

USSR

DUBITSKIY, L. A. et al., Region. nauch.-tekhn. seminar po stat. analizu, modelir. i avtomatiz. kontrolya ob"yektov s konstrukt. slozhn. strukturoy-- sbornik, vyp. 6, 1972, pp 86-90

range, and a device which determines the sequence of interaction of the units. Two illustrations, bibliography of two titles. L. P.

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USSR

UDC 669.243

GAL'NBEK, A. A., YUZHANINOV, I. A., DEKOPOV, YU. D., and  
ZHEL'DYBIN, O. I.,

"Examination of the Process of Continuous Converter Blowing of  
Ferronickel"

Moscow, Tsvetnyye Metally, No 2, Feb 71, pp 18-21

Abstract: The article considers results of the first phase of investigations of continuous converter blowing of ferronickel conducted at the Leningrad Mining Institute in cooperation with the "Gipronikel" Institute. The basic regime characteristics of the process are determined. Conversion to the continuous Bessemer process eliminates many shortcomings of the periodic process carried out in vertical converters. Blowing is carried out in the following manner: after arc firing of the furnace up to 800-1000°C, the bath is set by discharging lump electric-furnace ferronickel. Then the bath is preheated to 1500-1550°C and the arc is disconnected. The electrodes are removed from the furnace, the electrode holes are filled with refractory chokes,  
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USSR

GAL'NBK, A. A., et al., Tsvetnyye Metally, No 2, Feb 71, pp  
18-21

and positioning of the tuyere blast is conducted. Blowing begins  
at a bath temperature of 1350-1450°C. The blast in experiments  
varied from 1.5 to 3.2 m<sup>3</sup>/min at different degrees of carburi-  
zation.

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USSR

UDC: 621.178.169

RAZIKOV, M. I., SHUMYAKOV, V. I., YUZHANTYOV, I. N., Ural "Order of the Red Banner of Labor" Polytechnical Institute imeni S. M. Kirov

"A Method of Testing Materials for Cavitation Stability"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 9, Mar 72, Author's Certificate No 331282, Division G, filed 28 Apr 70, published 7 Mar 72, p 124

Translation: This Author's Certificate introduces a method of testing materials for cavitation stability in which a working section is formed in a fluid jet of continuous cross section, and the jet is periodically intersected by the study specimen, whose test surface is kept parallel to the fluid jet. As a distinguishing feature of the patent, in order to simulate the actual process of microimpact action accompanying cavitation and to intensify the process of specimen testing, a hollow is formed throughout the entire length of the working section of the jet, and the specimen approaches the jet from the side with the hollow.

1/1

Magnesium

USSR

UDC 669.721

OLYUNIN, G. V., MUZHZHAVLEV, K. D., IVANYUSHKINA, L. A., and  
YUZHANINOVA, T. P.

"Thermal Balance of Powerful Diaphragm-Type Magnesium Electrolyzer  
With Top Mounting of Anodes"

Tsvetnyye Metally, No 3, Mar 71, pp 62-64

Abstract: In order to determine the degree of utilization of power and the nature of thermal losses in magnesium electrolyzers of different capacities with identical design, the thermal balance of an electrolyzer was measured. Recommendations are given to decrease heat losses and increase the efficiency of the electrolyzer. The most important means of decreasing the heat losses and increasing efficiency is said to be decreasing the quantity of gas exhausted at the cathode, plus reduction of losses from the anode heads and through the top cover, increasing the removal of magnesium from the electrolyzer without increasing the heat losses.

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USSR

UDC 678.74.074

KLEBANSKIY, A. L., and YUZHELEVSKIY, Yu. A., All Union Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev

"The Work of the All Union Scientific Research Institute of Synthetic Rubber in the Field of the Synthesis of Siloxane Rubbers"

Moscow, Kauchuk i Rezina, No 2, 1971, pp 22-24

Abstract: The article describes the work done by the All Union Scientific Research Institute of Synthetic Rubber on the synthesis of siloxane rubbers and the study of their properties. Among those taking part in the work were A. L. KLEBANSKIY, V. S. FIKHTENGOL'TS, I. K. STAVITSKIY, E. V. KOGAN, A. V. KARLIN, S. N. BORISOV, L. A. MITROFANOV, V. N. GRUBER, B. I. PANCHENKO, V. M. TROFIMOV, T. F. ROGOZINA, T. V. KURLOVA, A. I. PONOMAREV, Yu. A. LARIONOVA, Ye. B. DMOKHOVSKAYA, I. Ya. PODDUBNYI, S. V. AVER'YANOV, L. A. AVER'YANOVA. At the present time researchers are directing their efforts towards improvements in existing methods for the synthesis of polymers and intermediates, the development and testing of new catalytic systems for the polymerization of cyclosiloxanes and the polycondensation of silane- or siloxanediols, and the creation of new types of siloxane rubbers.

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1/2 020

UNCLASSIFIED

PROCESSING DATE--04DEC70  
-U-

TITLE--ANIONIC POLYMERIZATION OF METHYLPHENYLCYCLOSILOXANES

AUTHOR--(04)-BORISOV, S.N., KURLOVA, Z.V., YUZHNEVSKIY, YU.A., CHERNYSHEV, YE.A.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(5), 332-4

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLYMERIZATION, SILOXANE, CYCLIC GROUP, BENZENE DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0725

STEP NO--UR/0460/70/012/005/0332/0334

CIRC ACCESSION NO--AP0136164

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136164

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POLYMERIZATION RATE OF THE TITLE MONOMERS (I) IN THE PRESENCE OF K POLY(DIMETHYLSILOXANE)DIOLATE DECREASED IN THE ORDER:

1,3,5,7-TETRAPHENYL, 1,3,5,7-TETRAMETHYLCYCLOTETRASILOXANE SIMILAR TO

1,3,5-TRIPHENYL, 1,3,5,7,7-PENTAMETHYLCYCLOTETRASILOXANE GREATER THAN

HEXAMETHYLDIPHENYLCYCLOTETRASILOXANE GREATER THAN

1,1-DIPHENYL, 3,3,5,5,7,7-HEXAMETHYLCYCLOTETRASILOXANE GREATER THAN

HEPTAMETHYL(PHENYL)CYCLOTETRASILOXANE GREATER THAN

OCTAMETHYLCYCLOTETRASILOXANE. THE INCREASED POLYMERIZATION RATE OF I WAS

ATTRIBUTED TO THE INDUCTIVE EFFECT OF PH GROUPS ADJACENT TO THE SI ATOM.

FACILITY: VSES. NAUCH.-ISSLED. INST. SINT. KAUCH. IM. LEBEDEVA, LENINGRAD, USSR.

UNCLASSIFIED



1/2 626 UNCLASSIFIED PROCESSING DATE--18SEP70  
 TITLE--POLYMERIZATION OF CYCLOSILOXANES BY BASES IN THE PRESENCE OF  
 ACTIVATORS -U-  
 AUTHOR-(03)-YUZHELEVSKIY, YU.A., KAGAN, YE.G., FEDOSEYEVA, N.N.  
 COUNTRY OF INFO--USSR  
 SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(3), 647-50 (CHEM TECHNOL)  
 DATE PUBLISHED-----70  
 SUBJECT AREAS--CHEMISTRY  
 TOPIC TAGS--POLYMERIZATION RATE, CYCLIC GROUP, SILOXANE, FLUORINATED  
 ORGANIC COMPOUND, ETHER, DIOXANE, NITROBENZENE, HETEROCYCLIC  
 OXYGEN COMPOUND, CHEMICAL REACTION MECHANISM  
 CONTROL MARKING--NO RESTRICTIONS  
 DOCUMENT CLASS--UNCLASSIFIED  
 PROXY REEL/FRAE--1984/1577 STEP NO--UR/0020/70/190/003/0647/0650  
 CIRC ACCESSION NO--A10100195  
 UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--18SEP70

2/2 026

CIRC ACCESSION NO--AT0100195  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. IN THE ABSENCE OF ACTIVATORS THE POLYMN. OF 1,3,5-TRIMETHYL-1,3,5-TRIS(3,3,3-TRIFLUOROPROPYL) CYCLOTETrasiloxane IS FIRST ORDER IN MONOMER AND 0.5 ORDER WITH RESPECT TO THE CATALYST (NA SILOXANEDIOLATE, I). IN THE PRESENCE OF APROTIC ACTIVATORS AND 0.002M I THE RELATIVE REACTION RATES (K-K SUBO) INCREASE (ACTIVATOR, ACTIVATOR CONC. (M), POLYMN. TEMP., AND K-K SUBO GIVEN): BU SUB2 O, 0.1, 110DEGREES, 1.2; P-DIOXANE, 0.1, 110DEGREES, 1.2; PHNO SUB2, 0.1, 40DEGREES, 2.1; ET SUB3 N, 0.1, 110DEGREES, 2.5; TETRAHYDROPIRAN, 0.1, 40DEGREES, 5.1; TETRAHYDROFURAN, 0.1, 40DEGREES, 10.5; MECN, 0.1, 40DEGREES, 34.0; BETA-CYANODETHYLHEPTAMETHYLCYCLOTETrasiloxane, 0.1, 40DEGREES, 35.0; ET SUB2 CO, 0.1, 40DEGREES, 80; ME SUB2 CO, 0.1, 40DEGREES, 95; ETCOME, 0.1, 40DEGR, 100; MECOPR, 0.1, 40DEGREES, 106; HCONME, 0.01, 30DEGREES, 150; ME SUB2 SO, 0.01, 30DEGREES, 155; BU SUB3 PO SUB4, 0.01, 40DEGREES, 300; MEOCH SUB2 CH SUB2 OME, 0.001, 30DEGREES, 4.0; (ETO CH SUB2 CH SUB2) SUB2 O, 0.001, 30DEGREES, 14.0; (MEOCH SUB2 CH SUB2) SUB2 O, 0.001, 30DEGREES, 28.0; PO(NME SUB2) SUB3, 0.001, 30DEGREES, 28.0. IN THE PRESENCE OF ACTIVATORS THE POLYMN. IS FIRST ORDER WITH RESPECT TO I AT CONST. (ACTIVATOR)-(I) RATIO. AT CONST. ACTIVATOR CONC., THE RATE CONST. PASSES THROUGH A MAX. WITH INCREASING (I). A MECHANISM IS PROPOSED.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--AGING OF REPEATEDLY REWORKED POLYPROPYLENE -U-  
AUTHOR--(05)-SHISHOVA, I.S., UTUGOVA, M.F., YUZHIN, V.M., MATVEYEVA,  
YE.N., SEMENSOV, A.D.  
COUNTRY OF INFO--USSR  
SOURCE--PLAST. MASSY 1970, (3), 39-40  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, MATERIALS  
TOPIC TAGS--POLYPROPYLENE, PLASTIC INJECTION MOLDING, CHEMICAL STABILIZER,  
PHENYLENE, DIAMINE, ORGANIC SULFUR COMPOUND, PROPIONATE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3002/1377 STEP NO--UR/0191/70/000/003/0039/0040  
CIRC ACCESSION NO--AP0128777  
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128777

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHYDICOHEM. CHANGES OCCURING IN POLYPROPYLENE (I) DURING REPEATED INJECTION MOLDING AND THE EFFECTIVENESS OF STABILIZERS WERE INVESTIGATED. REPEATED INJECTION MOLDING AFFECTED ONLY THE MELT INDEX, BUT NOT THE RECH. PROPERTIES OF I. THE MOST EFFECTIVE STABILIZER SYSTEM WAS TOPANOL SA WITH DILAURYL THIODIPROPIONATE, WHEREAS MOLDED I ARTICLES WERE BEST STABILIZED WITH N, N', DI, BETA, NAPHTHYL, P, PHENYLENEDIAMINE.

UNCLASSIFIED

1/2 021  
UNCLASSIFIED  
TITLE--ANISOTROPY OF THE PROPERTIES OF FILLED POLYETHYLENE DURING  
INJECTION MOLDING -U- PROCESSING DATE--27NOV70  
AUTHOR--(04)-LISTKOV, V.M., YUZHIN, V.M., DAMINOV, YU.F., MARTYNOV, M.A.  
COUNTRY OF INFO--USSR  
SOURCE--PLAST. MASSY 1970, (5), 46-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--PLASTIC INJECTION MOLDING, POLYETHYLENE, ANISOTROPY, FILLER,  
MECHANICAL STRENGTH  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3006/0910 STEP NO--UR/0191/70/000/005/0046/0049  
CIRC ACCESSION NO--AP0134639  
UNCLASSIFIED

2/2 021

CIRC ACCESSION NO--AP0134639

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADDN. OF 20PERCENT TALC, MICA, OR SILICA POWDERS TO HIGH-D. POLYETHYLENE (I) DECREASES THE ANISOTROPY OF I CASTINGS. THE FILLERS REDUCE THE MOBILITY OF I MOLS. AND PREVENT THEIR ORIENTATION DURING MOLDING. ASBESTOS FILLER CAUSES SOME ALIGNMENT OF I MOLS. ALONG ITS FIBERS AND INCREASES ANISOTROPY. THESE FILLERS DO NOT INTERFERE WITH THE WORKABILITY OF I MIXES OR ITS CRYSTALLINITY. CASTINGS CONTG. THESE FILLERS HAVE NEARLY THE SAME MECH. STRENGTH AND SHRINKAGE IN ALL DIRECTIONS.

UNCLASSIFIED

USSR

UDC 66.074.7:546.56

LASKORIN, B. N., YUZHINA, A. D., SMIRNOVA, N. M., SADOVNIKOVA, G. I., NOVIKOV, YU. P., and VITKOVSKAYA, A. A.

"Ion Exchanging Fibers and Fabrics . III. Extraction of Gold From Cyanide Solutions and From Pulps by Means of Ion Exchanging Fabrics"

Leningrad, Radiokhimiya, Vol 15, No 2, 1973, pp 236-240

Abstract: The possibility of extracting gold from cyanide solutions and pulps obtained after leaching out the gold containing ores by means of ion exchange fabrics has been studied. The capacity for gold of the medium and strongly basic anion exchange fabrics under static conditions (0.8-1.4 mg/g) is comparable to the capacity of the granular sorbent AM (1.74 mg/g). Under identical conditions the fabrics absorb 5.6 times less admixtures than the resin AM, the rate of gold absorption being 20-30 times faster than by the resin. The fabrics are easily regenerated with hydrochloric solutions of thiourea. Under dynamics conditions 62.2% of gold is removed from the fabric by three volumes of the regenerating solution.

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USSR

UDC 669.183.2/.4.001.8

ROMENETS, V. A., YUZOV, O. V., KOVALENKO, L. V.

"Prospects for Improving Open-Hearth Steel Production"

Dnepropetrovsk, Metallurgicheskaya i gornorudnaya promyshlennost', No 2 (74),  
1972, pp 9-12

Abstract: A study was made of the actual efficiency of open-hearth furnaces at the largest shops in the Soviet Union over the period of years from 1963 to 1970. The presented production indexes for the shops show that their steel output increased by 43.5 percent during this time. The reasons for this increase in production were analyzed. The analysis shows that under the existing operating conditions of open-hearth shops, the operation of the furnaces with oxygen scavenging is economically inefficient since it does not permit the required increase in output capacity of the furnaces. Mass withdrawal from operation of the furnaces with scavenging is impossible in practice since this would lead to a reduction in the steel production of the existing furnaces. However, open-hearth steel production can be improved by using the scrap-oxygen process in the open-hearth furnaces or by replacing the furnaces by continuous-action steelmaking units. The advantages of the new systems are discussed.

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1/2 043 UNCLASSIFIED PROCESSING DATE--11DEC70  
TITLE--CERAMIC HEAT TRANSFER AGENTS FOR CHEMICAL PROCESSES -U-  
AUTHOR--(02)-YUZVAK, D. I., SAPAROV, V. V.  
COUNTRY OF INFO--USSR  
SOURCE--GER. OFFEN. 1,805,616  
DATE PUBLISHED--21MAY70  
SUBJECT AREAS--MATERIALS, CHEMISTRY  
TOPIC TAGS--HEAT TRANSFER, PYROLYSIS, HYDROCARBON SYNTHESIS, ETHYLENE,  
PROPYLENE, ACETYLENE, CHROMIUM OXIDE, ALUMINUM OXIDE, SILICON DIOXIDE,  
IRON OXIDE, CHEMICAL PATENT, CERAMIC MATERIAL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3008/1433 STEP NO--GY/0000/70/000/000/0000/0000  
CIRC ACCESSION NO--AA0138443  
UNCLASSIFIED

2/2 043

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AA0133443

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CERAMIC GRANULATED HEAT CARRIER, E.G., FOR THE PYROLYSIS OF HYDROCARBONS IN THE MANUF. OF ETHYLENE, PROPYLENE, AND ACETYLENE, CONSISTS OF THE OXIDES OF AL, SI, CR, AND FE, PREFERABLY IN THE RELATION AL OXIDES 75-80, SI OXIDES 5-7, CR OXIDES 5-10, FE OXIDES 2-3 WT. PERCENT. IN THE MANUF. OF THE MATERIAL, POWD. CR ORE IS INTRODUCED INTO A POWD. MIXT. OF ALUMINA, REFRACTORY CLAY, AND BINDER E.G. NA AND (OR) NA SILICATE SOLN. ALTERNATIVELY, THE MIXT. OF POWD. ALUMINA, REFRACTORY CLAY, AND CR ORE IS MOISTENED WITH SIMILAR TO ONE THIRD OF ITS MASS AL SULFATE SOLN., THEN SIMILAR TO TWO THIRD OF THE DRY MASS SULFITE WASTE LIQUOR IS ADDED, AND THE MIXT. IS GRANULATED. FACILITY: BOGDANOVICH REFRACTORY MATERIAL PLANT.

UNCLASSIFIED

USSR

UDC 621.791.927:621.921

YUZVENKO, Yu. A., ZHUDRA, A. P., FRUMIN, Ye. I., and GAVRISH, V. A., Ye. O.  
Paton Electric Welding Institute

"Features of Gas-Abrasive Wear of Composite Alloys"

Kiev, Avtomaticheskaya Svarka, No 8, Aug. 1972, pp 35-38

Abstract: Composite alloys were studied which were produced by a method involving separate introduction of hard particles of ground eutectic alloy of tungsten monocarbide and semicarbide into the multicomponent binder. Solidification produces a single or multiple-phase alloy, cementing the particles introduced before crystallization. The gas-abrasive wear of composite alloys consisting of a matrix and specially introduced grains of cast tungsten carbide occurs selectively and depends linearly on the test time. Wear of alloys decreases with increasing wear-resistant phase grains. With low and moderate angles of attack (10-30°), wear of the alloys decreases as matrix hardness increases to HV 350-400, while further increases in hardness have little influence on wear. With cast tungsten carbide grain diameters of about 2 mm, wear depends little on properties of the matrix or angle of attack.

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USSR

UDC 621.791.927

YUZVENKO, YU. A., PASHCHENKO, M. A., and KORITSKIY, G. G., Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences Ukrainian SSR

"Application Characteristics of High-Melting Compounds for Arc Welding"

Kiev, Avtomaticheskaya Svarka, No 2, 1973, pp 1-4

Abstract: An all-weld metal produced by electrodes GK-15 (85%  $\text{Cr}_3\text{C}_2$  and 15% Ni), GK-30 (70%  $\text{Cr}_3\text{C}_2$  and 30% Ni) with metalloceramic core and BO wire consisting of 60%  $\text{Cr}_3\text{C}_2$  powder enclosed in a nickel shell was studied in the perpendicular and horizontal cross-sections. The obtained results were compared with the metalloceramic alloys KKhN-15, KKhN-30, KKhN-40, and KKhN-50 containing from 50 to 85%  $\text{Cr}_3\text{C}_2$  and 15-50% Ni. The microstructure of the all-weld metal consisted of the primary carbides and eutectic carbides. The ditrigonal shape of the primary carbides distorted by various growth defects was characteristic for  $\text{Cr}_3\text{C}_2$  and  $\text{Cr}_7\text{C}_3$  carbides. The total concentration of carbides was close to that in the electrodes. The ratio between volumes of the solid solution and eutectic carbides always remained at 5 : 1. Sizes and shape of carbide grains in the parallel and perpendicular cross-sections differed considerably. The columnar structure was characteristic for the

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USSR

YUZVENKO, YU. A., et al, *Avtomaticheskaya Svarka*, No 2, 1973, pp 1-4

parallel cross-sections, and disoriented for the perpendicular cross-sections. The size of the carbide phase and the total structure of the all-weld metal differed from that of metalloceramic alloys. Sizes of the primary carbides in the weld metal were by one order larger than in the alloys. When BO wire was used for welding of steel the built-up metal contained a noticeable amount of  $Cr_7C_3$  carbide in addition to  $Cr_3C_2$ , which was alloyed with iron and nickel. In some cases up to 50% of the electrode carbide was transformed into  $Cr_7C_3$  carbide, with 15-20% Fe and some amount of free carbon. When high-melting compounds (borides, carbides, silicides, and others) are introduced into the molten bath they undergo dissolution, either partial or complete, in the alloy matrix which becomes alloyed with boron, chromium, carbon, and silicon. This could lead to brittleness of the obtained alloy and appearance of cracks. The wear-resistance of the weld metal was much lower compared with the metalloceramic alloys. In order to eliminate the undesirable characteristics of the weld metal produced by the above electrodes, it is recommended to use induction and electroslag welding with a comparatively low linear welding energy, as well as to use liquid addition and penetrating agents. In the case of arc welding

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USSR

YUZVENKO, YU. A., et al, *Avtomaticheskaya Svarka*, No 2, 1973, pp 1-4.

the high-melting metal should be supplied as an addition agent (powders, rods, mixtures) at the end of the molten bath. The use of high-melting compounds in electrodes is undesirable.

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USSR

UDC: 539.16.04.08

KONSTANTINOV, D. I., MATVEYEV, V. V., YUZVUK, Yu. A.

"On Optimizing the Parameters of Radiometric Equipment When Determining Low Levels of Radiation"

Tr. Soyuzn. n.-i. in-ta priborostr. (Works of the Union Scientific Research Institute of Instrument Building), 1970, vyp. 12, pp 15-20 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 11, Nov 70, Abstract No 11.32.1472)

Translation: The authors consider the possibility of using the method of verifying statistical hypotheses to derive working formulas for determining the threshold of sensitivity of radiometric equipment in measuring vanishingly small concentrations of radioactive isotopes. It is shown that Gaussian distribution can be used to approximate the Poisson probability distribution of readings up to unity. A working formula is given for the sensitivity threshold of a radiometric unit with a known photon flux. Five illustrations, bibliography of five titles.

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UNCLASSIFIED  
TITLE—MATERIALS ON THE EXPERIMENTAL STUDY OF THE EFFECT OF TOXOTOXIN ON  
DEVELOPMENT OF CHICK EMBRYOS —U—  
AUTHOR—(03)—YYGISTE, A.K., KPOLUS, M.O., LUTSOYA, KH.I.  
PROCESSING DATE—30OCT70  
COUNTRY OF INFO—USSR  
SOURCE—MEDITSINSKAYA PARAZITOLOGIYA I PARAZITARNYYE BOLEZNI, 1970, VOL  
39, NR 3, PP 282-284  
DATE PUBLISHED—70  
SUBJECT AREAS—BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS—EMBRYOLOGY, TOXIN  
CONTROL MARKING—NO RESTRICTIONS  
DOCUMENT CLASS—UNCLASSIFIED  
PROXY REEL/FRAE—2000/0209  
CIRC ACCESSION NO—AP0123977  
STEP NO—UR/0356/70/039/003/0282/0284  
UNCLASSIFIED



2/2 014

CIRC ACCESSION NO—AP0123977  
ABSTRACT/EXTRACT—(U) GP-0-

UNCLASSIFIED

PROCESSING DATE—30OCT70

ABSTRACT. THE TERATOGENIC EFFECT OF  
THERMOSTABLE AND THERMOLABILE COMPONENTS OF TOXOTOXINE WAS STUDIED IN  
CHICK EMBRYOS. THE RATE OF EMBRYOPATHIES IN EMBRYOS TREATED WITH  
TOXOTOXINE DID NOT DIFFER SIGNIFICANTLY FROM THAT IN EMBRYOS RECEIVING  
PHYSIOLOGICAL SALINE. AT THE SAME TIME, 0.25PERCENT SOLUTION OF PHENOL  
EXERTED A MARKED TERATOGENIC EFFECT. FACILITY: TALLINSKIY  
NAUCHNO ISSLED. INSTITUT EPIDEMIOLOGII, MIKROBIOLOGII I GIGIYENY.

UNCLASSIFIED

USSR

UDC: 539.4

YZISENKO, V. K., KORENEVSKIY, Ye. Ya., IVSHCHENKO, L. I., Zaporozh'ye

"Influence of Heat Treatment and Surface Quality on Endurance of EI961 Steel"

Kiev, Problemy Prochnosti, No 8, Aug 73, pp 65-70.

Abstract: The influence of grinding, polishing, diamond smoothing and subsequent tempering on the formation of the physical-mechanical characteristics of the surface layer and the fatigue strength of EI961 steel is studied. It is established that diamond smoothing significantly increases the endurance of EI961 steel and neutralizes the harmful influence of stress concentrators in the form of a chamfer, notch or press fit.

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USSR

UDC 666.113.711'621'46'33'23

SARUKHANISHVILI, A. V., ZAALISHVILI, GG, and KUTATELADZE, N. K.

"Crystallization of Glasses in the System  $\text{SiO}_2\text{-Al}_2\text{O}_3\text{-MgO-Na}_2\text{O-MnO}$  With Iron Oxide Impurities"

Tr. Gruz. Politekhn. In-t (Works of Georgian Polytechn. Inst.)

No. 8(128), pp. 7-12, 1968 (from Referativnyy Zhurnal--Khimiya, No 2, 1970, Abstract No 2 M 97 by V. D. Sal'nikov)

Translation: A study was made of the possibility of producing finely dispersed materials of glass in the system  $\text{SiO}_2\text{-Al}_2\text{O}_3\text{-MgO-Na}_2\text{O-MnO}$  without the introduction of special crystallization stimulators to the glass. The influence of the partial replacement of  $\text{SiO}_2$  with an equivalent quantity of  $\text{Na}_2\text{O}$ ,  $\text{Al}_2\text{O}_3$ , or  $\text{MnO}$  on the technology and crystallization properties of the glasses was studied. It was established that with increasing  $\text{Na}_2\text{O}$  and  $\text{MnO}$  content, a reduction of the melting temperature of the glass from 1450 to 1400° is possible, as is an increase in the tendency of the glasses to crystallization. Crystallization in all specimens studied occurred volumetrically, which allowed a fine-grained crystalline product to be produced by two-stage crystallization.

1/1

USSR

UDC 669.187.26

ZABALUYEV, YU. I., MESHKEVICH, YE. I., BURYAKOVSKIY, G. A., BRODSKIY, G. H.,  
and NIKULIN, A. A., Dnepropetsstal' Plant and All-Union Scientific Research  
Institute of Electric Welding Equipment

"Improving the Quality of Electroslag Remelted Steel by the Action of a Magnetic  
Field"

Moscow, Stal', No 8, Aug 73, pp 710-711

Abstract: The effectiveness of electroslag remelting of large ingots is lowered due to the development of segregation phenomena (formation of "barbs" in the macrostructure, etc.). Reducing the remelting rate eliminates this defect but causes deterioration of surface quality and, therefore, is permissible only in narrow limits. Electromagnetic action with the aid of a solenoid makes it possible to eliminate segregation defects and to produce metal of satisfactory quality even with a slight increase in the remelting rate. Comparative data on the quality of steels ShKh15SGSh and ShKh15Sh are presented in which remelting was done in the same modes in a crystallizer measuring 415 x 415 mm with and without the solenoid. M. N. KUZNETSOV, H. A. STETSENKO, L. P., BULYSHENSKAYA, and S. S. KAZAKOV participated in this work. Two bibliographic references.

1/1

USSR

UDC 577.391:547.436

~~ZABALUYEVA, I. I.~~, and RYABUKHA, A. K., Central Scientific Research Institute of Roentgenoradiology, Ministry of Health USSR, Leningrad

"Effect of Desympathization on Cell Proliferation in the Thymus of Irradiated Mice in Cases of Cystaphos Protection"

Moscow, Radiobiologiya, Vol 12, Vyp 1, Jan/Feb 72, pp 132-136

Abstract: A study was made to determine the effect of sympatholytin on cell proliferation in the thymus. Male white mice were given 5 and 10 mg/kg doses of sympatholytin intraperitoneally 2 hours before exposure to 500 r irradiation. Subsequent examination of the cortical layer of the thymus showed that after 1 day sympatholytin aggravates radiation damage to lymphoid cells and, after 7 days it inhibits the restorative process by delaying maturation of lymphocytes. This effect was diminished with a lower dosage and a greater time lapse. When cystaphos was administered with an equal dose of sympatholytin, the structural changes in thymus cells were less severe. Desympathization does not seem to affect the protective effect of cystaphos on cell proliferation following irradiation.

1/1

- 33 -

1/2 023 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--FINE STRUCTURE OF BARIUM TITANATE SINGLE CRYSTALS -U-

AUTHOR-(04)-GUYENOK, YE.P., ZABARA, YU.V., KUDZIN, A.YU., FOMICHEV, O.I.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(3) 956-B

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--BARIUM TITANATE, SINGLE CRYSTAL, CRYSTAL LATTICE DEFECT,  
CRYSTAL LATTICE DISLOCATION, ETCHED CRYSTAL, CRYSTAL STRUCTURE ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1988/0584

STEP NO--UR/0181/70/012/003/0956/0958

CIRC ACCESSION NO--AP0105567

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105567

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FINE STRUCTURE OF BATIO SUB3 CRYSTALS GROWN FROM SOLN. IN A KF MELT WAS INVESTIGATED. DEFECTS AND DISLOCATIONS WERE DEVELOPED BY SELECTIVE ETCHING (ORTHOPHOSPHORIC ACID AT 130-150DEGREES). CRYSTALS WERE CUT ALONG THE (100) OR (110) DIRECTION IN THE (001) OR (100) PLANE. ON THE (100) PLANE SQUARE ETCHING FIGURES WERE OBSD., AND ON THE (110) PLANES, ELONGATED FIGURES. THE ETCHING FIGURES WERE DISTRIBUTED NONUNIFORMLY ON THE SURFACE. THEIR CONC. WAS HIGHER IN THE REGION OF THE CRYSTAL THE FARTHER AWAY THEY WERE FROM THE POINT OF THE BEGINNING OF CRYSTAL GROWTH. SOMETIMES, THEY OCCURRED ALONG THE LINES OF THE SEPN. OF LAYERS. THE ETCHING FIGURES ARE RELATED TO THE STRUCTURAL INHOMOGENEITY OF THE BATIO SUB3 CRYSTALS, AND MOST PROBABLY APPEAR ON THE LINEAR DEFECTS OF THE DISLOCATION TYPE.

UNCLASSIFIED

USSR

UDC 612.178.4-612.825.4

ZABAROVSKIY, Ya. Ya., Latvian Scientific Research Institute of Experimental and Clinical Medicine, Ministry of Health Latvian SSR

Riga, Izvestiya Akademii Nauk Latvyskoy SSR, No 1 (306), 1973, pp 104-114

Abstract: During performance of a task causing mental and emotional stress but involving no motor activity, blood pressure rises in hypertensive patients (without clinical arteriosclerosis and cardiovascular insufficiency) to a greater degree than in normal subjects. In some but not all patients, the higher the initial systolic blood pressure, the smaller the percent increase during mental stress. In normal subjects, mental stress causes primarily a rise in the heart rate. During performance of physical work, the circulatory differences between hypertensive patients and healthy subjects are much smaller. Recovery is faster in both groups after physical stress than after mental stress. This is so probably because in physical stress, nervous tension is to a considerable degree unloaded through motor activity. In mental stress, nervous tension is transmitted primarily to autonomic systems. Elenium reduces circulatory changes mainly during mental stress, and it stabilizes primarily the most labile parameters, that is, heart rate in normal subjects and blood pressure in hypertensive patients. A less pronounced alpha rhythm and fast

1/2



USSR

ZABAROVSKIY, Ya. Ya., Izvestiya Akademii Nauk Latvyskoy SSR, No 1(306), 1973,  
pp 104-114

beta 1 and beta 2 rhythms in the EEG of hypertensive patients at rest indicate  
a persistent excitation of the central nervous system in these patients.

2/2

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USSR

UDC 612.178.4-612.825.4

KRAUKLIS, A. A. and ZABAROVSKIY, Ya. Ya., Latvian Institute of Experimental and Clinical Medicine, Ministry of Health, Latvian SSR

"Dynamics of Indexes of Nervous Tension During Mental-Emotional Stress and Physical Exertion in Healthy Persons"

Riga, Izvestiya Akademii Nauk Latvian SSR, No 3, 1973, pp 57-65

Abstract: The purpose of the study was to compare the changes observed mainly in cardiovascular functions of human subjects of both sexes during concentrated mental activity with those occurring during static physical exertion under laboratory conditions. The stress of mental work produced significantly greater changes in the phases and frequency of heart contractions, respiratory rate, and electrodermogram than did physical exertion. It also resulted in more significant changes in the frequency spectrum of the EEG, mainly an increase in the duration of the theta waves and decrease in that of the alpha waves. The mental test raised blood pressure more in the males than in the females, but in other respects (pulse rate, cardiac output, electrodermogram, etc) there were no appreciable differences between the sexes. Criteria are suggested for determining individual reactions to standard stimuli.

1/1

- 60 -

USSR

UDC: 621.375.4.089.52-503.22:517.27

BESKROVNIYY, I. M., ZABASHTA, P. T., NOVIKOV, A. F.

"Sensitivity Optimization of a Transistorized Amplifier with Negative Feedback"

V sb. Poluprovodn. pribory v tekhn. elektrosvyazi (Semiconductor Devices in Electrical Communications Technology--collection of works), Vyp. 5, Moscow, "Svyaz", 1970, pp 159-165 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7D102)

Translation: Relationships are given which are used to optimize transistorized amplifiers with respect to minimum sensitivity of the transfer coefficient to a change in transistor gain  $h_{21e}$  in a common-emitter circuit. Resumé.

1/1

- 27 -

USSR

UDC 621.391.622

AL'PERT, Ya. L., ZABAVINA, I. N., KAPUSTINA, O. V., and FLIGEL',  
D. S.

"Brusque Changes in Phase Velocity and Field Computations of Low-Frequency Waves in the Low-Altitude Spherical Waveguide"

Moscow, V sb. X Vses. konf. po rosprostr. 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 188-192 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A321)

Translation: Results are given of computations of the amplitude and phase of electric-field radial components  $|E_r(D,f)|$ ,  $\Psi(D,f)$ , of average  $\bar{v}(D,f)$  and differential  $v_g(D,f)$  phase velocities, in a low-altitude spherical waveguide for an isotropic conducting ionosphere and an infinitely conducting earth surface. Five illustrations, bibliography of six. A. L.

1/1

USSR

UDC 621.371.029.4

ZABAVINA, I. N., NIKITIN, A. A., and ORLOV, A. B.

"Measuring Phase Velocities in the Ultra-Long Wave Range Using Radio Relay Communication Lines"

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 235-239 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A324)

Translation: Results of measuring the phase velocities in the ultra-long wave range using a system of dispersed points interconnected by radio relay lines are discussed. The instrument error in determining  $v/c$  in the 10-14 kHz range did not exceed  $(3-5) \cdot 10^{-4}$ . Bibliography of 12. A. L.

1/1

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USSR

UDC 621.762.001

AKSENOV, G. I., and ZABBARPV, R.

"Electric Conductivity of P/M Porous Materials"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1970, vyp. 42, pp 24-27 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G359 by G. Derkacheva)

Translation: A study is made of the effect of porosity on the electric conductivity of sintered porous specimens made of iron powder, electrolytic copper powder, carbonyl nickel powder, and ShKs-15 steel powder in the form of filings. Iron and nickel powders ranging in porosity from 0 to 50% and copper specimens with porosity up to 40% are characterized by perfect metal contacts. ShKh-15 steel specimens ranging in porosity from 0 to 40% are characterized by imperfect metal contacts. The electric conductivity of porous iron specimens is practically independent of powder particle size. Three illustrations. One table. Bibliography with three titles.

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- 23 -

USSR

UDC: 621.391:519.2

ZABEGALOV, B. D.

"On the Possibility of Improving Resistance to Interference in FM Communications Systems by Using Multiple Modulation"

V sb. Metody pomekhoustoychivogo priyema ChM i FM (Methods of Interference-Free FM and FM Reception--collection of works), Moscow, "Sov. Radio", 1970, pp 149-155 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A16)

Translation: The use of multiple modulation in communications systems with frequency modulation makes it possible to increase the signal-to-noise ratio at the receiver output with the same channel band and maximum frequency deviation as in the case of ordinary FM. On the other hand, if the signal-to-noise ratio at the output is predetermined, a lower modulation index can be taken with multiple frequency modulation, resulting in improved threshold properties of the receiver. It is shown that the law of distribution of instantaneous signal values at the output of a modulator with a multivalued amplitude characteristic approaches uniformity, which means that we can speak of an increase in the effectiveness of the communications system. Resumé.

1/1

USSR

UDC 576.895.4

KOCHKAREVA, A. V., ZAGNIBORODOVA, Ye. N., ZHERNOVOV, I. V., ZAYTSEVA, V. I., SHILENKO, V. I., ZAREGALOVA, M. N., AVAKOV, S. M., TASHLIYEV, A. O., BEL'SKAYA, G. S., and VAZHEV, A. P., Republic Antiplague Station, Institute of Zoology, Academy of Sciences Turkmen SSR.

"Regional Distribution of Ixodid Ticks in Turkmenia"

Ashkhabad, Izvestiya Akademii Nauk Turkmenskoy SSR, Seriya Biologicheskikh Nauk, No 5, 1971, pp 36-42

Abstract: The 31 species and subspecies of Ixodid ticks (of the total of 49 living in Turkmenia) gathered from 699 geographic points and included in the collection of the station are analyzed for the distribution of their natural habitats and their geological and botanic living conditions. *Hyalomma asiaticum asiaticum* proliferates in large numbers in all four regions (clay desert, sandy desert, cultivated river valleys, and southern mountains). *H. detritum* an. *anatolicum*, *H. an. excavatum*, and *H. pl. plumbeum* thrive mainly in cultivated areas. The most numerous species are *H. as. asiaticum* and *H. numidiana turanica* living in sandy desert and *Ornithodoros tartakovskyi* living in clay desert. *Ixodes redikorzevi*, *Haemaphysalis punctata*, *Rhipicephalus schulzei*, and *R. leporis* were recorded for the first time in the republic.

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USSR

UDC 615.917

NIKOLOV, S. KH., LYUBETSKIY, KH. Z., BARSEL'YANTS, G. B., ZABELIN, A. A., NEFELOV, P. V., ONOPCHENKO, N. V., CHURSINA, M. A., YEREMIN, V. M., TRENSUK, R. A.

"Toxicologic Estimate of the New Organophosphorus Pesticide Bitex"

V sb. Vliyanie ul'trazvuka, yadokhimik. i drugikh faktorov sredy na organizm cheloveka i pishch. produkty (Effect of Ultrasound, Poisons and other Factors of the Environment on the Organism of Man and Food Products -- collection of works), Krasnodar, 1971, pp 85-91 (from RZh-Farmakologiya. Khimioterapevticheskiye sredstva. Toksikologiya, No 2, Feb 72, Abstract No 2.54,773)

Translation: Rats were injected intraventricularly with bitex (an organophosphorus pesticide; I: contains 50% active principle) dissolved in water (1 ml) in doses of 100, 200, 300, 400, 500, 600, 700 and 800 mg/kg, and they were observed for 3 weeks. With a dose of 100-200 mg/kg, the activity of the cholinesterase dropped by 2-3 times during the first 1-2 days, and it began to recover after 7-11 days. The dose of 100 mg/kg was taken as the minimum toxic dose. For doses of 300 mg/kg and higher, sluggishness, increased frequency of urination, diarrhea, contraction of the pupils, tears, paresis of the extremities, a drop in body temperature of 1-5°, an increase in the sedimentation rate, leucocytosis, neutrophilesis and a reduction in the cholinesterase activity by 3-15 times were noted. The  $DL_{100}$  of I is 800 mg/kg, the  $DL_{50}$  is 384.6  
1/2

• USSR

NIKOLOV, S. KH., et al., Vliyanie ul'trazvuka, yadokhimik. i drugikh faktorov sredy na organizm cheloveka i pishch. produkty, Krasnodar, 1971, pp 85-91

(491.8-277.4 mg/kg). For rabbits (I was injected in doses of 25-200 mg/kg) the  $DL_{50}$  was calculated on the level of 82 (11.67-47.3) mg/kg. The pathomorphological changes in rabbits were characterized by circulatory disorders and dystrophy. USSR. Krasnodar, Medical Institute.

2/2

Zabelin, A.I.

JPRS 56388  
16 June 1972

UDC: 621.1 8.152

PURIFICATION OF CONDENSATE WITH SEPARATELY FUNCTIONING  
ION-EXCHANGER FILTERS AT THE VR-50 ATOMIC ELECTRIC POWER PLANT

(Article by Candidates of Technical Sciences A.N. Rudol', R.P. Neshkov, and Yu. V. Chechekin, Engineer L.P. Soshina, Candidate of Chemical Sciences A.I. Zabelin, and engineers Ya. P. Bartonkin, L.N. Rozhdarstvenskaya, and L.V. Ispenya; Moscow, Tomskoyepetlikh, Novosibirsk, No 3, May 1972, pp 13-15)

Experience in the operation of thermal and atomic electric power plants has shown that purification of the entire stream of condensate of dissolved and mechanical impurities is a necessary condition for reliable functioning of the plant [1,2].

To investigate the functioning of ion-exchange resins in the purification of the condensate of an atomic electric power plant from dissolved and suspended impurities, and also to verify the design of individual elements of an ion-exchanger filter, a semi-works installation with separately functioning ion-exchanger filters (two filters in diameter), with N-cation exchanger and OX-anion-exchanger resins, connected in series, was installed and tested on the bypass of the condensate loop of the VR-50 Atomic Electric Power Plant.

The filters were identical in their design. The drainage and distribution systems of the filters were of the slit-tube type. The slits on the radii of the system were formed of a coil of circular wire with a diameter of 0.8 mm. The coil was so made that the width of the gap was 0.1 mm on the radii of the lower system and 0.4 mm on those of the upper system.

During the time the filters functioned the following thermodynamic parameters were monitored (the flow rate of the condensate, the total resistance of the filters, and the resistance of the drainage systems) and also the physicochemical composition of the condensate (the pH value, electrical conductivity, hardness, the content of elements of corrosion products and the total beta-activity). The chemical composition of the condensate was stable during the entire course of functioning of the filters, except during the start-up period of the reactor (0.02-0.04 mg/liter of Fe (total).

1/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--PHYSICAL GEOGRAPHY AND SCIENCE OF THE FUTURE -U-

AUTHOR--ZABELIN, I.M.

COUNTRY OF INFO--USSR

SOURCE--2ND ED. MOSCOW, MUSL<sup>U</sup>, 1970, 174 PP

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PHYSICAL GEOGRAPHY, BIOLOGY, COSMOS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0677

STEP NO--UR/0000/70/000/000/0001/0174

CIRC ACCESSION NO--AM0114855

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AM0114855

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PREFACE 3. CHAPTER 1 COMMUNISM  
 AND NATURAL SCIENCES 9. 2 SCIENCE OF BIOGENOSPHERE 20. 3  
 PHYSICAL GEOGRAPHY AND BIOLOGY 34. 4 PHYSICAL GEOGRAPHY AND  
 EVOLUTIONAL ANTHROPOPSYCHOLOGY 40. 5 APPEARANCE OF HUMANITY AND  
 GEOGRAPHY 51. 6 PHYSICS, PHYSICAL GEOGRAPHY AND PRINCIPLES OF  
 HUMANISM 64. 7 PHYSICAL GEOGRAPHY AND NATURE SOCIOLOGY 64. 8  
 FEATURES OF THE LATEST PLANETARY EVOLUTION. THE PROBLEM OF "NOOSFERA"  
 104. 9 COMMUNISM, COSMOS AND GEOCOSMOLOGY 126. CONCLUSION.  
 HUMANITY 148. AFTERWORD 173. THE FIRST EDITION OF THIS BOOK WAS  
 ESTABLISHED IN 1963 AND PLAYED AN IMPORTANT PART IN THE DEVELOPMENT OF  
 INVESTIGATIONS OF SUCH ACTUAL PROBLEMS OF SOCIAL PROGNOSIS AS PROGNOSIS  
 IN THE FIELD OF SCIENCE AND ENGINEERING, SOCIAL RELATIONSHIPS,  
 ECONOMICS, AND ESPECIALLY, PROSPECTS OF FURTHER ASSIMILATION OF EARTH'S  
 SURFACE (GEOGRAPHIC PROGNOSIS).

UNCLASSIFIED

USSR

YUR'YEV, B. P., et al., Poroshkovaya Metallurgiya, No 11(131), Nov 73,  
pp 1-5

the chemical composition of the powder. By changing this correlation, the W-content in the alloy can be changed from 0-20 mass%. The optimum conditions of the electroprecipitation of W-Co powders are determined. According to the X-ray structural analysis, they represent solid solutions of W in hexagonal and cubic Co. Five figures, one bibliographic reference.

2/2

- 34 -

USSR

ZABELIN, V. and SADIKOV, V.

"All Union Conference on Research in the Field of General Epizootiology"

Moscow, Veterinariya, No 11, 1972, pp 122-124

Abstract: The title conference was held in the city of Ul'yanovsk (Ukraine) in August 1972. The consensus was that while progress has been made in preventing and eradicating a number of infectious diseases of animals, the epizootic situation with respect to many other infectious and parasitic diseases remains serious. The papers discussed the epizootiology of helminthiasis (Ye. Ye. Shumakovich, V. S. Yerшов, D. K. Polyakov, I. V. Abramov), piroplasmiasis of cattle (F. A. Petunin, V. I. Yarmoshkevich, O. N. Khudaynazarova), prevalence of fungus diseases (A. Kh. Sarkisov), specific prevention of fungus diseases (Sh. T. Rasulev, Ye. A. Marinin, Kh. A. Dzhilavyan, Z. A. Urmanov), pathogenic microorganisms in the environment, factors in the transmission of infections, and methods of breaking the epizootic chain (A. A. Polyakov), mechanism of action of disinfectants on microorganisms and survival time of helminth eggs and larvae in liquid manure), and economic costs of epizootic control measures (I. V. Sorokin, V. V. Vinokurov).

1/1

ZABELIN, YE. I.

*lunar geology*

PROBLEMS OF LUNAR GEOLOGY

Edited by A. V. Poyvo

Translation of "Problemy Geologii Lunny."  
"Nauka" Press, Moscow, 1969

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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January 1973

NASA TP F-689

13



SCHE FEATURES OF THE SMALL CRYSTALS OF THE MOON

A. L. Sakhany

ABSTRACT. Craters, which are craters on the order of a few kilometers, are considered to be of single-impact origin, and therefore have features which are distinctly different from those of large craters on the moon. Research by American and Russian scientists on the topic is discussed.

DISTRIBUTION OF ANOMAL STRUCTURES ON THE MOON ON THE BASIS OF THEIR DIAMETER

P. V. Platonov, Ye. I. Zhelezovskaya, S. V. Kochalov and ~~Ye. I. Zhelezovskaya~~

ABSTRACT. The irregular size frequency distribution of ring structures on the Moon is discussed. A history of the problem of the distribution of the number of craters as a function of their diameter is given. Data obtained from the Luna-9 and Ranger-7 spacecrafts are described.

ZABELINA, D.G.

S/PKS 59008

6-73

C

2-7. DISTRIBUTION OF APERTURES IN THE EPITAXIAL LAYERS OF CALCIUM PHOSPHIDE ALLOYED WITH SULFUR AND NITROGEN

Article by D. G. Zabelina, A. M. Petrov, A. E. Piskun, D. A. Yan'kov, V. F. Kopylov, S. M. Aronova, Leninskii, Krasnodar, III Sbornik po Fiziko-khimiya i Sintez Poluprovodnikov Kristallov i Plenok, Russian, 12-17 June 1972, p 1351

The properties of monocrytalline layers of calcium phosphide alloyed with nitrogen were investigated. The layers were grown by the method of liquid phase epitaxy in an open system on GaP substrates alloyed with sulfur obtained by the Czochralski method. Alloying with nitrogen was realized by adding calcium nitride from 0.05 to 1 percent by weight to the Ga-P-Ga melt. The sulfur got into the melt as a result of solution of the substrate.

By using the measurements of the dependence of the surface barrier at the Ga-P-Ga contact, a study was made of the concentration distribution of the donors with respect to depth of the epitaxial layer. On the film obtained, a study was made of the optical absorption near the edge of the basic band. On the basis of an analysis of the absorption spectra, the nitrogen concentration in the film was determined as a function of the amount of GaP in the Ga-P-Ga melt. Results are presented from a study of the electroluminescence of the p-n junctions obtained by the diffusion of zinc in the grown system. The radiation spectra at room temperature contained two bands with 1.25 electron volt and 2.2 electron volt peaks.

The quantum yield of green radiation is  $4 \cdot 10^{-2}$ . The brightness of the diodes at a current density of 10 milliamperes/cm<sup>2</sup> was 30 nits; at 100 milliamperes/cm<sup>2</sup> it was 1,100 nits.

1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--INFLUENCE OF THE COMPOSITION OF A REACTION MIXTURE ON M,XYLENE  
OXIDATION -U-  
AUTHOR--(05)-ALEKSANDROV, V.N., GOLUBEV, G.S., GITIS, S.S., ZABELINA, G.V.,  
SAVINOVA, V.V.  
COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(5), 341-3

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--XYLENE, OXIDATION, ORGANOCOBALT COMPOUND, CATALYST ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3008/0892

STEP NO--UR/0064/70/046/005/0341/0343

CIRC ACCESSION NO--AP0137920

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137920

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CO(OAC) SUB2 CATALYZED, BR INITIATED OXIDN. OF M,ME SUB2 C SUB6 H SUB4 (I) AT A CONC. OF 2 MOLES-L. IN HOAC SOLN. BY AIR ADMITTED AT 150DEGREES AND UNDER 20 ATM PRESSURE WAS 0.2-0.5 ORDER IN BR, 1-2 ORDER IN CO, AND 1.7-0.4 ORDER IN I. THE ORDER IN FELL AS I CONC. ROSE FROM 0.5 TO 2 MOLES-L. AT THE OPTIMAL CO,BR RATIO (2:1 TO 1:1), M,(HO SUB2 C) SUB2 C SUB6 H SUB4 (II) YIELDS WERE 86.9, 83.7, 71.2, 81.0, 79.0, 83.3, 85.8, AND 87.1PERCENT WHEN THE INITIATORS WERE NH SUB4 BR, CHBR SUB3, C SUB2 H SUB2 BR SUB4, P,(BRCH SUB2) SUB2 C SUB6 H SUB4, BR SUB2, HBRO SUB3, HBR, AND COBR SUB2, RESP. WHEN CO(OAC) SUB2 WAS REPLACED BY THE MN SALT, THE REACTION RATE WAS REDUCED AND II YIELDS WERE 49.9PERCENT, BUT WHEN MIXTS. OF THESE CATALYSTS WERE USED, REACTION RATES APPROACHED THOSE FOR CO(OAC) SUB2 CATALYZED OXIDN. AND II YIELDS WERE 80.8-7.0PERCENT.

UNCLASSIFIED

USSR

UDC: 621.396.6-181.48

ZABELKIN, M. M., SAZONOV, A. A.

"Automating the Control of a Sharp-Focus Electron-Beam Installation in the Production of Integrated Circuits"

Elektron. prom-st'. Nauch.-tekhn. sb. (The Electronics Industry. Scientific and Technical Collection), 1972, No 1, pp 74-77 (from RZh-Radiotekhnika, No 8, Aug 72, Abstract No 8V262)

Translation: The time for machining a single module can be cut to ten seconds or less by using a differential analyzer to control an electron beam installation. Resumé.

1/1

Oncology

USSR

UDC: 616.006.6-092.9-02:632.9

ZABEZHINSKIY, M. A., Laboratory of Carcinogenic Agents, Scientific Research Institute of Oncology imeni N. N. Petrov, Ministry of Health USSR

"Investigation of the Possible Carcinogenic Effect of  $\beta$ -Sevin"

Moscow, Voprosy Onkologii, Vol 16, No 11, 1970, pp 106-107

Abstract: Because of its presence as a technical component of  $\beta$ -sevin, which is widely used in agriculture as a herbicide, the possible blastomogenic effect of  $\beta$ -sevin (2-naphthyl ether N-methyl-carbamic acid) on animals was investigated. The results demonstrated a weak blastomogenic effect.  $\beta$ -sevin suspension (in sunflower oil) was administered subcutaneously and orally to rats (for 33 months) and mice for 25 months). The incidence of tumors in rats was low: 24% with subcutaneous, and 25% with oral administration. Two rats developed sarcomas at the place of subcutaneous injection, but sarcomas developed in control animals following injection of oil solvent. Local neoplasms in controls were thus the result of the specific effect of  $\beta$ -sevin. None of the other tumors occurred in control rats. In mice the incidence of tumors was somewhat higher: 60% with subcutaneous, and 31% with oral administration. Experimental results revealed a very weak carcinogenic or even cocarcinogenic effect of  $\beta$ -sevin.

1/1

USSR

UDC 615.277.4.032.23

ZABEZHINSKIY, M. A., Laboratory of Carcinogens, Scientific Research  
Institute of Oncology imeni N. N. Petrov, Ministry of Health USSR

"The Effect of the Inhalation Method of Introducing Some Atomizable  
Carcinogenic Substances"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 1,  
1970, pp 72-74

Abstract: Following inhalation of benzidine for 13 months, 8 of 28  
rats (29%) developed leukemia, fibroadenomas, mammary cancer, and  
hepatomas, that were indistinguishable from the neoplasma that  
appear in rats after intratracheal or subcutaneous injection of ben-  
zidine or ingestion of the latter with food. The absence of urinary  
bladder tumors is ascribed to the nature of the metabolism of aromatic  
amines in rats, which differs from that in dogs and man. The experi-  
ments show that the effect of aromatic amines depends not on the  
method of introducing the agents but on the experimental animal.

1/1

Acc. Nr.: AP0031625

Ref. Code: UR 0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 1, pp 72-74

THE EFFECT OF INHALATION METHOD FOR INTRODUCTION OF SOME  
ATOMIZABLE CARCINOGENOUS SUBSTANCES

Zabzhinskiy, M.A.

N. N. Petrov Institute of Oncology, Leningrad

Following benzidine inhalation 8 of 28 albino mongrel rats developed in 13 months leukemia, fibroadenomas and cancer of the mammary gland, hepatoma. As concerns their localization and structure these tumours were in no way different from neoplasms developing in rats consecutive to intratracheal or subcutaneous introduction or feeding of benzidine.

2 MK

REEL/FRAME

19691752



Acc. Nr:

AP0050117

Abstracting Service:

CHEMICAL ABST. 5-70

Ref. Code:

UR 0506

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99452v Carcinogenic properties of s-triazine derivatives.  
 Pliss, G. B.; Zabezhinskii, M. A. (N. N. Petrov Res. Inst.  
 Oncol., Leningrad, USSR). *Vop. Onkol.* 1970, 15(1), 82-5  
 (Russ). Simazine (2-chloro-4,6-bis(ethylamino)-sym-triazine)  
 and cyanuric acid (2,4,6-trihydroxytrihydro-sym-triazine) were  
 applied s.c. once a week at 80 mg to rats and 10 mg to mice, and  
 5 times weekly during feeding at 30 mg to rats and 5 mg to mice,  
 and at 2-3 drops of a 20% soln. in C<sub>6</sub>H<sub>6</sub> smeared onto the skin of  
 the mice. The 2 s-triazine derivs. had a low blastomogenic  
 action, with tumors appearing in 30% of the cases after an av.  
 latent period of 1.5 years. A characteristic feature of simazine  
 action was the development of sarcomas at the site of s.c. injection.

BJJR

Handwritten mark resembling a plus sign over a horizontal line

REEL/FRAME  
19810018

Handwritten initials "2 di"

USSR

UDC 534-8

VAL'KOV, Yu. V., ACHILOV, M. F., KHODZHA'YEV, S. A., KHALIULIN, M. G.,  
ZABIBULLAYEV, P. K.

"Concerning the Application of Diffraction Methods to the Study of Acoustical Properties of Liquids"

Uch. zap. Tashkent. gos. ped. in-t (Scientific Notes of Tashkent State Pedagogical Institute), 1971, Vol. 90, pp 24-28 (from RZh-Fizika, No 10, Oct 72, Abstract No 10Zh608)

Translation: Using the phenomenon of Bragg diffraction of light on acoustical waves, the authors conducted experimental studies on the rate of propagation  $v$  and absorption  $\alpha$  of acoustical waves in distilled water over a wide frequency range (10-800 MHz). Acoustical waves were excited in the range 10-700 MHz using a quartz plate oscillating at odd harmonics and in the range 200-1000 MHz using a  $\text{LiNbO}_3$  crystal in a coaxial resonator. The light source was a He-Ne gas laser. The following relationships were studied:  $v = \phi(t^\circ\text{C})$  in the temperature range 10-90°C,  $v = \phi(f)$  and  $\alpha = \phi(f)$  in the frequency range 10-800 MHz at a temperature of 22°C. V. Semenov.

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USSR

UDC 669.245'26.018.44 539.4

BRAGIN, D. YA., SHKANOV, I. N., GOL'DFARB, I. P., ZABIBULLINA, N. V.

"Effect of the Technological Conditions of High-Temperature Thermomechanical Treatment on the Static and Fatigue Strength of Heat-Resistant Alloy"

Tekhnol. i organiz. proiz-va. Nauchno-proizv. sb. (Technology and Organization of Production. Scientific Production Collection), 1970, No 6, pp 94-96 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4I765)

Translation: The results of studying the fatigue strength of parts made of KhN70MVTYuE high-alloy heat-resistant Cr-Ni alloy subjected to high-temperature thermomechanical treatment are described. Recommendations are made with respect to thermal conditions and degree of plastic flow insuring that high strength qualities will be obtained. There are 3 illustrations, 2 tables, and a 3-entry bibliography. [Kazan' Aviation Institute].

1/1

ZABILAG A.

Baybakov, H. L.,  
Zabila, G. A.,  
Topov, L. N.  
Gusev, V. G.  
Korshunov, I. P.  
Gartsehnereyn, F. E.  
Moykapar, O. I.  
Kirtomov, A. B., Fab-  
rikov, V. A.,  
Klyukhin, L. M.  
Klyukhin, L. M.,  
Pavlov, V. A.,  
Kirtomov, A. B.  
Men'shikh, O. F.  
Men'shikh, O. F.  
Kon'shikh, O. F.  
Nikitin, V. V.,  
Samoylov, V. D.  
Uspenskiy, A. V.  
Deryugin, I. A.,  
Kobov, V. V.,  
Obuznenko, Ye. L.

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TECHNICAL TRANSLATION

RGW / PSYCHT-23-2015-72

89 Nov 72

ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION  
PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE, KIEV,  
SEPTEMBER 1968

FOREIGN TITLE: PROBLEMY PEREDACHII INFORMATSII LAZERNYH IZLUCHENIYEM

AUTHOR: I. A. DEBYNIN, ET AL.

ADJUNCT: KIEV ORDER OF LENIN STATE UNIVERSITY  
IHEMI T.G. SCHEVCHENKO

Translated for FSTC by ACS1

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- File Page -

USSR

UDC: 629.78.017.2

ZOTEYEV, A.I. and ZABIROV, M.G.

"Synthesis of Nonlinear Control Systems with Incomplete Information on Prescribed Distribution of the Roots of Characteristic Equation for a Closed System"

Tr. Kazan. aviats. in-ta (Transactions of Kazan Aviation Institute) 1971, vyp 138, pp 82-88 (from Referativnyy Zhurnal-Raketostroyeniye, No 7, 1972, Abstract No 7.41.163)

Translation: The problem is considered of the synthesis of linear regulator parameters with incomplete information on the control object, the disturbed motion of which is represented by the following system of differential equations with constant coefficients:  $\dot{x} = Ax + bu$ , where  $x$  is the unit vector;  $u$  is the scalar control function ( $u = p \cdot x$ ). It is shown that if the control object can be fully controlled and the number of dimensional coordinates  $k < n$ , then there is a vector  $p$ , having  $(n-k)$  null elements corresponding to  $k$  random roots of the

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USSR

ZOTEYEV, A. I. and ZABIROV, M. G., Tr. Kazan. aviats. in-ta, 1971, vyp 138, pp 82-88

characteristic equation of the closed system; these  $k$  random roots not coinciding with  $k$  zeros of one of the functions  $H_s(\lambda)$  ( $s=0,1,\dots,k$ ) resulting from replacing the  $S$  column by  $b$  column in the matrix  $H_0(\lambda) = /A - \lambda E/$ . Particular cases are given of the distribution of roots of characteristic equation of a closed system, where one or several components of vector become zero. The appendix gives the synthesis of the automatic control system with incomplete information on the control object, the disturbed motion of which is represented by a system of differential equations  $\dot{x} = Ax + bu$ , where the matrix  $A$  has a quasitriangular form (9 references, resume).

2/2

ZABOLOTIYA, A. S.

UFRS 57493  
137UN-72

\*Published for the purpose of discussion.

- 50 -

SOME PROBLEMS PERTAINING TO OPERATION OF A RESUSCITATION AND ANESTHESIOLOGY DEPARTMENT OF A CLINICAL HOSPITAL

UDC: 616-036.382-089-51.008

Article by A. S. Zabolotina, Yu. I. Nesterov, School of Resuscitation and Anesthesiology (headed by Docent A. B. Nanyev'skiy), Kemerovo Medical Institute, at the Central Municipal Clinical Hospital (chief physician: Z. Ya. Fridman, Honored Physician of the RSFSR), Moscow, Sovetskoye Zdravookhraneniye, Bulletin, No 10, 1972, submitted 17 March 1972, pp 39-43]

Resuscitation-anesthesiology departments are growing increasingly important in the diagnostic and therapeutic work of large general hospitals. Having been established in the last few years, thanks to the good equipment of laboratories and availability of diverse monitoring equipment, they efficiently improved the quality of the diagnostic process. These departments are regulating and maintaining vital functions of the organism on a high and competent level; they effectively administer intensive care, provide anesthesiological assistance during surgery and diverse manipulations in different departments of the hospital. At the present time it is recognized by all that it is timely and important to create a resuscitation and anesthesiology service in large hospitals.

At the Central Municipal General Hospital of Kemerovo, which has 1,150 beds and is the base for seven chairs and classes of the medical institute, the resuscitation and anesthesiology service was created in accordance with order No 605 of the USSR Minister of Health three years ago. In view of the pavilion-type structure of the hospital with blocks spread over a large territory, a chief resuscitation department with 10 beds was organized in the surgical block where all serious emergency victims were delivered (75% of all those admitted) as well as serious patients from surgical departments (600 beds) of the hospital and an intensive care department with eight beds in the internal medicine block (400 beds). Thus, the resuscitation service had 18 beds in all. The departments were given isolated facilities in the direct vicinity of the decontamination station and surgical block.



USSR

2 UDC 632.951:633.814.574

VORONTSOVA, R. V. and ZABOLOTSKAYA, A. S., Scientific Research  
Institute of Mountain Horticulture and Floriculture

"Effect of Insecticides on Essential Oil Content in Sweet Bay Leaves"  
Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 7, Jul 70, pp 30-31

Abstract: Studies were conducted of the effect of various insecticides on essential oil content in leaves of the sweet bay. The experiments were conducted in 1965 and 1966 in Lazarevskiy Rayon of Krasnodarskiy Kray. For spraying, preparations recommended for control of sweet bay pests were used. In the first year, the trees were sprayed in June and August and in the second year -- in May, July and September. Leaf samples were taken between 10 and 11 o'clock in the morning for essential oil analysis. The oil was extracted with boiling water using the Ginzberg receptacle. In the experiments, untreated trees were used for control purposes.

Results of the experiments established the fact that 2-3 time spraying of the sweet bay tree with methylnitrophos, mecarbam and preparation No 30 at first has a negative effect on the accumulation of essential oil.

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USSR

VORONTSOVA, R. V., et al., Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 7, Jul 70, pp 30-31

lation of essential oil in its leaves. Towards the end of the vegetational period (start of harvesting), the essential oil content reaches the level in the control or even exceeds it. In treatment with methylethylthiophos and preparation No 30 in 5% concentration, the amount of essential oil in the leaves during the harvesting season increases; however, the control level is not attained.

2/2

Automatic Control Instruments & Systems

USSR

ZABLOTSKIY, G. A., CHERNUKHIN, V. Sh. (Institute of Semiconductors, USSR Academy of Sciences)

"A Method of Reducing Oscillations in Two-Point Program Control Systems"

Leningrad, Izvestiya Vysshikh Uchebnykh Zavedeniy, Priborostroyeniye, November 1970, pp 40-44

Abstract: The article concerns a two-point program control system in which a component proportional to a measured or specified quantity is introduced into the controlling signal at the output of the two-point regulator. Equations are derived with which the basic technical characteristics of such an automatic control system can be determined. It is shown that in such a system a number of technical characteristics are better than in two-point program control systems without the introduction of a proportional component.

The article includes 16 equations. There are two references. The article is endorsed by the Leningrad Institute of Precision Mechanics and Optics.

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1/2 030 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--A CONTACTLESS DISCRETE PHASE METHOD OF MEASURING TURBINE BLADE  
VIBRATIONS -U-  
AUTHOR--ZABLOTSKIY, I.YE., KOROSTELEV, YU.A.  
COUNTRY OF INFO--USSR  
SOURCE--ENERGOMASHINOSTROENIE, VOL. 16, JAN. 1970, P. 11-14  
DATE PUBLISHED----JAN70  
SUBJECT AREAS--METHODS AND EQUIPMENT, ENERGY CONVERSION (NON-PROPELLSIVE)  
TOPIC TAGS--MEASUREMENT, VIBRATION, TURBINE BLADE, PHYSICS LABORATORY  
INSTRUMENT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1983/0275 STEP NO--UR/0114/70/016/000/0011/0014  
CIRC ACCESSION NO--AP0053262  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0053262

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. DESCRIPTION OF A CONTACTLESS METHOD OF MEASURING TURBINE BLADE VIBRATIONS, BASED ON THE TIME QUANTIZATION OF A SIGNAL CHARACTERIZING THE PARAMETER TO BE MEASURED. MEASUREMENTS BY THIS METHOD ARE NOT CONTINUOUS BUT ARE MADE ONLY WHEN THE BLADES PASS A PAIR OF SENSORS FIXED INSIDE THE TURBINE CASING. BY APPROPRIATELY POSITIONING PULSE SENSORS IN THE CASING, IT IS POSSIBLE TO MEASURE THE DISPLACEMENT AMPLITUDES AND FLUTTER SPEEDS OF THE BLADE TIPS, AND THEREBY TO DETERMINE THE STRESSES IN THE BLADES AS WELL AS THE VIBRATION FREQUENCIES AND THE PHASE SHIFT BETWEEN THE VIBRATIONS OF ADJACENT BLADES.

UNCLASSIFIED

USSR

UDC 62-135-253.5:534.08.629.7.03

ZABLOTSKIY, I. Ye., KOROSTELEV, Yu. A., SVIBLOV, L. B.

"Contactless Measurement of Oscillations of Power Blades of Turbines"

Lopatochn. Mashiny i Struyn. Apparaty [Blade Machines and Jet Apparatus -- Collection of Works], No 6, Moscow, Mashinostroyeniye Press, 1972, pp 106-121, (Translated from Referativnyy Zhurnal, Turbostroyeniye, No 8, 1972, Abstract No 8.49.168).

Translation: The principles of the discrete-phase method are presented, allowing measurement of oscillations of the working fluids in an axial compressor to be measured with contactless impulse sensors. A block diagram of a cathode ray device for recording the amplitude of working fluids (ELURA) is presented, and the operating principle of the device is explained. Methods of measurement of the amplitudes of oscillations and amplitudes of oscillation velocities of the ends of blades, phase shift of oscillations of neighboring blades and various methods of measurement of resonant oscillations, the frequencies of which are strict multiples of the rotating frequency of the compressor blade wheel are described. A theoretical foundation is presented for these methods. Examples of measurement of various types of blade oscillations are presented. The advantages of the contactless method of measurement are noted. 10 figures; 10 bibliographical references.

1/1

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USSR

UDC 621.822-72

ZABLOTSKIY, N. D.

"A Method of Constructing the Asymptotic Solution of the Problems of Gas Lubrication with Blowing"

Trudy Leningradskogo Politekhnicheskogo Instituta, Aerotermodinamika  
(Works of the Leningrad Polytechnical Institute, Aerothermodynamics),  
No 313, 1970, pp 106-110

Translation: The method of solving the problems of gas lubrication with blowing and large compressibility numbers is proposed. The system of discrete blowing sources is replaced by a blowing line with non-uniform intensity of the gas feed to the lubricating layer. Radial displacement of the journal in a cylindrical bearing is investigated as an example. An integral condition is obtained which must be satisfied by the pressure in the blowing line. From analysis of two special cases (absence of blowing, infinitely large mode coefficients and equality of atmospheric pressure in the pressure chamber) the conclusion is drawn that in order to satisfy the integral condition it is possible to take a constant as the desired function. The bibliography has 7 entries.

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USSR

UDC 621.822-72

ZABLOTSKIY, N. D.

"Radial Gas Bearing with a Ring Blowing Line"

Trudy Leningradskogo Politekhnicheskogo Instituta, Aerotermodinamika  
(Works of the Leningrad Polytechnical Institute, Aerothermodynamics),  
No 313, 1970, pp 101-105

Translation: In this paper a solution is presented for the problem of finding the bearing capacity of a radial gas bearing with a blowing line through which the gas is fed into the lubricating layer. Two methods of feeding the gas through the blowing line are investigated: feeding the gas directly into the lubricating layer without choking and feeding the gas into an annular recess with choking. In both cases, the pressure at the input to the lubricating layer does not depend on the peripheral coordinate. The solution of the Reynolds equation was obtained by the Galerkin method. Formulas are presented for calculating the bearing capacity. There are 3 illustrations and a 3-entry bibliography.

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USSR

UDC 616.981-718.078.737 4

MARTYNYUK, Yu. V., EMDINA, I. A., TITOV, M. B., OBOLENSKAYA, G. I., KRUKIYER, M. D., SUPRUNOVICH, M. S., ZABNINA, S. G., and MOSKAL'CHUK, Z. A., L'vov Institute of Epidemiology and Microbiology

"Specificity of the Complement Fixation Reaction in the Diagnosis of Q Fever"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1970, pp 55-59

Abstract: Study of the immunological structure of the L'vov population with respect to Q fever, using the complement fixation reaction with antigen from *Rickettsia burneti*, revealed the highest number of positives (18-21%) among livestock handlers, meat plant workers, etc., as compared with 10.7% in the population at large. Serological examination of 429 hospitalized patients with cardiovascular, respiratory, liver, kidney, gastrointestinal, endocrine diseases, etc., 1730 febrile patients suffering from typhoid, influenza, meningoen- cephalitis, and other infectious diseases, and 158 cancer patients showed that about 12% had complement-fixing antibodies to the specific Q-fever antigen, or about the same rate as in the general population. There was no increase in the level of specific complement-fixing antibodies in any of the patients with diseases

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USSR

MARTYNYUK, Yu. V., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii,  
No 4, 1970, pp 55-59

of non-Q-fever etiology. Even when the sera were stored for as long as 3-4  
months (at 4°C) no nonspecific reactions were observed.

2/2

USSR

UDC: 621.373:530.145.6

ZABOKRITSKIY, B. Ya., SIDOROV, S. V., SOSKIN, M. S.

"On the Mechanism of Two-Transition Generation in Neodymium Glasses"

V sb. Peredacha energii v kondensirovan. sredakh (Energy Transmission in Condensed Media--collection of works), Yerevan, 1970, pp 91-101 (from RZh--Radiotekhnika, No 5, May 71, Abstract No 5D217)

Translation: The authors are the first to take neodymium glass as an example for studying "two-transition" generation of rare earth ions in a glass matrix with emission realized in a dispersion cavity (transitions from level  ${}^4F_{3/2}$  to levels  ${}^4I_{11/2}$  and  ${}^4I_{9/2}$ ). The basic properties of simultaneous emission in the regions of 0.92 and 1.06  $\mu$  are determined: threshold conditions, time cycle and spectral composition of radiation, as well as the mutual effect of generation on both transitions. A weakly pronounced relationship is found for the threshold characteristics of generation for both transitions. The results are discussed. A. K.

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USSR

UDC 669.715.018.95

ZABOLEYEV-ZOTOV, V. V., MISHCHENKO, YU. N.

"Antifriction Properties and Wear Resistance of Certain Composite Materials with Molybdenum Disulfide"

V sb. Metallovedeniye i prochnost' materialov. T. 3 (Physical Metallurgy and Material Strength. Vol 3 -- collection of works), Volgograd, 1971, pp 352-357 (from RZh-Metallurgy, No 4, Apr 72, Abstract No 41642)

Translation: A comparative study was made of cast and pressed specimens of composites based on aluminum with molybdenum disulfide. The conditions of manufacturing the cast and pressed specimens of the composites made it possible for the molybdenum disulfide to be retained in them even when heating at 700°. On the basis of the studies it is possible to draw the conclusions that during friction in oil the best results are obtained for cast specimens. In the presence of dry friction, the better antifriction properties occur for the pressed specimens with 35% molybdenum disulfide and the cast specimens with 20% disulfide; however, the hardness of the cast specimens is higher. 3 illustrations and a 2-entry bibliography.

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USSR

UDC 669.018.298

YEPIKHIN, M. A., ZABOLEYEV-ZOTOV, V. V., PISAREV, S. P., SHASHIN, A. V.

"Effect of a Third, Previously Formed Phase on the Hardness of Certain Aging Alloys"

V sb. Metallovedeniye i prochnost' materialov. T. 3 (Physical Metallurgy and the Material Strength. Vol 3 -- collection of works), Volgograd, 1971, pp 341-345 (from RZh-Metallurgy, No 4, Apr 72, Abstract No 4I633)

Translation: A study was made of the hardness of aging alloys hardened simultaneously by particles of intermetallides isolated during the aging process and solid particles of a third previously formed phase of the Cr oxide and Al oxide type introduced into the melt (AK4 alloy with different amounts of additives of Cr oxide and BRA9 aluminum bronze powder with different Al oxide content). For the case of the bronze, a sharp drop in the hardness increment was observed on reaching a third phase concentration of 30-40 volumetric % whereas for the AK4 alloys this decrease was observed at 4-5 volumetric %. It is expedient to use a dispersion hardening base in order to increase the strength characteristics of the alloys hardened by disperse inclusions only for defined content of the third phase in it, considering also the size of the inclusions. Two illustrations and a 1-entry bibliography.

1/1

Acc. Nr.: AP0046802

Ref. Code: URO113

USSR

ZABOLKIN, V.A.

UDC 629.113.001.1: 629.113.073

"Transverse Static Stability Coefficient of a Truck"

Koeffitsient poperechnoy staticheskoy ustoychivosti transportnoy mashiny (cf. English above), Moscow, Avto-mobil'naya Promyshlessost', 1969, No 11, pp 18-19

Translation:

Considered is the question of determining the transverse stability coefficient of a truck with account for the stiffness of the suspension, tires, and shift of the body center of gravity. The obtained formula permits finding this coefficient analytically and establishing the effect of the coefficient on the geometric, weight, and structural characteristics. Three figures.

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Reel/Frame  
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USSR

UDC 533.6.013.42

SHEYNIN, I. S., ZABOLOTNAYA, V. A.

"Vibrations of a Vertical Wall in a Compressible Fluid With a Density Variable Over Depth"

V sb. Dinamika gidrotekhn. sooruzh. (Dynamics of Hydraulic Engineering Equipment -- Collection of Works), Moscow, 1972, pp 92-96 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V400)

Translation: Small vibrations of a vertical wall located in an ideal compressible nonhomogeneous liquid with a density varying with height are discussed. Wave action on the free surface is not taken into account. The method of separation of variables is used. Graphs are given showing the coefficients of connected mass and the "connected resistance" as functions of frequency under vibrations of a rigid wall. The resulting values of the coefficients under an exponential change in the density of the liquid over height are compared with corresponding parameters calculated for a constant value of the density. Ye. A. Vol'mir.

1/1

- 46 -

USSR

UDC: 616.988.75(A2)-036.22(474.5)

RATMANAYTE, L. M., STEBLIVSKIY, P. P., LAZAREV, O. P., ZAROLOTNOV, V. I., and  
KSHIVITSKAS, V. S., Vil'nius, Institute of Epidemiology, Microbiology, and  
Hygiene

"Characteristics of Immunological Shifts Among the Population of the Lithuania  
SSR due to the Hong Kong Influenza Epidemic"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, Vol 48, No 6,  
Jun 71, pp 104-106

Abstract: The correlation between the intensity of influenza and the level of  
antihemagglutinins in the blood serum was studied. The 1969 epidemic, caused  
by influenza virus A2 Hong Kong 1/68, began in the second week of January and  
continued for 2 months. It was severe and distinguished by a large number of  
respiratory complications, surpassing in mass morbidity all of the influenza  
epidemics during the preceding decade. Serological investigation of 143 sera  
from members of organized collectives and 110 sera from the rest of the popu-  
lation, collected during November 1968, established the presence of anti-  
hemagglutinins only in a small number of sera with mean geometric titers of  
1:14.8 and 1:9.8, respectively. During the epidemic the appearance of anti-  
hemagglutinins was accompanied by an increase of antibodies to virus A2-151/68.

1/2



USSR

RATMANAYTE, L. M., et al, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, Vol 48, No 6, Jun 71, pp 104-106

This may be explained as an anamnestic response of the organism to a new virus variant. Serological investigations of sera obtained during the months of October-November, that is 8-9 months after the epidemic, established a low level of antihemagglutinins to virus A2 Hong Kong 1/68, with only 31.6% of the sera containing antibodies in a titer of 1:40 and higher. Higher titers of antibodies to virus A2 151/65 and V Dushanbe-66 were established in the sera. In all of the groups of sera studied, in the postepidemic period antihemagglutinins to the new antigenic variant of the virus were observed less often and also in titers lower than those to the preceding A2 virus variant.

2/2

- 50 -

USSR

UDC 619:614.9-07:543.544:637.1+637.5

ZABOLOTNYY, K. F., METELITSA, V. K., and NEPOKLOMOV, A. A., All-Union Scientific Research Institute of Veterinary Sanitation

"Detection of Phthalophos in Milk and Fat by Thin-Layer Chromatography"

Moscow, Veterinariya, No 5, May 71, pp 103-104

Abstract: A method for determining residual amounts of phthalophos in milk and fat was developed, using thin-layer chromatography with alumina and gypsum in a ratio of 93:7. The extraction is done with acetone and chloroform. The chromatographic system used consists of a mixture of hexane and methanol (19:1). The chromatogram is produced by spraying with a 20% aqueous alkali solution and a 1% aqueous solution of silver nitrate. Phthalophos appears in the form of dark-grey needles with Rf 0.62. The sensitivity of the method is 1 microgram per sample. Since sanitary rules do not permit the presence of phthalophos in milk and fat, the compound cannot be recommended for use on dairy animals. In the case of slaughter animals, the test must be run not earlier than 20 days after treatment of the animals with phthalophos.

1/1

Composite Materials

USSR

UDC 542.65:532.526.7

KOLESNICHENKO, L. F., POPCHENKO, YU. A., KLIMENKO, A. V., and ZABOLOTNYY, L. V., Institute of Problems of Material Science, Academy of Sciences Ukrainian SSR

"Use of Composite Materials in Mobile Joints"

Kiev, Poroshkavaya Metallurgiya, No. 9, Sep 70, pp 27-33

Abstract: Modern concepts of friction and wear are based on phenomena caused by the initiation and advancement of plastic processes in the contact zone and their interrelation with the effects of the operating media. Space technology applications have made necessary extensive studies in overcoming the low effects of certain lubricants in vacuum. The creation of a composite surface by dispersing particles of a stable phase in a plastic matrix designed to preclude plastic flow and failure through friction, is an important step in overcoming the low efficiency of some

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USSR

KOLESNICHENKO, L. F., et al, Poroshkavaya Metallurgiya, No. 9, Sep 70, pp 27-33

materials under specific conditions. Most promising, however, are combination materials which, unlike composite materials, are characterized by a macroscopic combined structure; they comprise two large groups: matrix-type combination materials and laminated systems of combination materials consisting of individual layers or layered components. To facilitate selection of components for combination materials of special designation, experimental data on antifriction properties and wear resistance for individual materials both in air and in vacuum are cited in a table. Applying a coat of any material cited in this table to the working surface of a steel specimen will change the friction parameters. The shortcoming of such modifications in the surface layer is the short-term work capacity of the friction joint under conditions featuring antifriction. Figures in the original article show the effect of layer orientation on the coefficient of friction and wear due to changes in pressure.

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USSR

UDC 669.28.018.45

SAVITSKIY, Ye. M., BUROV, I. V., ZABOLOTNYY, V. T.

"Change in Temperature Dependence of Gas Liberation of Molybdenum and Yttrium of Various Degrees of Purity in a Superhigh Vacuum"

Elektron. Tekhnika. Nauchno-Tekhn. Sb. Materialy [Electronic Engineering, Scientific and Technical Collection, Materials], 1970, No. 5, pp. 122-124. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. S 1769 from the resume).

Translation: A method is developed for studying the gas liberation of metals and alloys heated in a vacuum of  $10^{-9}$  mm Hg with recording of the gases separated by means of a mass spectrometer. The spectra of gases liberated when Mo and Y of various degrees of purity are heated are studied. It is established that the gas liberation of Mo purified by zone refining in a vacuum is significantly lower for H, C, N, and O, than the liberation of metal ceramic Mo. 2 biblio refs.

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1/2 021

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--MOLECULAR WEIGHTS OF POLYBUTADIENES PREPARED WITH THE PI  
ALLYLNICKEL CHLORIDE DIMER AND TITANIUM TETRACHLORIDE CATALYST SYSTEM  
AUTHOR--(04)-PAKURO, N.I., ZABOLOTSKAYA, YE.V., PRAVIKOVA, N.A., MEDVEDEV,  
S.S.  
COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(2), 361-2 (CHEM)

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MOLECULAR WEIGHT, POLYBUTADIENE, ORGANONICKEL COMPOUND,  
CATALYTIC POLYMERIZATION, CHROMATOGRAPHY, SOLUBILITY, INTRINSIC  
VISCOSITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1984/1578

STEP NO--UR/0020/70/190/002/0361/0362

CIRC ACCESSION NO--AT0100196

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0100196

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MOL. WTS. OF THE TITLE POLYBUTADIENES (I) WERE STUDIED BY SEDIMENTATION CHROMATOG. AND VISCOMETRY. THE I WERE DISSOLVED IN A MIXT. OF 84PERCENT PHME AND 16PERCENT ETOH AND PPTD. WITH A MIXT. OF 45PERCENT PHME AND 55PERCENT ETOH. THE SOLY. OF I INCREASED WITH BUTADIENE CONC. AND DECLINED WITH INCREASING CATALYST CONC. THE INTRINSIC VISCOSITY OF THE I WAS PROPORTIONAL TO THE BUTADIENE CONC. AND INVERSELY PROPORTIONAL TO THE CATALYST CONC., PRESUMABLY DUE TO THE FORMATION OF "LIVING" POLYMERS. MOL. WT. DISTRIBUTION CURVES HAD 2 MAX., WHICH WERE SHIFTED TO THE RIGHT AT HIGH BUTADIENE CONCNS. THE POLYDISPERSITY (WHICH WAS VERY HIGH) DEPENDED ON REACTION CONDITIONS.

UNCLASSIFIED

142 028

UNCLASSIFIED

PROCESSING DATE--11DEC70

TITLE--EFFECT OF ELECTRON DONOR COMPOUNDS ON BUTADIENE POLYMERIZATION IN THE PRESENCE OF PI ALLYL NICKEL CATALYSTS -U-

AUTHOR--(05)--KRISTALNYI, E.V., ORENKOVA, N.V., ZABOLUTSKAYA, YE.V., GANTMAKHEN, A.R., MEDVEDEV, S.S.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(4), 836-40

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL REACTION KINETICS, BUTADIENE, POLYMERIZATION, METAL CATALYST, NICKEL, TITANIUM CHLORIDE, CHEMICAL REACTION RATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1382

STEP NO--UR/0459/70/012/004/0836/0840

CIRC ACCESSION NO--AP0135056

UNCLASSIFIED



2/2 028

CIRC ACCESSION NO--AP0135056

UNCLASSIFIED

PROCESSING DATE--11DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BUTADIENE WAS POLYMD. IN THE  
 PRESENCE OF PI ALLYLNICKEL CHLORIDE (I) PLUS TICL SUB4 AND ELECTRON  
 DONOR ADDITIVES E.G., ME SUB2 S, ET SUB2 O, AND PHOME, IN ORDER TO DET.  
 THE EFFECTS OF THE ADDITIVES ON THE POLYMN. RATE. ME SUB2 S INHIBITED  
 THE POLYMN. RATE, BUT PHOME HAD THE OPPOSITE EFFECT. KINETIC STUDIES  
 SUGGESTED THAT THE DONOR ADDITIVES ADDED TO I INSTEAD OF TICL SUB4.  
 FACILITY: FIZ. KHIM. INST. IM. KARPOVA, MSCCW, USSR.

UNCLASSIFIED

USSR

UDC 621.391.84

AMIANOV, I.N., ZABOLOTSKIY, V.G.

"Some Features Of Filtration Of The Rayleigh Parameters Of Pulse Signals In The Presence Of Interference"

Izv.VUZ: Radioelektronika, Vol XV, No 4, Apr 1972, pp 426-435

Abstract: In a Gaussian approximation of an a posteriori distribution but on the basis of a precise expression for the probability density of transition, new algorithms are obtained of the filtration of a Markov Rayleigh parameter of a signal in discrete time. The results are specified for the case when the Rayleigh parameter is the amplitude of the signal. Two algorithms are realized in the form of block diagrams. A system of automatic gain control is synthesized which makes it possible to achieve optimum receivers for measurement of the non-energy parameters of fading of the pulse signals at stages with a limited dynamic range. 5 fig. 5 ref. Received by editors, 6 July 1971.

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USSR

UDC: 621.396.62

AMLIANTOV, I. N., ZABOLOTSKIY, V. G.

"Optimum Receivers for Measuring Delay Time of Pulse Signals in the Presence of Fading"

Kiev, IVUZ Radioelektronika, Vol 15, No 5, May 72, pp 645-654

Abstract: An optimum receiver is synthesized for measuring the fluctuating time position of an incoherent pulse signal which fades in amplitude. The effect which weight processing of the signal has on measurement precision is considered. Digital modeling is used to find quasioptimum circuits which are fairly simple in realization, and a computational procedure is given. The results of the analysis can be extended to receivers for detecting signals with other types of pulse modulation.

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USSR

UDC: 51:155.001.57:681.3.06

AKUSHKIY, I. Ya., ZABOLOTSKIY, V. N.

"On a Combinatoric Approach to the Idea of Data Compression"

V sb. Tsifr. vychisl. tekhnika i programmir. (Digital Computer Technology and Programming--collection of works), vyp. 6, Moscow, "Sov. radio", 1971, pp 5-17 (from RZh-Kibernetika, No 7, Jul 71, Abstract No TV786)

Translation: The article deals with the problem of data compression using the Shannon logarithmic measure of information quantity as stated by A. N. Kolmogorov. Information blocks are considered -- cortèges consisting of elements whose probabilities of appearance are unknown. A solution is given for the problem of finding algorithms for one-to-one mapping of a set of blocks with ordered arrangement of elements onto a set of unordered blocks. Methods of numeration of some combinatoric aggregates are considered. Authors' abstract.

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172 020

UNCLASSIFIED

PROCESSING DATE--30OCT71

TITLE--EFFECT OF WATER VAPOR AND ETHYL ALCOHOL ON THE THORIUM 228 EMANATION  
DIFFUSION RATE IN CELLULOSE TRIACETATE -U-

AUTHOR--(04)--NITZOLD, D.; ZABORENKO, K.B.; KURBANOV, KH.T.; KOZLOV, P.V.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(3), 182-4

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY, MATERIALS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--SORPTION, WATER, ETHANOL, CELLULOSE RESIN, ACETATE, THORIUM ISOTOPE, SCINTILLATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/0670

STEP NO--UR/0460/70/012/003/0182/0184

CIRC ACCESSION NO--AP0124342

UNCLASSIFIED

2/2 020

CIRC ACCESSION NO--AP0124342

UNCLASSIFIED

PROCESSING DATE--30OCT7.

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE SORPTION OF H SUB2 O OR ETOH BY CELLULOSE TRIACETATE (1) INCREASES THE DIFFUSION OF THORON (EMANATION) FROM PRIME228 TH) FROM THE INSIDE OF THE I FILM TO ITS OUTSIDE. THE FILMS CONTG. ADSORBED THORON WERE KEPT IN STREAMS OF DRY AIR OR AIR SATD. WITH H SUB2 O OR ETOH VAPOR AND THE RATES OF THORON EMANATION WERE DETD. BY SCINTILLOMETRY. FROM THE KINETIC CURVES THUS OBTAINED, THE DIFFUSION COEFFS. OF H SUB2 O AND ETOH INTO I WERE FOUND TO BE 2.7 TIME: 10 PRIME NEGATIVE 6 AND 8.2 TIMES 10 PRIME NEGATIVE 6 CM PRIME2-MIN, RESP.

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

UNCLASSIFIED

1/2 016  
UNCLASSIFIED  
PROCESSING DATE--04DEC70  
TITLE--USE OF AN EMANATION METHOD FOR EVALUATING THE REACTIVITY OF FERRIC  
OXIDE WITH VARIOUS CHEMICAL AND THERMAL HISTORIES -U-  
AUTHOR--(03)-BALEK, V., BAIKOV, S.O., ZABORENKO, K.B.  
COUNTRY OF INFO--USSR  
SOURCE--RADIOKHIMIYA 1970, 12(1), 156-63  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--IRON OXIDE, THERMAL EFFECT, THORIUM, RADIOACTIVITY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3005/0118  
STEP NO--UR/0186/70/012/001/0156/0163  
CIRC ACCESSION NO--AP0132411  
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132411

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE REACTIVITY OF ALPHA FE SUB2 O SUB3 (PREPD. BY VARIOUS METHODS) IN MIXTS. WITH ZNO WAS STUDIED BY INCORPORATING RADIOACTIVE TH IN THE ZNO AND MEASURING THE EMANATION OF RN DURING THE HEATING OF THE ZNO FE SUB2 O SUB3 MIXTS. IN ALL CASES THE REACTIVITY (AT 700-850DEGREES) DEPENDEND ON THE NATURE OF THE SALT FROM WHICH THE OXIDE WAS PREPD. BY THERMAL DECOMP. IN THE CASE OF SALTS DECOMP. AT 700DEGREES THE REACTIVITY WAS THE HIGHEST WEHN THE OXIDE WAS PREPD. FROM FERRIC SULFATE (I) AND DECREASED IN THE TRANSITION FROM I TO MOHR'S SALT (III) TO BASIC CARBONATE (III) TO OXALATE (IV); PROLONGED HEATING AT 700DEGREES REDUCED THE REACTIVITY OF THE FE SUB2 O SUB3. IN THE CASE OF SALTS DECOMP. AT 900DEGREES THE REACTIVITY WAS THE HIGHEST IN THE CASE OF FE SUB2 O SUB3 PREPD. FROM II AND THE LOWEST FOR FE SUB2 O SUB3 PREPD. FROM III, WHILE IN THE CASE OF SALTS DECOMP. AT 1100DEGREES THE REACTIVITY DECREASED IN THE TRANSITION FROM II THROUGH IV AND I TO III. THE METHOD MAY BE USED SUCCESSFULLY FOR DETG. THE REACTIVITY OF COM. GRADES OF FE SUB2 O SUB3.

UNCLASSIFIED



USSR

UDC 621.3.038.6

ZABORONOK, G. F., ZELENTSOV, T. I., RONZHIN, A. S., SOKOLOV, B. G.

"Electronic Melting of Metals"

Moscow, Elektronnaya plavka metallov (cf. English above), Revised edition, Metallurgiya, 1972, 348 pp (from Elektronnaya plavka metallov, pp 2-4)

Translation: The experience of Soviet and foreign researchers with respect to the development of the equipment and the technological process for melting metals by the method of electron bombardment is generalized in this book, and the work experience of the authors themselves is used. A study is made of the problems of the electron optical system, the electric power supply and the vacuum equipment of electron melting furnaces. Numerous data are presented on the studies of metals and alloys made by the method of electron bombardment and subjected to zonal purification. Some calculations are presented for the equipment to melt metals by electron bombardment, and variations in the chemical composition of metals and alloys during the melting process are illustrated. Some new prospects in the area of the application of the electron bombardment technique are investigated.

The book is intended for a broad class of engineering and technical workers of the research institutes, the design organizations and the nonferrous and ferrous metallurgical plants. It can be useful to students of the metallurgical and power engineering institutions of higher learning. There are 173 illustrations, 59 tables and a 199 entry bibliography.

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ZABORONOK, G. F., et al., Elektronnaya plavka metallov, Revised edition, Metallurgiya, 1972, 348 pp

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USSR

UDC 681.327.12

DENBNOVETSKIY, S. V., ZABOROVSKIY, YU. A., PETRENKO, A. I., SKRYNSKIY, N. YA.

"Method of Reading Two-Dimensional Graphs"

USSR Author's Certificate No 310274, filed 12 May 69, published 3 Sep 71 (from RZh --Avtomatika, Telemekhanika i vychislitel'naya tekhnika, No 4, Apr 72, Abstract No 4A525P)

Translation: A procedure is proposed for reading two-dimensional graphs by swinging the beam in a circular trajectory. In order to increase the reliability when reading the graphs with internal and external loops, the time interval of the tracking resolution is generated in each circular scanning cycle. This interval is centered symmetrically with respect to the reading direction, and on coincidence of the middle of the time interval of the resolution with the direction of reading, the center of the circular scan of the beam is advanced along the reading direction by one step. There are 2 illustrations.

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Information theory

USSR

UDC 681.327.12

DENBNOVETSKIY, S. V., ZABOROVSKIY, Yu. A., PETRENKO, A. I., SKRYNSKIY,  
N. Ya., Kiev Polytechnical Institute

"A Method of Reading out Two-Dimensional Graphs"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,  
No 23, Aug 71, Author's Certificate No 310274, Division G, filed 12 May  
69, published 26 Jul 71, p 158

Translation: This Author's Certificate introduces a device for reading out two-dimensional graphs by turning a beam in a circular trajectory. As a distinguishing feature of the patent, in order to improve reliability in reading out graphs with inside and outside loops, the time interval of tracking resolution is isolated on each cycle of the circular scan, this interval is symmetrically centered relative to the direction of readout, and the center of circular beam scanning is moved one step in the direction of readout when the middle of the time resolution interval coincides with the readout direction.

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