

USSR

UDC 615.31:547.497.6

KRIVENCHUK, V. Ye., and PETRUN'KIN, V. Ye., All-Union Research Institute of Hygiene and the Toxicology of Pesticides, Polymers, and Plastics, Kiev

"Thiohydroxamic Esters. I. S-diethylaminoethyl Esters of Thiohydroxamic Acids and Their Derivatives"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, No 3, 1973, pp 13-16

Abstract: Since thiohydroxamic esters (I) have not been investigated extensively and may possibly activate cholinesterase, they were synthesized by reacting hydroxamic acid chlorides with 2-diethylaminoethanol. The resultant I hydrochlorides were obtained as crystalline substances that usually were water soluble. Reaction of I with one equivalent of base resulted in water insoluble products that were poorly soluble in organic solvents. Alkylation of the latter products in alcohol, nitromethane, or dimethylformamide led to the formation of quaternary derivatives. It has been reported that hydrochlorides of the S-diethylaminoethyl esters of the thiohydroxamic acids are effective in protecting experimental animals from O, O-dimethyl-O-(2,2-dichlorovinyl)phosphate intoxication.

1/1

USSR

UDC: 632.95

KRIVENCHUK, V. Ye., All-Union Research Institute of Hygiene and Toxicology of
Pesticides, Polymers, and Plastics

"A Method for Preparing Oximes"

USSR Author's Certificate No 252330, filed 11 Jul 68, published 24 Mar 70
(from RZh-Khimiya, No 22, 25 Nov 70, Abstract No 22 K6L3 P by A. F. Prokof'yeva)

Translation: Acetyldialkylsulfonium bromides with the formula $\text{R}_2\text{SCH}_2\text{C}(=\text{NOH})\text{CH}_2\text{Br}^-$ (I) (R=lowest alkyl), which can be used as physiologically active compounds, are obtained from the oximation of acetyldialkylsulfonium bromides by hydroxylamine in MeOH. 3.63 g of $\text{NH}_2\text{OH}\cdot\text{HCl}$ and 2.92 g of KOH in MeOH are added to 9.8 g of $\text{Me}_2\text{SCH}_2\text{C}(=\text{O})\text{CH}_2\text{Br}$ and left at about 20°C for 18 hours. The MeOH is removed under vacuum without heating. The residue is dissolved in a mixture of 5 ml of absolute alcohol and 10 ml of CHCl_3 , which is dried for 24 hours with 20 g of anhydrous Na_2SO_4 . A thick liquid is obtained after the filtrate is evaporated under vacuum. The liquid is shaken 3 times with 7 to 10 ml of ethylacetate and 3 times with dry acetone, after which the solvents are decanted. The residue is treated with 5 ml of ethylacetate and crystallized. 4.1 g of (R=Me)

1/2

USSR

KRIVENCHUK, V. Ye., USSR Author's Certificate No 252330, filed 11 Jul 68, published 24 Mar 70 (from RZh-Khimiya, No 22, 25 Nov 70, Abstract No 22 N643 P by A. F. Prokof'yeva)

is obtained, yield 39%, boiling point 101-2° (absolute alcohol). I are prepared in a similar manner (R, yield in %, melting point, °C are given): Et 35.3, 93-4; n-Pr, 42.7, 86.5-87; iso-Pr, 15.7-131-32 (decomposition).

2/2

- 90 -

1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--MINISTRIES AND STANDING COMMISSIONS -U-
AUTHOR--KRIVENKO, L.I. K
COUNTRY OF INFO--USSR
SOURCE--SOVETSKOYE GOSUDARSTVO I PRAVO, JAN 1970, NR 1, PP 32-40
DATE PUBLISHED--JAN70
SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES
TOPIC TAGS--DOMESTIC POLITICS, COMMISSION, SUPERVISORY CONTROL, GOVERNMENT
ECONOMIC CONTROL, POLITICAL SYSTEM, GOVERNMENT CENTRALIZATION POLICY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1995/0948 STEP NO--UR/0554/70/000/001/0032/0040
CIRC ACCESSION NO--AP0116454
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0116454

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CPSU 23RD CONGRESS PUT FORWARD A TASK TO RISE THE SIGNIFICANCE OF THE SUPREME SOVIETS AND TO MORE THOROUGHLY DEFINE THE MAJOR DIRECTIONS OF THEIR ACTIVITY. IN THIS CONNECTION THE PERFECTIONING OF STANDING COMMISSIONS, THEIR ORGANIZATION AND ACTIVITY WAS CONSIDERED AS AN ASPECT OF IMPORTANCE. IN MANY A STATE AND PARTY DOCUMENT THE STANDING COMMISSIONS WERE UNDERLINED AS CONTRIBUTING TO THE DEVELOPMENT OF SOCIALIST DEMOCRACY, ACTIVISING THE ROLE OF THE REPRESENTATIVE ORGANS AND THEIR DEPUTIES, CONTRIBUTING TO CARRY OUT THE FUNCTIONS OF CONTROL AND SO ON. NEW REGULATION ON STANDING COMMISSIONS PROVIDES THAT MINISTERS, MEMBERS OF THE SUPREME COURTS AND UNION REPUBLIC PROCURORS ARE NON ELIGIBLE FOR MEMBERSHIP IN THE COMMISSIONS. CERTAIN RECOMMENDATIONS OF THE STANDING COMMISSIONS ARE MADE OBLIGATORY FOR THE HEADS OF THE MINISTRIES AND DEPARTMENTS. STATE ORGANS ARE OBLIGED TO CONSIDER THOSE RECOMMENDATIONS IN A MONTH TERM. THE AMENABILITY FOR NON DISCHARGE IS BEING ENHANCED. STEMMING OUT OF THE GROWING SIGNIFICANCE OF THE STANDING COMMISSIONS THE REGULATION IN ITS OWN TURN STIPULATES THE GROWTH OF THE CONTROL ACTIVITY OF THE COMMISSIONS. THE GRADUALLY CHANGING PRACTICE TESTIFIES TO THE ABOVE MENTIONED FACT. IN AUTHOR'S MIND TO FURTHER ACTIVISE THE WORK OF COMMISSIONS IT IS IMPORTANT TO WIDELY COOPERATE IT WITH THAT OF THE PEOPLE'S CONTROL ORGANS.

UNCLASSIFIED

USSR

UEC 669.14.018.44:539.4

BABICH, B. N., BULYGIN, I. P., ZHUKOV, N. D., KRIVENKO, M. F., and PARFENOVA, N. I.
All-Union Scientific Research Institute of Aviation Materials (Moscow)

"The High-Temperature Strength of Dispersion-Hardening Composition Alloys
Potentially Suitable for Use in Engines"

Kiev, Problemy Prochnosti, No 11, Vol 73, pp 73-77

Abstract: An investigation is made of the high-temperature strength of the nickel-based dispersion-hardened alloys VDU-1 and VDU-2, hardened by finely dispersed, uniformly distributed particles of high-melting oxides of the TiO_2 type in the amount of 2-3% by weight. A study was made of the strength of semi-finished products in the form of rods 6-12 mm in diameter and sheets 0.8-1.2 mm in thickness, obtained from powders of the components via shaping, baking, and hot extrusion. Results are presented of an investigation of the short- and long-term strength, the creep, fatigue, and heat resistance of the alloys to establish their suitability for use in gas-turbine engines. An analysis was made of such strength features of these alloys as the nature of the temperature-time relationship of the strength, the scattering of the heat-resistance indicators, the sensitivity to loading instability, etc. In comparison to the strength properties of series-produced highly heat-resistant alloys. The

1/2

USSR

BABICH, B. N., et al., Problemy Prochnosti, No 11, Vol 73, pp 73-77

obtained results demonstrate the fact that with regard to their high-temperature strength, dispersion-hardened alloys are potentially suitable for use in gas-turbine engines. 8 figures. 2 tables. 5 references.

2/2

- 80 -

USSR

Adsorption

UDC 545.633:543.544.6

SHATSKII, V. M., KRIVENKO, S. V., KOMISSAROVA, L. N., BEBINKI, G. F.,
PRUTKOVA, N. M., KESLER, YA. A., and TVOROGOV, V. A., *Chemistry*
Chain of Inorganic

"Synthesis of Novel Phosphorus Containing Sorbents and the Study of the Sorption
of Scandium on Them"

Moscow, *Vestnik Moskovskogo Universiteta*, Vol 13, No 6, Nov-Dec 72, pp 653-658

Abstract: Optimal conditions for scandium sorption and separation from iron
have been determined on a pilot-plant scale. A specific sorbent was used in the
process. It was the product of the copolymerization of styrene with divinyl-
benzene phosphorylated with PnCl_2 , and subsequently hydrolyzed with alcoholic
potassium hydroxide solution. The optimal conditions for the separation process
on this sorbent are as follows: the sorption is carried out from a 0.1 N H_2SO_4
solution; a 7% ammonium fluoride solution is used for the desorption; under
these conditions in one "sorption-desorption" cycle the iron is isolated prac-
tically completely. Repetition of the desorption process with a fresh portion
of the desorbent removed 92% of scandium. This sorbent may be used for the con-
centration of scandium out of the solutions with high iron content. In addition
to iron this method also separates all mono- and divalent elements, rare earth
elements and other impurities from scandium.

1/1

USSR

UDC 621.791.762.5:536.2

KRIVENKO, V. G., Candidate of Technical Sciences, and DOBROVOL'SKIY, V. P.,
GORSHKOV, A. P., and FORTUNATOVA, N. N., Engineers, Institute of Electric
Welding imeni Ye. o. Paton, Academy of Sciences Ukrainian SSR

"Heating Type EP199 Heat-Resistant Alloys in Resistance Welding with Impulse
Fusion"

Kiev, Avtomaticheskaya Svarka, No 2, Feb 74, pp 12-15

Abstract: The effect of the basic parameters of the impulse fusion process on heating the ends of parts prior to upsetting were studied and the values of these parameters, ensuring a minimum welding time, were determined in the welding of type EP199 heat-resistant alloys. The Hartley-Kono scheme was used in this work for selecting the controlling and output parameters. It was found that in resistance welding of heat-resistant alloys by impulse fusion with low-frequency vibrations (up to 5 Hz), the heating of parts is determined by the main control parameters and to a large degree by their interaction. The optimum values of the vibration parameters in welding EP199 alloys were vibration amplitude $A = 1-1.3$ mm and vibration frequency $f = 1-4$ Hz. The required temperature of not less than 1000° C at the upset zone boundary can be achieved in 90 seconds, which is 50% less in comparison with continuous preheating prior to welding. Three figures, two tables, four bibliographic references. 1/1

USSR

UDC: 621.3.085.3

BOYKO, B. N., KRIVENKO, V. G., Special Design Office of Biological Instrument Building, Academy of Sciences of the USSR

"A Device for Displaying Arabic Numerals on the Screen of an Oscilloscope"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obratny, Tovarnyye Znaki, No 6, Feb 72, Author's Certificate No 328489, Division G, Filed 26 May 70, published 2 Feb 72, p 165

Translation: This Author's Certificate introduces a device for displaying arabic numerals on the screen of an oscilloscope. The device contains two mixers, a matrix, keystone scanning voltage shapers based on integrating amplifiers, and polarity selectors comprised of an inverter and two switches. As a distinguishing feature of the patent, the clarity of the images is improved and the circuit is simplified by equipping each keystone scanning voltage shaper with upper-level and lower-level fixing devices connected in the feedback circuit of the integrating amplifiers. The outputs of the ballast resistors of each pair of fixing devices are connected to the set terminals of two flip-flops whose one-output terminals are cross-connected to the inputs of the shapers. The output of the

1/2

USSR

BOYKO, B. N., KRIVENKO, V. G., USSR Author's Certificate No 326469

first shaper is connected through a switch and also through an inverter and a second switch to the inputs of the first mixer. Both switches are connected to the outputs of a third flip-flop, whose counting input is connected to the one-output terminal of the first flip-flop. The inputs of the second mixer are connected to the outputs of the second shaper and the output of the first mixer.

2/2

- 5 -

1/2 024

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--STRUCTURE OF PARAMAGNETIC CENTERS AND THEIR PHOTOCHEMICAL
TRANSFORMATIONS IN A GAMMA IRRADIATED SINGLE CRYSTAL OF CYSTEINE
AUTHOR--KRIVENKO, V.G., KAYUSHIN, L.P., PULATOVA, M.K.

COUNTRY OF INFO--USSR

SOURCE--KIM. VYS. ENERG. 1970, 4(1), 49-55

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--AMINO ACID, GAMMA IRRADIATION, EPR SPECTRUM, PARAMAGNETISM,
PHOTOCHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0501

STEP NO--UR/0456/70/004/001/0049/0055

CIRC ACCESSION NO--AP0102506

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102506

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CYSTEINE HYDROCHLORIDE SINGLE CRYSTAL WAS IRRADIATED WITH PRIME⁶⁰ CO TO A DOSE OF 10 MEGARADS AT 77DEGREE^{SK} AND THE EPR SPECTRUM WAS ANALYZED. PARAMAGNETIC CENTERS OF 3 TYPES WERE FOUND. TWO WERE LOCALIZED ON THE S ATOM AND THE 3RD, A K RADICAL, WAS LOCALIZED ON A C ATOM. WHEN IRRADIATED WITH LIGHT (340-450 NM) THE S-C BOND IN HS PRIME NEGATIVE CH SUB2 C(NH SUB3 CL)HCO SUB2 H (I) IS BROKEN AND .CH SUB2 C(NH SUB3 CL)HCO SUB2 H IS FORMED. ABOVE 290DEGREE^{SK}, RADICALS .SCH SUB2 C(NH SUB3 CL)HCO SUB2 H AND PRIME NEGATIVE S:CHC(NH SUB3 CL) HCO SUB2 H ARE FORMED FROM PYROLYSIS OF I.

UNCLASSIFIED

USSR

UDC 547.241:536.423.15

NAKHUTIN, I. Ye., SMIRNOVA, N. M., KRIVENKO, V. I. and LOISHAKOV, G. A.

"Vapor Pressure of Di-n-heptylphosphoric Acid and Tri-n-Octylphosphine Oxide and the Solubility of Iodine in These Compounds"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 5, May 1971, pp 940-943

Abstract: Data on the vapor pressures of di-n-heptylphosphoric acid and tri-n-octylphosphine oxide are provided, in addition to boiling points and isosteric temperatures of evaporation from the liquid phase. The compensation method was used to plot vapor pressure curves. The solubility of iodine in the liquid phase of both compounds was studied. Although organophosphorous compounds rarely act as acceptors in a chemical reaction, the specific compounds considered show characteristics of electrophilic bonding with iodine. In the case of di-n-heptylphosphoric acid, iodine solubility increases with rising temperatures within the range of 80-180°, while for tri-n-octylphosphine oxide, it remains constant over the same range.

1/1

2/2 019

UNCLASSIFIED

PROCESSING DATE--300CT70

CIRC ACCESSION NO--AA0110286

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. DECIMAL CODE WITH FLOATING DECIMAL POINT INTO BINARY CODE CONVERTER WHOSE SPECIAL FEATURE IS THAT IT CONTAINS ELEMENTS FOR STORAGE OF THE MANTISSA AND OF THE ORDER OF THE NUMBER BEING CONVERTED, AND ALSO ELEMENTS FOR NORMALISATION OF THE BINARY NUMBER SO OBTAINED. THE ELEMENTS FOR STORAGE OF EACH OF THE DECIMAL NUMBER MANTISSA DIGIT ARE CONNECTED WITH THE DECODER (4) WHOSE OUTPUT WIRES ARE CONNECTED THROUGH COLLECTING CIRCUITS (5) TO THE INPUTS OF THE SUMMATOR (1) CORRESPONDING STAGES. THE ELEMENTS FOR THE STORAGE OF THE NUMBER ORDER IN THE INPUT REGISTER (2) ARE CONNECTED WITH THE DECODER (6) WHOSE OUTPUT WIRES ARE CONNECTED THROUGH COLLECTING CIRCUITS TO A SHIFT REGISTER (7). THE OUTPUT OF THE SUMMATOR STAGE CORRESPONDING TO THE MANTISSA LEADING DIGIT, IS CONNECTED THROUGH THE OBTAINED NUMBER CODE NORMALISATION ELEMENTS TO THE SHIFT REGISTER. THE DEVICE COMPRISES FURTHER COINCIDENCE CIRCUITS (3,8,10,11,14); STORAGE ELEMENTS (9,13,15); DELAY LINE (12). FACILITY: LENINGRAДСKAYA VOYENNAYA INZHENERNAYA KRASNOZNAMENNAYA AKADEMIYA IM. A. F. KOZHAYSKOGO.

UNCLASSIFIED

USSR

UDC: 681.325

KHIVENKOV, V. V.

"Device for Initial Setting of an Angle-Code Converter"

Avt. sv. SSSR, kl. G 03c 9/00, G 01 b 7/30, No 326615, zapavl.
16.04.70, opubl. 6.03.72 (Author's Certificate, USSR, class G 03c
9/00, G 01b 7/30, No 326615, claimed 16 April 1970, published
6 March 1972) (from RZh--Avtomatika, telemekhanika i vychislitel'-
naya tekhnika, No 2, 1973, Abstract No 2A480P)

Translation: A device is proposed for initial setting of an angle-code con-
verter, containing a pulse distributor, a motor, an initial code sensor, and a
code converter. One illustration.

1/1

- 9 -

1/2 031

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--RADIATION CATALYTIC ACTIVITY OF DIAMOND AND GRAPHITE -U-

AUTHOR--(05)-VLADIMIROVA, V.I., ZHABROVA, G.M., KADENATSI, B.M.,
KRIVENKOVA, P.G., BUTUZOV, V.P.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VYS. ENERG. 1970, 4(2), 182-3

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY, EARTH SCIENCES
AND OCEANOGRAPHY

TOPIC TAGS--CATALYST ACTIVITY, DIAMOND, GRAPHITE, METHANOL, GAMMA
RADIATION, FORMALDEHYDE, ETHYLENE GLYCOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0748

STEP NO--UR/0456/TQ/004/002/0182/0183

CIRC ACCESSION NO--AP0119655

UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119655

ASSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DIAMOND AND GRAPHITE WERE STUDIED TO DET. THEIR ACTIVITY IN DIFFERENT ELECTRONIC CONFIGURATIONS. SYNTHETIC AND NATURAL DIAMONDS WERE USED. THE SURFACE OF ALL SAMPLES WAS INCREASED BY VIBRATION GRINDING. THE SAMPLES WERE PURIFIED WITH HCL AND DRIED AT 120DEGREES. THE RADIATION CATALYTIC ACTIVITY WAS DETD. BASED ON THE TRANSFORMATION OF MEQH TAKING PLACE IN AN ADSORBED LAYER AT ROOM TEMP. THE SAMPLES WERE DEGASSED AT 400DEGREES AND MEQH VAPORS WERE ADSORBED ON THEM BY COOLING THEM TO ROOM TEMP. THEN THE SAMPLES WERE IRRADIATED WITH PRIME60 CO GAMMA RAYS, AND THE PRINCIPAL PRODUCTS FORMED WERE CH SUB2 O AND ETHYLENE GLYCOL. THE TOTAL PRODUCTS FORMED EXCEEDED BY A FACTOR OF 100 THE TOTAL OBTAINED BY THE HOMOGENEOUS RADIOLYSIS OF MEQH. THUS DIAMONDS WITH A WIDTH OF THE FORBIDDEN BAND OF 7 EV TRANSFER ENERGY WELL. NO DIFFERENCE IN ACTIVITY WAS FOUND BETWEEN SYNTHETIC AND NATURAL DIAMONDS. GRAPHITE DID NOT TRANSFER THE ADSORBED ENERGY.
FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 632.951

KRIVENTSOV, YU. I., and CHUMAK, P. YA., Botanical Garden of Kiev University

"Ultracide as an Agent for the Control of *Coccus hesperidum*"

Moscow, *Nashchita Rasteniy*, No 5, May 73, pp 23-24

Abstract: Observations in hothouses of the Botanical Garden of Kiev University showed that the pest *Coccus hesperidum* survives for four generations. In experiments carried out on lemon, calla lily, oleander, and *gerantosania* test plants infested with *Coccus hesperidum*, good results in the control of this pest were obtained by applying the Swiss systemic insecticide ultracide. Ultracide was used in concentrations of 0.1 and 0.15%. It proved more effective than rogor applied in the concentration of 0.1%

1/1

USSR

UDC 51

KRIVENTSOVA, N. N.

"A Method of Solving a Convex Programming Problem with a Special System of Boundaries"

Tr. 4-y Zimn. shkoly po mat. programir. i smezhn. vopr., Drogobych. 1971, (Proceedings of the Fourth Winter School on Mathematical Programming and Related Questions, Drogobych, 1971), No 4, Moscow, 1972, pp 158 - 169 (from RZh Matematika No 12, 1973, abstract No 12 V573)

Translation: The problem considered has a separable goal function and linear boundaries of a special type

$$F(x) = \sum_{j=1}^n f_j(x_j) \rightarrow \min$$

with

$$d_i \leq \sum_{j=1}^i x_j \leq a_i, \quad i = 1, \dots, n-1;$$

$$\sum_{j=1}^n x_j = a_n; \quad 0 \leq x_j \leq b_j, \quad j = 1, \dots, n \quad ;$$

1/3

USSR

KRIVENTSOVA, N. N., Tr. 4-v Zimn. shkoly do mat. programir. i smezhn. vopr.,
Drogobych. 1971. No 4, Moscow, 1972, pp 158 - 169

where $f_j(x_j)$ are convex beneath the function. For this problem a special method of solution is explained, consisting of a reduction of the initial problem to a large number of individual subproblems, each of which is of the type of the initial problem, but the subproblems do not have common variables and the total number of variables of all subproblems is equal to n . The division into subproblems is done sequentially. At each division of the subproblems the following simple problem must be solved:

$$\sum_{j=p}^q f_j(x_j) \rightarrow \min$$

$$\sum_{j=p}^q x_j = a_q, \quad 0 \leq x_j \leq b_j, \quad j = p, \dots, q.$$

2/3

- 64 -

USSR

KRIVENTSOVA, N. N., Tr. 4-y Zimm. shkoly po mat. programir. i smezhn. vopr.,
Drogobych, 1971, No 4, Moscow, 1972, pp 158-169

It is shown that at some step the division process is interrupted and that the combination of solutions of the subproblems is the solution of the initial problem. The suggested method is applicable if $f_j(x_j)$ are not necessarily strictly convex functions.

Abstract by V. Skokov.

3/3

Materials

USSR

UDC 620.172.2

ZELNYUK, Ye. Ye., KRIVENYUK, V. V., SEMIROG-ORLIK, V. N., (Kiev)

"Deformation and Rupture of Molybdenum Under Creep Conditions"

Kiev, Problemy Prochnosti, No 12, Dec. 1972, pp 85-89.

Abstract: Results are presented from creep and long-term strength tests in a vacuum at temperatures of 1,000-1,800°C, using specimens of technically pure molybdenum with concentrators in the form of apertures, as well as the results of studies of the concentration of deformations in a dangerous cross-section near a notch. It is established that the influence of the concentrator on the strength of the material may be qualitatively and quantitatively different, depending on the test conditions; the stress concentration and deformation concentration factors in the elastic area coincide, the latter being independent of the plastic deformation over rather broad limits of deformation.

1/1

USSR

UDC 620.172.2

ZASIMCHUK, Ye. E., KRIVENYUK, V. V., Kiev

"Regularities of Creep and Long-Term Rupture of Molybdenum and Its Alloys"

Kiev, Problemy Prochnosti, No 6, 1972, pp 33-37.

Abstract: An experimental study is presented of the regularities of creep and long-term rupture of slightly alloyed molybdenum-base alloys in comparison with molybdenum of technical purity. The composition of the materials studied was: technical molybdenum, 99.97% pure; TsM-2A, 0.075% Zr, 0.18% Ti, 0.003% C, 0.004% O₂, 0.004% N₂, 0.005% H₂; TsM, 0.14% Zr, remainder of TsM and TsM-2A -- molybdenum. Experimental results of the study of long term strength and deformation rate are presented, as well as descriptions of structural changes during creep of the specimens. The significance of diffusion softening processes (polygonization and grain growth) for deformation rate during creep is determined. The mechanism of the influence of microalloying on creep characteristics and long-term rupture characteristics is studied.

1/1

- 41 -

USSR

UDC 539.388.1

KRIVENYUK, V. V., TSVILYUK, I. S., PYL'NIKOV, V. I., Kiev, Kaliningrad.
Institute of Strength Problems, Academy of Sciences, Ukrainian SSR,
TSNIICHERMET (Central Scientific Research Institute of Ferrous Metallurgy
imeni I. P. Bardin)

“The High-Temperature Creep and Long-Time Strength of the Niobium Alloy
SVMTs”

Kiev, Problemy Prochnosti, No. 6, 1971, pp 54-59

Abstract: In spite of the extensive use of niobium-based alloys, little information is contained in the literature concerning the characteristics of their creep and long-time strength. The results of the tests described in the present article, on alloy SVMTs (W-5.08 percent, Mo-2.2 percent, Zr-0.7 percent, O-0.021 percent, C-0.01 percent, N-0.008 percent) in the temperature range from 1,000 to 1,800 degrees C on the basis of 0.1 to 1,000 hours, in conjunction with results from similar tests on alloy VN-2, make it possible to expand somewhat the framework of phenomenological analysis of the particularities of the creep and long-time strength characteristics of niobium-based alloys. 5 figures, 2 tables, 11 references.
1/1

USSR

UDC: 620.172.2

ZELENYUK, Ye. Ye., KRIVENYUK, V. V., Kiev

"Creep and Long-Term Strength of Molybdenum At High Temperatures"

Kiev, Problemy Prochnosti, No 11, 1970, pp 86-90

Abstract: Results are presented from an investigation of creep and long-term strength of molybdenum at 1000°C over a test period of from 0.1 to 400 hours and at 1200, 1400, 1600 and 1800°C over a test period of from 0.1 to 100 hours. The characteristic temperature dependences of strength, time dependences of durability and creep rate are determined. A qualitative analysis is presented of the influence of hot brittleness of molybdenum on the regularities of creep and long-term strength.

1/1

- 88 -

1/2 027 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--CREEP AND LONG TERM STRENGTH OF THE VN-2 ALLOY AT HIGH TEMPERATURES
-U-
AUTHOR--(02)-KRIVENYUK, V.V., MAKOVETSKI, I.V.
COUNTRY OF INFO--USSR
SOURCE--PROBLEMY PROCHNOSTI, VOL. 2, MAR. 1970, P. 29-32
DATE PUBLISHED----MAR 70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--HIGH TEMPERATURE EFFECT, MATHEMATIC EXPRESSION, DURABILITY,
METAL CREEP, MECHANICAL STRENGTH/(U)VN2 ALLOY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/0197 STEP NO--OK/3663/10/0027/000/0029/0032
CIRC ACCESSION NO--AP0123966

272 027 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0123966
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT, EXPERIMENTAL INVESTIGATION OF THE CREEP AND LONG TERM STRENGTH OF THE VN-2 ALLOY AT TEMPERATURES RANGING FROM 1000 TO 1400DEGC. EXPONENTIAL RELATIONS ARE ESTABLISHED BETWEEN THE STRESS AND THE INITIAL STRAIN RATE, AND ALSO BETWEEN THE INITIAL STRESS AND THE DURABILITY. THE ITO-SHIMOKIN (1923) EQUATION IS FOUND USEFUL FOR DESCRIBING THE GENERAL BEHAVIOR OF THE MECHANICAL PROPERTIES OF MATERIALS AS A FUNCTION OF TEMPERATURE. FACILITY: AKADEMIA NAUK UKRAINSKOI SSR, INSTITUT PROBLEM PROCHNOSTI, KIEV, UKRAINIAN SSR.

UNCLASSIFIED

AA0044268 ..

K

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

243048 PROTECTION OF PARALLEL-CONNECTED SEMICONDUCTOR
 DEVICES achieves higher reliability and better
 efficiency. The increase of current through the
 parallel-connected transistors (1) causes a proportional
 voltage drop on resistors (2). At a certain level of
 current in any of the branches controller (3) will
 switch off the power supply via switch (4).
 3.5.67 as 1153764/24-7. Ye. A. KRIVESHKO & N. B. MARCHENKO.
 MACHINE WORKS, KIEV. (30.9.69) Bul 1673.5.69. Class 21d².
 21c. Int. Cl. H 02m, H 01h.

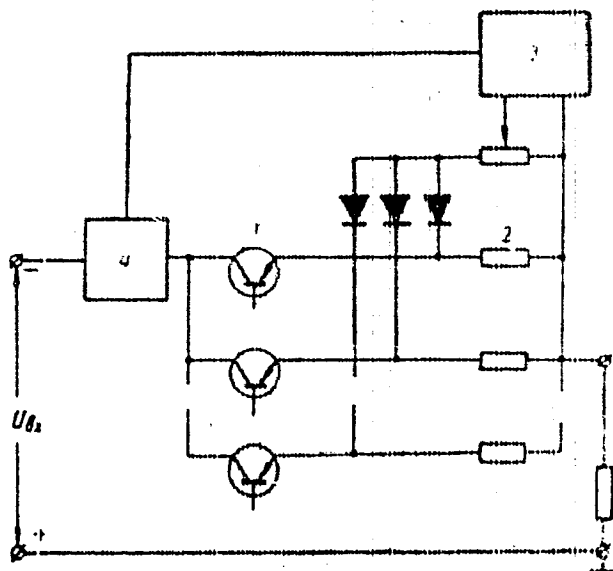
Kiyevskiy Mashinostroitel'nyy Zavod

1/2

4

19770787

AA0044268



H2

pc

19770788

Genetics

USSR

UDC 575.24

BUDOVSKIY, E. I., KRIVISKIY, A. S., SVERDLOV, YE. D., and SHERBAN, T. P.,
Institute of Chemistry of Natural Compounds, Academy of Sciences USSR, and
Institute of Molecular Biology, Academy of Sciences USSR.

"The Effect of Mutagens on Bacteriophage MS2 and Its Infectious RNA. III.
The Effect of O-Methylhydroxylamine. Analysis of the Kinetics of Inactivation"

Moscow, Genetika, No 1, 1971, pp 120-129

Abstract: Study of the inactivation of bacteriophage MS2 and its infectious RNA under the influence of O-methylhydroxylamine (OMHA) revealed a relationship between the chemical changes in the genome and the inactivating effect of OMHA. Some assumptions on the kinetics of modification of the cytidine residues in bacteriophage MS2 and its infectious RNA appear to have been experimentally confirmed. For example, the rates of individual stages of the reactions that occurred during the action of OMHA on the cytosine nucleus varied with the concentration of the reagent. The higher structures of polynucleotides and nucleoproteins apparently have a substantial effect on the reactivity of the cytosine nucleus. This makes it possible to calculate the contribution of the different kinds of modified residues to the inactivation process. The kinetics of modification of the cytidine residues in the
1/2

USSR

BUDOVSKIY, E. I., et al., Genetika, No 1, 1971, pp 120-129

monomers was found to be virtually independent of the ionic strength or presence of Versene. The influence of these factors on the kinetics of bacteriophage inactivation is ascribed to their action on the quaternary structure of the bacteriophage nucleoproteins.

2/2

- 10 -

1/3 023

UNCLASSIFIED

PROCESSING DATE--04DEC70.

TITLE--MUTAGENIC ACTION OF X RAYS ON EXTRACELLULAR PHAGE LAMBDA --U-

AUTHOR--(02)--KRIVISKIY, A.S., KTSOYAN, ZH.A.

COUNTRY OF INFO--USSR

SOURCE--GENETIKA 1970, 6(3), 65-77

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PHAGE, X RAY RADIATION BIOLOGIC EFFECT, RADIATION INDUCED
MUTATION, DNA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO-----FD70/605002/CO1 STEP NO---UR/0473/70/005/003/006570077

CIRC ACCESSION NO--AP0139421

UNCLASSIFIED

2/3 023

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139421

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MUTAGENIC EFFECT OF X RAYS WAS STUDIED IN EXTRACELLULAR RESTING LAMBDA SUB11 PHAGE (MULTIPLE MUTANT OF LAMBDA). DIRECT AND INDIRECT X IRRADN. RESULTED IN AN INCREASED FREQUENCY OF VIR MUTANTS; THIS WAS SUE NEITHER TO VIR MARKER RESCUE BY PROPHAGE LAMBDA IN LYSOGENIC CELLS IN THE BACTERIAL LAWN NOT TO INCREASED RADIORESISTANCE OF VIR MUTANTS. X RAYS EVIDENTLY HAD A TRUE MUTAGENIC EFFECT ON THE EXTRACELLULAR PHAGE. X RAY INACTIVATION OF LAMBDA 11 HAD ONE HIT KINETICS, WHILE MUTATION INDUCTION HAD MULTI HIT KINETICS. WHEN IRRADN. WAS CARRIED OUT IN PHOSPHATE BUFFER, THE RELATIVE FREQUENCY OF VIR MUTANTS WAS HIGHER AT THE SAME DOSE. THEREFORE, THE INDIRECT EFFECT OF X RAYS MAKES A DEFINITE CONTRIBUTION TO THE TOTAL NO. OF INDUCED MUTANTS. AT EQUAL SURVIVAL RATES, THE NO. OF VIR MUTAANTS WAS SOMEWHAT HIGHER WHEN THE X RAY EFFECT WAS DIRECT, WHICH IS APPARENTLY LATED TO A LOWER FREQUENCY OF DOUBLE BREAKS IN PHAGE DNA. AT THE MAX. DOSE OF IRRADN. IN THE BROTH (500 KR), WHEN IRRADIATED PHAGES WERE PLATED ON STRAINS NOT CARRYING MUTATIONS FOR DEFECTIVE REPAIR OR RECOMBINATION (UVR PRIME POSITIVE, HCR PRIME POSITIVE, REC PRIME POSITIVE), THE NO. OF VIR MUTANTS AMONG SURVIVORS WAS 15 FOLD GREATER THAN BACKGROUND LEVELS. WHEN IRRADIATED PHAGES WERE PLATED ON LYSOGENIC STRAINS WITH REPAIR OR RECOMBINATION DEFECTS (HCR PRIME NEGATIVE, UVR PRIME NEGATIVE, REC PRIME NEGATIVE), THE VIR MUTANT FREQUENCY DECREASED, WHILE SURVIVAL OF NONIRRADIATED AND IRRADIATED PHAGES LAMBDA SUB11 AND LAMBDA SUB11 VIR (WITH COMPLETE VIR MUTATION) WERE VIRTUALLY IDENTICAL IN ALL STRAINS (HCR PRIME POSITIVE, HCR PRIME NEGATIVE, REC PRIME NEGATIVE).

UNCLASSIFIED

3/3 023

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139421

ABSTRACT/EXTRACT--IT IS ASSUMED THAT PHAGES CARRYING PRE MUTATIONAL DEFECTS AFTER IRRADN. ARE CONVERTED TO VIR MUTANTS LESS EFFECTIVELY WHEN THEY DEVELOP IN BACTERIAL STRAINS WITH REPAIR OR RECOMBINATION DEFECTS.

FACILITY: INST. MOL. BIOL., EREVAN, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ACTION OF MUTAGENS ON PHAGE MS2 AND ITS INFECTIONOUS RNA. II.
COMPARATIVE STUDY OF THE KINETICS OF LETHAL AND MUTAGENIC EFFECTS OF
AUTHOR--(02)--KRIVISKIY, A.S., SHERBAN, T.P.

COUNTRY OF INFO--USSR

SOURCE--GENETIKA 1970, 6(1), 129-43

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MUTAGEN, PHAGE, RNA, RADIATION INDUCED MUTATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1361

STEP NO--UR/0473/70/006/001/0129/0143

CIRC ACCESSION NO--AP0125C09

UNCLASSIFIED

K

2/2 015

UNCLASSIFIED

PROCESSING DATE--(30 OCT 70)

CIRC ACCESSION NO--AP0125009

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INACTIVATING EFFECT OF HNO SUB2 ON PHAGE MS2 AND ITS RNA WAS EXPONENTIAL; THE RATE OF RNA INACTIVATION WAS 1.5-2 FOLD THAT OF THE INTACT PHAGE. TREATMENT OF RNA WITH HNO SUB2 CAUSED FORMATION OF PLAQUE TYPE MUTANTS PHENOTYPICALLY SIMILAR TO SPONTANEOUS MUTANTS AND TO MUTANTS INDUCED BY HNO SUB2 IN THE INTACT PHAGE. THE RELATIVE NO. OF MUTANTS INCREASED LINEARLY WITH TIME OF MUTAGEN TREATMENT UP TO THE DOSES CORRESPONDING TO 2-3 TIMES THE LD. LINEAR DEPENDENCE OF THE NO. OF INDUCED MUTANTS IN THE WHOLE PHAGE WAS FOUND UP TO 10 TIMES THE LD. INACTIVATION OF MS2 RNA BY UV IRRADN. WAS EXPONENTIAL AND AT THE SAME RATE AS FOR THE INTACT PHAGE. UV IRRADN. INDUCED LETHAL BUT NOT MUTAGENIC DAMAGE IN THE INFECTIOUS RNA.
FACILITY: INST. MOL. BIOL., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 615.214.31.015.4:612.823.5

POPOVA, E. N., VAVILOV, A. M., KRIVITSKAYA, G. N., and TUMANOV, V. P., Brain Institute and Institute of Surgery imeni A.V.Vishnevskiy, Academy of Medical Sciences USSR, Moscow

"Effect of Amphetamine Sulfate on the Structure of Interneuronal Connections"

Moscow, Zhurnal Nevropatologii i Psikhatrii, No 3, 1973, pp 382-387

Abstract: Intraperitoneal injection of rats with 1 mg/kg of amphetamine sulfate had little effect on the dendrites of most neurons in the caudate nucleus or cerebral cortex. Following a dose of 2.5 mg/kg, a dense network of fibrils of different sizes was seen in slices from the caudate nucleus stained with silver by Golgi's method. Along the thinnest fibrils could be seen varicosities of irregular shape and size that stained more intensely with silver. The number of spines per unit of dendrite length increased markedly. In this axonal network were intertwined thicker fibers branching out in arborescent fashion. The cortex also exhibited an axonal network, denser in the lower layers. Injection of 10 mg/kg of amphetamine sulfate intensified the staining of the fibrillar structures. The number of spines on the dendrites was somewhat larger than when the moderate dose was used and there were more axodendritic contacts on the trunk and spines. Thus, the number of spines per unit of 1/2

- 59 -

USSR

POPOVA, E. N., et al., Zhurnal Nevropatologii i Psikhatrii, No 3, 1973,
pp 382-387

dendrite length regularly increased as the dose of amphetamine sulfate was boosted, showing that both the caudate nucleus and the sensorimotor cortex were stimulated by the drug.

2/2

USSR

UDC 669.721.074.2

PICHUKOV, A. P., KRIVITSKAYA, L. I., FIALKOV, Yu. G.

"Variation of pH with Composition of Solutions Produced in Purification of Magnesium Production Gases"

Tr. Vses. N-i. i Proyekti. In-ta. Alyumin., Magn. i Elektrodn. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1970, No. 72, pp. 133-138. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G204 by the authors).

Translation: The pH of aqueous, alkaline, and acid solutions of CaCl_2 in the 0-4 mol/l concentration interval and of Ca(OH)_2 and CaCO_3 solutions with and without added CaCl_2 was measured. The pH decreases from 12.65 to 10.0 for saturated Ca(OH)_2 solutions and from 9.25 to 5.10 for saturated CaCO_3 solutions as the CaCO_3 content is varied from 0 to 4 mol/l. Similar dependences are produced for acid solutions of CaCl_2 . These regularities indicate the possibility of creating an automatic system for testing and control of the process of HCl and Cl removal from gases, based on measurement of the pH and redox potential of the solution. 4 figs.

1/1

USSR

UDC: 620.193.4

SUKHOTIN, A. M., SEMERIKOVA, I. A., KRIVITSKAYA, N. L., PARSHKOV, I. S.

"Corrosion of Metals in Freon 11 (CCl_2F) at 50-250° C"

Moscow, Zashchita Metallov, Vol 9, No 4, Jul-Aug 73, pp 402-406.

Abstract: This work summarizes and supplements data produced by the same authors earlier on the corrosion resistance of metal materials in freon 11 at temperatures of 50 to 250° C. The corrosion behavior of steels types 3, 1Kh13 and Kh18N10T, N2 nickel, monel metal NMZhMts 82-2.5-1.5, M1 copper, AD1 aluminum, SO lead, BrA5 bronze and LO62 brass was studied. The corrosion tests were performed in 1.5 l autoclaves of Kh18N10T steel. The corrosion rate was determined gravimetrically. During the tests, the freon 11 was partially decomposed, increasingly at increasing temperatures. The corrosion rates determined varied widely with type of material and temperature.

1/1

USSR

UDC: 601.51

MURASHKO, V. A., KRIVITSKIY, V. A., SHEVCHENKO, T. Ya.

"An Information Language for Finding Documents on Automation of Metallurgical Production"

V sb. Prom. kibernetika. Vyp. 3 (Industrial Cybernetics--collection of works. No 3), Kiev, "Nauk. dumka", 1971, pp 21-33 (from RZh-Kibernetika, No 9, Sep 71, Abstract No 9V653)

[No abstract]

6610

CSO: 1843-W

- END -

1/1

USSR

K
UDC: 621.396.75

ASTRETSOV, D. V., KRIVITSYN, V. G.

"Statistical Synthesis of Optimum Non-Tracking Direction Finders Which Utilize Instantaneous Phase Comparison of Received Signals"

Tr. Ural'skogo politekhn. in-ta (Works of the Ural Polytechnical Institute), 1970, sb. 183, pp 67-73 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7980)

Translation: The method of maximum plausibility is used to obtain schematic diagrams of optimum direction finders which implement instantaneous phase comparison of received signals. Each circuit is a combination of a phase angle data unit and an optimum amplitude angle discriminator. It is pointed out optimum non-tracking phase DF circuits depend on the shape of the amplitude patterns of the antennas which are used. The angle discriminators for directed antennas differ only in the method of normalization. The given diagrams may be recommended for use in the improvement of existing systems. Three illustrations, bibliography of three titles. A. M.

1/1

USSR

UDC 621.791.72

ZYBKO, I. YU., TSEL'NIKER, YE. YA., and KRIVKO, M. A., Central Scientific Research Institute of Technology and Machine Building

"Electron Beam Welding of Heavy Steam Turbine Assemblies"

Kiev, Avtomaticheskaya Svarka, No 10, Oct 72, pp 59-62

Abstract: TsNIITMash/Tsentral'nyy Nauchno-Issledovatel'skiy Institut Tekhnologii i Mashinostroyeniya; Central Scientific Research Institute of Technology and Machine Building/ has investigated the welding processes in the welding of steam turbine guide wheel and diaphragm vane blocks made from EKhlMEsh (EP291), 1Kh13, 1Kh16N13M2B (E1680), 15Kh1MF, and 12Kh1MF steels. Weldability of the steels was studied on electron-beam-welded samples 60 mm thick using a TsELS-1M unit. In joints of EP291 and 1Kh16N13M2B steels micro- and macro-cracks were absent. In EP291 the seams had individual pores 0.2-0.3 mm in diameter. It is possible that these pores formed as the result of incomplete degassification of the seam metal during welding. The short-time strength of weld joints at room temperature after heat treating (740°C annual for two hours for EP291 and austenitization at 1100°C for one hour for E1680 steel was the same as the base metal, and at 300 and 600°C it amounted to 85-90% of the base metal's short-time strength. The impact strength of the seam metal for 1/2

USSR

ZYBKO, I. YU., et al., Avtomaticheskaya Svarka, No 10, Oct 72, pp 59-62

EP291 (not preheated before welding) was 6 kg-m/cm^2 and with preheating to 400°C -- 10 kg-m/cm^2 . The impact strength of the seam metal for EI680 steel after welding was 12 kg-m/cm^2 , and after austenizing-- $15-18 \text{ kg-m/cm}^2$. The fatigue strength of EP291 welds at 20°C with symmetrical loading at 10^6 cycles was $32-32.5 \text{ kg/mm}^2$, and joints of EI680 steel-- 25 kg/mm^2 . At 565°C the fatigue strengths were 25 and 17 kg/mm^2 , respectively. The above results made it possible to develop the technology of welding vane blocks and to weld the unit of regular vanes for a K300-240 turbine, manufactured at the Leningrad Metals Plant imeni XXII Congress CPSU. The welding was done with the TsELS-2 unit developed jointly by TsNIITMash and the Institute of Electric Welding, the productivity of which is 30 vane blocks and 4 diaphragms per shift. Electron beam butt welds were made of dissimilar steels (12Kh1MF-1Kh13 and 15Kh1MF-15Kh11MF) 30 mm thick. Shear tests at 20, 300, and 600°C showed that these welded pairs failed in the base metal. The tensile strengths of these pairs at 20°C was 52-56 kg/mm^2 for 15Kh1MF-15Kh11MF and 40-45 kg/mm^2 for 12Kh1MF-15Kh11MF. At 600°C the tensile strengths of these pairs were 38-40 and 30-32 kg/mm^2 , respectively. 6 figures, 2 tables.

2/2

- 45 -

Acc. Nr: APO046228

K

Ref. Code: UR 0646

PRIMARY SOURCE: Teoreticheskaya i Matematicheskaya Fizika, 1970,
Vol 2, Nr 2, pp 244-253

THE SELF-CONSISTENT FIELD NEAR THE CRITICAL POINT
IN THE ANTIFERROMAGNETIC ISING MODEL

V. Ya. Krivnoy, O. A. Olkhov, B. N. Provotorov,
M. E. Sarychev

From the physical considerations the class of diagrams is found which determine the thermodynamic behaviour of the antiferromagnetic and ferromagnetic Ising models for $T < T_k$ (T_k being the critical temperature) in the case of interaction of the nearest neighbours. By means of summation of these diagrams the type of a singularity is found for the antiferromagnetic susceptibility and in the ferromagnetic case -- for the polarisation, susceptibility and specific heat. In the ferromagnetic case the region of the critical behaviour is determined ($z^{-2} < \frac{T_k - T}{T_k} < z^{-1}$, z being the number of the nearest neighbours). The reconstruction of the series of diagrams is carried out, which makes it

1/2

REEL/FRAME
19781344

21

AP0046228

possible correct evaluation of the critical temperature. The summation of diagrams leads to a transcendent equation and concrete results are obtained by means of its numerical solution. The calculations of the critical behaviour in the present method are less voluminous than if the high- and low-temperature expansions are exploited. The results obtained are in a good accordance with the experimental data and with the results of the numerical methods.

$\frac{7}{2}$

DI

19781345

USSR

UDC 543.77

FEDOROVA, M. N., KRIVODUBSKAYA, K. S., OSOKINA, G. N., and KOSTOUISOVA, T. I. Fazovyy Khimicheskiy Analiz Rud Chuznykh Metallov i Produktov Ikh Pererabotki (Phase Chemical Analysis of Ores of Ferrous Metals and Products of Their Treatment) "Nedra" Publishing House, Moscow, 1972, 160 pp

Translation of Foreword Annotation: The further development of ferrous metallurgy requires an ever increasing amount of high-quality ores. Therefore, the dressing of ores for metallurgical treatment is of great importance. More sophisticated technological schemes of ore beneficiation for assuring complete and complex extraction of valuable ore components should be developed in the coming years.

In order to correctly evaluate the industrial properties of ores being processed, a thorough and detailed study of their compositions is required, especially, a determination of the quantitative ratio of different mineral forms of elements composing them. Phase analysis, which along with other methods has found wide application in various branches of science and technology, is of importance in the compositional study of minerals.

The phase analysis method for non-ferrous and trace elements is the most highly developed (Dolivo-Dobrovolskiy, Klimenko, 1947; Filippova, 1964; Khristoforov, 1964, 1965). The literature regarding the methods of phase analysis of ores of ferrous metals is represented only by a few journal articles and several manuscripts.

1/6

USSR

FEDOROVA, M. N., et al., Fazovyiy Khimicheskiy Analiz Rud Chernykh Metallov i Produktov ikh Pererabotki, "Nedra" Publishing House, 1972, 160 pp

The methods of phase analysis for iron, manganese, and chromium ores that are mentioned in the monograph of V. V. Dolivo-Dobrovolskiy and Yu. V. Klimenko have not been developed very far. Presently they do not satisfy the high standards set up by concentration plants with respect to the elemental composition of ferrous ores. It should be noted that neither the domestic nor the foreign literature provides sufficiently complete manuals for the phase analysis of ferrous ores. Thus, it was thought expedient to generalize the works done in this field.

The present work systematizes the experience accumulated by many scientific research institutes (Uralsmekhanobr, Mekhanobr, Mekhanobrichermet) and tested at industrial plants in the Ural, Kazakhstan, Central, and Southern regions of the USSR for many years. Most of the methods presented were developed, tested, and perfected by the authors of this book.

The book describes the methods of phase analysis of different types of iron, manganese, titanium, and chromium ores, as well as beneficiation products and pelletized products prepared from iron concentrates. In some cases a detailed description is given of individual methods. This material can be useful for the evaluation of the ore analysis results, and in individual cases,

2/6

USSR

FEDOROVA, M. N., et al., Fazovyy Khimicheskiy Analiz Rud Chernykh Metallov i Produktov ikh Pererabotki, "Nedra" Publishing House, 1972, 160 pp

where data are available for comparison, it can be of help in selecting a more rational direction for future studies.

The authors will gratefully accept any comments regarding the application of methods given in this book to various ores, suggestions regarding modifications, improvements, and simplification of these methods, and reports of the development of new methods at various laboratories.

The authors thank Senior Scientist F. K. SOLOMONOVA for valuable comments and for the mineralogical analysis of ores during the development of the phase analysis methods. The authors are also grateful to Candidate of Technical Sciences N. N. MASLENITSKIY, YE. T. KARAFETYAN, Doctor of Technical Sciences V. V. DOLIVO-DOBROVOL'SKIY, Doctor of Chemical Sciences N. A. FILIPPOVA, and senior scientists R. S. MIL'NSR, A. G. LYASHENKO, I. G. GULEVITSKAYA and F. YE. MERLINA who gave us much valuable advice in examining the manuscript and gratefully helped us in the preparation of the manuscript for publication.

Translation of Table of Contents:

Foreword

Page

Problems and methods of phase analysis

3

Chapter I. Phase analysis of iron ores

5

3/6

USSR

FEDOROVA, M. N., et al., Fazovyy Khimicheskiy Analiz Rud Chernykh Metallov i Produktov ikh Pererabotki, "Nedra" Publishing House, 1972, 160 pp

Iron minerals and ores	19
A brief review of methods of phase analysis of iron ores	23
Determination of ore and silicate iron	24
Determination of magnetite	36
Determination of the magnetite chemical composition	50
Determination of iron hydroxides	53
Determination of siderite	55
Determination of Hematite	59
Determination of the sulfur mineral forms	60
Determination of cobalt and nickel forms in iron ores	63
Determination of the forms of phosphorus	65
Determination of bi- and trivalent iron in products with high concentration of sulfides	66
Chapter II. Phase analysis of pelletized products prepared from iron ore concentrates of different compositions	69
Formation of minerals in the charge during pelletizing process and firing of pellets	70
Synthesis of minerals present in the pelletized products	72

4/6

USSR

FEDOROVA, M. N., et al., Fazovyy Khimicheskiy Analiz Ihd Chernykh Metallov i Produktov ikh Pererabotki, "Nedra" Publishing House, 1972, 160 pp

Determination of calcium and iron oxide forms in pelletized products prepared from ore concentrates of a simple composition	73
Phase analysis of highly-basic agglomerates	78
Determination of mineral forms in pelletized products prepared from ore concentrates of complex composition	80
Chapter III. Phase analysis of titanium ores	
Titanium minerals and ores	84
Determination of the mineral forms of titanium	86
Study of the forms of iron, titanium, vanadium, and of other elements in titanium-magnetite and ilmenite-magnetite types of ores	97
Determination of grain sizes of ilmenite in titanomagnetite	100
Chapter IV. Phase analysis of manganese ores in products of their treatment	
Manganese ores and minerals	103
Review of methods of phase analysis of manganese ores	105
Determination of mineral forms of manganese in carbonate and mixed ores	110

5/6

USSR

FEDOROVA, M. N., et al., *Fazovyy Khimicheskiy Analiz Rud Charnykh Metallov i Produktov ikh Pererabotki*, "Nedra" Publishing House, 1972, 160 pp

Analysis of oxide ores	121
Analysis of firing products	123
Determination of phosphorus forms in manganese ores	124
Determination of chemical and molecular composition of carbonate manganese complexes	134
Chapter V. Phase analysis of chromium ores	140
Chapter VI. Determination of free and bound silicic acid	146
Methods of determining quartz	147
Determination of opal	153
Determination of sizes of quartz particles	154
References	155

6/6

USSR

UDC 532.694:669.046.542

KRIVOGLAZ, M. A., NAYDEK, V. L., OSINOVSKIY, M. YE., and PERELOMA, V. A.,
Institute of Metal Physics, Academy of Sciences Ukr SSR and Institute of Foundry
Problems, Academy of Sciences Ukr SSR

Kiev, Metallofizika, No 39, 1972, pp 26-37

Abstract: A drop of liquid with a low boiling point in a fused metal is surrounded by a gas layer of their vapors, owing to vaporization. A liquid-gas inclusion is formed. The mechanisms of heat exchange between the metal and inclusion are discussed. It is shown that the basic mechanism of heat transfer through the gas layer can be determined by the turbulence which occurs near the boiling drop. Boundary conditions for the surface problem of thermal conductivity were formulated. The distribution of temperatures around the rapidly moving inclusion, having the shape of an arbitrary rotating figure, at these boundary conditions was determined. The case of a sphere and a strongly flattened ellipsoid were investigated in more detail. The effect of the surface-active film on the movement of an inclusion and heat exchange is discussed. Diffusion of impurity atoms from the fused metal to an inclusion and the chemical reactions at the inclusion-metal interface was examined. The results obtained were used for investigating the interaction of a drop of liquid oxygen with molten Fe-C alloys. 6 bibliographic references.
1/1

KRIVOGLAZ, M. A.

NOTION OF MACROSCOPIC INCLUSIONS IN SOLIDS

JPRS 55930
9 May 1972

Excerpts from Russian-language book by Ya. Ye. Gerasim, M. A. Krivoglaz, Dvisheniye Makroskopicheskikh Vklucheniy v Tverdykh Telakh, 1971; Perelitsy, Smlishnyy House, Moscow, signed to press 21 April 1971; pp 3, 4, 284-339, DDC 669:62A192.4.

CONTENTS

TABLE OF CONTENTS	Page
PREFACE	1
CHAPTER 3. Effect of Notion of Inclusions on High-Temperature Processes in Solids	4

- a -

(I - USSR - 1)

USSR

UDC 539.219.3:549.4

KRIVOGLAZ, H. A., and ISINOVSKIY, M. YE., Institute of Metal Physics,
Academy of Sciences UkrSSR

"The Diffusion Movement of Impurities and Atoms and the Curving of Pores
in an Inhomogeneous Magnetic Field"

Kiev, Metallofizika, No 31, 1970, pp 45-47

Translation: The diffusion movement of ferromagnetic particles in a non-magnetic matrix, as well as of pores or nonmagnetic particles in a ferromagnet in the presence of an inhomogeneous magnetic field is examined. The force acting on a particle creates elastic stresses causing diffusion flows of atoms and leading to a transfer of impurities. Another reason for the emergence of diffusion flows is connected with the magnetic forces acting on individual matrix atoms. The order of the velocity of impurities is evaluated and it is shown that both mechanisms make contributions of one order to the velocity. It is shown that a pore in a ferromagnet can curve considerably. It is noted that a similar curving can occur during a diffusion transfer of pores in an inhomogeneous electric field. The depicted diffusion transfer of atoms in an inhomogeneous magnetic field is discussed.

Bibliography: 3 entries.

1/1

USSR

UDC 539.219.31548.4

KRIVOGLAZ, M. A., Institute of Metal Physics, Academy of Sciences UkrSSR

"Change in the Form of a Pore Moving in an Inhomogeneous Field"

Kiev, Metallofizika, No 31, 1970, pp 37-45

Translation: The movement of a pore in an inhomogeneous temperature gradient field or in an inhomogeneous electric field is examined. It is shown that even with the isotropic properties of the volume and surface of a crystal the inhomogeneity of a field leads to the curving of a pore. Diffusion flows were determined around the moving curved pore connected both with external forces and with inhomogeneous curvature and internal stresses near the curved pore. The conditions determining its stationary form in an arbitrary field were formulated. A case where the temperature or potential gradient far away from the pore is linearly changing with the distance is studied in greater detail. The dependence of the curvature on the pore radius is investigated. It is shown that in a homogeneous gradient temperature field or in a homogeneous electric field a pore can also curve as a result of the distortions created by adjacent pores or other impurities. The curvature value is evaluated and it is shown that it can be significant with the ordinary parameter values. Bibliography: 4 entries.

1/1

- 67 -

Acc. Nr:

AP0048044

Abstracting Service: **S/P/O**
INTERNAT. AEROSPACE ABST.

Ref. Code:

U/R 0185

A70-23193 # Dynamics of weakly coupled spins in ferromagnetic (Dinamika slabo sv'язanogo domashkogo spina u feromagnetiku). M. O. Krivopal and V. F. Lys' (Akademiia Nauk Ukrains'koi RSR, Institut Metalofiziki, Kiev, Ukrainian SSR). *Ukrains'ku Fizichni Zhurnal*, vol. 15, Jan. 1970, p. 84-91. In Ukrainian.

Spectral representation of Green's functions and certain correlation functions for weakly coupled spins in a ferromagnetic crystal. The calculation is based on the closing of the chain of equations for Green's functions and is valid over the whole temperature range up to the Curie temperature. Both harmonic and 'anharmonic' interaction of the spin of the impurity atoms with the spins of the crystal atoms, as well as spin-phonon and spin-electron interactions, are taken into account. The different contributions to the damping and shift of the quasi-local spin excitation frequency are estimated.

(Author)

A.L.S

1/1

REEL/FRAME
19791726

21

Radiation Chemistry

USSR

UDC 543.544.6:546.79

VDOVENKO, V. M., KRIVOKHATSKYY, A. S., BELOV, L. M., and ALEKSANDROV, B. M.

"Some Problems of the Chromatographic Purification and Preparation of Sources of Transplutonium Elements"

Leningrad, Radiokhimiya, Vol 16, No 4, 1973, pp 534-542

Abstract: Distribution of americium, curium, and californium has been determined between alcoholic solutions containing HCl and strongly alkaline anion exchange resin Dowex-1x4. Strong adsorption of TPE has been observed with distribution coefficients of 10^5 - $3 \cdot 10^6$, while admixtures of aluminum, magnesium, calcium, copper(II) and iron(III) were practically untouched. The process of electrolytic isolation of californium from weakly acidic solutions has been studied at various pH values, variable cathode current density and time of electrolysis. Optimal conditions have been selected for a two stage isolation of californium and one stage deposition of berelium from weakly acidic solutions directly on metallic plates, yielding layers of satisfactory quality.

1/1

USSR

JDC 66.074.7:539.173.8

VDOVENKO, M., KRIVOKHATSKIY, A. S., and SKOVOROKIN, N. V.

"An Analytical Method of Group Separation of Mixtures of Fission Products in the Presence of Carriers on Cation-Exchange Resins"

Leningrad, Radiokhimiya, Vol XIII, No 3, 1971, pp 416-421

Abstract: In investigating the composition of radioactive fission products, separation into groups is often the first stage of analysis, for it facilitates further separation, decontamination of individual elements, and ultimate analysis with β - and γ -spectrometers. But the numerous separation methods in use do not take into sufficient account the effect of the concentrations of separated elements or of impurities, for the individual case. The proposed group method, based on that of W. G. MATHERS, involves separation into 5 indicator quantities, on Dower-50x8 cation exchange resin, for Zr, Ce, Cs, Sr, Co and Ru, with use of columns and various elutriators. The method allows separation into six fractions: 1) Ru, Mo, Zr, Nb, Sb -- and possibly Gd and Pd, 2) Ce and Rb (but partially Sh), 3) Sr and Ba, 4) Zr, 5) transuranium elements, and partly rare-earth elements heavier than Gd and Yt, and 6) rare-earth elements. Separation is very precise, 1/2.

USSR:

VDOVENKO, M., et al., Radiokhimiya, Vol XIII, No 3, 1971, pp 416-421

but concentrations and impurities may have certain vitiating effects on the analysis; these can be avoided by precautions specified in the paper.

2/2

- 17 -

USSR

UDC 541.28

SKOVORODKIN, N. V., SOROKINA, A. V., BUGORKOV, S. S., KRIVOMETSKIY, A. S.,
and PETRZHAK, K. A.

"Radiochemical Determination of the Yields of Rare Earth Elements in the
Fission of ^{239}Pu and ^{241}Pu by Slow Neutrons. I. Yields of Rare Earth Elements
with Half-lives of Less Than 10 Days"

Leningrad, Radiokhimiya 12, No 3, 1970, pp 487-492

Abstract: ^{239}Pu and ^{241}Pu were purified with Dowex-1x8 (200-400 mesh) anion-
exchange resin, and used as targets. All cumulative yields are expressed in
terms of the ^{144}Ce cumulative yields. Yields are reported for the following
rare earth isotopes: ^{141}La , ^{143}Ce , ^{145}Pr , ^{149}Nd , ^{151}Pm , ^{152}Sm , ^{154}Sm ,
 ^{157}Eu , ^{159}Gd , and ^{161}Tb .

1/1

USSR

UDC 621.039.4.002

BAX, M. A., BARANOV, YU. I., KRIVOKHATSKIY, A. S., and SHLEMANIN, E. A.

"Special Features of the Production of Th^{233} and U^{232} by Neutron Irradiation of Pa^{231} "

Moscow, Akademiya Nauk SSSR, Atomnaya Energiya, Vol 23, No 3, Apr 70, p 234

Abstract: A calculation was made of the U^{232} and Th^{233} accumulation by irradiation of Pa^{231} by slow neutron fluxes in the 10^{19} - 10^{20} neutron/cm² . sec density range. About 40% of the initial quantity of Pa^{231} was a maximum accumulation of U^{232} attained during the optimum irradiation time of 1.3 year at the 10^{19} neutron/cm² . sec optimal electron flux density. The maximum Th^{233} yield amounts to 0.9% at a 10^{19} neutron/cm² . sec flux density for 16.5 years. The U^{232} yield, equal to about 0.3%, can be attained in one year by the continuous extraction of U^{232} from the irradiated volume of Pa^{231} , irradiated in a loop by a 10^{19} neutron/cm² . sec flux. For comparison, only 35% is attained by protactinium irradiation under the same conditions. The accumulation of U^{232} by Pa^{231} irradiation by various slow neutron fluxes is shown in a table. Orig. art. has: 1 table.

1/1

1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--THORIUM-228 AND URANIUM-232 PRODUCTION DURING THE NEUTRON
IRRADIATION OF PROACTINIUM-231 -U-
AUTHOR--(04)-BAK, M.A., BARANOV, YU.I., KRIVOKHATSKIY, A.S., SHLYAMIN, E.A.

COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. 1970, 28(3), 234

DATE PUBLISHED-----70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--NEUTRON BOMBARDMENT, SLOW NEUTRON, PROACTINIUM ISOTOPE,
FISSIONABLE MATERIAL, URANIUM ISOTOPE, THORIUM ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/0056

STEP NO--UR/0089/70/025/001/0234/0254

CIRC ACCESSION NO--AP0120756

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0120756

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. IN THE IRRADN. OF PRIME231 PA WITH SLOW N, THE MAX. ACCUMULATION OF PRIME232 U (SIMILAR TO 40PERCENT OF THE STARTING AMT. OF PRIME231 PA) IS OBTAINED BY IRRADN. FOR 1.8 YR AT THE OPTIMUM FLUX OF 10 PRIME14 N-(CM PRIME2-SEC); THE MAX. YIELD OF PRIME228 TH IS 0.9PERCENT, BY IRRADN. FOR 16.5 YR AT A FLUX OF 10 PRIME13 N-(CM PRIME2-SEC). THE AMT. OF PRIME223 TH IN EQUIL. WITH 1 G OF PRIME232 U IS 25.8 MG.

UNCLASSIFIED

USSR

UDC 534-8

AREF'YEV, I. M., ZAYTSEV, G. I., KHIVOKHIZHA, S. V., OZHOGIN, YA. P.,
SHREYNER, B. YA.

"Dispersion of the Velocity of Sound in Aniline-Nitrobenzene Solutions"

Kratk. soobshecheniya po fiz. (Brief Communications on Physics), 1970, No 7,
pp 37-41 (from RZh-Fizika, No 12(II), Dec 70, Abstract No 12Zh405)

Translation: The dispersion of sound in an aniline-nitrobenzene solution was investigated to observe its negative value, which is possible for associated solutions. At a temperature of 20°C the velocity of hypersound at a frequency of $5.5 \cdot 10^9$ Hz was determined in terms of the displacement of the Mandelstam-Brillouin components in the spectra of the thermal scattering of light which was excited by an He-Ne laser at an angle of 90°. The velocity of ultrasound was measured at a frequency of $2.8 \cdot 10^6$ Hz. It turned out that negative dispersion is absent in the solution. V. Ye. Gordeyev.

1/1

1/2 024 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--VOLUMETRIC DATA OF PULMONARY VENTILATION OF ROENTGENKINOGRAPHIC
EXAMINATION -U-
AUTHOR--KRIVOKHIZHA, V.I. *K*
COUNTRY OF INFO--USSR
SOURCE--VRACHEBNOYE DELO, 1970, NR 3, PP 64-66
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--LUNG, RESPIRATION, TUBERCULOSIS, DIAGNOSTIC METHODS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY PEEL/FRAE--1986/0974 STEP NO--UR/0475/70/0001003/0064/0066
CIRC ACCESSION NO--AP0102913
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--11 SEP 70

CIRC ACCESSION NO--AP0102913

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PECULIARITIES ARE REPORTED OF PULMONARY VENTILATION IN PATIENTS WITH PULMONARY TUBERCULOSIS AS DETERMINED BY ROENTGENKYMOGRAPHY IN THE POSTERIOR ANTERIOR AND ANTERIOR POSTERIOR VIEWS. SOURCES OF POSSIBLE ERRORS AND THEIR PREVENTION IN EVALUATION OF THESE DATA ARE DISCUSSED.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--EVALUATION OF ROENTGEN MORPHOLOGICAL DATA AND FUNCTIONAL
PROPERTIES OF THE SALIVARY GLANDS IN A NEOPLASTIC PROCESS -U-
AUTHOR--KRIVOLUTSKAYA, YE.G. *K*
COUNTRY OF INFO--USSR
SOURCE--STOMATOLOGIYA, 1970, VOL 49, NR 2, PP 45-48
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--MORPHOLOGY, SALIVARY GLAND, NEOPLASM, TUMOR, RADIOLOGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/1698 STEP NO--UR/0511/70/0497/001/0045/0048
CIRC ACCESSION NO--AP0101753
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0101753

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER IS CONCERNED WITH THE DETERMINATION OF THE FUNCTIONAL ACTIVITY OF THE SALIVARY GLANDS AND THE STUDY OF ROENTGEN MORPHOLOGICAL DATA IN A NEOPLASTIC PROCESS IN THE LARGE SALIVARY GLANDS. OBSERVATIONS HAVE SHOWN THAT IN THE REGION OF SALIVARY GLANDS VERY OFTEN THERE DEVELOP TUMORS OF SUCH A TYPE, WHICH ARE ONLY RARELY ENCOUNTERED IN OTHER ORGANS. PRIMARILY THEY ARE MOSTLY MIXED TUMORS HAVING A COMPLEX STRUCTURE AND ARE ENDOWED WITH A PREDISPOSITION TO MALIGNIZATION. CLINICALLY THESE CHANGES AT THE BEGINNING DEVELOP UNNOTED. THE DETERMINATION OF THE FUNCTIONAL ACTIVITY OF SALIVARY GLANDS IN NEOPLASTIC AFFECTIOIN, AS WELL AS THE ASSESSMENT OF THE TUMOR PATHOLOGY IN RESPECT TO THE GLAND IS DETERMINED BY MEANS OF SIALOGRAPHY AND HAVE PRACTICAL IMPORTANCE IN PLANNING OF THE OPERATION AND FURTHER TREATMENT.

UNCLASSIFIED

USSR

ILYENKO, A. I.; KRIVOLUTSKIY, D. A.; Candidates of Biological Sciences

Moscow, Radioekologiya (Radioecology), "Znanīye," 1971, 32 :

Translation: Problems of radioecology and the migration of radioactive isotopes in nature are discussed. Greatest emphasis is placed on the effect of radioactive contamination on the external surroundings, on some segments of the population, on animal and plant associations. Problems of the effect of ionizing radiation on the evolutionary processes of living organisms and methods for preventing the introduction of radionuclides into food products are examined.

<u>Table of Contents</u>	<u>Page</u>
Introduction	3
Short Discussion of Radioactive Decay and Radioactivity in the Environment	9

1/2

- 121 -

USSR

ILYENKO, A. I., et al, Radioekologiya, "Znaniye," 1971, 32 pp

Radioecology of Individuals	14
Radioecology of Populations	19
Radioecology of Associations	24
Evolutionary Aspects of Radioecology	29
Bibliography	32

2/2

Ecology

USSR

UDC 59:58.051:591.5

GILYAROV, M. S. and KRIVOLUTSKIY, D. A., Institute of Evolutionary Morphology and Ecology of Animals, Academy of Sciences USSR

"Radioecological Studies on Soil Zoology"

Moscow, Zoologicheskii Zhurnal, No 3, 1971, pp 329-342

Abstract: Soil animals are a convenient model for studying the effects of radioactive contamination because of their low mobility, large numbers, and close contact with an environment contaminated by artificial radionuclides. Experimental contamination of a plot in a birch forest with strontium 90 (1.8 to 3.4 microcuries/m²) markedly reduced the number of saprophages among the mesofauna, especially among the groups dwelling in the litter and incapable of migrating rapidly (earthworms, diplopods, lithobiids, geophilids, and so forth). The effects of contamination could not be determined in animals capable of flying at some stage in their life cycle or of moving considerable distances in some other way (by phoresy or parasitism), probably because of migration from "clean" plots. While the numbers of microarthropods tended to remain the same, the variety of species diminished markedly four times compared with the control). Increases were noted among rapidly moving insects, especially predators and necrophages. From the standpoint of method, the

1/2

USSR

GILYAROV, M. S., et al, Zoologicheskij Zhurnal, No 1, 1971, pp 329-342

authors recommend that similar experiments be performed on fairly isolated plots in order to prevent the immigration of mobile invertebrates. They note, in conclusion, the need to develop biological measures to control the radio-contamination of soil that might result from accidents. Some possible approaches are discussed.

2/2

- 3 -

USSR

UDC 539.67

KRIVONOGOV, G. S., MATVEYEV, V. V., ALEKSEYENKO, M. F., LIVSHITS, B. G.,
and YAKOVLEV, A. P.

"Certain Regularities of Magnetic Hysteresis in Stainless Martensite Class Steels"

Sb. "Vnutrenneye treniye v metallicheskih materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 170-175

Abstract: The effect of temperature and static stresses on the magnitude of hysteresis losses in stainless steels of the martensite class, related mainly to the process of irreversible displacements of 90° domain walls, is studied.

Expressions are derived for the dependence of damping decrement on temperature, static stresses, and magnetomechanical hysteresis constants. The effect of various heat treatment conditions on magnetomechanical hysteresis is discussed. Good agreement was obtained between experimental and theoretical data. 4 figures, 5 references.

1/1

8

USSR

UDC 620.171.2

SKLYAROV, N. M., KONONCHUK, N. I., ZHUKOV, S. L., ZHUKOV, N. D., VASIL'EV, B. N., AKIMOV, L. M., LAPITSKIY, Yu. A., BELYAYEV, M. S., KRIVONOGOV, G. S., ISHCHENKO, I. I., POGREBNIYAK, A. D., and KUFAYEV, V. N. (Moscow, Kiev)

"Estimating the Heat Resistance of Heat-Resistant Alloys Under Actual Operating Conditions"

Kiev, Problemy prochnosti, No 1, 1971, pp 13-21

Abstract: Problems concerned with estimating the endurance of heat-resistant materials under unstable loading conditions are analyzed. A method is suggested for producing and using "secondary" endurance characteristics, increasing the accuracy of estimation and calculation of guaranteed durability under operating conditions and forced equivalent loading modes. These secondary characteristics represent the dependence of the durability of materials on combinations of preceding programed and subsequent stationary loads in various proportions. The formula of linear addition of damage applies. The secondary characteristics are produced by accelerated testing over limited test periods with extrapolation to the area of increased durability.

1/1

USSR

UDC: 51

KRIVONOGOV, Yu. A. and MYASKOVSKIY, G. M.

"Optimizing a Combination of the Technical Means of Operative Control Systems"

Upravlyayushchiye sistemy i mashiny (Control Systems and Machines) No 2, 1973, pp 95-100 (from RZh--Matematika, No 1, 1974, Abstract No 1V551)

Translation: A method is considered for optimizing the structure and complex of technical means (CTM) of operative control systems for a specific production process in conformance with actual conditions of its operation, taking into account the operational reliability of the CTM and the operativity of the solution to the problems generated by their sources. Authors' abstract.

1/1

. 1/2 020

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--RETROSTERNAL PLASTY IN CICATRICIAL ESOPHAREAL OBSTRUCTION IN CHILDREN -U-

AUTHOR--(03)--KROLEVETS, I.P., KRIVONOGOV, YU.B., PAVILV, V.V.

R

COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 4, PP 109-111

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DIGESTIVE SYSTEM, PEDIATRICS, SMALL INTESTINE, LARGE INTESTINE, SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0047

STEP NO--UR/0589/70/104/004/0109/0111

CIRC ACCESSION NO--AP0105146

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--1600770

CIRC ACCESSION NO--AP0105146

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

ABSTRACT. IN THE PAPER THE RESULTS OF 14
RETROSTERNAL PLASTIES IN CICATRICAL ESOPHAGEAL OBSTRUCTION IN CHILDREN
ARE DISCUSSED. THE TECHNIC OF CONSTRUCTION OF A RETROSTERNAL TUNNEL IS
DESCRIBED. THE ADVANTAGES AND DESADVANTAGES OF INTESTINAL GRAFTS
PRODUCED FROM THE SMALL INTESTINE AND COLON ARE CONSIDERED. IT IS
RECOMMENDED TO USE THE SMALL BOWEL AND THE RIGHT COLON FOR
ESOPHAGOPLASTY.

UNCLASSIFIED

USSR

UDC 680.193.27

ZHABENSKIY, G. N., TSIBAR', I. A., and ~~NIKOLAYEV, V. B.~~ Kiev Polytechnic Institute, Vinnitsa Branch

"Special Features of Electrochemical Characteristics of Stainless Steels and AMG-61 Aluminum Alloy in Sea Water"

Moscow, Zashchita Metallov, Vol 7, No 6, Nov-Dec 71, pp 715-717

Abstract: Effects of surface conditions, holding time in sea water, moving speed, and water temperature on the electrochemical characteristics of 1Kh18N9T, 1Kh14ND, and 1Kh20N3G12BA stainless steels and AMG-61 aluminum alloy were investigated in natural Black Sea water under laboratory conditions and at sea. The polarization characteristics of stainless steels and the AMG-61 alloy differed considerably: the cathode polarizability at sea was lower but the limiting current of oxygen diffusion and the breakthrough potential of the protecting layer, which is the most sensitive electrochemical characteristic, were higher than under laboratory conditions. Investigations at sea revealed for stainless steel a refining of the corrosion potential in winter and a shift to the negative side in summer, and for the AMG-61 alloy - a continuous shift to the positive side. Values of the breakthrough potential of the protective layer of stainless steels and the AMG-61 alloy are discussed and compared with data from other corrosion tests. Two illustr., two tables, eight biblio. refs.

1/1

1/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--SCATTERING OF ELECTROMAGNETIC WAVES AT A CYLINDER IN A SEMIBOUNDED
REGION -U-
AUTHOR--(02)-SELEZOV, I.T., KRIVONOS, YU.G. **K**
COUNTRY OF INFO--USSR
SOURCE--AKADEMIIA NAUK UKRAINS'KOI RSR, ODPOVI01, SERIJA A
FIZIKO-TEKHNICHNI I MATEMATICHNI NAUKI, VOL. 32, APR. 1970, P. 367-372
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS
TOPIC TAGS--ELECTROMAGNETIC WAVE SCATTERING, CYLINDRIC WAVE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1809 STEP NO--UR/0441/70/032/000/0367/0372
CIRC ACCESSION NO--AT0125421
UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0125421

ABSTRACT/EXTRACT--(U) CP-0- ABSTRACT. APPLICATION OF THE METHOD OF IMAGES TO THE SOLUTION OF THE PROBLEM OF THE STATIONARY PROBLEM OF THE SCATTERING OF ELECTROMAGNETIC WAVES AT A CIRCULAR CYLINDER SITUATED IN A SEMIBOUNDED REGION. THE PROBLEM IS REDUCED TO THE SOLUTION OF A HELMHOLTZ EQUATION BY TRANSFORMING THE SOLUTION OBTAINED BY THE METHOD OF IMAGES TO THE REGION OF "REAL" VARIABLES. THE FINAL SOLUTION IS OBTAINED IN THE FORM OF A SERIES WHOSE TERMS DESCRIBE MULTIPLY SCATTERED FIELDS. AN APPROXIMATE ANALYTICAL SOLUTION IS OBTAINED IN A RAYLEIGH APPROXIMATE FOR THE FAR FIELD CASE. NUMERICAL RESULTS ARE PRESENTED WHICH REVEAL A STRONG INFLUENCE OF THE BOUNDARY ON THE RADIATION PATTERN. FACILITY: AKADEMIJA NAUK UKRAINS'KOI RSR, INSTITUT KIBERNETIKI, KIEV, UKRAINIAN SSR.

UNCLASSIFIED

USSR

UDC: 621.039.538.4

BUSYGIN, B. P., ~~KRIVONOSOV, A. I.~~, KUVSHINOV, V. Z., Moscow Automobile and Highway Institute

"A Device for Measuring and Regulating the Temperature of the Coolant in an Internal Combustion Engine"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraboty, Tovarnyye Znaki, No 7, Mar 72, Author's Certificate No 329515, Division G, filed 15 May 70, published 9 Feb 72, p 189

Translation: This Author's Certificate introduces a device for measuring and regulating the temperature of the coolant in an internal combustion engine. The device contains a pickup located in the cooling system of the engine and connected in the circuit of a thermal converter which controls an electromagnetic clutch connected to the fan. The device also contains a water pump connected to the crankshaft of the engine. As a distinguishing feature of the patent, control accuracy is improved, the design is simplified and power consumption is reduced by making the electromagnetic clutch in the form of a generator with stationary field winding connected at the output of the thermal converter and equipped with beak-shaped poles. Lo-

1/2

- 169 -

USSR

BUSYGIN, B. P. et al., USSR Author's Certificate No 329515

cated in the field of these poles is part of a short-circuited winding on the shaft of the water pump. The other part of this winding is located in an annular groove on the base of the fan. The two parts of the shorted winding are separated by a diamagnetic sheave.

2/2

KRIVONOSOV, A. I.

Transistors / RADIO ENGINEERING

KRIVONOSOV, A. I.

Transistors / Radio Engineering

JPRS 54704

22 December 1971

NONLINEAR AND MICROWAVE RADIO ENGINEERING SYSTEMS

Selected articles from the Russian-language book edited by L. S. Buhirakh, corresponding member of the USSR Academy of Sciences and V. I. Smolyanok, candidate of engineering sciences: *Radio i Sverchradiovolnyye Svyazi* (Radio and Superhigh-Frequency Communications), Vol. 7, No. 215, 1970, signed to press 14 October 1970. Mashinnoye Stroeniye, Moscow.

CONTENTS

	PAGE
An Analytical Method for Solving Dynamic Equations of Thin Ferromagnetic Films for 'Slow' Switching Fields	1
Unijunction Transistors and Their Possible Applications	9
A Microwave Switch Based on Thin Ferromagnetic Film	18
A Study of Antennas With Frequency Beam Scanning	30
Concerning the Distortions of Spiral Antenna Radiation Characteristics	69
Calculation and Design of Diode Switching Devices in the Decimeter Range	81
A Study of Some Characteristics of Diode Switching Devices in the Decimeter Range	102
Thinned Antenna Arrays With Small Side Lobes	129

- a -

[I - USSR - F]

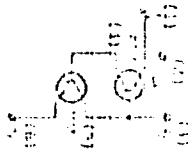


Figure 15. Model of a photo-sensitive unijunction translator.
 (1) B1 (2) B2 (3) B3 (4) PD (5) PD (6) E

Conclusion

The high sensitive properties of unijunction translators are very useful for use in various automation circuits, and also in field and control equipment.

The possibilities of integral actuation and control by light extend the field of their application even wider.

REFERENCES

1. Kasper, R. F., "The Unijunction Transistor," IBM J., 1966, Vol. 11, No. 1 (1967).
2. Shpelatir, O. N., Soviet Semiconductor Electron. "The Unijunction Transistor," Vol. 13.
3. Drenth V. Jones, "Semiconductor Rectifiers," Electronic Design, May 1966, Vol. 13.
4. Drenth V. Jones, "The Unijunction Transistor That Does One Job for Two," Electronic Design, 1966, Vol. 14, No. 12.
5. Rutenberg, G., "Triac Unijunctions and Their Impact on Circuit Approach," IBM J., 1966, Vol. 11, No. 7.
6. Crawford B., Dean R. T., "The Unijunction Translator in Relaxation Oscillator," Electron-Technology, 1964, Vol. 7, No. 2, p. 3.
7. Silyan T. P., Miron R. Z., "Speeding the Design of Unijunction-Transistor Multivibrators," Electronic Design, 1966, Vol. 12, No. 7.
8. Rusjanov, V. I., Grabov, A. K., and Krikozov, A. I., Patent Application "Model avshirovogo dioda" ("Model of a two-base diode"), No. 20-5795, Bulleten Izobreteniy (Bulletin of Inventions), 1967, No. 22.

UNIJUNCTION TRANSISTORS AND THEIR POSSIBLE APPLICATIONS

Authors: A. Z. Gromov, A. I. Kuznetsov, and V. I. Rubakov

Pages 17-21

Unijunction transistors are one of the most promising classes of semiconductor instruments. The advantages of these transistors are: the presence of a certain region of uniaxial resistance characteristics and dependence of the operating voltage upon temperature; high reliability in a closed state and low resistance in an open state; high degree of resistance linearity; the possibility of their application to long time delay devices and hours of operation; positive temperature coefficient of resistance; their use in unijunction transistors.

With the use of these instruments, it may obtain simple and reliable circuits which law also find application in its application in such important devices as control systems and the systems of artificial speech intelligibility.

Principles of Operation, Parameters, and Structure of Unijunction Transistors

A unijunction transistor is a two-directional semiconductor instrument, which usually consists of a base region a crystal of n-type silicon with ohmic contacts of two bars. The third electrode serves as an emitter. It forms a rectifying contact with the base region. The conventional definition of such a transistor is shown in Figure 1, and a simplified circuit diagram in Figure 1, b. The circuit in Figure 1, b, includes the presence of a p-n junction between the emitter and the base regions A1 and B2 and the resistance between this junction and the contacts of the first (B1) and the second (B2) base, respectively. (Fig. 1, b)

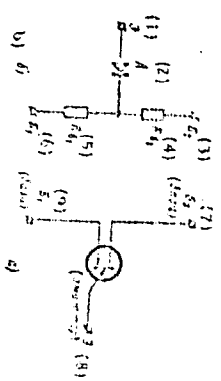


Figure 1. Unijunction transistor (a) conventional configuration; (b) circuit diagram. (1) E (emitter); (2) B1; (3) B2; (4) A1; (5) A2; (6) B1; (7) B2 (base 2); (8) E (emitter); (9) B1 (base 1).

USSR

UDC: 621.318.58

SKRITSKIY, L. G., BUDYANOV, V. P., KALMAKOV, A. A., KRIVOKOSOV, A. I., MILANOVICH, V. A., SHEVELEV, V. Ya., Moscow Construction Engineering Institute imeni V. V. Kuybyshev

"A Photo Relay"

Moscow, Otkrytiya, izobreneniya, promyshlennyye obraztsy, tovarnyye znaki, No 16, Jun 71, Author's Certificate No 303672, Division H, filed 18 Jun 69, published 13 May 71, pp 189-190

Translation: This Author's Certificate introduces a photo relay which contains interconnected photoreceiver, two groups of stabilitrons with different stabilization voltages and two transistors. Connected in the collector circuit of the first of the transistors is the winding of an electromagnetic actuating relay. As a distinguishing feature of the patent, tuning is facilitated and the accuracy with which the electromagnetic relay operates as a function of the light flux is increased by connecting the cathodes of all stabilitrons through switches to the centertap of a photoresistive voltage divider, connecting the anodes of stabilitrons with lower stabilization voltage to the base of the first transistor, and connecting the anodes of stabilitrons with higher stabilization voltage to the base of the second transistor. The collector-emitter junction of this transistor shunts the winding of the electromagnetic relay.

1/2

USSR

UDC 536.53.001.2

SERGEYEV, A. G., KRIVONOSOV, A. I., and PERSOV, I. A.

"Temperature Indicator Made From a Monocrystalline Thermoresistor"

Sb. nauchn. tr. Vladimir. politekhn. in-t (Collected Scientific Works of Vladimir Polytechnical Institute), No 10, 1970, pp 183-185 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 2, Feb 71, Abstract No 2.32.1129)

Translation: The characteristics of germanium monocrystalline thermoresistors made of dendritic tape and obtained by the method of dendritic crystallization from supercooled germanium melts are presented. The results of studying their application as temperature sensors are presented. The standard temperature characteristics of the sensitive elements based on a germanium thermoresistor and also the scattering of the temperature characteristics are presented in a table. The maximum temperature of the indicator with a monocrystalline thermoresistor has an upper bound equal to the solder temperature of the electric leads and it can be increased by specially connected leads, for example, by the method of diffusion welding. The theoretical measuring circuit of the temperature indicator based on a monocrystalline thermoresistor is presented. There are 4 illustrations and a 1-entry bibliography.

1/1

USSR

UDC 621.382.3

GREENEV, A. K., KRIVONOSOV, A. I., RUSLANOV, V. I.

"Unijunction Transistors and Possibilities for Their Use"

Tr. Mosk. aviats. in-ta (Works of the Moscow Aviation Institute), 1970,
Issue 215, pp 173-183 (from RZh--Elektronika i yeye primeneniye, No 5,
May 1971, Abstract No 5B156)

Translation: Problems are considered connected with the principles of operation, characteristics, parameters, and structures of unijunction transistors, and such basic types of circuits in which these devices are used. Unique material is presented which concerns models of unijunction transistors. 15 ill. 2 tab. 8 ref.

1/1

1/2 024 UNCLASSIFIED PROCESSING DATE--23DCT70
TITLE--EFFECT OF MODIFYING UREA OLIGOMERS ON THE PROPERTIES OF GLASS FIBER
REINFORCED PLASTICS -U-
AUTHOR-(05)-~~KRIVONOSOV, A.I.~~, AKUTIN, M.S., KERBER, M.L., MESHCHERYAKOV,
YU.YA., PUKHOVITSKAYA, A.N.
COUNTRY OF INFO--USSR

K

SOURCE--PLAST. MASSY 1970, (3), 46-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--UREA, OLIGOMER, GLASS FIBER, REINFORCED PLASTIC, POLYVINYL
ACETATE/(U)UKS UREA OLIGOMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/0578

STEP NO--UR/0191/70/000/003/0046/0047

CIRC ACCESSION NO--AP0119496

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119496

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MODIFICATION OF A UREA OLIGOMER
UKS (I) WITH 3-5PERCENT AGM-9, ES, AND POLY(VINYL ACETATE) EMULSION
INCREASED THE WETTABILITY OF GLASS FIBERS WITH I AND IMPROVED
PHYSICMECH. PROPERTIES OF GLASS FIBER REINFORCED PLASTICS.

UNCLASSIFIED

USSR

K
UDC 621.374

KRIVONOSOV, A. I., MALYSHKOV, G. M., RUSLANOV, V. I.

"Pulse Circuits with Semiconductor Optical-Electronic Converters"

Novye beskontaktn. elektron. ustroystva. Ch. 1 (New Contactless Electronic Devices. Part 1), Moscow, 1970, pp 156-161 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8G250)

Translation: A series of schematics are presented in which the advantages of image converter tubes are used: a relay made of mutually complementing transistors with positive feedback where the presence of an optical coupling in the image converter tube permits significant decrease in the resistance of the feedback resistor; a circuit using the inertial properties of the image converter tube with photoresistors; a pulse width modulator; and various logical circuits.

1/1

1/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--HOLMIUM SESQUIOXIDE, NIOBIUM PENTOXIDE SYSTEM -U-
AUTHOR--(03)-KRYLOV, YE.I., KRIVONOSOV, L.B., LEONTYEV, S.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1), 46-9
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--NIOBIUM OXIDE, HOLMIUM COMPOUND, RARE EARTH COMPOUND, X RAY
DIFFRACTION

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0849 STEP NO--UR/0363/70/006/001/0046/0049
CIRC ACCESSION NO--AP0118025
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118025

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. X RAY DIFFRACTION AND CRYSTALLOCHEM. INVESTIGATIONS OF THE TITLE SYSTEM WERE PERFORMED; THE DEPENDENCE OF THE SP. ELEC. RESISTIVITY ON THE TEMP. IS ALSO DESCRIBED. THE PRESENCE OF THE COMPD. HO SUB3 NBO SUB7 WITH A CUBIC FLUORITE STRUCTURE (ALPHA EQUALS 5.23 ANGSTROM) AND OF HO SUB4 NBO SUB7 WITH THE MONOCLINIC FERGUSONITE STRUCTURE (ALPHA EQUALS 5.049, B EQUALS 10.902, C EQUALS 5.240 ANGSTROM, AND BETA EQUALS 94DEGREES 30 PRIME) WAS OBSD. THE FORMATION OF HO SUB3-NBO SUB7 IS ATTRIBUTED TO THE CLOSENESS BETWEEN THE FLUORITE AND THE PYROCHLORE STRUCTURES AND THE C TYPE CUBIC STRUCTURE OF RARE EARTH OXIDES. THE HOMOGENEITY REGION OF THE HO SUB4 NBO SUB7 PHASE IS VERY SMALL. AT ROOM TEMP., THE RESISTIVITY VALUES OF THE ORDER OF 10^{11} - 10^{13} OHM CM WERE FOUND FOR COMPDS. OF SEVERAL COMPNS. WITH INCREASING TEMP., THE SP. RESISTIVITY OF THE SAMPLES SHARPLY DECREASES, ATTAINING VALUES OF THE ORDER OF 10^6 OHM CM FOR 3:1 AND 1:3 COMPNS. AT 600DEGREES. THE PRESENCE OF A NEG. TEMP. COEFF. OF THE RESISTIVITY IN SOME TEMP. REGIONS IS A CHARACTERISTIC OF SEMICONDUCTORS. THE NEG. VALUE OF THE COEFF. IS CAUSED BY THE EXCITATION OF ELECTRONS FROM CERTAIN SOURCES, THE NATURE OF WHICH IS DISCLOSED IN THE ENERGY BANDS MODEL, AS BASED ON THE QUANTUM THEORY OF SOLIDS. FACILITY: URAL. POLITEKH. INST. IM. KIROVA. SVERDLOVSK, USSR.

UNCLASSIFIED

USSR

UDC 569.112.227.3

22

KOROTUSHENKO, G. V., GRIGORKIN, V. I., CHUKHRIN, L. A., MILYANDV, A. P.,
KUZ'MINA, T. M., KRIVONOSOVA, L. F., Murmansk Marine Engineering School,
Lipetskiy Affiliate of Moscow Institute of Steels and Alloys

"Cavitation-Corrosion Resistance of Chrome-Nickel-Tungsten Austenitic Steel"

Kiev, Fiziko-khimicheskaya Mekhanika Materialov, Vol 8, No 4, 1972, pp 92-93.

Abstract: The author s studied the cavitation-corrosion resistance of type 30Kh14NSV austenitic steels made in a vacuum furnace. The tungsten content was varied between 0.5 and 5%. The tendency of the austenite to form deformation martensite with 50% compression and with cavitation was also studied. The studies were performed in a 5% aqueous NaCl solution. The greater the tendency of the austenite toward the formation of both "volumetric" and "surface" martensite, the higher the cavitation-corrosion resistance. The maximum cavitation-corrosion resistance corresponds to the optimal content of tungsten in the steel, approximately 3%. Further increases to 5% cause the resistance and quantity of "surface" and "volumetric" martensite to decrease significantly. The reason for this maximum on the deformation martensite vs. alloy admixture curve has not been established. The steel with the optimal composition for corrosion-cavitation resistance has com-
1/2

USSR

UDC 569.112.227.3

KOROTUSHENKO, G. V., GRIGORKIN, V. I., et. al., Kiev, Fiziko-khimicheskaya Mekhanika Materialov, Vol 8, No 4, 1972, pp 92-93.

paratively low corrosion rate in sea water. The steel with 3% tungsten therefore has the maximum cavitation-corrosion resistance, superior to that of Kh18N10T steel by more than an order of magnitude.

2/2

1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--COMPOSITION OF A CERIUM NITRILOTRIACETATE PEROXIDE COMPLEX -U-

AUTHOR--(03)-GANOPOLSKIY, V.I., KRIVONQZHNIKOVA, L.G., YERMOLENKO, I.N.

COUNTRY OF INFO--USSR

SOURCE--VESTI AKAD. NAVUK BELARUS. SSR. SER. KHIM. NAVUK 1970, (1), 38-42

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CERIUM COMPOUND, ACETATE, PEROXIDE, COMPLEX COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1875

STEP NO--UR/0419/70/000/001/0038/0042

CIRC ACCESSION NO--AP0123663

UNCLASSIFIED