
FACILITY: GOSUDARSTVENNYY PEDAGOGICHESKIY INSTITUT IM. V.I. LENINA.

UNCLASSIFIED

USSR

UDC: 629.7.018.1

KOPTEV, V. I., ALEKSASHIN, L. V., MAKSIMOV, Yu. S., PROKOP'YEV, V. Ye., STEKENIUS, K. A.

"A Device for Determining the Angle of Attack of a Model in a Wind Tunnel"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 2, Jan 72, Author's Certificate No 324536, Division G, filed 1 Jun 66, published 23 Dec 72, p 133

Translation: This Author's Certificate introduces a device for determining the angle of attack of a model in a wind tunnel. The device contains a mechanism for setting angles of attack, a model holder, and recording equipment. The angle-setting mechanism is mounted in the working section of the wind tunnel. As a distinguishing feature of the patent, the unit is designed for improved precision in determining the angle of attack in any plane. Fastened to the walls of the working section of the wind tunnel are the poles of a permanent electromagnet, and a pickup which responds to a change in the axial position of the constant magnetic field is installed in the model or in the holder close to the model.

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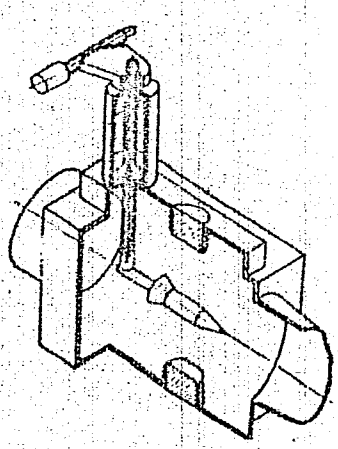
USSR

KOPTEV, V. I. et al., Soviet Patent No 324536



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1/2 030 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--FUNCTIONAL CHANGES OF THE PANCREAS IN PATIENTS WITH GASTRODUODENAL PEPTIC ULCER -U-

AUTHOR-(04)-SAVELYEV, V.S., UMBRUMYANTS, A.A., KHRUSHCHOVA, V.M., PROKOPYEVA, ZH.E.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 4, PP 55-59

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DIGESTIVE SYSTEM DISEASE, PANCREAS, TRYPSIN, BLOOD SERUM, INHIBITION, SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1237 STEP NO--UR/0531/70/000/004/0055/0059

CIRC ACCESSION NO--AP0054132

UNCLASSIFIED

2/2 030 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054132

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FUNCTIONAL STATE OF THE PANCREAS WAS STUDIED IN PATIENTS WITH GASTRODUODENAL ULCER. THE CHARACTER OF CHANGES WAS ASSESSED BY THE LEVEL OF TRYPSIN AND ITS INHIBITOR IN THE BLOOD SERUM IN 67 PATIENTS, IN 33 OF THEM DYNAMIC INVESTIGATIONS WERE CARRIED BEFORE AND AT DIFFERENT PERIODS AFTER THE OPERATION. THE DATA DERIVED TESTIFY TO THE FACT THAT IN PATIENTS WITH PEPTIC ULCER THERE IS 8LSO SEEN A SIMULTANEOUS RISE OF THE INCRETORY ACTIVITY OF THE PANCREAS, APPARENTLY, AS THE RESULT OF NEUROREFLEX DISTURBANCES. CHANGES IN THE PANCREAS ARE, EVIDENTLY, THE CAUSE OF A NUMBER OF COMPLICATIONS OCCURRING IN THE IMMEDIATE AND REMOTE POSTOPERATIVE PERIODS. THIS SHOULD BE TAKEN INTO CONSIDERATION WHEN CHOSING THE OPERATIVE TECHNIQUE.

UNCLASSIFIED

1/2 007 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--EFFECTIVENESS OF LIQUID COMPLEX FERTILIZERS BASED ON SUPERPHOSPHORIC ACID ON SOD PODZOLIC SOIL -U-

AUTHOR-(03)-YANISHEVSKIY, F.V., PROKOSHEVA, M.A., NOVIKOVA, G.V.

COUNTRY OF INFO--USSR

SOURCE--AGROKHIMIYA 1970, (2), 3-14

DATE PUBLISHED-------70

SUBJECT AREAS--AGRICULTURE

TOPIC TAGS--SOIL CHEMISTRY, SOIL STRUCTURE, LIQUID FERTILIZER, WHEAT, CEREAL CROP, LEGUME CROP, PHOSPHORUS FERTILIZER, UREA

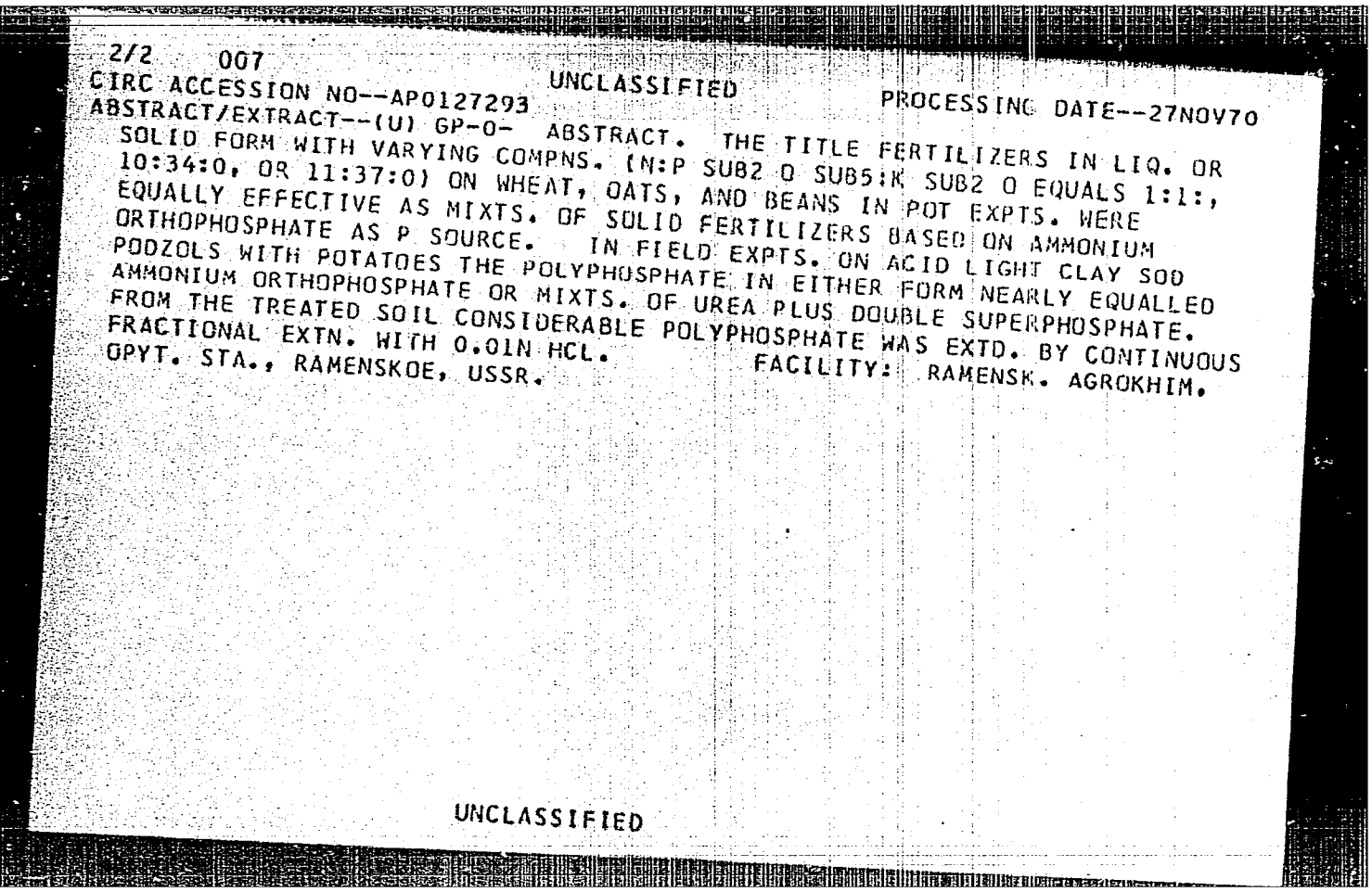
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1892 STEP NO--UR/0485/70/000/002/0003/0014

CIRC ACCESSION NO--AP0127293

UNCLASSIFIED



2/2 007 UNCLASSIFIED
CIRC ACCESSION NO--AP0127293 PROCESSING DATE--27NOV70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE FERTILIZERS IN LIQ. OR SOLID FORM WITH VARYING COMPNS. (N:P SUB2 O SUB5:K SUB2 O EQUALS 1:1:, 10:34:0, OR 11:37:0) ON WHEAT, OATS, AND BEANS IN POT EXPTS. WERE EQUALLY EFFECTIVE AS MIXTS. OF SOLID FERTILIZERS BASED ON AMMONIUM ORTHOPHOSPHATE AS P SOURCE. IN FIELD EXPTS. ON ACID LIGHT CLAY SOD PODZOLS WITH POTATOES THE POLYPHOSPHATE IN EITHER FORM NEARLY EQUALLED AMMONIUM ORTHOPHOSPHATE OR MIXTS. OF UREA PLUS DOUBLE SUPERPHOSPHATE. FROM THE TREATED SOIL CONSIDERABLE POLYPHOSPHATE WAS EXTD. BY CONTINUOUS FRACTIONAL EXTN. WITH 0.01N HCL. FACILITY: RAMENSK. AGROKHIM. OPYT. STA., RAMENSKOE, USSR.

UNCLASSIFIED

Automatic Control: Instruments

USSR

UDC 681.325+62-52

LISICHKIN, D. A., LOSHCHININ, A. A., PROKOSHEVA, V. V., SHISHKOVA, Yu. I., SHCHUKIN, A. I.

Operatsionnyye Ustroystva EVM i Avtomatiki (Operational Devices for Computers and Automation), Moscow, "Sovetskoye Radio," 1972, 255 pp

Abstract: The book proposes methods for designing and determining the characteristics of operational amplifiers and converters for changing analog quantities to digital code. The theory is outlined and methods are presented for determining static and dynamic characteristics and errors. Consideration is given to synthesis of optimum structures for the amplifiers and converters and to ensuring their operational stability. Examples of calculations and circuits for elements in high-amperage converters are given.

A distinguishing feature of the book is analysis of operational devices as complex units, and synthesis of calculations by the method of successive approximations for computer application.

The book is written for engineers and technicians, as well as for advanced college and university students as a text in the development and design of operational amplifiers and analog-digital converters.

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USSR UDC 537.312.62

GRUZNOV, YU. A., KORNIYENKOVA, T. N., PROKOSHIN, A. F., SUVOROV, V. A.

"Superconducting Compositional Materials"

Sb. tr. TsNII chern. metallurgii (Collected Works of the Central Scientific Research Institute of Ferrous Metallurgy), 1971, vyp. 78, pp 118-121 (from RZh-Radiotekhnika, No 6, Jun 72, Abstract No 6D448)

Translation: The superconducting compositional materials have the greatest current carrying capacity by comparison with ordinary superconductors. The application of these materials have permitted a significant increase in the current carrying capacity of the superconductors and an increase in the thermal stabilization of the superconducting system. In this paper a study has been made of the effect of cold deformation, the annealing temperature and the delay time on the critical current density J_{cr} in magnetic fields to 7.2 milliamps/meter (90 kiloersteds) in superconducting compositional materials of circular cross section with superconducting bands of Nb-Ti alloy.

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1/3 036 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--INVESTIGATION OF THE HYDRAULIC EROSION RESISTANCE OF HIGH STRENGTH CHROME MANGANISE SILICON STEELS -U-

AUTHOR-(05)-CHELYSHEVA, A.A., PROKOSHKIN, D.A., RAKHSHTADT, A.G., GUREVICH, YA.B., FOMIN, V.V.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY, MASHINOSTROYENIYE, NO. 1, 1970, PP 117-122

DATE PUBLISHED----------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHROMIUM MANGANESE STEEL, SILICON STEEL, STEEL HEAT TREATMENT, STEEL HARDENING, CAVITATION/(U)50KH3G6S HIGH ALLOY STEEL, (U)40KH3G6S STEEL, (U)25KH1468T STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0028

STEP NO--UR/0145/70/000/001/0117/0122

CIRC ACCESSION NO--AT0123820

UNCLASSIFIED

2/3 036 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0123820

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF HEAT TREATMENT AND THERMOMECHANICAL WORKING OF HIGH ALLOY CHROME MANGANISE SILICON STEELS (40KH3G6S AND 50KH3G6S) ON THE HYDRAULIC EROSION RESISTANCE OF THE STEELS IS EXAMINED, USING TWO TEST MELTS CONTAINING 0.38PERCENT C, 1.5PERCENT SI, 6.3PERCENT MN, 3.0PERCENT CR, 0.015PERCENT S, AND 0.001PERCENT P IN ONE MELT AND 0.50PERCENT C, 1.5PERCENT SI, 6.3PERCENT MN, 3.0PERCENT CR, 0.013PERCENT S, AND 0.004PERCENT P IN THE OTHER. CLEANED 40 KG INGOTS WERE FORGED AND HOT ROLLED INTO 20 TIMES 14 MM SHEET BILLETS, 7 MM THICK. HIGH TEMPERATURE THERMOMECHANICAL WORKING WAS PERFORMED AT 900DEGREESC WITH A 50PERCENT REDUCTION IN ONE ROLL PASS AND SUBSEQUENT HARDENING IN OIL AND AUSTENIZING IN 30 MINUTES. LOW TEMPERATURE THERMOMECHANICAL WORKING WAS PERFORMED AFTER A 30 MINUTE HOLD AT 900DEGREESC FOLLOWED BY FURNACE COOLING TO 500DEGREESC AND 2, 4 ROLL PASSES FOR A TOTAL REDUCTION OF 70-75PERCENT. FOLLOWING HARDENING AND WORKING, A NUMBER OF THE BLANKS WERE COLD WORKED AT MINUS 20DEGREESC, MINUS 35DEGREESC, AND MINUS 196DEGREESC TO OBTAIN A DIFFERENT AMOUNT OF MARTENSITE AND RESIDUAL AUSTENITE. SAMPLES OF THE ABOVE WERE SUBJECTED TO A 100 M-SEC WATER JET FROM A 5 MM NOZZLE. IT IS CONCLUDED THAT COLD WORKING, CAUSING TRANSFORMATION OF RESIDUAL AUSTENITE INTO MARTENSITE INCREASES THE YIELD POINT OF 40KH3G6S STEEL FROM 67 KG-MM PRIME2 TO 140 KG-MM PRIME2 AFTER HARDENING, WITH A SLIGHT INCREASE IN ULTIMATE STRENGTH. HYDRAULIC EROSION TESTS WITH THE TWO STEELS SHOWED THAT THEY HAVE GREATER RESISTANCE TO JET IMPINGEMENT EROSION THAN 25KH14G8T CAVITATION RESISTANT STEEL.

UNCLASSIFIED

3/3 036 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0123820

ABSTRACT/EXTRACT--A NUMBER OF OTHER CONCLUSIONS REGARDING THESE STEELS ARE GIVEN, AND THE HIGH AND LOW TEMPERATURE WORKING PROCEDURES DESCRIBED IN THE ARTICLE ARE RECOMMENDED FOR PRODUCING STEELS FOR OPERATION UNDER SEVERE CAVITATION CONDITIONS WHERE THE CORROSION FACTOR IS OF LESSER IMPORTANCE. FACILITY: MOSCOW HIGHER TECHNICAL SCHOOL IMENI N. E. BAUMAN.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--THERMOMECHANICAL TREATMENT OF STEEL, A MOST IMPORTANT METHOD OF PRODUCING HIGH STRENGTH STEELS -U-
AUTHOR--PROKOSHKIN, D.A.

COUNTRY OF INFO--USSR

SOURCE--IZVEST. AKAD. NAUK SSSR, METALLY, MAR.-APR. 1970, (2), 72-83

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--HIGH STRENGTH STEEL, MECHANICAL STRENGTH, STRUCTURAL STEEL, DUCTILITY, TENSILE STRENGTH, STEEL HEAT TREATMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1455 STEP NO--UR/0370/70/000/002/0072/0083

CIRC ACCESSION NO--AP0130308

UNCLASSIFIED

2/2 028 UNCLASSIFIED

CIRC ACCESSION NO--AP0130388 PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LATEST DEVELOPMENTS IN METHODS OF INCREASING THE MECHANICAL STRENGTH OF STRUCTURAL STEELS ARE DISCUSSED WITH SPECIAL REF. TO THE QUESTION OF THERMOMECHANICAL TREATMENT. THIS INVOLVES USING THE HEAT STORED IN THE METAL AFTER ROLLING, FORGING, ETC. TO IMPROVE ITS PHASE COMPOSITION AND STRUCTURE, E.G. TO CREATE A SORBITIC STRUCTURE IN HIGH STRENGTH STEELS. UNDER FAVOURABLE CONDITIONS UTS VALUES OF 250-300 KG-MM PRIME2 MAY BE ACHIEVED IN THIS WAY, WITHOUT ANY SERIOUS LOSS OF DUCTILITY.

UNCLASSIFIED

USSR

UDC: 537.312.62

KADYKOVA, G. N., MOLOTILOV, B. V., PROKOSHIN, A. F., SERGEYEV, I. P., FEDOTOV, L. N.

"Properties of 35BT Superconductive Alloy"

Moscow, Sverkhprovodyashchiye splavy i soyedin.--sbornik (Superconductive Alloys and Compounds--collection of works), "Nauka", 1972, pp 160-166 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12D558 [résumé])

Translation: The structure, electrical resistance and thermal expansion of 35BT superconductive alloy containing titanium and small additives of zirconium in addition to 35% niobium were studied in the state after cold deformation, annealing, and also during heating. A maximum current density $I_k = 1 \cdot 10^5$ A/cm^2 in a transverse magnetic field of 30,000 Bi/cm was reached after cold deformation and annealing at 450°C for 4 hours. Segregations of α-phase with transverse dimensions of about 300 Å are observed in the structure of the alloy in this state. On the $I_k(E)$ curve of the specimens in the state after cold deformation and after annealing at 200-300°C, a peak is observed due to the presence of ω-phase in the alloy structure. Four illustrations, bibliography of 14 titles.

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USSR

UDC 661.8

OBOLONCHIK, V. A., and PROKOSHINA, L. M., Institute of Problems of Material Science, Academy of Sciences Ukrainian SSR

"Obtaining Titanium Diselenide and Some of Its Properties"

Kiev, Poroshkovaya Metallurgiya, No 8, 1971, pp 31-35

Abstract: Conditions for obtaining titanium selenides by the reaction of hydrogen selenide with the metal oxide and elemental powder, as well as by the reaction of selenium vapor with metal powder in argon were investigated. A graphite boat containing the metal oxide or metal powder was placed in a quartz reactor. The synthesis of hydrogen selenide was conducted in the same reactor in the low-temperature zone by the reaction of hydrogen with selenium at 550°C. The following starting materials were used: selenium used for rectifiers; powder titanium, grade PMP-1, titanium (dioxide, high-purity), and pure argon, grade A. At temperatures up to 1400° the dioxide does not react with hydrogen selenide. Selenium was initially obtained only at the surface of the powder in the boat, and within the powder a stable hydride TiA_2, with the appearance of metallic titanium, was formed. Its formation began at 200° and proceeded rapidly at 300°. Titanium diselenide was obtained by the reaction of selenium vapors in an argon or helium current. Formation of diselenide evidently proceeds through the monoselenide (600°). Titanium diselenide (23.5% by weight (Ti and 76.5% Fe) is formed at 1000-1200°C, pink-violet, close to

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USSR

OBOLONCHIK, V. A., et al, Kiev, Poroshkovaya Metallurgiya, No 8, 1971, pp 31-35

the composition $TiFe_2$ ($TiSe_{1.48}$) with lattice constants (actual) a = 3.54 and c = 6.00 AU, hexagonal structure, of the CdI_2 type; pycnometric density 5.22 g/cm^3, and x-ray density -- 5.26 g/cm^3. Several properties of the diselenide were studied: the compound begins to decompose markedly at 700°. After annealing at 1350° the diselenide contains almost 13% less selenium than in the initial product, though its crystalline structure remains unchanged. The Mi-H bond is stronger than the Me-Se bond, and at 1300-1350° the hydride does not completely decompose. The diselenide is soluble in water freed of oxygen, with prolonged boiling, and is not soluble in dilute nonoxidizing acids. It dissolves with heating in concentrated sulfuric and nitric acids.

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USSR

UDC 669.27/.87.051

OBOLONCHIK, V. A., PROKOSHINA, L. M., and FEDORCHENKO, V. P.

"Production and Some Physicochemical Properties of Selenides of Transition Metals"

V sb. Khal'kogenidy (Chalcogenides--collection of works), Vyp 2, Kiev, "Naukova Dumka", 1970, pp 130-141 (from RZH-Metallurgiya, No 11, Nov 70, Abstract No 11G162)

Translation: Results are presented of an investigation of the technology of producing diselenides (D) with the help of the interaction of metallic powders of transition metals, and also of their oxides and salts with H_2Se and Se vapors in an Ar stream. The technological regimes of D production are shown. Investigation is conducted of the thermal stability of Nb and W D in an Ar stream, and of their electrophysical properties. The experimental data attest to the metallic nature of the conductivity of Ti and Nb D and semiconducting properties of Mo, W, and Zr D. 5 ill., 3 tables, 17 bibl. entries.

S. Krivonosova

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USSR

UDC 669.293.126.153

PROKOSHKIN, D. A., VASIL'YEVA, YE. V., MARKOVA, S. A., and CHIZHOV, I. N., Moscow Higher Technical School imeni N. E. Bauman. Department AM-9

"Investigation of the Effect of Carbon and the Properties of NV1OTZTs Alloys"

Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy--Chernaya Metallurgiya, No 4, 1973, pp 138-143

Abstract: Nb-W-Ti-Zr alloys, with and without additional alloying of carbon were produced by electron-beam melting for the purpose of studying the effect of carbon on these alloys. Chemical composition of the niobium-base alloys was (in wt %):

	W	Ti	Zr	C	O	N	H
NV1OTZTs	9.82	2.80	1.60	0.04	0.004	0.005	0.001
NV1OTZTsU	9.48	3.25	2.05	0.10	0.008	0.004	0.001

Ingots 120 mm in diameter were subjected to a two-step hot pressing processing to produce 16-mm diameter rods which were vacuum annealed at temperatures ranging from 400 to 1800°C for 0.5 hours and then measured for Vickers hardness. Hardness measurements showed that both alloys become softer with annealing, reaching a minimum between 1200 and 1400°C with hardness, then rising. Alloy

USSR

PROKOSHKIN, D. A., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy--Chernaya Metallurgiya, No 4, 1973, pp 138-143

NV1OTZTs is harder than the alloy with additional carbon, with the difference in hardness remaining almost constant throughout the range of annealing temperatures. Conversely, alloy NV1OTZTsU has a higher hardness than NV1OTZTs when the alloys were quenched from 1600°C and aged at 1100°C for 0 to 300 hours with the difference in hardness increasing between the alloys with increased aging time at 1100°C. The best combination of mechanical properties at room temperature for the two alloys was produced for a heat treating mode of quenching from 1600°C + aging at 1100°C for 150 hours with tensile strength, yield strength, elongations and hardness values of 72.8 kG/mm^2, 66.5 kG/mm^2, 20%, 230 kG/mm^2 and 90.0 kG/mm^2, 67.3 kG/mm^2, 15%, 285 kG/mm^2, respectively for NV1OTZTs and NV1OTZTsU. The long-time strength of alloy NV1OTZTs was 28 kG/mm^2 when quenched from 1600°C which is equal to the American alloy F-48, although the American alloy contains a much larger quantity of tungsten (15%). Thus, heat treatment of the alloys by quenching to the supersaturated solid solution for the given conditions ensures additional strengthening of the alloys and is especially effective for the alloy with additional carbon content. For conditions of long-time stress at 1100°C, precipitation of a finely dispersed

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USSR

PROKOSHKIN, D. A., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy--Chernaya Metallurgiya, No 4, 1973, pp 138-143

strengthening carbide phase occurs from the multicomponent solid solution and prevents the occurrence of shear and diffusion processes. Retarding of the diffusion process of dislocation creep by hard refractory particles of the precipitations leads to increased high-temperature creep strength. 3 figures, 4 tables, 8 bibliographic references.

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USSR

UDC: 669.293.5:621.785(088.8)

PROKOSHKIN, D. A., VASIL'YEVA, Ye. V., TRET'YAKOV, V. I., LUPAKOV, I. S.

"Method of Heat Treatment of Niobium and its Alloys"

USSR Author's Certificate Number 352882, Filed 18/06/71, Published 27/02/73 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8I871).

Translation: This method, including annealing, differs in that in order to increase the elastic properties before annealing cold plastic deformation is conducted with compression greater than 50%, and annealing is performed at 500-900°. Unalloyed Nb, treated by this method, has an elastic limit of 56 kg/mm^2.

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USSR

UDC: 669.293.5:539.434

PROKOSHKIN, D. A., VASIL'YEVA, Ye. V., TRET'YAKOV, V. I., CHIZHOV, I. N., Moscow

"Study of the Heat Resistance of Nb-Mo Alloys, Alloyed with Titanium and Zirconium"

Izvestiya Akademii Nauk SSSR, No 4, Jul-Aug 73, pp 230-235.

Abstract: This work studies the regularities of the influence of titanium and zirconium on the heat resistance of the alloys Nb + 10 wt. % Mo and Nb + 15 wt. % Mo. The titanium was introduced to the alloys in order to improve the technological characteristics and increase oxidation resistance. It was found that the addition of up to 3% titanium to the alloy Nb + 10 % Mo produces almost no change in the stable creep rate; intensive softening is observed as the titanium content is increased to over 3%. The hardening effect of the addition of (1 wt. %) zirconium to Nb + 10 % Mo + Ti depends on the titanium content and appears most clearly with titanium concentrations of not over 3%. An increase in the content of molybdenum to 15% facilitates increasing heat resistance of niobium alloys. The expediency of alloying Nb + 15 % Mo with titanium at 3% is demonstrated, since further increases in titanium

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USSR

Prokoshkin, D. A., Vasil'yeva, Ye. V., Tret'yakov, V. I., Chizhov, I. N., Izvestiya Akademii Nauk SSSR, No 4, Jul-Aug 73, pp 230-235.

content cause significant reduction of the heat resistance. Additional hardening of Nb + 15 % Mo + 3 % Ti can be achieved by the addition of 1% zirconium. The alloys produced have good technological properties and can be recommended for use as structural materials to operate at 1100° C and higher.

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USSR

UDC 669.29:539.376

PROKOSHKIN, D. A., VASIL'YEVA, YE. V., and TRET'YAKOV, V. I., Moscow Higher Technical School imeni N. E. Bauman

"Effect of Zirconium Concentration on Creep of Niobium-Zirconium Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 35, No 5, 1973, pp 1045-1051

Abstract: The creep of Nb-Zr alloys containing 1, 5, 10, and 20 weight percent Zr was studied on 15-mm rods at 1040-1200°C. Samples were prepared from an ingot annealed at 1400°C for 5 hours. The alloy containing 1% Zr showed the highest resistance to creep. This is attributed to the nature of the physico-chemical interaction of Nb and Zr and to the ability of zirconium in this concentration to saturate by almost 100% the lattice defects (grain boundaries, subgrains, and individual dislocations). An increase in the zirconium concentration above 1% lowered the heat-resistant properties of alloys because the melting temperature of Zr is lower compared with Nb and its higher diffusion mobility.

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USSR

UDC: 669.15

PROKOSHKIN, D.A., Professor, Doctor of Technical Sciences, and GALOV, A.G., Candidate of Technical Sciences (MVTU [Moscow Higher Technical School] imeni N. E. Bauman)

"Strengthening of Martensite-Aging Steels by Deformation in Liquid Nitrogen"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 6, 1972, pp 121-126

Abstract: Nickel-molybdenum-cobalt, martensite-aging steels have high strength and ductility but lack corrosion-resistance. By adding 17% of chrome a good corrosion-resistance is obtained, but the martensite point is displaced into very low temperature region. Therefore it is not possible to form martinsite by the usual heat-treatment methods.

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USSR

PROKOSHKIN, D. A. and GALOV, A. G., Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 6, 1972, pp 121-126

An investigation has been conducted on strengthening these steels by elongating them by 23-35% while immersed in liquid nitrogen. It was established that this treatment resulted in more complete transformation of austenite into martensite and in increasing the strength.

Graphs of mechanical properties as functions of low-temperature elongation for several steels are presented.

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USSR

UDC: 621.78

PROKOSHKIN, D. A., VASIL'YEVA, Ye. V., MARKOVA, S. A., CHIZHOV, I. N.

"Influence of Heat Treatment on High-Temperature Strength and Creep of NV10M5TZTs Niobium Alloy"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 11, 1972, pp 121-124.

Abstract: An alloy was studied with the following chemical composition (wt. %): 9.4% W, 5.98% Mo, 2.75% Ti, 1.65% Zr, impurity contents 0.05% C, 0.02% N, 0.02% O, 0.001% H. The short-term strength and creep of this alloy were studied at 1100°C. The influence of heat treatment on the characteristics of high temperature strength and heat resistance of the alloy was studied. It was shown that hardening from 1700°C is an effective means of strengthening the alloy at high temperatures. High heat resistance of the alloy is achieved as a result of formation of a multicomponent solid solution with high interatomic bond strength and separation of the dispersed refractory carbide phase during long service at 1100°C.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530006-1"

USSR

UDC 620.10

PROKOSHKIN, D. A., Doctor of Technical Sciences, Professor, BYKOV, Yu. A., Candidate of Technical Sciences, docent, SOKOLENKO, L. I., Graduate Student, and NAZARCHIK, N. A., Candidate of Technical Sciences, Senior Scientific Staff Member, Moscow Higher Technical School imeni N. E. Bauman

"The Influence of Residual Stresses Upon the Magnetic Properties of Hot-Pressed Ferrites"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 7, 1972, pp 107-110

Abstract: An investigation is made of the relationship of the magnetic properties of ferrites to internal stresses. It is established that the hot pressing and heat treatment of ferrites bring about the origination of considerable residual internal stresses. It is established that strongly stressed ferrites (hot-pressed, hardened) possess low values of initial magnetic permeability. As a result of the annealing of hot-pressed ferrites, the magnetic permeability increases, and the internal stresses decrease by a factor of about 6.5. 2 figures. 1 table. 3 references.

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USSR UDC 669.293.5

PROKOSHKIN, D. A., VASIL'YEVA, YE. V., and MARKOVA, S. A., Moscow

"Influence of Alloying With Small Quantities of Titanium and Zirconium on the Properties of Niobium"

Moscow, IAN SSSR, Metally, No 2, Mar-Apr 71, pp 130-135

Abstract: Results are presented from an investigation of the influence of elements of group IVa -- titanium and zirconium -- on the structure, hardness, mechanical properties, and creep of niobium. Both components differ from niobium in a number of physical and chemical characteristics, which influences the interatomic bond, fine structure, and rupture mechanism of the metal. Studies were performed for niobium alloys containing from 1 to 6 at. % Ti and from 0.5 to 5 at. % Zr after extrusion and after annealing. The microstructure, hardness, and mechanical properties of the alloys were studied at room temperature, and the creep was studied by extension at 1100°C at stresses of from 8 to 20 kg/mm^2. The alloying elements are distributed differently in the structure of the niobium. The zirconium is distributed unevenly, with primary concentration on the grain boundaries, while

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530006-1"

USSR

PROKOSHKIN, D. A., et al., IAN SSSR, Metally, No 2, Mar-Apr 71, pp 130-135

the titanium is distributed evenly through the grains. A significant increase in hardness and mechanical characteristics is produced at room temperature by alloying with titanium and zirconium. Alloying with small quantities of titanium and zirconium also increases the creep resistance significantly. As the content of alloying elements is increased to 5-6 at. %, the mechanisms increasing hardness are covered by the transition to the state of a normal solid solution.

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USSR UDC 669.293.5

PROKOSHKIN, D. A., VASIL'YEVA, YE. V., and MARKOVA, S. A., Moscow

"Influence of Alloying With Small Quantities of Titanium and Zirconium on the Properties of Niobium"

Moscow, IAN SSSR, Metally, No 2, Mar-Apr 71, pp 130-135

Abstract: Results are presented from an investigation of the influence of elements of group IVa -- titanium and zirconium -- on the structure, hardness, mechanical properties, and creep of niobium. Both components differ from niobium in a number of physical and chemical characteristics, which influences the interatomic bond, fine structure, and rupture mechanism of the metal. Studies were performed for niobium alloys containing from 1 to 6 at. % Ti and from 0.5 to 5 at. % Zr after extrusion and after annealing. The microstructure, hardness, and mechanical properties of the alloys were studied at room temperature; and the creep was studied by extension at 1100°C at stresses of from 8 to 20 kg/mm^2. The alloying elements are distributed differently in the structure of the niobium. The zirconium is distributed unevenly, with primary concentration on the grain boundaries, while

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USSR

PROKOSHKIN, D. A., et al., IAN SSSR, Metally, No 2, Mar-Apr 71, pp 130-135

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UNCLASSIFIED PROCESSING DATE--23OCT7C

1/3 027

TITLE--THERMOMECHANICAL TREATMENT OF STEEL, THE MAJOR METHOD OF OBTAINING HIGH STRENGTH STEELS -U-

AUTHOR--PROKOSHKIN, D.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK USSR, METALLY, NO 2, MAR-APR 70, PP 72-83

DATE PUBLISHED--------70

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

TOPIC TAGS--THERMOMECHANICAL TREATMENT, HIGH STRENGTH STEEL, METAL RECRYSTALLIZATION, PLASTIC DEFORMATION, PLASTICITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1603 STEP NO--UR/0370/70/000/002/0072/0083

CIRC ACCESSION NO--AP0120367

UNCLASSIFIED

2/3 027 UNCLASSIFIED PROCESSING DATE--23OCT7

CIRC ACCESSION NO--AP0120367

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERE ARE SEVERAL VARIANTS OF THE THERMOMECHANICAL TREATMENT OF STEEL, SUCH AS LOW TEMPERATURE, HIGH TEMPERATURE, COMBINED HIGH AND LOW TEMPERATURE, AND COMPLEX TREATMENTS WHICH INCLUDE DEFORMATION OF STEEL IN THE FERRITE CARBIDE, MARTENSITIC, AND BAINITIC STATES. LOW TEMPERATURE THERMOMECHANICAL TREATMENT CONSISTS IN MULTISTAGE QUENCHING AND DEFORMATION OF AUSTENITE BETWEEN THE RECRYSTALLIZATION AND MARTENSITIC TEMPERATURES. THE ULTIMATE STRENGTH OF STRUCTURAL STEEL TREATED BY THIS METHOD CAN BE INCREASED TO 280-300 KG-MM PRIME2. THE EFFECT OF THIS TREATMENT DEPENDS ON STEEL COMPOSITION, TEMPERATURE AND DEGREE OF DEFORMATION, TEMPERING TEMPERATURE, ETC. HIGH TEMPERATURE THERMOMECHANICAL TREATMENT CONSISTS IN THE ANNEALING OF STEEL TO THE AUSTENITIC STATE, DEFORMATION OF THE AUSTENITE AT AN ABOVE RECRYSTALLIZATION TEMPERATURE AND IMMEDIATE QUENCHING. RESULTS OF THE TREATMENT DEPEND ON THE DEGREE OF PLASTIC DEFORMATION, AUSTENITIZING TEMPERATURE, STEEL DOMPOSITION, AND OTHER FACTORS. A COMPARISON ON BETWEEN LOW TEMPERATURE AND HIGH TEMPERATURE THERMOMECHANICAL TREATMENTS SHOWS THAT THE FIRST TREATMENT RESULTS IN HIGHER STRENGTH, WHILE THE LATTER RESULTS IN HIGHER PLASTICITY. A COMBINATION OF THESE TWO METHODS CONSISTS IN A HIGH TEMPERATURE TREATMENT FOLLOWED IMMEDIATELY BY A LOW TEMPERATURE TREATMENT. PLASTIC DEFORMATION OF AUSTENITE IS THUS CARRIED OUT ABOVE AND BELOW THE RECRYSTALLIZATION TEMPERATURE. THIS FORMS A COMPLEX NETWORK OF DISLOCATION STRUCTURES WHICH DETERMINES THE FAVORABLE COMBINATION OF STRENGTH AND PLASTIC PROPERTIES OF THE STEEL.

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3/3 027 UNCLASSIFIED PROCESSING DATE--23OCT7(
CIRC ACCESSION NO--AP0120367
ABSTRACT/EXTRACT--A COMPLEX TREATMENT OF STEEL, CONSISTING IN THERMOMECHANICAL TREATMENT, TEMPERING AT 500-650DEGREESC, QUENCHING, RAPID HEATING, AND SUBSEQUENT LOW TEMPERATURE TEMPERING, APPEARS TO BE VERY PROMISING. HIGH STRENGTH AND SUPER STRENGTH STEELS CAN BE OBTAINEI BY THIS METHOD. THE ULTIMATE STRENGTH OF STEELS CAN BE INCREASED TO 250-300 KG-MM PRIME2 WITH SUFFICIENTLY HIGH PLASTICITY.

UNCLASSIFIED

USSR UDC 669.140

CHELYSHEVA, A. A. (Aspirant), PROKOSHKIN, D. A. (Doctor of Technical Sciences, Professor), RAKHSHTADT, A. G. (Doctor of Technical Sciences, Professor), FOMIN, V. V. (Doctor of Technical Sciences), GUREVICH, YA. B. (Candidate of Technical Sciences), MILYAKOV, A. P. (Engineer), and MARININ, A. A. (Candidate of Technical Sciences), Moscow Higher Technical School imeni N. E. Bauman

"Study of Hydroerosion Resistance of High Strength Chromium-Manganese-Silicon Steels"

Moscow, IVUZ Mashinostroyeniye, No 1, Jan 70, pp 117-122

Abstract: The article presents the study of properties of steels 40Kh3G6S and 50Kh3G6S after heat and heat-mechanical treatment. It is shown that the steels, after ordinary hardening, high-temperature heat-mechanical treatment (VTMO) and low-temperature heat-mechanical treatment (NTMO) plus low-temperature tempering possess a reduced value of yield point at high value of tensile strength. The low yield point is explained by the presence of a considerable quantity of residual austenite. In the process of deformation during determination of the tensile strength the residual austenite apparently is transformed into martensite and therefore the tensile strength reaches high values. The use of sub-zero treatment, which induces the transformation

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202530006-1"

USSR

CHELYSHEVA, A. A., et al., IVUZ Mashinostroyeniye, No 1, Jan 70, pp 117-122

of residual austenite into martensite, considerably increases the yield point from 67 kg/mm^2 to 140 kg/mm^2 after hardening in steel 40Kh3G6S with a small increase in the tensile strength. The comparison of mechanical properties of studied steels after hardening, VTMO, NTMO and low temperature tempering at equal quantity of residual austenite shows that heat-mechanical treatment, particularly NTMO, increases the strength properties of steels. Hydroerosion tests show that steels 40Kh3G6S and 50Kh3G6S possess a considerably high resistivity to jet-impact erosion. At that, the difference between resistance after hardening and low temperature tempering and hardening, sub-zero treatment and low temperature tempering is insignificant regardless of the fact that in the latter case the quantity of martensite is much higher. It is shown that the deformation of steels 40Kh3G6S and 50Kh3G6S under VTMO and particularly under NTMO increases the quantity of residual austenite as compared to ordinary hardening. This is due to lowered transformability of supercooled and deformed austenite into martensite. Likewise, the resistance to jet-impact erosion of these steels significantly increased after VTMO but particularly after NTMO, as compared to ordinary hardening and tempering. This increase in the resistance to hydroerosion due to VTMO and NTMO is traced to high degree of work hardening of austenite obtained as a result of deformation during VTMO and NTMO and to its partial transformation into martensite.
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1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--DIFFERENTIAL THRESHOLD CHERENKOV COUNTER -U-

AUTHOR--PROKOSHKIN, YU.D.

COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, (2), 71-4

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CHERENKOV DETECTOR, PHOTOELECTRON, PHOTOCATHODE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1064 STEP NO--UR/0120/70/000/002/0071/0074

CIRC ACCESSION NO--AP0136484

UNCLASSIFIED

2/2 019 UNCLASSIFIED

CIRC ACCESSION NO--AP0136484 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MODIFIED VERSION OF A CHERENKOV COUNTER IS DESCRIBED, I.E. THE DIFFERENTIAL THRESHOLD (DT) CHERENKOV COUNTER. THE NEW VERSION COMBINES HIGH RESOLN. WITH A LARGER ANGLE APERTURE. THE DT COUNTER CONSISTS OF A THRESHOLD COUNTER IN WHICH THE OUTPUT PULSES OF THE PHOTOELECTRON AMPLIFIER ARE DISCRIMINATED ON A LOW LEVEL AND ONLY THOSE PULSES ARE REGISTERED WHICH CORRESPOND TO THE DISLOCATION OF A SMALL NO. OF PHOTOELECTRONS FROM THE PHOTOCATHODE OF THE AMPLIFIER. THE PROBLEM OF PARTICLE SEPN. CAN BE SOLVED BY AMPLITUDE ANAL. OF THE SIGNALS FROM THE CHERENKOV COUNTER.

FACILITY: INST. FIZ. VYS. ENERG., SERPUKHOV, USSR.

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