"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

Gritsyk, V. V. and Mikhaylovskiy, V. N., Otsenka Kachestva Peredachi Informatsii, Kiev, Nauk. Dumka Press, 1973, 106 pp.

Chapter Five presents results of estimation of the quality of certain methods of information transmission from the standpoint of the generalized information indicator -- the function of specific content and the information reproduction quality indicator. A general method is given for information evaluation of the effectiveness of various methods of information transmission.



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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR UDC 621.317.4

GRABAR, L. I., MIKHAYLOVSKIY, V. N., SAVEL'YEV, YU. K., L'vov

"Device for Creating Highly Stable Magnetic Fields"

Kiev, Otbor i Peredacha Informatsii, No 27, 1971, pp 104-108

Abstract: A magnetic field intensity stabilizer with a low sensitivity threshold of $0.01\gamma/\text{hertz}^{1/2}$ developed and manufactured by the Institute of Physics and Mathematics of the USSR Academy of Sciences is investigated. The operating principle of the stabilizer is based on compensation for the variations of the magnetic field intensity relative to a previously given value. A sensor the operation of which is based on the Zeeman effect and optical pumping in helium [N. M. Pomerantsev, Geofizicheskaya apparatura, No 34, Nedra Press, Moscow, 1967] is used to measure the magnetic field intensity. The device stabilizes only the values of the modulus of the total magnetic field intensity vector.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

GRABAR, L. I. et al, Otbor i Peredacha Informatsii, No 27, 1971, pp 104-108

The investigated device comprises four parts: a magnetically sensitive sensor, a measuring unit, compensating rings and rings with constant bias with a current source. A study was made of the basic factors leading to errors in stabilizing the magnetic field intensity in the case where the magnetic field intensity vector of both pairs of rings is vertical, and the vector of the Earth's magnetic field at the location of the sensor is inclined at about 70° as a result of which rotation of the resultant magnetic field vector occurs on creation of the compensating magnetic field by the rings.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

UDC 51:621.391

GRITSYK, V. V., MIKHAYLOVSKIY, V. N.

"The Quality of Reproduction of Information Transmitted by Correcting Codes"

Otbor i Peredacha Inform. Resp. Mezhved. sb. [Selection and Transmission of Information, Republic Interdepartmental Collection], No 25, 1970, pp 3-9, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V455).

NO ABSTRACT.



APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

UDC 51:621.391

GRITSYK, V. V., MIKHAYLOVSKIY, V. N.

"Estimating the Quality of Reproduction of Information Transmitted by Group Codes"

Otbor i Peredacha Inform. Resp. Mezhved. sb. [Selection and Transmission of Information, Republic Interdepartmental Collection], No 25, 1970, pp 9-18, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V456).

NO ABSTRACT.



APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR UDC 519.2:621.391

DRAGAN, Ya.P. and MIKHAYLOVSKIY, V.N. (L'vov)

"On the Development of Signal Theory"

Kiev, Otbor i Peredacha Informatsii. Respublikanskiy Mezhvedomstvennyy Sbornik (Collection and Transmission of Information. Republic Interdepartmental Collection), Vypusk 26, "Naukova Dumka," 1970, pp 7-20

Abstract: This is the first part of a three-part series of articles which describes the development of a theory of signals as carriers of information and contrasts different mathematical models of signals and the problems they can be used to solve. The first part is devoted to models that are in the form of deterministic functions and stationary random processes; part two will be devoted to models in the form of specific types of nonstationary processes, and part three will review linear and nonlinear forms of signal conversions. In the present article, the main stages in the development of signal theory are given as: simple harmonic oscillation, complex deterministic functions, a model of a signal with a limited carrier of a spectrum, Gabor's model, a model in the form of an analytical signal, a stationary random process as a model of a signal, generalized random processes, a model in the form of a stationary random process



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USSR UDC 519.2:621.391

DRAGAN, Ya.P. and MIKHAYLOVSKIY, V.N., Kiev, Otbor i Peredacha Informatsii. Respublikanskiy Mezhvedomstvennyy Sbornik (Collection and Transmission of Information. Republic Interdepartmental Collection), Vypusk 26, "Naukova Dumka," 1970, pp 7-20

with a limited spectrum, discrete approximations to Zheleznov's expansion, and the Rice-Bunimovich model. The contributions of Fourier, Laplace, Bernoulli, Kotel'nikov, Wiener, Shannon, and others are noted.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR UDC 62.5;007:621.391:519.2

GRINTSYK, V.V. and MIKHAYLOVSKIY, V.N. (L'vov)

"Evaluation of the Quality of Reproduction of Information Transmitted by Grouped Codes"

Kiev, Otbor i Peredacha Informatsii. Respublikanskiy Mezhvedomstvennyy Sbornik (Collection and Transmission of Information. Republic Interdepartmental Collection), Vypusk 25, "Naukova Dumka," 1970, pp 9-18

Abstract: The authors examine the problem of evaluating the quality of reproduction of information transmitted by grouped codes over a stationary, symmetric channel without a memory. Using the results obtained in one of their previous works, they find the entropy for grouped n·k codes, where n is the length of the code and k is the quantity of informational symbols. Once the entropy expressions have been obtained, it is possible to find the average quantity of information received per code word and to evaluate the informational effectiveness of the coding and the quality of the reproduction of information. The latter is expressed as the ratio of lost information to transmitted information. General expressions for transmitted and lost information, which depend on the length of the code words, are obtained for two well-known error-correcting codes -- the Bose-Chaudhuri and Reid-Muller [Rid-Myuller] codes.



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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR UDC: 620.193.2:669.717

MIKHAYLOVSKIY, Yu. N., KLARK, G. B., SHUVAKHINA, L. A., AGAFONOV, V. V., ZHURAVLEVA, N. I., Institute of Physical Chemistry, Academy of Sciences of the USSR

"Calculating the Rate of Atmospheric Corrosion of Aluminum and Its Alloys in Different Climatic Zones With Respect to Meteorological Parameters"

Moscow, Zashchita Metallov, Vol 9, No 3, May/Jun 73, pp 264-269

Abstract: The purpose of the paper was to study the influence of meteorological parameters (humidity and air temperature, time of saturation of the metal surface by phase layers of moisture, chemical composition of the atmosphere) on the rate of corrosion of aluminum and its alloys under natural conditions, and to develop engineering methods of calculating the corrosion effects to be expected on these materials in any climatic zone. The research procedure is described in a previous paper (Yu. N. Mikhaylovskiy et al., Zashchita Metallov, 1971, Vol 7, p 154). The specimens were aluminum and alloys D16T, AMG-6 and 01915. The studies were done in rural and industrial regions in the central zone, and in the coastal regions of the North and South. The results of previous tests in tropical zones with

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USSR

MIKHAYLOVSKIY, Yu. N. et al., Zashchita Metallov, Vol 9, No 3, May/Jun 73, pp 264-269

known meteorological characteristics were also used. The specimens and instrumentation were exposed in an open area and in a louvered enclosure where phase layers of moisture settled on the metal surface due to precipitation, dew, and drop condensation. In the open atmosphere, the specimens and sensors were exposed on stands turned toward the south at an angle of 45° to the horizontal. In the louvered booths, the specimens were held vertically. An analysis of the results of the corrosion sensors shows that in spite of the complex influence of temperature, aluminum corrosion can be calculated with respect to averaged quantities, yielding satisfactory agreement with natural tests. The average rate of aluminum corrosion under "clean" atmospheric conditions is nearly independent of the nature of the moisture film, which is typical of metals which retain their passive state under atmospheric conditions. Corrosion parameters were determined which are necessary for calculating the rate of corrosion of aluminum and its alloys in any climatic zone from meteorological data.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

UDC 620.193.2

MIKHAYLOVSKIY, YU. N., SHUVAKHINA, L. A., KLARK, G. B., and AGAFONOV, V. V., Academy of Sciences USSR, Institute of Physical Chemistry

"Method of Studying the Influence of Climatic Parameters on the Rate of Atmosphere Corrosion of Metals"

Moscow, Zashchita Metallov, Vol 7, No 2, Mar-Apr 71, pp 154-158

Abstract: A method is suggested allowing continuous recording of the rate of atmospheric corrosion of metals. The method is based on measurement of the electrical resistance of a thin layer of the metal (vacuum condensate or thin foil) during the process of corrosion. The design of sensors for the method is described and illustrated.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

UDC 620.193.2

MIKHAYLOVSKIY, YU. N., KLARK, G. B., SHUVAKHINA, L. A., SAN'KO, A. P., GLADKIKH, YU. P., and AGFONOV, V. V., Insitute of Physical Chemistry, Academy of Sciences USSR

"Calculation of the Atmospheric Corrosion Rate of Zinc and Cadmium Coatings in Different Climatic Areas"

Moscow, Zashchita Metallov, Vol 7, No 5, 1971, pp 534-539

Abstract: Zinc and cadmium are taken as examples in developing a general method of calculatingthe rate of atmospheric corrosion for any climatic zone in which corrosion related both to adsorption and phase moisture layers is taken into account. The meteorological factors involved included relative humidity, air temperature, the time during which the metal was wetted with phase mositure layers, and the content of corrosive admixtures in the atmosphere. Artificial climate chamber studies confirmed the linear dependence of the rate of zinc and cadmium corrosion on the $SO_2$ concentration (within the range 0.18-5 mg/m$^3$). The maximum rate of zinc and cadmium corrosion in rural areas in any climatic zone cannot exceed $\sim$10 g/m$^2$ · year in closed quarters and $\sim$30-40 g/m$^2$ · year out in the open. These values climb sharply when $SO_2$ is present in the

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MIKHAYLOVSKIY, YU. N., et al., Zashchita Metallov, Vol 7, No 5, 1971, pp 534-539

atmosphere. For example, in an industrial atmosphere containing 0.2-0.3 $mg/m^3$ $SO_2$, the rate of zinc and cadmium corrosion increases by an order of magnitude and in a heavily contaminated atmopshere with high humidity can reach a level of 100-200 $g/m^2 \cdot year$. The difference between the corrosion rates of relatively thick ($>$ 20-30 microns) zinc and cadmium coatings and pure zinc and cadmium is not great, generally.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

UDC 620.193.2

MIKHAYLOVSKIY, YU. N., SHUVAKHINA, L. A., KLARK, G. B., and AGAFONOV, V. V., Academy of Sciences USSR, Institute of Physical Chemistry

"Method of Studying the Influence of Climatic Parameters on the Rate of Atmosphere Corrosion of Metals"

Moscow, Zashchita Metallov, Vol 7, No 2, Mar-Apr 71, pp 154-158

Abstract: A method is suggested allowing continuous recording of the rate of atmospheric corrosion of metals. The method is based on measurement of the electrical resistance of a thin layer of the metal (vacuum condensate or thin foil) during the process of corrosion. The design of sensors for the method is described and illustrated.

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Adsorption

USSR

UDC 541.183

MASLOVSKAYA, R. S., PAVLINOA, T. N., MIKHAYLOVSKIY, YU. N., and ZUBOV, P. I.,
Institute of Physical Chemistry, Acad. Sc. USSR, Moscow

"Adsorption Kinetics of Monomeric Molecules on Aluminum and the Study of the Properties of Chemosorption Layers Being Formed"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 46, No 5, May 72, pp 1139-1142

Abstract: Kinetics of the formation of adsorbed layers of organic molecules (acrylic acid, styrene, diethylamine, and propyl alcohol) on freshly formed and on oxidized aluminum plates was investigated. All materials reacted with aluminum forming stable chemosorbed layers. Chemosorption of diethylamine on the aluminum is accompanied by exchange of electrons, the organic molecule being the electron donor. Appearance of a new phase of acrylic acid during the adsorption is the result of its polymerization on the aluminum surface. The film formed by propanol appears to serve as a barrier excluding the possibility of the reaction of organic molecules with the metallic ions. It has been determined that a portion of the aluminum surface under the adsorbed layers may become oxidized indicating that some adsorption centers remain free to react with oxygen.

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USSR UDC 546.185

SHOKOL, V. A., MOLYAVKO, L. I., MATYUSHA, A. G., MIKHAYLYUCHENKO, N. K., and DERKACH, G. I. (deceased)

"Diisocyanates of Phosphorus Thioacids"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 11, Nov 1971, pp 2,380-2,383

Abstract: Twenty-four derivatives of alkyl- and aryl diisocyanothiophosphates $ROP(S)(NHCOR')_2$, and the diisocyanate of phenylthiophosphonic acid, were synthesized by reacting alkyl- and aryl diisocyanophosphites and diisocyanate of phenylphosphonic acid with phosphorus thiochloride. The isocyanate groups of these compounds were found to react with substances containing active hydrogen atoms. Details of experimental procedures and tables of physical constants are given.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

UDC 547.26'118.07

SHOKOL, V. A., MIKHAYLYUCHENKO, N. K., DE KACH, G. I., KIRSANOV, A. V., Institute of Organic Chemistry, Kiev, Academy of Sciences Ukrainian SSR

"A Method of Producing trichlorophosphazo Compounds"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 18, Author's Certificate No 271520, filed 18 Mar 69, p 24

Abstract: This Author's Certificate introduces: 1. A method of producing trichlorophosphazo compounds by interacting an amine or amide with a phosphorus-containing reagent and chlorine in an organic solvent in the presence of heat with subsequent isolation of the goal product by conventional methods. As a distinguishing feature of the patent, the process is simplified by using red or white phosphorus as the phosphorus-containing component. 2. The method described in (1) is distinguished by the fact that the process is carried out at 50-80°C.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR UDC 547.26'118

SHOKOL, V. A., MOLYAVKO, L. I., MIKHAYLYUCHENKO, N. K., and DERKACH, G. I. (deceased), Institute of Organic Chemistry, Academy of Sciences Ukr. SSR

"Alkyl Esters of tris-Dimethylamido-, Methyl-bis-dimethylamido- and Dialkyl-dialkylamidophosphazocarbonic Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 2, Feb 71, pp 318-319

Abstract: The reaction of tris-dimethylamidophosphite, methyl bis-dimethylamidophosphonite, and dialkyldialkylamidophosphinite with the azides of carbonic acid esters yields corresponding alkyl esters of phosphazocarbonic acids. To a solution of 0.1 g-mole of the azide of carbonate ester in 20 ml of absolute ether, 0.1 g-mole of the respective phosphite, phosphonite in 20 ml of solvent is added dropwise. The reaction is exothermic. After the addition is completed, the mixture is heated for 30 min, the solvent is removed and the product is distilled under vacuum.

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UDC 621.385.6:681.3

USSR

BLEYVAS, I. M., LUKOSHOV, V. S., MIKHAYLUS, F. F., POBEDONOSTSEV, A. S., SAZONOV, V. P., SILIN, R. A.

"Machine Methods of Planning Microwave Electrovacuum Devices -- Means of Increasing the Efficiency of Development"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 4, pp 74-97 (from RZh--Elektronika i yeye primeneniye, No 7, July 1970, Abstract No 7A118)

Translation: The basic problems of machine planning of microwave electrovacuum devices are formulated, and some concrete examples of machine planning in the area of electronics, electrodynamics, and electron optics are considered. Problems are discussed of the creation of a system of procedure in machine planning and problems in the area of machine planning of microwave electrovacuum devices. 55 ref. Summary.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

UNCLASSIFIED PROCESSING DATE--11SEP70

1/2 026

TITLE--BROACHES FOR MACHINING OPENINGS IN HIGH STRENGTH STEEL PARTS -U-

AUTHOR--ZAKHAROV, G.K., MIKHAYLOYUK, E.A., SINITSYN, V.I.

M

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, STANKI I INSTRUMENT, NO 3, 1970, PP 36-37

DATE PUBLISHED--------70

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

TOPIC TAGS--HIGH STRENGTH STEEL, METAL MACHINING, ALLOY DESIGNATION, LOW ALLOY STEEL, METAL BROACHING, HARD STEEL, TECHNICAL STANDARD/(U)30KHGSA LOW ALLOY STEEL, (U)30KHGSNA LOW ALLOY STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/1565 STEP NO--UR/0121/70/000/003/0036/0037

CIRC ACCESSION NO--AP0114153

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

UNCLASSIFIED PROCESSING DATE--11SEP70

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CIRC ACCESSION NO--AP0114153

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MACHINING OF HARDENED STEELS OF THE TYPES 30KHGSA AND 30KHGSNA BY BROACHING INVOLVES CONSIDERABLE TECHNICAL DIFFICULTY. AS A RULE, IT IS NOT POSSIBLE REGULARLY TO OBTAIN A SURFACE CLEANNESS HIGHER THAN CLASS 6, WHEREAS IT IS NECESSARY TO PROVIDE FOR CLEANNESS OF THE MACHINED SURFACES TO MEET THE STANDARD OF CLASS 7-8. AS A RESULT OF EXPERIMENTAL WORK, BROACH DESIGNS HAVE BEEN DEVELOPED WHICH PERMIT THIS PROBLEM TO SOLVED. THE NEW BROACH DESIGNS ARE DESCRIBED, AND THEIR APPLICATION IS INDICATED.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

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USSR UDC 632.95

PROTOPOPOVA, G. V., REYDALOVA, L. I., DZYUBAN, A. D., MOLYAVKO, L. I., DOROSHENKO, V. V., MIKHAYLYUCHENKO, N. K., SHOKOL, V. A., DERKACH, G. I.

"Insecticidal Activity of Esters of bis-(3-arylcarbamido) phosphoric and thiophosphoric Acids"

Fiziol. aktivn. veshchestva. Resp. mezhved. sb. (Physiologically Active Materials. Republic Interdepartmental Collection), 1972, vyp. 4, pp 9-11 (from RZH-Khimiya, No 5 (II), 1973, Abstract No 5N579)

Translation: A study was made of the insecticidal activity of esters with the formula ROP-(X)(NHCONHR')$_2$ (I) (X = O or S; R = alkyl, aryl; R' = Ph, $C_6H_4SCN$-π, α-pyridyl) for rice weevils, housefly larvae and imago and greenbugs. The I containing the SCN-group have the highest insecticidal activity, and among them the activity rises on going from the methyl to the propyl and isopropyl radicals.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

1/2 006 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--THE EXPERIENCE OF REGISTRATION WAVES FROM DIRECTED SOURCES BY THE ORE SEISMIC PROSPECTING -U-

AUTHOR--KEFELI, A.S., MIKHELEV, I.P., TRIGUBOV, A.V.

COUNTRY OF INFO--USSR

SOURCE--GEOLOGIYA I GEOFIZIKA, 1970, NR 1, (121) PP 110-115

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--SEISMIC PROSPECTING, ORE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1287 STEP NO--UR/0210/70/000/001/0110/0115

CIRC ACCESSION NO--AP0103169

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

2/2 006 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103169

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITIES OF REFLECTED TRANSITIONAL WAVES APPLICATION BY THE STUDY OF UPPER PART OF THE SECTION IN ORE AREAS ARE DISCUSSED. THE RESULTS OF FIRST OBSERVATIONS IN ORE ALTAI REGION AND UZBEKISTAN ARE LISTED.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

UDC: 8.74

MIKHELEV, V. M., SHTARKMAN, VIK. S.

"MAKROKOD (A Description of the Language)"

MAKROKOD (Opisaniye Razyka) [English version above], Institute of Applied Mathematics, Academy of Sciences, USSR, Preprint No 24, Moscow, 1972, 50 pp (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V558K)

Translation: MAKROKOD, an expansion of AVTOKOD BEMSH, is described. In this language, the programmer can replace groups of autocode statements with individual statements called macroinstructions, the sense of which is fixed by macro-definition. These statements, which are instructions for the macrogenerator, can perform conditional translation both of macrodefinitions and of the main program. The effectiveness of conditional translation is increased by introducing several types of macrovariables and built-in atribute functions.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

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UDC 542.952.6/541.15

USSR

VLASOV, A. V., KOMAROVA, L. I., Corresponding Member of the Academy of Sciences USSR KORSHAK, V. V., MALAKHOVA, I. I., MIKHELEVA, G. A., TSETLIN, B. L., SHABLYGIN, N. V., Institute of Organo Elemental Compounds, Moscow, Academy of Sciences USSR; All-Union Scientific-Research Institute of Synthetic Fibers, Kalinin, State Committee for Chemistry USSR

"Production of Multilayer Graft-Polymerized Materials ("Pomosors") by Radiation Polymerization in the Gas Phase"

Moscow, Doklady Akademii Nauk SSR, Vol 193, No 3, 21 Jul 70, pp 615-617

Abstract: Multiple graft polymerization should lead to the formation of multilayered materials, in the opinion of the authors. A synthesis was developed for doubly grafted materials by gas-phase polymerization of various monomers to stretched polyethylene and polypropylene films and fibers. The graft polymerization was carried out by irradiating with X-rays substrates (of fibers and films and singly grafted materials) in the presence of unsaturated

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USSR

VLASOV, A. V., et al, Doklady Akademii Nauk SSR, Vol 193, No 3, 21 Jul 70, pp 615-617

monomer vapors. The following monomer pairs were so polymerized: acrylonitrile/vinylidene chloride, vinylidene chloride/acrylonitrile, vinylidene chloride/acrylic acid, acrylic acid/vinylidene chloride, vinyl chloride/vinylidene chloride, styrene/vinylidene chloride, methyl methacrylate/vinylidene chloride, vinylidene chloride/methyl methacrylate, acrylic acid/acrylonitrile. Films and fibers of a three-layer structure with minute particles between the layers were obtained. The orientation of the grafted layers was studied by IR spectroscopy. It was found that a singly grafted material will add a third layer whenever its first layer has a highly ordered structure (for instance, polyvinylidene chloride, polyacrylonitrile). The orienting effect of the grafted layer is retained even when it is quite thick. Formation of the new (third) layer begins in the interfibrillar channels of the intermediate (second) layer and the process follows the same scheme as the one in the gas-phase polymerization on the initial stretched substrate.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

VLASOV, A. V., et al, Doklady Akademii Nauk SSSR, Vol 193, No 3, 21 Jul 70, pp 615-617

The passage of the orienting effect of the substrate on the formation of the third graft layer through a nonoriented intermediate layer may possibly be due to a repetition of the microrelief of the surface of the orienting original substrate or there may be a long-range effect of charged point defects.

3/3

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

1/2 026 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--ELECTRON MICROSCOPIC STUDY OF TWO LAYER FIBERS USING AN ION ETCHING METHOD TO CONTRAST THE SAMPLES -U-

AUTHOR-(02)-MIKHELEVA, G.A., VLASOV, A.V.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(5), 363-6

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ELECTRON MICROSCOPY, SYNTHETIC FIBER, POLYPROPYLENE FIBER, ACRYLIC ACID, VINYLIDINE RESIN, ACRYLONITRILE, GRAFT POLYMERIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/1331 STEP NO--UR/0460/70/012/005/0363/0366

CIRC ACCESSION NO--AP0138341

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

2/2 026 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138341

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYPROPYLENE FIBERS WERE GRAFTED IN THE GAS PHASE WITH ACRYLIC ACID, VINYLIDENE CHLORIDE, OR ACRYLONITRILE. MICROTOME SLICES OF THE FIBERS WERE ETCHED IN VACUO BY THE ION ETCHING METHOD (B. J. SPIT, 1963) AND VACUUM COATED WITH CR. ELECTRON MICROSCOPY AT 10,000-20,000 MAGNIFICATIN SHOWED THAT THE GRAFTED FIBERS CONSISTED OF 2 LAYERS AND THAT THE THICKNESS OF THE OUTER LAYER INCREASED WITH DEGREE OF GRAFTING. FACILITY: VSES. NAUCH.-ISSLED. INST. ISKUSSTV. VOLOKNA, MYTISHCHI, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

1/2 026 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--ANISTROPY OF THE THERMAL EXPANSION OF IRON DIGERMANIDE -U-

AUTHOR-(03)-KRENTSIS, R.P., MIKHELSON, A.V., GELD, P.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(3), 933-4

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--PHYSICAL CHEMISTRY PROPERTY, SINGLE CRYSTAL, IRON COMPOUND, GERMANIUM COMPOUND, IRON COMPOUND, THERMAL EXPANSION, PHASE TRANSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0583 STEP NO--UR/0181/70/012/003/0933/0934

CIRC ACCESSION NO--AP0105566

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

2/2 026 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105566

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LINEAR EXPANSION COEFF. WAS MEASURED AT 90-480DEGREES K BY USING 2 SPECIMENS CUT FROM A SINGLE CRYSTAL OF FEGE SUB2 IN THE DIRECTIONS (001) AND (100). THE DATA OBTAINED ARE GENERALIZED GRAPHICALLY AND THEY INDICATE A CONSIDERABLE ANISOTROPY OF THE PHYS. PROPERTIES OF THE COMPD. FEGE SUB2 AND SHARP ANOMALIES OF THEIR TEMP. DEPENDENCES IN THE REGION OF THE TRANSFORMATION. DIFFERENCE IN SIGN AND THE MAGNITUDE OF THE ANOMALIES ON THE CURVES ALPHA (TAU) ARE APPARENTLY RELATED TO THE DIFFERENCES IN THE CHARACTER OF THE EXCHANGE INTERACTION BETWEEN FE ATOMS LOCATED IN THE SAME AND NEIGHBORING BASIS PLANES OF THE TETRAGONAL STRUCTURE OF FEGE SUB2. THE TEMP. SHIFT OF THE NEEL TEMP. CAN BE ATTRIBUTED EITHER TO BROADENING OF THE TRANSFORMATION OR TO THE PRESENCE OF A SERIES OF SUCCESSIVE PHASE TRANSITIONS.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR UDC 612.815.014.46+615.787

MIKHEL'SON, M. YA., and ZEYKAL', E. V.

Atsetilkholin. O Meolekulyarnom Mehanizime Deystviya (Acetylcholine: Its Molecular Mechanism of Action), Leningrad, "Nauka", 1970, 279 pp

Translation: Discovery of the chemical transmission of nerve impulses is justly called one of the outstanding achievements of modern science. However, only in the past 10-15 years has information accumulated on the molecular mechanism of mediator action of the most closely studied mediator -- acetylcholine. Comparison of the association between the chemical structure of compounds and their action on cholinergic structure yields information on the structure of cholinoreceptors and cholinesterases and on changes of this structure in the course of evolution. Data presented in this book afford a deeper grasp of the physiological action of chemical mediators of nerve impulses and open up an avenue for deliberate and not empirical, intervention into the functioning of cholinergic synapses using specially synthesized compounds and other biologically active materials with desired properties.

Table of Contents:

| | PAGE |
|---|---|
| Editorial Notes | 3 |
| Introduction | 5 |

1/5



APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

MIKHEL'SON, M. YA., Acetycholine: Its Molecular Mechanism of Action, Leningrad, "Nauka", 1970, 279 pp

Chapter I. Function of the Cholinergic Synapse
I.1 General scheme of cholinergic synapse function 13
I.2 Ion migration across membrance 13
I.3 Excitatory postsynaptic potential 19
I.4 "Quantum" nature of mediator release 20
I.5 Inhibitory postsynaptic potential 24
I.6 Hypotheses on the mechanism of change in permeability of postsynaptic membrance during action by a mediator 26
I.7 Importance of calcium for release of mediator by nerve endings and for functioning of other cells 27
I.8 Localization of cholinoreceptors and acetylcholinesterase in synapse 31
I.9 Chemical transmission of nerve impulses in different synapses 34
I.10 Distribution and Physiological importance of cholinergic systems in the animal kingdom 38
Chapter II. Cholinoreceptors and Cholinesterases and Methods of Studying Their Chemical Structure 48

2/5 54

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

MIKHEL'SON, M. YA., Acetylcholine: Its Molecular Mechanism of Action, Leningrad, "Nauka", 1970, 279 pp

II.1 Hypothesis of the mucopolysaccharide nature of Cholinoreceptors 54
II.2 Hypothesis of the protein nature of cholinoreceptors 57
II.3 Difficulties in the biochemical isolation of cholinoreceptors 60
II.4 Pharmaceutical chemical method 61
Chapter III. Quanitative Evaluation of the Action of Agents Exciting and Blocking Cholinoreceptors 63
III.1 Theory of the interaction of compounds with cholino - receptors 63
III.2 Quantitative evaluation of the strength of cholinomimetic and cholinolytic action 84
III.3 Difficulties in the quantitative evaluation of the action of compounds on cholinoreceptors 88
Chapter IV. Reactivity of the Acetylcholine Molecule and Structure of Active Centers of Cholinoreceptors and Cholinesterases 94
IV.1 Cationic "Head" of acetylcholine and anionic sections of cholinoreceptors and cholinesterases 95

3/5

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

MIKHEL'SON, M. YA., Acetylcholine: Its Molecular Mechanism of Action, Leningrad, "Nauka", 1970, 279 pp

IV.2 Significance of the position of cationic head in compounds for their interaction with cholinoreceptors and cholinesterases 105
IV.3 Esterophilic section of cholinoreceptors 113
IV.4 Structure of esterase sections of cholinesterases and the mechanisms of their interaction with substrates and inhibitors 124
IV.5 Hydrophobic sections in the vicinity of active centers of cholinesterases and cholinoreceptors 128
Chapter V. Mutual Arrangement of Individual Cholinoreceptors on Cholinoreceptive Membrane 150
V.1 Investigations of skeletal muscles 150
V.2 Investigations of the mutual arrangement of cholinoreceptors on other materials 184
Chapter VI. Changes in the Mutual Arrangement of Cholinoreceptors During Evolution 189
VI.1 Investigations of muscles 189
VI.2 Study of the mutual arrangement of cholinoreceptors on gastropod neuron membrane 206

4/5

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

MIKHEL'SON, M. YA., Acetylcholine: Its Molecular Mechanism of Action, Leningrad, "Nauka", 1970, 279 pp

VI.3 Possible biological significance of complexformation of individual cholinoreceptors into oligomeric structure in the course of development 215
Chapter VII. Nonsynaptic Cholinoreceptors 219
VII.1 Nonsynaptic cholinoreceptors of the skeletal muscles 219
VII.2 Action of acetylcholine on nerve endings and nerve fibers 222
VII.3 Nonsynaptic cholinoreceptors of nerve cells 224
VII.4 Effect of acetylcholine on release of mediators and hormones 230
VII.5 Nonspecific receptors or acceptors of acetylcholine 234
Bibliography 238
Subject Index 266
Name Index 273

5/5



APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--PHARMACOLOGICAL CHARACTERIZATION OF SOME MUSCLES IN ANELIDS AND SIPUNCULIDS -U-

AUTHOR-(04)-GER, B.A., BAKDYMOV, I.V., LAVRENTYEVA, V.V., MIKHELSON, M.YA.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EVOLYUTSIONNOY BIOKHIMII I FIZIOLOGII, 1970, VOL 6, NR 2, PP 187-197

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--WORM, MUSCLE PHYSIOLOGY, ACETYLCHOLINE, CHOLINESTERASE, CHOLINOLYTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0356 STEP NO--UR/0385/70/006/002/0187/0191

CIRC ACCESSION NO--AP0132587

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

2/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132587

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDIES HAVE BEEN MADE ON THE CHOLINORECEPTION IN THE PROBOSCIS RETRACTOR OF THE SIPUNCULID PHYSCOSOMA JAPONICUM AND IN BODY WALL MUSCLES OF TWO ANNELIDS, LUMBRICONEREIS IMPATIENT AND SERPULA VERMICULARIS. THE RESULTS WERE COMPARED WITH THOSE OBTAINED ON MUSCLES OF TWO OTHER ANNELIDS, HIRUDO MEDICINALIS AND ALLOLOBOPHORA LONGA. ALL THESE MUSCLES EXHIBIT COMPARATIVELY HIGH SENSITIVITY TO ACETYLCHOLINE PROVIDED THEIR CHOLINESTERASES ARE INHIBITED. CHOLINORECEPTORS OF THE MUSCLES EXAMINED ARE PREDOMINANTLY OF THE NICOTINIC TYPE. HOWEVER THE CLASSIFICATION OF CHOLINORECEPTORS AS MUSCARINIC AND NICOTINIC ONES WHICH IS ACCEPTED FOR VERTEBRATES, CANNOT BE FULLY APPLIED TO INVERTEBRATES. SIMILARLY, CLASSIFICATION OF CHOLINESTERASES AS ACETYLCHOLINESTERASE AND BUTIRYLCHOLINESTERASE DOES NOT EMBRACE ALL THE VARIETY OF INVERTEBRATE CHOLINESTERASES. SOME SIGNS OF OLIGOMERIC STRUCTURE IN THE CHOLINORECEPTORS WERE DISCOVERED IN THE MUSCLES STUDIED. EVIDENT SIGNS OF C-16 STRUCTURE WERE FOUND IN A. LONGA AND S. VERMICULARIS. C-10 STRUCTURE WAS OBSERVED ONLY IN A. LONGA. CHOLINOLYTIC AGENTS WITH TERTIARY NITROGEN INDUCE PERIODIC ACTIVITY IN THE PROBOSCIS RETRACTORS OF PHYSCOSOMA, WHICH RESULTS PRESUMABLY FROM THE EFFECT OF THESE AGENTS ON THE NERVOUS ELEMENTS OF THESE MUSCLES. FACILITY: INSTITUTE OF EVOLUTIONARY PHYSIOLOGY AND BIOCHEMISTRY, USSR ACADEMY OF SCIENCES, LENINGRAD.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--ACETYLCHOLINE. MOLECULAR MECHANISM OF ACTION -U-

AUTHOR-(02)-MIKHELSON, M.YA., ZEYMAL, E.V.

COUNTRY OF INFO--USSR

SOURCE--ACETYLCHOLINE. MOLECULAR MECHANISM OF ACTION (ATSETILKHOLIN. O MOLEKULYARNOM MEKHANIZME DEYSTVIYA) LENINGRAD, NAUKA, 1970, 278 PP

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHOLINERGIC, CHOLINESTERASE, NERVOUS SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0068 STEP NO--UR/0000/70/000/000/0001/0278

CIRC ACCESSION NO--AM0129341

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

2/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AM0129341

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: FROM THE EDITOR 3. INTRODUCTION 5. CHAPTER I FUNCTION OF CHOLINERGIC SYNAPSIS 13. II NATURE OF CHOLINE RECEPTORS AND CHOLINESTERASES AND METHODS FOR STUDY OF THEIR CHEMICAL STRUCTURE 54. III QUANTITATIVE EVALUATION OF THE EFFECT OF SUBSTANCES WHICH STIMULATE AND BLOCK THE CHOLINE RECEPTOR 63. IV REACTIVITY OF THE ACETYLCHOLINE MOLECULE AND STRUCTURE OF ACTIVE CENTER OF CHOLINE RECEPTORS AND CHOLINESTERASES 94. V RELATIVE POSITION OF INDIVIDUAL CHOLINE RECEPTORS ON THE CHOLINE RECEPTIVE MEMBRANE 150. VI CHANGES IN RELATIVE POSITION OF CHOLINE RECEPTORS DURING EVOLUTION 189. VII NON SYNAPTIC CHOLINE RECEPTORS 219. BIBLIOGRAPHY 238. SUBJECTS INDEX 266. NAME INDEX 273. THE BOOK DEALS WITH THE CHEMICAL MECHANISM OF ACTION OF THE BEST KNOWN MEDIATOR ACETYLCHOLINE. THE AUTHORS SHOW US THAT A COMPARISON OF CONNECTIONS BETWEEN CHEMICAL STRUCTURE OF SUBSTANCES AND THEIR EFFECTS ON CHOLINERGIC STRUCTURES ENABLE US TO OBTAIN DATA ON THE STRUCTURE OF CHOLINE RECEPTORS AND CHOLINESTERASES, AS WELL AS CHANGES IN THIS STRUCTURE DURING EVOLUTION.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

1/2 033 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--AUTOMATIC MAINTENANCE AND CONTROL OF DEPTH OF ANESTHESIA -U-

AUTHOR-(05)-ZHUROV, I.S., SMIRNOV, V.G., MIKHELSON, V.A., KOTOVA, G.P., NIKITINA, L.G.

COUNTRY OF INFO--USSR

SOURCE--EKSPERIMENTAL'NAYA KHIRURGIYA I ANESTEZIOLOGIYA, 1970, NR 2, PP 57-61

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANESTHESIA, MEDICAL APPARATUS, ELECTROENCEPHALOGRAPHY, SURGERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0637 STEP NO--UR/0481/70/000/002/0057/0061

CIRC ACCESSION NO--AP0108848

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

2/2 033 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0108848

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS DESCRIBE AN APPARATUS WHICH REGULATES AUTOMATICALLY THE AETHER DOSAGE ACCORDING TO ELECTROENCEPHALOGRAPHIC DATA. OVER 50 IMPORTANT OPERATIONS HAVE BEEN CARRIED OUT WITH THIS METHOD. THIS APPARATUS IS A PROTOTYPE OF THE APPARTUS FOR AUTOMATIC CONTROL OF ALL THE MODERN METHODS OF ANESTHESIA. THIS WILL REQUIRE FURTHER INVESTIGATION AND STUDY. FACILITY: KAFEDRA FAKUL'TETSKOY KHIRURGII 2-GO LECHEBNOGO FAKUL'TETA I MOSKOVSKOGO MEDITSINSKOGO INSTITUTA IM. I. M. SECHENOVA AND MNIIP MINISTERSTVA RADIOPROMYSHLENNOSTI SSSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

UDC 547.963:612.112.94.014.48

HAIKAZYAN, E. V., MIKHELSON, V. M., and ZHESTYANIKOV, V. D., Laboratory of Radiation Cytology, Institute of Cytology of the Academy of Sciences of the USSR, Leningrad

"The Mechanisms of Action of the Inhibitors of Cell Postradiation Recovery. I. The Caffeine Inhibition of the Rejoining of Radiation-Induced Single-Strand Breaks in Human Lymphocyte DNA"

Leningrad, Tsitologiya, Vol 15, No 7, Jul 1973, pp 881-887

Abstract: Haikazyan, Mikhelson and Zhestyanikov study the mechanism of caffeine on one of the many indusputable examples of post-radiation reparation on a molecular level -- recovery of single strand breaks of DNA in human lymphocytes after the action of ionizing radiation. Caffeine increases the number of chromosomal aberrations of many types after irradiation and acts as inhibitors in post radiation recovery. Ultracentrifuged DNA of human lymphocytes in an alkaline sucrose gradient shows that gamma-irradiation in dosages of 10-30 krads induces reduction of the molecular weight of DNA (from 50 to 4.5 min under a dosage of 20 krads). Sixty-minute incubation of post-irradiated lymphocytes in the sucrose medium at 37°C produces almost half the rejoining of radiation-induced breaks of the DNA and the recovery of the resultant

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

HAIKAZYAN, E. V., et al., Tsitologiya, Vol 15, No 7, Jul 1973, pp 881-887

molecular weight. The presence of caffeine during incubation in a $6 \cdot 10^{-3}$ and $6 \cdot 10^{-4}$M concentration prevents rejoining of the breaks; the reparation of the inhibiting effect of caffeine rises with the increase of its concentration. Graphs 2-4 indicate caffeine concentration effects on the above post-irradiation recovery of single strand DNA in the cells observed.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR UDC 576.312.36:612.014.48

MIKHEL'SON, V. M., Laboratory of Radiation Cytology, Institute of Cytology, Academy of Sciences USSR, Leningrad

"The Limited Role of DNA Repair in Recovery of Chromosomes Damaged by Ionizing Radiation"

Leningrad, Tsitologiya, Vol 13, No 8, Aug 71, pp 932-945

Abstract: In multicellular organisms, chromosomes have little or no ability to repair themselves after ionizing irradiation (x-rays, gamma-rays), since such radiation damages not only the DNA but also the interreplicon links (i.e. it destroys the supermolecular structure of chromosomes). Unicellular organisms, notably bacteria, possess far fewer replicons (1-3 at the most) than multicellular organisms (anywhere from several hundred to several thousand), therefore the restorative process is more effective. The limited genetic structure of bacteria allows them to repair their genetic structures and restore cell viability along with DNA repair, i.e., restoration of DNA constitutes complete restoration of the genetic structure. This is observed following treatment with ionizing radiation, chemical mutagens, of UV light. Multicellular organisms can fully restore genetic structures following treatment with only UV light or some radiomimetics. There are no known data to

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

MIKHEL'SON, V. M., Tsitologiya, Vol 13, No 8, Aug 71, pp 932-945

substantiate a restoration on molecular and cellular (chromosomal) levels after ionizing irradiation, although DNA molecules may be repaired. The cells contain insufficient enzymes to repair damage. Almost all known data on repair in multicellular organisms are indirect; lack of known mutant-analogs with differing sensitivity to ionizing radiation has made research difficult. Such repair may not be impossible, but rather it may be insignificant; complete repair of DNA may be insufficient for chromosome repair.

The polyreplicon structure seems to be the determining factor linked to a chromosome's lessened or lost ability to repair itself; radiosensitivity rises sharply in the transition from unicellular to multicellular organisms. Since a unicellular organism lacks the tissues which play a vital role in restoring or regenerating cells in a multicellular organism, and because, in this case, survival of a cell means survival of the entire organism, such an organism must necessarily possess the ability to repair its genetic structure.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

UDC 669.71.013.9.411

CHULKOV, V. S., MIKHENCHEV, L. A., and KURDYUMOV, A. V.

"Influence of Flux Composition and State on Microporosity and Gas Content of Ingots During Electric-Flux Refining"

Tekhnol. legkikh splavov. Nauchno-tekhn. byul. VILSa [The Technology of Light Alloys, Scientific and Technical Bulletin of the All-Union Institute of Light Alloys], No 4, 1970, pp 34-36 (Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract 2 G166 by A. Tseydler)

Translation: The effect of flux composition and state on the gas content of alloys based on Al is studied. Two fluxes were used with compositions (in %): 1) $KCl \cdot MgCl_2$ 90 and $MgF_2$ 10; 2) KCl 47, NaCl 30, $Na_3AlF_6$ 23. To decrease the content of $H_2$ and microporosity in ingots of the alloys, fluxes must be used only in the liquid state, with holding in the liquid state before consumption for at least 30 minutes. 12 figures.

1/1

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

Mikheichev, L.A. UDC 669.71.411

CHULKOV, V. S., ~~MIKHEICHEV~~, L. A., BONDAREV, B. I.

"Increasing the Quality of Ingots in Electric-Flux Refining"

Tekhnol. Legkikh Splavov. Nauchno-tekhn. Byul. VILSa [The Technology of Light Alloys, Scientific and Technical Bulletin of the All-Union Institute of Light Alloys], 1970, No. 6, pp. 12-14. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G166 by S. Krivonosova).

Translation: The structure, presence of flux corrosion, contamination according to technological tests, gas content, density, and mechanical properties of ingots of type AMg6 alloy produced by electric flux refining (EFR) with various flux bath applications are studied. EFR in the crystallizer, in a container, and with casting through glass cloth were compared. The testing of specimens in a fog chamber with 96-100% relative humidity at 25° showed that there was no flux corrosion. Following the various versions of purification, there were practically no differences in the contents of the components of the alloy (Mg, Si, Fe). The differences in level of contamination with oxide films were not great. However, the alloy produced by EFR was purer than an alloy poured through glass cloth.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

CHULKOV, V. S., et al, Legkikh Splavov, Nauchno-tekhn. Byul. VILSa, 1970, No 6, pp 12-14

The gas content was lowest with refining in the crystallizer, highest with casting through glass cloth. Ingots produced by EFR had increased density and impact toughness. Refining in the crystallizer creates favorable conditions for delivery of the purified alloy to the crystallization zone. When the flux is applied in a separate container, repeated usage of the flux and pouring of ingots of any configuration are possible. 5 figs; 3 tables.

2/2



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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

UDC: 621.373.431

MIKHEYENKO, A. M.

"Energy Relationships in a Key Oscillator With Series Tank Circuit"

Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR (Works of Educational Institutes of Communications. Ministry of Communications of the USSR), 1970, vyp. 48, pp 99-105 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2G224)

Translation: The author discusses the energy relationships in the plate and grid circuits of a key oscillator with series resonant circuit. Data are given from a comparison of the analyzed oscillator with a conventional power amplifier and with a key oscillator with parallel tank. Bibliography of four titles. Resumé.

1/1

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

1/2 017 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--LIQUID PHASE OXIDATION OF ALIPHATIC KETONES -U-

AUTHOR--RIF, I.I., POTEKHIN, V.M., PROSKURYAKOV, V.A., MIKHEYENKO, T.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 372-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--OXIDATION, ALIPHATIC KETONE, THERMAL DECOMPOSITION, ORGANOLEAD COMPOUND, ACETONE, CARBOXYLIC ACID, CHEMICAL REACTION MECHANISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1217 STEP NO--UR/0080/70/043/002/0372/0377

CIRC ACCESSION NO--AP0104583

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

2/2 017 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104583

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE REACTION WAS INVESTIGATED ON θ,UNDECANONE (I) OBTAINED BY THERMAL DECOMPN. OF PB CAPROATE. I (50 ML) WAS OXIDIZED WITH AIR (CONTINUOUS FLOW, 0.5 L.-MIN.) 3 HR AT 140DEGREES-18 KG-CM PRIME2 TO GIVE A MIXT. OF MONOCARBOXYLIC ACIDS (FROM ACETIC TO CAPROIC), GAMMA,METHYLBUTYROLACTONE, GAMMA,ETHYLBUTYROLACTONE, 3,6 AND 2,6,UNDECANEDIONES, GAMMA,OXOVALERIC, AND GAMMA AND DELTA,OXOCAPROIC ACIDS. THE PRESENCE OF THESE COMPDS. PROVES THAT THE REMOTE (FROM C:O) CH SUB2 GROUPS ARE ATTACHED BY O, CONTRARY TO THE OPINION OF EARLIER AUTHORS STATING THAT IN THE OXIDN. OF THE ALIPHATIC KETONES, ONLY THE CH SUB2 NEXT TO C:O IS OXIDIZED (ALPHA,MECHANISM). NO BETA,DIKETONES WERE FOUND IN THE PRODUCT; THEY ARE FORMED BUT UNDERGO OXIDATIVE DECOMPN.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

1/3 011 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--BOULDER OF DIAMOND BEARING ECLOGITE FROM THE MIR KIMBERLITE PIPE -U-

AUTHOR-(04)-MIKHEYENKO, V.I., VLADIMIROV, B.M., NENASHEV, N.I., SELDISHEVA, YE.B.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(6), 1440-3

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--DIAMOND, GEOCHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0274 STEP NO--UR/0020/70/190/006/1440/1443

CIRC ACCESSION NO--AT0108576

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

2/3 011 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AT0108576

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE 1ST LARGE XENOLITH OF DIAMOND BEARING ECLOGITE WAS FOUND IN 1967. IT HAD THE FORM OF TYPICAL BOULDER 15 TIMES 10 TIMES 6 CM. FIVE DIAMONS, 1-3 MM LONG, WERE FOUND ON ITS SURFACE, THE 6TH DIAMOND, 13 MM LONG, WAS FOUND IN THE WALL OF AN OPEN FRACTURE, AND THE 7TH, WEIGHING 8 MG, WAS FOUND IN THE ECLOGITE PROTRUSION. THE ECLOGITE FROM THE MIR PIPE CONSISTED OF FRESH GARNET AND ALTERED PYROXENE. THE ROCK HAD PORPHYROBLASTIC TEXTURE, D. 3.20, AND CONTAINED: SIO SUB2 40.50, TIO SUB2 0.96, AL SUB2 O SUB3 10.47, FE SUB2 O SUB3 2.86, FEO 10.45, MN 0.014, MGO 9.95, CAO 10.35, NA SUB2 O 1.32, K SUB2 O 0.89, H SUB2 O PLUS 2.84, H SUB2 O MINUS 0.30, P SUB2 O SUB5 0.27, CR SUB2 O SUB3 0.41, NIO 0.024, AND S 0.32 PERCENT. THE DIAMONDS ON ECLOGITE XENOLITHS WERE XENOCRYSTALS AND THEIR APPEARANCE IN KIMBERLITE WAS CONTROLLED TO A LARGE DEGREE BY THE SIZE AND SHAPE OF KIMBERLITE BODY. THE SERPENTINE CARBONATE COMPN. OF KIMBERLITE, THE COMPLETE ABSENCE OF MAGMATIC EFFECT ON THE NEAR CONTRACT ROCKS, AND XENOLITHS WITH ORG. BITUMENS PRESERVED WITHOUT ALTERATION, INDICATE THAT THERMAL ENERGY WAS NOT A FACTOR CONTROLLING FORMATION OF THESE DIAMONDS. THE EFFECTS OF POWERFUL MECH. ENERGY, DURING FORMATION OF PIPE, WERE OBSD. IN KIMBERLITE. THE CRYSTAL STRUCTURE OF MINERALS PROBABLY CAN DISINTEGRATE TO AMORPHOUS AND IONIZED STATE OF SUBSTANCE UNDER EFFECT OF SUFFICIENTLY STRONG DYNAMIC PRESSURE. THE EXCITED ATOMS AND IONS ARE CAPABLE TO BUILD NEW AND STRONGER CRYST. FORMS. THE DIAMONDS WERE CRYST. TOGETHER WITH GRAPHITE INKIMBERLITE INTRUSIONS WHICH ARE A CONTINUOUS ZONE OF CATACLISM.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

3/3 011 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AT0103576

ABSTRACT/EXTRACT--NATURAL DIAMONDS ARE THUS THE PRODUCTS OF HUGE DYNAMIC PRESSURE GENERATED DURING VISCOUS PLASTIC DEFORMATION OF KIMBERLITE. THE HIGH PHYS. DYNAMICAL PARAMETERS IN KIMBERLITE OF LARGE PIPES AND DIKES WERE THE MAIN CAUSES OF GENERATION AND GROWTHS OF DIAMOND CRYSTALS BOTH IN SERPENTINE CARBONATE ROCKS AND ON THE SURFACE OF ECLOGITE XENOLITHS.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

UDC 539.434:669.094:083.4

KUSLITSKIY, A. B., CHABAN, D. V., and MIKHEYEV, A. A., L'vov and Moscow

"Comparative Effect of Vacuum, Electroslag, and Electron-Beam Remeltings on the Fatigue of High-Strength Steels"

Moscow, Izvestiya Akademii Nauk SSSR Metally, No 1, Jan/Feb 74, pp 115-117

Abstract: The mechanical properties, particularly fatigue strength, of high-strength steels 30KhGSNA, EI643 a(40KhGSN3VA), and VKS-1 (42Kh2CSNMA), close in composition and structure, were studied. The steels had been originally produced by electric-arc melting and then remelted in either a vacuum-arc furnace (vacuum-arc remelting (VAR), or by the electroslag or electron-beam methods. Electroslag and electron-beam remelting were the best for achieving a high fatigue strength, with steel EI643 being the best of the three and VKS-1 the next best (82-83 kg/mm$^2$ and 73.0-73.5 kg/mm$^2$, respectively. However, steel 30KhGSNA had the best endurance life, registering 47.4 cycles before failure (electron-beam melted) and EI643 having the lowest endurance (41.4 cycles to failure). Two figures, two tables, three bibliographic references.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

UDC 621.172:62-408.3

(3)

PASHKOV, P. O., YAVOR, A. A., SAVCHENKOV, E. A., KOTOV, N. V., SKLYAROV, N. M., MIKHEYEV, A. A., and PLATONOV, A. A., Volograd Polytechnic Institute, All Union Scientific Research Institute of Aviation Materials

"Properties of High-Strength Clad Sheet Steel in Tension"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 12, 1973, pp 37-40

Abstract: Specimens of VKS-1 steel, 1.5 mm thick, clad with the corrosion--resistant KhN78T (EI435) alloy, 13-15% of sheet thickness, were tested for mechanical properties by the method: axial tension - static bending - biaxial tension - tensile fracture (crack sensitivity). The investigation results indicate that VKS-1 clad steel possesses higher strength and plasticity in comparison with steel without cladding and higher resistance to rupture. The strength of VKS-1 steel in biaxial tension comes up to maximum values; besides, the strength in axial tension is 20-25% higher than the strength of homogeneous VKS-1 steel. The application of electroslag remelting contributes to increased plasticity under tension for high-strength clad steel, but to a smaller degree than for homogeneous steel. Three figures, two tables, seven bibliographic references.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

1/2 031 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--INFLUENCE OF COATINGS ON THE LOW CYCLE FATIGUE OF STRUCTURAL STEEL IN CORROSIVE MEDIA -U-

AUTHOR-(04)-TKACHEV, V.I., KUSLITSKY, A.B., KRIPYAKEVICH, R.I., MIKHEYEV, A.A.

COUNTRY OF INFO--USSR

SOURCE--FIZ. KHIM. MEKHAN. MAT., 1970, 6, (2), 98

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FATIGUE STRENGTH, PROTECTIVE COATING, STRUCTURAL STEEL, SEA WATER CORROSION, ELECTRODEPOSITION, PHOSPHATE, CADMIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1830 STEP NO--UR/0369/70/006/002/0098/0098

CIRC ACCESSION NO--AP0129198

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

2/2 031 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129198

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LOW CYCLE FATIGUE OF STRUCTURAL STEEL SAMPLES COATED WITH A VARIETY OF MATERIALS WAS STUDIED IN CORROSIVE MEDIA (3PERCENT NACL SOLUTION OR SIMULATED SEA WATER). OF ALL THE ELECTRODEPOSITED COATINGS STUDIED, THE MAX. FATIGUE LIFE WAS ACHIEVED FOR PHOSPHATED SAMPLES AND THE MIN. FOR CD PLATED MATERIAL. THIS DIFFERENCE WAS ATTRIBUTED TO THE FACT THAT H PENTRATED INTO THE METAL IN THE LATTER CASE DURING ELECTRODEPOSITION.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

UDC 621.362.322

SOPOV, O.V., ABRAMOVA, L.I., [redacted], NIKONOV, A.S., RZHANOVA, T.R.

"Stabilization Of MOS Transistor By Phosphorous Silicate Glass"

Elektron. tekhnika. Nauchno-tekhn. sb. Poluprovodn. pribory (Electronic Technology. Scientific-Technical Collection. Semiconductor Devices), 1970, Issue 2(52), pp 169-186 (from RZh--Elektronika i yeye primeneniye, No 3, March 1971, Abstract No 33215)

Translation: The problems are considered of the stabilization of a MOS transistor with an induced p-channel by phosphorous silicate [fosfornosilikatnyy] glass. An investigation is conducted of the effect of the conditions of formation of phosphorous silicate glass on the stability of the device. The existence of optimum conditions for the stabilization process is established. It is possible with the aid of stabilization by phosphorous silicate glass to assure high stability of a MOS transistor during the long-term action of an electrical load and increased temperature of the environment. Summary.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

1/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--MODIFICATION OF THE BERSTON AND GOMORI METHODS FOR THE HISTOCHEMICAL DEVELOPMENT AND DIFFERENTIATION OF VARIOUS TYPES OF ACID

AUTHOR--MIKHEYEV, A.G.

COUNTRY OF INFO--USSR

SOURCE--LAB. DELO 1970, (1), 11-13

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ACID PHOSPHATASE, HISTOCHEMISTRY, HYDROGEN ION CONCENTRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0213 STEP NO--UR/9099/70/000/001/0011/0013

CIRC ACCESSION NO--AP0119209

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

2/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119209

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MODIFICATION OF THE BERSTON AND GOMORI METHOD FOR DIFFERENTIATION OF THE VARIOUS TYPES OF ACID PHOSPHATASES BASED ON THEIR BIOCHEM. PROPERTIES WAS PRESENTED. USING VARIOUS INHIBITORS ACID PHOSPHATASES WITH OPTIMAL ACTIVITY AT PH 3.4-4.2, 4.6 AND5.0-6.5 COULD BE DEMONSTRATED. FACILITY: KEMEROV. MED. INST., KEMEROVO, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR UDC 621.384.6

ABROSIMOV, N.K., DMITRIYEV, S.P., KULIKOV, A.V., MIKHEYEV, G.I., SEREDENKO, YE. V., CHERNOV, N.N. [Fiz.-tekhn. in-t AN SSSR -- Physicotechnical Institute, AS USSR]

"Device For Coupling An Oscillator Tube With The Resonance System Of A Synchrocyclotron"

USSR Author's Certificate No 270131, filed 28 Apr 69, published 5 Aug 70 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A403P)

Translation: A device is proposed for coupling an oscillator tube with the resonance system of a synchrocyclotron, which contains a waveguide feeder line. With the object of increasing the reliability of excitation of the resonance system and suppressing the transverse oscillations at the dee, the feeder for direct coupling is fulfilled in the form of two branches connecting the tube anode with the right and left halves of the dee, symmetrically with respect to the longitudinal axis of the dee, and the voltage feedback to the tube cathode is fed across a branching feedback feeder with the inductive voltage divider also arranged symmetrically with respect to the longitudinal axis of the dee at

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

ABROSIMOV, N. K., et al, USSR Author's Certificate No 270131, filed 28 Apr 69, published 5 Aug 70

its end opposed to the accelerating slit. In a variation of the proposed device, with the object of obtaining a relatively steady transmission of voltage from the anode of the oscillator tube to the accelerating slit of the dee, a lumped capacitance is connected to the anode of the oscillator tube, and the length and wave resistance of the feedback feeders are respectively matched.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

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USSR

UDC: 621.384.639

ABROSIMOV, N. K., ALKHAZOV, D. G., DMITRIYEV, S. P., YELISEYEV, V. A., KAMINKER, D. M., KULIKOV, A. V., MIRONOV, Yu. T., MIKHEYEV, G. E., RYABOV, G. A., CHERNOV, N. N., SHALMANOV, V. I., KOMAR, Ye. G., MALYSHEV, I. F., MONOSZON, I. A., PEREGUD, V. I., ROZHDESTVENSKIY, B. V., ROYFE, I. M., SEREDENKO, Ye. V., Physicotechnical Institute imeni A. F. Ioffe, Academy of Sciences of the USSR, Leningrad, Scientific Research Institute of Electrophysical Equipment imeni D. V. Yefremov, Leningrad

"The Leningrad Synchrocyclotron for a Proton Energy of 1 GeV"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 41, No 9, Sep 71, pp 1769-1775

Abstract: The paper describes the synchrocyclotron at the Physicotechnical Institute imeni A. F. Ioffe of the Academy of Sciences of the USSR for a proton energy of 1 GeV. Proton beam parameters as well as the characteristics of the main systems of the accelerator are presented. The beam channels are described, and the layout of the accelerator building is given. The installation has been in successful operation since 1970. Three tables, two figures, bibliography of twelve titles.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

UDC: 622.011.3

MIKHEYEV, G. V.

"Analysis of Some Estimates of Results of Splitting Rock Specimens by Point Loads"

V sb. Gorn. davleniye i gorn. udary (Rock Pressure and Rock Collisions--collection of works), VNIMI, 82, Leningrad, 1971, pp 73-78 (from RZh--Mekhanika, No 7, Jul 72, Abstract No 7V623)

Translation: The paper deals with the problem of selecting a computational formula for determining the tensile strength of rocks from the results of tests of regularly and irregularly shaped specimens by point compression loads. The formula $\delta KP/F$ is proposed ($K$ is a coefficient which depends on the conditions at contact and is close to unity; $F$ is the area of the surface of destruction of the specimen, $P$ is the splitting load, $\delta$ is the tensile strength). The close agreement between the experimental data and the results of calculations is noted. Bibliography of 8 titles. A. B. Fadeyev.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1



USSR

RYAZANTSEV, V. I., PUGACHEV, A. I., Candidates of Technical Sciences, SMIRNOVA, Ye. I., MIKHEYEV, I. M., Engineers, ANTONOV, Ye. G., Candidate of Technical Sciences, and OSOKINA, T. N., Engineer

UDC 621.791.042:669.15'74-194

"Selection of an Additive Material for Welding of Mg-Zn-Zr-REM Alloys"

Moscow, Svarochnoye Proizvodstvo, No 7, Jul 1972, pp 9-11

Abstract: Deformable magnesium alloys in the system Mg-Zn-Zr-REM are recommended for the manufacture of complex structures without stress relief following welding. These alloys have tensile strengths of at least 22 kg/mm$^2$ and $\delta \geq 15\%$. These alloys are also superior in impact toughness, relative elongation, and relative reduction in area. The weldability of the alloys studied was evaluated using sheets 2 mm thick following annealing for one hour at 260°C. The alloys were found to have good weldability with argon arc welding using wires with compositions differing from the base metal. Two compositions of wires based on Mg are suggested: 1.0-1.5% Zn, 0.5-0.7% Zr, 2.8-3.7% Ce; and 1.0-1.5% Zn, 4.4-7.0% Al, 0.3-0.6% Mn. The former wire is recommended for complex and rigid structures with large volumes of manual welding; the latter is recommended for automatic welding of structures to be subjected to impact and cyclical loading. These wires produce welded joints with strengths at least 90% of the base metal, bending angle at least



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RYAZANTSEV, V. I., et al., Svarochnoye Proizvodstvo, No 7, Jul 1972, pp 9-11

50 and 65° respectively. Overall corrosion of welded seams using these wires is similar to the base metal; the welded joints are not inclined to corrosion under stress.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

Welding

USSR

UDC 621.791.011.001.5:669.721 + 669.5

ANTONOV, YE. G., Engineer, POPOV, A. S., Engineer, YAKUSHIN, B. F., Candidate of Technical Sciences, OSOKINA, T. N., Engineer, NIKOLAYEVA, V. S., Technician, MIKHEYEV, I. M., Engineer, SMIRNOVA, YE. I., Engineer, SHPAGIN, B. V., Engineer, and BABADZHANOVA, I. S., Engineer

"Effect of Rare-earth Elements on the Weldability of Magnesium-Zinc and Magnesium-Zinc-Zirconium Alloys"

Moscow, Svarochnoye Proizvodstvo, No 12, Dec 70, pp 6-8

Abstract: The effect of some rare-earth metals on the weldability of magnesium-zinc and magnesium-zinc-zirconium alloys was studied in experimental melts. Sheets of the alloys, 2 mm thick, were obtained by rolling on a "Duo" laboratory mill from flat ingots cast in metal molds. Before rolling, the ingots were heated to 380-400° C (11 intermediate heats, 2-3 passes). Shrinkage was 15-25 percent. After rolling, the sheets were annealed at 260° C for an hour. The filler wire was made of the same material. The results indicate that rare-earth metals (neodymium,

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

ANTONOV, YE. G., et al., Svarochnoye Proizvodstvo, No 12, Dec 70, pp 6-8

lanthanum, mischmetal) at the rate of up to 0.6 percent by weight affect the hot-shortness of the studied alloys in different ways during welding. The most probable reason for this is the varying effect of rare-earth metals on the plasticity of the studied alloys in the region of the lower limit of the brittle temperature range, as well as the varying effect on the magnitude of the latter. The weld cracking resistance of the alloys can be increased by alloy additions of lanthanum and cerium mischmetal and the use of filler wire (2 percent Zn, 0.45 percent Zr, 3.44 percent cerium mischmetal, the rest Mg).

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

UDC 621.791.019

ANTONOV, Ye. G., POPOV, A. S., YAKUSHIN, B. F., OSOKINA, T. N., MIKHEYEV, I. M., SMIRNOVA, Ye. I., SHPAGIN, B. V., and NIKOLAYEVA, V. S., Moscow

"Metallurgical Action on Seam Strength in Magnesium Alloy Welding"

Kiev, Avtomaticheskaya Svarka, No 2, Feb 71, pp 53-55

Abstract: The problem considered in this paper is the metallurgical means that can be used to deal with cracks in magnesium alloy welds, specifically magnesium alloyed with zinc, and the efficiency of the means. Melts of the VMD3 series and several magnesium-zinc melts were the subjects of the experimentation; the defect of the first class of alloys is the tendency of its welds to develop heat cracks caused by the change in the lanthanum content. It was assumed in these tests that the introduction of rare earth metals into the alloys would improve their resistance to the formation of cracks since magnesium forms eutectics with these metals. A conclusion reached by the authors is that one cause of cracks forming in the welds that did not contain zirconium is the large crystalline structure of the weld metal, and that the resistance of the weld to cracks could be improved by the addition of 0.55% Zr.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

UDC: 639.389.1:538.213:537.311.31:
669.15-194.56

BELENKOVA, M. M., UBAROV, A. I., MALUSHEV, K. A., MIKHEYEV, M. N.

"Change in Strength, Electrical and Magnetic Characteristics of Austenitic Steel Type 40Kh4G18F During Heat Treatment and Thermomechanical Treatment"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 5, Nov 73, pp 971-977.

Abstract: Type 40Kh4G18F aging austenitic steel is hardened by aging, cold and hot plastic deformation, both individually and together. All of the hardening treatments increase the yield point and magnetic permeability of the steel, but not to the same extent for different treatments. Electrical resistance changes more complexly. The greatest increase in magnetic permeability is observed upon cold plastic deformation, the least -- with combined treatment including aging and hot plastic deformation. However, with all hardening treatments the steel has a low value of magnetic permeability, and is therefore a good high-strength nonmagnetic material.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

UDC 620.179.14

ZAKHAROV, V. A., MIKHEYEV, M. N., FRANTSEVICH, V. M.

"Design of a Ferroprobe Coercitimeter with an Attached Electromagnet and Compensation Winding"

Defektoskopiya, No 4, 1971, pp 21-31.

Abstract: Results are presented from a study of the dependence of the ampere turns of demagnetization and compensation on the parameters of the magnetic circuit of a ferroprobe coercitimeter with an attached electromagnet and compensation winding, as well as certain experimental results. Simplified formulas are given for calculation of the ampere turns, as well as an example of calculation and a schematic diagram of the semiautomatic ferroprobe coercitimeter for testing the quality of heat treatment of products.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

UDC 661.61:53.08:536.5

MIKHEYEV, M. P.

"On the Possibilities of Flame Temperature Measurement by Interferometric Method"

Cheboksary, V sb. "Fiz. vibrats. goreniya i metody eye isled." (In Collection of Works-Physics of Vibration Combustion and Methods of Investigation) No 1, 1971, pp 87-91 (from Referativnyy Zhurnal-Teploenergetika, No 6, June 72, Abstract No 6R52 by S. G. Dupleva)

Abstract: The highest accuracy in flame temperature measurement by optical methods is obtained at flat object when the object geometrical thickness and physical properties are constant in the direction of light beam propagation. Interferometry makes it possible to expose the three-dimensional propagation of temperature at any time. The kinetic flame which is the most similar to one dimensional case, is obtained by burning combustion mixtures in channels of rectanfular cross section. Interferogram of

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

MIKHEYEV, M.P., Cheboksary, V sb. "Fiz. vibrats. gorenlya i metody eye isled." No 1, 1971, pp 87-91

a flame propagating in a vertical pipe of rectangular cross section is presented. A method of subtracting interferograms which are obtained simultaneously in two normal to each other directions is used for greater accuracy. For simplification purposes, the boundary effect can be neglected. 2 figures, 1 table and 1 reference.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1"

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USSR

UDC 536.46:533.6

MEDVEDEV, N. A., MIKHEYEV, M. P.

"On the Effect of an Electric Field on Flame Propagation in a Tube"

V sb. Fiz. vibrats. goreniya i metody yeye issled. Vyp. 1 (Physics of Vibration Combustion and Methods for Studying It. No. 1 -- Collection of Works), Cheboksary, 1971, pp 79-86 (from RZh-Mekhanika, No 6, Jun 72, Abstract No 6B900)

Translation: An experimental study of the effect of a transverse electric field on the initial stage of flame propagation in a vertical tube filled with a propane-air mixture and the effectiveness of the action of the field on the vibration mode of combustion upon the application of the field to different segments of the tube is described. The experiments were conducted in a tube of rectangular cross section 12.5 × 28.5 mm and 1050 mm long. The mixture was ignited at the lower open end of the tube. The electric field was produced between the electrodes 126 mm long fastened to the outer walls of the tube. Shadow and interference pictures of the propagation of the flame front were obtained at the initial stage of the development of the combustion process and oscillograms of the pressure change in the tube were also obtained.

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USSR

MEDVEDEV, N. A., MIKHEYEV, M. P., Fiz. vibrats. goreniya i metody yeye issled. Vyp. 1, Cheboksary, 1971, pp 79-86

It was shown that the rate of flame propagation in the initial stage of the development of the combustion process increases under the effect of the transverse electric field. The field has the greatest effect on vibration combustion when it is applied close to the open end of the tube. The amplitude of the acoustical oscillations in this case rises with an increase in the field strength. G. D. Salamandra.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

UDC 669.018.2.4

MIKHEYEV, N. I., and STOLYAR, G. F., Novocherkassk Scientific Research Institute of Permanent Magnets

"On the Action of Base Components and of Silicon in Magnico Alloys"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 2, 1973, pp 26-28

Abstract: A study was made of the effect of cobalt, nickel, copper, and aluminum on the temperature of the beginning high-coercive transformation ($\beta_2 \rightarrow \beta + \beta_2$-decomposition) in magnico alloys of YuNDK24 type under conditions of continuous cooling. An alloy containing 24% Co, 14% Ni, 8% Al, 3% Cu, and the rest Fe served as the base. Various modifications of this alloy differing in the content of one of the components were investigated. The temperature dependence of beginning transformation on the content of individual elements was established. The effect of the hardening temperature on the magnetic properties of YuNDK24S and YuNDK24 alloys was investigated. Presented data demonstrate the possibility of successful magnetothermal processing of YuNDK24S alloys from all temperatures over 875°C. The use of lower hardening temperatures is of particular economic and technological interest

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USSR

MIKHEYEV, N. I., and STOLYAR, G. F., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 2, 1973, pp 26-28

in the series production of YuNDK24S alloys. Three figures, seven bibliographic references.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

1/2 021 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--EFFECTIVENESS OF A SPARK CHAMBER WITH LIMITING LOW IONIZATION -U-

AUTHOR-(02)-SBORSHCHIKOV, V.G., MIKHEYEV, S.P.

COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, 1, 58-9

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SPARK CHAMBER, FREE ELECTRON, ELECTRODE DESIGN, ALUMINUM, TIN, QUANTUM YIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1991/1075 STEP NO--UR/0120/70/000/001/0058/0059

CIRC ACCESSION NO--AP0110765

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

2/2 021 UNCLASSIFIED

CIRC ACCESSION NO--AP0110765 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS DESCRIBED FOR OBTAINING AND MEASURING A SMALL NO. OF FREE E IN A SPARK CHAMBER. THE APP. CONSISTS OF A SPARK CHAMBER WITH FLAT ELECTRODES 5 CM IN DIAM. PLACED AT A DISTANCE OF 2 CM FROM EACH OTHER. THE LOWER ELECTRODE WAS PREPD. FROM AL AND SN. THE QUANTUM YIELD OF AL PROVED UNSTABLE. THE SN ELECTRODE WAS USED TO MAKE 2 SERIES OF MEASUREMENTS. THE EFFECTIVENESS OF THE CHAMBER WITH RESPECT TO ONE FREE E IS NOT SMALLER THAN 70PERCENT.

FACILITY: FIZ. INST., MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR UDC 532.132

GRIGOR'YEV, V. N., GULIN, B. A., YESEL'SON, B. N., KOREPANOV, V. D., MIKHEYEV, V. A.

"Device for Investigating Diffusion and Magnetic Characteristics of $^3He$ and $^3He$-$^4He$ Solutions by the Spin Echo Method"

Trudy, Fiziko-tekhnicheskiy institut nizkikh temperatur (Physico-technical Institute for Low Temperatures--collection of works) Academy of Sciences, Ukrainian SSR, No. 10, 1970, pp 166-177 (from RZh-Fizika, No. 9, 1971, Abstract No. 9E36)

Translation: The description is given of a spin echo device, designed for investigating the characteristics of $^3He$ and $^3He$-$^4He$ solutions in the liquid and solid states. The device permits measurements of the coefficient of diffusion, the magnetic susceptibility, and the magnetic relaxation time, as they vary in a broad range. The results of controlled measurements of the diffusion coefficient in liquid $^3He$ at various pressures are given. These results correspond well with the results obtained by other authors. Author's abstract.

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USSR

UDC 536.46:533.6

ZARKO, V. Ye., MIKHEYEV, V. F., ORLOV, S. V., KHELEVNOY, S. S., CHERTISHCHEV, V. V.

"On the Characteristics of the Ignition of Gun Powder by a Hot Gas"

V sb. Goreniye i vzryv (Combustion and Explosion -- Collection of Works), Moscow, "Nauka", 1972, pp 34-37 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B933)

Translation: Combustion characteristics are investigated under conditions of conductive and convective heat transfer from a hot gas and the limits of applicability of the thermal theory are determined. The objects of investigation were nitroglycerine gun powder and compressed nitrocellulose. It is shown that there exists a region of condition in which ignition is determined preferentially by the parameters of the solid-phase reactions for substances with a complex reaction mechanism (in the solid and gas phases). The preponderance of gas-phase reactions is achieved under conditions of conductive heating by a rise in pressure (due to ballasting of the reaction mixture by inert gas); under conditions of convective heating it is due to intense escape of gaseous products of

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USSR

ZARKO, V. Ye., et al, Goreniye i vzryv, Moscow, "Nauka", 1972, pp 34-37

the decomposition of the high-speed gas flow. The second method of heating is less suitable for the study of nitroglycerine gunpowders and other explosives, the melting temperature (softening, liquefication) of which is lower than the ignition temperature. 5 ref. Authors' abstract.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

Acc. Nr: AP0041914 Ref. Code: UR 0245

PRIMARY SOURCE: Voprosy Psikhologii, 1970, Nr 1, pp 70-78

# ON THE MODELLING OF THINKING PROCESS IN A SELF — INSTRUCTING SYSTEM

Matyushkin, A. M.; Mikheyev, V. I.

Summary

The paper describes the process of self — instruction under problem situation conditions as a result of which the schoolchild gains a meaningful unit of academic information. A probability — information model was used for the description of the process of solving the problem in the indicated conditions. Indices characterizing the possibility of acquiring independently new knowledge and indices determining the limits of possibilities of performing the acquired action in new conditions are proposed as indicators of acquisition.

Two main cases of new knowledge acquisition are considered: 1) acquisition by a schoolchild and 2) acquisition by a group of schoolchildren. Characteristics are given of the difficulty of problem situations in the process of the independent acquisition of study program by schoolchildren with different possibilities of acquiring new knowledge.

REEL/FRAME

19751803

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

UDC 621.385.632

KOSTIN, YU.A., YENIN, P.S., MALODITKO, A.P., MIKHEYEV, V.I.

"Securing Of Spiral Delay Line Of Vibration-Proof TWT"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue No 10, pp 101-108 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A181)

Translation: A stable, easily-controlled and checked method is developed for securing a delay line of the spiral type. Securing is accomplished by clinching [osazhivaniye] the warmed-up glass for forming the bulb into the form of narrow bands. The glass is clinched under the influence of a jet of nitrogen heated to a high temperature. Evacuation of the bulb in the process of securing prevents oxidation of the spiral delay line, and use of an electrical furnace for overall heating and annealing of the bulb removes the emerging thermal stress. Summary.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR UDC 546.621'21:537.226.1/.2

MIKHEYEV, V. N., BROVIKOV, V. N., and GORDEYEV, S. YA.

"Influence of the Addition of $Na_2O$ on the Dielectric Properties of Aluminum Oxide"

Moscow, Neorganicheskiye Materialy, Vol 7, No 4, Apr 71, pp 703-704.

Abstract: Aluminum oxide was produced from oxide hydrate of various purities, and various quantities of caustic soda were added. The dielectric losses of aluminum oxide were found to increase in proportion to the content of the alkali metal. This simple dependence allows the concentration of alkali metals in alundum to be determined from the value of the dielectric loss angle tangent.

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Mechanical Properties

USSR

UDC:669.295:669.018

MIKHEYEV, V. S., Moscow

"Mechanical Properties of Multicomponent Alloys Based on α-Solid Solution of Titanium-Aluminum-Tin (Zirconium) with β-Stabilizing Elements"

Kiev, Problemy Prochnosti, No 10, Oct 73, pp 89-92

Abstract: This work studies the mechanical properties of multicomponent titanium alloys based on an α-solid solution from the system Ti-Al-Sn(Zr) and Ti-Al-Sn-Zr, alloyed with Mo, V, Cr, Fe, Si and B at room temperature in the forged and heat-treated states and at high temperatuers (up to 950° C) in the forged state. Optimal compositions of high-strength, ductile and technologically workable multicomponent titanium alloys are determined: 5.5-7% Al, 1.5-2.5% Sn, 2% Mo, 2% V, 0.5-0.5% Cr, 0.10-0.20% Fe, 0.3-0.5% Si, 0.01% B, or in the case of Zr, 2.5-3% Zr (no tin) in a composition totalling 11-13% of the same elements. Increasing the aluminum content to 8.9% or the zirconium content to 15% increases the hardness and strength, while reducing plastic properties significantly. Heat treatment is very significant. High temperature annealing (at 1000° C) with subsequent water quenching and tempering at 500° C increases the strength of the alloy with 8.9% Al (total of alloying elements 15.76%) to 170 kg/mm$^2$, without changing elongation, and increasing the reduction in area by 1.9-2.7 times.

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USSR

UDC 669-973:669.295'296

KOSHELEV, P. F., MIKHEYEV, V. S., NIKITIN, P. N., Institute of the Machine Studies, Academy of Sciences USSR

"Strength and Plasticity at Low Temperatures of Titanium Alloys With Zirconium"

Moscow, Metallovedeniye, No 10, 1971, pp 30-33

Abstract: The mechanical properties of titanium alloys with zirconium (up to 30%) and their stress concentration sensitivities at 20°C, -196°C, and -269°C were investigated. The principles of the change of strength and plasticity, as a function of Zr-content, were experimentally determined using iodide zirconium and TG-110 titanium. The results are discussed by reference to diagrams showing the mechanical properties of alloys of the system Ti-Zr at 20°C, -196°C, and -269°C, stress-strain diagrams of Ti-alloys with 5% Zr and 20% Zr, and their stress concentration sensitivities. The ultimate strength and yield point of the investigated alloys increase smoothly with increasing Zr-content. By alloying Ti with Zr, alloys of sufficient strength and without significantly increased stress concentration sensi-

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR

KOSHELEV, P. F., et al, Metallovedeniye, No 10, 1971, pp 30-33

tivity can be obtained. Titanium alloys with up to 15% Zr are not susceptible to stress concentrations, possess satisfactory plasticity, and can be recommended for use in cryogenic technology. 3 illustrations, 4 bibliographic references

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR UDC 539.4

KOSHELEV, P. F., MIKHEYEV, V. S., NIKITIN, P. N., Institute of Machine Science

"The Influence of Tin Upon the Strength and Plasticity of Titanium at Low Temperatures"

Kiev, Problemy Prochnosti, No 2, Feb 72, pp 68-69

Abstract: A study is made of the mechanical properties, and the sensitivity to stress concentration, of alloys of titanium with tin corresponding to the structure of an alpha-solid solution, at temperatures from 20 to -253° C. Research was conducted on alloys containing 2.5, 5.0, 8.0, and 12.0% of tin by weight, with static stretching of smooth and incised cylindrical specimens. The alloys were melted in a vacuum-arc furnace with a nonconsumable tungsten electrode in a helium atmosphere. Titanium-base alloys, containing up to 5.0% of tin by weight, are plastic and possess low sensitivity to stress concentrations in a wide range of low temperatures. Increasing the tin content in the alloy above 5% by weight brings about an acute decrease of the plastic properties of the alloys and acutely decreases their deformability, particularly at low temperatures. Three figures, 2 references.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR UDC 539.4

MIKHEYEV, V. S., KOSHELEV, P. F., NIKITIN, P. N., Institute of Metallurgy imeni A. A. Baykov

"The Mechanical Properties of Alloys AT3 and AT6 at Low Temperatures"

Kiev, Problemy Prochnosti, No 1, Jan 72, pp 63-65

Abstract: The behavior of alloys AT3 and AT6 at temperatures from 20 to -253°C was studied, and the following results were obtained: the standard mechanical properties were determined; the sensitivity to stress concentrations was studied; it was shown that the impact viscosity varied in relation to the test temperature and the incision sharpness. The conclusion was drawn that these alloys can be used in cryogenic-engineering structures operating at temperatures to -196°C. In the entire temperature range under investigation, alloy AT6 has definite advantages over alloy AT3; however, account must be taken of the smaller amount of work required for crack spreading during the destruction of this alloy. When these alloys are used at the temperature of liquid hydrogen, calculations should be made for strength and the permissible stresses should be specified, with account taken of a certain amount of sensitivity of the alloys with respect to stress concentrations. One table, three figures, three references.

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USSR

UDC 669.295.5

MIKHEYEV, V. S., and SHNYREV, G. D.

"Mechanical Properties of Beta-Titanium Alloys With 15.5% Cr Alloyed with Molybdenum, Vanadium, Niobium, and Tantalum"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 2, Mar-Apr 72, pp 178-180

Abstract: Investigation of the mechanical properties of forged beta-alloys of the system Ti+15.5% Cr+(0-5)%Mo(V,Nb,Ta) at room temperature established the regularities of change in their tensile strength, elongation, reduction in area, and impact strength. According to the nature of change of plastic properties, Ti-Cr alloys can be divided into two groups: alloys alloyed with Mo and V, and alloys alloyed with Nb and Ta. Alloys containing 1% Mo or V have the highest tensile strength (95-99 kg/mm$^2$), elongation (19-21%), and reduction in area (50-54%). When all the alloys contain 5% of each of the selected alloying elements, the alloy with the highest tensile strength (107-112) kg/mm$^2$) is the one with vanadium. This alloy has an elongation of 12-17%, reduction in area of 37-45%, and impact strength of 2-2.8 kg-m/cm$^2$. The best plastic properties are found in Ti-Cr alloys containing 5% ta or Nb.

Alloys containing 2% Nb or Ta have the lowest plastic properties;

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MIKHEYEV, V. S., and SHNYREV, G. D., Izvestiya Akademii Nauk SSSR, Metally, No 2, Mar-Apr 72, pp 178-180

elongation = 11-13%, reduction in area = 19-28%, and impact strength = 2 kg-m/cm$^2$. Best impact strength was found in the alloys containing Mo, where at a content of 1% Mo the impact strength was almost 15 kg-m/cm$^2$ and at 5% Mo--almost 5 kg/cm$^2$, while alloys with 1 and 2% V had impact strengths of 6 and 3.5 kg-m/cm$^2$. One figure, 5 bibliographic references.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR UDC 621.721.541.121

KALABUKHOVA, S. V. and MIKHEYEV, V. S., Institute of Metallurgy imeni A. A. Baykov

"Polythermal Section of Ti-ΣMo-Ni(9:1) of the Ternary System Ti-Mo-Ni"

Kiev, Poroshkovaya metallurgiya, No 2, Feb 72, pp 33-37

Abstract: A study has been made of the titanium angle of the Ti-Mo-Ni system within the range of molybdenum-rich alloys. The study centered on the section with a Mo:Ni=9:1 ratio containing up to 55% of ΣMoNi. Use was made of microstructure, hardness, resistivity, dilatometric, and x-ray diffraction analysis data to plot a partial polythermal section of Ti-ΣMMoNi(9:1). The α+β two-phase region expands with a decrease in temperature and is limited by ΣMoNi content: at 800--6, at 700°--14, at 600°C--17 wt.%. The presence of a β+$Ti_2Ni$ phase is revealed at 55% ΣMoNi and above. Curves show the hardness of the alloys as a function of quenching temperature and their resistivity as a function of composition. (5 illustrations, 1 table, 5 bibliographic references).

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USSR

UDC 621.785.78.9:620.17:669.295'292'293

KOSHELEV, P. F., MIKHEYEV, V. S., and NIKITIN, P. N., Institute of Metallurgy, Academy of Sciences USSR

"Mechanical Properties of Binary Titanium Alloys With Vanadium and Niobium at Low Temperatures"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 2, 1972, pp 16-19

Abstract: This study concerns the mechanical properties and stress concentration sensitivity of binary Ti alloys with various contents of V and Nb at temperatures from +20 to -269°C. Discussed are the principles governing the variation of properties and optimum alloying limits for Ti with V and Nb for producing stronger multicomponent alloys suited for use in the cryogenic technology. The strength of Ti alloys with up to 12% V increases 4-7 times at temperatures as low as -253°C; but the alloy becomes brittle. In Ti alloys with up to 11% Ni, the strength increases about 3.5 times and a certain amount of plasticity is retained. For service at temperatures as low as -269°C Ti alloys with up to 6-7% Nb are recommended; Ti alloys with up to 5-6% V may be used for service at temperatures as low as -253°C. (3 illustrations, 5 bibliographic references)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR UDC 539.4.015

MIKHEYEV, V. S., KOSHELEV, P. F., NIKITIN, P. N., SENYREV, G. D. (Moscow), Institute of Metallurgy imeni A. A. Baykov

"The Influence of Beta-Stabilizers on the Strength and Plasticity of Titanium at Low Temperatures"

Kiev, Problemy Prochnosti, No 10, 1970, pp 115-117

Abstract: In the article is investigated the influence of beta-stabilizing metals (tantalum, vanadium, niobium) on the strength, plasticity, and sensitivity to stress concentration in titanium-based binary alloys corresponding to the structure of an alpha-solid solution, containing two atomic percent of the second component, at temperatures of 20 to -253°C. Attention is paid to the rules governing the change of the mechanical properties of alloys in the multicomponent Ti-Ta-Cr; Ti-Ta-V-Mo systems at low temperatures. 2 figures, 1 table, 2 bibliographic entries.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202020020-1

USSR UDC 669.[illegible]

MIKHEYEV, V. S., PUSTOVOYTOVA, T. G., SOKOLOV, V. S., and SHNYRYEV, [illegible]
Moscow

"Strength and Plasticity of Ti-Nb-Zr Alloys at -196 and +20° C"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 4, Jul-Aug 7[illegible], [illegible]

Abstract: The mechanical properties of Ti-Zr-Nb alloys [illegible] of Zr and Nb were investigated at -196° C and + 20° C on [illegible] stant relation of Ti/Zr = 9/1, Nb content between 1 and 50 at%, and Zr [illegible] up to 10 at%. The alloys were composed of Ti, brand TG-[illegible], [illegible] Fe, Si, C, Cl, $N_2$, $H_2$, and the components iodine Zr and [illegible] effect of Nb on the mechanical characteristics of the alloys [illegible] + 20° C shows a notable increase in strength and yield [illegible] mains of $\alpha$ and $\beta$ solid solutions. The most different values [illegible] yield properties at -196° C were observed on alloys with [illegible] ($\alpha+\beta$) solid solution at 20 at% Nb; similar values were observed [illegible] microstructures of $\beta$ solid solutions which showed a brittle [illegible] tests. Titanium alloys containing up to 3 at% of Nb and [illegible] [illegible] $\beta$=[illegible] kg/mm$^2$ and $\delta$=9-13%, have the best [illegible]
[illegible]
1/[illegible]

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USSR M UDC 669.295.5'294'292

MIKHEYEV, V. S., and NIKITIN, P. N., Moscow

"Investigation of a Section of the Structural Diagram of the Ti-Ta-V System"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 1, Jan-Feb 1970, pp 189-192

Abstract: A study was made of the Ti-Ta-V system according to three radial sections from the titanium angle to the side of Ta-V with a ratio Ta:V = 3:1, 1:1, and 1:3 up to 60 wt. % $\Sigma$ Ta,V. Titanium iodide, tantalum (99.9% pure), and electrolytic vanadium were used for preparing the alloys. Specimens weighing 30 g were smelted in a vacuum arc furnace in an argon atmosphere with 4-5 fold remelting. Tantalum was introduced into the alloy in the form of a Ti-Ta master alloy at the ratio of 1:1. The alloys were homogenized at 1100° C for 75 hrs and forged at temperatures of 900-1000° C. The alloys, containing up to 16 wt. % of $\Sigma$Ta, V, were formed in a cold state with a degree of 50% area reduction with subsequent heat treatment at corresponding temperatures. The specimens were annealed at 800, 700, and 600° C for 150, 250, and 400 hrs, respectively, with water quenching. A diagram of the composition of the system Ti-Ta-V up to 60% $\Sigma$Ta, V constructed according to data from microstructural analysis, partial x-ray micrography, and measurements of electrical resistance

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