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Nuclear Science and Technology

USSR

UDC 539.125.5.162.2:621.039.512.45

MOSTOVOY, V. I., TRUKHANOV, G. Ya., SAFIN, Yu. A., and MOSKOVSKIY, V. N.

"Analysis of Experiments on Thermalizing Neutrons in a Graphite-Water System"

Moscow, Atomnaya Energiya, Vol 31, No 5, Nov 71, pp 459-464

Abstract: The paper presents an analysis of experimental data on neutron thermalization in a graphite-water system at graphite temperatures of 443-823°K. The initial data for the analysis were provided by experiments conducted over a period of years at the Institute of Atomic Energy imeni Kurchatov. The system studied was comprised of a graphite prism and an aluminum tank full of water separated by heat shields, the neutron spectra being vector fluxes $\phi(z,v,l)$ in the direction perpendicular to the interface, measured at various distances from the temperature discontinuity. The measurements were made by the time-of-flight method. The results are compared with data of calculations of a multigroup kinetic equation. A brief explanation is given of methods of obtaining the first relaxation length and the length of rethermalization from the experimental data. The lengths of relaxation and rethermalization are given for graphite and water at different graphite temperatures. The authors thank L. V. Mayorov for constructive criticism.

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SECTION I

SO: SELECTED AEROSPACE MEDICAL FACILITIES
FCS-89
SEPT 71

(7)

Name: Institute of Medico-Biological Problems (IMBP), Moscow

Description:

(U) During this quarterly reporting period, seven new articles(1-7)* were located from the Institute of Medico-Biological Problems (IMBP). On the basis of these articles, it was possible to identify eight new personalities with the institute. These personalities, the subjects of the articles, and the dates are given below:

Chevent, V.	All - Space physiology space physiology/psychology	1970(1)
Gorbunova, A. V.	hypokinesia/physiology	1971(2)
Katkovskiy, B. S.	nutrition	1971(3)
Kornilyev, V. P.	temperature measurement	1970(4)
Kormulinskiy, F.	space physiology/psychology	1970(1)
Kovalzon, V. M.	temperature measurement	1970(4)
Morozov, D. Kh.	spacecraft radiation shielding	1970(5)
Trukhanov, K. A.	spacecraft radiation shielding	1970(5)

Gorbunova was associated by the article(2) with the Laboratory of Cytochemistry at IMBP. Kornilyev and Kovalzon were listed in the article(4) as being associated with the Laboratory for Investigation of Nervous and Humoral Regulation at IMBP.

(U) One of the new articles was issued jointly from IMBP and the Laboratory of General and Radiation Immunology at the Institute of Epidemiology and Microbiology imeni N. F. Gamaleya(6). This 1970 article, dealing with the effects of microflora on lymphoid tissue and the adrenal gland, probably

* Superscript numbers in parentheses refer to items in the Reference List.

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TRUKHAYEV, R. I. and KHOMENYUK, V. V.

"The Theory of Nonclassical Games Problems"

Teoriya Igr [Games Theory -- Collection of Works], Yerevan, 1973, pp 304-309 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V451)

Translation: Games are studied in which the sets of strategies are subsets of Hilbert spaces. Necessary conditions for optimality are produced. Algorithms for the solution based on continuous gradient methods are studied.

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USSR

UDC 51:330.115

TRUKHAYEV, R. I., KHOMENYUK, V. V.

"The Selection of Coefficient α in the α-Criterion of Gurvitz in Multistep Problems of Decision Making Under Conditions of Uncertainty"

Mat. Metody Issled. i Optimiz. Sistem. Vyp. 4 [Mathematical Methods of Investigation and Optimization of Systems, No 4 -- Collection of Works], Kiev, 1970, pp 16-24, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V484).

NO ABSTRACT.

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C. Application of Theoretical Probability and Mathematical Methods

USSR

DOBROKHOTOV, I. S. and TRUKHIN, B. V.

"Analysis of Dependences of a Deformation Diagram on Various Parameters by Construction of a Confidence Band"

Metody Resheniya Zadach Uprugosti i Plastichnosti [Methods of Solution of Problems of Elasticity and Plasticity -- Collection of Works], No 6, Gor'kiy, 1972, pp 209-214 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V180)

Translation: The nature of the deformation diagram for a material generally depends essentially on many factors: temperature, deformation rate, scale factor, etc. The influence of these factors is most significant in the area of plastic deformations.

At the present time, there is no physical theory allowing adequate description of the deformation diagram considering the many influencing factors, even with accuracy to certain constants. As a rule, the dependence of stress on strain and other parameters is constructed only on the basis of experimental data. Therefore, construction of such a dependence with a sufficient degree of accuracy requires many observations. In the mathematical aspect, this problem is reduced to the construction

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DOBROKHOTOV, I. S. and TRUKHIN, B. V., Metody Resheniya Zadach Uprugosti i Plastichnosti, No 6, Gor'kiy, 1972, pp 209-214

of a regression on the basis of the results of observations. The form of the dependence is assumed known. This work studies the problem of construction of a confidence layer for an unknown regression which covers the regression with the required reliability.

2/2 Author's view

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USSR

UDC 681.3

KUZ'MIN, I. V., BARBASH, I. P., TRUKHIN, G. P.

"Optimization of the Structure of a Logic Device"

Tekhn. Kibernetika. Vyp. 8 [Engineering Cybernetics, No 8 -- Collection of Works], Kiev, 1970, pp 55-66, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V578 by V. Mikheyev).

Translation: A mathematical model is produced of the structure of a logic device for realization of any Boolean function of k variables in the logic bases AND-NOT (OR-NOT) in the form $f(x_1, x_2, \ldots, x_k) = \overline{\overline{x_1 \cdot f(1, x_2, \ldots, x_k) \cdot \bar{x}_1 f(0, x_2, \ldots, x_k)}}$,

$$f(x_1, x_2, \ldots, x_k) = \overline{\overline{x_1 + f(1, x_2, \ldots, x_k) + \bar{x}_1 + f(0, x_2, \ldots, x_k)}}.$$

The optimization of a logic device with mixed structure is performed with and without consideration of the load limitations of the NAND (NOR) logic elements. It is shown that in both cases there is a unique point, placement of an adjustment unit at which leads to minimum cost of the logic device with fixed number of variables.

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USSR

UDC 77

VEPRIK, YA. M., TRUKHIN, M. I., SHELEKHIN, YU. L.

"Electron Centers in Microcrystals of Silver Bromide of a Photoemulsion Sensitized by Amines"

V sb. Mezhdunar. kongress po fotogr. nauke, Moskva, 1970, Priroda fotogr. chuvstvitel'nosti (International Congress on Photographic Science, Moscow, 1970, Nature of Photographic Sensitivity -- Collection of Works), no place of publication given, Vneshtorgizdat, no year given, pp 131-134 (from RZh-Fizika, No 12(I), Dec 70, Abstract No 12D1368)

Translation: The existence of two types of centers, stable and photon-induced electron-excess, was observed by the EPR method in microcrystals of the Ya2 nuclear photographic emulsion at 77°K. The stable centers were observed independent of the exposure; g = 1.96 for these. The other centers were induced by light and g = 2.0036 for these. The magnitude of the signal of centers of the second type depends on the illumination temperature (maximum at -40°C and disappearance upon heating to +20°C) and correlates with the temperature change in

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Priroda fotogr. chuvstvitel'nosti, no place of publication given, Vneshtorgizdat, no year given, pp 131-134

light sensitivity. Neither photoinduction of centers of the second type nor heating of the exposed samples have an effect on the signal from stable centers. It follows from a comparison with EPR of free Ag atoms in AgHal and alkali-halide crystals that centers of the second type are not Ag atoms. The hypothesis that dependence of the signal on temperature reports in the dependence of the mobility of interstitial Ag^+ ions was tested in experiments with the introduction of different amines into the emulsion. Their introduction sharply increased the signal of centers of the second type at the temperature maximum, probably due to recombination of photoelectrons with Ag^+ ions from dissociated Ag-amines of the complexes, since differences in the intensification of the signal upon the introduction of different amines correlates with differences in the instability constants of Ag-complexes of the amines. Also possible is a contribution to the signal from photoreduction in the transfer of an electron from the coordinated amine to a central Ag^+ ion in photoexcitation of the complex. 10 references.

A. L. Kartuzhanskiy.

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USSR

TRUKHIN, V. I. (Chair of Physics of the Earth)

"Nonequilibrium Magnetic States of Mountain Rocks"

Moscow, Vestnik Moskovskogo Universiteta, Fizika, Astronomiya, March-April, 1971, pp 207-211

Abstract: The article is devoted to a study of the natural magnetic states of mountain rocks and their comparison with the original states. It is shown that mountain rocks, as a rule, are found in nonequilibrium states. The degree of nonequilibrium depends on the temperature at which the remanent magnetization develops and on the elapsed time since the formation of the rocks.

In his work the author studied the thermo-demagnetized, absolute zero state (AZS) of volcanic mountain rock and the natural magnetic state (NMS) of sedimentary mountain rock. These states were compared with the zero state (ZS) of comparable rocks demagnetized in a variable field. The AZS was studied in samples of titanium-magnetite lava of Kamchatka, powdered magnetite with a grain size of 63 μ, and a block of hematite. The NMS was

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USSR

TRUKHIN, V. I., Vestnik Moskovskogo Universiteta, Fizika, Astronomya, March-April 1971, pp 207-211

studied in Quaternary sedimentary rocks collected in Altaysk Kray. The results are shown in the table.

Sample No.	1751	66133	66900	66100	Magnetite	Hematite
S_{zs}	2.10	0.62	0.57	0.37	0.17	0.00
S_{Azs}	1.25	1.2	1.65	1.05	0.65	0.7
S_{Azs}/S_{zs}	0.6	1.95	2.9	2.95	3.5	∞

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USSR

TRUKHLIK, S., DRABEK, I., KOVACH, I., and GAGER, S. UDC 632.95

"Metathion -- New Low-Toxicity Organophosphorus Insecticide"

V sb. Khimiya i primeneniya fosfororgan. soyedin. (Chemistry and Application of Organophosphorus Compounds -- Collection of Works), Moscow, "Nauka," 1972, pp 477-483 (from RZh-Khimiya, No 14, 25 Jul 72, Abstract No 14N440 by T. A. BELYAYEVA)

Translation: The article presents physical and chemical properties and methods of producing metathion (I), data on the hydrolysis of I in various media, and toxicity of the preparation for warm-blooded animals. Compound I consumption norms for various crops are indicated. Compound I can be used in fruit and vegetable growing and in viticulture to control the pests of ornamental plants and agricultural crops.

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USSR

UDC 539.4:624

TRUKHLOV, L. M., and FOMIN, G. A.

"Calculation and Theoretical Research on the Stressed State of a Silo Row Building With the Use of an Electronic Digital Computer"

Saratov, Issled. Napryazh. Sostoyaniya Zhelezobeton. Silos. Sooruzh. -- Sbornik (Research on the Stressed State of Reinforced-Concrete Silo Structures -- Collection of Works), No 3, 1971, pp 5-26 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2V1047 by Ya. B. L'vin)

Translation: Groups of silo containers, consolidated into a unit of two or four containers each, are calculated for the nonuniform pressure of a friable material, with account taken of the interrelationship of the containers as shells on the basis of the semizero-moment theory of V. Z. Vlasov. A comparison is made of the labor intensity and results of calculation by the method of displacement (the basic system is composed of open cylindrical and butt elements) and the method of forces (the basic system is formed by separation of the unit into closed cylindrical shells). The number and orientation of the basic unknowns in the method of forces (the intersecting forces of the combined shells which replace the butt element) were varied. The method of forces is recommended as being less labor-intensive and sufficiently exact

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USSR

TRUKHMANOV, B., Professor, Head of a Division of the Institute of Poliomyelitis and Virus Encephalitides

"Virus Hunters"

Moscow, Vechernyaya Moskva, 5 Jun 72, p 2

Translation: I did not have to give the taxi driver a long explanation on how to get to the institute. "I know," he said. "African monkeys live there in the snow in winter. I saw them myself..."

We are in a hurry. We have to go to the institute and take the preparations in order to deliver them to the public health pavilion of the Exhibition of Achievements of the National Economy of the USSR. The results of work executed over many years by scientific workers, including the vaccine against Crimean hemorrhagic fever, will be displayed for review there.

A long and difficult path was traversed before it was possible to obtain this vaccine. Crimean hemorrhagic fever is a serious febrile disease in which the patients sometimes cannot be saved. The greatest difficulty lies in the fact that specific treatment and prevention of Crimean fever do not exist, or rather, did not exist until recently.

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TRUKHMANOV, B., Vechernyaya Moskva, 5 Jun 72, p 2

It all began as long ago as 1944, when virologist M. P. Chumakov, who was then a young man but already well-known in the Soviet Union, headed an all-around expedition sent to the Crimea to decipher an unknown, new disease. Having studied the epidemiology and determined the virus nature, M. P. Chumakov named it Crimean hemorrhagic fever. There began a difficult stage in the laboratory study of the acute infectious virus of Crimean hemorrhagic fever, conducted without means of protection. Dangerous? Yes, very dangerous, but the work must be done. It must be done very carefully, because often infection in a laboratory leads to a tragic outcome. But in defiance of everything a large number of viruses must be obtained.

In addition to virologists and epidemiologists, zoologists, parasitologists, pathomorphologists, clinicians, and infectious disease specialists joined in working out the problem. They were followed by scientific workers and specialists in other cities, i.e., Astrakhan', Rostov, Dushanbe, Baku, Tashkent, and Yerevan...

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TRUKHMANOV, B., Vechernyaya Moskva, 5 Jun 72, p 2

The research expanded. Specialists in Bulgaria, the United States, Brazil, Senegal, Iran, Pakistan, France, and Yugoslavia became interested in this research.

The Bulgarian G. Popov, a graduate student of M. Chumakov, conducted valuable research on the morphology and classification of the virus of Crimean hemorrhagic fever. His dissertation was so successful that the institute's scientific council unanimously awarded Georgiy Popov, when he defended his candidate's dissertation, the academic degree of doctor of biological sciences. Later on completely new data were obtained from the investigations conducted by the institute's scientific workers N. Shestopalova and V. Reyngol'd.

There are several hemorrhagic fevers. There is Omsk hemorrhagic fever, Bolivian hemorrhagic fever, and quite recently a new fever became known, i.e., Marburg fever. The world-renowned virologist M. P. Chumakov was invited from the Soviet Union to the FRG to identify this fever. However, this is not enough. Startling facts have become known recently. As a result of joint efforts on the part of workers of the Institute of Poliomyelitis and Virus Encephalitides of the Academy of Medical Sciences USSR and scientists

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TRUKHMANOV, B., Vechernyaya Moskva, 5 Jun 72, p 2

of Yale University (D. Casals, et al.), in a short period it was possible to establish the fact that there is a relationship between the virus of Crimean hemorrhagic fever and the agent of Congo infection, which is widespread in Africa and some regions in India. There is no more doubt that these viruses are close relatives, and the fight against them should be waged from the positions developed in the USSR.

The pledge of the institute's success lies in work on a wide united front. This was also the case when poliomyelitis, a virus disease with terrible consequences, was eradicated. This happened not only in our country, but, with the institute's help, in many countries all over the world. To date the institute's experimental enterprise has dispatched millions of doses of polio vaccine to 42 countries in nearly all continents, i.e., Europe, Africa, Asia, and Latin America.

Intense and at times selfless creative labor brings good results. The production of large quantities of a specific antigen made it possible to develop jointly with Restov scientists a method of producing a specific gamma-globulin
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TRUKHMANOV, B., Vechernyaya Moskva, 5 Jun 72, p 2

and to obtain a preparation for the treatment of Crimean hemorrhagic fever. Finally, as a logical synthesis of all the numerous investigations, a vaccine for the prevention of Crimean hemorrhagic fever was developed by a group of young scientists, including A. Butenko, Ye. Tkachenko, and T. Zavodova, under M. Chumakov's guidance and was approved.

Now we are bringing this preparation, among others, to the All-Union Exhibition of Achievements of the National Economy of the USSR. We are bringing a simple, very modest ampule, but it contains protection against Crimean hemorrhagic fever, the same fever against which there was no remedy. Now it exists. It was developed by a united front under the auspices of the Institute of Poliomyelitis and Virus Encephalitides of the Academy of Medical Sciences USSR.

We go past the open-air cage where monkeys raised under conditions of the localities near Moscow live in winter, only iron bars separating them from the freezing air. The monkeys gave up bananas and oranges and changed to carrots and cabbage exactly like the rabbits living in the localities near Moscow. As the saying goes, where you live is how you eat. What can one

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TRUKHMANOV, B., Vechernyaya Moskva, 5 Jun 72, p 2

do when he gets into the hands of enthusiasts? One changes nature itself if this is necessary. There are many interesting things in the institute. The deeds of its scientists -- virus hunters -- are important and interesting.

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VIL'NER, L. M., ZEYTLENOK, N. A., CHUMAKOV, M. P., KROPACHEV, V. A., and TRUKHMANOVA, L. B., Institute of Poliomyelitis and Viral Encephalitides, Academy of Medical Sciences USSR, Institute of High-Molecular-Weight Compounds, Academy of Sciences USSR

"Use of Synthetic Copolymers Derived From Vinylpyrrolidone for Interferon Induction and for Increasing Resistance to Viral Infections"

Riga, Fiziologicheski i Opticheski Aktivnyye Polimernyye Veshchestva, "Zinatne," 1971, pp 137-144

Abstract: Antiviral and interferon-inducing activities of copolymers of vinylpyrrolidone (VP) with crotonic acid (CA), crotonic aldehyde (CAL), and maleic anhydride (MA) were studied. Interferon activity was determined by intraperitoneal injection of mice with 0.5 ml. of copolymers of different concentration, followed by blood serum analysis. Analysis results showed that interferon titers were <16, 16, 32-24, 42, 128-155 for VP with CA; and <16, <16, 48, not determined, 138-252 for VP with MA 2, 4, 6, 8, and 24 hrs, respectively, after injection. Effectiveness of these copolymers was high if they were administered to mice prior to infection with tickborne encephalitis virus. However, all of them were ineffective if given to mice 24 hr after infection. Injection of a large group of mice infected with low doses

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VIL'NER, L. M., et al., Fiziologicheski i Opticheski Aktivnyye Polimernyye Veshchestva, "Zinatne," 1971, pp 137-144

of tickborne encephalitis virus with less than 100 LD_{50} dose of copolymers tested showed that VP with CA (No 20) and VP with MA (No 2) possessed high antiviral activity (95 and 60% of mice survived). This means that copolymers with polyanionic structure were the most effective. With respect to mol. wt. the most active copolymers were those with 50 ÷ 200,000 mol. wt. and with characteristic viscosity of ~0.24-0.5 in 0.02 N HCl. Thus, in the case of VP with CA and MA a possibility was established of inducing interferon-production in animal blood by chemical means. Results were negative with chicken embryos and with cell cultures of chicken and mouse embryos.

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VAVILIN, G. I., VASIL'YEV, A. V., IL'INA, T. B., KROPACHEV, V. A., LAVRENT'YEVA, Ye. M., RABINOVICH, I. M., and TRUKHMANOVA, L. B., Institute of High-Molecular Compounds, Academy of Sciences USSR; State Scientific Research Institute of Tuberculosis, Ministry of Health of RSFSR; Leningrad Scientific Research Institute of Antibiotics, Ministry of Medical Industry USSR

"Use of Polymers for Modification of Antibacterial Preparations"

Riga, Fiziologicheski i Opticheski Aktivnyy Polimernyye Veshchestva, "Zinatne," 1971, pp 175-180

Abstract: Antibacterial preparations were modified by forming strong chemical bonds with polymers, and by protective coatings. Mixtures of p-aminosalicylic acid (PASA), streptomycin and hydrazine of isonicotinic acid (HINA) with polyvinyl alcohol (PVA) and polyvinylpyrrolidone (PVP), gels of iodopolyvinyl alcohol, as well as polymer preparations with PASA and HINA were studied. Coating of streptomycin, PASA, and HINA were accomplished with acetylphthalylcellulose (APC) and with its ammonium salt (NH_4-APC). All prepared antitubercular preparations preserved their potency in vitro for not less than 1 year. Therapeutic properties of PASA, tubaside, and streptomycin with polymers were tested on dogs and guinea pigs. The long-lasting effect of preparations depended first of all on the polymer-carrier, its mol. wt.,

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VAVILIN, G. I., et al., Fiziologicheski i Opticheski Aktivnyye Polimernyye Veshchestva, "Zinatne," 1971, pp 175-180

and the method of administration into the animal organism. Best results were shown by polymers with mol. wt. of 50,000-60,000. Coating of tubaside, PASA, and streptomycin with APC and NH_4-APC eliminated some side effects, excessive production of gastric juices, increased tolerance by patients who could not take them without coatings, and prolonged effectiveness of all drugs tested. PASA pills with APC coating preserved their antimicrobial effect for 2 years (1.5 years for uncoated pills). Solubility of APC and NH_4-APC coatings in artificial gastric juices at pH 7.4 was 20 and 15 min, respectively, and 3 hr at pH 1.2. Some coated pills reached small intestine before being completely decomposed. NH_4-APC coatings were more penetrable by fluids than APC coatings.

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UNCLASSIFIED

TITLE--COPOLYMERIZATION OF CROTONIC DERIVATIVES OF ISONICOTINIC ACID HYDRAZIDE WITH VINYLPYRROLIDONE -U-

PROCESSING DATE--20NOV70

AUTHOR-(03)-KROPACHEV, V.A., MAKKELOVA, T.M., TRUKHMANOVA, L.B.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL SOEDIN., SER. A 1970, 12(5), 1091-6.

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COPOLYMERIZATION, CHEMICAL REACTION RATE, ORGANIC NITRILE COMPOUND, NICOTINIC ACID

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

CIRC ACCESSION NO--AP0135048 UNCLASSIFIED PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COPOLYMN. OF N,VINYL,2,PYRROLIDONE (I) WITH N,ISONICOTINOYL,N',CROTONOYLHYDRAZINE (II) IN THE PRESENCE OF AZOBISISOBUTYRONITRILE GAVE III. THE REACTIVITY RATIOS ARE 0.04 PLUS OR MINUS 0.04 FOR I AND 0.58 PLUS OR MINUS 0.02 FOR II. THE MAX. YIELD WAS 80PERCENT. THE SOLY. OF III IN WATER DECREASED WITH DECREASING NO. OF II UNITS IN THE CHAIN. III IS INSOL. IN WATER WHEN GREATER THAN OR EQUAL TO 26 MOLE PERCENT II UNITS ARE PRESENT. SIMILARLY, I WAS COPOLYMD. WITH N,ISONICOTINOYL,N PRIME, CROTYLIDENEHYDRAZINE, BUT THE POLYMN. RATES WERE VERY SLOW AND ONLY SIMILAR TO 6PERCENT COPOLYMER WAS OBTAINED.

VYSCKOMOL. SOEDIN., LENINGRAD, USSR. FACILITY: INST.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

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USSR UDC: 621.746.5

TRUKHOV, A. P., Candidate of Technical Sciences

"On Mechanism of Formation of Residual Stresses and Distortions in Castings"

Moscow, Izvestiya Vysshikh Uchebnych Zavedeniy, Mashinostroyeniye, No. 4, 1971, pp 163-167

Abstract: The theory of the mechanism of formation of residual stresses and distortions in castings is presented.

First the casting consisting of two blocks connected by three bars, a thick one in the middle and two thin ones on the sides, is considered. There are three periods during the cooling of the casting.

Period I, during which the stresses increase as the difference between the temperatures of the thick bar and the thin bars increases, reaching a maximum.

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TRUKHOV, A.P., Izvestiya Vysshikh Uchebnych Zavedeniy, Mashinostroyeniye, No 4, 1971, pp 163-167

Period II, during which the temperature difference and the stresses decrease until the stresses become zero.

Period III, during which the stresses change sign and increase till the complete cooling of the casting. The residual stresses are: tension in the thick bar, compression in the thin ones. They are due to the plastic deformations during periods I and II.

The second case being considered is a T-section bar. There are the same three periods during the cooling of the casting. The bar deflects first in one direction and then in the other. These deflections are resisted by the mold.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

UDC 533.95:538.4

UMAROV, G. YA., and TRUKHOV, V. S.

"Experimental Study of Physical Processes Accompanying a Pulsed Electric Discharge in a Liquid"

V sb. Teplofiz. svoystva nizkotemperaturn. plazmy (Physical Properties of a Low-Temperature Plasma -- Collection of Works), Moscow, "Nauka", 1970, pp 146--148 (from RZh-Fizika, No 4, Apr 71, Abstract No 4G35)

Translation: The results of an experimental study of the dynamics of the formation of a pulsed electric discharge in water are presented. Slit photographs of the discharge in a liquid and their qualitative interpretation are given. Authors abstract.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

KATKOV, G. A., and TRUMBACHEV, V. F.

"Instruments With Photoelastic Sensing Elements for Measuring Stresses in Rock Masses and Underground Structures"

V sb. Izmereniye napryazh. v massive gorn. porod (Measurement of Stresses in Rock Masses — collection of works), Novosibirsk, 1970, pp 148-153 (from RZh-Mekhanika, No 1, Jan 71, Abstract No 1V806 by A. S. Zverev)

Translation: The article describes the designs of gauges with photoelastic sensing elements developed by the authors at the Institute of Mining imeni A. A. Skochinskiy. 1. A rod uniaxial tensometer is intended for measurement of strain of the surface layer or a layer situated at a given depth; base 50 mm; it has been tested on 15x15x15-cm concrete cubes axially compressed on a 30-ton press; variance from calculation 12%. 2. A three-component borehole deformometer is used to measure radial deformations of boreholes (three components at angle of 120°). 3. A single-component dynamometer is intended for measurement of loads acting upon underground structures from the direction of the surrounding rocks; an elastic element in the form of a steel ring senses the load along the vertical diameter and is constricted by a plate of photoelastic material along the horizontal diameter. 4. A single-component

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KATKOV, G. A., and TRUMBACHEV, V. F., Izmereniye napryazh. v massive gorn. porod., Novosibirsk, 1970, pp 148-153

dynanometer is employed to measure the loads on concrete, ferroconcrete and dynanometric props; a sensing element is glued by its ends to the inside of the membrane; the load acts upon the outside of the membrane.. Laboratory tests have confired the efficiency of the gauges.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

UDC: 539.124.18

VYATSKIN, A. Ya., KABANOV, A. N., TRUNEV, V. V.

"Transmission, Reflection and Absorption of High-Power Electron Beams in Thin Films of Some Metals and Alloys"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 9, Sep 72, pp 1893-1899

Abstract: A simultaneous study is made of the integral coefficients of transmission, absorption and reflection of electron beams with current densities of 1-3 A/cm^2 and initial electron energy of 10-35 keV in free thin films of aluminum, copper and nichrome alloy. An analysis of curves for the coefficients of transmission η, reflection r and absorption γ as functions of film thickness x showed satisfactory agreement with the previously found empirical expressions

$$\eta(x) = \exp[-\alpha x^p], \quad (1)$$

$$r(x) = r_0\{1 - \exp[-\mu x^p]\}, \quad (2)$$

where α and μ are factors which depend on the initial energy, while p is independent of energy and depends only on the properties of the material; r_0 is the coefficient of reflection for a massive specimen. Values of the

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USSR

VYATSKIN, A. Ya. et al., Radiotekhnika i Elektronika, Vol 17, No 9, Sep 72, pp 1893-1899

experimental coefficients p, α, μ, and r_0 are determined. An expression is found for the mean transverse flight paths of "stopped" and reflected electrons as a function of the initial energy. It is shown that within the investigated range of beam energies and current densities the behavior of electron transmission, absorption and reflection as characterized by formulas (1) and (2) is independent of the current density and holds up to destruction of the materials.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR UDC: 539.124.17

VYATSKIN, A. Ya., TRUNEV, V. V.

"Concerning the Interaction Between Electrons and Thin Dielectric Films"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 9, Sep 72, pp 1899-1905

Abstract: The paper presents the results of a simultaneous study of the characteristics of transmission η, reflection r, and absorption γ of electrons with initial energies between 4 and 30 keV in thin films of Al_2O_3 and SiO_2. Film thickness varied from 50 to 1200 nm. The measurements were done on free films to eliminate the possible distorting effect of a substrate. A pulse measurement mode was used to eliminate the effect of surface charge. The pulse duration was 1-100 μs at a repetition rate of 1-10 Hz. The results show that the behavior of electron transmission, reflection and absorption in these materials is similar to that observed with metal and semiconductor specimens.

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1/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--REFLECTION OF ELECTRONS BY THIN FILMS OF A SOLID -U-

AUTHOR-(04)-VYATSKIN, A.YA., KABANOV, A.N., MAKAROV, K.A., TRUNEV, V.V.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, NO 3, 1970, PP 565-570

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--ELECTRON REFLECTION, THIN PLATE, FREE PATH, MATHEMATIC ANALYSIS, THIN FILM SEMICONDUCTOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1361 STEP NO--UR/0109/70/000/003/0565/0570

CIRC ACCESSION NO--AP0123319

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

2/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0123319

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SEMIEMPIRICAL METHOD WAS USED TO DERIVE EXPRESSIONS FOR THE INTEGRAL COEFFICIENT OF REFLECTION, PATH DISPERSAL OF REFLECTED ELECTRONS, AND MEAN FREE PATH AS A FUNCTION OF INITIAL ENERGY. THIS WAS DONE ON THE BASIS OF EXPERIMENTAL RESULTS OBTAINED EARLIER (1-2) FOR THE COEFFICIENTS OF REFLECTION AND PENETRATION OF MEAN ENERGY ELECTRONS (KEV UNITS AND KEV TENS) IN THIN FILMS OF A SOLID (METALS AND SEMICONDUCTORS). THE OBTAINED RESULTS ARE IN GOOD AGREEMENT WITH TEST DATA.

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USSR

1.

UDC 619:616.988.43:615.372

KRUGLIKOV, B. A., ANTONYUK, V. P., YURCHENKO, A. N., TRUNILIN, S. N., and KAZENOV, N. I., State Scientific Control Institute of Veterinary Preparations, Kok-Yangak Veterinary Station, Oshskaya Oblast

"Transport and Storage of Foot-and-Mouth Disease Vaccines"

Moscow, Veterinariya, No 5, May 71, pp 49-50

Abstract: In storing and transporting foot-and-mouth disease vaccines with aluminum hydroxide formaldehyde composition, the optimum temperature conditions (from +1 to +8°C) must be maintained. This is important when the vaccines are transferred from the production plant to the various veterinary stations, particularly in the spring and summer, when mass immunizations of cattle are performed in the Soviet republics of Central Asia and in the Transcaucasian region. Polyethylene bags of various sizes were tested for this purpose. For the transport of 4-5 liters of vaccine, polyethylene bags 800 mm long and 500 mm wide were most practical. Two such bags are used, one inside the other. The inner bag should be 150-200 mm smaller than the external one. The internal bag contains the vaccine and is surrounded by ice (in the external bag). Both bags are closed by a plastic ring on top. The filled bags are placed in precooled ice chests and cooling boxes. The proposed bags were used under conditions

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USSR

KRUGLIKOV, B. A., et al, Veterinariya, No 5, May 71, pp 49-50

of +21, +25, and +28°C and kept the temperature of the control flacon at +4°C to +7°C for a period of 6-8 hours. When a freezing mixture (ice+salt) instead of ice is used, the temperature of the vaccine flacons is kept at 2-4°C, but for a shorter time period because of breakdown of the ice crystals. The proposed double bags of polyethylene are cheap, convenient to use at any veterinary station, and sufficient for bringing the vaccine to the immunization site.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

1/2 013 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--SODIUM, CALCIUM MAGNITUDE OF SULFATE, METAPHOSPHATE SYSTEM -U-

AUTHOR-(04)-BERGMAN, A.G., VYSOTSKIY, V.M., GASANALIYEV, A.M., TRUNIN, A.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 917-19

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHASE DIAGRAM, SOLID SOLUTION, MULTICOMPONENT CHEMICAL MIXTURE, SODIUM COMPOUND, CALCIUM COMPOUND, PHOSPHATE, SULFATE, EUTECTIC MIXTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1718 STEP NO--UR/0078/70/015/003/0817/0819

CIRC ACCESSION NO--AP0115547

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

2/2 013 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0115547

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PROJECTION OF THE PHASE DIAGRAM OF NA, CA MAGNITUDE OF SO SUB4, PO SUB3 WAS CONSTRUCTED. THIS IS A NONDIAGONAL IRREVERSIBLE RECIPROCAL SYSTEM, HAVING 3 EUTECTICS AT 715, 610, AND 571DEGREES AND 2 POINTS OF SOLID SOLN. DECOMPN. AT 800 AND 700DEGREES. IN THE PRESENCE OF A 3RD COMPONENT, THE SOLID SOLNS. OF NA AND CA SULFATES DECOMP. BY A COMPLEX REACTION.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

UDC 669.14.018.44:620.192.7

TRUNIN, I. I., KUMANIN, V. I., and BOGOMOL'NAYA, R. B., Central Scientific Research Institute of Technology and Machine Building, All-Union Correspondence Machine Building Institute

"Destruction Mechanism of Heat-Resistant Steel"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1972, pp 46-50

Abstract: The destruction mechanism of EP44 steel (0.22% C, 1.45% Cr, 1.03% Mo, 0.9% V, 0.15% Nb, 0.15% Ni, 0.0026% B, and 0.06% Ce) was studied during a tensile test using samples with different plasticity indicators. Samples (I) were normalized at 1100°C for 30 min and tempered at 725°C for 6 hr. Samples with high plasticity (II) were hardened in oil at 1050°C for 1 hr and tempered at 725°C for 6 hr. The metallographic analysis of deformed (broken during the tensile test) samples showed that accumulation of a critical number of micropores leads to destruction of the EP44 steel. Pores in both type of samples were localized along the grain boundaries perpendicular to the tensile axis. Most of the pores were concentrated close to the breaking point of the samples. The total volume of pores at this point was approximately 0.41-0.51% regardless of the test duration.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

TRUNIN, I. I., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1972, pp 46-50

At a distance of 5 mm from the breaking point the total volume of pores decreased 3-5 times, and 10-100 times at a distance of 10 mm. The microhardness of samples I decreased upon approaching the breaking point, but for samples II it was independent of the distance from the breaking point. The metal density at the breaking point was identical for both types of samples, and was equal to 0.006-0.01 g/cm^3.

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JPRS 58760
16 Aug 1973

TRUNIN, I. I.

INVESTIGATION OF CERTAIN LAWS GOVERNING CREEP AND RUPTURE IN HEAT-RESISTANT MATERIALS

[Article by I. I. Trunin, N. G. Golubova; Kiev, Problemy Prochnosti, Russian, No 7, July 1972, submitted 26 October 1971, pp 50-54]

Processes of increased deformation (creep) and the development of rupture centers occur in metals under the influence of permanent stresses or loads at high temperatures. The resistance of material to these processes depends largely on its durability under operating conditions.

One of the most important characteristics of refractory materials designed for long-term service is its deformation capacity, evaluated in terms of plasticity that builds up to the moment of rupture during creep.

It is known that metal with low deformation capacity in the presence of stress raisers or, in the case of negligible temporary overloads in the presence of stresses that are substantially below the stress-rupture limit, is inclined to sudden brittle rupture. An increase in strength properties, by which rupture resistance is determined, usually entails reduction of plastic properties. The problem of the optimal ratio of these two characteristics has not yet been solved.

Deformation resistance and plasticity that builds up in a material during creep can be evaluated by means of the minimum (steady state) and average creep rate, and also on the basis of the time of accumulation of a given amount of deformation.

The complexity of the problem as it applies to refractory materials designed for long service periods consists in the absence of sufficiently reliable methods of forecasting these values for the given period.

[1]From the materials of the Scientific-Technical Conference on Problems of Rupture and Strength Criteria of Materials and Structural Parts, held in Kiev in October 1971.

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USSR

UDC: 669.017.539.376

Trunin, I. I., Golubova, N. G., Moscow

"Study of Certain Regularities in the Processes of Creep and Rupture of Heat-Resistant Materials"

Kiev, Problemy Prochnosti, No 7, 1972, pp 50-54.

Abstract: Problems of estimating the deformation-resistance and long-term ductility of heat-resistant materials with long service life are studied. Metallographic analysis of the nature of rupture and determination of the volume of metal occupied by pores are used to establish the relationship between deformation capacity and degree of accumulation of damage during the process of long-term strength testing. Analysis of the degree of damage of the metal by rupture centers with various levels of long-term ductility shows that the deformation capacity is characterized not only by the ability of the material to redistribute stresses, but also by the degree of localization of damage accumulated during the process of creep.

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TRUNIN, I. I.

JPRS 56002

16 May 1972

UDC: 669.14.018.44:539.4

STATISTICAL EVALUATION OF CHARACTERISTICS OF HEAT-RESISTANT MATERIALS FOR GAS-TURBINE ENGINES

[Article by I.P. Bulygin, N.I. Parfenova, L.N. Timofeyeva, and I.I. Trunin; Moscow, Problemy Prochnosti, Russian, No 10, 1970, pp 20-24]

Change of Dispersion of the Characteristics of Long-Term Strength and Creep As a Function of Test Temperature and Length

Characteristics of heat-resistance are among the random values, the precision of determination of which depends to a considerable degree on the quantity of experimental data. This fact can explain the tendency to determine those characteristics on the basis of the results of mass tests.

The results of statistical processing of mass tests for long-term strength and creep can be used to obtain additional information which contributes to increased reliability of evaluation of the working capacity of heat-resistant materials. One of those possibilities is study of the time and temperature dependence of certain statistical parameters of experimental sets.

In the present work, on the example of two typical heat-resistant materials (EP109VD nickel-based alloy and EI961 steel) an investigation was made of the change of dispersion of the characteristics of resistance to deformation and destruction during creep as a function of the test temperature and length.

Three industrial casts of each material were selected for the investigation in accordance with the principles given in [1], in which is shown the possibility of estimating the mean values and dispersion of the "mark" characteristics of long-term strength by statistical processing of the results of tests of three or four casts, selected with consideration of the actual distribution of a large number of casts with respect to durability.

On the basis of the smelting method, chemical composition, type of intermediates and conditions of heat treatment

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USSR

UDC 621.892.8:669(088.8)(47+57)

LIVANOV, V. A., KOSTYUK, V. K., BASOVA, I. G., KULIKOV, A. F., SVETLOV, V. T., KRASOVSKAYA, T. A., and TRUNINA, S. I.

"Lubricant-Cooling Liquid for Hot Working of Metals"

USSR Author's Certificate No 226768, filed 5/06/66, published 17/01/69, (from Referativnyy Zhurnal Khimiya, No 3, Vol 2, 10 Feb 70, Abstract No 3 P260 P)

Translation: In order to increase the effectiveness of a lubricating cooling fluid for hot working of metals, based on water or aqueous emulsions of petroleum oil, polyorganosiloxane liquid and an emulsifier such as solvar were added. The liquid includes 0.01-0.05 polyorganosilicone liquid, 0.0004-0.002 solvar and up to 100% water or aqueous emulsion of petroleum oil.

A. A. N.

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USSR

BATRAKOV, YU. G., TRUN'KOV, I. I.

UDC 528.335.2:528.516

"Experience in the Remote Joining of the Boundaries of Land Holdings Through the Use of the RDG Radiorangefinder"

Moscow, Geodeziya i kartografiya, No. 6, 1971, pp 22-28

Abstract: Experience in the remote joining of the boundaries of land holdings using the RDG radiorangefinder by determining the geodesic coordinates of reliably fixed survey reference points located every 3-5 km is described. Formulas are given for determining the error in the mutual position of the survey points. Experience in the remote joining of the boundaries of land holdings in a forested region on the basis of polygonometric traverses laid with the RDG radiorangefinder is described. The work was done in 1969 in the Lotoshinsk Region of Moscow Oblast in collaboration with the "Rosgiprozem" Planning Institute. The geodesic grid in the region was designed on topographical maps of the scale 1:50,000 with a cross section of the relief of the horizontals every 10 m. It was found that the accuracy of determining the survey reference points is quite sufficient for use as initial data in making theodolite traverses along the boundaries of land holdings. The relative error was 1:1500. It is noted that it is desireable to produce a small-scale radiorangefinder that could measure distances of up to 5-8 km with an error of not more than 10 cm over all kinds of terrain conditions.

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USSR

UDC: 629.7.036.54:532.5

ALEMASOV, V. Ye., DREGALIN, A. F., TRUNOS, V. N.

"Thermodynamics of the Flow of a Reacting Gas Through a Nozzle With Distributed Heat Exchange and Friction"

Tr. Vses. nauchno-tekhn. konferentsii po termodinamike. Leningr. tekhnol. in-t kholodil'n. prom-sti (Transactions of the All-Union Scientific and Technical Conference on Thermodynamics. Leningrad Technological Institute of the Refrigeration Industry), Leningrad, 1970, pp 168-177 (from RZh-Aviatsionnyye i Raketnyye Dvigateli, No 10, Oct 70, Abstract No 10.34.111)

Translation: The parameters of a nozzle flow are calculated with the following assumptions: one-dimensional steady-state flow of a continuous compressible medium is considered; the components of the combustion products and the mixture of these components are ideal; the process of expansion in the nozzle is chemically and energetically balanced; there is no condensate in the products of combustion; the Mach number at the input to the chamber is zero; cooling is independent. Flow of the products of combustion of kerosene with liquid oxygen is calculated by way of example. Three illustrations, bibliography of eleven titles.

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23

JPRS 59873

23 August 1973

TECHNOLOGY OF PRODUCING NEW MATERIALS

Translation of Russian-language collection: Tekhnologiya Polucheniya Novykh Materialov, 1972, Kiev.

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[I - USSR - I]

TRUNOV, G.V.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

Technology of Producing New Materials

JPRS 59873
23 Aug. 73

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

UDC 669.295.046.44

UTKOV, V. A., KUDINOV, B. Z., YAKOVLEV, V. A., TRUNOV, G. Z., KASHIN, V. V., REMPEL', P. S.

"Dilatometry of Titanium-Vanadium Agglomerate"

Tr. In-ta metallurgii. Ural'sk. fil. AN SSSR (Works of the Institute of Metallurgy. Urals Branch of the USSR Academy of Sciences), 1970, vyp. 22, pp 140-142 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G228)

Translation: The compositional and grain size characteristics of Kachkanarskiy concentrates determine its capacity for agglomeration. The ore has a high Fe content and low SiO_2 content. The ore composition is the following (in %): Fe 59.9, FeO 26.0, SiO_2 5.4, TaO 2.0, V_2O_5 0.66, TiO_2 3.3, MgO 2.6, S 0.004. The content of fractions in the concentrate is as follows (in %): +0.1 mm 23.3, +0.074 mm 15.7, -0.074 mm 61. This arises from the necessity for fine crushing of the ore. The temperature level of the sintering process is raised as a result of less development of the low-melting phases based on Ca, Si, and Fe oxides and also as a result of the presence of Ti and V oxides. The agglomerate is inclined toward crack formation as a result of internal stresses arising during cooling of the formed and hardened mass. There are 2 tables.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

Agriculture

USSR

UDC 632.982

DASHEVSKIY, V. I., Senior Scientific Associate, KALININ, L. B., TRUNOV, I. A., Candidates of Agricultural Sciences, and ZUBOV, P. A., Candidate of Biological Sciences, VNIISKhSPGA and All-Union Scientific Research Institute of Forestry and Agroforest Melioration

"Experience in Using Rotary Sprayers in the Aerial Spraying of Upland Oak Groves"

Moscow, Zashchita Rasteniy, Vol 16, No 11, 1971, pp 34-35

Abstract: Tests were carried out by VNIISKhSPGA on the spraying of upland oak groves from aircraft using rotary sprayers with an output of toxic chemicals in the range of 3-20 l./ha. The tests were carried out in the spring before the opening of leaves on land managed by the Saratov Forestry Administration. Four removable rotary sprayers are installed under the wings of AN-2M aircraft. The four streams of aerosol, which has a dispersity corresponding to a droplet size ≤ 100 micron, join to form a single stream during the flight of the plane. At air speed of 160 km/hr, a strip 60 m wide is sprayed when the plane flies at a height of 10 m above the treetops. This compares with a strip width of 40 m for sprayers of the present rod type. At the same output of liquid (5 l./ha), 383.4 ha/hr could be treated with the new equipment vs. 278.5 ha/hr

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

DASHEVSKIY, V. I., et al., Zashchita Rasteniy, Vol 16, No 11, 1971, pp 34-35

for equipment of the older type. An oil solution of DDT (16%) + gamma-hexachlorocyclohexane (4%), undiluted 40% emulsion concentrates of phosphamide (rogor, Bi-58) and carbophos, and a 30% emulsion concentrate of phosphothion (malathion) were sprayed. As a result of spraying with the new equipment, 99% of gypsy moths, brown-tailed moths, leaf rollers and other insect pests were exterminated. DDT + hexachlorocyclohexane were more effective against insects that live in the open than those that live under cover. In 1971 the Ministry of the Aviation Industry will release the first shipment of serially-produced rotary sprayers for AN-2M planes.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

UDC: 681.325.65:525

VITKALOV, B. G., [redacted], PASHOLOK, L. T.

"A Fluidic Discrete Amplifier"

USSR Author's Certificate No 309354, filed 19 May 70, published 13 Aug 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 7, Jul 72, Abstract No 7A62 P)

Translation: A fluidic discrete amplifier is proposed which contains supply and control channels, output channels with a splitter between them, and also channels which are open to the atmosphere. To increase the amplification factor the walls of all channels of the amplifier, except for the controlling channels, are sloping and narrowed toward the lower part of the element, while the controlling channels are made shallower and are located in the lower part of the element. One illustration.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

UDC 632.95

MEL'NIKOV, N. N., SOKOLOVA, YE. M., TRUNOV, P. P., VOLODKOVICH, S. D., DYMSHAKOVA, G. M., GOLYSHIN, N. M., ABELENTSEV, V. I., UKRAINETS, N. S., FEDOSEYENKO, L. G., ZAIKIN, B. A., DVUKHSHERSTOV, M. G., VISHEVETSKAYA, A. M., ORLOV, S. I., ZAVIZION, A. P., and TALASH, A. I.

"Polycarbazin"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works), vyp 1, Moscow, 1970, pp 95-104 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N503 by T. A. Belyayeva)

Translation: The effectiveness of polycarbazin (I) on apple scab and grape-vine mildew equals that of zineb (II) and polyram-combi, while on cherry-fruit gray rot it equals Bordeaux liquid (III) (1 percent), but is ahead of II. I equals II and III for Clasterosporium infection of the cherry plum and tomato macrosporiosis. The decisive factor which determine the length of action of I is precipitation, which washes thepreparation off plants.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

UDC 632.95

GOLYSHIN, N. M., ABELENTSEV, V. I., DVUKHSHERSTOV, M. G., MEL'NIKOV, N. N., VOLODKOVICH, S. D., TRUNOV, P. P., DYMSHAKOVA, G. M., NOVIKOVA, V. A.

"Fungicide Mix"

USSR Author's Certificate No 250600, filed 28 Mar 68, published 16 Jul 71 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 6N624).

Translation: Ethylenethiuramdisulfide (13-40%) is added to a fungicide mix containing ethylenebisdithiocarbamates of Zn (36-55%) and Mn (20-35%) for simultaneous control of several plant diseases. The preparation can be used for preplant treatment of the seed of bean and vegetable crops with consumption norms of 6-10 grams/kg of feed.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

PINSKER, I. Sh., TRUNOV, V. G., SHAKIN, V. V.

"Recognition of Manuscript Characters which can be Parametrized"

Opoznavaniye i Opisaniye Liniy [Recognition and Description of Lines -- Collection of Works], Moscow, Nauka Press, 1972, pp 101-107 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V714 by the authors).

Translation: An approach is suggested and described for recognition of manuscript characters (numerals) which are studied as lines on a plane, represented in parametric form with a natural parameter. This representation allows the problem of synthesis of spatial standards for manuscript characters to be solved. A simple generator is suggested, the use of which allows significant reduction in the preparatory portion of the experiment, related to coding and input of information to a computer.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

Acc. Nr: AP0034145

Abstracting Service: CHEMICAL ABST. 4-70

Ref. Code: UR 0078

T

71751t X-ray study of double tungstates, α-KLn(WO$_4$)$_2$. Pol'shchikova, Z. Ya.; Tsinov, V. K. (Kafedra Neorg. Khim., Mosk. Univ., Moscow, USSR). Zh. Neorg. Khim. 1970, 15 (1), 268-9 (Russ). X-ray power diffraction data (I, d, hkl) of α-KHo(WO$_4$)$_2$ and lattice parameters (a, b, c) of KM(WO$_4$)$_2$ (where M = Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, or Y) are given. The compds. form monoclinic crystals and belong to group symmetry $P2_1/c$.
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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

UDC 621.382.2:621.317.799

VALOV, A.N., GLAVNOV, V.N., TRUNOV, YU.A.

"Measurement Of Temporal Parameters Of High-Speed Diodes"

Sb.nauch. tr. po probl. mikroelektron. Mosk. in-t elektron-tekhn. (Collection Of Scientific Works On Problems Of Microelectronics. Moscow Institute Of Electronics Technology), 1971, Issue 7, pp 86-102 (from RZh:Elektronika i yeye primeneniye, No 5, May 1972, Abstract No 5B477)

No abstract.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

UDC 621.357.7:669.15'24(088.8)

ANDRYUSHCHENKO, F. K., OREKHOVA, V. V., GRITSENKO, T. I., TRUNOVA, A. I.

"Method of Electrolytic Deposition of a Nickel-Iron Alloy"

USSR Author's Certificate No 308098, filed 22 Oct 68, published 26 Aug 71 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 6L316P)

Translation: A procedure for electrolytic deposition of Ni-Fe alloy has been patented. It is distinguished by the fact that in order to obtain the magnetic anisotropy of thin films, the process is realized with the application of a square-pulse direct current with a period of 11-20 seconds, a pulse time of 10-15 seconds, an off-duty factor of 1.1-1.5 and an amplitude of 3-5 a. The films obtained are characterized by magnetic anisotropy with a coercive force of 4-6 oersteds and an anisotropy field of 3-7 oersteds. The minimum values of the coercive force and the anisotropy field (2-4 oersteds) are achieved for a pulse period of 15 seconds (the pulse time was 10 seconds, the off-duty factor was 1.5) and an amplitude of 4 a/dm^2 during the electrolysis process with D_c 1 a/dm^2.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

Thin Films

UDC 669.24.018.9(088.8)

ANDRYUSHCHENKO, F. K., OREKHOVA, V. V., GRITSENKO, T. I., TRUNOVA, A. I.

"Method of Electrolytic Precipitation of Nickel-Iron Alloy"

USSR Author's Certificate No 308098, filed 22 Oct 68, published 26 Aug 71 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4G317P)

Translation: This is a supplement to the primary patent (RZh--Metallurgiya, 1969, 5G402P). In order to obtain magnetic anisotropy of thin films, this process is realized with deposition on a direct current of square pulses with an 11-20 second period, a pulse time of 10-15 seconds, an off-duty factor of 1.1-1.5, and an amplitude of 3-5 amps/decimeter^2. The alloy films obtained are characterized by magnetic anisotropy with a coercive force of 4-8 oersteds and an anisotropy field of 3-7 oersteds.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

Public Health, Hygiene and Sanitation

UDC 619.614.777

TRUNOVA, O. N., Candidate of Biological Sciences, Saratov, Scientific Research Veterinary Station

"Relationships Between Protozoans and Pathogenic Microflora in Still Ponds"

Moscow, Veterinariya, No 4, 1971, pp 28-30

Abstract: A summary is presented of a large number of experiments which show that protozoans like Paramecium caudatum and Colpidium colpoda have a bactericidal effect in moderately polluted bodies of water. In experiments with E. coli, S. Gartneri, St. albus and Br. abortus, the two protozoan species destroyed most of the bacterial populations within 72 hours. M. tuberculosis cultures and the spore forms of anthrax and Bac. subtilis were readily engulfed and digested by the paramecia. Cholera and dysentery phage particles were quickly destroyed by the protozoans' digestive enzymes. The addition of various herbicides, fungicides, and insecticides to water weakened the antimicrobial activity of the protozoans. Organic runoff from livestock farms (fertilizers, milk, feces, urine) had an adverse effect. An increase in organic pollution to 12- mg/L O_2 reduced the infusorian populations to 1 or 2 individuals per ml, while an increase to 150 to 200 mg/L inhibited their growth completely.

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UNCLASSIFIED

TITLE--THE CARDIO VASCULAR SYSTEM FUNCTIONAL STATE IN PATIENTS WITH HYPERTONIC DISEASE IN TREATING WITH HYPOTHIAZID ACCORDING TO SOME

PROCESSING DATE--02OCT70

AUTHOR--TRUNOVA, T.L.

COUNTRY OF INFO--USSR

SOURCE--ZDRAVOOKHRANENIYE BELORUSSII, 1970, NR 2, PP 20-24

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CARDIOVASCULAR SYSTEM, BLOOD CIRCULATION, DIURETIC, ANTIHYPERTENSIVE AGENT, ELECTROCARDIOGRAPHY

CONTROL MARKINGS--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1503

STEP NO--UR/0477/70/000/002/0020/0024

CIRC ACCESSION NO--AP0106259

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

2/2 026 UNCLASSIFIED

CIRC ACCESSION NO--AP0106259 PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE PRESENTS INTRACELLULAR AND EXTRACELLULAR SODIUM AND POTASSIUM CHANGES UNDER THE INFLUENCE OF HYPOTHIAZID IN COMPARYING THEM WITH THE CARDIAC CYCLE DYNAMICS, ELECTROCARDIOGRAPHIC DATA AND VASCULAR TONUS IN 130 PATIENTS WITH HYPERTONIC DISEASE WITHOUT BLOOD CIRCULATION DISTURBANCES.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

1/2 029 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--DEVELOPMENT OF ACTIVE IMMUNITY IN PERSONS AFTER AN ACTIVE PASSIVE PROPHYLAXIS OF TETANUS -U-

AUTHOR-(05)-MATVEYEV, K.I., BYCHENKO, B.D., PETROV, P.N., KASPAROVA, YE.M., TRUNOVA, Z.N.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 5, PP 26-32

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ACTIVE IMMUNITY, PROPHYLAXIS, TETANUS, TETANUS TOXOID, VACCINATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0103 STEP NO--UR/0016/70/000/005/0026/0032

CIRC ACCESSION NO--AP0114499

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

UNCLASSIFIED

PROCESSING DATE--16OCT70

ACCESSION NO--AP0114499

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OF 39 INJURED PERSONS WHO WERE NOT SUBJECTED FORMERLY TO IMMUNIZATION AGAINST TETANUS 45PERCENT IN 3 MONTHS, AND 73PERCENT IN 12 MONTHS, AFTER AN URGENT ACTIVE PASSIVE PROPHYLAXIS (TOXOID PLUS SERUM), WERE PREPARED TO REVACCINATION WITH TOXOID AND REQUIRED NO ADMINISTRATION OF TETANUS ANTISERUM IN REPEATED TRAUMAS. AMONG HEALTHY PERSONS GIVEN A SINGLE INJECTION OF TETANUS TOXOID IN A DOSE OF 20 BU (50 PERSONS), 84PERCENT IN 3 MONTHS, AND 100PERCENT IN 8-12 MONTHS WERE PREPARED TO REVACCINATION WITH THE USUAL DOSE OF THE TOXOID (10 BU). THIS POINTED TO THE POSSIBILITY OF WIDE SINGLE IMMUNIZATION OF ADULT POPULATION WITH SUBSEQUENT REVACCINATION IN 8 TO 12 MONTHS. ANTITOXIC TETANUS ANTISERUM (3,000 IU) INJECTED TOGETHER WITH THE TOXOID (20 BU) PRODUCED SOME DEPRESSIVE EFFECT ON THE DEVELOPMENT OF ACTIVE IMMUNITY IN FORMERLY NON IMMUNIZED PERSONS. PERSONS IMMUNIZED AGAINST TETANUS IN WHOM THE ANTITOXIN TITRE WAS 0.001 IU-ML. EVEN AFTER SEVERE TRAUMAS PRODUCED THE ANTITOXIN RAPIDLY IN RESPONSE TO THE ADMINISTRATION OF THE TOXIN TOGETHER WITH THE SERUM.

FACILITY: INSTITUT EPIDEMIOLOGII I MIKROBIOLOGII IM. GAMALEI AND INSTITUT IM. SKLIFOSOVSKOGO, MOSCOW.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

UDC 539.3

BEREZHNITSKIY, L. T., PANASYUK, V. V., TRUSH, I. I., L'vov

"Stress Intensity Factors Near Hard Acute-Angle Inclusions"

Kiev, Problemy Prochnosti, No 7, Jul 73, pp 3-7.

Abstract: A method is presented for determination of the stress intensity factors near hard inclusions with corner points. In the case when the function mapping the exterior of the inclusion on the exterior of a unit circle is fixed in the form of a series, the problem is reduced to solution of a system of 2N algebraic equations. The effectiveness of the algorithm for calculation of stress intensity factors suggested is illustrated with a number of examples, most of which are studied in this article for the first time.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

UDC 539.3

PANASYUK, V. V., BEREZHNITSKIY, L. T., and TRUSH, I. I., Institute of Physico Mechanics, Academy of Sciences Ukrainian SSR, L'vov

"Crack Propagation in Composite Materials"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Academy of Sciences Ukrainian SSR, Vol 7, No 1, 1971, pp 108-110

Abstract: Conditions for the propagation of linear cracks, one apex of which lies in the inclusion material, and the other in the binder, were examined. An infinite isotropic body with a circular inclusion made of another homogeneous material was calculated. A linear crack was assumed to lie along a diameter of the inclusion and to enter the binder. The strength of adhesion between inclusion and binder was taken as not less than the strength of the components. A general expression was found for the limiting loads (exerted by uniformly distributed and mutually perpendicular forces) at which the crack can propagate at either terminus.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

PERMYAKOV, V. G., TRUSH, I. KH., LOSKUTOV, V. F., PISARENKO, V. N., and YAKOVCHUK, YU. YE., Kiev Polytechnic Institute

UDC 669.295:621.785.539

"Effect of Titanium on Growth Kinetics of Boronized Layer"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 11, 1973, pp 71-72

Abstract: A study was made of the effect of titanium on the growth kinetics and properties of the boronized layer during the saturation of iron-titanium alloys in commercial boron carbide, as well as the effect on grain growth in the transition zone. Synthetic alloys smelted from Armco iron and pure titanium (0.59, 1.12 and 1.64 wt.% Ti) were used for the study. All the alloys had grain No. 6 before boronization. Prismatic specimens 15 x 10 x 10 mm in size were boronized at 900, 950, 1000, 1050 and 1100° C for 3 and 5 hours. Kinetic curves were constructed for all the studied alloys plotting the depth of the boronized layer as a function of the saturation time and temperature. It was found that increasing the titanium content of the studied alloys results in a significant decrease in the maximum depth of the boronized layer.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

PERMYAKOV, V. G., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 11, 1973, pp 71-72

Titanium dissolves in FeB, which is accompanied by an increase in hardness. Considering the inhibiting effect of titanium on grain growth in the transition zone and matrix and the peculiarities of its effect on the growth of the boride layer, it is advisable to add 0.5-0.6% Ti to steels that are to be boronized.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

UNCLASSIFIED

PROCESSING DATE--30OCT70

MEASUREMENT OF TRIPLET TRIPLET ABSORPTION SPECTRA OF MOLECULES OF ORGANIC COMPOUNDS IN LIQUID SOLUTIONS BY USING A LASER -U-

AUTHOR-(04)-TSURIKOV, YU.L., ABAKUMOV, G.A., TRUSHANOV, A.A., SIMONOV, A.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(2), 336-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--ABSORPTION SPECTRUM, NAPHTHALENE, RUBY LASER, AROMATIC KETONE, BENZENE, PULSE EXCITATION, LASER RADIATION, SECOND HARMONIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1241

STEP NO--UR/0368/70/012/002/0336/0338

CIRC ACCESSION NO--AP0116703

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

CIRC ACCESSION NO--AP0116703 UNCLASSIFIED PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SPECTRA OF TRIPLET TRIPLET (T-T) ABSORPTION OF PH SUB2 CO AND NAPHTHALENE IN BENZENE SOLN. WERE MEASURED AT ROOM TEMP. BY USING A RUBY LASER 2ND HARMONICS RADIATION (LAMBDA EQUALS 347 NM; POWER 0.3-0.5 MW, AND PULSE DURATION SIMILAR TO 30 NSEC) AS THE EXCITATION SOURCE. THE 2ND HARMONICS WAS OBTAINED WITH A KH SUB2 PO SUB4 SINGLE CRYSTAL (25 MM LONG). SOLNS. OF FLUORESCEIN IN HOAC WATER MIXT. AND OF PHENYLACRIDONE IN ETOH WERE USED AS SOURCES OF VISIBLE REGION RADIATION. THE POSITIONS OF MAX. IN PH SUB2 CO AND NAPHTHALENE AT 350 AND 420 NM, RESP., IN THE T-T SPECTRUM, ARE IN GOOD AGREEMENT WITH LITERATURE DATA. THE ADVANTAGES OF THE USE OF LASER RADIATION FOR THE EXCITATION OF ORG. MOLS. IN SOLNS. ARE DISCUSSED.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

UDC 621.791.052:620.17

TRUSHCHENKO, A. A., Electric Welding Institute imeni Ye. O. Paton

"Rational Procedure of Inspecting Welds for Impermeability"

Moscow, Svarochnoye Proizvodstvo, No 8, Aug 70, pp 37-38

Abstract: A procedure of controlling the impermeability of two-sided single-pass butt welds is proposed. The procedure specifies visual inspection following the completion of the first weld. Optimum conditions of welding are maintained to insure quality welds (by appearance). Vacuum inspection of the first weld for impermeability is the next step. The defects are eliminated. The minimum distance between the inspection area and the area being welded depends on the safe temperature of the inspected weld section to avoid burning the rubber of the vacuum chamber. Welds completed on the other side of the backing strip may be inspected only visually following welding and elimination of outer defects. There is no need to inspect the impermeability of finished two-sided welds. It is recommended that the inspection of one- and two-sided lap welds be made by the vacuum method following welding.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

UNCLASSIFIED

...SSED POWDER SOLDER FOR SOLDERING CERAMICS WITH METAL -U-

PROCESSING DATE--13NOV70

AUTHOR-(02)-KRUCHININ, V.P., TRUSHECHKIN, D.P.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 267,313

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

DATE PUBLISHED--01APR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PATENT, SOLDER, COPPER, SILVER, MANGANESE, TUNGSTEN, FILLER, METAL TO NONMETAL BONDING, CERAMIC MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1413

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

CIRC ACCESSION NO--AA0128812

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

ACCESSION NO--AA0128812 UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLDER CONSISTED OF SOLDER BASED ON A CU-AG SYSTEM AND A FILLER COMPOSED OF A 20-50PERCENT MIXT. OF MN 5-40 AND W THE REMAINING.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

UDC 625.78.018.1(088.8)

KREMENA, V. P., PETROV, Yu. V., TRUSHECHKIN, N. P.

"Device for Determination of Velocity in Wind Tunnels"

USSR Author's Certificate No 307343, filed 15/10/69, published 8/09/71, (Translated from Referativnyy Zhurnal, Raketostroyeniye, No 4, 1972, Abstract No 4.41.169 P from the Resume).

Translation: A device for determination of velocity in shock tunnels containing a standard frequency generator, switch, counter and two master sensors, differing in that in order to eliminate losses of information resulting from the effects of electromagnetic interference, for example when operating with electric-discharge tubes, as well as interference from the reflected wave, the permit and forbid inputs of the switch are connected to sensors through the blocking unit and an OR circuit, the cross section of the tunnel between the diaphragm and the sensors contains an additional sensor which is connected through an AND circuit to the permit input of the blocking unit, the second input of the OR circuit and the zero-setting circuit of the counter, while the second input of the AND circuit is connected through a pulse expander to the starting device of the tunnel. 1 Figure.

1/1

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

GLAZKOV, L. N., TRUSHIN, I. K.

UDC 621.397.61:531.71

"Accuracy and Speed of Television Devices for Controlling the Dimensions of Parts"

Nekotoryye vopr. teorii i proyektir. televizionno-vychisl. sistem -- V sb. (Some Problems of Theory and Design of Television Computing Systems -- collection of works), Tula, 1970, pp 4-7 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4G188)

Translation: The possibility of improving the accuracy of readings of television control devices by projecting the part not completely but partially on a photocathode is demonstrated. The speed of the TV calculating device is analyzed. The bibliography has 5 entries.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

UNCLASSIFIED

--DETERMINATION OF THE ORIENTATION OF THE ARTIFICIAL EARTH SATELLITES ELEKTRON 2 AND ELEKTRON 4 -U-

PROCESSING DATE--23OCT70

AUTHOR-(02)-LAVROVSKIY, E.K., TRUSHIN, S.I.

COUNTRY OF INFO--USSR

SOURCE--KOSMICHESKIE ISSLEDOVANIIA, VOL. 8, MAR.-APR. 1970, P. 229-242

DATE PUBLISHED-------70

SUBJECT AREAS--SPACE TECHNOLOGY

TOPIC TAGS--SATELLITE ORIENTATION, SATELLITE SENSOR SYSTEM/(U)ELEKTRON 2 SATELLITE, (U)ELEKTRON 4 SATELLITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1754

CIRC ACCESSION NO--AP0115583

STEP NO--UR/0293/70/008/000/0229/0242

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

UNCLASSIFIED

ARC ACCESSION NO--AP0115583 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS OF CALCULATIONS DETERMINING THE ORIENTATIONS OF TWO HIGH ALTITUDE SATELLITES, ELEKTRON 2 AND ELEKTRON 4, ON THE BASIS OF DATA OBTAINED FROM ONBOARD SOLAR AND MAGNETIC SENSORS. BOTH SATELLITES HAD FINE AND ROUGH SOLAR SENSORS WITH 20 AND 70 DEG VIEW ANGLES, RESPECTIVELY. THE MAGNETOMETERS MEASURED THREE COMPONENTS OF THE GEOMAGNETIC FIELD VECTOR. THE ORIENTATION OF BOTH SATELLITES IS SOUGHT IN A COORDINATE SYSTEM TIED TO THE DIRECTION FROM THE SUN TO THE SATELLITE CENTER OF MASS. BOTH SATELLITES REPRESENT DYNAMICALLY SYMMETRICAL OBJECTS, AND BY STUDYING THEIR INERTIAL MOTION OVER A SHORT INTERVAL OF TIME, A REGULAR PRECESSION IS OBTAINED. FIVE PARAMETERS OF THIS PRECESSION ARE DETERMINED ON THE BASIS OF SOLAR MEASUREMENTS, AND THE SIXTH IS OBTAINED FROM MAGNETIC DATA.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

UNCLASSIFIED

METHODS OF DETERMINING THE ORIENTATION OF AN ARTIFICIAL EARTH SATELLITE ON THE BASIS OF TELEMETRIC MEASUREMENTS -U-

PROCESSING DATE--23OCT70

AUTHOR-(02)-LAVROVSKIY, E.K., TRUSHIN, S.I.

COUNTRY OF INFO--USSR

SOURCE--KOSMICHESKIE ISSLEDOVANIIA, VOL. 8, MAR.-APR. 1970, P. 218-228

DATE PUBLISHED-------70

SUBJECT AREAS--SPACE TECHNOLOGY, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--SATELLITE ORIENTATION, TELEMETERING DATA, MEASUREMENT, SATELLITE SENSOR SYSTEM, SATELLITE MOTION, MODEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1755

STEP NO--UR/0293/70/008/000/0218/0228

CIRC ACCESSION NO--AP0115584

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

ACCESSION NO--AP0115584 UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF PROCEDURES FOR DETERMINING THE ORIENTATION OF DYNAMICALLY ALMOST SYMMETRICAL SATELLITES ON THE BASIS OF DATA FROM ONBOARD SENSORS. THE PROBLEM IS REDUCED TO THE DETERMINATION OF THE DYNAMICS OF THE SATELLITE'S ROTATIONAL MOTION USING STATISTICAL DATA PROCESSING TECHNIQUES. A SIMPLIFIED ANALYTICAL MODEL OF SATELLITE MOTION AROUND ITS CENTER OF MASS IS CONSTRUCTED, AND THE ORIENTATION IS DETERMINED USING SIMPLE FORMULAS WITHOUT CONSUMING MUCH TIME IN COMPUTER CALCULATIONS. DATA PROCESSING IS PERFORMED WITH THE LEAST SQUARES METHOD, AND QUASI REGULAR PRECESSION IS ASSUMED IN THE MODEL FOR THE SATELLITE MOTION.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

1/2 031 UNCLASSIFIED

TITLE--STUDY OF THE HEAT EXCHANGE BETWEEN GAS AND THE ELEMENTS OF THE FLOW THROUGH PART OF A GAS TURBINE UNDER CONDITIONS OF ROTATION -U-

PROCESSING DATE--30OCT70

AUTHOR-(02)-LOKAY, V.I., TRUSHIN, V.A.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK SSSR: ENERGETIKA I TRANSPORT, NO 1, 1970, PP 94-100

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, ENERGY CONVERSION (NON-PROPULSIVE)

TOPIC TAGS--GAS TURBINE, BIBLIOGRAPHY, HEAT EXCHANGE, DIMENSION ANALYSIS, GAS TURBINE ENGINE TEST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1327

STEP NO--UR/0281/70/000/001/0094/0100

CIRC ACCESSION NO--AP0123285

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

CIRC ACCESSION NO--AP0123285 UNCLASSIFIED

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS OF A STUDY ARE GIVEN ON HEAT EXCHANGE IN THE FLOW THROUGH SECTION OF A TURBINE WHEEL. A VALIDATION IS GIVEN FOR THE STRUCTURE OF A DIMENSIONLESS EQUATION WHICH TAKES INTO CONSIDERATION THE EFFECT OF MASS INERTIAL FORCES ON HEAT EXCHANGE (ALPHA SUBR). A SHORT DESCRIPTION IS GIVEN OF AN EXPERIMENTAL TURBINE ALONG WITH A PROCEDURE FOR CONDUCTING TESTS. RESULTS FOR UNIFYING TESTS ARE GIVEN FROM A STUDY OF THE EFFECT OF ROTATION ON HEAT EXCHANGE BOTH FOR LOCAL AND INTERMEDIATE VALUES OF (ALPHA SUBR) (IN THE LATTER CASE, BOTH FOR CALCULATED AND UNCALCULATED ANGLES OF ATTACK). MATHEMATICAL PROCESSING OF TESTS RESULTS USING METHODS OF DIMENSIONAL ANALYSIS MADE IT POSSIBLE TO OBTAIN A DIMENSIONLESS EQUATION FOR CALCULATING CORRECTIONS FOR THE EFFECT OF ROTATION ON HEAT EXCHANGE.

PROCESSING DATE--30OCT70

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

KOVALENKO, I. YA., ONIKIYENKO, V. V., TRUSHINA, L. I. [redacted]

UDC 577.4

"Some Models and Methods of Forecasting Population and Man Power in the Labor and Personnel Subsystem"

V sb. Razrabotka avtomatizir. sistemy plan. raschetov v soyuz. resp. (Development of Automated Planning Calculation Systems in the Union Republics -- collection of works), Kiev, 1971, pp 125-137 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V466)

No abstract

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

UNCLASSIFIED

AND SULPHOPROPYL ESTER OF DEXTRANE -U- PROCESSING DATE--11SEP70

AUTHOR--TRUSHINA, M.N., KHOMYAKOV, K.P., VIRNIK, A.D., ROGOVIN, Z.A., ROGOZKIN, V.D.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY MEDITSINSKOY KHIMII, 1970, VOL 16, NR 2, PP 195-198

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIOPROTECTIVE AGENT, CYSTAMINE, POLYMER, DEXTRAN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0642

CIRC ACCESSION NO--AP0102628 STEP NO--UR/0301/70/016/002/0195/0198

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

CIRC ACCESSION NO--AP0102628 UNCLASSIFIED PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RADIOPROTECTIVE ACTION OF SALT LIKE ADDUCT OF CYSTAMINE TO SULPHOPROPYL ESTER OF DEXTRANE HAS BEEN STUDIED. ADDITION OF CYSTAMINE TO POLYMER LEADS TO INCREASE IN RADIO PROTECTIVE EFFECT OF CYSTAMINE AT A SMALL DOSES INJECTED 10-15 MIN BEFORE IRRADIATION. CYSTAMINE AND DEXTRANE COMPLEX IS CHARACTERIZED BY THE PROLONGED PERIOD OF ACTION AS COMPARED TO CYSTAMINE DIHYDROCHLORIDE. THIS ENABLES THE AUTHORS TO ADMINISTRATE THE POLYMER 1 H BEFORE IRRADIATION INSTEAD OF 15 MIN AS IT TAKES PLACE FOR CYSTAMINE DIHYDROCHLORIDE.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

UNCLASSIFIED

TITLE--THE STUDIES OF RADIOPROTECTIVE ACTION OF POLYMER SALT OF CYSTAMINE AND SULPHOPROPYL ESTER OF DEXTRANE -U-

PROCESSING DATE--11SEP70

AUTHOR--TRUSHINA, M.N., KHOMYAKOV, K.P., VIRNIK, A.D., ROGOVIN, Z.A., ROGOZKIN, V.D.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY MEDITSINSKOY KHIMII, 1970, VOL 16, NR 2, PP 195-198

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIOPROTECTIVE AGENT, CYSTAMINE, POLYMER, DEXTRAN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0642

STEP NO--UR/0301/70/016/002/0195/0198

CIRC ACCESSION NO--AP0102628

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

CIRC ACCESSION NO--AP0102628 UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RADIOPROTECTIVE ACTION OF SALT LIKE ADDUCT OF CYSTAMINE TO SULPHOPROPYL ESTER OF DEXTRANE HAS BEEN STUDIED. ADDITION OF CYSTAMINE TO POLYMER LEADS TO INCREASE IN RADIO PROTECTIVE EFFECT OF CYSTAMINE AT A SMALL DOSES INJECTED 10-15 MIN BEFORE IRRADIATION. CYSTAMINE AND DEXTRANE COMPLEX IS CHARACTERIZED BY THE PROLONGED PERIOD OF ACTION AS COMPARED TO CYSTAMINE DIHYDROCHLORIDE. THIS ENABLES THE AUTHORS TO ADMINISTRATE THE POLYMER I H BEFORE IRRADIATION INSTEAD OF 15 MIN AS IT TAKES PLACE FOR CYSTAMINE DIHYDROCHLORIDE.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

GOFSHTEYN-GARDT, A.L., KOVYREVA, N.I., KOGAN, L.M., KULAGIN, L.N., KURLYAND, S.I., TIN'KOV, A.P., TRUSHINA, V.YE.

UDC 621.382:535.376

3

"Semiconductor Light Source (Light-Emitting Diode) Of Gallium Phosphide"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their Application--Collection Of Works), Issue 4, Moscow, "Sov.radio," 1972, pp 3-14 (from RZh:Elektronika i yeye primeneniye, No 9, Sept 1972, Abstract No 9B310)

Translation: The results are discussed of the development and an investigation of the electrical and optical characteristics of gallium phosphide red-radiation light-emitting diodes. The method of creation of p-n structures and the design of the light-emitting diode are described. The principal areas of application of the light-emitting diodes are considered. The devices described are characterized by a quantum efficiency of radiation of 0.1--1 percent. 11 ill. 1 tab. 19 ref. Author's abstract.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

025

TITLE--IRON PYROPHOSPHATE -U- UNCLASSIFIED

PROCESSING DATE--11SEP70

AUTHOR--TRUSHINSKA, V.A., KONSTANTS, Z., BURTNIYEKS, U., VAYVADS, A.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SER. 1970, (1), 112-13

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--IR SPECTRUM, X RAY ANALYSIS, SPECTROSCOPIC ANALYSIS, PHOSPHATE, IRON COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0600

STEP NO--UR/0464/70/000/001/0112/0113

CIRC ACCESSION NO--AP0105583

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

2/2 025

CIRC ACCESSION NO--AP0105583 UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IRON PYROPHOSPHATE IS PREPD. BY AUTO CLAVING AMORPHOUS FE(III) PHOSPHATE, WHICH WAS PREPD. BY THE REACTION OF 87PERCENT H SUB3.PO SUB4 WITH POWD. FE CARBONYL, FOR 4 HR AT 175DEGREES. THIS PRODUCT EXHIBITS ENDOTHERMAL EFFECTS AT 555 AND 720DEGREES AND AN EXOTHERMAL EFFECT AT 645DEGREES. THE PRODUCT WAS ALSO STUDIED BY X RAY AND IR ANAL.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

TITLE--IRON METAPHOSPHATE -U- UNCLASSIFIED

PROCESSING DATE--23OCT70

AUTHOR-(04)-TRUSHINSKA, V.A., KONSTANTS, Z., BURTNIYEKS, U., VAYVADS, A.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS, KIM. SER. 1970, (1), 113-14

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHOSPHATE, IRON COMPOUND, X RAY ANALYSIS, IR ANALYSIS, THERMAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0022

STEP NO--UR/0464/70/000/001/0113/0114

CIRC ACCESSION NO--AP0119018

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

037

CIRC ACCESSION NO--AP0119018 UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMPD. CORRESPONDING TO THE RATIO FE SUB2 O SUB3 .3.1P SUB2 O SUB5 .6.1H SUB2 O WAS PREPD. FROM A MIXT. OF FEPO SUB4 .2H SUB2 O AND H SUB3 PO SUB4 KEPT 6 WEEKS AT 15DEGREES. THE COMPD. WAS STUDIED BY MEANS OF DTA, IR, AND X RAY ANAL.

FACILITY: INST. NEORG. KHIM., RIGA, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

PISKAREVA, N. A., KUZNETSOVA, E. Ye., POPOVA, R. P., BRODOVA, M. D., TRUSHINSKAYA, E. P., and YAKIMANSKAYA, K. I., Leningrad Scientific Research Institute of Childrens Infections

"Virological, Clinical and Immunological Characterization of Hong Kong A2 Influenza in Children"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, p 492

Translation: The 1969 influenza outbreak in Leningrad was caused by a new antigenic strain of influenza virus of sero type A2 (Hong Kong). During the outbreak, tests were performed on chick embryos infected with materials collected from 53 patients with sporadic forms of the disease, with eight samples collected from foci, and with 10 samples collected from children who had died of influenza. Twenty-three hemagglutinating agents were isolated and identified as A2 Hong Kong influenza viruses. All strains were sensitive to inhibitors. Serological investigation of paired sera of 388 persons revealed that specific immunological shifts took place in children fairly early. Positive shifts occurred in 40.2% of children aged up to 1 year, which considerably exceeded analogous shifts in a similar group of children in previous years. The express method of immunofluorescent analysis of nose and throat smears yielded positive

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

PISKAREVA, N. A., et al, Voprosy Virusologii, No 4, Jul/Aug 71, p 492

results in 104 out of 165 ill children (63%). Combined positive results by the express method and by the serological method were obtained in about 83% of the total number of individuals examined during the influenza outbreak.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

UDC 669.716:620.178.3

STEPNOV, M. N., and TRUSHKIN, M. A., Moscow Aviation Technological Institute

"Evaluation of Changes in Fatigue Properties of Aluminum Alloys Under the Effect of Variable Loads by Means of Secondary Fatigue Curves"

Moscow, Zavodskaya Laboratoriya, Vol 38, No 7, 1972, pp 860-864

Abstract: A model is proposed for evaluating, with the aid of secondary fatigue curves of equal damageability, the changes in fatigue properties of aluminum alloys undergoing deformation under the effect of variable loads. Secondary fatigue curves are defined as the curves obtained in testing a previously damaged material. Three tables, 5 figures, 3 references.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

UDC 632.4.22

TRUSHKO, M. M., Siberian Scientific Research Institute of Agricultural Chemistry

"Sources of Stem Rust Infection of Rye in Siberia"

Novosibirsk, Sibirskiy Vestnik Sel'skokhozyaystvennoy Nauki, Vol 3, No 4(16), 1973, pp 46-51

Abstract: The laboratory and field tests reported were conducted from 1969 to 1972 in Novosibirskaya Oblast on the rust Puccinia graminis secalis, attempting to determine if its uredospores could winter under Siberian conditions and then infect rye and other grains and grasses the following year. Tests showed that on both winter and spring plantings the disease had difficulty surviving the winter. When uredospores were planted on grasses, then their surviving numbers used to infect spring crops, almost all proved to be incapable of thriving. The role of herbaceous grasses tested as transmitters of the infection gave positive results for various types of barley and rye, and lesser infections of other types. It was also found that wheat rust could infect rye and rye rust could infect wheat. It was concluded that the basic source of infection was in uredomycelia which had wintered on perennial wild grasses such as crab and timothy. Stem rust of rye develops on Barberry, but this plant is too scarce in the area to be of practical importance in rust control.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

Acc. Nr. AP0049329 Abstracting Service: CHEMICAL ABST. 5/70 Ref. Code UR 0226

104879w Electron-microscopic investigation of the structure of metal films during heating. Kolesnichenko, L. F.; Trushko, P. V. (Inst. Probl. Materialoved., Kiev, USSR). *Poroshk. Met.* 1970, 10(1), 76-82 (Russ). A novel technique for the direct heating of thin metallic objects in an electron microscope to 850-900° was developed and employed. The possibility is established of the successive study of the structural-phase state of thin metallic foils during continuous heating, which is of principal significance in the investigation of the synthesis processes of new metalloceramic material. Fundamental structural changes are shown during continuous heating of pure Cu, Fe, and Ni, which must be taken into consideration during the investigation of the possible phase transformations in compds. based on them. Recrystn. processes taking place during heating in sputtered Ni films agree with corresponding processes in foils studied within the same temp. range. The characteristic phase formation (Fe_3C) during the heating of Fe is shown. It is apparently closely assocd. with the interaction between Fe and the decompn. products of oil vapors in the working area. S. A. Mersol

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REEL/FRAME 19801146

18 Nt

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR UDC: 621.374.4(088.8)

TRUSILOV, A. A.

"A Multistage Frequency Divider"

USSR Author's Certificate No 261462, filed 17 Aug 68, published 28 May 70 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11G217 P)

Translation: This Author's Certificate introduces a multistage transistorized frequency divider which contains multivibrators with time-setting capacitor in the emitter circuit, and a current pulse generator for feeding the emitter circuits of the multivibrators. To improve the stability of the frequency division coefficient when there is a change in the frequency being divided over a wide range, and to reduce the power requirements, the emitter-collector junctions of the transistors in each of the arms of the multivibrators are interconnected in series; the emitter-collector junctions of the transistors in some arms of the multivibrators are directly interconnected, while those in other arms are connected through the emitter--collector junctions of blocking transistors with their bases connected to the power supply through a divider based on resistors, the emitters of these transistors being connected to the power supply through individual resistors.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

UDC: 621.373.531.1(088.8)

TRUSILOV, A. A.

"A Semiconductor Multivibrator"

USSR Author's Certificate No 262161, filed 28 Aug 68, published 21 May 70 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11G189 P)

Translation: This Author's Certificate introduces a semiconductor multivibrator with time-setting capacitor in the emitter circuit and current-setting resistors in the emitter circuits. To reduce the value of the time-setting capacitance during operation on low frequency without cutting down speed, the collectors of current-switching transistors controlled from the multivibrator outputs are connected to the emitters of the multivibrator transistors.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203330002-6

USSR

UDC 621.01:539

KOVALEV, V. V., GOLEGO, N. L., TRUSKOV, P. F., Kiev Institute of Civil Aviation Engineering

"Influence of Degree of Hardening and Roughness of Friction Surfaces on Wear Rate and Load-bearing Ability"

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Abstract: This work presents a study of the changes in wear rate, coefficient of friction and friction surface temperature as functions of microhardness and roughness of the friction surfaces at various temperatures of the lubricant supply and various normal pressures. The softer metal of the friction couple, when it does not reach full hardening, wears rapidly with increased normal pressure, and its wear rate may be higher than the same material in the hardened state by 2 or 3 orders of magnitude. During the initial period of friction, the wear rate is decisively influenced not so much by the height of microprojections on the friction surfaces as by their mutual placement on the two surfaces. The temperature of the lubricant layer has a decisive influence on processes of friction and wear, both during the break-in period and after it. An increase in the temperature of the lubri-

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