1/2 044 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--RADIATION HARDENING OF SOME NICKEL, CHROMIUM, AND IRON ALLOYS -U-

AUTHOR-(02)-RAYETSKY, V.M., VOTINOV, S.N.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA METALLOV I METALLOVEDENIE, FEB. 1970, 29, (2), 284-290

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--NEUTRON IRRADIATION, CRYSTAL DISLOCATION, YIELD STRESS, DUCTILITY, TEMPERATURE DEPENDENCE, CHROMIUM NICKEL ALLOY, CHROMIUM NICKEL STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1677 STEP NO--UR/0126/70/029/002/0284/0290

CIRC ACCESSION NO--AP0129047

UNCLASSIFIED

2/2 044 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129047

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF NEUTRON IRRADIATION ON THE MECHANICAL PROPERTIES OF NI,CR AND FE,NI,CR ALLOYS WERE STUDIED. THE YS INCREASED WITH INCREASING NEUTRON FLUX, REACHING SATURATION FOR AN INTEGRAL NEUTRON DOSE OF 10 PRIME21 N-CM PRIME2 (ENERGY 1 MEV) AT 70DEGREESC. TESTS AT 350 AFTER IRRADIATION AT 70DEGREESC REVEALED THE EXISTENCE OF A SOFTENING EFFECT APPARENTLY ASSOCIATED WITH AN EXCESS OF VACANCIES ARISING FROM THE DECOMPOSITION OF VACANCY AGGREGATES. THE HARDENING CAUSED BY THE IRRADIATION WAS ATTRIBUTED TO THE PINNING OF DISLOCATIONS BY VACANCY AGGREGATES COMPRISING AT LEAST FIVE VACANCIES.

UNCLASSIFIED

THE BEHAVIOR OF BOR-60 REACTOR CONTROL AND SAFETY RODS DURING THEIR OPERATION

[Article by S. N. Votinov, V. P. Gol'tsev, E. N. Guseva, R. I. Mineyev, V. I. Prokhorov, and V. V. Chesanov, Scientific Research Institute of Atomic Reactors imeni V. I. Lenin; Dimitrovgrad, Pogloshchayushchiye materialy i sterzhni regulirovaniya bystrykh reaktorov, Russian, International Working Group for Fast Reactors Specialists Meeting, International Atomic Energy Agency, Dimitrovgrad, 4-8 June, 1973]

The results of an investigation of automatic regulation (AR) rods, burn-up compensation (KS-2) rods, and rods for compensation of the temperature and power effects of reactivity (KS-1), which had operated in the BOR-60 from 1 year to 2.5 years, are given. It was established that the basic radiation effects determining the efficiency of the PEL (absorbing elements) is the bulging (swelling) of the carbide, the magnitude of which is associated with temperature and burn-up. Gas liberation from B_4C at working temperatures for the operation of the rod is not great and does not exceed 10% out of the total formed.

1. Introduction

In a reactor, for reliable operation, regulating rods of various designation are used: emergency protection (AZ) rods, automatic regulation (AR) rods, and rods for compensation of burn-up and temperature effects (KS).

The requirements imposed upon them also differ. Thus, for AZ rods the main thing is the efficiency of the absorbent, and requirements with respect to radiation resistance are less rigid. For AR and KS rods, their high radiation resistance must be the basic factor.

USSR

UDC 616.938.25-022.395.42-036.1(476 + 571.62)

PROTAS, I. I., and VOTYAKOV, V. I., Clinical Department of Neuroviral Infections, Belorussian Institute of Epidemiology and Microbiology, Minsk

"Clinical Differences between Tickborne Encephalitis in Belorussia and Khabarovskiy Kray"

Moscow, Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova, Vol 71, No 7, 1971, pp 1,001-1,006

Abstract: A comparative study was conducted of 61 cases of tickborne encephalitis in Belorussia in 1966-1968 and of 149 cases of tickborne encephalitis in Khabarovskiy Kray during the same period. While the disease in Khabarovskiy Kray was accompanied by bulbar and residual paralyses in a large number of cases (24.2%) and had a relatively high mortality (16.8%), in Belorussia it was predominantly of the meningeal or general infection type and had a favorable outcome (95.2% of the patients recovered completely and there was not a single death). Residual paralyses and pareses were observed in 14.8% of cases in Khabarovsk Kray, whereas full motor capacity of paretic extremities was usually restored in Belorussia. Fever was the principal component of the clinical syndrome in Belorussia in the acute period; the symptoms of a meningeal

USSR

PROTAS, I. I., et al, Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova, Vol 71, No 7, 1971, pp 1,001-1,006

lesion disappeared immediately after the temperature became normal. The clinical symptoms observed in Khabarovskiy Kray indicated a predominant lesion of the cerebral parenchyma, which continued to increase in severity during the post-fever period. A two-wave fever was typical for the cases observed in Belorussia, while the second wave seldom developed in Khabarovskiy Kray encephalitis, and the length of the fever period was less extended in this type of the disease. The disease was of the focal type in 38.3 and 11.5% of cases in Khabarovsk Kray and Belorussia, respectively.

2/2

USSR UDC 576.858.25.01(476)

SAMOYLOVA, T. I., VOTYAKOV, V. I., MISHAYEVA, N. P., KHOD'KO, L. P., FEDORCHUK, L. V., VOINOV, I. N., and DANILOVA, G. M., Belorussian Institute of Epidemiology and Microbiology, Minsk

"Detection of Uukuniyemi Virus in the Belorussian SSR"

Moscow, Voprosy Virusologii, No 1, 1973, pp 111-112

Abstract: A strain of Uukuniyemi virus, named Belovezhskiy-Uukuniymi-302, was isolated for the first time in 1970-1971 in Bretskaya Oblast, Belorussian SSR from female Ixodes ricinus. The virus belonged to the ectromelia group, passed through 35-mm Seitz filters without significant titer changes, and apparently the virions had a supercapsular lipoprotein membrane. The virus was highly pathogenic to newborn white mice, much less so to 4-5 gm mice, and nonpathogenic to adult guinea pigs and white rats. Complement-fixation reactions with several specific sera confirmed that this virus belongs to the Uukuniyemi group. Apparently the Belovezhskiy microfocus from which the virus was obtained is part of an extensive focus spreading from the Baltic Sea south to Czechoslovakia and western Ukrainian SSR.

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USSR

UDC 616.988.25-022.395-06:616.832.522

PROTAS, I. I., and VOTYAKOV, V. I., Clinical Department of Neuroviral Infections, Belorussian Institute of Epidemiology and Microbiology, Minsk

"The Relationship Between Amyotropic Sclerosis and Tickborne Encephalitis"

Moscow, Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova, Vol 70, No 8, 1970, pp 1,124-1,129

Abstract: A study was made of 16 male and 8 female (20 to 42 years old) afflicted with amyotrophic lateral sclerosis. No etiological link was found between this disease and tickborne encephalitis. Although the syndrome of amyotrophic lateral sclerosis was found to be extremely rare in tickborne encephalitis, it is recommended that primary chronic neuroinfections for which the pathogenic agent is also tickborne be registered in Byelorussia.

1/1

USSR

VOTYAKOV, V. I., GRIBOV, V. A., RYTIK, P. G., and BOYKO, V. I., Belorussian Scientific Research Institute of Epidemiology and Microbiology, Minsk

"Device for Feeding and Natural Infection of Insects"

Moscow, Otkrytiya, Izokreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 9, 1973, p 102

Translation: The device for feeding and natural infection of insects, consisting of two chambers (one of them open, the other one closed) divided by a membrane and having an opening for supplying the donor's blood, differs in that there is a bolt (for instance a ball valve) installed in the channel for serving blood and that the open chamber is provided with a netted ring, which is fixed by a clamping mount, in order to increase the safety of serving donor's blood and to prevent dissemination of the insects used in the experiment.

USSR

UDC: 546.92

AKATOVA, S. P., BOGDANOVSKIY, G. A., and VOVCHENKO, G. D., Department of General Chemistry, Moscow State University

"Adsorption of Methanol on Osmium"

Moscow, Vestnik Moskovskogo Universiteta, Seriya II, Khimiya, no. 6, vol. 11, Nov-Dec 70, pp 744-746

Abstract: The adsorption of methanol on finely crushed osmium powder in a solution of 0.1 N. H_2SO_4 using the direct contact method (as described in an earlier study) has revealed significant differences in the behavior of methanol as compared to that on other platinum metals. On contact of methanol with osmium powder polarized to the value of a potential equaling a two-layer region (φ_r^o=0.3 v), there is no shift in potential toward the negative side for a few hours as it generally occurs on other platinum metals. Based on experimental data, this study suggests that optimum conditions for methanol dehydrogenation on osmium are those at a potential close to 0.2 v where the centers at which dehydrogenation takes place are

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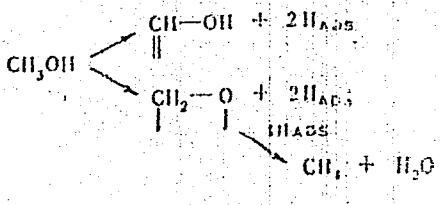
USSR

AKATOVA, S. P., et al, Vestnik Moskovskogo Universiteta, Seriya II, Khimiya, no. 6, vol. 11, Nov-Dec 70, pp 744-746

most released from oxygen and not as yet completely occupied by hydrogen. The absence of potential displacement with methanol introduction (φ_1=0.2) in this case may be explained by the fact that the hydrogen appearing due to dehydrogenation is consumed for hydrogenating one of the chemically adsorbed products thus compensating the anticipated shift of φ_r toward the cathode. A possible arrangement based on the assumption of self-hydrogenation of a chemically adsorbed aldehyde which arises from the cleavage of two hydrogen atoms on methanol dehydrogenation is proposed:



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1/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--CHANGES IN CATALYTIC AND ADSORPTION PROPERTIES OF A RHODIUM CATALYST UPON THERMAL TREATMENT IN AN OXYGEN ATMOSPHERE -U-

AUTHOR-(04)-KAZLAUSKIYENE, L., PLETYUSHKINA, A.I., KHOKHLOVA, M.N., VOVCHENKO, G.D.

COUNTRY OF INFO--USSR

SOURCE--VESTN. MOSK. UNIV., KHIM, 1970, 11(1), 67-9

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--RHODIUM, CATALYST ACTIVITY, OXYGEN, CATALYTIC REDUCTION, MALEIC ACID, ADSORPTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0599 STEP NO--UR/0189/70/011/001/0067/0069

CIRC ACCESSION NO--AP0119517

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0119517
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADSORPTION CAPACITY WITH RESPECT TO H WAS DETD. FOR A RH CATALYST AFTER THERMAL TREATMENT IN AN O ATM. AT 25, 80, 150, AND 200DEGREES. THE ACTIVITY WAS DETD. FOR THE REDN. OF MALEIC ACID IN AN EXCESS OF H. THE LENGTH OF THE H REGION FOR THE CHARGE CURVES BECOMES SHORTER AS THE TEMP. OF THE TREATMENT IS INCREASED. AT 80DEGREES, THE ADSORPTION CAPACITY DECREASES BY 27PERCENT, AT 150DEGREES BY 30PERCENT, AND AT 200DEGREES BY 32PERCENT OF THAT FOR THE STARTING SAMPLE. THE BOND ENERGY OF THE H WITH THE RH SURFACE DOES NOT CHANGE AND IS EQUAL TO 54.4 KCAL-MOLE. THE SP. ACTIVITY DECREASES SHARPLY AT 150DEGREES WHICH IS EXPLAINED BY THE RECRYSTN. OF THE SURFACE DUE TO THE ORDERING OF THE STRUCTURE. THE ACTIVATION OF THE SAMPLE WHICH WAS OBSD. AT 200DEGREES IS ATTRIBUTED TO TEH POSSIBLE ORIGIN OF NEW DEFECT STRUCTURES.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--MECHANISM OF THE PP YIELDS PI PRIME POSITIVE PN REACTION AT 660 MEV -U-

AUTHOR-(03)-VOVCHENKO, V.G., KOSTANASHVILI, N.I., YARBA, V.A.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(4), 810-13

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ENERGY SPECTRUM, NUCLEAR REACTION, PI MESON, PION PION INTERACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1028 STEP NO--UR/0367/70/011/004/0810/0813

CIRC ACCESSION NO--AP0124687

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0124687

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTL. DATA ON THE INTEGRAL ENERGY SPECTRUM AND ON THE ANGULAR DEPENDENCE OF THE SHAPE OF THE PI PRIME POSITIVE MESON SPECTRUM IN THE CENTER OF MASS SYSTEM FOR THE TITLE REACTION AT 660 MEV, ARE COMPARED WITH CALCNS. WHICH ARE BASED ON THE RESONANCE MODEL OF THE PION PRODUCTION, DEVELOPED BY MANDELSTAM WHICH IS USED, IN TURN, PRIMARILY FOR DESCRIBING THE MESON FORMATION PROCESS IN PP INTERACTIONS AT THE GIVEN ENERGY. THE SPECTRUM IS REASONABLY WELL DESCRIBED BY MEANS OF THE RESONANCE MODEL, BY TAKING INTO ACCOUNT THE PRIME3 P SUB0,1,2 PRIME1 D SUB2, AND PRIME2 F SUB2,3 SHAPE IS IN CONTRADICTION TO THE RESONANCE MODEL PREDICTIONS. THE PARTIAL CROSS SECTIONS OF THE PI MESON FORMATIONS FROM THE (J,L) STATE, DEPENDING ON THE MESON ENERGY E SUBPI, ARE GIVEN. FACILITY: OB'EDIN. INST. YAD. ISSLED., MOSCOW, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--090CT70

TITLE--ANALYSIS OF PP SCATTERING AT 640 MEV BY TAKING INTO ACCOUNT THE TOTAL CROSS SECTIONS AND PI MESON ANGULAR DISTRIBUTIONS -U-

AUTHOR-(03)-VOVCHENKO, V.G., ZULKARNEYEV, R.YA., KISELEV, V.S.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 3, PP 825-830

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

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PROTON SCATTERING, PHASE SHIFT ANALYSIS, INTEGRAL CROSS SECTION, PION, ANGULAR DISTRIBUTION, ELASTIC SCATTERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1976/2061 STEP NO--UR/0056/70/058/003/0825/0830

CIRC ACCESSION NO--AP0043589

UNCLASSIFIED

2/2 014 UNCLASSIFIED

CIRC ACCESSION NO--AP0043589 PROCESSING DATE--090CT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PHASE SHIFT ANALYSIS OF 640 MEV PP COLLISIONS IS PERFORMED. IN DISTINCTION TO PREVIOUS WORK THE PRESENT ANALYSIS IS CARRIED OUT BY TAKING INTO ACCOUNT THE PIPOSITIVE 0 MESON ANGULAR DISTRIBUTIONS. FOUR APPROXIMATELY EQUALLY PROBABLE SOLUTIONS ARE OBTAINED. MORE PRECISE EXPERIMENTAL DATA ON ELASTIC PP SCATTERING ARE NECESSARY IN ORDER TO MAKE THE ANALYSIS LESS AMBIGUOUS.

UNCLASSIFIED

Heat, Combustion, Detonation

USSR

UDC 629.7.036.54-66:536.46

VOVCHUK, YA. I., SHEVCHUK, V. G., and YAKOVLEVA, T. YA.

"Determination of the Lag Time of the Ignition of a Metal Particle in a Track Device"

Odessa, 11-ya Vses. Konf. po Vopr. Isparenlya, Goreniya i Gaz. Dinamiki Dispersn. Sistem, 1972 -- Sbornik (11-th All-Union Conference on Problems of the Evaporation, Combustion, and Gas Dynamics of Dispersed Systems, 1972 -- Collection of Works), 1972, pp 33-34)(from Referativnyy Zhurnal -- Aviatsionnyye i Raketnyye Dvigateli, No 1, 1973, Abstract No 1.34.150. Resume)

Translation: A method is proposed for calculating the lag time of the ignition of a spherical metal particle along the dark zone with account taken of acceleration of the particle during the motion of an entraining stream in a vertical pipe. Calculation of the ignition lag time on the basis of a known stream velocity, under the assumption that the particle instantaneously acquires the velocity of the stream, introduces a substantial degree of error. Thus, for boron particles with a diameter on the order of 50 microns, the error in determination of the ignition lag time reaches 60%. An equation of the motion of a spherical particle in a vertical stream of entraining gas if obtained, the solution of which makes it possible to obtain the relationship of the path traversed by the particle to the time. Analytic solutions are obtained for

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USSR

VOVCHUK, YA. I., et al., 11-th All-Union Conference on Problems of the Evaporation, Combustion, and Gas Dynamics of Dispersed Systems, 1972 -- Collection of Works), 1972, pp 33-34

cases in which the resistance forces of the medium are described by the Stokes and Oseen formulas. To solve the equation for Reynolds-number values at which the resistance of the medium is described by the Klyachko formula, a program for the M-220 electronic computer is complied. Calculation tables are obtained for the motion of boron particles, from 5 to 160 microns in size, in an entraining airstream.

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RAP//R-760/5-AKP-73

Dec 73

(2)

XIV. SOIL MECHANICS

Vovk, A. A., and A. V. Mikhalyuk. Wave process characteristics in a ground mass during explosions by air-casing charges. ZhPMTF, no. 2, 1972, 105-110.

A study of the wave process characteristics in a ground mass during explosions by air-casing charges was conducted with concentrated confined charges (charge weight 0.2 kg) and linearly distributed ejection charges (4 kg of explosive per meter) in loam with a density of 1990 kg/m^3 and an average moisture content of 14.17% by weight. The effect of the charge air-casing size on the parameters of detonation waves propagating in the ground during the explosion was investigated. The explosive used in all experiments was pressed trotyl with a density of 1600 kg/m^3, a detonation rate of 6 km/sec, and a specific intrinsic energy of 1010 kcal/kg. The charge was placed in a cardboard case, with a volume exceeding the charge volume by the air casing size. The stress wave parameters were measured by a tensometric complex. Sensors were installed to permit registration of the radial σ_r, axial σ_z, and circumferential σ_q components of the stress tensor.

An analysis of the experimental results shows that when the volume of the air casings is close to optimal, an increase of the detonation impulse time in the low-pressure region occurs. This is particularly evident in explosions of linearly distributed charges. Scattering of the experimental point data precluded the drawing of conclusions on the explosions of the concentrated confined charges. Changes in stress wave parameters during the explosion of air-casing charges affect the distribution of pressure impulse values. The redistribution of the deformation energy due to changes in the charge design was confirmed by experimentally established relationships on the change with distance of the radial impulse values on the load sector at various relative volumes of the air casings during explosions of centrally-symmetric and axisymmetric charges.

VOVK, A.A.

USSR

UDC 622.215.2

VOVK, A. A. and MIKHALYUK, A. V.

"Features of Wave Processes in a Soil Mass During the Detonation of Charges With Air Envelopes"

Novosibirsk, Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 2, March-April 1972, pp 105-110

Abstract: Results are presented of experimental research on wave processes in soils during the detonation of charges surrounded by an air envelope, and some general relationships are established. It is shown that the air envelope of a charge exerts an essential influence on practically all the parameters of a wave disturbance propagating in soil during an explosion. The established features of wave processes in soils during the detonation of charges with air envelopes can be used for calculating the action of an explosion when cutting through mine workings and other underground structures in compressible soils. 5 figures. 7 references.

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USSR

UDC 622.235.5

VOVK, A. A., KUZ'MENKO, A. A., KRAVETS, A. G., and SMIRNOV, A. G., Institute of Geotechnical Mechanics of the Academy of Sciences of the Ukrainian Soviet Socialist Republic

"On Investigation of the Residual Deformation Zone in Grounds by Seismometric Methods"
(Presented by Polyakov, N. S., Member of the Academy of Sciences of the Ukrainian SSR)

Kiyev, Dopovidi Akademii Nauk, Seriya A, Ukrainian SSR, No 10, 1971, pp 951—954

Abstract / Ukrainian article / : A seismometric method of investigating the neighboring zone of the explosion effect is described. By this method, irreversible deformations of the ground can be determined at distances exceeding by 3—4 times the dimensions of the zone of residual deformations. The latter are determinable by other methods. Two illustr., three tables, one biblio. ref.

1/1

USSR

VOVK, A. A. (Kiev, Institute of Geotechnical Mechanics AN SSSR)

"Deformation of Coherent Soils by Explosion of Charges at Various Depths"

Kiev, Akademiya Nauk UkrSSR. Prikladnaya Mekhanika, Vol 7, No 2, Feb 71, pp 89-93

Abstract: Available data on deformation of cohesive soils by explosion of cylindrical and spherical charges at various depths is considered. Particular attention is paid to the studies of the cylindrical blast wave parameters in soils, to the mechanism of their propagation, to the nature of deformations of the medium under the effect of the cylindrical blast impulses. The parametric values of cylindrical blast waves at various charge depths, including the case of underground explosion effect, are cited. Finite values of volume deformation of soils, expressed in terms of the distance from the charge axis, obtained from the condition of compatibility on the blast wave shock front, and measured by a radiometric method are presented. An analysis of the relations $\theta_s = f_1(R_o)$ and $\theta_{ts} = f_2(R_o)$, where θ_s and θ_{ts} are the volume deformations produced by spherical charges, and $R_o = R/r_3$ is the relative distance, as well as the study of deformation fields, show that the absolute dimension of the compacted zone is 1.5 = 2.0 times greater

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USSR

VOVK, A. A., Akademiya Nauk UkrSSR. Prikladnaya Mekhanika, Vol 7, No 2, Feb 71, pp 89-93

with a cylindrical than with concentrated charge.

An experimental study of the degree of variation of the cylindrical blast wave parameters, with the charge depth, was conducted in loams of 1.94 - 1.96 X 10^3 kg/m^3 volume weight, 14.3 - 13% humidity, and 0.36 - 0.3 porosity. Cylindrical charges 2 m in length were placed at relative depths H_i^o = H_i/r_3 = 15, 20, 50, 60 (i-1,2,3,4 and r_3 is the charge radius). The results presented in tables show that stresses and particle velocities increase with depth. The volume deformation variation with charge depth, for spherical and cylindrical charge including the underground effect, are given by formulas. The importance of strong variation of the soil permeability properties in the zone of deformation is stressed for the construction of irrigation canals by explosion method. 5 formulas, 3 figures, 2 tables.

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Stress Analysis and Stability Studies

USSR

UDC 624.1 + 622.258 + 626.131

A. A. VOVK, G. I. CHERNYY, A. G. SHIRKOV

Deformirovaniye szhimayemykh sred pri dinamicheskikh nagruzkakh (Deformation of Compressible Media Under Dynamic Loads), Kiev, "Naukova dumka", 1971, 175 pp, biblio, illus, 1,000 copies printed

The monograph considers the processes of deformation and irreversible deformation of loose materials. Results are given of theoretical studies of the dynamics of inelastic compressible media and the propagation of detonation waves in naturally deposited soils and research results on the measurement of deformation fields within the zones of influence of detonations. Equations of state of cohesive soils and metal powders are obtained experimentally for impulsive loading and various time parameters. The criteria for correspondence of experimental and theoretical research are discussed.

The monograph is intended for use by engineering-technical workers, teachers and students at the VUZ level.

The authors were helped by Academician G. S. Pisarenko in the work.

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A.A.Vovk, G. I. Chernyy, A. G. Smirnov, Deformation of Compressible Media Under Dynamic Loads, Kiev, 1971, 175 pp, cont'd

Contents

Lubricants and Lubrication

UDC: 621.9.079:621.892

USSR

LEVIN, I. M., Candidate of Technical Sciences, VOVK, A. I., IVANOV, V. I., and GORENSHTEYN, M. M., Candidate of Technical Sciences

"New Lubricating-Cooling Liquid"

Moscow, Mashinostroitel', No 6, Jun 73, p 31

Abstract: A new lubricating-cooling liquid was developed at the Zhdanovskiy Metallurgical Institute for use in the mechanical processing of aluminum and its alloys (author certificate No 293041). It is a new emulsion of surface-active synthetic substances with the following composition: 0.5-1 percent synthetic wax (complex esters of synthetic fatty acids and high-molecular alcohols), and 0.5-1 percent alkylolamides of C_{10}--C_{16} fraction synthetic fatty acids. The new lubricating-cooling liquid withstood the drop method corrosion testing, and does not have a disagreeable odor, and is not toxic. Comparative tests were conducted involving the new lubricating-cooling liquid, skipidar, castor oil, and ordinary five percent water emulsion. The MI-1M friction machine was utilized with the specimen roller equipped with the VK6 grade hard alloy and the other made from the AD-1 grade aluminum. The MPB-2 microscope was used to measure the width of the band of adhering material on the specimens. The results show that the new lubricating-cooling liquid is equivalent in its properties to skipidar. In drilling, the new liquid reduces metal sticking to the cutting edges in compari-

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USSR

LEVIN, I. M., et al, Mashinostroitel', No 6, Jul 73, p 31

son to the five percent emulsion. The new liquid is recommended for the mechanical processing of aluminum and its alloys and is being currently used at metallurgical plants in the cold rolling process.

USSR

VOVK, I. G.

"Algorithm and Programs for Calculation of Integral Values of Spherical Functions"

Tr. Novosib. In-ta Inzh. Geod., Aerofotos'yemki i Kartogr. [Works of Novosibirsk Institute of Geodetic, Aerophotographic and Cartographic Engineering] 1972, No 26, pp 21-30 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V766).

Translation: Recurrent relationships are established for computer calculation of the values of Φ_{nm} and P_{km}. Two procedures are written in ALGOL 60. It is shown that the errors in calculation amount to a relative measure of 10^{-7}-10^{-8}.

Author's view

1/1

1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--HYDROGENATION PURIFICATION OF LIQUID PARAFFINS -U-

AUTHOR-(04)-GONCHARENKO, A.D., MARTYNENKO, A.G., VOLKOV, A.I., VOVK, L.M.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPEREAB. NEFTEKHIM. (MOSCOW) 1970, (3), 36-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HYDROGENATION, AROMATIC HYDROCARBON, CATALYST, SULFIDE, CHEMICAL PURIFICATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2048 STEP NO--UR/0318/70/000/003/0036/0038

CIRC ACCESSION NO--AP0125636

UNCLASSIFIED

2/2 010 UNCLASSIFIED

CIRC ACCESSION NO--AP0125636 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HYDROGENATION AT 0.25-0.5 HR PRIME NEGATIVE1 AND 280-350DEGREES OF AROMATIC HYDROCARBONS (3.1PERCENT) IN PARAFFIN, D SUB20 0.7922, INITIAL B.P. 270DEGREES, 10, 50, 70, 90, AND 95PERCENT B. 287DEGREES, 315DEGREES, 331DEGREES, 354DEGREES, AND 365DEGREES, M. 23DEGREES, AND CONTG. 0.025PERCENT S WAS MAX. (90PERCENT) ON WS SUB2,NIS,FES CATALYST 3076 WITH 2000 1. H PER 1. AT 50 ATM WHEN THE VOL. INPUT RATE WAS 0.25 HR PRIME NEGATIVE1 AND THE TEMP. WAS 325DEGREES. AT 60-90 ATM., AROMATIC HYDROCARBON HYDROGENATION WAS 100PERCENT WITH 1600 1. H PER 1. AT 325DEGREES AND A RATE OF 0.3 HR PRIME NEGATIVE1 FOR PARAFFIN D SUB20 0.7850, INITIAL B.P. 276DEGREES, 50 AND 95PERCENT B. 300DEGREES AND 340DEGREES, M. 22DEGREES, AND CONTG. 0.024PERCENT S AND 1.7PERCENT AROMATIC HYDROCARBONS.

UNCLASSIFIED

USSR

UDC:620.10

VOVK, L.M., Engineer, SUKHAREV, I.P., Candidate of Technical Sciences

"Investigation of Stresses Around Reinforced Holes by a Method of Optically Inactive Patches"

Moscow, Izvestiya Vysshykh Uchebnykh Zavedeniy, Mashinostroyeniye, No 3, 1970, pp 5-9

Abstract: Stresses in a plate, around symmetrically reinforced holes by means of optically inactive patches have been investigated. The plate specimen was made of an optically active OASO plastic, and the patches of an optically inactive SO-95 plastic. The reinforcing patches in the shape of rings (see Fig. 1), or rings with two milled segments (see Fig. 1c) were cemented to the plate. So prepared specimens were subjected to tensile stresses. On the basis of previous studies it was established that the optimum reinforcement is provided by a patch of an oval shape (see Fig. 1b). However, reinforcement of this shape is hard to machine. The experiments showed that a reinforcement patch shown on Fig. 1c is much simpler and still its characteristics are close to those of an oval patch. The study also showed that the coefficients of the concentration of stresses practically do not depend on

VOVK, L.M., et al., Izvestiya Vysshykh Uchebnykh Zavedeniy, Mashinostroyeniye, No 3, 1970, pp 5-9

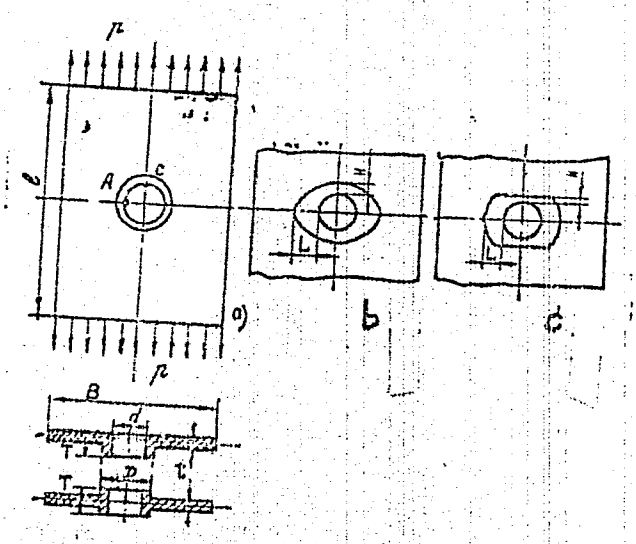

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Fig. 1

VOVK, L.M. et al., Izvestiya Vysshykh Uchebnykh Zavedeniy, Mashinostroyeniye, No 3, 1970, pp 5-9

the width H (see Fig. 1c). There was no increase of stresses around the hole even when the ratio L/H was increased five times, thereby reducing its weight by 40% as compared with a ring-shaped reinforcing patch.

USSR

UDC 577.37

VOVK, M. I., and TKACH, V. K., Institute of Cybernetics, Academy of Sciences Ukr. SSR, Kiev

"Effect of a Constant Magnetic Field on Fluctuations of the Stimulation Threshold of a Skeletal Muscle"

Moscow, Biofizika, Vol 16, No 5, Sep/Oct 71, pp 833-836

Abstract: The effects of a uniform, constant magnetic fields of 2,200 OE on the stimulation threshold and fluctuations of this threshold were studied in experiments on the isolated sartorial muscle of the frog subjected to electric stimulation. Irrespective of the season in which the muscle had been isolated and the region in which stimulation was applied (nerve ending or nerve-free region of the muscle), the magnetic field increased fluctuations of the stimulation threshold, although the height of the threshold was practically unchanged. The difference between the magnitude of fluctuations in a magnetic field and without application of a magnetic field increased with increasing deterioration of the functional state of the muscle. At equal times of survival of the muscle, this difference was greatest for muscles isolated in

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USSR

VOVK, M. I., and TKACH, V. K., Biofizika, Vol 16, No 5, Sep/Oct 71, pp 833-836

the spring, because the functional state of the muscle was lowest in this season. After an isolated sartorial muscle had been kept in the magnetic field for 20 hrs, both the stimulation threshold and the magnitude of fluctuations of this threshold increased, while the length of the time of survival of the muscle decreased.

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1/2 026 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--TECHNIQUE OF MUSCULAR CONTRACTION RECORDING BY MEANS OF A PIEZOELECTRIC TRANSDUCER -U-

AUTHOR--VOVK, M.I.

COUNTRY OF INFO--USSR

SOURCE--FIZIOL ZH SSSR IM I M SECHENOVA 56(1): 132-133. ULLUS. 1970.

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PIEZOELECTRIC TRANSDUCER, MUSCLE PHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0240 STEP NO--UR/0239/70/056/001/0132/0133

CIRC ACCESSION NO--AP0135736

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0135736

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PIEZOELEMENT IS COMPOSED FROM 2 PLATES OF PIEZOCERAMIC ON THE BASIS OF ZIRCONATE, TITANATE LEAD OF THE SIZE 6 TIMES 1 TIMES 0.05 CM EACH. EXTERNAL SITES ARE COVERED WITH SILVER. THE PLATES ARE GLUED TOGETHER SO THAT THE VECTORS OF POLARIZATION ARE DIRECTED TO ENCOUNTER. A SIMILAR UNIT WAS USED IN BUILDING THE PIEZOELECTRIC TRANSDUCER. A DETAIL DESCRIPTION AND 2 SCHEMATIC DRAWINGS ARE PRESENTED OF THE APPARATUS. THE SENSITIVITY OF THE TRANSDUCER WAS 35 MV-G. FACILITY: INST. CYBERNET., ACAD. SCI. UKR. SSR, KIEV, USSR.

UNCLASSIFIED

USSR

UDC 622.235.5

VOVK, O. O., and LUCHKO, I. A., Institute of Geotechnical Mechanics, Academy of Sciences Ukrainian SSR

"On the Similarity Principle in Explosions of Cylindrical Horizontal Bump Charges"

Kiev, Dopovidi Akademiyi Nauk Ukrayins'koyi RSR, Seriya A -- Fizyko-Tekhnichni ta Matematychni Nauky, No 11, Nov 70, pp 1038-1041

Abstract: It is known that the principle of geometric similarity is applicable to concentrated bump charges. According to this principle the size of craters grows in proportion to the size of the charge for certain charge values, charge action indices and charge seat depths. The article describes results obtained by the authors in the Kiev Department of the Institute of Geotechnical Mechanics, Academy of Sciences Ukrainian SSR, by conducting a series of experimental explosions on the explosion testing grounds of the Academy of Sciences Ukrainian SSR. The soil was clayey. There were over a hundred explosions of elongated hori-

USSR

VOVK, O. O., and LUCHKO, I. A., Dopovidi Akademiyi Nauk Ukrayins'koyi RSR, Seriya A -- Fizyko-Tekhnichni ta Matematychni Nauky, No 11, Nov 70, pp 1038-1041

zontal charges weighing 2-33 kg/r.m. at a charge seat depth of 0.25-1.8 m. Various explosives were used. An expression is obtained for the explosion action index as a function of the reduced charge seat depth. It is found that over the entire investigated range of values for the explosion action index constancy of the reduced excavation radius values is not maintained, as follows from the geometric similarity principle. Hence the conclusion may be drawn that this regularity arises only in a certain optimal range of values for the explosion action index, which corresponds to the optimal range of charge seat depth values. However, in ordinary engineering calculations deviations in excavation parameter values from those theoretically obtained with the use of the geometric similarity law need not be taken into consideration as they do not significantly affect the accuracy of the results. Consequently, the geometric similarity

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USSR

VOVK, O. O., and LUCHKO, I. A., Dopovidi Akademiyi Nauk Ukrayins'koyi RSR, Seriya A -- Fizyko-Tekhnichni ta Matematychni Nauky, No 11, Nov 70, pp 1038-1041

may also be used in the calculation of cylindrical charges without significant errors, as is done in calculations of spherical charges. Formulas are obtained for the calculation of elongated bump charges, valid for explosion action index values of from $1 \div 1.5$ to $3.5 \div 4$.

USSR

UDC 669.71.472(088.8)

BELYAYEV, A. S., BEKTASOV, O. A., VOVK, P. A., KUROKHTIN, A. N., NEKHOROSHEV, V. S.

"Device for Measuring the Weld Packing Density of the Bottom of an Aluminum Electrolyzer and the Bottom Mass Temperature"

USSR Author's Certificate No 272567, Filed 23 Dec 68, Published 7 Sep 70 (from RZh-Metallurgy, No 4, Apr 71, Abstract No 4G161P)

Translation: The device includes a thermocouple and a galvanometer. For purposes of simultaneous measurement of the weld packing density and temperature of the anode mass, the device comprises a housing with sockets for arrangement of measuring instruments, a hollow connecting rod with a tip inside which a thermocouple is installed, and a short-circuiting device needle. The upper part of the connecting rod has an inclined plane for deflection of the density indicator needle, and the junction of the thermocouple is electrically connected to the short-circuiting device needle and the galvanometer. There are 3 illustrations.

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USSR UDC 543.42

VOVK, V. N.

"Effect of Excitation Conditions on the Spectra of Products Transferred in an Electrical Contact Spark"

Minsk, Zhurnal Prikladnoy Spektroskopii (Journal of Applied Spectroscopy), Vol 13, No 4, Oct 1970, p 595-598

Abstract: The author examines the possibilities of improving the sensitivity of spectral analyses of products transferred in an electrical contact spark by optimizing the conditions under which the spectrum is excited. Several types of titanium alloys were tested. Samples were taken with a vibrating electric contact spark sampler operating at 125 v, 0.5 amp, discharged from a 30 mf condenser bank. A copper rod, 6 mm in dia, with a hemispherical tip was used as one electrode; and a larger, flat-surfaced carbon rod, as the other. The spectra were photographed with an ISP-28 spectrograph that had a 0.016 mm slit. The sparks were discharged in an argon atmosphere.

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USSR

VOVK, V. N., Zhurnal Prikladnoy Spektroskopii, Vol 13, No 4, Oct 1970, pp 595-598

Preliminary experiments indicated that high-voltage alternating current sparks produce the most intense spectral lines. Twenty experimental runs were made on each sample in three different modes. When the sample is anodic, spectral line intensity is weaker and the copper lines are stronger. When the sample is the cathode, the reverse is true. Highest intensity is reached with an alternating current spark in argon as compared with air. Intensity increased somewhat in air when the copper rod was replaced by a carbon electrode. In general, when a carbon anode is used, the carbon spectrum is either not excited or is extremely weak. The carbon electrode showed practically no erosion.

From the titanium alloy experiments, determinations can be made of 2 to 7% aluminum, 0.5 to 2.3% vanadium, 0.7 to 4.3% molybdenum, 0.7 to 3.0% manganese, 1.8 to 3.8% lead, 1 to 4% chromium, 0.025 to 0.6% iron, and 0.02 to 0.5% silicon. Exposure time for argon atmospheres is 2 to 2.5 times shorter than for air, and the

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USSR

VOVK, V. N., Zhurnal Prikladnoy Spektroskopii, Vol 13, No 4, Oct 70, pp 595-598

carbon rod is good for several hundred runs. The transfer products are easily eliminated from the electrode with a brush. The mean square error in the determination of impurities does not exceed 8 to 10 percent and for the alloying elements is 4 to 6 percent. Spectral and chemical analysis results are in good agreement.

Orig. art. has 1 figure, 2 tables, and 7 references.

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USSR

UDC 539.3

KOVALENKO, A. D., KOSTYUK, Z. D., VOVKODAV, I. F.

"The Flexure of a Round Plate, the Thickness of Which is Variable Along the Circumference"

Kiev, Prikladnaya Mekhanika, No 9, 1970, pp 52-58

Abstract: The problem of the flexure of a freely supported supported round plate, the thickness of which is variable along the circumference, under the action of a load uniformly distributed in a concentric circle, is investigated by the method of a small parameter. The deflection function of the plate is represented in the form of a series with respect to powers of the small parameter λ. Expressions for the first three coefficients of the series are presented. As a special case, solutions are obtained for a uniformly distributed load and a load concentrated in the center. Calculation and experimental research were conducted for $\lambda = 0.2$, 0.4, 0.6; these showed that deformations in a circumferential direction depend little upon the variability of the thickness.

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1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--EFFECT OF MAGNESIUM METATITANATE ON THE SINTERING AND SOME PROPERTIES OF CALCIUM ZIRCONATE -U-

AUTHOR-(02)-SYCHEVA, N.A., VOVKOTRUB, E.G.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 585-6

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--CERAMIC TECHNOLOGY, CALCIUM COMPOUND, ZIRCONATE, SINTERING FURNACE, MAGNESIUM COMPOUND, TITANATE, ELECTRIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1512 STEP NO--UR/0363/70/006/003/0585/0586

CIRC ACCESSION NO--AP0120293

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0120293

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SAMPLES TO BE STUDIED WERE PREPD. BY CONVENTIONAL CERAMIC TECHNOLOGY. PHASE COMPN. AND THE MICROSTRUCTURE OF THE SAMPLES WERE DETD. FROM AN EXAMN. OF THE X RAY DIFFRACTION PATTERNS OF CAZRO SUB3 WITH ADDN. OF 10 WT. PERCENT MGTIO SUB3 IT FOLLOWS THAT CAZRO SUB3-CATIO SUB3 SOLID SOLNS. ARE PRESENT IN THE MATERIAL AND MGO IN ZRO SUB2. THE APPEARANCE OF ZRO SUB2 IN CAZRO SUB3 BASED CERAMICS IS NOT DESIRABLE, INASMUCH AS IT LEADS TO A WORSENING OF ELEC.-PHYS. PROPERTIES OF THIS COMPD. MICROSCOPIC INVESTIGATIONS SHOWED THAT ADDNS. OF MGTIO SUB3 ENHANCE NOT ONLY THE SINTERING OF CAZRO SUB3, BUT ALSO THE FORMATION OF A FINE CRYST. STRUCTURE OF THE SAMPLES. THE GRAIN SIZE OF CAZRO SUB3 GRAINS WITH 2 WT. PERCENT ADDN. OF MGTIO SUB3 AMTS. TO 2-5 MU. DATA RELATIVE TO THE CHANGE IN DIELEC. PERMEABILITY AND ITS TEMP. COEFF. ARE PRESENTED. DENSE CAZRO SUB3 SAMPLES WITH SMALL MGTIO SUB3 ADDNS. HAD A HIGH BULK RESISTIVITY AT ROOM TEMP. SAMPLE OF THE COMPN. CAZRO SUB3 PLUS 2 WT. PERCENT MGTIO SUB3 WAS FOUND TO HAVE HIGH INSULATING PROPERTIES, AND THAT AT 400DEGREES ITS RESISTIVITY IS HIGHER THAN 10 PRIME10 OHM-CM. THE RESULTS OBTAINED SHOW THAT MGTIO SUB3 CAN BE USED AS A SINTERING ADDN. TO CAZRO SUB3, WITH THE OPTIMUM AMT. OF THIS ADDN. BEING 2-3 WT. PERCENT. FACILITY: URAL. POLITEKH. INST. IM. KIROVA, SVERDLOVSK, USSR.

UNCLASSIFIED

USSR

UDC 621.385.623.5

BRODULENKO, I.I., GALANIN, A.K., GRIGOROV, N.K., ROZE, YE. A., VOVNENKO, V.L., SHMELEV, A. YE.

"Reflex Klystrons With Interchangeable Resonators"

Elektron. tekhnika. Nauch.-tekhn. sb. Elektron. SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1971, Issue 5, pp 74-82 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10A165)

Translation: The paper considers glass and metalceramic reflex klystrons with interchangeable [s"yemnyy] resonators, which operate in the shortwave part of the centimeter range of wave lengths with output powers up to 0.5 watt. Metalceramic klystrons with interchangeable resonators assure high output electrical parameters and in comparison with glass klystrons are more resistent to mechanical and climatic effects and are also more promising during utilization of the shortwave part of the centimeter range of wavelengths. Summary.

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USSR

UDC 547.26'118

ORLOVSKIY, V. V., VOVSI, B. A. (deceased), and MISHKEVICH, A. YE., Leningrad Chemical-Pharmaceutical Institute

"Dealkylation of Dialkyl Esters of Phosphorous Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 9, Sep 72, pp 1930-1935

Abstract: Reaction of dialkyl Phosphite taken in a 3-8 fold excess with the salts of hydrohalide acids leads to the formation of the salts of monoalkyl esters of phosphorous acids in almost quantitative yields. It was shown that the dealkylation of dialkyl phosphites is accelerated in the order K, Na, Li, as well as Ba, Sr, Ca, Mg, and Cl, Br, I. The rate of the reactions of dialkyl phosphite with the salts of substituted ammonia can be expressed by a kinetic equation of the second order, in agreement with the S_N2 mechanism. An analytical method was proposed for the ammonium salts of the monoesters of phosphorous acids based on potentiometric titration in nonaqueous media.

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UDC 547.26'118

USSR

TAUBE, D. O., VOVSI, B. A. (deceased), and IONIN, B. I., Leningrad Institute of Pharmaceutical Chemistry

"Reactions Between Amine Hypophosphites and Benzaldehyde"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 351-356

Abstract: Experiments are conducted which show that ammonium hypophosphite reacts anomalously with benzaldehyde to form N-benzyl-α-aminobenzylphosphonic and bis(N-benzyl-α-aminobenzyl)pyrophosphonic acids, whereas reactions with amine hypophosphites result in N-alkyl-α-aminobenzylphosphinic acids. A mechanism is suggested for the reaction. Ammonium hypophosphite with benzaldehyde in hydrochloric acid forms bis(α-hydroxybenzyl)phosphinic acid.

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UDC 617.713-001.4-08-02:612.275.1

USSR

VOVSI, B. M., Chair of Eye Diseases, Tadzhik Medical Institute imeni Avitsenna, Dushanbe

"Treatment of Corneal Wounds in High Altitudes"

Moscow, Vestnik Oftal'mologii, No 1, Jan/Feb 72, pp 70-74

Abstract: In high altitude, corneal wounds (penetrating and nonpenetrating) in rabbits heal slower than in low altitude. Topical application of ATP and 4-methyluracil significantly accelerates the process of healing in both altitudes. By improving the energy balance and oxidative processes in the cornea, restoring the hematoophthalmological barrier, stimulating the trophic nerves of the eye and RNA production in epithelial and stroma cells, increasing glycogen concentration, and normalizing the concentration of salts and amino acids in the cornea and the aqueous humor, ATP and 4-methyluracil promote closure of the wound, restitution of the anterior chamber, reabsorption of the infiltrates, and epithelialization. On the other hand, administration of corticosteroids to animals adapting to high altitude drastically impedes the healing of corneal wounds, and therefore corticosteroids are contraindicated under these conditions.
1/1

USSR UDC: 621.397.61

SHAPIRO, Ya. A., GALAKHOVA, N. G., VOVSI, L. M., BERLIN, B. A., KHARCHIK-YAN, R. S., VOROB'YEVA, F. Kh.

"Technical Facilities of Television Services of the Soviet-Wide Television Center"

V sb. Televizion. tekhnika (Television Technology--collection of works), Moscow, "Svyaz'", 1971, pp 127-163 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6G190)

Translation: Basic data are given on studio and announcer TV cameras, motion picture cameras with TV view finder, cameras for transmitting motion picture films in TV and motion picture projection rooms, and epidiascopic projectors for transmitting transparencies, photos, drawings, etc. The individual elements of the instrument and program unit, central instrument room and video recording unit are described. N. S.

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UDC 947.943

USSR

POROSHIN, K. T. (DECEASED), SADYKOV, YU. D., KHAYDAROV, K. KH., VOVSI-KOL'T SHTEYN, A. L., DEGTYAREV, V. A., and BURICHENKO, V. K., Institute of Chemistry Academy of Sciences TadzhSSR

"Physiologically Active Papaverine Derivatives"

Tashkent, Khimiya Prirodnykh Soyedinenly, No 1, 1972, pp 83-84

Abstract: Papaverine reacted with acyl chlorides of sulfonic acids, carboxylic acids and chloroacetic acid, yielding N-benzenesulfonylpapaverinium chloride, m.p. 200° (dec.); N-benzoylpapaverinium chloride; m.p. 193°; N-acetylpapaverinium chloride, m.p. 217° (dec.); and the chloride of N-papaverineacetic acid, m.p. 210° (dec). The products exhibited hypotensive and spasmolytic properties.

1/2 017 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--STEEL -U-

AUTHOR-(04)-SHAVKUNOV, N.D., NI, V.N., STOLETNIY, M.F., VOVSINA, A.D.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,893

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--10FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--STEEL, CHEMICAL COMPOSITION, MECHANICAL PROPERTY, CARBON STEEL, MANGANESE STEEL, SILICON STEEL, PHOSPHORUS STEEL, CHROMIUM STEEL, SULFUR, METALLURGIC PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1086 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0130120

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0130120

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STEEL WITH IMPROVED MECH. PROPERTIES HAS THE FOLLOWING COMPN.: C 1.6-1.9, MN 1.6-1.9, SI 1.2-1.5, V 0.2-0.4, CR SMALLER THAN 0.3, S SMALLER THAN 0.04, P SMALLER THAN 0.08PERCENT, AND FE THE REMAINDER.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--SOLVENT EFFECTS OF PMR SPECTRA OF METHYL DERIVATIVES OF SILICON, GERMANIUM, TIN, LEAD, AND MERCURY -U-

AUTHOR-(03)-PETROSYAN, V.S., REUTOV, O.A., VOYAKIN, A.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(5), 889-93

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SPECTROSCOPIC ANALYSIS, PROTON MAGNETIC RESONANCE, ORGANIC SOLVENT, ORGANOTIN COMPOUND, ORGANOGERMANIUM COMPOUND, ORGANOSILICON COMPOUND, ORGANOLEAD COMPOUND, ORGANOMERCURY COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/0421 STEP NO--UR/0366/70/006/005/0889/0893

CIRC ACCESSION NO--AP0127992

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0127992

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PMR SPECTRA WERE OBTAINED OF SIME SUB4, GEME SUB4, SNME SUB4, AND HGME SUB2 IN ET SUB2 O DIMETHOXYETHANE, PYRIDINE, DICXANE, HCONME SUB2 ACETONE, POINME SUB2) SUB3, CYCLOHEXANE, CCL SUB4, CHCL SUB3, CH SUB2 CL SUB2, THIOPHENE, ME SUB2 SO SUB2, TETRAMETHYLETHYLENEDIAMINE, ET SUB2 S, PET SUB3, TETRAHYDROFURAN, OR NET SUB3. THE CHEM. SHIFTS OF ME GROUP PROTONS COULD NOT BE CORRELATED WITH THE SOLVATING ABILITY OF THESE SOLVENTS. HOWEVER, A CORRELATION WAS FOUND BETWEEN THE SPIN SPIN CONSTS. OF METAL ME GROUP PROTONS INTERACTIONS AND THE ELECTRON DONOR PROPERTIES OF THE SOLVENTS.

FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 669.14.018.45:539.56

LYSAK, L. I., and VOYAKIN, V. N., Scientific Research and Engineering Design Institute of Machine Building (Kramatorsk), and Institute of Metal Physics, Academy of Sciences Ukr SSR

"Reversibility of the Brittle State of a Hardened Steel During Tempering"

Kiev, Metallofizika, No 39, 1972, pp 75-80

Abstract: The embrittlement of 20KhGNR, 30 KhGSA, and 38KhGN steels was studied during tempering in conjunction with the change of crystal lattice distortions in micro-regions of the alpha-solid solution as well as the effect of cooling rate after tempering on the reversibility of the embrittled condition. It was established that the degree of embrittlement at 300, 350, and 550°C depends on the cooling rate after tempering. During slow cooling, at the rate of 0.35°/min, a brittle state of the steel is formed which corresponds to the large crystal lattice distortions in micro-regions of the alpha-solid solution. An increase of cooling rate to 1000°/min leads to a soft condition and a decrease in the magnitude of crystal lattice micro-distoritions. Results of this work led to the conclusion that it is not possible to examine the condition of the grain boundaries without consideration of the grain as a whole. Only the combined investigation of processes occurring at the boundaries and in the grain body permit full study of the nature of steel embrittlement during tempering. 2 figures, 2 tables, 15 bibliographic references.

1/1

USSR

VOYCHISHIN, K. S., DRAGAN, Ya. P.

"Exclusion of Rhythm From Periodically Correlated Random Processes"

Otbor i Peredacha Inform. Resp. Mezhved. sb. [Selection and Transmission of Information, Republic Interdepartmental Collection], 1972, No 33, pp 12-16 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V216 by the authors).

Translation: It is shown that known methods (selection of readings at a given time interval or averaging of values over a period) for elimination of rhythm from natural phenomena allow the rhythm to be eliminated from periodically correlated random processes as a general model of the rhythm of phenomena and that these methods are not equivalent within the framework of the model.

1/1

USSR

UDC 632.951:633.11

ARESHNIKOV, B. A., KOGOSOVA, E. YA., GOROKHOVSKIY, N. A., and VOYCHUK, G. A.,
Ukrainian Scientific Research Institute of Plant Protection

"Effectiveness of Metathione Against the Stink bug [Eurygaster]"

Moscow, Khimiya v Sel'skom Khozyavstve, Vol 10, No 9, (119), 1973, pp 33-35

Abstract: Metathione exhibited a faster effect against bugs than chlorophos. With an elevation of air temperature the toxicity of this preparation increased, but the duration of its activity became shorter. Optimal doses of this agent have been determined to be: against the overwintered bugs -- 0.8 kg/hectare, against younger larvae -- 0.5 kg/hectare, and in case of more mature larvae -- from 0.6 to 0.8 kg/hectare. To destroy young larvae, the wheat should be treated with metatione towards the end of the blooming period, at the initial phase of the formation of caryopsis. More mature larvae can be controlled by applying the agent at the beginning of milky ripeness of the grain.

1/1

VOYEUDSKIY, Ye. N.

Control syst. (maritime)

GLORIA

SO: JPRS 55352
6 MARCH 1972

PROBLEMS OF PLANNING IN AN AUTOMATED CONTROL SYSTEM FOR MARITIME TRANSPORTATION

[Article by Ya. N. Voyevodskiy, E. P. Gromova, Z. D. Levyy, G. S. Makhutenko, N. F. Serdyuk, I. P. Tarasova; Moscow, V Vsesoyuznoye soveshchaniye po problemam upravleniya, Moscow, 1971, Referaty Dokladov, Russian, Part I, 1971, pp 93-95]

The results of studying the characteristics of the maritime transport economic system are discussed in this paper. The specifics of this system as a planning object are demonstrated, and the basic requirements on the creation of the planning subsystem of the Morflot [Maritime Fleet] Automatic Control System are formulated.

This has permitted establishment of the theoretical principles of functioning of optimal planning and the creation of a procedural base for the development of a set of models, algorithms and planning calculation procedures.

In the most general statement, the planning problem is formulated as finding the most advantageous law of motion of the economic system in a region of the phase space defined by the given resources.

It is proposed that the planning problem in the general statement be studied by means of a model of the space conducting the excitation in order to simulate the behavior of the economic system.

The report contains a description of the models and algorithms of calendar planning of the fleet operation. The general problems of calendar planning are studied, and some new ideas of its improvement are advanced, in particular, on the basis of adaptive automata. The methods of simulating calendar plans and optimization of them are investigated.

A set of algorithms and programs for calculating the calendar schedule of operation of the fleet on a computer is described. It comprises three parts:

Processing the requests for freight transport operations and formation of all possible sections of future schemes for movement of the ships;

Formation of all possible movement schemes for each ship;

USSR

UDC 661.143

KHUDENSKIY, YU. K., TISHCHENKO, V. G., VOYEVODA, L. V., and BEZUGLYY, V. D.

"Electro-Fluorescent Substance"

USSR Author's Certifictae No 335967, filed 16 Mar 68, published 18 Aug 72 (from Referativnyy Zhurnal -- Khimiya, No 12(II), 1973, Abstract No 12L182P by V. D. Matveyev)

Translation: This electro-fluoric substance is used to manufacture electrochemical indicator systems in computer technology and in systems for automatic control and has a luminescence during the application of an electric current across an electrode in liquid solutions. It contained dimethylformamide as a solvent, lithium halide as an electrolyte, and benzophenanthrene as an electrophor. A change in the above mentioned electrolyte from tetrabutylammoniumperchlorate to LiCl increases the intensity of the electrofluoric lumniscence 10 fold. The substance is made of a solution containing 0.004-0.9 g LiCl and 0.002-0.2 g benzophenanthrene and dimethylformamide. For example, 0.002 g of benzophenanthrene and 0.16 g of LiCl are dissolved in 100 ml of reagent grade dimethylformamide. The prepared solution is placed in the electrofluoric ampule and an alternating current approximately 10 milliamps is applied at approximately 6.3 volts. The lumniscence obtained in the of 420-470 microns was 10 times the luminescence obtained for the electrophor.

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USSR

UDC 661.143(088.8)

KHUDENSKIY, YU. K., and VOYEVODA, L. V.

"Electrofluoric Composition"

USSR Author's Certificate No 328155, Cl. C 09 k 1/02, C 09 k 3/00, filed 1 Apr 68, published 20 Mar 72 (from RZh-Khimiya, No 20, 25 Oct 72, Abstract No 20L109P by N. SH.)

Translation: The electrofluoric composition contains a solvent, for example dimethylformamide, and electrolyte -- alkali metal halides, for example LiCl, and an electrofluor. In order to increase brightness, stilbene is introduced into it as an electrofluor. This makes possible an increase in the brightness of the luminescence. The composition contains the following (in wt.%): LiCl 0.004-4, stilbene 0.002-2 and dimethylformamide up to 100. The suggested electrofluoric composition is prepared by dissolving LiCl and stilbene in dimethylformamide. Example : 0.025 g of the electrofluor stilbene and 0.16 g of electrolyte are dissolved in 100 ml of "Ch" brand dimethylformamide. The resultant solution is put in an electrofluoric cell and a 10-ma alternating current passed through it at voltage of 6.3 v. The composition has a luminescence range of 460-480 nm.

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USSR

VOYEVODIN, A. A.

UDC 624.621.396

"Light Sprengel Masts for Radio Broadcasting Lines"

Moscow, Elektrosvyaz', No 7, 1970, pp 53-57

Abstract: This type of antenna mast, first proposed in 1950, has been widely used in the Soviet Union for the past two decades. It is superior in many ways to the conventional lattice-type mast structure and is consequently favored for the transmission of medium-length waves. In practice, it has been found by many constructors in various parts of the Soviet Union to be erectile without requiring special mounting crews or equipment. Unlike the ordinary lattice structure, the Sprengel mast consists of a central tube, cross diaphragms, and long stays of polygonal cross section. Details of the mast design are given and its electrical qualities are analyzed. Three photographs, one of them a close-up of a mast section, are shown. Another picture shows a mast 164 meters high, designed to withstand severe climatic extremes, which was installed in an Eastern Siberian radio center in 1955.

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USSR

VOYEVODIN, A. V., All-Union Institute for the Protection of Plants

UDC 632.952

"Field Evaluation as a Method of Rating Herbicide Effectiveness"

Moscow, Khimiya v sel'skom khozyaystve, Vol 9, No 8, 1971, pp 41-45

Abstract: Described are two known methods of rating the effectiveness of herbicides: 1) counting the number of weeds on specific control areas followed by weighing the weed plants; 2) simplified descriptions (field evaluation) of experimental plots specifying the degree of coverage of a given plot area with a surface mass of weed plants. Foreign research on this subject indicates similar results for both quantitative rating and field evaluation with the latter requiring less time and finding preferential application in foreign countries in mass-scale rating tests of new herbicides. Field evaluation is based on certain geobotanical criteria: type structure of weeds, abundance and predominance of given species on the experimental plots. A comparative analysis of several field rating systems, including the EWRC nine-point system, is presented and the major aspects

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USSR

VOYEVODIN, A. V., Khimiya v sel'skom khozyaystve, Vol 9, No 8, 1971, pp 41-45

discussed in greater detail. The degree of coverage of an area with weeds and the classification by type and development stages is given. The degree of coverage is, in turn, further classified into overall coverage and average coverage. Use is made of a fundamental criterion which represents the difference between the average overall degree of coverage of the control plot (assumed to be 100%) and the average overall on a plot treated with herbicides. The overall rating is then made by the nine-point system. The procedure is rather laborious and requires very fine differentiations presenting certain difficulties in practical application. The Institute for Plant Protection proposes a five-point rating system for herbicides. The system includes complete elimination (90-100% effectiveness--100% reduction of weed-covered area); drastic elimination (70-90% reduction of weed-covered area); moderate elimination (50-70% reduction); weak elimination (0-50% reduction) and NO elimination (no signs of supression). The system is proposed for use as a preliminary step to existing conventional

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USSR

VOYEVODIN, A. V., Khimiya v sel'skom khozyaystve, Vol 9, No 8, 1971, pp 41-45

systems. A combination of both: counting plus weighing followed by field evaluation is proposed as the optimum solution for rating herbicide effectiveness.

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USSR

UDC 632.954

VOYEVODIN, A. V., PETUNOVA, A. A., All-Union Institute of Plant Protection, Leningrad, All Union Academy of Agricultural Sciences imeni V. I. Lenin

"Nature of Herbicide Action"

Moscow, Zashchita Rasteniy, No 5, 1970, pp 29-30

Abstract: The article is a report of a sectional meeting at the Third All-Union Conference on herbicides. The studies of D. I. CHKANIKOV and others were devoted to investigation of the energetics of herbicide treated plants. It was stated that one of the most important functions of the action of 2,4-D is the interference with the phosphorylation processes leading to the formation of halophenols. S. M. MASHTAKOV and collaborators worked with various plants and different herbicides and discovered formation of novel phenolic compounds not found in controls. The papers of V. S. RADUYEV, V. P. LOBOV, F. L. KALININ, and V. F. LADONIN were concerned with the effect of herbicides on nucleic acids. L. S. KOZIN, YU. V. KRUGLOV, V. G. MASLENNIKOVA, V. D. GOGUADZE, et al, reported

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203610006-1"

USSR

VOYEVODIN, A. V., et al, Zashchita Rasteniy, No 5, 1970, pp 29-30

on the action of herbicides on soil microflora and on the role of microorganisms in detoxication of these agents. L. P. POPOVA, and SH. A. ALIYEV reported data on the effect of herbicides on agrochemical properties of the soil. The action of atrazine under different light conditions was discussed by M. I. LUZHNOVA (GAGARINA) and L. M. EYTINGON. K. I. MOCHALKINA, A. I. MOCHALKINA, L. L. ROMAN, A. M. GOLOVANI, and M. S. SOKOLOVA covered the utilization of new physical methods for studying the activity of herbicides. L. D. STONOV and L. A. PODYNYA used IR gas-analyzer to evaluate potential herbicides. Toxicity of atrazine and monurone was reported by V. I. KAMENSKIY, YU. YA. SPIRIDONOV, G. S. SPIRIDONOVA, and A. I. YAKOVLEV. G. S. MUROMTSEV, R. S. MIKHAYLANTS, and V. N. AGNISTIKOVA reported on the use of several fungicides to control dodder and broom rape.

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UDC 632.954

USSR

VOYEVODIN, A. V., SHIPINOV, N. A., All-Union Institute of Plant Protection

"Results of Studies and the Outlook for the Utilization of Herbicides"

Moscow, Zashchita Rasteniy, No 4, 1970, pp 47-49

Abstract: A chronological review is presented of the work carried out in the field of herbicides prior to the revolution, in the post-revolutionary era, and finally in the post-WWII period. A short section on economic aspects of herbicides in the USSR and abroad is followed by an extensive list of various herbicides as they are used against weeds of specific types of plants and vegetables.

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USSR

UDC 632.954

VOYEVODIN, A. V., SHIPINOV, N. A., All-Union Institute of Plant Protection

"Results of Studies and the Outlook for the Utilization of Herbicides"

Moscow, Zashchita Rasteniy, No 4, 1970, pp 47-49

Abstract: A chronological review is presented of the work carried out in the field of herbicides prior to the revolution, in the post-revolutionary era, and finally in the post-WWII period. A short section on economic aspects of herbicides in the USSR and abroad is followed by an extensive list of various herbicides as they are used against weeds of specific types of plants and vegetables.

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USSR V UDC 632.954.58.03

VOYEVODIN, A. V., and PETRUSHENKO, V. V., All-Union Institute of Plant Protection, Leningrad, All-Union Academy of Agricultural Sciences imeni V. I. Lenin

"The Effect of Some Herbicides on the Bioelectric Activity of the Plant Cell"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 5, May 70, pp 46-51

Abstract: Changes in the rest potential of cells of Nitella flexilis, under the effect of the herbicides diuron (N-3,4-dichlorophenyl-N',-N'-dimethylurea), atrazine, dalapon, 2,4-D, and IFK (isopropyl-N-phenylcarbamate) were studied. The cells of N. flexilis resemble those of the parenchyma of higher plants. The bioelectric potential of isolated cells was measured by using microelectrodes. All herbicides applied reduced the rest potential independently of the presence or absence of light, with the exception of diuron. Diuron inhibited the TS (transition of cells from normal dark to normal light state) reaction and acted similarly to the elimination of light both at the moment of hyperpolarization and in the state of the cell induced by light. Under the action of diuron, the photolysis of H_2O was

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203610006-1"

USSR

VOYEVODIN, A. V., et al, Khimiya v Sel'skom Khozyaystve, Vol 8, No 5, May 70, pp 46-51

apparently inhibited. This was followed by stoppage of photosynthetic assimilation of CO_2 and cessation of the light-induced passive transfer of HCO_3^- ions through the cell membrane. The changes in the rest potential produced by 2,4-D could be ascribed to disturbances in oxidative phosphorylation that developed under the action of this substance. The changes in the rest potential under the action of the herbicides were highly specific. On the basis of the results obtained, the method that was applied is well suited for determining the nature of the action of herbicides in the initial period of their contact with plant cells.

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USSR

UDC 621.374.5(088.8)

MIRSKIY, G. YA., VOYEVODIN, V. G.

"Device for Square-Pulse Delay"

USSR Author's Certificate No 271566, Filed 27 Mar 69, Published 15 Sep 70 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4G263P)

Translation: A device is proposed for delaying square pulses. It comprises a differential circuit, a front delay circuit, a pulse generator, two rectifiers and a shaping trigger. In order to improve the accuracy of reproducing the duration of the delayed pulse, the device contains a reversible counter, the summing input of which is connected to the output of the pulse generator via a rectifier. The control input of the rectifier is connected to the delayed pulse source; the calculating input of the counter is connected to the output of the pulse generator via a second rectifier the control input of which is connected to the zero output of the shaping trigger; the outputs of the reversible counter are connected via the zero decoder to the unit input of the trigger, to the zero input of which the delayed pulse source is connected via the differential circuit and the delay circuit. The output of the device is the unit output of the trigger.

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1/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--DEVELOPMENT OF METHODS FOR SOLVING ALGEBRAIC PROBLEMS AT THE COMPUTER CENTER OF THE UNIVERSITY --U--

AUTHOR--VOYEVODIN, V.V.

COUNTRY OF INFO--USSR

SOURCE--MOSKOVSKII UNIVERSITET, VESTNIK, SERIIA L MATEMATIKA, MEKHANIKA, VOL. 25, MAR.-APR. 1970, P. 69-82.

DATE PUBLISHED--------70

SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--COMPUTER TECHNIQUE, ALGEBRAIC EQUATION, COMPUTER CENTER, ERROR ANALYSIS, ALGEBRA, MATHEMATIC MATRIX, APPLIED MATHEMATICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1870 STEP NO--UR/0055/70/025/000/0069/0082

CIRC ACCESSION NO--AP0116834

UNCLASSIFIED

2/2 020 UNCLASSIFIED

CIRC ACCESSION NO--AP0118834 PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REVIEW OF THE MAJOR RESULTS IN THE DEVELOPMENT OF COMPUTER TECHNIQUES FOR SOLVING ALGEBRAIC PROBLEMS AT THE COMPUTER CENTER OF THE MOSCOW UNIVERSITY, COVERING A PERIOD SINCE WORK IN THIS FIELD WAS INITIATED AT THE UNIVERSITY OVER A DECADE AGO. ROUNDING ERROR ANALYSIS, STABILITY IN LINEAR ALGEBRA, MATRICES FACTORIZATION, THE JACOBI ROTATION METHOD, AND INTERATION PROCEDURES ARE DISCUSSED BRIEFLY. DISSEMINATION OF THE OBTAINED RESULTS AMONG OTHER COMPUTER ORIENTED INSTITUTIONS THROUGHOUT THE COUNTRY IS MENTIONED.

UNCLASSIFIED

USSR

UDC 681.3.06.51

VOYEVODIN, Ye. A.

"A Tabular Algorithmic Language"

Mat. Obespecheniye Etsvm. Vyp. 3 [Digital Computer Software, No. 3 -- Collection of Works] Kiev, 1970, pp 109-123 (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V638).

Translation: A tabular algorithmic language is designed for statement and solution of economics problems by digital computer. The tabular language has much in common with COBOL and can be looked upon as a subset of COBOL. The operators of the tabular language, pattern characters and division of data being processed into logical codes and files are similar to those used in COBOL. However, in contrast to COBOL, the tabular language does not require great additional knowledge of machine mathematics, it is simple to study and use, allowing specialists in economics (economists, statisticians, financial experts, etc.) to use digital computers without the aid of programmers.

The data processed are presented in natural, customary form -- tables of data -- such as lists, price tables, bookkeepers reports, etc.

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USSR UDC: None

KHOLOSHA, Ye. G., VOYEVODIN, Yu. M., VERKLOV, B. A., and ZAVGORODNIY, Ye. Kh.

"Safety Valve for Hydraulic Systems"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 27, 1971, p 124, No (11)351027

Abstract: The body of the valve contains a load spring in a gate made of a hollowed cavity containing a two-piston differential plunger. There is also an added cavity with a two-piston plunger containing a stepped bore into which the first cavity fits, thus lending the device compactness and a better structure. The valve is made by cutting slits in the body into which the plungers are inserted. A diagram of the device in cross section is given.

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USSR UDC 621.357.8.035.4:669.71

VOYEVODINA, N. M.

"The Joint Introduction of Sulfate and Sulfamate Ions in Oxides Formed in Mixed Electrolytes"

Tr. Kazan. aviats. in-ta (Works of the Kazan Aviation Institute), Vyp 148, 1972, pp 10-13 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L281)

Translation: Using tracer techniques it was shown that at the anode, the oxidation of aluminum in a mixed electrode containing sulfhate and sulfamate ions proceeds with the joint introduction of anions in the anode oxidation. However, if there is an increase of the sulfamine acid in the mixed electrolytes, it had only an insignificant effect on the concentration at the anode of the sulfate ion oxidized. In contrast the amount of sulfamate ion seldom increases during the addition of sulfaminic acid or sulfate ions to the solution. It was established that the change in pH of the solution in the acids resulting from the formation of the anode aluminum oxides did not exert an influence on their concentration of the anion of the electrolyte. The conclusion was drawn that the behavior of the sulfate and sulfamate ions reflects the influence of unilateral ion competition.
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1/2 023 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--LIQUID SCINTILLATORS FOR LARGE SCINTILLATION COUNTERS -U-

AUTHOR-(03)-VOYEVODSKIY, A.V., DADYKIN, V.L., RYAZHSKAYA, O.G.

COUNTRY OF INFO--USSR

SOURCE--PRIB. TEKH. EKSP. 1970, 1, 85-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS, MATERIALS

TOPIC TAGS--SCINTILLATOR, POLYSTYRENE RESIN, TOLUENE, ORGANIC AZOLE COMPOUND, KEROCENE, GREASE, PETROLEUM PRODUCT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1376 STEP NO--UR/0120/70/001/000/0085/0087

CIRC ACCESSION NO--AP0128776

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128776

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROPERTIES OF NEW, LIZ, SCINTILLATORS PREPD. FROM CHEAP PETROLEUM PRODUCTS ARE LISTED IN COMPARISON WITH A POLYSTYRENE BASED PLASTIC SCINTILLATOR AND A PHME BASED LIQ. SCINTILLATOR. THE NEW LIQS. INCLUDE WHITE SPIRIT WITH 1G-L. OF 2,5,DIPHENYL OXAZOLE PLUS 0.03 G-L. OF 1,4,BIS,(5,PHENYL,2.OXAZOLYL)BENZENE, TS KEROSINE, T KEROSINE, NAPHTHYL, VASELINE GREASE AND MOTOR ALKYLATE (ALL WITH THE SAME SCINTILLATING ADMIXT.). THE DESCRIBED LIQ. SCINTILLATORS HAVE A HIGH TRANSPARENCY AND A LIGHT YIELD COMPARABLE TO THAT OF THE STD. PLASTIC SCINTILLATORS.

FACILITY: FIZ. INST., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 616.8+616.89:613.632:632.951-099

VOYEVSKAYA, G. A., Department of Psychiatry, Vinnitsa Medical Institute

"Nervous and Psychic Disturbances in Subjects Exposed for Prlonged Periods to Organophosphorus Pesticides"

Kiev, Vrachebnoye Delo, No 9, 1973, pp 136-138

Abstract: Clinical observations of 89 mole and 41 female agricultural workers exposed for prolonged periods to organophosphorus pesticides showed their blood cholinesterase levels to be depressed (350 ± 10.2 to 225 ± 20 units; control values were 620 ± 25.5 units, $p < 0.001$) indicating intoxication. The majority of the subjects were less than 30 years of age. The patients also exhibited asthenic syndromes, irritability, pathologic fears, anxieties, aggressiveness, hysteria, hypochondria, and weakness. Neurological examinations revealed the disturbances to be primarily vegetative in nature; rheoencephalographic studies showed that cerebral blood vessels were not affected. The symptoms of intoxication abated when contact with organophosphorus pesticides was discontinued.

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USSR UDC: 629.78.015.076.8

VOYEYKOV, V. V., YAROSHEVSKIY, V. A.

"Determining the Amplitude of Oscillations of an Axisymmetric Space Vehicl During Uncontrolled Descent in the Atmosphere"

Uch. zap. Tsentr. aero-gidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamic Institute), 1970, 1, No 3, pp 45-55 (from RZh-Raketostroyeniye, No 1, Jan 71, Abstract No 1.41.77)

Translation: The authors consider the peculiarities of uncontrolled moti of a space vehicle about its center of mass during atmospheric descent. Particular attention is given to determining the possible amplitudes of oscillations and transverse loads on the descent trajectory for small ini angular velocities. Formulas and graphs are given for determining the indicated parameters. Seven illustrations, bibliography of eight titles. Resumé.

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USSR

UDC 629.19:533.6

VOYEYKOV, V. V., YAROSHEVSKIY, V. A.

"On the Probability of the Stabilization of a Body of Rotation at Large Angles of Attack Upon Descent in the Atmosphere"

Uch. zap. Tsentr. aero-gidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamic Institute), 1972, Vol. 3, No. 2, pp 94-101 (from RZh-Mekhanika, No 8, Aug 72, Abstract No 8B460)

Translation: The problem of determining the probability of stabilization of a body of rotation at large or small angles of attack during uncontrolled descent in the atmosphere is discussed. The moment characteristics of the body of rotation ensure stable balancing at $\alpha = 0$ and 180°. Two limiting cases are considered: small initial angular velocities (where the solution is trivial) and large angular velocities. The results of the study are compared with the results of numerical calculations for plane motion. Resume.

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USSR

UDC 629.78.015.076.8

VOYEYKOV, V. V. and YAROSHEVSKIY, V. A.

"Probability of Rotating Body Stabilization at Large Angles of Attack During Atmospheric Descent"

Uch. Zap. Tsentr. Aerogidrodinam. In-ta (Scientific Writings of the Central Aerohydrodynamics Institute), Vol 3, No 2, 1972, pp 94-101 (from Referativnyy Zhurnal--Raketostroyeniye, No 8, 1972, Abstract: 8.41.82)

Abstract: The problem of determining the probability of rotating body stabilization at large or small angles of attack in uncontrolled atmospheric descent is examined. The moment characteristic of a rotating body provides stable balance for $\alpha = 0$ and 180°. Two limiting cases are investigated: small initial angular velocities (the solution is trivial) and large angular velocities. The results are compared with the results of numerical calculations for plane motion. 4 figures, 5 bibliographical references.

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USSR UDC 773.9:681.41

VEYDENBAKH, V.A., VOYEYKOVA, Ye.D., and KOVAL', G.I.

"Possibility of Using Domestic Shellac in Precision Photography"

Moscow, Optiko-Mekhanicheskaya Promyshlennost', No 2, 1970, pp 44-45

Abstract: Two types of domestic shellac were investigated as possible material for making scales, grids and similar parts for optical devices. The first type was obtained at the Azerbaydzan experimental station as a mixture made from fig and acacia plants, and the second came from the Komarov Botanic Institute and was grown on a fig plant. The results show that scales and grids made by vacuum deposition of layers make it possible to produce strokes 1.25 micrometers wide and in photoetching 3.3 micrometers.

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UDC: 542.61

USSR

SHARKOV, A.I., PETRUSHA, YE.A., PERFIL'YEV, A.I., and VOYEVUDSKAYA, S.V., Institute of General and Inorganic Chemistry, Kiev, Academy of Sciences Ukrainian USSR

"Extraction of Germanium With Aniline in the Presence of a Complex Forming Agent"

Kiev, Ukrainskiy Khimicheskiy Zhurnal, Vol 36, No 4, Apr 70, pp 393-395

Abstract: Germanium was extracted with aniline as tripyrocatechnic acid. The ratio of aniline to the acid is 1:1. To diminish the loss of aniline to the aqueous phase, it was used in carbon tetrachloride solution. Germanium was reextracted with an aqueous solution of ammonium carbonate. The extraction begins to be noticeable at pH 0.1, increases rapidly to the optimal level around pH range 2.25-5.50, and then drops sharply at pH≥6.

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1/2 017 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--INTERACTION OF GALLIUM ARSENIDE WITH COMPOUNDS OF THE AIIBVI TYPE -U-

AUTHOR-(03)-VOYISEKHOVSKIY, A.V., PASHUN, A.D., MITYUREV, V.K.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA, NEORGANICHESKIE MATERIALY, VOL. 6, FEB. 1970, P.379, 380.

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--GALLIUM ARSENIDE, CADMIUM SULFIDE, SELENIDE, TELLURIDE, ZINC COMPOUND, SOLID SOLUTION, INTERMETALLIC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0952 STEP NO--UR/0363/70/006/000/0379/0380

CIRC ACCESSION NO--AP0118118

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0118118
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE POSSIBILITY OF PRODUCING SOLID SOLUTIONS OF GAAS WITH INTERMETALLIC COMPOUNDS COMPOSED OF ELEMENTS OF THE SECOND B AND SIXTH A GROUPS OF THE PERIODIC SYSTEM. THE GAAS ALLOYS CONTAINING UP TO 20 MOL PERCENT CDS, CDSE, CDTE, ZNS, AND ZNTE WERE SUBJECTED TO INVESTIGATIONS USING METALLOGRAPHIC AND X RAY ANALYSES. THE RESULTS OBTAINED ARE TABULATED. FACILITY: KIEVSKII GOSUDARSTVENNYI PEDAGOGICHESKII INSTITUT, KIEV, UKRAINIAN SSR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--NUCLEAR MATRIX ELEMENTS OF THE BETA DECAY OF DEFORMED NUCLEI -U-

AUTHOR-(02)-VOYKHANSKIY, M.YE., VORONKOV, YU.P.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(2), 444-8

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--DEFORMED NUCLEUS, MATRIX ELEMENT, BETA DECAY, FORBIDDEN TRANSITION, WAVE FUNCTION, HARMONIC OSCILLATOR, TRANSITION PROBABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0218 STEP NO--UR/0048/70/034/002/0444/0448

CIRC ACCESSION NO--AP0105294

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105294

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BETA TRANSITIONS IN DEFOREMED NUCLEI WERE STUDIED AND A COMPARISON OF EXPTL. AND THEORETICAL RESULTS WAS PERFORMED IN A WAY SIMILAR TO THAT APPLIED TO GAMMA TRANSITIONS. FORBIDDEN BETA TRNASITIONS OF THE 1ST, AS WELL AS OF HIGHER ORDERS, CAN BE EXPRESSED BY SEVERAL MODELS. THE INTERNAL WAVE FUNCTIONS, X SUBK, ARE EXAMD. AS LINEAR COMBINATIONS OF BASIC FUNCTIONS OF THE ISOTROPIC HARMONIC OSCILLATOR. THE TRANSITION WAVE FUNCTION IS FORMED BY BASIC FUNCTIONS OF THE ANISOTROPIC HARMONIC OSCILLATOR. HERE, CALCNS. OF A PROBABILITY OF THE TRANSITION INCLUDE SELECTION RULES FOR ASYMPTOTIC QUANTUM NOS. THEORETICAL RELATIONS ARE CONSIDERED FOR FORBIDDEN TRANSITIONS OF ANY ORDER.

UNCLASSIFIED

USSR

UDC: 62-501.72:681.3.06

VOYKHONSKIY, V. L., SABININ, O. Yu., Leningrad Electrical Engineering Institute imeni V. I. Ul'yanov (Lenin)

"Algorithm of Economic Organization of Statistical Modeling of Complex Systems of Information Processing and Control"

Leningrad, Izvestiya VUZov: Priborostroyeniye, Vol 16, No 9, 1973, pp 33-38

Abstract: An algorithm based on the principle of stratified sampling is considered. It is proposed that stratification be done by analyzing the results of initial stages of operation of the system. A flowchart is given for an algorithm of economic organization of statistical modeling of two--stage processes, and a formula is presented for approximate evaluation of the resultant gain in time. The effectiveness of the proposed algorithm is illustrated by an example. This particular example gives a reduction in computer time by a factor of 4.

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RADAR

SO: JPRS 56143
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UDC 629.7.058.54.001

EFFECT OF A PRIORI INFORMATION ON THE LOCATION OF AN OBJECT ON THE QUALITY OF RADAR DETECTION

B. A. Voynich, Candidate of Technical Sciences,
G. A. Volova, Candidate of Technical Sciences
N. V. Andriyevchuk, V. A. Andrianov, Engineers

Pages 135-137

The energy potential of a radar is calculated in the detection zone usually by the given probabilities of correct detection D and false alarm F. As is known, the values of these probabilities uniquely define the magnitude of the signal/noise threshold ratio which is calculated by the relations presented in reference [1] or is determined by the detection curves of reference [2].

Use of only the conditional probabilities D and F for the calculations is explained by the fact that, as a rule, the information on the characteristics of the radar observation objects and their location in space are highly limited.

However, if the a priori probability P(SN) of the event generating the signal from the object is known and the a priori probability P(N) of the event generating the noise signal is also known, these probabilities must be considered for the energy calculations of the radar.

It is known from reference [3] that when considering the a priori probabilities P(SN) and P(N) the probability of a false signal is equal to P(N)F, and the probability of missing a signal is P(SN)M where M is the conditional probability of missing a signal, M = 1 - D.

The probability of making an erroneous decision P error caused by skipping a signal and false detection is defined by the relation

$$P_{\text{ош}} = P(N)F + P(SN)M. \quad (1)$$

Key [throughout article]: 1. error

Here, the probability of making the correct decision $P_{\text{пр}}$ is calculated as

USSR

UDC 621.371.332.3:621.391.883.6

VOYNICH, B. A., VOLKOVA, G. A., ANDREYCHUK, M. V., ANDRIANOV, V. A.

"Effect Which a Priori Information Concerning the Location of an Object has on the Quality of Radar Detection"

Tr. Mosk. aviats. in-ta (Works of Moscow Aviation Institute), 1971, vyp. 207, pp 190-197 (from RZh-Radiotekhnika, No 12, Dec 71, Abstract No 12G20)

Translation: Consideration is given to the possibility of using a priori data on the location of objects within a given range of distances to calculate the energy potential of a radar. Relations are given for the probability of taking the correct decision as a function of the probability of correct detection and the probability of a false alarm. It is shown that the power required by the transmitter can be reduced in the case of a normal probability density function for target range. Eight illustrations, bibliography of three titles. Resumé.

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USSR UDC: 532.593

VOYNICH-SYANOZHENTSKIY, T. G.

"On the Limiting Characteristics of Surface and Internal Waves Generated by the Wind"

Tr. Zakavkaz. n.-i. gidrometeorol. in-t (Works of the Transcaucasian Hydrometeorolgical Scientific Research Institute), 1971, vyp. 42(48), pp 119-129 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7B497)

Translation: Within the framework of an idealized approximate model similar to the Kapitsa-Levich model of wind action on the disturbed surface of the sea, a theoretical solution is given for the problem of determining the maximum characteristics of wind waves under conditions of steady-state agitation. Making use of the known hydrodynamic solution of the problem of propagation of linear waves of an ideal fluid on the interface of a two-layer fluid with free surface, the author finds relationships between the amplitude of maximum internal waves and the velocity of the wind which generates the waves. Author's abstract.

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USSR

UDC 532.593

VOYNICH-SYANOZHENTSKIY, T. G., TOGONIDZE, N. V.

"Transformation of Surface Waves on a Stream of Variable Depth"

V Izv. Tbilissk. n.i. in-ta sooruzh. i gidroenerg. (Tbilisi Scientific Research Institute of Structures and Water Power Engineering -- collection of articles), 1969, 18(52), pp 51-65 (from RZh-Mekhanika, No 1, Jan 70, Abstract No 1B500)

Translation: The problem of wave transformation on a flow of variable depth is examined. The Kochin-Krylov method is used and within the framework of the linear theory of planar potential waves of an ideal fluid, relations are obtained which establish the connection between the amplitudes and lengths of the approaching and "passing" waves. Qualitative methods are used to study the effect of individual factors (depth, flow velocity) on the basic characteristics of the transforming waves.

The solution of the problem of determining the depth of waves breaking on shoals and in the zone of the opposing flow of a river stream is given. An estimate is made of the possible movements of river deposits at the shoreline under the influence of velocities of the discharge and wave flows. Twelve references.

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Author's abstract

USSR

UDC: 539.4

Blashchuk, V. Ye., Voynitskiy, A. G., Grabin, V. F., Gurevich, S. M., Kas'yan, V. V., Novikov, N. V.

"Deformation Resistance of AT-2 and AT-3 Titanium Alloys and Their Welded Joints at High and Low Temperatures"

Kiev, Problemy Prochnosti, No 7, 1972, pp 96-99.

Abstract: The deformation resistance of AT-3 and AT-2 alloys and seam metal is studied in the 400-700°K temperature interval. The strength of the metal of seams in these alloys in the interval up to 500°K does not fall below 90% of the strength of the alloys. The temperatures dependences of strength and yield point of the metals of the seams and alloys are similar. At 700°K, the strength of the seam metal drops to 80% of the strength of AT-3 alloy. The ductility of the seam metals at normal and high temperatures is similar to the ductility of the base alloys, but falls below the ductility of the base metal at low temperatures. As temperature drops, the decrease in the value of coefficient α_K is greater in the alloys than in the seam metal, but throughout the entire temperature range studied $\alpha_K > 1$.

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USSR

UDC 539.4

MAKSIMOV, Yu. A., KORNILOV, I. I., VOYNITSKIY, A. G., BLASHCHUK, V. Ye., ZAGREBENYUK, S. D., Moscow, Kiev

"Mechanical Properties of Alloys of Titanium with Vanadium and Aluminum as Functions of Oxygen Content"

Problemy Prochnosti, No 11, 1971, pp 54-55.

ABSTRACT: The possibilities are studied for production of alloys of titanium with high contents of oxygen, but retaining high mechanical properties. It is shown that the addition of vanadium and aluminum produces oxygen-containing alloy with the required mechanical properties.

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USSR

UDC:539.5

NOVIKOV, N. V., VOYTENKO, A. F., VOYNITSKIY, A. G., OVSEPYAN, Ye. S, NEKRASOVA, Z. P., Kiev, Moscow

"Influence of Technological Factors on Mechanical Properties of Molybdenum Alloys at Low Temperatures"

Kiev, Problemy Prochnosti, No. 12, Dec 70, pp. 69-71

Abstract: The elasticity, plasticity and strength characteristics of cast molybdenum alloy (0.1% Zr, 0.15% Ti, less than 0.6% W) are presented in the temperature interval between -196 and +20°C. A change is noted in the intensity of growth of strength and plasticity of the alloy with decreasing temperature depending on its structural state. The determining influence of peening on the mechanical properties of this alloy at low temperatures is demonstrated.

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Instrumentation and Equipment

USSR

UDC 620.171.251.1

NOVIKOV, N. V., ALEKSYUK, M. M., VOYNITSKIY, A. G., KOVAL'CHUK, B. I., MITLIKIN, M. D., and ZARUBIN, L. T., Kiev

"Specifics of Mechanical Tests of Structural Materials Over a Broad Range of Low Temperatures"

Kiev, Problemy Prochnosti, No 4, Apr 71, pp 20-26

Abstract: Methods and equipment for mechanical testing at low temperatures used at the Institute of Problems of Strength of the Academy of Sciences Ukrainian SSR are described. The equipment is used to study the temperature dependence of the mechanical properties of steels, aluminum, and titanium alloys. Equipment illustrated includes a device for maintenance of temperatures from 0 to -196°C, multiposition clamps for circular and flat specimens, the UN-30 tensile testing device, allowing loads of up to 30 tons to be applied at temperatures down to -269°K, a miniature semiconductor thermometer, the SZF-1 tensile testing machine, equipped with a chamber for testing at down to -269°C, and an electromechanical tensometer for measurement of linear and angular displacements.

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