1/2 022 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--X RAY DIFFRACTION DETERMINATION OF THE ORIENTATION OF GALLIUM SINGLE CRYSTALS -U-

AUTHOR-(03)-PINES, B.YA., SIRENKO, A.F., VLASOVA, N.V.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 142-4

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--X RAY DIFFRACTION ANALYSIS, CRYSTAL LATTICE STRUCTURE, GALLIUM, SINGLE CRYSTAL, STEREO CHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/1915 STEP NO--UR/0139/70/013/002/0142/0144

CIRC ACCESSION NO--AT0114355

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--090CT70
CIRC ACCESSION NO--AT0114355
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR THE EASY INDEXING OF REFLECTIONS AND FOR THE DETN. OF THE GA SINGLE CRYSTAL ORIENTATION, AUXILIARY GRAPHS OF THE STD. STEREOGRAPHIC PROJECTION FOR DIFFERENT ORIENTATIONS OF THE CRYSTAL RELATIVE TO THE PRIMARY BEAM ARE BIVEN. A REF. TABLE RELATING THE ANGLES BETWEEN DIFFERENT REFLECTION PLANES IN THE LAUE DIAGRAM TO THE POSSIBLE HKL INDEXES IS ALSO PRESENTED.
FACILITY: KHAR'KOV, GOSUNIV. IM. GOR'KOGO, KHARKOV, USSR.

UNCLASSIFIED

USSR UDC 541.183:661.183.6

VLASOVA, O. A., IONE, K. G., KARAKCHIYEV, L. G., and PLYASOVA, L. N., Institute of Catalysis, Siberian Department, Academy of Sciences SSSR

"Influence of Machining on Grain Size and Crystalline Structure of Type NaY Zeolites"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, 1972, pp 534-536

Abstract: The possible change in the size of the zeolite particles with mechanical working was studied, as was the effect of the intensity of mechanical grinding on the grain size and crystal structure of the zeolites. An original sample and samples ground for 1, 2, 3, and 4 hours were studied. The surface area, as determined by the BET method using argon, decreased from 620 m^2/g for the unground sample, NaY, to 40 m^2/g for the sample ground for 4 hours, NaY-4. The surface areas calculated from electron micrograph data show an increase from 2.3 for NaY to 16.5 m^2/g for NaY-4. The latter was calculated from the equation $S = 6/\rho d$ where ρ is the density of the zeolite, equal to 2 g/cm^3; d is the average radius of the particles, obtained from a radius distribution curve. The radius decreased from 1.3 for NaY to 0.18 μ for NaY-4. In x-ray studies the very marked fine structure exhibited by NaY was

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VLASOVA, O. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 3, 1972, pp 534-536

much reduced for the sample ground for 1 hour, NaY-1, and absent for Na-4. The total intensity was also much reduced, indicating decreasing crystallinity with increasing grinding time. The IR spectrum of NaY-4 between 1400 cm^{-1} and 300 cm^{-1} was much smoother and showed much greater absorption than that for NaY, although the peak positions were similar for all the spectra. The data obtained indicate that grinding induces changes in the crystal structure and adsorption capacity of NaY type zeolites.

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UDC 621.371.332

VLASOVA, O. K., GAYLIT, T. A., and GUSEV, V. D.

"Scattering Angles in the Reflection of Radio Waves from the Ionosphere"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 1 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 1--collection of works) "Nauka," 1972 pp 383-387 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A337)

Translation: A comparison is made of the experimental histograms for θ and ψ with the theoretical laws of distribution in scattering by large-scale and small-scale ionospheric nonuniformities. For these cases, the distribution laws of the polar angle differ and are satisfactorily described by the theoretical laws for the geometrical optics zone and the Fraunhofer diffraction zone. The distribution of the azimuthal angle in the plane perpendicular to the direction of propagation in all cases has two maxima. One illustration, bibliography of six. A. L.

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USSR UDC: 547.26'118

BLAGOVESHCHENSKII, V. S. and VLASOVA, S. N.

"Preparation of Trialkyltetrathiophosphates from Alcohols and Phosphorus Pentasulfide"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 5, May 1971, pp 1032-1034

Abstract: Trialkyltetrathiophosphates (C_1-C_{10}) were synthesized by reaction of primary alcohols with phosphorus pentasulfide: $3ROH + P_2S_5 \rightarrow (RS)_3PS$

The reaction takes place in two stages: $4ROH + P_2S_5 \rightarrow 2(RO)_2PSSH + H_2S$

and

$6(RO)_2PSSH + 2P_2S_5 \rightarrow 4(RS)_3PS + P_2O_2S_3 + 2P_2O_5 + 3H_2S$

The overall reaction in exothermic, the temperatures increasing with the size of the substituted group. The yields were high, (50-86%) when the reaction was conducted in two stages.

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1/2 007 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--HEAT FROM DEPTH AT THE BIBIEYAT OIL AND GAS FIELD

AUTHOR-(03)-SUKHAREV, G.A., TARAKHUNA, YU.K., VLASOVA, S.I.

COUNTRY OF INFO--USSR

SOURCE--AKAD. NAUK SSSR DOKLADY, V. 190, NO. 1, P. 176-179, ILLUS., TABLE, 1970
DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS

TOPIC TAGS--GEOGRAPHIC LOCATION, NATURAL GAS, CRUDE OIL, PETROLEUM DEPOSIT, GEOGRAPHIC LOCATION, GEOTHERMAL GRADIENT

CONTROL MARKINGS--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROX REEL/FRAME--3005/1956 STEP NO--UR/0020/70/190/001/0176/0179

CIRC ACCESSION NO--AT0113941
UNCLASSIFIED

2/2 007 UNCLASSIFIED PROCESSING DATE--13NOV7(

CIRC ACCESSION NO--AT0133841

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS OF GEOTHERMAL MEASUREMENTS IN 15 WELLS IN DIFFERENT PARTS OF THE BIBIEYAT OIL AND GAS FIELD (SOUTHEAST COAST OF THE APSHERON PENINSULA) ARE TABULATED. AVERAGE GEOTHERMAL GRADIENTS RANGE FROM 0.0266DEGREES TO 0.4340EGREES PER METER. HEAT FLOW IS HIGHEST IN THE CREST OF THE STRUCTURE, AS EXPECTED, AND IS PARTICULARLY INTENSIVE IN THE VICINITY OF THE MUD VOLCANO. THESE RESULTS USPPORT AN EARLIER CONCLUSION (1965) THAT IT MIGHT BE POSSIBLE TO PROSPECT FOR STRUCTURES AND FAULTS BY INVESTIGATING HEAT FLOW EVEN IN RELATIVELY SHALLOW WELLS.

UNCLASSIFIED

Acc. Nr.: AP0041082

Ref. Code: UR 0074

USSR

UDC: None

VLASOVA, T., Chairwoman of the Society Znaniye

"Seventy of Them"

Moscow, Grazhdanskaya Aviatsiya, No. 1, 70, p. 16

Abstract: The chairwoman of the factory society Znaniye (Knowledge) describes the various activities in her organization. Engineers often give lectures on the strengthening of solidarity of communist and workers' parties or a new upsurge in the struggle against imperialism. The society has grown from 12 members only six years ago to its present roster of 70. The names of some of the most prominent members are given. This year many reports have been read to more than three thousand workers of the plant, and in addition to the usual lectures given by the society's members, the latter are invited to nearby schools, plants, and agricultural communities.

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19750855

VLASOVA, T. A.

Pedagogic Sciences

PROBLEMS PERTAINING TO OVERCOMING DEVELOPMENTAL ANOMALIES IN CHILDREN

[Article by T.A. Vlasova, Scientific Research Institute of Defectology, USSR Academy of Pedagogic Sciences, Moscow; Moscow, Vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No 4, 1972, pp 60-66]

Success in overcoming deviations in child development depend to a decisive extent on scientific substantiation of the system of differentiated education and upbringing for each category of children with anomalies, under conditions of correctively oriented treatment and education.

All branches of defectological science, the different branches of special pedagogics, special psychology, diverse aspects of clinical and neurophysiological investigation of children with developmental anomalies, development of technical means of correcting and compensating for defects have as their chief task to determine the conditions of differentiated upbringing and education that would most adequately consider the developmental distinctions of the anomalous child and would offer maximum aid in overcoming its deviations referrable to psychophysical development.

The development in our country of defectology as a single complex science permitted not only achievement of a certain level of differentiated education for children with developmental anomalies but also helped develop the theoretical bases for further improvement of a differentiated network of specialized schools and preschool institutions. This is also indicated by the fact that, at the present time, there are nine types of specialized schools in the USSR, not counting the schools for children with complex defects (blind-deaf-dumb, mentally retarded and blind, and others). All specialized schools, other than the ancillary ones for mentally retarded children, provide children with the equivalent of eight-year or secondary school and vocational training in industrial and agricultural fields over different periods of time.

Developmental deviations of children are extremely diverse. They are referrable to auditory, visual, speech, intellectual, motor, emotional-volitional, and other disturbances, either individually or in the most diverse combinations. For each of these categories of children different conditions are required to correct their developmental defects. On this basis, the chief objective of theoretical research in defectology is scientific substantiation of differentia-

USSR UDC 547.752.753.755.07:542.953

SHVEDOV, V. I., PANISHEVA, Ye. K., VLASOVA, T. F., GRINEV, A. N., USSR
Institute of Chemical-Pharmaceutical Scientific Research imeni S. Ordzhonikidze, Moscow

"The Synthesis and Aminomethylation of 6-Hydroxyindoles"

Riga, Akademiya Nauk Latviiskoy SSR, Himiya Geterotsiklicheskikh Soedinenii, No 10, Oct 73, pp 1354-1356

Abstract: It was found that, while reaction of p-benzoquinone with β-aminocrotonic ester or N-methyl-β-aminocrotonic ester at 0°C in acetic acid produced 5-hydroxyindoles, the reaction of p-benzoquinone with N-aryl-β-aminocrotonic ester under the same conditions produced 6-hydroxyindoles. Thus, the substituent on nitrogen determines whether the ester reacts at the double bond or the carbonyl group of p-benzoquinone. Reacting the 6-hydroxyindoles with bisdimethylaminomethane produced 6-hydroxy-7-dimethylaminomethylindoles. Bromination and nitration of 6-methoxyindoles and 6-acetoxyindoles led to substitution at position number 5, which is explained by the fact that bromination and nitration take place in acid solution, and aminomethylation in basic. Structure determination was by NMR spectroscopy.

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UDC 669.71.4(088.8)

GEORGIYEV, V. M., and VIASOVA, T. G.

"Method of Degassing Metals and Alloys"

USSR Author's Certificate No 263146, filed 22 Sep 67, published 29 May 70 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11 G123 P)

Translation: A method is proposed for degassing metals and alloys in the molten state by using ultrasound. In order to intensify the process, a constant electrical field is applied simultaneously to the melt, whereby the cathode is placed above the anode.

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USSR UDC 615.372:576.851.553.097.291.015.36

VLASOVA, YE. V., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Correlation Between Survival Time in Mice and the Intravenous Dose of Gas Gangrene Pathogen Toxin"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 1, 1973, p 133

Abstract: Over a wide range of small and medium doses, the correlation between dose and survival time is linear, that is, a plot of the log of the survival time in minutes (Y) against the log of the dose in MLD (X) yields a straight line following the equation $Y = a + bX$. Coefficient 'a' represents the survival time after 1 MLD, while $b = tg$ alpha, where alpha is the angle formed by the curve and the abscissa. For each of the five toxins investigated, the value of alpha is different, indicating that the mechanism of action of each toxin has different qualitative characteristics. Toxins of Cl. septicum, perfringens, and histolyticum are fast-acting, while those of Cl. oedematiens and sordelii are slow-acting. Between medium and large doses, Cl. perfringens, oedematiens, and sordelii curves have a break due to a change in angle alpha, indicating a change in the mechanism of action. Since gas gangrene toxins have not only a lethal component but also small amounts of other enzymatic components,

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VLASOVA, YE. V., Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 1, 1973, p 133

it is assumed that after administration of large doses, the additional components magnify the lethal effect of the basic component.

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USSR

UDC 532.526

VLASOV, YE. V., GINEVSKIY, A. S.

"Effect of Sonic Disturbances on the Transition of a Laminar Boundary Layer to Turbulent"

Uch. zap. Tsentr. aero-gidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamic Institute), 1971, Vol 2, No 2, pp 1-10 (from RZh-Mekhanika, No 11, Nov 71, Abstract No 11B588)

Translation: The results of an experimental study of the effect of sound vibrations of different intensity and frequency propagated along the flow on the turbulence of the external flow and the transition at the boundary layer are discussed. It is demonstrated that for sufficiently high sound intensities the degree of turbulence of the longitudinal velocity pulsations increases sharply at the same time as the degree of turbulence of the transverse components of the velocity pulsations remains practically invariant. It is noted that the mechanism of forced transition under the effect of sound vibrations can be dual: for a very intense signal, independently of the frequency, the transition is caused by increased turbulence of the external flow; for a comparatively weak signal, but entirely defined frequencies, the transition is caused by resonance phenomena, that is, the interaction of sound waves and Tollmin-Schlichting waves in the boundary layer.

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UDC 615.372:576.851.555].015.45.032+
576.861.555.097.29.095.38

VLASOVA, Ye. V., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Sensitivity of Mice to Toxins of the Agents of Gas Gangrene with Different Modes of Administration"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971, pp 47-51

Abstract: Mice were injected intravenously, intramuscularly, and intraperitoneally with Cl. perfringens, Cl. septicum, Cl. oedematiens, Cl. histolyticum, and Cl. sordelli toxins. The animals were most sensitive to Cl. perfringens, Cl. septicum, and Cl. histolyticum toxins injected intravenously and to Cl. oedematiens toxin injected intramuscularly. They were equally sensitive to Cl. sordelli toxin with all three modes of administration. These differences in mouse sensitivity in relation to the mode of administration indicate that the mechanism of action of each toxin is specific. In traveling from the injection site to the receptor zone, the toxins apparently encounter different "obstacles" (inhibitors or activators) and produce different effects as a result.
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USSR

UDC 57.085.23:576.851.55.097.29

YERMAKOVA, M. P., SHAMRAYEVA, S. A., ZEMLYANITSKAYA, Ye. P., and VLASOVA, Ye. V., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Morphological and Histochemical Changes Produced by Clostridium sordelli and Clostridium oedematiens Toxins in Cultures of Fibroblasts, Kidney Epithelium, and Macrophages"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971, pp 23-28

Abstract: C. sordelli and C. oedematiens toxins had a marked cytotoxic effect on cultures of chick fibroblasts, transplanted human fetal kidney epithelium, and macrophages from a guinea pig peritoneal exudate. C. sordelli toxin caused vacuolar degeneration of the cytoplasm, while C. oedematiens toxin produced karyorrhexis, karyopyknosis, karyolysis, karyorrhexis, and marked fatty degeneration of the cytoplasm. Histochemical analysis showed that both toxins intensified acid phosphatase activity in the cytoplasm of the fibroblasts and macrophages, decreased the RNA content of the kidney epithelial cells, and stimulated the formation of lumps of glycogen. The cytotoxic effect was not manifested when the various cultures

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520013-3"

USSR

YERMAKOVA, M. P., et al., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971, pp 23-28

were grown on a nutrient medium containing a mixture of one of the toxins and the corresponding antitoxic serum. A comparative morphological and histochemical study of the effect of C. sordelli and C. oedematiens exotoxins on sensitive cultures revealed sharp changes in cell structure, lipid content, and acid phosphatase activity characteristic of the particular toxin.

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USSR UDC 616.981.57-092.9-091

YERMAKOVA, M. P., and VLASOVA, YE. V., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Morphological and Some Histochemical Changes in the Organism of Immune Guinea Pigs Upon Intramuscular Administration of Cl. sordellii Toxin"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, Apr 71, pp 105-109

Abstract: Two-fold immunization of guinea pigs with Cl. sordellii toxoid in doses of 5 SU resulted in development on an intense antitoxic immunity that protected the animals from gas gangrene, as could be shown by administration to them of Cl. sordellii toxin. On intramuscular injection of immunized animals with 1-3 ID_{50} of the toxin, a local necrotic lesion of limited extent formed in which intensive infiltration of leukocytes and macrophages took place. The polymorphonuclear leukocytes at the site of the lesion had a high content of alkaline phosphatase and glycogen, while the polyblasts and histiocytes were enriched in acid phosphatase. This indicated a raised functional activity of the cells in question associated with the fact that they exerted a protective action. The pathological process in the local lesion terminated rapidly, whereupon healing took place. The severe pathological changes in

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USSR

YERMAKOVA, M. P., and VLASOVA, YE. V., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, Apr 71, pp 105-109

muscles and internal organs (specifically the kidneys and liver), intramuscular and endoneural hemorrhages, and edema that were observed in noninmunized animals upon administration of the toxin did not develop. Pronounced immunomorphological changes indicating the high level of immunity took place in the lymph nodes and spleen of the immunized animals.

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USSR UDC 576.851.555.097.29.083.35

SHAMRAYEVA, S. A. and VLASOVA, YE. V., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Use of Tissue Culture to Detect Specific Toxins of Clostridium perfringens"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 12, 1971, pp 83-87

Abstract: A method is proposed for identifying the agents of gas gangrene (Cl. perfringens type A, Cl, oedematiens, Cl. histolyticum, Cl. sordelli, and V. septicum) from the cytotoxic effect of the toxins in tissue cultures of 11-day-old chick embryos. It appears to be more sensitive than the usual method of neutralization of the toxins with specific antitoxic sera in mice. The results are comparable because there are no fluctuations due to individual mouse sensitivity. Dry toxins and standard sera are used to ensure standard conditions.

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USSR

UDC: 615.372:576.851.555/.015.46

VLASOVA, Ye. V., Laboratory of Wound Infections Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences, USSR, Moscow

"Sensitivity of Mice Immunized With Cl. Oedematiens and Cl. Sordellii Toxoids to Homologous Toxins with Various Injection Methods"

Moscow, Byulleten' eksperimental'noy biologii i meditsiny, No 8, 1972, pp 73-74

Abstract: In nonimmunized mice, sensitivity to toxin injected intramuscularly was 3-1/2 times the sensitivity to toxin injected intravenously. For immunized mice the relationship was reversed: those with immunization to Cl. oedematiens were 2-1/2 times less sensitive to the toxin when intramuscularly injected than when intravenously injected. For injections of Cl. sordellii toxin, however, the sensitivity of the animals was the same regardless of the method of injection.

Heat, Combustion, Detonation

USSR

UDC 624.152.5:626.8

BARON, V. L., VLAS'YEV, S. YE. and SIDEL'NIKOV, B. K., Union Explosive Industry Board

"A Canal is Constructed by Blasting"

Moscow, Gigrotekhnika i Melioratsiya, No 2, Feb 73, pp 29-31

Abstract: The construction of a 26.5 m portion of the main Pallasov canal using a charged trench explosion is reported. The formula used for calculating the distribution of explosives in the trench is given. Granulite AS-4 and ammonite No 6, ZHV were the explosives used. The depth and width of the canal were within 10% of that desired, and the slant of the walls was also accurate. The advantages of this method were sharply cutting time requirements, lowering expenses, eliminating post-blast work and lowering filtration through the walls and bottom of the canal.

1/2 030 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--HIGH SPEED STEELS OBTAINED BY POWDER METALLURGY METHODS -U-

AUTHOR-(03)-RADOMVSELSKIY, I.D., KLIMENKO, V.N., VLASYUK, I.V.

COUNTRY OF INFO--USSR

SOURCE--POROSH. MET. 1970, 10(2), 32-7

DATE PUBLISHED--------70

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

TOPIC TAGS--HIGH SPEED STEEL, POWDER METALLURGY, HOT EXTRUSION, STEEL MICROSTRUCTURE, MICROHARDNESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0035 STEP NO--UR/0226/70/010/002/0032/0037

CIRC ACCESSION NO--AP0119031

UNCLASSIFIED

2/2 030 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0119031
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STEEL OF THE COMPN. R18 (HIGH W CONTENT), OBTAINED BY HOT EXTRUSION, WAS STUDIED. THE INFLUENCE WAS STUDIED OF THE HOLDING PERIOD AT THE ANNEALING TEMP. ON THE AMT. OF CARBIDE ISOLATED DURING TEMPERING. THE D. OF THE EXTRUDED SMAPLES WAS 8.76 G-CM PRIME3, WHICH PRACTICALLY COINCIDES WITH THE D. OF STD. HIGH SPEED STEEL. THE MICROSTRUCTURE OF THE QUENCHED AND TEMPERED METALLOCERAMIC STEEL CONSISTS OF HIGH ALLOYED MARTENSITE (WITH A MICROHARDNESS OF 700-800 KG-MM PRIME2), RESIDUAL AUSTENITE (WITH A MICROHARDNESS OF 320-400 KG-MM PRIME2), AND THE CARBIDES. INCREASING THE HOLDING TIME DURING QUENCHING ENHANCES THE SEGREGATION OF THE SECONDARY CARBIDES, MAKES THE MARTENSITIC MATRIX LESS ALLOYED, AND IMPROVES ITS ETCHABILITY. FACILITY: INST. PROBL. MATERIALOVED., KIEV, USSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--BIOSYNTHESIS OF PROTEINS WITH DIFFERENT LEVELS OF MANGANESE CONTENT IN PLANTS -U-
AUTHOR-(02)-VLASYUK, P.A., ZORYA, V.T.

COUNTRY OF INFO--USSR

SOURCE--FIZIOL. BIOKHIM. KUL'T. RAST. 1970, 2(2), 142-7

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, AGRICULTURE

TOPIC TAGS--BIOSYNTHESIS, PROTEIN, MANGANESE, PLANT PHYSIOLOGY, CYTOPLASM, CHLOROPLAST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605004/C08 STEP NO--UR/0654/70/002/002/0142/0147

CIRC ACCESSION NO--AP0139622

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0139622
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF MN ON THE PROTEIN COMPN. OF SUBCELLULAR STRUCTURES (CYTOPLASMIC AND CHLOROPLAST FRACTIONS) OF LEAVES OF PEA PLANTS WAS INVESTIGATED. THE ABSENCE OF MN FROM THE NUTRITIVE MEDIUM CAUSED A DECREASE OF THE AMT. OF CHLOROPLAST PROTEINS PER G OF FRESH TISSUE. THE AMT. OF CYTOPLASMIC PROTEINS WAS NOT INFLUENCED. THE CHLOROPLAST PROTEINS WERE SEPD. ON A DEAE CELLULOSE COLUMN INTO 10-12 COMPONENTS, THE CYTOPLASMIC PROTEINS INTO 13-14. THE ABSENCE OF MN FROM THE NUTRITIVE MIXT. CAUSED CHANGES IN THE QUAL. COMPN. OF PROTEINS: A DECREASE OF A NO. OF COMPONENTS IN BOTH FRACTIONS; AN INCREASE OF AMT. OF PROTEINS ELUTED BY 0.01-0.05M PHOSPHATE, BUFFER PH 8.0; AND A DECREASE OF AMT. OF COMPONENTS ELUTED BY 0.5M PHOSPHATE BUFFER, PH 8.0. FACILITY: INST. PLANT PHYSIOL., KIEV, USSR.

UNCLASSIFIED

USSR

UDC 624.07:534.1

AMEL'CHENKO, V. V., VOLCHKOVA, A. G., KRYS'KO, V. A.

"On the Problem of the Thermal Stability of Flexible Orthotropic Shells"

V sb. Raschet prostranstv. sistem v stroit. mekh. (Calculation of Three-Dimensional Systems in Structural Mechanics — Collection of Works), Saratov, Saratov University, 1972, pp 188-192 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V298)

Translation: A hollow fiberglass shell is considered as a nonhomogeneous orthotropic shell. The change in the elastic moduli is taken into account as a function of temperature, which is considered a known function of three variables. Relationships for thermoelastic forces and deformations are found. A system of nonlinear equations for equilibrium and compatibility of deformations is obtained in the ordinary manner. The nonlinear system is linearized by the consecutive loads method to solve the problem. The resulting linearized system is solved by the Bubnov-Vlasov variation method in high approximations. The calculations were performed on the M-220 computer. The example considered is that of a square isotropic shell hinge-supported on unstretchable ribs that are flexible in the tangential plane.

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USSR

AMEL'CHENKO, V. V., et al, Raschet prostranstv. sistem v stroit. mekh., Saratov, Saratov University, 1972, pp 188-192

The temperature over the thickness of the shell was taken to be constant in the examples. 7 ref. O. I. Terebushko.

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1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--DISPERSE CONDENSATION STRUCTURES OF POLYESTER URETHANES -U-

AUTHOR-(04)-YABKO, YA.M., POLINSKIY, S.L., ZHDANOVA, V.I., VLODAVETS, I.N.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(1), 155-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--PLASTIC FILM, POLYURETHANE RESIN, POLYGLYCOL, ORGANIC ISOCYANATE, CAPROLACTAM, POROSITY, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1091 STEP NO--UR/0020/70/191/001/0155/0157

CIRC ACCESSION NO--AT0124748
UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124748

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POROUS POLYURETHANE FILMS WERE PREPD. FROM THE REACTION PRODUCTS OF POLY(PROPYLENE GLYCOL), MOL. WT. SIMILAR TO 2000, H SUB2 NNH SUB2 .H SUB2 O, AND TOLYLENE DIISOCYANATE, OR OF POLYCAPROLACTAM, BUTANEDIOL, AND BIS(ISOCYANATOPHENYL)METHANE. THESE POLYMERS WERE SOL. IN ALL PROPERTIONS IN HCONME SUB2, HOWEVER THE ADDN. OF 5-10PERCENT H SUB2 O (PREFERABLY BY THE ABSORPTION OF H SUB2 O VAPOR) CAUSED THE SEPN. OF THE POLYMER GLOBULES WHICH SETTLED, FORMING POROUS AND ELASTIC FILMS (ELONGATION AT BREAK SMALLER THAN OR EQUAL TO 700PERCENT, H SUB2 O (G) PERMEABILITY SIMILAR TO 6 MG-CM PRIME2-HR). THE EFFECT OF THE AMT. OF H SUB2 O, AND THE TEMP. ON THE SOLN. METASTABILITY AND THE FILM PROPERTIES WERE ESTABLISHED. FACILITY: VSES. NAUCH.-ISSLED. INST. PLENOCHNYKH MATER. ISKUSSTV. KOZHI, MOSCOW, USSR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--HYDRODYNAMIC PECULIARITIES OF MICROELECTROPHORESIS AND ELECTROOSMOSIS IN A. C. FIELD -U-

AUTHOR-(03)-VOROBYEVA, T.A., VLODAVETS, I.N., DUKNIN, S.S.

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 2 PP 189-194

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTROPHORESIS, ELECTROOSMOSIS, ALTERNATING CURRENT, NAVIER STOKES EQUATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0395 STEP NO--UR/0069/70/032/002/0189/0194

CIRC ACCESSION NO--AP0113313

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0113313

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN MICROELECTROPHORESIS AND ELECTROOSMOSIS STUDIES IN A. C. FIELDS IT IS NECESSARY TO TAKE INTO ACCOUNT FAST DAMPING OF ELECTROOSMOTIC OSCILLATIONS OF THE LIQUID AS THE DISTANCE FROM THE WALLS INCREASES. THE NATURE OF THE DISTRIBUTION CURVES OF THE VELOCITY AMPLITUDES OF ELECTROOSMOTIC OSCILLATIONS HAS BEEN CONSIDERED IN A THICK LIQUID LAYER AJACENT TO THE WALL, IN A WIDE FLAT OPEN, AND IN A FLAT CLOSED, CELLS. THE SOLUTIONS OF NAVIER STOKES EQUATIONS HAVE BEEN FOUND, WHICH SATISFY THE CORRESPONDING BOUNDARY CONDITIONS AND AGREE WELL WITH EXPERIMENT.

UNCLASSIFIED

Acc. Nr: AP0036533 Ref. Code: UR 0069

PRIMARY SOURCE: Kolloidnyy Zhurnal, 1970, Vol 32, Nr 1, pp 83-86

SMALL ANGLE X-RAY SCATTERING BY WATER-CONTAINING CONDENSATION STRUCTURES OF POLYVINYLFORMAL

G. M. Plavnik, G. M. Sinitsyna, I. N. Vladavets

Summary

The porosity of the condensation structures of polyvinylformal subjected to treatment with an acetalizing mixture during 6 and 120 hours has been studied by the small angle x-ray scattering method. At maximum water content the scattering intensities of both samples coincide, in this case the porous structure being independent of the acetalation time. After drying the sample subjected to 6 hour acetalation shows practically no porosity. On the contrary, the porosity of the second sample remains unchanged. This indicates that upon prolonged acetalation (120 hours) the structure becomes stable to the capillary contraction forces arising during drying.

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REEL/FRAME
19721381

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VLODAVETS, V. V.

JPRS 55320
1 Mar 72

UDC: 616.9-078

SANITARY MICROBIOLOGICAL RESEARCH DEALING WITH PREVENTION OF BACTERIAL AND VIRAL INFECTIONS

[Article by L.Ye. Korsh, G.A. Bagdasar'yan, V.V. Vlodavets, Yu.G. Talayeva, Ya.L. Lovtsevich, T.Z. Artemova, R.A. Dmitriyeva (Moscow); Moscow, Vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No 1, 1972, pp 71-78]

One of the decisive factors in nonspecific prophylaxis of bacterial and viral infections is institution of health improving hygienic measures. Prompt development of first and foremost sanitary measures is determined largely by the results of systematic sanitary microbiological investigations of environmental objects (water, air in buildings, soil).

Sanitary microbiology, which has been studying the quality of drinking water and sanitary state of reservoirs, soil, and air, jointly with hygienists, have developed sensitive methods and accumulated extensive experimental and factual data, which permitted recommendation of norms that are used in routine sanitary practice to regulate the quality of water.

From the standpoint of prophylaxis of intestinal infections, improve-
ment of routine methods of rating the quality of water and sanitary condition
of reservoirs with respect to bacterial contamination is becoming very
important. One of the directions of work in this area is evaluation of the
existing methodological approaches to isolation of the E. coli group of
bacteria as indicators of the degree of fecal pollution of water. For this
purpose, the sanitary significance of bacteria included in the E. coli group
was investigated, on the basis of fermentation of glucose at 43°, according
to GOST [All-Union State Standard] 5216-50, for several years in different
climate zones of the nation, in reservoirs of different types and with
different degrees of pollution. It was established that the glucose tempera-
ture test does not permit precise differentiation between bacteria that are
significant from the sanitary point of view and E. coli that have lost this
property and water bacteria. This was confirmed not only for the reservoirs
in the South but also in the temperate zone. The quality of water in reser-
voirs, with respect to fecal contamination, is best characterized by lactose-
positive variants of Enterobacteriaceae, studied on lactose media at a tempe-
rature of 37° and demonstrated best by the method of membrane filters (L.Ye.

USSR

UDC 548,0:535

VLOKH, O. G., KUTNYY, I. V., LAZ'KO, L. A., and NESTERENKO, V. YA., L'vov State University imeni Iv. Franko

"Electrogyration of Crystals and Phase Transitions"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 9, Sep 71, pp 1852-1855

Abstract: Among the effects which are spontaneously generated during ferroelectric phase transitions the best known are the linear and quadratic electrooptical effects which are manifested in the change in refracting properties of the crystals and are described by polar tensors of the third and fourth ranks. Proceeding from the common symmetry arguments based on the principles of Curie and Neumann it may be expected that the ferroelectric phase transitions will be accompanied also by change in the gyration properties of the crystals that are associated with the imaginary part of the complex refractive index. The authors studied the spontaneous electrogyration effect in crystals of triglycinesulfate (TGS). They determined the size of the coefficient of linear electrogyration of the TGS crystals. They analyzed the character of the spontaneous electrogyration as a function of the type of phase transition and indicated the excellent characteristics of this effect as compared to the spontaneous electro-optical effect. The article contains 1 illustration and 11 bibliographic entries.
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1/2 034 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--ELECTROOPTICAL ACTIVITY OF QUARTZ CRYSTALS -U-

AUTHOR--VLOKH, O.G.

COUNTRY OF INFO--USSR

SOURCE--UKRAYIN. FIZ. ZH. (USSR), VOL. 15, NO. 5, P. 759-63 (MAY 1970)

DATE PUBLISHED----MAY70

SUBJECT AREAS--PHYSICS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--ELECTROOPTIC EFFECT, QUARTZ, LIGHT POLARIZATION, ELECTRIC FIELD, HELIUM NEON LASER, KERR EFFECT, TENSOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1811 STEP NO--UR/0185/70/015/005/0759/0763

CIRC ACCESSION NO--AP0133716

UNCLASSIFIED

2/2 034 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133716

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE QUADRATIC EFFECT OF THE ELECTROOPTICAL ACTIVITY (ELECTROGYRATION) IS FOUND IN THE QUARTZ CRYSTAL. IT CONSISTS IN THE CNAGE OF THE SPECIFIC ROTATION OF THE POLARIZATION PLANE OF THE LINEAR POLARIZED LIGHT UNDER THE ACTION OF THE ELECTRIC FIELD DIRECTED ALONG THE X OR Y AXIS DURING THE LIGHT PROPAGATION FROM THE HELIUM NEON LASER ALONG THE OPTICAL AXIS Z. THIS EFFECT IS SHOWN TO DIFFER IN PRINCIPLE FROM THE KNOWN ELECTROOPTICAL POCKELS' AND KERR'S EFFECTS AND IS DESCRIBED BY THE AXIAL TENSOR OF THE FOURTH RANK. THE COEFFICIENT OF THE QUADRATIC ELECTROGYRATION BETA SUB31 EQUALS (.1. PLUS OR MINUS 0.1) TIMES 10 PRIME NEGATIVE6 CGSE UNITS IS DETERMINED WITH LAMBDA EQUALS 632.8 NM.

UNCLASSIFIED

USSR UDC 632.95.024.391

MURAV'YEV, N. N., VNIIGINTOKA, Kiev

"A Toxicological and Hygienic Evaluation of Editon"

Moscow, Zashchita Rasteniy, No 1, 1970, p 27

Translation: The VNIIKhSZR All-Union Scientific Research Institute of Plant Protection Chemicals has synthesized a new fungicide -- editon (ethylenebis-4, 6-dimethyltetrahydro-1,3,5-thydiazine-2--thion). It has been extensively tested and is recommended against many plant diseases: apple mange, grape mildew, potato and tomato Phytophora, sugar beet cercosporella infection and tobacco pernosporosis. The preparation is not a phytocide, influences plants positively, and increases fruit and vegetable crop yields.

Editon can be included among the low-toxicity fungicides. The LD_{50} for rats is 5600±125 mg/kg, and for rabbits -- 4500±560 mg/kg. It is not resorbed through the skin and is not a local irritatant. The cumulative properties of the preparation are not pronounced: the cumulation coefficient with a daily injection into rats of one-tenth of the LD_{50} equals 6.6. Special calculations

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USSR

MURAV'YEV, N. N., et al., Moscow, Zashchita Rasteniy, No 1, 1970, p 27

have shown that the daily permissible dose of the preparation for man is 5 mg. The permissible editon concentration in foodstuffs is approximately 1 mg/kg.

Residual amounts of the preparation in fruit and vegetables depend on the number and frequency of treatments, the concentration of the suspension, and the time since application. Thus, potato tubers whose tops were sprayed with a 0.6% suspension (500 liters/hectare) twice (on 2 and 22 August, 1968, at the Put' Kommunizma Kolkhoz, Minsk Rayon) contained no editon residues. The harvest took place two weeks after the second treatment. An organoleptic study of the tubers disclosed no strange odors or taste. In tomatoes (an experimental plot of the Kolkhoz imeni Frunze, Kiev Oblast) after three sprayings with a 0.4% suspension (on 20 July, 10 and 25 August 1968), the maximum residue two weeks after the last treatment was 1.08 mg/kg. The fruit had no strange odor or taste. When sprayed twice (10 and 25 August) with a 0.2% suspension, the editon residues were even lower (0.54 mg/kg after seven days).
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USSR

MURAV'YEV, N. N., et al., Moscow, Zashchita Rasteniy, No 1, 1970, p 27

Determination of residual amounts of the preparation in apples was made after the trees were treated three and five times. In the triple-treated fruit (4 and 24 June and 20 July 1968 with a 0.5% suspension at a rate of 1,000 liters/hectare), 21 days after the last treatment the editon content in the fruit was 0.5 mg/kg, and their organoleptic qualities had not changed. When treatment was conducted peated five times (5 and 19 May, 3 and 22 June and 7 July, 1968) with a 0.5% suspension of editon (1,000 liters/hectare) 30 days after the last treatment 3 mg/kg of the preparation remained in the apples and there was a strange odor. The distinctive aroma of this apple variety had disappeared. After 50 days, the fruit contained 1.08 mg/kg of the preparation, and the organoleptic properties were normal.

Tests showed that treatment of tomatoes with a 0.4% suspension must stop at least two weeks before the first harvest. In apple trees sprayed three times with a 0.5% suspension, the last treatment is completed three weeks before the first picking. When treatment is repeated five times, the last treatment should end

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USSR

MURAV'YEV, N. N., et al., Moscow, Zashchita Rastenii, No 1, 1970, p 27

seven weeks before picking. Treating potato tops with a 0.6% suspension (500 liters/hectare) can be done two weeks prior to harvesting.

Work with editon presupposes special clothing and respirators. Inasmuch as the preparation rapidly decomposes in the open air, forming carbon disulfide, editon is stored in hermetically-sealed containers in a dry place.

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USSR

UDC: 620.179.16

NIKIFORENKO, Zh. G., SYSKOV, V. A., KREPS, N. S., IGNATINSKIY, I. L.,
VNIINK, Kishinev

"Ultrasonic Inspection of Bilayer Plates"

Sverdlovsk, Defektoskopiya, No 3, May/Jun 71, pp 87-93

Abstract: In order to evaluate the possibility of inspecting bilayer plates by the ultrasonic reflected pulse resonance method (L. G. Merkulov, V. M. Verevkin, Defektoskopiya, 1965, No 5, p 13) when the contacting liquid can wet only one surface of the plate to feed ultrasonic oscillations into the material being inspected, the authors calculate the shape of a pulse reflected from a plate separating liquid from air, disregarding attenuation. A block diagram of the ultrasonic flaw detector is presented. The proposed device can be used to check for diffusion welds between the layers of double-layer plates. The results of experiments show that the Merkulov-Verevkon method is a sound basis for highly sensitive high-productivity flaw detection.

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1/2 015 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--RESEARCH IN A DESIGN PLANNING INSTITUTE -U-

AUTHOR-(05)-KARATAYEV, G., VNIYZEMAMASH, M., GAYDAYENKO, YU., NAUMOV, A., BLOKH, G.

COUNTRY OF INFO--USSR

SOURCE--STROITEL, NAYA GAZETA, MAY 6, 1970, P 2, COLS 5-7

DATE PUBLISHED--06MAY70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--RESEARCH AND DEVELOPMENT, EARTH HANDLING EQUIPMENT, DESIGN FACILITY PLANNING, INDUSTRIAL INSTITUTE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0183 STEP NO--UR/9024/70/000/000/0002/0002

CIRC ACCESSION NO--AN0102254

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--18SEP70
CIRC ACCESSION NO--AN0102254
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THREE ARTICLES BY THE AFOREMENTIONED AUTHORS DISCUSS CERTAIN DRAWBACKS OF THE SOVIET RESEARCH AND DEVELOPMENT SYSTEM. ACCORDING TO KARATAYEV, THE VNIIZEMMASH COMPRISES RESEARCH DEPARTMENTS NAUCHNO ISSLEDOVATEL, SKIYE OTDELY, A LEADING DESIGN BUREAU GOLOVNOYE KONSTRUKTORSKOYE BYURO, AND A PILOT PLANT, OPYTNYY ZAVOD-. ITS PRINCIPAL PROBLEM IS LACK OF TESTING AND FIELD TESTING FACILITIES FOR THE EARTH MOVING MACHINERY IT DEVELOPS. GEMMERLING COMPLAINS ABOUT THE "DOUBLE LIFE" STANDARD FORCED UPON HIS INSTITUTE BY THE MINISTRY OF BUILDING MATERIALS, U.S.S.R. THE RESEARCH,NAUCHNAY,AND THE DEVELOPMENT,PROYEKTNAY,-SECTIONS OF THE INSTITUTE ARE SUBORDINATE TO DIFFERENT MAIN ADMINISTRATIONS OF THE MINISTRY AND HAVE DIFFERENT BUDGETS. IN GEMMERLING, S OPINION, BUDGET MONEYS SHOULD BE ALLOCATED TO THE ADMINISTRATION OF THE INSTITUTE TO FUND THE DEVELOPMENT OF PILOT PROJECTS ON THE BASIS OF COMPLETED RESEARCH PROGRAMS.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520013-3"

USSR

529.781:621.397.6

PALIY, G.N., LUK'YANCHENKO, YA.I., FEDOROV, YU.A., VNUKOV, YE.M.

"Experimental High-Precision System Of Transmission Of The Dimensions Of Time And Frequency Units On Television Broadcasting Channels"

Izmeritel'naya tekhnika, Moscow, No 1, Jan 1972, pp 34-37

Abstract: An established experimental system is described which assures joining the time scale of television channels in various cities of the European part of the USSR with an error of less than 1 microsecond. A block diagram of the system is shown. The authors express their thanks to S.N. Mordovin, V.F. Zhelezov, V.S. Krasulin, V.G. Il'in, L. A. Abramov, G.A. Zadykin, M.D. Sopel'nikov and other specialists who took an active part in creation of the system. Received by editors 20 Sept 71. " fig. 1 tab. 7 ref.

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USSR

UDC 681.326.34:519.1

VOBLENKO, S. T., and KULTYGIN, A. K.

"A Procedure for Forming the Unidirectional Output Pulses of a Linear Transforming Combinatory Switch"

USSR Author's Certificate No 278752, Filed 28 May 68, Published 3 Dec 70 (from Referativnyy Zhurnal -- Avtomatika, Telemekhanika, i Vychislitel'naya Tekhnika, No 8, 1971, Abstract No 8B171 P)

Translation: A procedure for forming the unidirectional output pulses of a linear transforming combinatory switch is being patented. The procedure is distinguished by the following features, whose purpose is to decrease significantly the energy accumulated in the inductance of the trigger of the switch during the time a pulse occurs and also to increase the limiting frequency of the switch's operation. At one of the outputs of the switch, a pulse is formed whose length is equal to half of the specified length of the pulse in the charge; this pulse is formed by supplying the appropriate combination of input signals to the inputs of the switch. Then the polarity of all the input signals is reversed and at the same switch output a pulse is formed whose length is the same as the preceding pulse, but whose polarity is the reverse of the polarity of the preceding pulse. Both output pulses are then permitted to pass.

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Extraction and Refining

USSR UDC 669.713

BARON, L. I., VOBLIKOV, V. S., and KURBATOV, V. M.

"On the Problem of Extracting Metal From Aluminum Slags"

Moscow, Tsvetnyye Metally, No 10, Oct 70, pp 74-75

Abstract: A schematic diagram for the fractionation of aluminum slags, with electromagnetic separation of inclusions after each fractionation step, is presented on the basis of experiments conducted by the authors. Crushers fractionate the initial slag in sizes up to 80-100 mm: the material of the 0-15 mm class is screened and sent for leaching-out. The remaining material is sent to a second fractionation step, and so on. A schematic drawing of the electromagnetic separator is presented, and its operation is described. The method described is said to make it possible to fractionate aluminum slag in sizes which will ensure its easy dissolution in the regeneration of salts, with sufficiently complete extraction of aluminum inclusions.

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USSR

UDC 678;66.018.86

SEMENKO, E. I., MYSHKOVSKIY, V. I., VOBLIKOVA, V. A., and VENDILLO, V. P.

"Study of the Caseous Products of γ -Radiolysis of Polymers in the Presence of Small Doses of Irradiation"

Moscow, Plasticheskiye Massy, No 5, 1973, pp 30-32

Abstract: A study was made of the gaseous products formed during γ -irradiation by small (2.5 Mrads) doses of certain polymer materials used in the medical industry: high-density polyethylene, methylmetacrylatebutyl acrylate copolymer polymethylmethacrylate, polyvinyl chloride and copolymers of styrene with methylenthacrylate, isoprene and divinyl.

From the experimental results presented it can be concluded that by using highly sensitive gas chromotography to analyze the products of radiolysis of certain polymer materials subjected to the effect of sterilizing doses of γ-radiation (2.5 Mrads) it is possible to establish the course of the decomposition processes with the formation of C_1-C_5 hydrocarbons, CO, and CO_2. Broad utilization of ionizing radiation to sterlize medical products made of plastics requires a detailed study of the mechanism of the initial stages of the decomposition processes of polymers on irradiation of them by small doses.

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USSR

UDC: 621.396.69:621.314.21.024.1

VOBROVSKIY, G. A., PIROGOV, A. I.

"Change in a Complex of Static and Dynamic Characteristics and Parameters of Cores With Rectangular Hysteresis Loop After Exposure to Gamma Emission"

Dokl. Nauchno-tekhn. konferentsii po ispol'z. ionizir. izluchenly v nar. kh-ve. Vyp. 3 (Reports of the Scientific and Technical Conference on the Use of Ionizing Radiation in the National Economy. No. 3), Tula, Prioksk. kn. izd-vo, 1970, pp 261-272 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2V470)

Translation: The authors present the results of measurements of a complex of characteristics of a series of core types including ribbon cores before and after long-term exposure (for a year) to continuous gamma radiation from Co-60 at a constant dose rate with temperature control of the specimen. The cores had different radiation resistances. Ribbon cores showed the least resistance. Empirical equations are presented which approximate the averaged relationships for the most radiation-sensitive parameters of ribbon cores as a function of the integral dose of gamma radiation. Six illustrations, bibliography of one title. N. S.

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USSR

UDC 547.26'118

ORLOVSKIY, V. V., VOBSI, B. A., and ZAKHAROVA, L. F., Leningrad Chemical Pharmaceutical Institute

"Preparation of the Dialkyl Esters of N-Substituted α-Aminobenzylphosphonic Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 5, 1972, pp 1165-1166

Abstract: The title esters may be prepared in high yield without using a catalyst by reacting the dialkyl esters of phosphorous acid with anils in solution at room temperature. If the reaction is carried out in an inert gas and the starting materials are carefully purified, it is not necessary to purify the product. Yields and physical data are for the compounds prepared.

USSR

UDC 621.43.001.4

MOZOKHIN, N. G., VODENISOV, A. YA., Gor'kiy Motor Vehicle Plant, Zavolzhskiy Motor Plant

"The Longevity of the Model 320B (320) Stationary Engine"

Moscow, Avtomobil'naya Promyshlennost', No. 7, 1971, pp 2-3

Abstract: The article deals with the just-completed third stage of long-term tests of the indicated stationary engine. Data were obtained concerning the average wear of engine parts after 7,000 hours of tests, more precise information was obtained in the average calculated longevity of the basic engine parts, and the equivalent of one hour of operation of the engine under stationary conditions to the travel of the base model (in kilometers). 2 figures, 2 tables, 4 references.

1/1

USSR

KOLOT, V. YA., TATUS, V. I., RYBALKO, V. F., FOGEL, YA. M., VODOLAZHCHENKO, V. V., and YEVSEYEV, V. M., Engineering Physcis Institute, Academy of Sciences Ukrainian SSR, Khar'kov

"Effect of Oxygen Pressure on the Initial Stage of Molybdenum Oxidation"

Leningrad, Fizika, Tverdogo Tela, Vol 13, No 6, 1971, pp 1521-1524

Abstract: The effect of oxygen pressure on the initial stage of oxidation of molybdenum was investigated using the technique of secondary ion-ion emission. Molybdenum strips were heated in vacuum up to a temperature of 1900°K, which completely cleaned their surfaces for the absorbed particles and particles of surface compounds. Each experiment began with the molybdenum surface brought to atomic purity. Then the molybdenum temperature was reduced from 1900°K to a temperature at which the experiment was conducted; namely, the range 300-1900°K. The kinetics of oxide accumulation on the surfaces of molybdenum strips was studied; the current I of a beam of secondary ions driven off from the oxide molecule under study was plotted as a function of time t. The oxygen pressure was varied within the limits $5 \cdot 10^{-8}$ - $1 \cdot 10^{-6}$ torr. The following ion species were investigated: MoO_2^+,

USSR

KOLOT, V. YA., et al., Fizika Tverdogo Tela, Vol 13, No 6, 1971, pp 1521-1524

MoO_3^-, $Mo_2O_3^+$, $Mo_2O_6^+$, and Mo_2O^+. An increase in oxygen pressure leads to the following: 1) a shortening of the latency. (time interval between the onset of oxygen adsorption and the instant of oxide formation on molybdenum surfaces); 2) a shortening of the time interval required for an equilibrium oxide film to form on surfaces; and 3) increased oxide concentration. The condition of the surface film (composition and concentration of oxides) is reproducible and reversible with variation in temperature and oxygen pressure. This indicates that the oxide film consists of a layer of surface oxides.

2/2

USSR UDC 616.981.551-612.014.464

BELOKUROV, Yu. N., VODOLAZOV, Yu. A., KAMENNYY, A. N., POPOV, B. V., and KIRSANOV, B. N.

"Inhalation of Oxygen Under High Pressure for Tetanus"

Kazan', Kazanskiy Meditsinskiy Zhurnal, No 5, 1971, p 93

Abstract: A 46-year-old male received a prophylactic dose of tetanus antitoxin as well as tetanus toxoid for gunshot wounds in the neck and back, but his condition began to deteriorate sharply seven days after the injury and convulsions occurred with increasing frequency. When repeated injections of tetanus antitoxin, oxygen, analgesics, antihistamine, and desensitizing agents were ineffectual and the convulsions intensified, it was decided to institute hyperbaric oxygen therapy (1-1/2 hour exposure with O_2 pressure about 3 atm. The symptoms began to subside within 24 hours and respiration became easier. However, convulsions were provoked by the slightest movement and another session was carried out 24 hours later. The patient's condition showed steady improvement and convulsions became less frequent and confined to increasingly smaller areas. By the 15th day from the time of admission to the hospital, the clinical symptoms of tetanus disappeared completely.

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USSR

UDC 669.715

KOZHEVNIKOV, G. N., and VODOP'YANOV, A. G.

"Decomposition Conditions of Silicon and Aluminum Suboxides in Production of Light Metals and Alloys"

Moscow, Tsvetnyye Metally, No. 7, Jul 71, pp 37—40

Abstract: On the basis of calculations which utilized data of the reference literature and individual experimental findings, it is demonstrated that silicon and aluminum suboxides do not decompose in the temperature interval of 1,000—1,900 °C by contact with oxides of other metals, but they reduce them with production of slag and the alloy. In the presence of C, suboxides of Al and Si decompose with production of carbides and oxides of higher valency, up to temperatures of 2,025 °C and 1,500 °C, respectively. At higher temperatures, suboxides react with C with production of carbide. To decrease Si and Al losses with the gaseous phase, it is expedient to carry out the reduction process by decreased CO pressure and increased surfaces of the reducing agent and the solvent. Two illustr., two tables, sixteen biblio. refs.
1/1

USSR UDC 669.71.053.2

VODOP'YANOV, A. G., KOZHEUNIKOV, G. M., MIKULINSKIY, A. S., and YEFREMKIN, V. V.

"The Role of Suboxides of Aluminum in Reduction Processes"

V. sb. Vakuumn. protsessy v tsvetn. metallurgii (Vacuum Processes in Nonferrous Metallurgy -- Collection of Works), Alma-Ata, "Nauka," 1971, pp 213-216 (from Referativnyy Zhurnal - Metallurgiya, No 6, Jun 71, Abstract No 6G142)

Translation of Abstract: A study is made of the interaction of gaseous oxides of lower valent Al with SiO_2 and C at 1450-1700° and residual pressure of 15-22 mm Hg. Al suboxides possess reducing and oxidizing properties (Two illustrations)

1/1

USSR

ADO, YU. M., ZHURAVLEV, A. A., LOGUNOV, A. A., MYAE, E. A., NAUMOV, A. A., PISAREVSKIY, V. YE., ROGOZINSKIY, V. G., TUSHAMISHVILI, K. Z., SHUKEYLO, I. A., BOYKO, S. N., KOMAR, YE. G., MALYSHEV, I. F., MOZIN, I. V., MONOSZON, N. A., MOZALEVSKIY, I. A., SPEVAKOVA, F. M., STOLOV, A. M., TITOV, V. A., VODOPIYANOV, F. A., KUZ'MIN, A. A., KUZ'MIN, V. F., MINTS, A. L., RUBCHINSKIY, S. M., UVAROV, V. A., GUTNER, B. M., ZALMANZON, V. B., PROKOP'YEV, A. I., and TEMKIN, A. S.

"Some Results of the Overall Adjustment and Start-up of the 70-Gev Proton Synchrotron of the Institute of High-energy Physics"

Moscow, Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

Abstract: The physical part of the plan for the 70-Gev proton synchrotron was executed by the Institute of Theoretical and Experimental Physics. The electromagnet with feed system, the vacuum chamber, and the injection devices were developed at the Scientific Research Institute of Electrophysical Apparatus imeni D. V. Yefremov. The radioelectronic systems for acceleration process control and generation of

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ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

the accelerating field, as well as the radiotechnical measurement and beam observation systems, were developed by the Radiotechnical Institute of the Academy of Sciences USSR. "Tyazhpromelektroproyekt" [State Planning Institute for the Planning of Electrical Equipment for Heavy Industry] designed the general-purpose electrotechnical devices and cable connections. The plan for the construction complex of the accelerator was developed by the State All-Union Planning Institute. The construction of the accelerator was under the general supervision of the State Committee for the Use of Atomic Energy USSR. The adjustment of individual systems and the overall adjustment and start-up of the accelerator were carried out by the Institute of High-energy Physics and the developers of the accelerator systems. The basic beam work was done by the Institute of High-energy Physics with the participation of the Radiotechnical Institute. The construction of the accelerator was begun in 1960, and all the basic construction and assembly work was completed at the beginning of

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ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

1967. At the initial stage of construction, before the formation of the Institute of High-energy Physics in 1963, the work was coordinated by the Institute of Theoretical and Experimental Physics. The linear accelerator injector was started on 28 July 1967, the operation of the individual systems was adjusted by September 1967, and the physical start-up of the accelerator was accomplished on 14 October.

A description is given of the work done to adjust the annular electromagnet (including the electromagnet cooling and feed systems), the injection system (consisting of matching channel and injection device), the vacuum system, the radioelectronic system (including the accelerating field generation system, the acceleration process control system, and the radiotechnical measurement system), and the beam observation system (which provides for beam observation in the first revolution and during acceleration). In the physical start-up of the accelerator the main efforts were directed towards obtaining accelerated protons of the planned energy, and the problem of obtaining high

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ADO, YU. M., et al., Atomnaya Energiya, Vol 28, No 2, Feb 70, pp 132-138

intensity of the accelerated proton was not raised.

The article gives a listing of the principal parameters of the proton synchrotron, as well as a schedule of the individual stages of the start-up of the accelerator. Photographs include a view of the part of the ring hall in the beam injection area and a general view of the hall of ignitron rectifiers.

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USSR

UDC: 53.082.5

VODOP'YANOV, L. K., KOPANEV, V. D., and VINOGRADOV, Ye. A.

"Automation of Optical Measurements from Points in the Far Infrared Region"

Moscow, Pribory i tekhnika eksperimenta, No 1, 1973, pp 206-208

Abstract: Although the method of optical measurements in the far infrared region involving point-by-point spectrum recording is the most accurate, it is also the most tedious. The authors of this paper therefore present a system for making such measurements automatically. As the simplified drawing shows, the equipment consists of a diffraction grating that is turned precisely to a given angle, a cryostat that periodically enters the light beam for a time and carries the specimen, and a slide which interrupts the beam for zero signal measurements. A detailed explanation of the equipment's operation is given. It used periods of 1.2, 3.5, 7.0, and 14.0 min for performing its recording cycles. Two factors were considered in setting these periods: the measurement accuracy, which improves with increasing spectral recording time in each phase, and the total time for recording the whole spectrum.

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VODOP'YANOV, N. G.

Radio-Engineering

JPRS 57102

26 September 1972

UDC 621.372.852.1

GENERAL PURPOSE MODULAR WAVEGUIDE ASSEMBLY

[Article by A. V. Kislyakovskiy, N. G. Vodop'yanov, and S. [illegible], Moscow, Izvestiya Vuz - Radioelektronika, Russian, Vol 15, No 10, 1971, pp 1175-1181]

The design of a general purpose modular waveguide assembly consisting of orthogonally intersecting transmission lines coupled by two ferrite resonators is described. The construction allows one design version to serve as a directional bandpass filter, filter limiter, rejector filter, filter circulator, and selective attenuator. The engineering specifications for these functional elements are given.

The various filters, circulators, and other devices employed in the frequency separation of signals transmitted in a common antenna-waveguide channel are cumbersome in the waveguide version, while their dimensions grow as the wavelength increases.

The sizes of these waveguide assemblies can be appreciably reduced with the use of ferrite resonators. The general purpose modular waveguide assembly (VUMU) described below utilizes the transmission line coupling phenomenon by means of ferrite resonators.

The general purpose modular guide assembly, shown schematically in Figure 1, consists of a main transmission line 1 and auxiliary transmission line 2 which are crosswise coupled through the wide walls of two beyond-cutoff circular waveguides 3 and 4. The beyond-cutoff waveguides are coupled with the orthogonally intersecting transmission lines through coupling apertures in regions where the high frequency magnetic field is circularly polarized for both transmission lines.

Ferrite resonators 5 and 6, mounted in teflon enclosures 7 and 8, are situated along the axis of the beyond-cutoff waveguides and magnetized by an external field H_0 proportional to the ferromagnetic resonant frequency. The

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UDC 621.372.852.1

KISLYAKOVSKIY, A.V., VODOP'YANOV, N.G., KUSHCH, S.N.

"Waveguide Universal Functional Unit"

Kiev, Izvestiya Vuzov SSSR—Radioelektronika, Vol XIV, No 10, 1971, pp 1130-1136

Abstract: The construction is described of a waveguide universal functional unit consisting of transmission lines intersecting at a right angle, connected by two ferrite resonators, which in one constructive execution make it possible to assure operation of the following functional elements: directional band-pass filter, filter-limiter, rejection filter, filter-circulator, and a selective attenuator. The scheme of the waveguide universal functional unit is shown as well as the electrical circuit of the magnetic system, and a detailed description is given of the technical characteristics of the functional units. Received by editors 15 June 70. 4 ref. 6 fig.

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USSR UDC 513.735

VODOP'YANOV, S. K.

"Limits of the Deviation of Quasi-umbilical Surfaces from a Sphere"

Moscow, Sibirskiy Matematicheskiy Zhurnal (Siberian Mathematical Journal), Vol 11, No 5, Sept-Oct 1970, pp 971-987

Abstract: Every convex surface M has a corresponding convex, positive, homogeneous, first-order reference function h(x). The surface M belongs to a class W^2 if $h(x) \in W^2_p$. The characteristic elements of matrix $\|\partial^2 h/\partial x_i \partial x_j\|$ are radii of curvature of M with the normal v. These radii can be related to values equal to zero when the surface M is part of a sphere. The zero values characterize the deviation of the surface from the sphere. The surface M can be continued in a region bounded by two concentric spheres. The radii of the two spheres are compared and relations are obtained. If p(M) is the lower bound of such relations and is greater than or equal to 1, the author questions whether one can suppose that n(M) 0 and p(M) 1. If this is true, then what is the order of smallness of p(M) - 1 as compared to n(M)? The author makes estimates of p(M) - 1. The author thanks Yu. G. Reshetnyak for interest in the work. Orig. art. has 5 refs.

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1/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--PREPARATION OF CRYSTALLINE CYANAMIDE -U-

AUTHOR-(04)-GOLOV, V.G., KUZNETSOVA, L.V., VODOPYANOV, V.G., IVANOV, M.G.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(3), 198-200

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--CRYSTAL, CALCIUM COMPOUND, CYANAMIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0531 STEP NO--UR/0064/70/046/003/0198/0200

CIRC ACCESSION NO--AP0124226

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0124226
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN ORDER TO PREVENT FORMATION OF H SUB4 C SUB2 N SUB4 (I) IN THE MANUFG. OF H SUB2 CN SUB2 (II), A CACN SUB2 SUSPENSION IN H SUB2 O IS TREATED WITH CO SUB2 AT LESS THAN 20-5DEGREES. THE CA PRIME2 POSITIVE IONS ARE THEN REMOVED FROM THE RESULTING 5PERCENT II SOLN. BY ION EXCHANGE BY THE TECHNIQUE OF GOL'DBERG, ET AL. (1966), THE PH IS ADJUSTED TO 4.5-5.5 BY THE ADDN. OF H SUB2 SO SUB4, AND THE SOLN. IS CONCD. BY A 2 STAGE VACUUM EVAPN. PROCESS TO 30PERCENT II BY EVAPN. AT 40DEGREES AND TO 70-80PERCENT II BY EVAPN. AT 20DEGREES. THE II IS THEN CRYSTD. BY COOLING THE SOLN. TO MINUS 15DEGREES; THE PRODUCT CONTAINS 5PERCENT H SUB2 O, 10PERCENT I AND THE BALANCE II. A PRODUCT OF LOWER I CONTENT (4.5PERCENT) MAY BE OBTAINED BY HEATING THE CRYSTALS TO 20DEGREES AND REMOVING THE LIQ. PHASE. THE II MAY BE STORED FOR UP TO 1 MONTH AT 20DEGREES BUT MORE PROLONGED STORAGE REQUIRED STABILIZATION OF THE II (TO PREVENT FORMATION OF I, E.G., UNSTABILIZED II IS QUANT. CONVERTED TO I WITHIN 11 MONTHS AT 20DEGREES) BY THE ADDN. OF 1PERCENT OF BAOH OR 0.2PERCENT OF IODINE; AFTER THE STABILIZATION, THE MOLTEN (AT 45-50DEGREES) II MAY BE FROZEN AND GRANULATED BY CRUSHING.

UNCLASSIFIED

USSR UDC 539.389.4

GUR'YEV, A. V., VODOP'YANOV, V. I., Volgograd

"Influence of Preliminary Plastic Deformation on Nonelastic Properties of Metal"

Kiev, Problemy Prochnosti, No 5, May, 1971, pp 85-89.

Abstract: The dependence of the intensity of the appearance of nonelastic properties of steel, evaluated on the basis of the parameters of the elastic hysteresis loop, on the type of preliminary plastic deformation, performed by extension or torsion, is studied. The total dislocation deformation is found to be determined by the total dislocation deformation in shear in all slipping systems per unit volume, activated under preliminary plastic deformation conditions. If the loading is performed in the same direction during measurement of hysteresis loops as during preliminary plastic deformation, bending of the dislocation loops will occur in the previously active slipping systems. Otherwise, the number of previously active systems involved in bending will be decreased.

USSR

UDC: 681.3.06:51

POPOV, V. A. and VODOP'YANOV, V. K.

"Minimization of Algorithms on the Basis of Geometric Interpretation"

Kharkov, V sb. Radioelektronika letatel'n. apparatov (Aerospace Electronics--collection of works) No 5, 1973, pp 171-179 (from RZh--Avtomatika, telemekhanika i vychislitel'naya tekhnika, No 12, 1973, Abstract No 12B71)

Translation: On the basis of the Glushkov algorithmic system, the representation of any algorithm is considered in a disjunctive situation on the basis of product operations and x-disjunctive operators. Among the set of regular forms of the algorithm are the normal, canonical, and minimal.

A theorem of the possibility of minimizing the number of logic conditions of the algorithm is proved, and an iterative procedure is proposed for the algorithm with the use of a theoretical, multivariate regular operation for the intersection of disjunctive complexes represented in geometric form as the coating of an m-dimensional unit cube. Bibliography of four. Resume.

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USSR

UDC 577.4

POPOV, V. A., and VODOP'YANOV, V. K.

"Minimization of Algorithms on the Basis of Geometric Interpretation"

V sb. Radioelektronika letatel'n. apparatov (Radioelectronics of Flying Apparatus - collection of works), No 5, Khar'kov, 1973, pp 171 - 179 (from RZh Matematika No 12, 1973, abstract No 12 V 466

Translation: A method is proposed for transforming control algorithms on the basis of V. M. Glushkov's model (RZh Mat, 1966, 8 V135). To minimize the number of logical conditions, a geometric interpretation of this model in terms of covering the vertices of a n-dimensional unit cube is examined. A theorem on the possibility of minimizing the number of logical conditions of the algorithm is proven.

Abstract by A. Sapozhenko.

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USSR UDC 539.67

KRISHTAL, M. A., VYBOYSHCHIK, M. A., VODOP'YANOV, V. N., GOLOVIN, S. A., MOKROV, A. P., and GONCHARENKO, I. A.

"Dislocation Damping and Study of Dislocation Structure and Mobility Along the Dislocation Tubes"

Sb. "Vnutrenneye treniye v metallicheskikh materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 85-90

Abstract: The effect of weakly soluble impurities and their mobility on stress in surface layers and upon formation of a dislocation network before the diffusion front is studied. The change in dislocation structure is investigated by internal friction time dependence. At the same time, the additional impurities precipitation upon dislocations was considered in the recovery process of Cu-La, Cu-Li, and Cu-B alloys. An increased dislocation density in the diffusion zone was studied on an Fe-In system. Diffusion equations for impurity atoms along the dislocation, its solution, and analysis are presented. The described model works in dilute solutions with impurity concentrations less than 0.05% and at temperatures lower than those corresponding to the formation of Cotterell's atmospheres. 1 table. 5 figures, 3 references.

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USSR UDC 577.391

MAKHLINA, A. M., VINOGRADOVA, M. F., and VODOP'YANOVA, L. G.

"The Relative Radiation Sensitivity of Some Animal Organs"

Leningrad, Vestnik Leningradskogo Universiteta, Biologiya, No 2, 1973, pp 88-94

Abstract: At the peak of radiation sickness (72 hrs after irradiation of rats and rabbits with a lethal dose of X-rays amounting to 1,000-1,200 and 3,000 R, respectively), changes in the proteins, nucleic acids, and lipids of the animals' small intestine, liver, spleen, brain, and skeletal muscles were studied. On the basis of changes established by the investigation of organ and tissue homogenates, the small intestine, spleen, and liver must be regarded as radiation-sensitive, while the brain and skeletal muscles are radiation-resistant. The results obtained for mitochondria isolated from the organs of the animals agreed with those obtained in the study of homogenates derived from the organs in question. The conclusions reached in regard to the relative radiation sensitivity of the organs and tissues studied are in agreement with those arrived at by other investigators, except in the case of the liver, which is regarded as radiation-resistant in some published work. According to the data obtained in the present work, the biosynthesis of total lipids in the liver of rats decreased by 32%, while that of cholesterol increased by a factor

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MAKHLINA, A. M., et al., Vestnik Leningradskogo Universiteta, Biologiya, No 2, 1973, pp 88-94

of three. The content of lipids + cholesterol increased by 11-12%. The biosynthesis of total lipids and proteins in the mitochondria of the rat liver increased significantly, while a change in the content of these two components did not take place. The biosynthesis of lipids and proteins was studied by means of a tracer introduced by the addition of radioactive Na acetate ($2^{14}C$). The results of the work described indicated that the radiation sensitivity increased with increasing intensity of the metabolic activity of the organs and tissues.

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1/2 028 UNCLASSIFIED PROCESSING DATE--090CT70

TITLE--CHANGE IN EXCITABILITY OF VASOMOTOR CEREBRAL CENTRE WHEN STIMULATING THE MECHANORECEPTORS OF THE LUNG LOBE VESSELS -U-

AUTHOR--VODOPYANOVA, M.A.

COUNTRY OF INFO--USSR

SOURCE--FIZIOLOGICHNIY ZHURNAL, 1970, VOL 16, NR 3, PP 312-317

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BRAIN, LUNG, BLOOD PRESSURE, EXCITED STATE, NERVOUS SYSTEM, DOG

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1122 STEP NO--UR/0238/70/016/003/0312/0317

CIRC ACCESSION NO--AP0115141

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--09OCT70
CIRC ACCESSION NO--AP0115141
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN ACUTE EXPERIMENTS ON DOGS DIFFERENT POINTS OF VASOMOTOR CENTRE WERE STIMULATED BY ELECTRIC CURRENT. THE LEVEL OF AN INCREASE IN MAGISTRAL BLOOD PRESSURE IN RESPONSE TO THIS STIMULATION FELL WITH AN INCREASE IN THE VOLUMEN OF BLOOD, PERFUSED THROUGH THE VESSELS OF THE LUNG LUNG. ON THIS BASIS THE INHIBITORY EFFECT IS SUPPOSED ON THE VASOMETER CENTRE FROM THE MECHANORECEPTORS OF THE LUNG VESSELS. FACILITY: DEPARTMNET OF NORMAL PHYSIOLOGY, MEDICAL INSTITUTE, ROSTOV.

UNCLASSIFIED

USSR

UDC 621.396.626

VODOP'YANOVA, V. V., Active Member of the Scientific and Technical Society of Radio Engineering, Electronics and Communications imeni A. S. Popov

"Noiseproofness of Carrier Telegraphy Signals in Communication Systems with a Protective Interval"

Moscow, Radiotekhnika, Vol 27, No 1, 1972, pp 65-68

Abstract: A study was made of the problems of improving the noiseproofness of reception of carrier telegraphy signals passing through a multibeam channel with additive white noise as a result of controlling the intersymbol interference by a protective interval. The transmission of binary carrier telegraphy signals with a duration T through a multibeam channel was considered with fading smooth in time and selective with respect to frequency. This model of the channel is convenient for analyzing the short-term functioning of the system under the condition that the channel parameters do not vary during the time interval equal to the duration of all the elementary signals interfering with the investigated symbol signal. In accordance with the procedure discussed previously [V. V. Vodop'yanova, et al., Radiotekhnika, Vol 26, No 5, 1971], moments of the following type must be calculated first to determine p_{error}^{i}:

$$m_{11}^{i} = \overline{|\dot{u}_1|^2}, \quad m_{00}^{i} = \overline{|\dot{u}_0|^2}, \quad m_{10}^{i} = \overline{\dot{u}_1 \dot{u}_0^*},$$

where $\dot{u}_1$ and $\dot{u}_0$ are values of the complex envelopes of the signals at the filter output at the reading time $t = t_0 + T_a$; i determines the form of the transmitted sequence. Assumptions are made by which the expressions for the above described moments assume the form

$$m_{11}^{111} = 8E^2\sigma^2\left\{b^2 + b/\rho\right\};\ m_{00}^{111} = 8E^2\sigma^2\, b/\rho;\ m_{11}^{010} = 8E^2\sigma^2\left\{\frac{(1+b)d}{\pi\sqrt{\pi}} \times \right.$$

$$\times \exp\left[-\frac{\pi^2}{16d^2}(1+b)^2\right] - \frac{d(1+3b)}{\pi\sqrt{\pi}} \exp\left[-\frac{\pi^2}{16d^2}(1-b)^2\right] -$$

$$- \Phi\left[\frac{\pi}{4d}(1-b)\right]\left[\frac{2d^2}{\pi^2} + 1/4(1+b)^2 - b^2\right] + \Phi\left[\frac{\pi}{4d}(1+b)\right]$$

$$\left.\left[\frac{2d^2}{\pi^2} + 1/4(1+b)^2\right] + b/\rho\right\};\ m_{00}^{010} = 8E^2\sigma^2\left\{\frac{d(1-3b)}{\pi\sqrt{\pi}}\right.$$

$$\exp\left[-\frac{\pi^2}{16d^2}(1+b)^2\right] - \frac{d(1-b)}{\pi\sqrt{\pi}} \exp\left[-\frac{\pi^2}{16d^2}(1-b)^2\right] +$$

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VODOP'YANOVA, V. V., Radiotekhnika, Vol 27, No 1, 1972, pp 65-68

$$+ \Phi\left[\frac{\pi}{4d}(1+b)\right]\left[\frac{2d^2}{\pi^2} + 1/4(1-b)^2 - b^2\right] - \Phi\left[\frac{\pi}{4d}(1-b)\right]$$

$$\left[\frac{2d^2}{\pi^2} + 1/4(1-b)^2\right] + b^2 + b/\rho\Big\}; \quad m_{11}^{011} = m_{11}^{110} = \frac{m_{11}^{111} + m_{11}^{010}}{2};$$

$$m_{00}^{011} = m_{00}^{110} = \frac{m_{00}^{111} + m_{00}^{010}}{2}; \quad m_{10}^{1} = 0 \text{ for all } i.$$

The theoretical calculations are illustrated by graphs. There are values of b which are defined by the values of d and ρ which are optimal in the sense of minimal P_{error}. The selection of $b < 0.5$ is inexpedient since in this case the required frequency band more than doubles, and the energy losses of the signal increase significantly, leading to inadmissible P_{error}. With an increase in the order of the spaced reception L, the efficiency of reception with a protective interval increases. This is explained by a relative decrease in the effect of the additive noise on P_{error} by comparison with the interference noise. The same trend is observed with an increase in ρ.

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USSR

UDC: 621.396.626

VODOLIVANOVA, V. V., LIVSHITS, V. M.

"Resistance to Interference in Reception of Frequency Telegraphy Signals in Communications Systems With 'Jumping' Frequency"

Moscow, Radiotekhnika, Vol. 26, No 5, May 71, pp 49-54

Abstract: The method proposed by P. A. Bello and B. D. Nelin (Trans. IRE, v. CS-11, 1963, No 2) is used to determine the resistance to interference of communications systems with jumping frequency. The "jumping frequency method" is a procedure for correction of intersymbol interference. The essence of the method consists in a programmed change of the carrier frequency of the transmitted signal and a shift of the receiver passband. The resultant general relationships are illustrated by curves for the error probability as a function of the signal-to-noise ratio for $\gamma = 0$ and 1 (where γ is the number of pairs of "jumping" frequencies) and various rates of data transmission in the channel in the case of two branches of separation. A curve is also given for the signal-to-noise ratio necessary for a given error probability.

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UNCLASSIFIED PROCESSING DATE--17JUL70

TITLE--DIFFUSION OF OXYGEN INTO CADMIUM TELLURIDE STUDIED WITH A MASS SPECTROMETRIC MICROANALYZER -U-

AUTHOR--VOLOVATOV, F.F., INDENBAUM, G.V., VARYUKOV, A.V.

28
5
33

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD TELA 1970, 12(1), 22-5

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--GAS DIFFUSION, OXYGEN, CADMIUM TELLURIDE, MASS SPECTROMETER, VISIBLE LIGHT QUANTUM GENERATOR, TEMPERATURE DEPENDENCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1979/1999 STEP NO--UR/0181/70/012/001/0022/0025

CIRC ACCESSION NO--AP0048277

UNCLASSIFIED

Acc. Nr: AP0048277 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR0181

104045w Diffusion of oxygen into cadmium telluride studied with a mass-spectrometric microanalyzer. Vodovatov, F. F.; Indenbaum, G. V.; Vanyukov, A. V. (Inst. Stali Splavov, Moscow, USSR). *Fiz. Tverd. Tela* 1970, 12(1), 22–5 (Russ). The distribution of O in pure CdTe produced as a result of oxidn. at various temps. was studied by probing with a beam from an optical quantum generator and subsequent mass-spectrometric anal. Temp. dependences were detd. of the diffusion coeffs. of O in *p*- and *n*-type specimens. A. Libackyj

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REEL/FRAME
19791999

18 cx

USSR UDC 616.985.5-053.3-097.5

DREYZIN, R. S., VOD'YA, R. A., and ZOLOTARSKAYA, E. Ye., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, and Tallin Scientific Research Institute of Epidemiology, Microbiology, and Hygiene

"Long-Term Follow-Up of the Level of Antibodies to Adenoviruses in Institutionalized Children"

Moscow, Voprosy Virusologii, No 5, 1971, pp 590-596

Abstract: The formation of humoral immunity to six serotypes of adenoviruses (types 3 and 7 and latent types 1, 2, 5, and 6) was studied in 90 institutionalized Estonian children ranging in age from 2 months to 3 years. By age 3 the sera of all the children contained antihemagglutinins to types 3 and 7, and only 38 to 63% contained neutralizing antibodies to each of the latent types, despite the fact that the latter circulated in the group. There were numerous cases of natural reinfection with the same type of virus. The level of immunity markedly increased after reinfection as manifested by a sharp rise in antibody levels, persistence of high titers, and slow lowering of the levels. The results of the study suggest that immunity to adenovirus infection is maintained by infection with the commonest serotypes. Primary infections

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002203520013-3"

USSR

DREYZIN, R. S., et al., Voprosy Virusologii, No 5, 1971, pp 590-596

arose in the absence of antibodies in the serum, while reinfection occurred both in the absence of antibodies and in the presence of neutralizing antibodies to the latent types in titers of 1:10 and of antihemagllutinins to types 3 and 7 in titers ranging from 1:10 to 1:80. The complement-fixing antibodies were the first to disappear, then the antihemagglutinins, and last of all the neutralizing antibodies.

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USSR

UDC 533.916

VODYANITSKIY, A. A., REPALOV, N. S.

"Spatial Echo and Nonlinear Interaction of Waves in a Plasma"

Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb. (Plasma Physics and Problems of the Controlled Thermonuclear Fusion. Republic Interdepartmental Collection), 1972, No. 3, pp 47-63 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G199)

Translation: Spatial echo is investigated considering the motion of electrons and ions in all frequency regions. An expression is obtained for the echo signal at the natural oscillations of the plasma under the condition that at least one of the three frequencies of the external sources and the echo belong to the transparency region. The signal for the nonlinear interaction of waves is compared with the echo in the plasma.

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1/2 023 UNCLASSIFIED PROCESSING DATE--090CT70

TITLE--NONLINEAR INTERACTION OF LONGITUDINAL WAVES IN A NONISOTHERMAL PLASMA -U-

AUTHOR-(02)-VODYANITSKIY, A.A., REPALOV, N.S.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL TEKHNICHESKOI FIZIKI, VOL. 40, JAN. 1970, P. 32-40

DATE PUBLISHED-----JAN70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--INHOMOGENEOUS PLASMA, PLASMA OSCILLATION, PLASMA INTERACTION, PLASMA WAVE PROPAGATION, TURBULENT PLASMA, NONLINEAR EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1978/1219 STEP NO--UR/0057/70/040/000/0032/0040

CIRC ACCESSION NO--AP0046142

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0046142

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DERIVATION OF EQUATIONS FOR THE AMPLITUDES AND PHASES OF THE INTERACTING ION ACOUSTIC LANGMUIR OSCILLATIONS IN A NONISOTHERMAL PLASMA. ON THIS BASIS, A STUDY IS MADE OF THE INTERACTION OF LOW FREQUENCY ION ACOUSTIC WAVE WITH A DISCRETE SET OF HIGH FREQUENCY LANGMUIR WAVES, USING THREE FOLLOWING ASSUMPTIONS: (1) A FINITE NUMBER OF LANGMUIR WAVES, (2) TWO LANGMUIR WAVES WITH DIFFERENT PHASES, AND (3) AN INFINITE SET OF PHASED LANGMUIR WAVES. USING OBTAINED SOLUTIONS, A COMPARISON IS MADE OF THE CHARACTERISTICS TIMES OF THE NONLINEAR INTERACTIONS AS WELL AS EVALUATION OF THE ENERGY FRACTION TRANSFERED TO THE IONIC SOUND BY LANGMUIR OSCILLATIONS. THE CRITERIA FOR TURBULENCE OF AN ION PLASMA ARE ESTABLISHED.

UNCLASSIFIED

USSR UDC: 621.373.42.029.64:621.385.64

MASHIN, B. G., SOKOLOV, I. V., VODYANITSKIY, V. I., ZHENOVENKOV, S. I.

"A Superhigh-Frequency Magnetron Oscillator"

USSR Author's Certificate No 270002, filed 1 Aug 67, published 13 Aug 70 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1D353 P)

Translation: To improve the reliability of a magnetron microwave oscillator (see RZh-Radiotekhnika, 1968, 4D366), it is proposed that a full-wave rectifier consisting of two diodes and the secondary of an auxiliary transformer be connected in series with the windings of the electromagnet. At the instant of actuation of the oscillator, the primary winding of the auxiliary transformer is completely connected to the power supply terminals, but under operating conditions, a smaller part of it is connected across the line by means of a switch through the primary of the power transformer. One illustration. V. P.

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UDC 622.362:622.778

VODYANITSKIY, YU. N., Candidate of Technical Sciences, TSNIGRI, and OSIPOV, YU. B., Candidate of Geological and Mineralogical Sciences, Moscow State University

"The Effect of a Magnetic Field on the Breakdown of Iron Coated Quartz Aggregates in Water"

Moscow, Steklo i Keramika, No 5, May 73, pp 8-10

Abstract: The authors study the magnetic properties of iron coated quartz aggregates and the structure of the iron bearing film on the surface of quartz particles. Lyuberetskiy quartz sand (SiO_2 97 percent) was used in the study. The following is the chemical composition of the iron bearing film by percent: 30 SiO_2, 26 Al_2O_3, 29 Fe_2O_3, 5 CaO, and 10 other. The magnetic susceptibility and magnetization of the sand and film were determined on magnetic scales at various temperatures and field intensity. At T=25°C the magnetic susceptibility of the sand does not depend on field intensity. The susceptibility of the iron bearing film at T=25°C is $x=15.5 \cdot 10^{-6}$, while the paramagnetic susceptibility component is $x=12 \cdot 10^{-6}$. In heating the iron bearing substance (iron-clay) to 700°C, magnetic susceptibility falls to $x=5 \cdot 10^{-6}$ and the ferromagnetic component to zero. Variation in the intensity of magnetization of the iron bearing film was determined during heating and cooling in a field of H=7500 amp/cm. The heating curve has an inflection in the 240-270°C

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VODYANITSKIY, YU. N., et al, Steklo i Keramika, No 5, May 73, pp 8-10

range. This is evoked by the phase transition of a strongly magnetic mineral. A scanning electron microscope was used for studying the structure and thickness of the film. In order to calculate the number of aggregates, the sand was processed with a saturated Na_2SO_4 solution using the methodology for determining the cold resistance of concrete fillers (GOST 8269-64). The aggregates constitute 0.8-0.9 percent weight of the sand. The iron bearing aggregates appear to be the sources for increased Fe_2O_3 content. Iron bearing aggregate breakdown testing was done with the aid of a magnetic field in a Lyuberetskiy chamber. The results show that an alternating magnetic field of industrial frequency breaks down aggregates in water. This makes it possible to remove iron oxides from sand.

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USSR UDC 620.193.01

VODYANOV, YU. M., KONYAYEV, B. YA., and FALICHEVA, A. I., Voronezh Polytechnic Institute, Voronezh State Pedagogical Institute

"Effect of Ultrasound on Cathodic Processes on Iron and Nickel"

Moscow, Zashchita Metallov, Vol 8, No 3, May-Jun 72, pp 296-298

Abstract: The authors studied the effect of an ultrasonic field on cathodic reactions under aeration conditions and in an inert gas atmosphere, specifically the behavior of iron (0.08 percent C) and nickel (NP-2) in 1n. H_2SO_4 at 30°. There was found to be a shift in the corrosion potential of both metals and a significant increase in corrosion losses in the aerated acid with the application of the ultrasonic field. This is due mainly to an increase in the acid ionization rate as a result of intensive stirring of the solution. Under the action of ultrasound the self-dissolution rate of iron in the presence of air is about double that of nickel.

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1/2 007 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--DETERMINATION OF THE NUMBER OF ELECTRONS TAKING PART IN THE ELECTROOXIDATION OF STERICALLY HINDERED PHENOLS USING AN ANODIC

AUTHOR-(03)-KORSHUNOV, I.A., VOOZINSKIY, V.V., VASILYEVA, A.A.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(2) 277-80

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTROLYTIC OXIDATION, PHENOL, ELECTRODE POLARIZATION

CONTROL MARKING--NO RESTRICTIONS

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PROXY REEL/FRAME--1989/0463 STEP NO--UR/0364/70/006/002/0277/0280

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2/2 007 UNCLASSIFIED PROCESSING DATE--02OCT70
CIRC ACCESSION NO--AP0107069
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLARIZATION CURVES WERE OBTAINED ON A REVOLVING ELECTRODE WITH A CLEARLY EXPRESSED AREA OF CRIT. CURRENT. WITH ALL COMPDS. STUDIED ONE ELECTRON TRANSITION TAKES PLACE IN A NEUTRAL AND ALK. MEDIUM. ON THE POLAROGRAMS UNDER THESE CONDITIONS THERE IS ONLY ONE WAVE. IN AN ACIDIC MEDIUM 2,4,6-TRI-TERT-BUTYLPHENOL AND 2,6-DI-TERT-BUTYL-4-METHYLPHENOL SHOW 2 CLEARLY SPED. WAVES. THE NO. OF ELECTRONS CALCD. FROM THE 1ST WAVE IS CLOSE TO ONE. ELECTROOXIDN. OF 4,4 PRIME -THIOBIS(6-TERT-BUTYL-2-METHYLPHENOL), 4,4 PRIME -THIOBIS(6-TERT-BUTYL-3-METHYLPHENOL), 2,2 PRIME -THIOBIS-6T-TERT-BUTYL-4-METHYLPHENOL), DICRESYLOLPROPANE ON A STATIONARY ELECTRODE AT PH 2 PRODUCES ONE WAVE CORRESPONDING TO A 2 ELECTRON TRANSITION. WITH 2, 2 PRIME -METHYLENEBIS(6-TERT-BUTYL-4-METHYLPHENOL) IN AN ACIDIC MEDIUM, 2 BADLY SPED. WAVES ARE FOUND. WITH A REVOLVING ELECTRODE THE SEPN. OF THE WAVES IS RATHER DISTINCT, HOWEVER. ELECTROCHEM. GENERATION OF PHENOXYL RADICALS SHOWS THAT THE 2ND WAVE APPEARS OWING TO THE OXIDN. OF THE PHENOXYL RADICALS ADSORBED ON THE ELECTRODE.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THERMOPLASTIC COAL PRODUCT -U-

AUTHOR-(05)-SHUSTIKOV, V.I., VOEVODINA, M.V., SKLYAR, M.G., ARONOV, S.G., LERNER, V.G.
COUNTRY OF INFO--USSR

SOURCE--BRIT. 1,180,325

DATE PUBLISHED--04FEB70

SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--COAL, THERMOSPLASTIC MATERIAL, HYDROGEN, CONDENSATION REACTION, PHYSICAL CHEMISTRY PROPERTY, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
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2/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AA0121863
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERMOPLASTIC COAL CAN BE OBTAINED IN A YIELD OF UP TO 95PERCENT OF THE COMBUSTIBLE MASS OF THE COAL BY HEATING A COAL WITH H CONTENT ABOVE 5.5 WT. PERCENT AT A TEMP. 10-20DEGREES BELOW THE TEMP. OF THE MAX. RATE OF DESTRUCTION FOR 5-20 MIN IN AN ATM. OF NATURAL OR COKE OVEN GAS, THEN RAPIDLY COOLING TO SMALLER THAN 30DEGREES TO PREVENT THE DEVELOPMENT OF POLYCONDENSATION REACTIONS. THE VOLATILE PRODUCTS OF B.P. BELOW 200DEGREES ARE REMOVED PRIOR TO THE HOLDING PERIOD. IN AN EXAMPLE, A HUMIC COAL OF GRANULE SIZE 0.5-6.0 MM WAS HEATED TO 380-85DEGREES IN THE PRESENCE OF COKE OVEN GAS, AND HELD AT 395-400DEGREES FOR 20 MIN. THE PRODUCT HAD THE FOLLOWING PROPERTIES: MELTING TEMP. 235DEGREES, SOLY IN C SUB6 H SUB6 23.8, YIELD OF VOLATILES 36.2, COMPARED TO VALUES OF 393, 6.27, AND 45.87, RESP., BEFORE TREATMENT. FACILITY: UKRAINIAN SCIENTIFIC RESEARCH INSTITUTE OF COAL CHEMISTRY.

UNCLASSIFIED

USSR

UDC 546.77'183:661.183.9

VINMER, I. K., VOICHINOVA, E. S., DENISOVA, N. E.

"Ion-Exchange Properties of Zirconium 'Molybdophosphates' (ZMP)"

Leningrad, Russian, Zhurnal prikladnoi khimii, vol 46, No 7, July 73, pp 1471-1475

Abstract: Studies on the ion-exchange properties of ZMP as a function of the method of preparation showed that ZMP prepared at pH 3 was smaller in volume and had smaller pores than samples prepared at lower pHs (0.50-1.65). In the presence of heteropoly acid, ions that form slightly soluble molybdates were sorbed partially by a precipitation mechanism. But in the presence of phosphomolybdic heteropoly acid, sorption was chiefly by ion exchange. When the ZMP product was dried at temperatures higher than 150°C, the ion-exchange volume decreased markedly compared to that dried at lower temperatures. Above 400°C, there was a condensation of the phosphoric acid groups.

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Phytology

USSR UDC 557.37:581.1

VOLKOV, G. A., and LISYUK, L. A., Agrophysical Scientific Research Institute, Academy of Agricultural Sciences imeni V. I. Lenin, Leningrad

"Interpretation of the Bioelectrical Reaction of Plants to Stimulation Using the Effect of Light as an Example"

Moscow, Doklady Akademii Nauk SSSR, Vol 197, No 6, 21 Apr 71, pp 1,435-1,437

Abstract: Previous studies have shown that the resting, potential (r.p.) of a cell and the potential difference (p.d.) between illuminated parts of plant leaf and the nonilluminated part of the leaf are changed through a number of stages. A corresponding multiphase change is observed in the sudden transition from illumination to darkness. The changes in r.p. and p.d. were close in magnitude and duration. This and the specific bioelectrical response of either plant cell or leaves of the entire plant to the same stimulant led to the conclusion that there must be a fundamental mechanism involved in these phenomena. In this study, external and internal recording of electric potentials at Nitella plant cells suspended in standard solutions were determined. In another 18-day experiment two bean leaves were used and the effect of illumination on them was studied. It was found that the character of the

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VOLKOV, G. A., and LISYUK, L. A., Doklady Akademii Nauk SSSR, Vol 197, No 6, 21 Apr 71, pp 1,435-1,437

course of the reaction at the Nitella is largely identical for both reactions. It was concluded that the processes involved in the adsorption of light by chloroplasts of illuminated photosynthesizing cells of the plant leaf affect the characteristics of the external cytoplasm membrane of these cells. Otherwise the change in the p.d. recorded at the plant leaf reflects the change in the potential difference at the plasmalemma of the cells of the palisade parenchyma on the illuminated part of the leaf. It was concluded that any factors, among them temperature and chemical compounds, which can affect the properties of the plasmalemma of corresponding cells in any part of the plant (leaf, root, stem) must bring about changes in the r.p. of the part of the plant which is removed from this part.

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Acc. Nr: AT0100177 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR0145

102377g Analysis of ignition in a diesel engine with accounting for chemical kinetic and physical factors. Voinov, A. N.; Dzhanardana, Chetti V. (Mosk. Avto.-Dorozhn. Inst., Moscow, USSR). *Izv. Vyssh. Ucheb. Zaved., Mashinostr.* 1970, (1), 76–81 (Russ). The dependence of temp. and pressure on the injection angle (φ) was studied during cetane combustion in air in a diesel engine. The process was simulated on a computer and the following effects were considered: cooling of the mixt. due to the evapn. and heating up of the fuel; fluctuations in the fuel concn. in the cylinder caused by kinetic and temp. inhomogeneities; addnl. increase of temp. and pressure of the reacting gas mixt. during the compression. A quant. agreement with expt. was reached. The ignition lag (θ_i) increases with increase in φ and with decrease in the initial reaction velocity (Δ). The activation energy of the reaction increases with decrease in φ and with increase in Δ. The ignition temp. 1100°K and the point at which pressure curves of the reacting mixt. and of the air crossed each other occurred at the same φ. Karel A. Hlavaty

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UDC 576.858.25.01(476)

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

"Detection of Uukuniyemi Virus in the Belorussian SSR"

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

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

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