MOISEYEV, V. K. et al., USSR Author's Certificate No 305598

output of the time modulator. The potential inputs of these coincidence circuits are connected to the outputs of a commutator whose pulse outputs are connected to the recording pulse generator and to the input of the gate generator for transcription of lock-on pulses. The output of this generator is connected through a differentiating circuit to one input of the lock-on flip-flop, and a signal from the time discriminator is sent to the other input of this flip-flop.

2/2

UNCLASSIFIED PROCESSING DATE--20NOV70

1/2 037

TITLE--PLASTIC DEFORMATION OF CORUNDUM SINGLE CRYSTALS -U-

AUTHOR-(05)-KLASSENNEKLYUDOVA, M.V., GOVORKOV, V.G., URUSOVSKAYA, A.A., VOINOVA, N.A., KOZLOVSKAYA, E.P.

COUNTRY OF INFO--USSR

SOURCE--PHYSICA STATUS SOLIDI, 1970, VOL 39, NR 2, PP 679-688

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--PLASTIC DEFORMATION, SINGLE CRYSTAL, CORUNDUM, RUBY, SAPPHIRE, CRYSTALLOGRAPHY, RESEARCH FACILITY, CHROMIUM IMPURITY, CRYSTAL IMPURITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0337 STEP NO--GE/0030/70/039/002/0679/0688

CIRC ACCESSION NO--AP0124094

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--

2/2 037

CIRC ACCESSION NO--AP0124094

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRESS STRAIN CURVES AND THE DEFECT STRUCTURE OF CORUNDUM SINGLE CRYSTALS (SAPPHIRE AND RUBY) WERE STUDIED. THE INFLUENCE OF IMPURITY (CR) PRESENCE, CRYSTALLOGRAPHIC ORIENTATION, TEMPERATURE, AND DEFORMATION RATE WAS INVESTIGATED. CHROMIUM MAKES CORUNDUM HARDER AND CAUSES A YIELD POINT PHENOMENON. THE YIELD POINT HAS ALSO INCREASED BY THE TRANSITION FROM 60DEGREES TO 90DEGREES ORIENTATION OF THE SPEICIMENS, BY LOWERING THE TEMPERATURE, AND BY AN INCREASE IN THE DEFORMATION RATE. IN 60DEGREES SPECIMENS THE DEFORMATION OCCURS BY MEANS OF GLIDING ON BASAL PLANES IN (1120) AND (1010) DIRECTIONS. IN 90DEGREES SAMPLES BESIDE THIS ONE GLIDING IN (1010), (1011), (2021) AND (2243) IS FOUND. FACILITY: INSTITUTE OF CRYSTALLOGRAPHY OF THE ACADEMY OF SCIENCES OF THE USSR, MOSCOW.

UNCLASSIFIED

USSR UDC 615.217.34.017:[illegible]

VAL'DMAN, A. V., and KOZLOVSKAYA, M. M., Chair of Pharmacology, First Leningrad Medical Institute imeni I. P. Pavlov

"Experimental Studies on the Tranquilizing and Antidepressant Effects of Central Cholinolytics"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, [illegible], 1970, pp 51-56

Abstract: [illegible] states and depression were [illegible] by stimulating the hypothalamus and medial portions of the [illegible] zone. In low doses (0.005-0.1 mg/kg) scopolamine, [illegible] hydrobromide showed a tranquilizing effect by suppressing [illegible] tional state in aggressive-defensive behavior. The [illegible] [illegible] conditioned reflexes by blocking the effects of [illegible] the lateral portions of the septum. At the same time, the [illegible] hydrobromide failed to inhibit the medial portions of the septum. In large doses (0.5-1.0 mg/kg), they suppressed [illegible] [illegible] chiefly in the cortical direction, [illegible] that both have a bearing on the antidepressant properties of central cholinolytics.

[illegible]

Physiology

USSR UDC 612

VAL'DMAN, A. V., and KOZLOVSKAYA, M. M., Chair of Pharmacology, First Medical Institute imeni I. P. Pavlov, Leningrad

"Experimental Investigation of Emotional States in Animals"

Moscow, Uspekhi Fiziologicheskikh Nauk, Vol 4, No 1, Jan/Feb/Mar 73, pp 31-52

Abstract: The old tenet that emotion is a psychological category which has no neurophysiological aspect and that it therefore cannot be studied scientifically in animals is no longer regarded as valid. Two emotional components can be distinguished: 1) the subjective experience which reflects the individual's relationship to the surrounding world and to himself and which is called emotional experience or state, and 2) the accompanying somatic and visceral shifts, which are called emotional manifestation or expression. Both develop in parallel on the basis of biologically consolidated neurophysiological mechanisms. In animals (except for those especially trained in tricks), emotional manifestations correctly reflect the quality and intensity of the primeval emotions, such as fear, rage, and pain. Electrical stimulation of individual brain structures may cause a specific emotional experience, but only the emotional manifestations can be observed by the investigator. However, under the artificial experimental

1/2

USSR

VAL'DMAN, A. V., and KOZLOVSKAYA, M. M., Uspekhi Fiziologicheskikh Nauk, Vol 4, No 1, Jan/Feb/Mar 73, pp 31-52

conditions, the manifestations may no longer signify the simultaneous existance of the emotional experience, that is, the manifestations can be evoked alone. One cardinal characteristic of emotion is inertia of the psychic state with protracted alteration in the organism's reactivity. This prolonged change at times is and at other times is not observed after electrical stimulation. Since an emotion cannot be generated "at the tip of an electrode," it is suggested that the electrode may stimulate a trigger zone, coordinating neurons, or integrating paths which then activate a larger number of brain structures. The functional organization of emotional behavior is analyzed, and models of emotional states are presented.

2/2

USSR

UDC 615.214.32.015.001.57

VAL'IMAN, A. V., and KOZLOVSKAYA, M. M., Department of Pharmacology, 1st Leningrad Medical Institute imeni I. P. Pavlov, Leningrad, USSR

"The Effects of Antidepressants on Neurophysiological Models"

Moscow, Farmakologiya i Toksikologiya, Vol 36, No 2, 1973, pp 139-143

Abstract: The specific activities of 3 tricyclic antidepressants, imipramine (I), pertofrane (II), and doxepin (III) were tested on rabbits and compared with stimulants and tranquilizers. Electrodes were implanted into the medial and lateral zones of the septal region, and the posterior hypothalamus of 52 animals. Stimulation of the medial region of the septal zone elicited depression, lethargy, and inhibition of muscular and sympathetic tonus; in this situation hypothalamic stimulation failed to evoke emotional aggressive-defensive reactions. Stimulation of the lateral septal regions caused a stuporous condition, and stimulation of the periventricular hypothalamic nuclei elicited an aggressive motor reaction. All drugs were administered intravenously. Low doses of I (0.3-3 mg/kg), II (0.3-1 mg/kg), and III (0.05-0.1 mg/kg) abolished the reactions elicited by the stimulation of the medial septal zone. I and II enhanced the effects obtained by stimulation of the lateral septal zones and of the hypothalamus. The administration of III inhibited the effects of lateral septal zone stimulation, and the hyperemotional results of hypothalamic

USSR

VAL'DMAN, A. V. and KOZLOVSKAYA, M. M., Farmakologiya i Toksikologiya, Vol 36, No 2, 1973, pp 139-143

stimulation. Higher doses of I (5-6 mg/kg) and II (2 mg/kg) inhibited hyperemotional and aggressive reactions but, unlike psychodepressants, did not alter proper response to various test stimuli and motivated behavior patterns. Simultaneous septal and hypothalamic stimulations showed that caffeine abolishes inhibitory signals from the septum to the diencephalic structures at a dose of 0.5-20 mg/kg, but did not alter septal or hypothalamic excitability. Phenamine (0.5-2 mg/kg) depressed the threshold for the hypothalamic reaction, but did not abolish septal inhibition. Low doses of central cholinolytics (scopolamine, amizil; 0.05-0.1 mg/kg) enhanced the inhibitory effects of the medial septal zones, but abolished those of the lateral septal zones and depressed reactions elicited by hypothalamic stimulation. The effects of elenium were similar to those of III. The neuroleptics aminazine (2 mg/kg) and haloperidol (0.03-0.5 mg/kg) enhanced the effects obtained through the stimulation of the medial septal zones, depressed the reactions of the lateral septal zones, and decreased the excitability of the hypothalamus. Thus, of the classes of psychotropic agents investigated, the antidepressants I, II, and III at low doses depress the inhibitory influences of the limbic system which are mediated by the septal zone, and concomitantly facilitate hypothalamic integration of incoming emotional information.

2/2

5

USSR UDC 616.981.455-036.21(571.62)

BUSOYEDOVA, N. M., ANTIP'YEVA, O. A., LIPAYEV, V. M., KOZLOVSKAYA, O. L., CHERNYKH, P. A., FEOKISTOV, A. Z., GRIGOROV, V. I., CHIPANIN, V. L., and KHAMAGANOV, S. A., Khabarovsk Antiplague Station

"Characteristics of Natural Foci of Tularemia in Khabarovskiy Kray"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, Apr 71, pp 26-31

Abstract: A study conducted in the southern part of Khabarovskiy Kray indicated that natural foci of tularemia in forested and agricultural areas are different from those found in other parts of the USSR, because Arvicola terrestris and the common vole (Microtus arvalis) are absent, and hares and house mice are not numerous. Muskrats were found at only one focus. In forested regions the principal host is the large-toothed redbacked vole (Clethrionomys rufocanus), while the long-time reservoir and vectors are I. persulcatus and H. concinna ticks. Forest and field mice and the Siberian chipmunk were also infected. In agricultural regions the hosts are the northern redbacked and Far-Eastern vole (Clethrionomys rutilis; Microtus fortis), while D. silvarum and H. concinna ticks constitute the reservoir and vectors. A low epizootic level and still lower epidemic activity were typical for 1/2

USSR

BUSOYEDOVA, N. M., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 48, No 4, Apr 71, pp 26-31

tularemia foci in Khabarovskiy Kray in the vicinity of the Amur River. The low rate of infection of human beings was due to the absence or small numbers of classical hosts (Arvicola terrestris, common vole, and hares) with which human beings may come into contact, the absence of active and widespread epizootics, and the predominance in agricultural areas of a rodent of the secondary host group (field mouse). Of seven cases of tularemia recorded, five were of the bubonic form. In one instance the source of infection was water containing P. tularensis, and in another instance the infection was apparently due to introduction of the agent into an eye by hands soiled with rodent feces. Testing of the population at known tularemia foci with tularin resulted in a positive allergic reaction in 1.2-2.5% of cases. The agglutination reaction was positive in 2.5-5.6%, and the passive hemagglutination reaction in 3.3-9.7% of cases. The data reported were obtained in an investigation conducted during 1956-1968.

2/2

USSR

UDC 669.295:620.186.5

PETROVA, L. A., BABAREKO, A. A., GRANKOVA, L. P., KOZLOVSKAYA, T. M., and SAZONOVA, T. N., Institute of Metallurgy imeni A. A. Baykov

"Recrystallization of β-Alloy of IVT-1 Titanium"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 11, 1972, pp 30-34

Abstract: The ionization method of taking texturograms was used for plotting polar figures. The changing character in annealing of polar figures describes the process of recrystallization. Specimens were cut from a bar forged by broaching in two perpendicular directions at 950°C. The specimens were annealed in air at 400-1200°C with 30 min aging at each temperature. The textures of specimens of different grain size and boundary character in continuous heating up to 700°C are discussed by reference to microstructures and polar figures. Specimens annealed at 600°C showed a considerably changed texture in comparison with the initial texture. This is connected with the beginning recrystallization, which is practically completed at 650°C. Extrusion or forging by a more complex method is recommended for obtaining stable properties of normal forging on two mutually perpendicular surfaces. Two figures, one bibliographic reference.
1/1

USSR UDC 669.295.5:539.376

AGEYEV, N. V., PETROVA, L. A., GREKOV, N. A., GRANKOVA, L. P., KOZLOVSKAYA, T. M., and ARKOVENKO, G. I., Moscow

"Creep of IVT-1, a β-Alloy of Titanium"

Moscow, IAN SSSR, Metally, No 2, Mar-Apr 71, pp 163-167

Abstract: The creep of IVT-1, a β-alloy of titanium (7% Mo, 5.5% Cr, 3% Fe, 3% Al, remainder Ti) was determined at temperatures of 100, 200, 250, and 350°C at stresses of 120, 115, 110, 90, 80, and 75 kg/mm^2 over 1,000 hours and in some cases up to 2,500 hours. The limiting stress causing 0.02% residual deformation of the alloy after 1,000 hours is 105 kg/mm^2 at 200°C and 79 kg/mm^2 at 250°C. The rate of stable creep at these stresses and temperatures is $2 \cdot 10^{-5}$%/hr. The creep tests showed that if two specimens tested under identical conditions show different initial deformation, the specimen with greater initial deformation generally has lower creep than the specimen with less initial deformation. Total deformation increases little with increasing load time at 100-250°C and 120-75 kg/mm^2. Following creep tests, some breakup of β phase grains is observed; migration of grain boundaries and displacement along grain axes (slipping) were noted.

1/1

USSR UDC: 539.385

AGEYEV, N.V., PETROVA, L.A., TERENT'YEV, V.F., CHANTSOVA, L.P. and KOZLOVSKAYA, T.M., Institute of Metallurgy im.ni A. A. Baykov, Academy of Sciences USSR

"Effect of Structure on the Cyclic Strength of IVT1 Titanium Beta-Alloy"

Moscow, Sb. "Ustalost' metallov i splavov", "Nauka" Press, 1971, pp 70-73

Translation: The cyclic strength of IVT1 titanium alloy (8.7% Mo, 4.9% Cr, 2.8% Fe, 3.1% Al) has been investigated under alternating loads following heat treatments under various conditions. The structure of the alloy was examined as a function of these conditions under both light and electron microscopes. The highest fatigue limit of 5.3 kg/mm^2 was exhibited by an alloy heat treated under the following specifications: hardening at 800C for 1 hr., water quenching, aging for 15 hrs. at 550C, and cooling in open air. The alloy treated under these conditions is characterized by homogeneous decay of the β-solid solution. (3 illustrations, 6 bibliographic references; summary).

1/1

USSR

UDC 669.295.5:539.376

AGEYEV, N. V., PETROVA, L. A., GREKOV, N. A., GRANKOVA, L. P., KOZLOVSKAYA, T. M., and ARKOVENKO, G. I., Moscow

"Creep of IVT-1, a β-Alloy of Titanium"

Moscow, IAN SSSR, Metally, No 2, Mar-Apr 71, pp 163-167

Abstract: The creep of IVT-1, a β-alloy of titanium (7% Mo, 5.5% Cr, 3% Fe, 3% Al remainder Ti) was determined at temperatures of 100, 200, 250 and 350°C at stresses of 120, 115, 110, 90, 80 and 75 kg/mm^2 over 1,000 hours and in some cases up to 2,500 hours. The limiting stress causing 0.02% residual deformation of the alloy after 1,000 hours is 105 kg/mm^2 at 200°C and 79 kg/mm^2 at 250°C. The rate of stable creep at these stresses and temperatures is $2 \cdot 10^{-5}$%/hr. The creep tests showed that if two specimens tested under identical conditions show different initial deformation, the specimen with greater initial deformation generally has lower creep than the specimen with less initial deformation. Total deformation increases little with increasing load time at 100-250°C and 120-75 kg/mm^2. Following creep tests, some breakup of β phase grains is observed; migration of grain boundaries and displacement along grain axes (slipping) were noted.

1/1

USSR

UDC 621.396.6-182.48

YEFREMENKO, G., KOZLOVSKAYA, V.

"Mass-Spectrometric Studies of Organometal Compounds used in Microelectronics"

Tr. Mosk. in-ta elektron. mashinostr. (Works of the Moscow Institute of Electronic Machine Building), 1972, vyp. 20, pp 108-145 (from RZh-Radiotekhnika, No 7, Jul 72, Abstract No 7V304)

Translation: A study was made of the mass spectra of certain classes of compounds, the mechanism of their decomposition and the composition of the films obtained. Alkyl and aryl metal compounds, alkoxyl compounds, cyclopentadienyl complexes of metals, bis-aromatic π-complexes of metals, metal carbonyls and metal acetylacetonates were investigated. There are 96 entries in the bibliography.

1/1

USSR

UDC 632.95

OVSYANKO, E. P., and KOZLOVSKAYA, V. I.

"Effect of Certain Organophosphorus Insecticides on the Sorption of Neutral Red by the Ventral Ganglionic Chain of Cabbage Looper Caterpillars"

Zap. Leningr. s.-kh. in-ta (Notes of Leningrad Agricultural Institute), 1972, 180, pp 44-48 (from RZh-Khimiya, No 14, 25 Jul 72, Abstract No 14N442 by T. A. Belyayeva)

Translation: The investigation consists of the detection, by the vital-staining method, of changes in the ventral ganglionic chain of cabbage looper caterpillars when poisoned by Rogor, phosalone, Cidial and Gardona. Intensification of the sorption of Neutral Red is observed in poisoned caterpillars.

1/1

USSR

UDC 632.95

BERIM, N. G., GAVRILOVA, V. P., KOZLOVSKAYA, V. I., and RADISHCHEVA, D. F.

"On Combined Employment of Rogor and Benzimidazole or 5-Aminobenzimidazole Against Cabbage Pests"

Zap. Leningr. s.-kh. in-ta (Notes of Leningrad Agricultural Institute), 1972, 180, pp 20-27 (from RZh-Khimiya, No 14, 25 Jul 72, Abstract No 14N446 by T. A. Belyayeva)

Translation: Spraying cabbages with an 0.3% solution of Rogor during the mass pedogenesis period cuts down the numbers of spring cabbage fly by 87%, but adversely affects the plants' physiological condition: ascorbic acid content declines and photosynthetic activity lessens. Under the influence of benzimidazole (I) and 5-NH_2-I there is an increase in the resistance to Rogor both of the plant and of the insect pest. The optimum variant is simultaneous application of Rogor and I or 5-NH_2-I. A significant rise in the resistance of insects was found when plants were pretreated with benzimidazole solutions and subsequently sprayed with Rogor.

1/1

USSR UDC 669.14.018.258.8:669-973

KAGAN, YE. S., POTAK, YA. M., SACHKOV, V. V., KOZLOVSKAYA, V. I., GRIKUROV, G. N., All-Union Scientific Research Institute of Aviation Materials

"Stainless Steel of Increased Strength for Cryogenic Temperatures"

Moscow, Metallovedeniye, No 10, 1971, pp 18-20

Abstract: The mechanical properties of the 000Kh11N10M2T (EP678) hardened steel and its welded joints were experimentally investigated at temperatures up to -253°C. Standard steel specimens and specimens with cracks showed a high ductility and low notch sensitivity. With regard to mechanical properties, the investigated steel at -253°C is not inferior to the widely used 30KhGSNA steel at 20°C. The relatively slow cooling in soldering from 980 to 700°C has little effect on the steel plasticity, due to the negligible change of solubility of carbides in this temperature interval. Welded steel joints, without and with additives, possess high plasticity and show a completely ductile fracture from tangential stresses in tests up to -253°C. 000Kh11N10M2T steel is a promising material for cryogenic technology due to its

1/2

USSR

KAGAN, YE. S., et al, Metallovedeniye, No 10, 1971, pp 18-20

high yield point (~90 kg/mm^2) at 20°C and its applicability up to -253°C. 2 illustrations, 1 table, 5 bibliographic references

2/2

USSR

UDC 632.951

KOZLOVSKAYA, V. I., Leningrad Agricultural Institute

"Toxicity of Phozalone, Tsidial, and Gardone to the Cabbage Borer Caterpillar"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 9, No 4 (90), 1971, p 19

Abstract: Insecticides were used either in form of impregnated sandwiches or were applied directly to the insects by means of a calibrated loop. The most toxic compound was tsidial by either route of administration. Phozalone and gardone were more active by the oral than by the topical route.

1/1

USSR UDC 539.23

KOZLOVSKAYA, V.M., KHVOSTIKOVA, V.D., VELEZHEV, D.K., YEFREMENKO, G.A.

"Structure And Composition Of Films Prepared By Electron Beam Decomposition Of Molybdenum Hexacarbonyl"

Tr. Mosk. in-ta elektron. mashinostr. (Works Of The Moscow Institute Of Electrical Machine Building), 1972, Issue 20, pp 100-107 (from RZh:Elektronika i yeye primeneniye, No 7, July 1972, Abstract No 7A256)

Translation: Deposition of films was performed by electron-beam decomposition of molybdenum hexacarbonyl in Type ELUPD equipment. Electronic microscope and electron diffraction studies were conducted as well as mass-spectrum analysis of films with an impurity, and the presence of molybdenum carbide in the films was established. M.V.

1/1

USSR

UDC 621.791.754

(3)

RABKIN, D. M., Doctor of Technical Sciences, ISHCHENKO, A. YA., Candidate of Technical Sciences, IGNAT'YEV, V. G., Candidate of Technical Sciences, LOZOVSKAYA, A. V., Candidate of Technical Sciences, SAYENKO, M. I., Engineer, Electric Welding Institute imeni Ye. O. Paton of the Academy of Sciences UkrSSR, KOZLOVSKAYA, V. P., Candidate of Technical Sciences, and ICDA, M. V., [expansion unknown]

"Influence of Admixtures on the Mechanical Properties of Joints of 1201 Aluminum Alloy"

Kiev, Avtomaticheskaya Svarka, No 7(244), Jul 73, pp 53-55

Abstract: Mechanical test results of joints of aluminum alloys, 1201 type (0.15% Fe, 0.12% Si) and 01203 type (0.003% Fe, 0.02% Si), are discussed by reference to curves of the effect of temperature on the strength of the initial metal and the joint and of the effect on the relative elongation of the initial metal. The decrease of the total Fe and Al content to 0.06% in alloys of Al-Cu type improves the mechanical properties of the initial metal and of welded joints at normal temperature. The relative elongation, impact ductility, and the angle of bend of the initial metal and of joints of 01203 alloy are ~ 1.5 times higher than on 1201 alloy. The mechanical properties of both alloys

1/2

USSR

(3)

RABKIN, D. M., et al., Avtomaticheskaya Svarka, No 7(244), Jul 73, pp 53-55

improve with decreasing temperature. At liquid He temperature, the resistance to rupture of the initial metal and of joints of 01203 alloy are somewhat higher than on 1201 alloy and the relative elongation of the initial metal is two times higher. Three figures, one table, four bibliographic references.

2/2

USSR

UDC: 611.774.3

AFANAS'YEVA, A. K., KOZLOVSKAYA, V. P., CHALIKOV, V. V.

"Study of the Structure and Properties of Drilling Pipe of Aluminum Alloys Produced by Rolling"

Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 3, 1975, pp 120-126.

Abstract: Results are presented from a study of the influence of the temperature and deformation mode of the rolling process on the structure and properties of pipe of various aluminum alloys with periodically changing cross section. Small diameter pipe was studied, produced by rolling by hot-pressed blank. Pipe made of aluminum alloys D16 and 01953 by rolling, a new, highly productive method, satisfies the requirements of the technical conditions for pressed drilling pipe. The rolled pipes have the following advantages over pressed pipe: lower anisotropy of mechanical properties, double the endurance limit of the transition zone with sign-changing load, and higher corrosion-wear resistance. Rolled drilling pipe should be used in prospecting drilling, where the influence of corrosive media is not a decisive influence due to the brief cycle of use.

1/1

USSR UDC 611.82-001.12

KOZLOVSKIY, A. P., Chair of Normal Anatomy, Academy of Military Medicine imeni S. M. Kirov

"Effect of Accelerations on Spinal Ganglia Neurons"

Leningrad, Arkhiv Anatomii, Gistologii i Embriologii, No 5, 1972, pp 55-59

Abstract: Cats were subjected once to accelerations of 10 G in a head-pelvis direction. In one series of experiments, the animals were exposed to accelerations with a relatively high gradient of increase and decrease, while in a second series of experiments, the gradient was low but the intensity of the accelerations remained high. Histological examination of spinal ganglia neurons obtained from the 7th lumber and 1st sacral segments revealed the presence of pericellular and perinuclear edema, marked vacuolation, chromatolysis, in some cases hyperchromatism, and contraction of the nuclei. Besides irreversible changes in the neurons, there were also reversible ones as well as completely unaltered neurons. The number of changes was greater in the second series of experiments, which suggests that the continuity of accelerations and their intensity rather than the gradient of increase and decrease in intensity are the most important aspect of the stress. The observed changes are considered the result of the action of gravity directly on the neurons rather than the secondary effect of hemodynamic disturbances.

1/1

USSR UDC 621.373:535

ARISTOV, A. V., VEMBER, T. M., KOZLOVSKIY, D. A., CHERKASOV, A. S.

"Photochemical Method of Determining the Luminous Pumping Energy Absorbed by Rhodamine Dyes Under Conditions of Stimulated Emission"

Leningrad, Optika i Spektroskopiya, Vol 33, No 5, Nov 72, pp 961-965

Abstract: A photochemical method is proposed for determining the quantum light sum absorbed by a rhodamine 6G solution with flash-tube stimulation of emission. The method is based on sensitized photo-oxidation of anthracene compounds in nondeoxygenated solutions by excited molecules of a "generating" organic phosphor. The proposed method is used to determine the limiting coefficient of conversion of optical pumping energy to stimulated emission by ethanol solutions of rhodamine 6G with flash-tube excitation.

1/1

Acc. Nr: AP0046225 Abstracting Service: STAR Ref. Code: 72R0077
INTERNAT. AEROSPACE ABST.

A70-23173 Use of a monopulse laser for photographing models in ballistic studies (Ispol'zovanie monoimpul'snogo opticheskogo kvantovogo generatora dlia fotografirovaniia modelei pri ballisticheskikh issledovaniiakh). A. N. Berezkin, Iu. A. Dunaev, Iu. E. Kamach, E. N. Kozlovskii, and V. M. Ovchinnikov (Akademiia Nauk SSSR, Fiziko-Tekhnicheskii Institut, Leningrad, USSR). *Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii*, vol. 15, Jan.-Feb. 1970, p. 21-25. In Russian.

Study of the possibilities of employing lasers to illuminate moving objects during shadow photography. Diagrams of the experimental arrangement are presented, and a description is given of the laser employed in the experiment, the telescopic system used to shape the beam illuminating the moving body, and the system for synchronizing the illumination pulse with the moment of arrival of the object under investigation at a given point in the photography field. Photographs are presented in which the boundaries of the flying bodies, the shock waves, and inhomogeneities in the wake of a body can be clearly seen. The possibility of using a monopulse ruby laser as an illumination source when photographing moving models in aerobaillistic studies is demonstrated. A.B.K.

1/1

REEL/FRAME
19781341

AA0051848 KOZLOVSKIY G. V. 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

239597 INDUCTIVE LEVEL METER where a float can move freely along the inductive coils indicating its position corresponding to the measured level. The float has been improved, it has two flanges which make it possible to obtain a parallel reading from two independent coils.

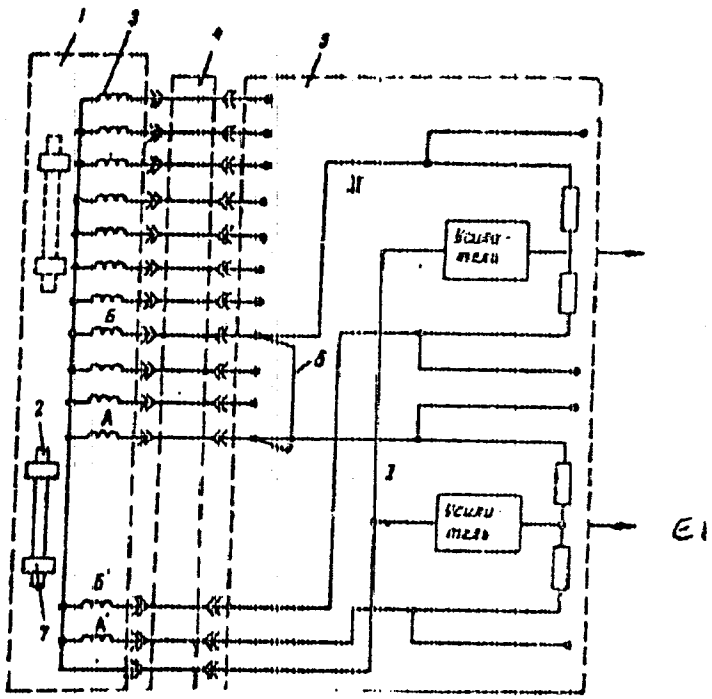
12.12.66 as 1119046/26-10. A.S. ABRAMOV et al. (28.7.69) Bul 11/18.3.69. Class 42e. Int.Cl.G 01f.

AUTHORS: Abramov, A. S.; Zotov, S. V.; Maslov, G. S.; Vaspin, B.A.; Shorin, N. I.; Kornyushin, P. M.; Mirskov, B. I.; Chistyakov, N. N.; Mosyakov, V. A.; Kozlovskiy, G. V.; Chichigin, I. B.; Batov, V. A.; Golovachev, V. T.; Lyakhterov, M. N.; Kobelev, Yu. M.

1/2

19820276

AA0051848



19820277

2/2

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--MARINES, ON THE SHORES OF THE BLACK SEA -U-

AUTHOR--KOZLOVSKIY, I.

COUNTRY OF INFO--USSR

SOURCE--TURKMENSKAYA ISKRA, APRIL 26, 1970, P 4, COLS 1-4

DATE PUBLISHED--26APR70

SUBJECT AREAS--MILITARY SCIENCES

TOPIC TAGS--WAR GAMES, PHOTOGRAPH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/0548 STEP NO--UR/9026/70/000/000/0004/0004

CIRC ACCESSION NO--AN0122669

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AN0122669

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ONE OF THE LARGEST OPERATIONS DURING "OKEAN" WAR GAMES IS DESCRIBED. PARTICIPATING WAS THE AIR FORCE, SURFACE SHIPS, AND THE BLACK FLEET MARINES. TANKS AND ARMORED PERSONNEL CARRIERS PARTICIPATED IN A LANDING OPERATION. A PHOTO OF A ROCKET MOUNTED ON ITS LAUNCHING PLATFORM AT THE BOW OF A SURFACE SHIP IS ALSO INCLUDED.

UNCLASSIFIED

USSR

UDC: 621.793.6

SINTSOVA, I. T., and KOZLOVSKIY, I. V., Leningrad Technological Institute imeni Lensovet

"Mechanical Properties and Corrosion Resistance of Titanium and Zirconium Carbonitride Coatings on Steel"

Moscow, Zashchita Metallov, Vol 6, No 5, Sep-Oct 70, pp 610-621

Abstract: Data from earlier research indicate that coatings produced by diffusion saturation of 30KhGSA and 30KhGSNA steels with titanium and zirconium followed by carbidizing treatment and nitriding of the surface layer increase the resistance of the surface layer of the metal against wear and corrosion and decrease the tendency of parts to sticking and weldability during service. Simultaneous saturation of titanium- and zirconium-metallized steels with carbon and nitrogen was accomplished in an NPV-3 furnace in a pure nitrogen atmosphere at 880°C (optimum temperature). The results of this study are summarized in figures illustrating the dependence of tensile strength on temperature (holding for 8 hrs.) and the type of thermochemical treatment, the dependence of

1/2

USSR

SINTSOVA, I. T., et al, Zashchita Metallov, vol 6, no 5, Sep-Oct 70, pp 616-621

tensile strength on holding time (t=880°C) and the type of thermochemical treatment, tensile strength, and Rockwell hardness obtained after various types of surface treatment, changes in microhardness with thickness of diffusion layers, and weight losses of specimens in wear resistant tests. It is shown that the wear resistance of steel test specimens subjected to the above thermochemical treatment increases. 30KhGSA steel is less resistant to abrasion than 30KhGSNA. Titanium-coated specimens have better resistance to wear than zirconium-coated specimens. Carbonitriding reduces scale formation and minimizes wear during initial testing. The corrosion resistance of the steels is increased and the high mechanical strength typical of these steels is maintained.

1/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--PRODUCTION OF REFRACTORIES -U-

AUTHOR-(03)-ANDREYEVA, N.A., GROPYANOV, V.M., KOZLOVSKIY, L.V.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 267,434

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

DATE PUBLISHED--01APR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL PATENT, ROASTING FURNACE, VACUUM TECHNIQUE, ZIRCONIUM OXIDE, REFRACTORY PRODUCT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1781 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132047

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AA0132047
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REFRACTORIES WERE PRODUCED BY MOLDING ZRO SUB2 INTERMEDIATES, ROASTING THEM IN VACUO, AND COOLING THEM. TO PRESERVE THE HIGH PURITY AND O. OF THE REFRACTORIES, ROASTING TOOK PLACE IN A VACUUM GREATER THAN OR EQUAL TO 5 TIMES 10 PRIMENEGATIVE4 TORR AT GREATER THAN OR EQUAL TO 2500DEGREESK FOR GREATER THAN OR EQUAL TO 1 HR AND COOLING TOOK PLACE AT A RATE OF 800-5000EGREES-MIN. FACILITY: LENSOVET TECHNOLOGICAL INSTITUTE, LENINGRAD AND ALL UNION INSTITUTE OF REFRACTORY MATERIALS.

UNCLASSIFIED

USSR

UDC 621.793.6

SINITSOVA, I. T., and KOZLOVSKIY, L. V.

"Diffusion Coatings on Steel Formed by Titanium Carbonitride and Zirconium Carbonitride"

Moscow, Zashchita Metallov, Vol 6, No 3, May-Jun 70, pp 367-371

Abstract: A discussion is presented of an experiment in diffusion saturation of 20 KhGSA and 3AKhGSNA steel performed in metallic powders of technical titanium and zirconium mixed with alumina in a 2:1 ratio. The MPV-3 furnace was used at a temperature of 900-1150° and an argon pressure of 2.4 atmospheres. Within the indicated limits the increase in weight of the samples was proportional to the temperature and holding time. The best results were obtained at 1150° with 5 hours' holding. The increase in weight during zirconium saturation was on the average approximately twice as much as during titanium saturation. This is explained by the fact that zirconium is heavier. Also, titanium increases the diffusion rate of iron. Therefore, during titanium saturation of steel samples, iron losses can increase as a result of diffusion of it from the steel into the packing material. Samples of 30KhGSA and 30KhGSNA metal-plated in advance with titanium and zirconium were saturated with carbon in the same furnace and under the same argon pressure in molybdenum containers filled with acetylene black. The temperature was in the 700-

1/2

USSR

SINITSYA, I. T., and KOZLOVSKIY, L. V., Zashchita Metallov, Vol 6, No 3, May-Jun 70, pp 367-371

950° range, and holding lasted from 4 to 12 hours. Microphotographs of the diffusion coatings are presented, and the results of the x-ray micrographic study of titanium carbonitride coating on 30KhGSA steel are tabulated. The x-ray micrographic results indicate that in surface layers of titanium-plated and subsequently carbonitrided samples the intermetallic compounds Fe_2Ti and α-Fe are formed, and there are also a large number of lines obviously belonging to solid solutions of carbon and nitrogen in titanium and iron. From the distribution curves of Zr and Fe in surface layers of 30KhGSA steel obtained using an electron microprobe, the maximum amount of diffusing element is in the outer layers of the coating, and on going away from the surface its concentration decreases monotonically. The iron concentration in the coating increases on going away from the surface. The zirconium concentration in the surface layer can vary from 5 to 45%, and that of titanium, from 14 to 54%. This scattering depends on the differences in structure of the samples and at what point of the surface (grain, grain boundary, and so on) the given measurement was taken. The mechanical properties and corrosion resistance of the described coatings will be discussed in a subsequent article.

2/2

Acc. Nr: AT0048313 Abstracting Service: CHEMICAL ABST. 5170 Ref. Code: UR0020

95994a Effect of the supporting electrolyte on the formation of finely divided precipitates during the reduction of metals at a mercury electrode. Geinrikhs, K. Ya.; Ilabkin, G. N.; Kuzlovskii, M. T.; Gladyshev, V. P. (Inst. Khim. Nauk, Alma-Ata, USSR). *Dokl. Akad. Nauk SSSR* 1970, 190(1), 135–7 [Phys Chem] (Russ). The effect of the supporting electrolyte on the electrode position of finely divided Cd onto a still Hg electrode was studied by measuring polarization (η) in ClO_4^- solns. of different concn. contg. 0.5*N* Cd^{2+}. At pH 6.5, the η values were independent of the nature of the anions (SO_4^{2-}, Cl^-, or ClO_4^-). In each case, at the limiting c.d., the finely divided Cd was formed; vibrating the electrode caused rapid diss'oln. of the Cd into the Hg. Increasing the $NaClO_4$ concn. increased the η and decreased the limiting c.d. At concn. >0.5*N* $NaClO_4$, the voltage oscillated and Na amalgam was formed during these oscillations. At higher c.ds., Cd was chem. ppted. by the amalgam to form the powd. Cd. The ability to form powd. Cd decreased from $Li^+ > Na^+ > K^+ > Cs^+$. The limiting c.d. for Cd redn. was not a function of pH. The reason for the finely divided deposits was not the passivating action of OH^-.

S. G. Melbuhr

REEL/FRAME
19800015

USSR

UDC 519.21

KOZLOVSKIY, M. Z.

"Evaluation of Accuracy of Approximate Stochastic Solutions of Nonlinear Differential Equations"

Nelineyn. i optimal'n. sistemy - Sbornik (Nonlinear and Optimal Systems - Collection of Works), Moscow, "Nauka," 1971, pp 235-245, Discussion, p 245 (from Referativnyy Zhurnal - Matematika, No 8, Aug 71, Abstract No 8V130)

Translation: It is required to find the approximate solution of a nonlinear differential equation whose right side represents a random process. Linearization of a nonlinear function of the dependent variable of the equation is carried out. Formulas are derived for the mathematical expectation of the dispersion of the error in the solution. It is proven that under certain conditions an exact solution can be obtained from an approximate solution by the iterative method. (Author's Abstract)

1/1

USSR

UDC 518:517.392

KOZLOVSKIY, N. YA., Belorussian Institute for the Mechanization of Agriculture

"Evaluation of the Residual Term of Chebyshev's Formula"

Minsk, Doklady Akademii Nauk BSSR, Vol 15, No 11, Nov 71, pp 965-967

Abstract: Chebyshev formulated the following problem: For a given n, select the coefficient A and nodes $-1 \leq x_1 < x_2 < \ldots < x_n \leq 1$ so that the formula

$$\int_{-1}^{1} f(x)\,dx \approx A \sum_{i=1}^{n} f(x_i) \qquad (1)$$

is exact each time f(x) is a polynomial of degree no higher than n. This problem was solved by Chebyshev for n = 1, 2, ..., 7. S. N. BERNSHTEYN

1/2

USSR

KOZLOVSKIY, N. YA., Doklady Akademii Nauk BSSR, Vol 15, No 11, Nov 71, pp 956-967

made a detailed study of Chebyshev's problem and established that, given $n > 9$, Chebyshev's problem is not solvable. Following I. S. BEREZIN and N. P. ZHIDKOV, the author considers the class of functions C having on segment $[-1,1]$ continuous derivatives up to the order $m + 1$ inclusive, where

$$m = \begin{cases} n \text{ if } n = 2k+1 \\ n+1 \text{ if } n = 2k. \end{cases}$$

A refined expression is found for the residual term $R_n(f)$ of Chebyshev's formula in class C.

2/2

EAST GERMANY / SOVIET UNION

BRODER, D. L., GUREEV, V. I., and KOZLOVSKII, S. A., Institute for Physics and Power Engineering, G. Obninsk, Kaluzhskaya Oblast, Obninsk, USSR.

"On the Passage of Gamma Rays Through Heterogeneous Media"

East Berlin, Kernenergie, Vol 14, No 4, Apr 1971, pp 121-124.

Abstract: [Russian article][Authors' English summary, modified] Calculations of gamma rays flowing through heterogeneous media imply knowledge of effective absorption coefficients and buildup factors for all types of shielding. ^{137}Cs and ^{60}Co gamma-ray attenuation functions were studied experimentally in water shields containing insertions of variable-diameter rods. The spacing between rods was varied also. Semiempirical relations were proposed on the basis of the gamma-ray doses measured. These relations are useful for calculating the topography of radiation fields in the case of point or line sources. Eight references, including 1 German, 1 Western, and 6 Russian. (Manuscript received 26 Oct 1970).
1/1

USSR

UDC 621.039.524.034.3

NESTERENKO, V. B., LOMASHEV, B. I., VERZHINSKAYA A. E., KOVLOVSKIY, V. G., SAKOVICH, A. T.

"First Experience in Realizing Thermal Cycles in a Dissociating Gas $N_2O_4 \rightleftarrows 2NO_2 \rightleftarrows 2NO + O_2$"

Dissotsiiruyushch. gazy kak teplonositeli i rab. tela energ. ustanovok -- V sb. (Dissociating Gases as Heat Transfer Agents and the Working Medium of Power Plants -- Collection of Works), Minsk, Nauka i Tekhn. Press, 1970, pp 95-104 (from RZh-Elektrotekhnika i Energetika, No 5, May 1971, Abstract No 5V183)

Translation: The experimental testing units (the thermal D-50 and the power Vulkan) and the experience accumulated during operation of them in a dissociating medium $N_2O_4 \rightleftarrows 2NO_2 \rightleftarrows 2NO + O_2$ are presented for operation by a closed gas-liquid cycle scheme with the following parameters: 1) p = 10-60 absolute atmospheres, T = 25-600° C; 2) p = 3-15 absolute atmospheres, T = 25-500° C. The first operating experience in N_2O_4 confirmed the reversibility of the chemical reaction of dissociation of the system $N_2O_4 \rightleftarrows 2NO_2 \rightleftarrows 2NO + O_2$. Methods of measuring all the necessary values -- temperature, pressure, flow rate and so on -- are developed. This method of operation permits an approach to the

1/2

USSR

NESTERENKO, V. B. et al., Dissotsiiruyushchiy gazy kak teplonositeli i rab. tela energ. ustanovok, Minsk, Nauka i Tekhn. Press, 1970, pp 95-104

operation of more powerful heat and power plants. There are 2 illustrations and 1 table.

2/2

USSR

UDC 539.4:629.7.02

KOZLOVSKIY, V. I.

"Effective Height Method for Calculating Cross Sections of Beams and Wings"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1971, No. 54, pp 55-68 (from RZh-Mekhanika, No 3, Mar 72, Abstract No 3V1141)

Translation: Formulas were obtained for selecting the cross sections of booms of longerons of the caisson type on the basis of given values of bending moments and permissible stresses. Several assumptions were made: the cross sections of the booms are not reducible in terms of stresses or in terms of intersecting modules, the centers of rigidity of the booms coincide with the centers of gravity of their areas, the effect of the walls is not taken into account, the plane of the bend of the caisson coincides with the plane of one of the major central axes, the contour of the caisson is close to rectangular, and its booms are slightly curved and almost symmetric. Computational graphs are given in relative coordinates for selecting the dimensions of booms and an auxiliary graph is given for determining the best position x^* along the cord of the rear wall of the D-shaped longeron inscribed into the wing profile, supporting the known rule that $x^* \sim 0.6\ v$ (where v is the cord of the profile and x is the coordinate of the wall relative to the nose of the profile). S. Ya. Makarov.

1/1

USSR

UDC 537.226.33

KOZLOVSKIY, V. Kh.

"Nonstationary Polarization Based on a Model of an Anharmonic Vibrator"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 9, Sep 71, pp 1779-1782

Abstract: A phenomenological equation is proposed for antiferroelectric materials $E = \alpha(\Theta - T)P - \beta(\Theta) - T)P^3 + \gamma P^5 (T < \Theta)$, the isotherms of which reflect the double hysteresis loops contracting to the critical point. The author finds the spinodal and the line of the supercritical transitions. He constructs the diagram (E-T) which indicates the existence of two critical points arranged symmetrically with respect to the T-axis. He establishes the existence of a critical point on the diagram (T-S) and confirms that the geometric structure of the phase diagram is the criterion for the electrical characteristics of the dielectric materials. Both models studied by the author possess analogous formal characteristics; however, they differ as physical models. Boguslavskiy's potential curve is studied as belonging to the ion adsorbed on the surface of the solid, and possibly, therefore, the first model belongs to macroscopically heterogeneous

1/2

USSR

KOZLOVSKIY, V. Kh., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 9, Sep 71, pp 1779-1782

structures with inclusions of the solid phase. The second of the models describes the state of the ion in a uniformly friable -- amorphous, for example -- structure. The article contains 2 illustrations and 5 bibliographic entries.

2/2

1/2 009 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--DYNAMICS OF A CHANGE IN GRANULOMETRIC COMPOSITION DURING THE DEHYDRATION OF SOLUTIONS IN A FLUIDIZED BED -U-

AUTHOR-(03)-NALIMOV, S.P., KAGANOVICH, YU.YA., KOZLOVSKIY, V.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGARD) 1970, 43(3), 581-6

DATE PUBLISHED--------70

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

TOPIC TAGS--CHEMICAL DRYING, PARTICLE DISTRIBUTION, PARTICLE SIZE, FLUIDIZED BED, AQUEOUS SOLUTION, ZINC COMPOUND, SULFATE, SOLUTION CONCENTRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1925 STEP NO--UR/0080/70/043/003/0581/0586

CIRC ACCESSION NO--AP0108254

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0108254

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PARTICLE SIZE DISTRIBUTION STUDIES WERE CONDUCTED ON ZNSO SUB4 POWDERS PRODUCED BY DEWATERING (DRYING) OF AQ. SOLNS. CONTG. 12-25PERCENT ZNSO SUB4 IN FLUIDIZED BEDS, 360-560 MM DEEP, AT TEMPS. OF 210 AND 260DEGREES AND WATER REMOVAL RATES OF 1100 AND 1600 KG-M PRINE2 HR, RESP. DRYING AT 260DEGREES YIELDED 3.44-4.0 MM PARTICLES WITH A LARGE FRACTION OF 1.4 AND A SMALLER FRACTION OF 2.5 MM DIAM. PARTICLES; 210DEGREES DRYING YIELDED LARGER PARTICLES IN LARGER FRACTIONS. LOW RESIDENCE TIMES (LOW BED HEIGHTS) YIELDED LARGE FRACTIONS OF 2.5 MM DIAM. PARTICLES AND SMALL AMTS. OF 1.4 MM DIAM PARTICLES. AT LONG RESIDENCE TIMES (560 MM DEEP BEDS) THE NO. OF SMALL 1.4 MM DIAM. PARTICLES PRODUCED WAS 3.5 TIMES LARGER THAN IN 360 MM DEEP BEDS. REDUCING THE ZNSO SUB4 CONCN. FROM 25 TO 21PERCENT INCREASED THE RESIDENCE TIME AND PRODUCED A 4 FOLD INCREASE IN THE YIELD OF SMALL PARTICLES.

UNCLASSIFIED

USSR

UDC: 621.375.8

KAMACH, Yu. E., KOZLOVSKIY, [redacted], OVCHINNIKOV, V. M.

"A Laser"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 17, Jun 72, Author's Certificate No 240136, Division H, filed 16 Oct 67, published 24 May 72, p 250

Translation: This Author's Certificate introduces a laser which contains an active element, an optical cavity, and a polarization element which gives two orthogonally polarized beams at the output. As a distinguishing feature of the patent, provision is made for controlling the polarization of the output emission at different stages of development of the monopulse, and for increasing the power of the output emission. Located in the optical cavity of the laser between the polarization and reflection elements is a polarization element which converts two incident orthogonally polarized waveforms to nonpolarized emission, and connected between the polarization elements in the direction of beam travel are two electro-optical controlling elements.

1/1

USSR

UDC: 621.375.8

KAMACH, Yu. E., KOZLOVSKIY, Ye. N., OVCHINNIKOV, V. M., SOLOMATNIKOVA, G. M.

"An Electro-Optical Reflection Gate for Q-Switching a Laser Cavity"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 17, Jun 72, Author's Certificate No 270920, Division H, Filed 16 Feb 68, published 24 May 72, p 250

Translation: This Author's Certificate introduces an electro-optical reflection gate for Q-switching a laser cavity. The gate is made from an optically uniaxial crystal in the form of a parallelepiped with annular electrodes, the edges being parallel to the optical Z axis, and with a base inclined to the optical axis of the crystal at an angle equal to or greater than the angle of total internal reflection. A reflective coating is applied to part of the lateral face opposite the inclined base. As a distinguishing feature of the patent, the gate is designed for use in lasers with unpolarized emission. The other base of the crystal is inclined to its optical axis at an angle equal to or greater than the angle of total internal reflection, and is located in a plane which is mutually perpendicular with respect to the first base.

1/1

USSR

UDC: 621.375.8

KAMACH, Yu. E., KOZLOVSKIY, Ye. N., OVCHINNIKOV, V. M., SOLOMATNIKOVA, G. M.

"An Electro-Optical Reflection Gate for Q-Switching a Laser Cavity With Polarized Emission"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 17, Jun 72, Author's Certificate No 273023, Division H, Filed 7 Feb 68, published 24 May 72, p 250

Translation: This Author's Certificate introduces: 1. An electro-optical reflection gate for Q-switching a laser cavity with polarized emission. The gate is made from an optically uniaxial crystal in the form of a parallelepiped with annular parallel electrodes on the ends of the crystal. The edges of the crystal are perpendicular to one of the bases and parallel to the Z axis. As a distinguishing feature of the patent, in order to reduce losses of light, simplify design, improve reliability and increase stability, the other base of the crystal is made in the form of at least one reflecting face which is inclined to the optical axis of the crystal at an angle equal to or greater than the angle of total internal reflection. 2. A modification of this gate in which a reflective coating is applied to part of the lateral face opposite the inclined base and bounded by the electrode.

1/1

Optical

USSR

UDC 621.378.325

ZHARKOV, A. P., KAMACH, YU. E., KOZLOVSKIY, YE. N., LYUBAVSKIY, YU. V., OVCHINNIKOV, V. M.

"The OGM-20 Monopulse Laser"

Leningrad, Optiko-mekhanicheskaya Promyshlennost', No 9, Sep 70, pp 30-34

Abstract: The authors describe the circuits and give the principal characteristics of a ruby monopulse laser in which the Q of the resonator is modulated by use of the linear electrooptic effect in potassium dihydrophosphate crystals. The OGM-20 is the first industrial model of a monopulse laser designed for jobs requiring brief high-power light pulses. The unit can be used to study the interaction between radiation and matter both in microvolumes with the use of special focusing lenses, and on the macroscopic scale in optically transparent media with the use of a telescopic system. An IFP-800 xenon tube is used for pumping. The instrument emits on a wavelength of 649.3 μ with a prf of 1 Hz, pulse emission power is 2.10⁷ watts, the duration of a

1/2

USSR

ZHARKOV, A. P., et al, Optiko-mekhanicheskaya Promyshlennost', No 9, Sep 70, pp 30-34

pulse at one-half maximum intensity is 2.10^{-8} second, the angle of beam divergence at one-half maximum intensity without the telescope is 10', the laser head itself measures 140 x 840 x 440 mm, and the power supply and control unit measures 523 x 530 x 985 mm. The instrument is water-cooled and is designed for operation in a temperature range of 5-35°C at a relative humidity of less than 90 percent.

2/2

Lasers and Masers

USSR

UDC: 621.375.029.67

ARKAD'YEV, D. I., LAPACH, Yu. E., KOZLOVSKIY, Ye. N., CHUHNIKOV, V. N., and SHEMBUROV, V. A.

"Monopulse Ruby and Neodymium-Glass Laser"

Moscow, Radiotekhnika i Elektronika, Vol. 15, No. 3, 1970, pp 523-528

Abstract: This article describes a laser designed by the authors to correct defects in an earlier laser developed by some of the men named above and described in the Russian Journal of Applied Spectroscopy ("Laser with Neodymium Glass Electro-Optical Q Modulator," 1967, Vol. 7, No. 2, p. 269). This earlier laser used a half-wave electro-optical gate with a KDP crystal between crossed polarized prisms of Iceland spar. The presence of a second polarizer in the laser introduced additional absorption and dispersion losses in the Iceland spar, and the half-wave voltage for controlling the gate for neodymium glass was as much as 18-20 kv. The new laser uses ruby and neodymium glass

1/2

USSR

ARKAD'YEV, D. I., et al, Radiotekhnika i Elektronika, Vol 15, No 3, 1970, pp 523-528

Abstract:

as well as a quarter-wave electro-optical gate. A diagram of the new type of laser is shown. It consists of a special prism for full internal reflection, the electro-optical crystal polarized by a Glan prism, the ruby with sapphire ends, and stopping plates. Curves for the device giving the output energy as a function of the delay in application of the voltage to the gate for the ruby and the neodymium glass are shown; there are also curves for the output energy as a function of the voltage applied to the gate and of the pumping energy. The authors express their gratitude to A. M. Prokhorov for his valuable comments on the article..

2/2

USSR

UDC 621.373:623.543

BEREZKIN, A. N., DUNAYEV, YU. A., KAMACH, YU. E., KOZLOVSKIY, YE. N., and OVCHINNIKOV, V. M., Physical Engineering Institute Imeni A. F. Ioffe

"Use of Monopulse Optical Laser for Photographing Models During Ballistic Investigations"

Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii, Vol 15, No 1, Jan-Feb 70, pp 21-25

Translation: The article investigates the possibilities of application of optical lasers for the illumination of moving objects in shadow photography. A diagram of the experimental apparatus is presented and a description is made of the optical laser, telescopic system which forms the illumination beam for the moving object, and a system of synchronization of illumination pulse with the moment of arrival of the investigated object at a given point in the field of photograph taking. The presented photographs clearly show the boundries of flying solids, shock waves, and discontinuities in solid's track. The article shows the possibility of application of a monopulse ruby laser as a source of illumination in the photography of moving objects during aeroballistic investigations.

1/1

1/2 009 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--ISOLATION AND STUDY OF SOME PROPERTIES OF GLIADIN AND GLUTENIN FRACTIONS OF RYE SEEDS -U-

AUTHOR--KOZLOYA, N.I.

COUNTRY OF INFO--USSR

SOURCE--BIOL. NAUKI 1970, (2), 76-81

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CEREAL CROP, PROTEIN, FRACTIONATION, ELECTROPHORESIS, AMINO ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0623 STEP NO--UR/0325/70/000/002/0076/0081

CIRC ACCESSION NO--AP0117849

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0117849
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RYE FLOUR WAS SUSPENDED IN A CHCL SUB3 BENZENE MIXT. (SP. GR. 1.38) AND CENTRIFUGED AT 900 G FOR 20 MIN. THE PPT. WAS EXTD. WITH 0.1M ACOH AND A MIXT. OF GLIADINS AND GLUTENINS PPTD. BY NACL (FINAL CONCN. 0.2M). GLIADINS WERE OBTAINED BY EXTG. THE PPT. WITH 70PERCENT ETOH. HETEROGENEITY OF THE FRACTIONS WAS PROVED BY ELECTROPHORESIS AND SEDIMENTATION ANAL. IN AN ULTRACENTRIFUGE. THE HETEROGENEITY CAN BE PARTLY EXPLAINED BY THE TENDENCY OF RYE GLIADINS TO AGGREGATE IN WATER SOLNS. GLUTENINS WERE OBTAINED AFTER THE EXTN. OF GLIADINS BY CONCN. OF THE EXT. AND DIFFERENTIAL CENTRIFUGATION. AMINO ACID ANAL. SHOWED THAT THE FRACTIONS WERE DIFFERENT FROM EACH OTHER.
FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 539.4:629.12

KOZLYAKOV, V. V., KHARKHURIM, I. Ya., SHISHENIN, Ye. A.

"Investigation of Combined Flexure of a Ship and a Floating Dock by the Method of Finite Elements"

Tr. Leningr. korablestroit. in-ta (Works of the Leningrad Shipbuilding Institute), 1971, vyp. 75, pp 77-85 (from RZh-Mekhanika, No 9, Sep 72, Abstract No 9V667)

Translation: A "dock - ship" system is represented in the form of two girders of stepped variable cross section connected by keel-block spacers. The lower girder is lying on an elastic base; therefore differentiation is taken care of automatically during the computational process. The length of the keel track can be broken up into no more than 20-40 sections. Each spacer may represent several keel-blocks. Loading is reduced to nodal form. The calculation is done by the method of displacements. Two linear and one angular displacement of the end of the rod are taken as the principal unknowns. A matrix of rigidity is found for a rod lying on an elastic base. The initial data for digital computer calculation include information on the construction design scheme, the external load and the parameters of the

1/2

USSR

KOZLYAKOV, V. V. et al., Tr. Leningr. korablestroit. in-ta, 1971, vyp. 75, pp 77-85

terminal elements (rods). The computer gives the displacements and forces for each element. The results of some calculations are given. The described computational scheme is recommended for practical application of sector-wide standard ON-964-69. Bibliography of 9 titles. I. I. Tryanin.

2/2

1/2 049 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--APPLICATION OF LOGIC ELEMENTS MADE OF INJECTION LASERS IN COMMUNICATIONS SYSTEMS WITH TIME DIVISION MULTIPLEX -U-

AUTHOR-(04)-KOZLYAEV, I.P., NIKITIN, V.V., SAMOYLOV, V.D., FEDOROV, YU.F.

COUNTRY OF INFO--USSR

SOURCE--RADIOTEKHNIKA I ELEKTRONIKA, VOL. 15, APR. 1970, P. 772-777

DATE PUBLISHED--------70

SUBJECT AREAS--NAVIGATION, PHYSICS

TOPIC TAGS--LOGIC ELEMENT, LASER, MULTIPLEX, OPTIC COMMUNICATION, COMMUNICATION SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1087 STEP NO--UR/0109/70/015/000/0772/0777

CIRC ACCESSION NO--AP0118237

UNCLASSIFIED

2/2 049 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118237

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL DATA FOR THE USE OF INJECTION LASERS AS LOGIC ELEMENTS IN OPTICAL COMMUNICATION SYSTEMS EMPLOYING TIME DIVISION MULTIPLEXING OF LIGHT PULSES. RECOMMENDATIONS ARE GIVEN FOR THE OPTIMAL SWITCHING OF THE LASER DIODES INTO A COHERENT EMISSION REGIME, AND METHODS OF REDUCING THE PULSE DURATIONS ARE EXAMINED. IT IS SHOWN THAT THE USE OF THE PROPOSED LASER ELEMENTS MAKES IT POSSIBLE TO OBTAIN INFORMATION TRANSFER RATES OF ABOUT 10 TO THE 10TH POWER BITS-SEC.

UNCLASSIFIED

USSR UDC 621.314.58(088.8)

ZAGORSKIY, V. T., KOZLYAYEV, Yu. D., DVORKINA, G. Sh., MALAKHOV, A. P., SHTERNSHIS, V. Yu.

"Direct Thyristor Frequency Converter with Unit for Forced Commutation"

USSR Author's Certificate No 258444, filed 10 July 68, published 14 Apr 70 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1B448P)

Translation: The circuit for a converter of 3-phase a-c voltage of stable frequency into 3-phase a-c voltage of controlled frequency contains: a rectifier block (18 thyristors), commutating capacitors, cathode and anode groups of semiconductor diodes, and a rectifier commutating device (6 thyristors). It is proposed to supplement the circuits with two capacitors connected between the zero point and the anode and cathode buses of the commutation device. The capacitors mentioned shunt the reactance of the phases of the feeding transformer and assist acceleration of the commutation process. Balanced thyristors are connected into the circuit of the supplementary capacitors for limitation of the pulse currents, while in the case of formation of a short circuit on the load, unblocking pulses are not presented to the symmetrical thyristors. 1 ill. A. S.

1/1

UDC 621.314.61 (088.8)

USSR

ZAGORSKIY, V.T., DVORKIN, G.SH., KOZLYAYEV, YU.D. [Novosib. elektrotekhn. in-t svyazi -- Novosibirsk Electrical Engineering Institute Of Communications]

"Device For Maximum Protection Of Solid State Converters"

USSR Author's Certificate No 271639, filed 21 May 68, published 26 Aug 70 (from RZh--Elektronika i yeye primeneniya, No 4, April 1971, Abstract No 4B678P)

Translation: The device for maximum protection contains a 3-phase current transformer with primary and secondary windings. The primary windings are connected in series to the supply circuit of the solid state converter. The secondary windings of the current transformer are combined into a star and feed an auxiliary 3-phase bridge solid-state rectifier. The load of this rectifier is a saturable choke coil. In emergency conditions the current across the working winding of a choke coil is increased and withdraws its core from a saturation condition. As this takes place the large inductance of the choke coil is fed into the secondary winding of the 3-phase transformer, which limits the rate of increase of the current in the primary circuit of the protected converter. 1 ill. L.R.

1/1

USSR

UDC: 533.697

GOLUBKOV, A. G., KOZ'MENKO, B. K., OSTAPENKO, V. A., NOLOTCHIN, A. V., Institute of Theoretical and Applied Mechanics Siberian Department of the Academy of Sciences of the USSR, Novosibirsk

"Concerning the Interaction Between an Underexpanded Supersonic Jet and a Flat Bounded Obstacle"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Tekhnicheskikh Nauk, No 13(208), vyp. 3, Oct 1972, pp 52-58

Abstract: The authors study certain kinds of interaction between a supersonic underexpanded jet and a flat bounded obstacle as a function of the gasdynamic parameters of the jet and the geometric characteristics of the jet-obstacle system. The conditions for transition from stationary to nonstationary flow around the obstacle are experimentally determined. The effect of the obstacle on displacement of the central compression shock is analyzed. Computer processing of experimental data by the method of least squares shows that the dimensions and location of zones of self-oscillations cease depending on the Mach number of the gas flow in the outlet section of the nozzle.

1/1

USSR

UDC 532.507

VOLCHKOV, E. P., KOZ'MENKO, V. K., LEVEDEV, V. P.

"Influence of Initial Dynamic Sector on Heat Exchange in a Turbulent Boundary Layer with Injection"

Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 6, 1971, pp 126-131.

ABSTRACT: The results are presented of a study of the influence of an initial dynamic sector on heat exchange during injection. The experimental data produced indicate that the starting sector may have a significant influence on heat exchange. The method suggested is based on utilization of the relative laws of heat exchange; the influence of the initial sector is considered using the Stanton number over the impermeable surface. The calculations agree satisfactorily with the experimental data of these and other author's.

1/1

USSR UDC 51.621.391

KOZMIDIADI, V. A.

"One Generalization of Finite Automata Forming a Hierarchy Similar to the Classification of A. Jegorchik of Primitively Recursive Functions"

Probl. Kibernetiki [Problems of Cybernetics -- Collection of Works], No. 23, Moscow, Nauka Press, 1970, pp 127-170 (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V463 by G. Blokhina).

Translation: One generalization of the concept of a finite automaton is studied. A sequence of expanding classes of n-automata is constructed, where n=0,1,... Each class is formed by closure of a composition of a class of primitive n-automata. The primitive n-automaton "operates" similarly to an ordinary finite automaton: it has an initial state and is defined by a certain transition function defining each new state as a function of the preceding states and each successive input letter. However, each condition of the automaton is a word in the input alphabet; each output word is formed as a sequence of states through which the automaton passes under the influence of the input word. The transition function for a primitive automaton of rank n+1 is fixed using an automaton of rank n. The work consists of four chapters.

The first chapter presents a definition of an nth rank automaton and presents a number of examples of such automata. The second chapter proves theorems

USSR

UDC 51.621.391

KOZMIDIADI, V. A., Probl. Kibernetiki, No. 23, Moscow, Nauka Press, 1970, pp 127-170.

of combination for n-automata: propagation, branching, union, repetition and continuation. Furthermore, a theorem is proven concerning increased rank, confirming that any transformation performed in an n-automaton can be performed in an (n+1)-automaton as well. The third chapter constructs an example of the numeration of words in alphabet A performed by one-automata. Based on this numeration, it is proven that any primitively recursive function can be calculated using a suitable n-automaton; on the other hand, any n-automaton is equivalent in a certain sense to a certain primitively recursive function. In chapter 4, classes of n-automata and classes of primitively recursive functions from the classification of Jegorchik are compared. It is established that the class of functions which can be calculated on n-automata ($n \geq 1$) corresponds to Jegorchik's class n+2.

2/2

USSR

UDC 519.2:62-50

ANDREYEV, N. V. and KOZ'MIN, P. D.

"Asymptotic Monitoring and Successive Replacement of Poisson Processes"

Kiev, Tekhn. kibernetika--Sbornik (Technical Cybernetics -- Collection of Works), No 9, 1970, pp 102-110 (from Referativnyy Zhurnal -- Matematika, No 6, June 71, Abstract No 6V258, by R. Liptser)

Translation: Suppose $\xi(t)$ is a Poisson process with parameter λ, which is a model of the process being monitored. If $\xi(t)$ becomes larger than some level m, the process being monitored must be discontinued, then replaced by the same process, starting from zero. Suppose T is the length of the time segments through which observations of the process $\xi(t)$ are carried out, τ_m is the time elapsed until the process $\xi(t)$ surpasses the level m, ν_m is the number of observations during this time period, and γ_m is the time that the process $\xi(t)$ remains above the level m until its detection by the inspection. The mean cost of operating the system is given by the formula $C(T)=aM\nu_m+bM\gamma_m$ where a is the cost of a single inspection and b is the penalty per unit time that $\xi(t)$ spends above the level m. It is required to select T so that C(T) will be at a minimum. It is shown that $T=\sqrt{\frac{2a(m+1)}{b\lambda}}$ in a stationary mode reaches the minimum C(T).

1/1

USSR UDC: 615.361.419.014.413

DATSENKO, B. M., BULATOVA, R. F., PUSHKAR', N. S., IZKIN, Yu. A., KOGAN, V. S., and KOZ'MIN, Yu. V., Ukrainian Institute for the Advanced Training of Physicians, ~~Ministry of~~ Health USSR, and Physico-technical Institute, Academy of Sciences Ukrainian SSR, Kharkov

"Mechanism of the Protective Action of Polyethylene Oxide on Bone Marrow Cells Freezing to -196°C"

Moscow, Problemy Gematologii i Perelivaniya Krovi, Vol 15, No 11, Nov 70, pp 32-37

Abstract: X-ray diffraction analysis and low-temperature crystallography showed that little polyethylene (as compared to glycerin) penetrates bone marrow cells frozen to -196°C. The bulk of the substance remains outside, forming a coating around the cells, and hence exerts a protective effect. Electron microscope study of erythrocytes present in the frozen bone marrow cells revealed many cavities formed as a result of intracellular crystallization. The size of the pieces of ice increased from the periphery to the center, where a large ice crystals were sometimes found. In the light of the suggested mechanism of action of

USSR

DATSENKO, B. M., et al, Problemy Gematologii i Perelivaniya Krovi, Vol 15, No 11, Nov 70, pp 32-37

polyethylene oxide, the increased number of crystals in the erythrocytes from the periphery to the center is considered to be the result of a quantitative decrease in the cryophylactic agent in the cells in the same direction.

2/2

USSR UDC 8.74

KRITSKIY, S. P., KOZ'MINA, I. V.

"The Kl-System of Translator Planning"

V sb. Razrabotka translyatorov (Development of Translators--collection of works), Rostov-na-Donu, Rostov University, 1972, pp 58-79 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V457)

Translation: A study was made of the syntactically controlled processing of texts with a complex "language" structure including comparison of the processing plan, its encoding in the form of the files of tables, the compilation of the control algorithm and semantic subprograms. The advantage of the language proposed by the author (for recording the text processing plan) is the fact that the plan is written in the terms in which it is conceived. The proposed system can serve as a basis for planning and designing various translators.

1/1

1/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--FORMATION OF KOP SUB3 .MOO SUB3 -U-

AUTHOR-(03)-VOLFKOVICH, S.I., KUBASOVA, L.V., KOZMINA, M.L.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(5), 1101-2

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--X RAY ANALYSIS, PAPER CHROMATOGRAPHY, POTENTIOMETRIC TITRATION, POTASSIUM COMPOUND, PHOSPHATE, MOLYBDENUM OXIDE, PHASE EQUILIBRIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1275 STEP NO--UR/0020/70/190/005/1101/1102

CIRC ACCESSION NO--AT0128689

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0128689

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHASE EQUIL. IN THE SYSTEM FORMED BY MO(VI) OXIDE AND K POLYMETAPHOSPHATE WERE STUDIED. K POLYMETAPHOSPHATE IS OBTAINED BY THE DEHYDRATION OF K ORTHOPHOSPHATE AT 450DEGREES FOR A PERIOD OF ONE HR. THE AV. D.P. BY THIS METHOD IS 130 ATMOS OF P PER CHAIN AS DETD. BY POTENTIOMETRIC TITRN. IN A SOLN. OF NANO SUB3. THE CRYSTD. MELT OF (KPO SUB3) SUBN AND MOO SUB3 IS INVESTIGATED BY MEANS OF DTA UP TO 1000DEGREES AT A HEATING RATE OF 3.5 DEGREES-MIN. THE RESULTS INDICATE THE FORMATION OF A COMPD. OF COMPN. KOP SUB3 .MOO SUB3 WITH A M.P. OF 772DEGREES AND HAVING 2 EUTECTICS, AT 676DEGREES (15 MOLAR PERCENT MOO SUB3) AND 6030#GREES 67.5 MOLAR PERCENT MOO SUB3). ANAL. OF THE INDIVIDUAL PHASES AND THE GENERAL PHASE COMPN. IS CONDUCTED BY X RAY DIFFRACTION AND POINTS TO A CUBIC STRUCTURE WITH ALPHA EQUALS 13.50 ANGSTROM. PAPER CHROMATOGRAPHIC STUDIES SHOW THE PRESENCE OF A LARGE AMT. OF THE TETRAMETAPHOSPHATE ANION.

FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MO$COW, U$SR.

UNCLASSIFIED

KOZ'MINYKH, L.F.

MEDICINE

STATS 5 Card 1/2

UDC 615.373.6:547.962.4:616.98.251.012.4

PREPARATION OF ANTITICKBORNE ENCEPHALITIS POLYGLOBULIN

[Article by L. V. Mitakova, L. F. Koz'minykh et al., Kirov Research Institute of Blood Transfusion and Kirovskaya Oblast Sanitary-Epidemiological Station] Moscow, Voprosy Virusologii, Russian, No 1, 1972, submitted 21 February 1971, pp 84-86]

Antitickborne encephalitis polyglobulin was obtained from the plasma of donors living in inhabited localities affected with tickborne encephalitis. Polyglobulin was prepared by the rivanol method and it consisted of a 9 to 10% solution of plasma proteins (75 to 80% gamma globulin and 20 to 25% beta globulin). The titer of the preparation varied with the immune layer of the population, ranging from 1:10 to 1:320 according to the hemagglutination inhibition test. Preliminary screening of plasma by the antibody titer makes it possible to produce entire series of polyglobulin with higher titers (1:80 to 1:640). Specific antibodies are generally 4 to 8 times more concentrated in polyglobulin than in the original plasma.

Gamma globulin made from hyperimmune horse serum has been used for the prevention and treatment of tickborne encephalitis, and clinical observations showed it to be quite efficacious [2, 8, 12, 13, 18]. However, heterologous preparations have the serious shortcoming of sensitizing the body to foreign protein so that repeated use involves the risk of serum sickness and other allergic reactions [10]. Moreover, additional injections result in neutralization of the antibodies introduced and decrease or abolish their protective action [15].

Reports published in recent years mention the possible use of human globulin made from the serum of people living in the natural foci of tickborne encephalitis. The number of immune persons in such areas, according to the figures of several investigators, ranges from 4.8 to 82%, varying with the intensity of the focus of the disease [1, 3, 4, 7, 9, 11]. The

1/2 043 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--POSSIBLE CREATION OF A CARBON DIOXIDE LASER WITH ELECTRON BEAM PUMPING -U-

AUTHOR-(04)-DOLGOVSAVELYEV, G.G., KUZNETSOV, V.V., KOZMINYKH, YU.L., ORISHICH, A.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(4), 737-9

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CARBON DIOXIDE LASER, ELECTRON BEAM, LASER PUMPING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/0094 STEP NO--UR/0368/70/012/004/0737/0739

CIRC ACCESSION NO--AP0127721

UNCLASSIFIED

2/2 043 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0127721

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF A TRANSVERSE ELECTRON BEAM ON THE OUTPUT POWER W OF A CO SUB2 PULSED LASER WAS STUDIED BY MEASURING W OF THE LASER AS A FUNCTION OF CO SUB2 PRESSURE AT A CONST. DISCHARGE VOLTAGE (2 KV) AND THE PULSE DURATION (1-2) TIMES 10 PRIME6 NEGATIVE SEC) WITH AND WITHOUT THE ELECTRON BEAM (0.5 MEV, SIMILAR TO 5 A, AND 2 TIMES 10 PRIME6 NEGATIVE SEC PULSE DURATION) APPLICATION AND WITH AND WITHOUT THE ADDN. OF XE, AG, NE, HE, AND N. IN PURE CO SUB2 AND DISCHARGE WITH AND WITHOUT THE APPLICATION OF THE ELECTRON BEAM, A STABLE GENERATION WAS OBSD. AT LESS THAN OR EQUAL TO 30 TORR. AT GREATER THAN 30 TORR, THE GENERATION WAS UNSTABLE. A MAX. W WAS OBSD. AT 8-10 TORR. IN BOTH CASES (WITH AND WITHOUT ELECTRON BEAM APPLICATION) W INCREASES LINEARLY WITH CO SUB2 PRESSURE, BUT THE INCREASE WAS MARKEDLY HIGHER IN THE PRESENCE OF THE ELECTRON BEAM. THE RATION OF W WITHOUT THE ELECTRON BEAM TO W WITH THE ELECTRON BEAM INCREASES WITH PRESSURE FROM 1 TO 2.5-3. THIS RATIO WAS MARKEDLY HIGHER IN THE PRESENCE OF XE OR AG. THE ADDN. OF NE, HE, OR N HAVE PRACTICALLY NO EFFECT ON THE LASER GENERATION. THE MARKED INCREASE IN THE OUTPUT POWER OF THE CO SUB2 LASER WITH THE APPLICATION OF AN ELECTRON BEAM IS ATTRIBUTED TO THE EFFECT OF THE ELECTRON BEAM ON THE ELECTRON ENERGY DISTRIBUTION FUNCTION.

UNCLASSIFIED

USSR

UDC 911.3.616.921.5(470.51)

KOZ'MINYKH, Yu. V.

"Study of the Etiology of "Summer Influenza" in Agricultural Areas of Udmurtiya"

V sb. Yubileyn. nauchno-praktich. konferentsiya. san. vrachey UdmurtASSR. Tezisy dokl. (Anniversary Scientific Practical Conference of Sanitary Inspectors of Udmurt ASSR. Thesis Reports.--collection of works) Izhevsk, 1970, pp 152-154 (from RZh-Meditsinskaya Geografiya, No 4, Abstract No 4.36.80)

Translation: Significant in the etiology of summer febrile diseases in the population of agricultural regions of Udmurtiya are the arboviruses--agents of tickborne encephalitis, and also agents previously not isolated in Udmurtiya which are related to viruses of the western equine encephalomyelitis complex and the Japanese encephalitis complex.

1/1

USSR

UDC 550.834:553.982

VOROZHTSOV, L. N., BALIAKH, I. Ya., KOZHODEM'YANSKIY, V. V., Institute of Geology and Development of Mineral Fuels, "Mangyshlakneftegeofizika" Trust

"Summation of Vertical Seismic Profiling Recordings on the Basis of Controlled Directional Reception"

Moscow, Neftegazovaya geologiya i geofizika, No. 4, 1972, pp 30-34

Abstract: The application of a basic modification of controlled directional reception for stratographic tying in of reflected waves and for determining the level of intensity of multiple waves on the vertical seismic profile is discussed along with a description of the results of applying the first correlation modification of controlled directional reception that has been widely applied in the development of vertical seismic profile recordings. Recordings were obtained in conducting vertical seismic profiling in a bore on the Mangyshlak Peninsula in which the correlation of the waves and their stratographic tying in was extremely difficult. The complexity of the wave picture on the vertical seismic profile recording was caused by the upper portion of the geological section and the predominant intensity of the incident wave. The latter were processed on the "PCISK-1-24-SNP-1" adder to improve separation and tracing the waves on the vertical seismic

1/2

USSR

VOROZHTSOV, L. N., et al, Neftegazovaya geologiya i geofizika, No. 4, 1972, pp 30-34

profile recordings. Preliminary amplification and the number of channels added was selected in such a way that the incident waves could be correlated along with the rising waves. The summation bases for the modification of controlled directional reception were selected from previously obtained directional tapes in intervals where sharp reflecting boundaries are absent and the sensitivity of the channels is the same. It is concluded that summation of vertical seismic profile recordings on the basis of controlled directional reception makes it possible to carry out separation of reflected waves and their stratographic tying in and to determine the intensity of multiple waves. Summation on the basis of controlled directional reception is recommended for processing of vertical seismic profiling recordings when the analysis does not give positive results under processing by other methods.

2/2

USSR

KOZMOLINSKIY, F., and DUSHKOV, B., Candidates of Medical Sciences

"Vibration Isolation"

Moscow, Meditsinskaya Gazeta, 7 Jun 72, p 3

Abstract: The use of modern machines has raised the level and increased the spectral composition of vibrations, necessitating a complex analysis of the relationship beteen man and machine and of man's reaction to vibration. It has been established that changes in the operator's position alter the frequency characteristics of the body and the damping properties of the "man-machine system." The mechanism of distribution of vibrations over the bone tissues, the blood flow in the vessels under the effect of vibration, and the functional state of the operator must be thoroughly investigated. Sanitary-hygienic vibration norms and criteria of vibro-isolation should be established with increased utilization of electronic computer technique. Living organisms should be studied on the molecular and cellular level, with special attention to vibration effect on receptors and properties of nerve cells. The primary reaction to vibration effect is characterized by prevalence of parasympathetic substances in the blood, and the subsequent changes in the ratio of contents of sympathicotropic and parasympathicotropic mediators is characterised by phase flow of significant duration. Marked changes have been

1/2

USSR

KOSMOLINSKIY, F., and DUSHKOV, B., Meditsinskaya Gazeta, 7 Jun 72, p 3

revealed in the function of enzymes, with an aftereffect lasting for weeks and months. With high mental efficiency intact, some pathological body structural and functional disturbances were, however, observed. Regularities in the deviations within the histamine-diamine oxidase system point to the adaptive properties of the regulatory systems, demanding further study of the mechanisms of humoral regulation under the vibration effect. Temporary and spatial peculiarities under the effect of noise must also be taken into account.

2/2

USSR

UDC 681.325.65:525

BARYKIN, N. A., ZAYGERMAKHER, D. M., KHOKHLOV, G. N., BALUSHKIN, K. S., KOZOBRODOV, V. A.

"Logic Circuits Based on Pneumatic Relay Elements"

Pnevmatich. Privody i Sistemy upr. [Pneumatic Drives and Control Systems -- Collection of Works], Moscow, Nauka Press, 1971, pp 267-272, (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11, 1971, Abstract No 11 A74 from the Resume).

Translation: The basic characteristics and nomenclatures of pneumatic relay automation elements (PERA) are presented, as well as typical logic device circuits based on these elements. A modular-element method of planning of devices based on PERA and the experience of the application of the standard circuits are studied. 6 Figures; 1 Table; 1 Biblio. Ref.

1/1

USSR

UDC: 654.9-525

KOZOBRODOV, V. A., IVANOV, N. A., RAZUMENKO, V. M., ZAKIN, V. G., Ust'-Kamenogorsk Instrument Plant

"A Pneumatic Analyzer of Limiting Deviations"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 31, 1970, Soviet Patent No 283682, Class 42, filed 30 May 69, p 151

Abstract: This Author's Certificate introduces a pneumatic analyzer of limiting deviations. The device contains AND logic elements which act as data units for the deviational standards; deviation signal devices; and a group analog-code converter which includes a series circuit made up of a pulse oscillator, pulse counter, code-analog converter, and comparison elements equal in number to the variables being converted. As a distinguishing feature of the patent, the device is simplified and precision is improved by connecting two AND elements by their inputs to the outputs of the pulse counter in the group analog-code converter, the outputs of these AND elements being connected to the upper and lower deviation signal devices, the first output being connected through an inhibit element and a flip-flop with separate inputs, and the second through a third AND element and another flip-flop with separate inputs. The output of the comparison element in the group analog-code converter is connected to the inputs of the inhibit element and the third AND element.

1/1

USSR K

UDC 621.316.721.1

KOZODAYEV, A. M., LAZAREV, N. V.

"Thyristor Voltage Stabilizer for a 40-KV Modulator"

Moscow, Pribory i tekhnika eksperimenta, No 4, July-August 1970, pp 92-95

Abstract: The modulator in question is that used with an IT-300 pulse transformer feeding the pre-injector of a 25-Mev linear proton accelerator. The high-voltage circuit integrated into the stabilizer is a capacitive energy accumulator in which the voltage on the capacitors is stabilized by a three-phase thyristor-diode circuit connected in the primary winding of a power transformer in a wye arrangement with no zero conductor. The capacitor battery is charged by a high-voltage unregulated rectifier through a resistor, and contains 14 IM50-0.2 capacitors. Other circuit details and a complete schematic are given. The authors express their gratitude to I. M. Kapchinskiy and L. L. Gol'din for their useful comments, to L. V. Kartsev and V. I. Edemskiy for doing the electrical and mechanical work, and to B. M. Podvisotskiy and V. S. Skachkov for mounting and adjusting the equipment.

1/1

Acc. Nr: AP0102961 — Abstracting Service: 6-7a Ref. Code:
INTERNAT. AEROSPACE ABST. UR 0188

A70-25391 # Contribution to the nonlinear problem of the flow part an unevenness of the earth oil arbitrary profile (K nelineinoi zadache obtekaniia nerovnosti Zimli proizvol'nogo profilia). V. N. Kozhevnikov and V. V. Kozoilunov (Moskovskii Gosudarstvennyi Universitet, Moscow, USSR). *Moskovskii Universitet, Vestnik, Seriia III—Fizika, Astronomiia*, vol. 11, Jan.-Feb. 1970, p. 11-14. In Russian.

Development of a method of solving the Helmholtz equation for perturbations of the stream function, to which reduces the two-dimensional nonlinear problem of lee waves in the troposphere (assuming that the velocity and temperature gradient in the unperturbed oncoming flow are constants and that the particle motion is adiabatic). Particular attention is given to the influence of the earth's profile on the form of the solution. A stream function field is obtained in dimensionless form for a closely simulated mountaineous profile.

V.P.

CK

REEL/FRAME
19861027

12

USSR

UDC 678.048

MIKHAYLOV, V. V., KOKHANOV, YU. V., KAZARYAN, K. S., MATVEYEVA, YE. N., and KOZODOY, A. A.

"Metal Dialkyldithiophosphates -- Stabilizers of Polymeric Materials"

Moscow, Plasticheskiye Massy, No 9, 1970, pp 23-24

Abstract: Various metal salts of the dodecyl ester of dithiophosphoric acid were studied as light and thermal stabilizers for polyamides and polyolefines: zinc, nickel, copper, and chromium salts. Comparison of the rate of oxygen consumption at 200°C and 200 mm Hg of the polymers PA-68 and PA-12, to which these salts were added, using a proven stabilizer N,N'-di-β-naphtyl-p-phenylenediamine (DNPDA) as control, showed that the nickel salt of PA-68 and the copper salt of PA-12 surpass the DNPDA. Both of these compounds leave the polymer colorless, in contrast to DNPDA. The copper and nickel salts show good synergistic activity as light stabilizers for polyolefines when mixed with 2-hydroxy-4-alkoxybenzophenone (benzone OA).

UNCLASSIFIED PROCESSING DATE--03JUL7C

TITLE--NEW PHOTOSTABILIZERS OF POLYOLEFINS -U-

AUTHOR--ZIMIN, YU.B., LEVIN, P.I., MATVEYEVA, E.A., KOZLOV, A.A., SOTNIKOVA, L.M.

CORPORATE AUTHOR--USSR

SOURCE--PLAST. MASSY 1970, (1), 20-1

DATE PUBLISHED--------70

33
5
38

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CHEMICAL STABILIZER, POLYETHYLENE, PHOTOEFFECT, LIGHT AGING, HYDROXYL RADICAL, KETONE, ORGANIC SULFUR COMPOUND, BENZENE DERIVATIVE, POLYMER/(U)PRK2 LAMP, (U)P2C2CT POLYETHYLENE, (U)P4C20E POLYETHYLENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1980/1685 STEP NO--UR/0191/70/000/001/0020/0021

CIRC ACCESSION NO--APO049767

UNCLASSIFIED

Acc. Nr: AP0049767 Abstracting Service: CHEMICAL ABST. 3-70 Ref. Code: UR 0191

101351g **New photostabilizers of polyolefins.** Zimin, Yu. B.; Levin, P. I.; Matveeva, E. A.; Kozodoi, A. A.; Slotnikova, L. M. (USSR). *Plast. Massy* 1970, (1), 20-1 (Russ). The effects of 2-hydroxy-4-propoxyphenyl thienyl ketone (I), and 2-hydroxy-4-octyloxyphenyl thienyl ketone (II) as photostabilizers of low-d. polyethylene P 2020T (III) and high-d. polyethylene P 4020E (IV) were studied. Thus, 0.5–0.66% of I and II were added to III and IV and the polymers were aged under a PRK-2 lamp at 45°. The phys. and mech. properties of stabilized III and IV were unchanged after a 12 month exposure in the air, indicating that I and II were effective photostabilizers comparable to Benzone OA.

CKJR

1/1

REEL/FRAME
19801685

1

USSR

BORODIN, V. V., KOZOKINA, S. M., KONOVALOVA, V. V., MAYOROVA, V. A.

"Algorithm for Lexicographic Processing of Texts"

Izbr. Tr. Vses. Mezhvuz. Simpoz po Prikl. Mat. i Kibernet., Gor'kiy, 1967 [Selected Works of All-Union Interuniversity Symposium on Applied Mathematics and Cybernetics, Gor'kiy, 1967], Moscow, Nauka Press, 1973, pp 359-365 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V770, by the authors).

Translation: Problems of organization of a machine dictionary capable of performing a broad range of linquistic tasks is studied. It is suggested that the dictionary be based on list structures using the apparatus of grammars with a finite number of states. It is considered that the most acceptable form of operation with an automatic dictionary is the method of standard programs. With this purpose in mind, a set of operators is given for writing the program. The most typical tasks of lexicographic analysis performed by computers are formulated in terms of the operators.

1/1

USSR

UDC 621.762.001

FEDORUS, V. B., KOZOLAPOVA, T. YA., KUZ'MA, YU. B., and KUKAY, L. N.

"Investigation of the Reaction of Zirconium Oxide With Carbides of Group VI Metals"

V sb. Tugoplavk. karbidy (The Refractory Carbides -- Collection of Works), Kiev, "Nauk. Dumka," 1970, pp 244-250 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G378 by authors)

Translation: An investigation is made of the character of the reaction of zirconium oxide with carbides of Group VI metals -- Cr_3C_2, Mo_2C and WC -- by the methods of x-ray, chemical, and metallographic analyses. The authors determine the nature of the intermediate and final reaction products, and establish the dependence of the phase composition of the reaction products on sintering temperature. A study is made of the stability of Mo and W carbides and ZrO_2 in acids and in mixtures of acids with oxidizing and complexing agents. A method is suggested for chemical phase separation of the above-indicated compounds. Four tables. Bibliography with 21 titles.

1/1

USSR

UDC 621.791.1:621.57

KHRENOV, K. K., CHUDAKOV, V. A., KOZOLUP, P. M., LYMAR, P. I., and SKLYAR, I. D.

"Magnetic Impulse Welding of Domestic Refrigerator Tubes"

Kiev, Avtomaticheskaya Svarka, No 8, Aug 70, pp 74-75

Abstract: A brief description is given of technology for the magnetic-impulse welding of copper and aluminum tubes 6 and 8 mm in diameter, respectively. The technology was developed jointly by the Institute of Electric Welding imeni Ye. O. Paton and the Dnepropetrovsk Plant for Radio Relay Devices (DZARP). A copper tube is introduced inside the aluminum tube with a certain clearance. In order to retain the inside diameter of the copper tube a 30KhGS steel rod is inserted inside it, and is removed after welding by a special device. The welding is achieved by an inductor, supplied by an 80-microfarad capacitor bank with a voltage of 20 kv and capacity of 16 kilojoule. The energy required for welding is 4.4-6.5 kilojoule and is determined by the inductor parameters. The current is about 165-200 kilo amperes. The inductor coils are water cooled.

1/1

1/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--OXICATION OF TRIVALENT CHROMIUM -U-

AUTHOR-(05)-YAKOBI, V.A., BOCHKAREVA, T.P., KOZOREZ, L.A., CHUSOVA, L.L., SHPAK, L.P.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 262,106
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--26JAN70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--METAL OXIDATION, CHROMIUM, CHEMICAL PATENT, OZONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/1465 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126096

2/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AA0126996
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CR PRIME3POSITIVE IS OXIDIZED TO CR PRIME6POSITIVE IN AN ACIDIC MEDIUM IN THE PRESENCE OF MN COMPDS. (E.G. MNCL SUB2) WITH OZONIZED AIR. FACILITY: RUBEZHANSKIY FILIAL KHAR'KOVSKOGO ORDENA LENINA POLITEKHNICHESKOGO INSTITUTA IM V. I. LENINA.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--ALKYLATION OF BENZENE BY A PROPANE PROPYLENE FRACTION ON ALUMINUM OXIDE PROMOTED BY BORON FLUORIDE -U-

AUTHOR-(02)-KOZOREZOV, YU.I., RUSAKOV, A.P.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (2), 42

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZENE, ALKYLATION, ISOPROPYL BENZENE, BORON FLUORIDE, ALUMINUM OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1881 STEP NO--UR/0318/70/000/002/0042/0042

CIRC ACCESSION NO--AP0112861

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112861

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OPTIMUM ALKYLATION CONDITIONS WERE AT 75-100DEGREES, 5 ATM, C SUB6 H SUB6 VOL. VELOCITY 1.0-1.5 HR PRIME NEGATIVE), 5-7:1 C SUB6 H SUB6-C SUB3 H SUB8. WITH 0.2PERCENT BF SUB3 BASED ON C SUB6 H SUB6, THE CONVERSION OF C SUB3 H SUB6 IN 1 PASS ATTAINED 97PERCENT TO YIELD ALKYLATE BASED ON C SUB3 H SUB6 INCLUDING ISO-PRPH. FACILITY: KRASNODAR. FILIAL V$ES. NAUCH. ISSLED. INST. NEFTEKHIM., KRASNODAR, USSR.

UNCLASSIFIED

Magnetohydrodynamics

USSR

IVANOV, A. A., KOZOROVITSKIY, L. L., RUSANOV, V. D., SAGDEYEV, R. Z., and SOBOLENKO, D. N.

"Experimental Observation of Electron Shock Waves in a Collisionless Plasma"

Moscow, Pis'ma v Zhurnal Eksperimental'nov i Teoreticheskoy Fiziki, Vol 14, No 11, 5 Dec 71, pp 593-596

Abstract: Experimental proofs of the existence of a stationary heat discontinuity (an electron shock wave) in a collisionless plasma are discussed and its parameters are interpreted in accordance with the theory. The structure of a thermal wave front that was obtained with an internal diamagnetic probe introduced into the chamber in hydrogen and argon discharges is shown. The initial plasma was produced by two high-frequency generators inside a glass tube of diameter 8 cm and length ≈250 cm in a longitudinal homogeneous magnetic field of the order of 0.5-5 koe. The initial gas pressure varied in the range $4\text{-}10\cdot10^{-4}$ torr and the charge particle concentration was $2\cdot10^{13}$ cm^{-3}, while the initial electron temperature was 10 ev. Local plasma heating up to electron temperatures of ≈300 ev was achieved with a narrow coil that generated a skew magnetosonic wave of large amplitude. The structure shows that there exists a region of values where a wave nF of the shock type with

USSR

IVANOV, A. A., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 14, No 11, 5 Dec 71, pp 593-596

a fairly steep pressure drop is formed. The velocity of this wave D depends on the mass of the gas ions and drops by approximately a factor of 2 upon changing to a discharge in argon. A similar wave structure was obtained with measurements with a specially designed double electric probe. Controlled experiments made on plasma afterglow with an electron temperature of $\sim$0.5 ev showed that the length of the front and the wave velocity hold constant--i.e., are independent of the initial temperature -- but that the detailed structure of the front varies somewhat. Analysis of the expression for the velocity of the thermal wave shows that velocity should be a function of the mass of the ions, $\sqrt{1/M}$. Experiments with a xenon plasma showed that the wave velocity also decreases in accordance with this relationship. The width of the thermal wave front is found by taking into account the fact that the current velocity of cold electrons is dependent on the potential produced by hot electrons. A method for determining the density profile of the hot electrons is indicated. The authors claim that the analysis proves that a stationary electron shock wave exists in a collisionless plasma and note that such a shock wave can arise also in other situations, such as in the effective attenuation of a relativistic high-current beam in a plasma.
2/2

1/2 012 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--SYNTHESIS OF SORBIC ACID FROM KETENE AND CROTONALDEHYDE. VIII. THERMAL ISOMERIZATION OF A POLYESTER OF 3-HYDROXYHEXENOIC ACID AND ITS

AUTHOR-(04)-POLYANSKIY, N.G., UTKIN, B.N., KOZOVA, G.YA., BALAKIN, V.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(5), 1095-1100

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ISOMERIZATION, POLYESTER RESIN, DEPOLYMERIZATION, CARBOXYLIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1955 STEP NO--UR/0080/70/043/005/1095/1100

CIRC ACCESSION NO--AP0132216

UNCLASSIFIED