USSR

BUZHINSKIY, I. M., et al, Doklady Akademii Nauk SSSR, Vol. 190, No. 3, 21 Jan 70, pp 558-561

lengths 0.63 and 1.15 μ. The minimum thermal distortion at this temperature was exhibited by glasses with a thermooptical constant in the limits $(-10 - +10)\cdot10^{-7}$/ /°C. Measurements showed that glasses KGSS-3 and LGS-41 satisfy conditions for minimum thermal distortion.

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Acc. Nr: AT0050267 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: 4R 0020

B

103301q Thermooptical characteristics of glasses activated by neodymium. Buzhinskii, I. M.; Dianov, E. M.; Mamonov, S. K.; Mikhailova, L. M.; Prokhorov, A. M. (Fiz. Inst. im. Lebedeva, Moscow, USSR). *Dokl. Akad. Nauk SSSR* 1970, 190(3), 558–61 [Phys] (Russ). A new method to measure the thermooptical const. $W = \alpha(n - 1) + \beta_{T,\lambda}$ is given, where α is the coeff. of linear expansion of a glass, n refractive index, and $\beta_{T,\lambda}$ the temp. coeff. of n. The measurement was done in the region 10–45° for wavelengths 0.63 and 1.15 μ, by using as a light source Ne-He laser LG-126. The temp. gradient, perpendicular to the light beam in the glass 10 × 60 × 130 mm, was produced by water baths, one of const. temp. at 10° and the other with temp. varying slowly 10–45°. A diaphragm with 2 holes (1 mm cross section) at 7 mm to sep. beams passing the glass through the zones with different temp., was used. By an optical system it was possible to follow the change of the optical path $\Delta P = \Delta N\lambda = LW\Delta T$, where ΔN is the no. of interference fringes shifted after the temp. gradient was formed in the glass,

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L was the length of the rod, λ wavelength of the light used, and ΔT the temp. difference. The values of W and $\beta_{T,\lambda}$ were evaluated for a no. of laser glasses. Finally, the values of $\beta_{T,\lambda}$ and W were evaluated, at which the distortion of the wave front of the wave passing the glass under the temp. gradient does not take place or is minimal. For W this was in the region (-10 to $+10$) $\times$ 10^{-7}/degree. The best glasses studied were those of the types KGSS-3 and LGS-41. J. Havel

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19810196

USSR

UDC 616.2-022.12.12-097:543.426

MAKSIMOVICH, N. A.; BUZHIYEVSKAYA, T. I.; VASINA, A. G.; GILEVICH, E. V.; Kiev Scientific Research Institute of Infectious Diseases, Ukrainian SSR Ministry of Public Health

"Experimental Use of Immunofluorescence in the Study and Diagnosis of Respiratory Viral Infections"

Kiev, Vrachebnoye Delo, No 4, Apr 71, pp 143-147

Abstract: Data were collected on the use of immunofluorescence in the etiological diagnosis of acute respiratory infections. During 1964-1968, data from 4,035 patients and 101 autopsies were collected (3,495 cases in the interepidemic period and 540 cases in influenza foci, foci of parainfluenza, and adenovirus diseases). The material chosen for the study must contain a sufficient quantity of cells sensitive to the viruses to be studied. Smears from the mucous membranes of the nose and from nasopharyngeal washings were studied by phase-contrast and luminescence microscopy. Some photomicrographs of cells of the columnar epithelium are shown. Cells were treated with polyvalent influenza and parainfluenza globulins labeled with

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520005-5"

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MAKSIMOVICH, N. A., et al, Vrachebnoye Delo, No 4, Apr 71, pp 143-147

fluorescein isothiocyanate, with anti-adenovirus rabbit serum and with antirabbit globulin labeled with fluorescein isothiocyanate. The specific luminescence of the centrosphere, the nuclear membrane, and cytoplasm was studied. A tropism of influenza, parainfluenza virus and adenoviruses for epithelial cells of the human respiratory tract was found. A seasonal character of influenza and parainfluenza infections was observed: a certain rise in the incidence of infections was found in the January-March and October-December period. Sporadic outbreaks of acute respiratory diseases were relatively rare (up to 2%) during the summer months. Adenovirus infections, on the other hand, did not exhibit any pronounced seasonal character. In some cases, mixed influenza-adenovirus infections were observed. The virus was localized only in cells lining the trachea, the smaller branches of bronchi and bronchioles, or it was detected only in impressions from the lungs in cadavers.

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USSR

UDC 621.372.825.4

BUZIK, L. M.

"Dispersion and Damping of Comb Delay Systems outside the Pass Bands"

Gor'kiy, Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XIV, No 12, 1971, pp 1878-1890

Abstract: A study was made of the properties of delay systems outside the pass bands in the examples of a comb delay system with thin lamella. The analysis performed by the electrodynamic method of partial regions with subsequent convolution of an infinite system of equations leads to simple analytical expressions for the dispersion equations and the field distribution . The dispersion and damping curves of the slow and fast waves outside the regions of transparency which are a continuation of the corresponding dispersion relations in the pass bands are investigated. A Brillouin diagram is constructed which is supplemented by regions with complex propagation constants. The picture of the field is analyzed under conditions corresponding to different parts of the diagram. The slow waves in the suppressed band are analogous to waves in electric filters. The properties of fast waves in the suppressed band are similar to the properties of wave guide waves in translimit wave guides. The simple formulas obtained for the electromagnetic field distribution in the system permit

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BUZIK, L. M., Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XIV, No 12, 1971, pp 1878-1890

calculation of the field in various modes and determination of the contribution of the individual space harmonics to the total field. The formulas found can be used to study the properties of more complex composite structures as equivalent boundary conditions.

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USSR

UDC: 533.697

BUZINOV, S. N., GALIULLIN, Z. T., and KARPOVA N. A.

"Nonlinear Problems in Non-Steady State Movement of Liquids and Gases Through Tubes"

Tr. Vses. n.-i. in-t prirodn. gazov (Works of the All-Union Scientific Research Institute of Natural Gases) 1970, No. 38/46, pp 149-162 (from RZh-Mekhanika, No. 8, Aug 70, Abstract No. 8B514)

Translation: Solutions of a system of nonlinear differential equations in partial derivatives are considered for the non-steady state movement of fluids in the use of the Leybenzon function in cases where the pressure or outflow in the initial section of the semi-infinite tube varies according to a power law. Some amount of fluid is introduced; this is a problem in "instantaneous source" for the boundary conditions. There is a jump in the outflow, or the outflow varies according to a sine law. The solution is considered for the case in which the daily sinusoidal curve of gas consumption is given, and the power of the last compressor station varies such that all other compressor stations operate in the steady state mode. The effect of the diameter and length of the final section of the tube on variations in the pressure and outflow is investigated. Bibliography of eight. Author's abstract.

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USSR

681.2:621.317.42

BUZINOV, V.S., BELYAKOVA, G.M., MELEKHOV, M.YE., FILONOV, A.N.

"Standard Units For Checking And Calibration Of Field-Strength Meters With Loop And Dipole Antennas"

Izmeritel'naya tekhnika, No 5, May 1972, pp 55-56

Abstract: This paper discusses P1-4 and P1-5 units of the second class which at present are entering production and are intended for metrological servicing of electromagnetic field-strength meters. The P1-4 operates in the 10 kHz-30 MHz frequency range. The range of the rated values of the magnetic field strength, reproducible by four interchangeable loops antennas, lies within the limits 0.5--0.025 mA/m. The P1-5, which operates in the 30--1000 MHz frequency range, uses a set of dipole antennas tuned to the fixed frequencies 30, 40, 50, 60, 70, 80, 100, 125, 150, 175, 200, 225, 250, 275, 300, 400, 500, 600, 700, 800 and 1000 MHz. The rated values of the electrical field strength, measurable by the dipoles of the standard unit, lie within the limits 0.7--10 v/m (according to the frequency). 2 fig. 2 ref. Received, 19 October 1971.

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USSR

UDC 621.793

YAGUBETS, A. N., TIKOFEYEVA, N. I., BUNTUSHKIN, V. P., LYUBOVICH, V. I., BOBANOVA, ZH. I., and BUZINOVA, V. P., Moscow, Kishinev

"Obtaining Electrochemical Composite Materials Based on Nickel with Disperse Metal Oxide Particles"

Kishinev, Elektronnaya obrabotka materialov, No 1 (43), pp 62-67

Abstract: A study was made of methods of obtaining composite materials based on nickel with disperse inclusions of refractory oxides -- lanthanum chromite, praseodymium zirconate, and hafnium dioxide. The technological process for obtaining combined coatings comprises three steps: electrolytic deposition of plates, assembly of the plates into packets with subsequent diffusion welding (rolling), and degassing annealing. The effect of the electrodeposition conditions on the composition of the materials was investigated. The pH of the electrolyte and position of the cathode relative to the direction of the force of gravity have the most significant effect on the disperse particle contents. The uniformity of distribution of the particles in the coating depends on uniformity of the hydraulic field of the electrolytic cell. The deformations of the matrix in the hot and cold states improve the structure and distribution of the particles in the composition, and high-temperature annealing causes consolidation of the oxide particles of certain metals. Possible causes of a

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[illegible] A. N., et al., Elektronnaya obrabotka materialov, No 1 (43), pp 62-67

[illegible] in strength of the precipitation-hardened composite materials with [illegible] metal matrix obtained by the electrochemical procedure are discussed. The [illegible]chanism of coprecipitation of disperse inclusions with metal is discussed. [illegible] microstructure of electrolytically deposited nickel with 1.5 percent haf-[illegible] dioxide and lanthanum chromite is illustrated before and after heat treat-[illegible].

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USSR

YAGUBETS, A. N., KARYAKIN, V. V., KOVALEV, V. V., BUZINOVA, V. P., and BOBANOVA, ZH. I., Kishinev

"Electrodeposition of Nickel and Iron Coatings Alloyed with Boron"

Kishinev, Elektronnaya Obrabotka Materialov, Vol 38, No 2, 1971, pp 24-28

Abstract: A study was carried out to explore the possibility of preparing boron-containing alloys by an electrolytic method. The nickel electrolyte used had a composition (in g/l) of nickel sulfate (80), nickel nitrate (15), ammonium chloride (30), potassium bisulfite (3), sodium citrate (60), triethanolamine (35), trilon B (35), mercaptophthalic anhydride (0.4), and sodium borohydride (0.4). The acidity of the nickel electrolyte varied from a pH of 10.5 to 14, the temperature from 20 to 70°C, the cathodic current density from 3 to 10 amp/decimeters^2. The composition of the iron electrolyte used was (g/l) ferric sulfate (80), Trilon B (132), triethanolamine (154), sodium borohydride (0.5). The electrolyte temperature was 80°C, the pH 11-12, the cathodic current density varied between 5-15 amps/decimeters^2. The boron content in the powder, microstructure, microhardness, and phase composition of the powder in relation to variation of electrolysis conditions were investigated. 1/2

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YAGUBETS, A. N., et al., Elektronnaya Obrabotka Materialov, Vol 38, No 2, 1971, pp 24-28

The addition of stabilizers displaced the polarizarization curve of nickel, the area and degree of displacement depending on the stabilizer. The iron electrolyte was not affected by the addition of sodium borohydride. The boron uptake by the nickel and iron powders was found to be dependent on the electrolysis conditions and in the nickel amounted to 1-3% by wt. and in the iron up to 7% by wt. Microhardness was also dependent on the electrolytic conditions.

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USSR

UDC 001

BUZNI, Ye. N.

"Foreign Languages for Scientists"

Moscow, Nauchno-Tekhnicheskaya Informatsiya, Series 1, Organization and Methods of Information Work, No 8, 1973, p 16

Translation: The present level of development of science in foreign countries is of interest to workers in industry and to the developers of new techniques and technology. Translations of scientific-technical literature are made in many information organizations and at enterprises. This gives rise to difficulties because the developers usually do not have sufficient knowledge of foreign languages and are not prepared not only to read all the technical literature but even to select the necessary material to be given to the translators. The titles of foreign articles and books are occasionally of an advertising nature and do not always reveal their content. The translator of technical text, not being a specialist, cannot know all the variety of scientific terminology. Thus, for example, translators at the "Magarach" Institute of Winemaking and Viniculture must translate material on chemistry, microbiology, genetics, physiology, production technology, agrochemistry, mechanization, etc. It is necessary

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BUZNI, Ye. N., Nauchno-Tekhnicheskaya Informatsiya, Series 1, Organization and Methods of Information Work, No 8, 1973, p 16

to realize that the same term in various areas of science and technology is translated differently. For example, the English term "browning" is translated in winemaking as "browning"; by the breeder as "root browning"; and by the culinary specialist as "searing", "seasoning" (for sauce), or as "caramel color". In describing the making of vessels (pottery), this same term is used in the sense of glazing, and in construction as the second application of stucco, while in military affairs it is a make of weapon. The English word "aging", with respect to wine, means holding the wine to improve its quality; in the discussion of toole and machinery, it means wear and worsening of the quality; in electronics it may be translated as training (of an electron tube); in food preparation it means ripening, etc. The preparation of a good translation therefore requires that the specialist work with the translator on the text, which requires much time.

In practice, we often find that specialists familiar with the basic rules of foreign languages translate articles in their own areas themselves, believing that they completely understand the material, although errors and inaccuracies occur.

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BUZNI, Ye. N., Nauchno-Tekhnicheskaya Informatsiya, Series 1, Organization and Methods of Information Work, No 8, 1973, p 16

We note the basic causes of typical errors in translation: 1) the belief that words and grammatical forms have a single meaning; 2) misunderstanding the syntactical function of a word; 3) erroneous use of analogy; 4) translating words with more specific meanings than they actually carry; 5) inability to find Russian meanings as translations of English words and lexical and grammatical combinations; 6) ignorance of the presentation of English scientific-technical material and the techniques of translating it into Russian, as well as ignorance of the enormous quantity of idiomatic word combinations widely used in scientific-technical literature, such as "to be due to, to result in, to work up", etc., the incorrect translation of which distorts the meaning. For example, the English phrase "decomposition of a substance is often due to a chemical reaction" is often translated by graduate students and scientific workers as "a chemical reaction occurs in connection with the decomposition of the substance" or "the decomposition of the substance frequently influences a chemical reaction", when in fact the phrase signifies exactly the opposite: that is, "the decomposition of the substance is caused by a chemical reaction." This error is due to ignorance of the combination "to be due to", which should be translated as indicating cause.

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BUZNI, Ye. N., Nauchno-Tekhnicheskaya Informatsiya, Series 1 Organization and Methods of Information Work, No 8, 1973, p 16

Errors also arise due to a poor knowledge of grammar. Thus, expressions similar to the following are frequently encountered in technical texts, "The products of such reactions have frequently been assumed to be dimeric for no other reason than they were obviously not monomeric." This is frequently translated literally by specialists as "The products of such reactions are frequently accepted as dimeric, since there is no other cause than that they were clearly not monomeric." It is undoubtedly difficult to understand this translation. The specialist who is not an experienced translator will hardly guess immediately that the translation of this expression should begin with the perfected form of the passive voice "have frequently been assumed". There is still another difficulty, the infinitive construction, which should be translated by an additional sentence. This makes the beginning of the sentence under consideration translate as, "It was frequently assumed that the products of such reactions were dimers." But here the specialist encounters a new difficulty, "for no other reason than", which must not be translated as "because there was no other reason," but either by "for the simple reason that," or by "though only because." Thus the entire sentence in Russian becomes, "It was frequently assumed that the

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BUZNI, Ye. N., Nauchno-Tekhnicheskaya Informatsiya, Series 1, Organization and Methods of Information Work, No 8, 1973, p 16

products of such reactions were dimers, for the simple reason that they were clearly not monomers."

The examples show clearly that for the specialist who does not know a foreign language it is even more difficult than for the translator who is not a specialist in a given area of technology. How shall we overcome these difficulties? The most expedient method is to teach the specialist in a given area of science and technology foreign languages. In our opinion, this requires that all scientific-research establishments conduct required studies of foreign languages, not in the plan of associated studies twice a week, from season to season, but regularly, even if only one hour a day, in a special program which considers the terminology of the specific branch of science, in special listening booths, under the direction of experienced translator-teachers. It is necessary to establish a correspondence between the knowledge of the specialty, the knowledge of foreign languages, and the ability to use them. Only this approach to the study of foreign languages can solve the problem of translators and specialists and thus improve the quality of scientific development.

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USSR

UDC 616.083.2/355.424.8

BUZNIK, I. M., Professor, Col Med Service

"Therapeutic Diets in the Medical Evacuation Stages"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 2, 1971, pp 12-15

Abstract: Therapeutic diets cannot be provided in wartime below the regimental level. Eight standard diets plus variations have been devised in accordance with the most probable pathologies in the event of war involving the use of weapons of mass destruction: (a) general hospital diet, (b) mechanically bland diet, (c) mechanically and chemically bland hospital diet, (d) for those with jaw and facial wounds, (e) tube feeding, (f) for patients suffering from radiation sickness and burns, general, (g) for patients suffering from radiation sickness and burns, mechanically and chemically sparing, and (h) zero. If the military situation is difficult, only canned foods and concentrates will be available. At present food technology is insufficiently advanced to ensure preservation of the organoleptic and nutritive qualities of these products. There is also need for better trained personnel from cooks to attending physicians.

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USSR

UDC 591.31:593.9:615.78.019-092

BUZNIKOV, G. A., RAKICH, L., and TURPAYEV, T. M., Laboratory of Physiology imeni Kh. S. Koshtoyants, Institute of Developmental Biology, Academy of Sciences USSR, Moscow and Laboratory for Brain Study, Institute for Biological Research, Belgrade

"Supersensitivity of Early Embryos of the Sea Urchin Arbacia Lixula to Neuropharmacological Agents"

Leningrad, Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, No 5, 1972, pp 478-485

Abstract: The early embryos of A. lixula were found to be 10 to 800 times more sensitive to 53 neuropharmacological agents (serotonin antagonists, adrenolytics, and cholinolytics) than the early embryos of 5 other sea urchin species (Strongylocentrotus drobachiensis, S. nudus, S. intermedius, Paracentrotus lividus, and Sphaerechinus granularis). On the other hand, A. lixula embryos did not exhibit supersensitivity to 19 other kinds of agents that block development, i.e., detergents, chelating compounds, mitotic and metabolic poisons, and inhibitors of macromolecular synthesis, except to the antibiotic antimycin A. Both supersensitivity and ordinary sensitivity to the neuropharmacological

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BUZNIKOV, G. A., et al., Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, No 5, 1972, pp 478-485

drugs decreased in A lixula when the eggs were treated with endogenous antidotes (e.g., 1-benzyl-2,5-dimethylserotonin) or exogenous mediators (acetylcholine and monoamines). The hyperactive drugs apparently block early embryonic development by antagonizing the mediators.

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1/2 015 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--MANUFACTURE OF GALVANIC CELLS -U-

AUTHOR-(05)-NABIULIN, F.K., BUZOVA, Z.M., GERTYK, E.M., MARFIN, B.V., RABINOVICH, V.A.

COUNTRY OF INFO--USSR

B

SOURCE--U.S. 3,506,750

DATE PUBLISHED--14APR70

SUBJECT AREAS--ENERGY CONVERSION (NON-PROPULSIVE)

TOPIC TAGS--PATENT, GEL, BATTERY ELECTROLYTE, BATTERY ELECTRODE, ELECTROLYTIC CELL, VALVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1798 STEP NO--US/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AA0109759

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AA0109759
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PREGELLED ELECTROLYTE AND NEG. ELECTRODE MATERIAL ARE SIMULATNEOUSLY PRESSED THROUGH A FUNNEL SHAPED FEEDER INTO THE POS. ELECTRODE VESSEL BY A PISTON AND VALVE ARRANGEMENT. AT THE SAME TIME, A CURRENT COLLECTOR IS FED THROUGH THE CENTRAL PORTION OF THE FEEDER. BY MOLDING THE ION CONDUCTING DIAGRAM AND THE NEG. ELECTRODE IN THE CELL CASING, INTERNAL SHORTING BETWEEN THE CELL ELECTRODES IS ELIMINATED.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--GALVANIC CELL MANUFACTURE BY EXTRUSION -U-

AUTHOR-(05)-NABIULLIN, F.K., GUZOVA, Z.M., GERTSYK, E.M., MARFIN, B.V., RABINOVICH, V.A.

COUNTRY OF INFO--USSR

B

SOURCE--BRIT. 1,190,586

DATE PUBLISHED--06MAY70

SUBJECT AREAS--ENERGY CONVERSION (NON-PROPULSIVE)

TOPIC TAGS--ELECTROLYTIC CELL, MANUFACTURING METHOD, EQUIPMENT EXTRUSION, ELECTRODE, ELECTROLYTE, PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1072 STEP NO--UK/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AA0131619

2/2 022 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AA0131619

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PROCESS IS DESCRIBED FOR FILLING CELLS, HAVING A CENTRAL CURRENT COLLECTOR, BY THE EXTRUSION OF ELECTRODE ACTIVE MATERIAL AND GEL ELECTROLYTE THROUGH COAXIAL NOZZLES.

UNCLASSIFIED

USSR

UDC 621.396.6-181.48

SAMOFALOV, K. G., BUZOVSKIY, O. V., KANEVSKIY, YU. S.

"Selecting the Case for a Number of Multicrystal Integrated Circuits"

Vestn. Kiev. politekhn. in-ta. Ser. avtomatiki i elektropriborostr. (Vestnik of the Kiev Polytechnic Institute. Automation and Electronic Device Construction Series), 1972, No 9, pp 125-127 (from RZh-Radiotekhnika, No 7, Jul 72, Abstract No 7V277)

Translation: A procedure is proposed for selecting the case for a series of multicrystal integrated circuits designed to construct the regular structural circuits of digital computers. There is 1 illustration and a 2-entry bibliography.

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B

Lasers & Masers

USSR

BUZUKOV, A. A., TESLENKO, V. S., Novosibirsk

"Pressure at the Front of a Shock Wave in the Zone Near the Breakdown of a Laser Spark in Water"

Novosibirsk, Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 3, May/Jun 1970, pp 123-124

Abstract: Pressures at the front of a shock wave arising from breakdown in water caused by ruby laser radiation at distances of 0.4-3 mm from the focal point in the direction normal to the radiation axis was determined on the basis of the separation of the liquid from a free surface under reflection of the shock wave. It is noted that the formation of shock waves and a pulsating cavity are similar in an underwater explosion and in focusing strong pulsed laser radiation in a liquid. The initial velocity of the surface layer of the liquid was determined in the acoustical approximation as the sum of the mass velocities beyond the shock wave falling on the free surface and the

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BUZUKOV, A. A., et al, Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 3, May/Jun 1970, pp 123-124

reflected rarefaction wave $U = 2P \cos \alpha/\rho c$, (1)
where U is the velocity of the liquid normal to the free surface, P is the pressure in the incident shock wave, ρ is the density of the liquid, c is the speed of sound in the liquid, and α is the angle of incidence of the shock wave on the free surface. In the experiment a ruby laser beam with an energy of about 0.5 joule and a pulse length of 50 nsec was focused by a lens in a drop of water hanging from a dropper. The explosion of the water drop was recorded with a high-speed SFR-IM camera using shadow photography. The photographs were analyzed to determine the initial rate of dispersion of the water in a direction normal to the axis of radiation, and then formula (1) was used to find the pressure at the front of the shock wave at different distances from the center of breakdown. The results are close to those obtained in measuring pressures on the front of the shock wave obtained previously by the authors (PMTF, 1969, No 5), but they must be considered as estimative in character, since the mechanism of the dispersion of water in a microexplosion near the surface is as yet inadequately studied.
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1/2 028 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--A CONTACT PROBLEM FOR THE TORSION OF A TWO CAVITY HYPERBOLOID OF REVOLUTION -U-

AUTHOR-(02)-BUZUN, T.N., PANKRATOVA, N.D.

B

COUNTRY OF INFO--USSR

SOURCE--PRIKLADNAIA MEKHANIKA, VOL. 6, APR. 1970, P. 131-134

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, MATHEMATICAL SCIENCES, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--FREDHOLM EQUATION, SECOND ORDER EQUATION, BOUNDARY VALUE PROBLEM, INTEGRAL EQUATION, TORSIONAL VIBRATION, TORSION STRESS, BODY OF REVOLUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/0097 STEP NO--UR/0198/70/006/000/0131/0134

CIRC ACCESSION NO--AP0127723

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0127723

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF AN ELASTIC TWO CAVITY HYPERBOLOID OF REVOLUTION WHOSE STRESSED STATE IS CAUSED BY THE ROTATION OF A RIGID STAMP APPLIED TO THE SURFACE OF THE HYPERBOLOID FROM ITS APPEX TO A CERTAIN CROSS SECTION. BELOW THIS CROSS SECTION, THE SURFACE IS ASSUMED TO BE FREE OF STRESSES. A FREDHOLM INTEGRAL EQUATION OF THE SECOND KIND, EQUIVALENT TO THE BOUNDARY VALUE PROBLEM, IS OBTAINED WITH THE AID OF A METHOD OF STUDYING DUAL INTEGRAL EQUATIONS WITH KERNELS IN THE FORM OF ASSOCIATED LEGENDRE FUNCTIONS. THE TORSIONAL PROBLEM IS SOLVED NUMERICALLY. A RELATION BETWEEN THE TORSIONAL MOMENT AND THE ANGLE OF ROTATION OF THE STAMP IS OBTAINED, AND THE DISTRIBUTION OF THE TANGENTIAL STRESSES ARISING BELOW THE STAMP IS DETERMINED.

UNCLASSIFIED

USSR

UDC 613.6:612.766.1

NAVAKATIKYAN, A. O., KUNDIYEV, Yu. I., AKHRIMENKO, A. P., MAKSIMOVA, O. F., VASILENKO, Yu. I., SAVENKO, N. P., BUZUNOV, V. A., TOMASHEVSKAYA, L. I., and DERKACH, V. S., Institute of Industrial Hygiene and Occupational Diseases, Kiev

"Principles for Quantitative Evaluation of the Difficulty and Strenuousness of Work on the Basis of Physiological Data"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1971, pp 3-9

Abstract: A four-level classification of jobs by difficulty and stress is proposed on the basis of research conducted by the Institute and the literature data. The criteria used to measure the amount of effort involved as well as the changes therein during the course of the workday include energy consumption (ranging from under 150 kcal/hour for class 1 work, e.g., computer programming, to 351 kcal/hour or more for class 4 work, e.g., steel casting), muscular, cardiovascular, central nervous, and endocrine functions. A table lists average values of several physiological functions in different kinds of work while another evaluates the difficulty and strenuousness of different kinds of jobs (e.g., operation of office machines is classified as class 1 in difficulty and class 2 in strenuousness, lathework 2 and 2, steel casting 4
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AVAKATIKYAN, A. O., et al., Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1971, pp 3-9

and 3). The article also discusses some of the theoretical and practical problems in establishing adequate criteria and in applying them to specific jobs, work conditions, and various groups of people (e.g., adolescents, females, elderly workers).

USSR

UDC 612.8+612.766.1

NAVAKATYKYAN, O. O., KUNDIYEV, Yu. I., LYSYNA, G. G., BUZUNOV, V. P., HRYSHKO, F. I., DERKACH, V. S., KAPSHUK, O. P., KYRYENKO, A. Ye., KARAKASHYAN, A. N., KOVAL'OVA, G. I., RATUSHNA, A. M., TOMASHEVC'KA, L. I., NAGORNA, A. M., and MAYDYKOV, Yu. L., Kiev Institute of the Work Hygiene and Occupational Diseases, Kiev

"Nervous Emotional Stresses as a Problem of Modern Work Physiology"

Kiev, Fiziolohichnyy Zhurnal, Vol 18, No 4, Jul/Aug 72, pp 535-546

Abstract: The introduction of machines and automatic control instrumentation into production lines at plants and factories and at many other institutions requires of workers rapid coordination of actions combined with mental activity. The volume of information input which requires a combination of physical and mental ability has been increasing tremendously for the last decade. This has produced nervous and emotional stresses and disturbances in the normal functions of many human organs. Analysis of many workers from various branches of industry as well as people occupied with mental work has shown that modern technology imposes heavy stresses on an individual which are accompanied by abnormal function of the adrenal glands, and hypothalamus, and the hypophysial and sympathoadrenal systems. Measurements have shown that corticosteroid blood and urine

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NAVAKATYKYAN, O. O., et al., Fiziolohichnyy Zhurnal, Vol 18, No 4, Jul/Aug 72, pp 535-546

levels exceed the norm by as much as 42-57% in people under heavy stress. Emotional stress with distortion in the function of many systems were more often encountered among the young (17-18 year olds). These malfunctions included the secretion of adrenalin and noradrenalin, and disturbances in hemodynamics. Shifts in physiological functions among different occupational groups under identical stresses occur at different times and are closely related to age. They were more pronounced among older people (31-40 years old). The cardiovascular system occupies a prominent place in labor physiology, and there are many methods and approaches to study it. Some literature methods and those of the authors are described, including instrumentation. Mental work which is accompanied by nervous-emotional stresses influences profoundly the cardiovascular system within a wide range of deviations, including pathological functional disturbances and hypertension. The same is true for other occupations as well. The authors recommend the rational use of working hours and rest periods to avoid overstresses.

2/2

USSR

UDC: 8.74

BUZUNOV, Yu. A., KACHANOV, P. T.

"One Method of Construction of Microprogrammed Automaton Control Pulse Formers"

Kibern. Tekhn. [Cybernetic Equipment--Collection of Works], Kiev, 1971, pp 212-222 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V507, by V. Mikheyev)

Translation: A method is described for solving the following problem of synthesis of control signal formers (CSF). A set of microprograms is fixed, corresponding to the selected algorithms for performance of operations in an operational automaton (OA). It is required to construct a circuit for formation of control signals according to the fixed set of microprograms. The number of signals must be equal to the number of microinstructions required to run any microprogram from the fixed set. A microinstruction refers to a set of microoperations performed simultaneously. Two cases are studied: a number of microinstructions in a microprogram is constant, or variable. An illustrative example is presented.

1/1

USSR

UDC: 8.74

BUZUNOV, Yu. A., VAVILOV, Ye. N., Kachalov, P. T.

"Tabular Method of Construction of Distribution of Control Signals in Microprogrammed Automaton"

Kibern. Tekhn. [Cybernetic Equipment--Collection of Works], Kiev, 1971, pp 184-197, (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V506, by V. Mikheyev)

Translation: The following problem is studied. Given is a set of operations $O_1, O_2, \ldots, O_n$, performed by a digital operating automaton. Each operation O_i corresponds to microprogram M_n, composed of a fixed set of microoperations $A_1, A_2, \ldots, A_j, \ldots, A_r$, where r is the number different microoperation in the set. The problem is to construct a microprogrammed controlling automaton (MPCA) with the minimum output control signal distributor, corresponding to the fixed set of microoperation. The MPCS is constructed in the form of two units: the control signal former (CSF) including, in addition to memory, logic circuits realizing the excitation functions; the control signal distributor (CSD), realizing the output functions corresponding to the output control

USSR

Buzunov, Yu. A., Vavilov, Ye. N., Kachalov, P. T., Kibern. Tekhn., Kiev, 1971, pp 184-197

signals u_j. The CSF develops a sequence of pulses $q_1, q_2, \ldots, q_n, \ldots, q_s$, forming the operating cycle of the MPCA. The operating cycle refers to the time interval, during which the automaton develops the necessary sequence of microoperations allowing performance of the microprogram corresponding to operation O_i. The operating cycle is divided into microcycles, during each of which one of the signals q_h appears at the input of the CSD. The outputs of the MPCA then carry a sequence of control signals u_j, distributed in time and space. Illustrative examples are presented.

2/2

USSR

BUZURKHANOV, V., KAMILOV, M. M.

"Determination of the Significance of Binary Characteristics of Medical Diagnosis Objects by the Boolean Difference Method"

Vopr. Kibernetiki [Problems of Cybernetics -- Collection of Works], No 51, Tashkent, 1972, pp 66-77 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V714, by the authors).

Translation: The authors develop and generalize an approach which they suggested earlier to estimation of measures of importance of characteristics, based on the Boolean differences of particular functions, and check it in an experiment involving differentiation of chronic gastric diseases.

1/1

USSR UDC: 577.4

BUZURKHANOV, V.

"Methods of Calculating Boolean Differences of the First Kind"

V sb. Vopr. kibernetiki (Problems of Cybernetics--collection of works), vyp. 45, Tashkent, 1971, pp 3-6 (from RZh-Kibernetika, No 5, May 72, Abstract No 5V314)

[No abstract]

1/1

USSR

BUZURKHANOV, V., KAMILOV, M. M., KIM, A. N.

"Measures of Importance of Binary Characteristics"

Vopr. Kibernetiki [Problems of Cybernetics -- Collection of Works], Tashkent, No 44, 1971, pp 9-14 (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V394 by V. Mikheyev).

Translation: The following problem is studied. Given are objects characterized by a set of values of binary characteristics. We must determine which of these characteristics are essential and which are secondary. A method is suggested using the Boolean difference of the partial functions. An algorithm is described for calculation of an estimate of the measure of importance of an individual characteristic.

1/1

USSR UDC 51.621.391

BUZURKHANOV, V., NAYANZIN, N. G.

"Second Order Boolean Differences"

Vopr. Kibernetiki [Problems of Cybernetics -- Collection of Works], No 42, Tashkent, 1971, pp 13-18, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V577 by N. Katerinochkina).

Translation: The concept of the second order Boolean difference is introduced. A number of its properties are established, the use of which accelerates the process of calculation of these differences.

1/1

USSR

UDC 51.621.391

BUZURKHANOV, V.

"First Order Boolean Differences"

Vopr. Kibernetiki [Problems of Cybernetics -- Collection of Works], No 42, Tashkent, 1971, pp 3-12, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V576 by N. Katerinochkina).

Translation: The concept of the first order Boolean difference is introduced and some of its properties are studied.

1/1

USSR

BUZURKHANOV, V. V.

"Methods of Calculation of Boolean Second Order Differences"

Vopr. Kibernetiki [Problems of Cybernetics -- Collection of Works], Tashkent, No 44, 1971, pp 3-8 (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V593 by V. Mikheyev).

Translation: Proven are:

Theorem 1. If the partial function $f(\vec{x})$ can be represented as $f(\vec{x}) = \psi(\phi(\vec{A}), \vec{B})$, its Boolean difference $df(\vec{x})/d\phi(\vec{A})$ can be calculated from the formula

$$\frac{df(\vec{x})}{d\varphi(\vec{A})} = \psi(0, \vec{B}) \vee \psi(1, \vec{B}).$$

Theorem 2. If

$$\vec{x}^1 \cup \vec{x}^2 \cup \vec{x}^3 \cup \ldots \cup \vec{x}^m \cup \vec{x}^{m+1} = \vec{x};$$

$$\vec{x}^1 \cap \vec{x}^2 = \vec{x}^2 \cap \vec{x}^3 = \ldots = \vec{x}^m \cap \vec{x}^{m+1} = \varnothing;$$

$$f_0(\vec{x}) = f_0(\vec{x}^1, \vec{x}^2, \ldots, \vec{x}^m, \vec{x}^{m+1}) = \ldots$$

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BUZURKHANOV, V. V., Vopr. Kibernetiki, Tashkent, No 44, 1971, pp 3-8.

$$\ldots = \psi_m(f_m(\vec{x}^1, \vec{x}^2, \ldots, \vec{x}^{m+1})),$$

then $df_0(\vec{x})/df_m(\vec{x}^1)$ can be calculated from the formula

$$\frac{df_0(\vec{x})}{df_m(\vec{x}^1)} = \bigwedge_{j=0}^{m} \frac{df_{j-1}(\vec{x}^1, \ldots, \vec{x}^{m+1-(j-1)})}{df_j(\vec{x}^1, \ldots, \vec{x}^{m+1-j})}.$$

2/2

BUZUYEV, A. Ya.

DEPARTMENT OF THE NAVY
NAVAL INTELLIGENCE SUPPORT CENTER
TRANSLATION DIVISION
4301 SUITLAND ROAD
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CLASSIFICATION: Unclassified

Approved for Public Release, Distribution Unlimited

TITLE: DEPENDENCE OF THE FEAR THICKNESS OF FAST ICE ON HUMMOCKING

Zavisimost' sredney tolshchiny pripaynogo l'da ot torosistosti

AUTHOR(S): Buzuyev, A. Ya., and Shesterikov, N. P.

PAGES: 13

SOURCE: Problemy Arktiki i Antarktiki, Sbornik Statey, No. 32, 1969, pp. 30-35

ORIGINAL LANGUAGE: Russian

TRANSLATOR: R

NISC TRANSLATION NO. 3414

APPROVED P.T.K.

DATE 26 February 1971

THE DEPENDENCE OF THE MEAN THICKNESS

OF FAST ICE ON HUMMOCKING

[Izuryev, A. Ya., and Shesterikov, N. P., Zavisimost' sredney tolshchiny
prilaynego l'da ot torosistosti, Problemy Arktiki i Antarktiki, Sbornik
statey, No. 32, 1969, pp. 30-35,
Russian]

Ice thickness is one of the basic indices which characterize the ice cover of the Arctic seas. Therefore, a great deal of work has been devoted to the study of the laws governing its change in dependence upon hydrometeorological conditions. In the majority of the investigations, however, the thicknesses of level ice — which in the Arctic seas is encountered rather rarely — are examined. This situation hampers the use of empirical or analytical methods for determining ice thickness concurrent with different degrees of hummocking. If we do not take into account the influence of hummocking, then the calculated values of the ice thicknesses can differ considerably from the actual.

As shown by numerous observations taken in fast ice, an increase of ice hummocking results in an increase of its thickness not only in the zone of the hummocks, but also in the comparatively level areas situated among the hummocks.

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* Numbers in the right margin indicate pagination in the original text.

The question of the influence of hummocking on the mean thickness of the ice was examined earlier by P. A. Gordiyenko, who introduced the term "the depth [i.e. thickness] of ice." [illegible]

The concept of "mean ice thickness" is used quite frequently in different degrees of hummocking.

of ice is understood as that mean ice thickness which hummocked ice would attain if it were smoothed out, all protuberances having been removed and used to fill in all hollows. A. A. Kirillov [illegible] carried out calculations which showed that the role of hummocks in the work of P. A. Gordiyenko was somewhat overestimated, but to verify this by facts was not possible because of the lack of suitable observations.

In the navigational period of 1961, a continuous record of ice thicknesses was accomplished for the first time from the side of an icebreaker with the help of a device, the ITLM-2." From the data of

"A measuring instrument for the thickness of sea ice.

these observations, the distribution features of the thickness of ice in the hummocks have also been examined.

Because of the construction features of the ITLM-2 (in the present version), it is impossible to make thickness observations at the moment the icebreaker breaks solid ice. Therefore, the observations were accomplished by the movement of the icebreaker within a lead completely filled with fine brash ice and very light floes. The record of the ice thicknesses was produced along a track segment

Antennas

USSR UDC: 621.396.677.833

YERUKHIMOVICH, Yu. A., BUZUYEV, Yu. B.

"An Antenna"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 28, 1970, Soviet Patent No 280574, Class 21, filed 3 Jul 68, p 48

Abstract: This Author's Certificate introduces an antenna made in the form of a paraboloid with a cylindrical attachment on the periphery and a radiator. As a distinguishing feature of the patent, emission behind the antenna is reduced by making the outer edge of the cylindrical part in the form of an even number of spiral cuts with oppositely directed spirals. The cuts are spaced by half the mean wavelength.

1/1

USSR

UDC: 621.314.26(088.8)

VARFOLOMEYEV, G. N., BUZYKANOV, A. A., SULAYEV, G. M., and SKVORTSOV, Yu. M.

"Frequency Tripler"

/Pusko-nalodochn. upr. tresta "Sibelektromontazh"/ Avt. sv. SSSR (Start-Up and Repair Management of the "Sibelektromontazh" Trust, Author's Certificate USSR) Class 21a^4, 6/01; 21d, 51, (H 01f 35/00, H 03b 19/10), No. 276174, Application 11.02.69, Publication 8.10.70 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3D81P)

Translation: A frequency tripler with a resonance circuit containing a stabilitron connected in series with the voltage supply circuit is proposed. An additional stabilitron, connected oppositely and in series with the first, is introduced as a simplification, to exclude the damping of the oscillatory circuit by the bias current and to weaken the even harmonics.

1/1

1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--AROMATIC COMPOUNDS WITH HYDRAZO AND AZO GROUPS. II. NITRATION OF PENTANITROAZOBENZENES -U-

AUTHOR-(03)-SHARNIN, G.P., BUZYKIN, B.I., SHAKUROVA, K.KH.

B

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(5), 1036-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AROMATIC NITRO COMPOUND, ORGANIC AZO COMPOUND, NITROBENZENE, NITRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1281 STEP NO--UR/0366/70/006/005/1036/1038

CIRC ACCESSION NO--AP0134955

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0134955
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NITRATION OF 2,2PRIME,4,6,6PRIME,PENTANITROAZOBENZENE WITH 98PERCENT HNO SUB3 OR HNO SUB3 -H SUB2 SO SUB4 MIXTS. GAVE 2,2PRIME,4,4PRIME,6,6PRIME, HEXANITROAZOBENZENE (I). SIMILARLY, 5,5PRIME,DIMETHYL,2,2PRIME,4,4PRIME,6,PENTANITROAZOBENZENE WAS NITRATED TO THE 5,5PRIME,DI,ME DERIV. OF I. THE ATTEMPTED NITRATION OF 2,2PRIME,4,4PRIME,6,PENTANITROAZOBENZENE (II) OR ITS DERIVS. CONTG. ELECTRON ACCEPTING SUBSTITUENTS, WITH 98PERCENT. HNO SUB3 OR HNO SUB3 -H SUB2 SO SUB4 MIXT. WAS NOT SUCCESSFUL. THE NITRATING MIXTS. CONTG. FREE SO SUB3 DECOMPD. II AND ITS DERIVS. FACILITY: KAZAN. KHIM.-TEKHNOL. INST. IM. KIROVA, KAZAN, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--AROMATIC COMPOUNDS WITH HYDRAZO AND AZO GROUPS. III. NITRATION OF TETRA AND PENTANITROHYDRAZOBENZENES -U-

AUTHOR-(02)-BUZYKIN, B.I., SHARNIN, G.P.

B

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(5), 1039-41

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AROMATIC NITRO COMPOUND, ORGANIC AZO COMPOUND, BENZENE DERIVATIVE, CHLORINATED ORGANIC COMPOUND, NITROBENZENE, TRINITROBENZENE, NITRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1282 STEP NO--UR/0366/70/006/005/1039/1041

CIRC ACCESSION NO--AP0134956

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0134956

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OXIDN.-NITRATION OF 2,4,(O SUB2 N) SUB2 C SUB6 H SUB3 NHNHC SUB6 H SUB3 (NO SUB2) SUB2 -2,4 WITH 98PERCENT HNO SUB3 OR HNO SUB3 -H SUB2 SO SUB4 MIXT. GAVE 2,4, (O SUB2 N) SUB2 C SUB6 H SUB3 N:NC SUB6 H SUB3 (NO SUB2)-2,4 AND 2,4,6-(O SUB2 N) SUB3 C SUB6 H SUB2 N: NC SUB6 H SUB3 -(NO SUB2) SUB2 -2,4 (I). ALSO 2,4,6,(O SUB2 N) SUB3 C SUB6 H SUB2 NHNHC SUB6 H SUB4 NO SUB2 -2 WAS OXIDIZED TO I. SIMILARLY, 1,3,BIS(4,NITROPHENYLHYDRAZO),2,4,6, TRINITROBENZENE WAS OXIDIZED NITRATED TO 1,3,BIS(2,4,DINITROPHENYLAZO), 2,4,6,TRINITROBENZENE. UNDER THESE CONDITIONS 2,4,6, (O SUB2 N) SUB3 C SUB6 H SUB2 NHNHC SUB6 H SUB4 NO SUB2 -4, ITS CHLORO DERIVS., ITS ME DERIVS., AND PENTANITROHYDRAZOBENZENES ARE ONLY OXIDIZED TO NITROAZOBENZENES, BUT NOT NITRATED. FACILITY: KAZAN. KHIM.-TEKHNOL. INST. IM. KIROVA, KAZAN, USSR.

UNCLASSIFIED

Automata

USSR UDC: 8.74

KAGAN, B. M., MKRTUMYAN, I. B., and BUZYUK, N. A.

"A Realization of the D-Algorithm in the System of Automating the Design of Diagnostic Tests (SAPDT) for Combination Automatons"

Moscow, Tr. Mosk. in-ta inzh. zh.-d. transp. (Transactions of the Moscow Institute of Railroad Engineering) 1971, No 395, pp 195-209 (from RZh--Matematika, No 7, 1972, Abstract No 7V558)

Translation: Problems in the automation of diagnostic test construction for combination automatons are considered. A D-algorithm is used for finding sets of input variables controlling the specified fault. An example of using the algorithm for computing the controlling test for an automaton with memory is given.

USSR

UDC 8.74

KAGAN, B. M., MKRTUMYAN, I. B., BUZYUK, M. A.

"An Execution of the D-Algorithm in the System for Automation of the Planning and Design of Diagnostic Tests (SAPDT) for Combination Automata"

Tr. Mosk. in-ta inzh. zh.-d. transp. (Works of Moscow Institute of Railroad Transportation Engineers), 1971, vyp. 395, pp 195-209 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V556)

Translation: A study was made of the problems of automating the construction of diagnostic tests for combination automata. In finding the sets of input variables controlling the given failure, the D-algorithm is used. An example is presented of the application of the algorithm to calculate the controlling test for an automaton with a memory.

1/1

USSR

UDC 621.762.01:669.2

VORONTSOV, V. K., SHANKOV, G. S., and BYAKOV, L. I.

"Use of Methods of Powder Metallurgy for Production of Fine-Grained Silver Chloride"

Plast. deformatsiya met. i splavov [Plastic Deformation of Metals and Alloys -- Collection of works] (Moscow Institute of Steels and Alloys, 64), Moscow, 1970, pp. 246-249, (Translated from Referativnyy Zhurnal—Metallurgiya, No. 1, 1971, Abstract No. 1 G455 by the authors).

Translation: The possibility is studied of using methods of powder metallurgy to produce finely dispersed specimens of AgCl, suitable for polarization optical studies. Hydrostatic compression in a container is used to produce a material which approaches the density of the compact material. Optimal modes are found for heat and mechanical working in order to give the material the necessary combination of optical and mechanical properties. 4 figures.

1/1

Powder Metallurgy

USSR

UDC 620.171.5

VORONTSOV, V. K., SHANKOV, G. S., and BYAKOV, L. I.

"Using Powder Metallurgy Methods to Obtain Fine-Grain Silver Chloride"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya," 1970, pp 246-249

Translation: The possibility of using powder metallurgy methods to obtain fine-grained specimens of silver chloride suitable for polarization-optical research is investigated. During hydrostatic compression in a container, a material is obtained which approximates a compact material in density. Optimal conditions of thermomechanical treatment are found in order to give the material the necessary set of optical-mechanical properties. Four figures and two bibliographic entries.

1/1

USSR

UDC 621.382:621.362

BYALED'DINOV, M.F., KHORUNZHIN, YU. P., DITYAT'YEV, M.B.

"Semiconductor Thermoelectric Conditioners And Coolers"

Kholodil'n. tekhn. i tekhnol. Resp. mezhved. nauchno-tekhn. sb. (Refrigeration Technology And Production Processes. Republic Interdepartmental Scientific-Technical Collection), 1970, No 9, pp 6-8 (from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract 11B173)

Translation: A description is given of conditioners and coolers, the operation of which is based on the use of the Peltier thermoelectric effect. A number of new developments are described which were produced during the last 2-3 years at SKBPP [expansion uncertain. SKB probably = Spetsial'noye konstruktorskoye byuro, i.e., Special Design Office. PP may = Pishchevaya promyshlennost', i.e., Food Industry]. An analysis is conducted of the practical operation of conditioners placed into use in 1963-1964. The problem is discussed of determining the quantitative indices of the reliability, both of conditioners on the whole, and of thermopiles. Liquid coolants are discussed, with water heat removal from hot junctions, and their technical characteristics are listed. Summary.

1/1

Aluminum and Its Alloys

USSR

UDC 669.788:(669.715+669.018.28)

CHERNEGA, D. F., and BYALIK, O. M.

Vodorod v Liteynykh Alyuminiyevykh Splavakh (Hydrogen in Aluminum Alloy Castings) "Tekhnika" Publishing House, Kiev, 1972, 148 pp

Translation of Foreword: Directives of the 24th Congress of the CPSU provide for a 50-60% increase in aluminum production during the 1971-1975 5-year plan for the development of the economy of the USSR. The greatest amount of the aluminum will be used for the production of aluminum alloys.

Low specific weight, good thermal and electrical conductivity properties, and the relatively high mechanical properties of aluminum alloys are responsible for their wide application in the national economy.

The casting properties of aluminum alloys make it possible to produce items which would be uneconomical to produce by mechanical means or would be altogether impossible to make by any other means. Thus, the necessity for a considerable increase in the production of aluminum alloy castings. Along with the increased demand for castings is the requirement that they be of high quality. The quality is determined to a large extent by the concentration of harmful impurities in the aluminum alloy, especially of hydrogen.

The purpose of the present brochure is to systematize the work of the authors and other researchers on the role of hydrogen in the production of

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USSR

CHERNEGA, D. F. and BYALIK, O. M., Vodorod v Liteynykh Alyuminiyevykh Splavakh, "Tekhnika" Publishing House, 1972, 148 pp

aluminum alloy castings. It was impossible in the limited space of this booklet to elucidate in detail many of the problems mentioned in the materials presented. However, this shortcoming is made up by giving references to the original works and monographs. The authors hope that the material presented in this booklet will be useful to specialists dealing with the production of aluminum castings.

The authors thank Doctor of Technical Sciences K. I. VASHCHENKO for consulting in the work and Doctor of Technical Sciences V. V. ZHIZHCHENKO for his comments during preparation of the manuscript.

Translation of Table of Contents:

USSR

CHERNEGA, D. F. and BYALIK, O. M., Vodorod v Liteynykh Alyuminiyevykh Splavakh, "Tekhnika" Publishing House, 1972, 148 pp

USSR

CHERNEGA, D. F. and BYALIK, O. M., Vodorod v Liteynykh Alyuminiyevykh Splavakh, "Tekhnika" Publishing House, 1972, 148 pp

4/4

1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--EXPRESS DETERMINATION OF HYDROGEN CONTENT IN ALUMINUM SILICON ALLOYS UNDER PRODUCTION CONDITIONS -U-

AUTHOR-(04)-VASHCHENKO, K.I., CHERNEGA, D.F., BYALIK, O.M., REMIZOV, G.A.

COUNTRY OF INFO--USSR

SOURCE--KIEV, TEKHNOLOGIYA I ORGANIZATSIYA PROIZVODSTVA, NO 1, 1970, PP 52-55

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--HYDROGEN, METAL CONTAINING GAS, GAS CONTAINING METAL, ALUMINUM ALLOY, SILICON ALLOY, LIQUID METAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1321 STEP NO--UR/0418/70/000/001/0052/0055

CIRC ACCESSION NO--AP0123280

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0123280
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A UNIT WAS DEVELOPED WHICH MAKES IT POSSIBLE TO DETERMINE HYDROGEN CONTENT IN LIQUID ALUMINUM ALLOYS IN 40-50 SECONDS. MEASUREMENT ERROR CONSTITUTES 5-7PERCENT.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--MORPHOLOGICAL AND HISTOCHEMICAL CHARACTERISTICS OF THE LUNGS IN ACUTE RENAL INSUFFICIENCY -U-

AUTHOR--BYALIK, V.L., ROMANENKO, A.M.

B

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 3, PP 57-60

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AUTOPSY, RENAL FAILURE, HISTOCHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0961 STEP NO--UR/0475/70/000/003/0057/0060

CIRC ACCESSION NO--AP0102900
UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0102900

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AUTOPSY STUDIES IN 33 CASES REVEALED CERTAIN MORPHOLOGICAL AND HISTOCHEMICAL PECULIARITIES DEPENDING ON THE DURATION OF ACUTE RENAL INSUFFICIENCY. ONE OBSERVED MARKED CIRCULATORY DISORDERS AND CHANGES OF THE FIBER STRUCTURES OF THE ALVEOLAR SEPTA. THESE CHANGES WERE MANIFESTED BY SWELLING OF THE ARGYROPHIL CAPILLARY MEMBRANES WITH THEIR SUBSEQUENT PARTIAL MELTING. THE BASIS OF THESE CHANGES IS ACCUMULATION OF SOUR NON SULFATED MUCOPOLYSACCHARIDES, WHICH LEADS TO AN INCREASE OF CAPILLARY PERMEABILITY AND DEVELOPMENT OF SWELLING. LATE STAGES OF THE PROCESS WERE CHARACTERIZED BY DEVELOPMENT OF FIBRINOUS PNEMONIA AND CARNIFICATION.

UNCLASSIFIED

1/2 032 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--INTENSIFICATION OF ANTIBLASTIC ACTION OF EMISSIONS OF THE OPTIC QUANTUM GENERATORS LASERS -U-

AUTHOR-(04)-KAVETSKY, R.YE., SIDORIK, YE.P., LIKHTENSHTEYN, V.YE., BYALIK, [redacted]

COUNTRY OF INFO--USSR

SOURCE--PATOLOGICHESKAYA FIZIOLOGIYA I EKSPERIMENTAL'NAYA TERAPIYA, 1970, VOL 14, NR 3, PP 12-17

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

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TUMOR, CHEMOTHERAPY, BIOLOGIC STAIN, IRON COMPOUND, LASER RADIATION BIOLOGIC EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1922 STEP NO--UR/0396/70/014/003/0012/0017

CIRC ACCESSION NO--AP0127323

UNCLASSIFIED

2/2 032 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127323

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS STUDIED THE POSSIBILITIES OF ENHANCEMENT OF THE ANTIBLASTIC EFFECT OF LASER RADIATION BY COMBINING THE ACTION OF THE LATTER WITH ADMINISTRATION OF DYES, CHEMOPREPARATIONS AND IRON IONOPHORESIS UPON THE TUMOUR. INHIBITION OF THE GROWTH OF GUERREN TUMOUR OF RATS WAS THE GREATEST WHEN THE ACTION OF NEODYMIUM LASER AND ADMINISTRATION OF TRYPANE BLUE AND JANUS GREEN WAS COMBINED. A COMBINATION OF LASER RADIATION WITH THIOTEPA OF FLUOROURACIL PROVED TO BE EFFECTIVE IN CASE OF GARDING PASSI MELANOMA. THE RESULTS OBTAINED POINTED TO A DEFINITELY SPECIFIC ACTION OF OPTIC QUANTUM GENERATORS WORKING IN PULSE REGIMEN, THIS BEING CONDITIONED BY THE BRIEFNESS OF RADIATION, IT MONOCHROMATIC CHRACTER AND COHERENCE. FACILITY: KIYEVSKIY INSTITUT EKSPERIMENTAL'NOY I KLINICHESKOY ONKOLOGII.

UNCLASSIFIED

Oncology

USSR UDC 615.849.19.03:616-006-092.9

KAVETSKIY, R. Ye., SIDORIK, Ye. P. LIKHTENSHTEYN, V. Ye., and BYALIK, V. V.
Kiev Institute of Experimental and Clinical Oncology

"Intensification of the Antitumor Effect of Laser Radiation"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 3, May/Jun 70, pp 12-17

Abstract: Laser radiation has a necrotizing effect on tumor tissue. In order to study the possible intensification of the antitumor effect of lasers by simultaneous administration of dyes or chemicals, tests were run on Guerin rat carcinoma. The research showed that the greatest retardation in tumor growth could be achieved by combined action of a neodymium laser and intraperitoneal or intravenous administration of Trypan blue. For instance, tumor growth was depressed 91%, instead of 65% when the two agents were used separately. The most active combination for injection into tumors was laser radiation and Janus green. Histological study of tumors after introduction of various dyes showed that changes were similar, and differed from those observed in controls only by a more pronounced tissue edema. Combined application of laser radiation and TIOTEF or fluorouracil was effective in a case of Harding-Passy melanoma. The data obtained confirmed that with either combined application or only the laser the focus of necrosis in the ganglia of the erythromyelosis is comparatively slight, whereas along the

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USSR

KAVETSKIY, R. Ye., et al., Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 3, May/Jun 70, pp 12-17

periphery the tumor tissue retained its usual structure. After combined application, only an insignificant proliferation of connective tissue was noticed. The character of the changes due to combined application of laser radiation with dyes or chemicals was the same as if only the laser had been used; however, the spatial restriction of the disease was greater when the laser was combined with either dyes or chemicals. The specific advantages of using a laser in the impulse mode are shortness of the irradiation period, and the monochromatic character and coherence of the radiation itself.

1/2 026 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--ON THE INITIAL FORMS OF CHRONIC CARBON DISULFIDE POISONING -U-

AUTHOR-(05)-MILKOV, L.YE., MONAYENKOVA, A.M., BYALKO, N.K., GLOTOVA, K.V., VERETINSKAYA, A.G.

COUNTRY OF INFO--USSR

B

SOURCE--GIGIYENA TRUDA I PROFESSIONAL'NYYE ZABOLEVANIYA, 1970, NR 5, PP 28-32

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--POISON, CARBON DISULFIDE, INDUSTRIAL HYGIENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0450 STEP NO--UR/0391/70/000/005/0028/0032

CIRC ACCESSION NO--AP0116116

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116116

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXAMINATION OF WORKERS EXPOSED TO THE EFFECT OF CARBON DISULFIDE IN CONCENTRATIONS OF 30-60 MG-M PRIME3 DISCLOSED THE PRESENCE OF THE INITIAL FORMS OF CHRONIC CARBON DISULFIDE POISONING IN THE SHAPE OF VEGETATIVE VASCULAR DYSFUNCTION (NOT INFREQUENTLY WITH HYPERTENSIVE REACTIONS) AND OF THE ASTHENO VEGETATIVE SYNDROME, OFTEN APPEARING IN CONJUNCTION WITH SIGNS OF MILDLY PRONOUNCED VEGETATIVE SENSITIVE POLYNEURITIS, COMMONLY DEVELOPING IN PERSONS WITH LONG SERVICE RECORDS. IN THE INITIAL FORMS OF POISONING A NUMBER OF NONSPECIFIC CHANGES IN INDIVIDUAL BIOCHEMICAL BLOOD AND URINE INDEXES WERE ELICITED, WHEREBY IN CASES OF VEGETATIVE VASCULAR DYSFUNCTION OF A DECLINE OF THE PSEUDO CHOLINESTERASE ACTIVITY AND A FALL OF THE BLOOD CHLORIDE CONCENTRATION, ALONG WITH AN ELEVATED CATECHOLAMINES EXCRETION (WITH NORPINEPHRINE BEING COMMONLY RESPONSIBLE FOR IT) OCCURRED MUCH MORE OFTEN THAN IN THE ASTHENIC FORM OF POISONING. PERSONS EXPOSED TO CARBON DISULFIDE CONCENTRATION NOT SURPASSING THE MAXIMUM PERMISSIBLE LEVEL (10 MG-M PRIME3) ALSO DEMONSTRATE INITIAL FORMS OF CHRONIC CARBON DISULFIDE POISONING, ALTHOUGH IN FEWER CASES. THIS MAKES IT NECESSARY TO LOWER THE FIXED MAXIMUM PERMISSIBLE CONCENTRATION LEVEL OF CARBON DISULFIDE IN CONSIDERATION OF THE INHALATION AND CUTANEOUS ROUTS OF ITS INGRESS INTO THE ORGANISM. FACILITY: INSTITUT GIGIYENY TRUDA I PROFZABOLEVANIY AMN SSSR.

UNCLASSIFIED

Radiation Chemistry

USSR

UDC 628.543.661.7

TSUTSARIN, V. V., BYALKOVSKIY, N. N., YATSUN, V. V., ZHIKHAREV, V. S., and VYSOTSKAYA, N. A., Institute of Physical Chemistry, Academy of Sciences UkrSSR, Chemical-Pharmaceutical Plant imeni Lomonosov

"Changes in the Oxidizeability of Aqueous Solutions of Some Organic Materials Due to the Action of Radiation"

Kiev, Khimicheskaya Tekhnologiya, No 3 (57), May-Jun 71, pp 12-15

Abstract: Oxidizeability characterizes total content of the reducing agents in water. It is expressed by the amount of oxygen needed for the oxidation of organic material contained in 1 l of solution to CO_2 and water. Changes of this oxidizeability in waste waters of the Kiev Chemical-Pharmaceutical Plant taking place upin γ-irradiation with a Co^{60} source were studied. These waters contain about 30 inorganic impurities and 70 of the organic nature. In addition, model systems containing methanol, isopropyl alcohol, phenol, metacrylic acid, and their mixtures were investigated. Irradiation was found to lower the oxidizeability, leading occasionally to formation of precipitates. The model system showed more pronounced lowering of the oxidizeability than natural waste waters, because the latter most probably contained many admixtures capable of oxygen consumption.

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USSR

UDC 531.55.521.1

BYALKOVSKIY, O. V.

"Possible Methods of Determining the Coordinates of an Interplanetary Ship in Accident Situations"

Moscow, Tr. pyatykh Chteniy, Posvyashch. Razrabotke Nauch. Naslediya i Razvitiyu Idey K. E. Tsiolkovskogo. Sekts. "Mekh. Kosmich. Poleta" (Works of the Fifth Lecure Series Devoted to Development of the Scientific Heritage and Development of the Ideas of K. E. Tsiolkovskiy. Series "Mechanics of Space Flight"), 1971, pp 76-87 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2A75 by N. M. Teslenko)

Translation: A method is proposed for determining the coordinates of the center of mass of a space craft, and for determining the orientation of the axes associated with it in space on the basis of the results of independent measurements aboard the space craft. The navigational measurements consist in determination of the lines of sight of celestial bodies. Two sets of measurements are considered. In the first of these, six angles of sight of three astronomical reference points are measured; on the basis of these can be determined the position of the center of mass of the space craft, and its orientation. In the second set, three angles between the lines of sight of three reference points are measured; on the

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USSR

UDC 620.193.52

BYALOBZHESKIY, A. V., and ANUROVA, G. M., Academy of Sciences USSR, Institute of Physical Chemistry

"Specifics of Corrosion of Metals in Distilled Water at 250°"

Moscow, Zashchita Metallov, Vol 7, No 2, Mar-Apr, 1971, pp 112-117.

Abstract: Results are presented of a study of the regularities of the initial stage of the process of corrosion of various metals in distilled water at 250°C. Chromatographic, gravimetric and x-ray structural methods are used to study the corrosion behavior of aluminum, tungsten, cadmium, copper, molybdenum, nickel, niobium, platinum, tantalum, titanium, chromium, zirconium, type EI-929 heat-resistant nickel alloy and type Kh18N10T steel. None of the metals tested were inert under the experimental conditions (exposure to distilled water at 250° [150° for aluminum due to its high rate of corrosion] for five hours), a slight quantity of hydrogen being almost always liberated. In most cases the share of corrosion with liberation of hydrogen was not great (1-3%). The main corrosion process apparently is the formation of an oxide or hydroxide film, which is then broken down by the electrolyte. Formulas are suggested for calculation of the quantity of metal dissolved and the quantity of metal remaining in the oxide film on the surface of the metal if the quantity of absorbed hydrogen and composition of the film are known.

USSR

UDC 620.193.52

BYALOBZHESKIY, A. V., and ANUROVA, G. M., Academy of Sciences USSR, Institute of Physical Chemistry

"Specifics of Corrosion of Metals in Distilled Water at 250°"

Moscow, Zashchita Metallov, Vol 7, No 2, Mar-Apr, 1971, pp 112-117.

Abstract: Results are presented of a study of the regularities of the initial stage of the process of corrosion of various metals in distilled water at 250°C. Chromatographic, gravimetric and x-ray structural methods are used to study the corrosion behavior of aluminum, tungsten, cadmium, copper, molybdenum, nickel, niobium, platinum, tantalum, titanium, chromium, zirconium, type EI-929 heat-resistant nickel alloy and type Kh18N10T steel. None of the metals tested were inert under the experimental conditions (exposure to distilled water at 250° [150° for aluminum due to its high rate of corrosion] for five hours), a slight quantity of hydrogen being almost always liberated. In most cases the share of corrosion with liberation of hydrogen was not great (1-3%). The main corrosion process apparently is the formation of an oxide or hydroxide film, which is then broken down by the electrolyte. Formulas are suggested for calculation of the quantity of metal dissolved and the quantity of metal remaining in the oxide film on the surface of the metal if the quantity of absorbed hydrogen and composition of the film are known.

USSR

UDC 620.193.52

BYALOBZHESKIY, A. V., PLAVNIK, G. M., ANUROVA, G. M., and FEDOROVA, G. M., Academy of Sciences USSR, Institute of Physical Chemistry

"Composition of Films Formed on Metals in Distilled Water at 250°"

Moscow, Zashchita Metalloy, Vol 7, No 2, Mar-Apr, 1971, pp 177-178.

Abstract: The authors performed x-ray phase analysis of the films formed on copper, cadmium, tungsten, molybdenum, niobium, zirconium, titanium, nickel, and iron in distilled water at 250°. The films formed on each of these types of metals are described.

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USSR

UDC 621.357.5:669.715
(088.8)

BUBYALIS, YU. S., BYARNOTAS, A. K., KANSHEPEDAS, Z. P., PAPIL'SKIS, I. M., and ESTULIN, I. YA., Institute for Chemistry and Chemical Technology, Academy of Sciences, Latvian SSR

"Process for Preparing the Surface of Aluminum and Aluminum Alloys for the Application of a Galvanized Coat"

Avt. sb. SSSR, kl. (USSR Authors' Certificate kl. [expansion unknown]) C 23 b 5/00, C 23 c 3/00, No 336375, applied 26/01/70, published 19/05/72 (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L356P)

Translation: A process is patented for the preparation of the surface of Al and its alloys for galvanization by treating the surface in a solution containing the fluoroborates of zinc and ammonia followed by cathodic treatment in the same solution. The process is distinguished in that nickel fluoroborate is added to the solution, the formation of the Ni-Zn alloy on the surface of the Al providing an increase in the durability of the adhesion of the subsequent galvanic film to the substrate. The reaction proceeds at a temperature of 20-30°C and a current density of 0.5-1.5/decimeter^2 in a solution containing the following (in g/l: $Zn(BF_4)$, 40-80; $Ni(BF_4)_2$, 100-250; NH_4BF_4, 5-40. For example, parts made of Al or one of its alloys are degreased in an organic

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BUBYALIS, YU. S., et al., Avt. sb. SSSR, kl (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L356P)

solvent and then treated in a solution containing Na_2CO_3 (56 g/l) and Na [sic] (56 g/l) at 70°C for 5 minutes. Then the parts are treated in a 5% solution of NaOH at 20°C for 5 minutes. After washing in water the Al parts are treated for 30-60 seconds dilute (1:1)HNO_3. For parts made of the Al alloy D-16, however, 30 g/l of NH_4F is added to the HNO_3 solution before treatment. The parts are washed again with water and treated for 10-60 seconds in a solution -- having pH 3.5-4.5 and a temperature of 20-30°C -- containing the following: $Zn(BF_4)_2$, 40-8- g/l; $Ni(BF_4)_2$, 100-250 g/l; and NH_4BF_4, 5-40 g/l. After this the parts are cathodically processed in this same solution for 10-30 seconds at a current density of 0.5-1.5 amps/decimeter^2 and transferred to a bath for the application of the galvanizing coat.

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USSR

UDC 669.3/6.476(088.8)

BUBYALIS, Yu. S., SHVIL'PENE, G. P., BYARNOTAS, A. K., and MATULIS, Yu. Yu., Institute of Chemistry and Chemical Technology, Academy of Sciences Lithuanian SSR

"Method for Electrodeposition of Copper-Tin Alloy"

USSR Authors' Certificate No 305206, Cl. C 23 b 5/34, filed 7 Jan 70, published 13 Jul 71 (from RZh-Metallurgiya, No 1, Jan 72, Abstract No 1G196P by G. Svodtseva)

Translation of Abstract: In order to obtain adherent deposits of alloys, Sn in the form of Na stannate and KNO_3 are introduced into the electrolyte in the following ratio of components (in g/liter): Cu pyrophosphate 15-35, Na stannate 20-35, K pyrophosphate 170-240, KNO_3 5-17. The process is carried on at pH 10-11, D = 0.8-5 a/dm^2 and temperature 40-60°. The Cu content of the alloy is 70-95%. The composition of the alloy does not depend on current density, but current efficiency declines approximately from 100 to 55% with a rise in D. With a rise in pH of the electrolyte from 10 to 11 and of temperature from 40 to 60° the Cu content of the alloy drops by ~ 15%.

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USSR

UDC 616.981.551-002.39

SHAPIRO, S. Ye. and BYBOROV, G. P., Clinic of Infectious Diseases, Khabarovsk Medical Institute

"Rare Cases of Tetanus"

Moscow, Sovetskaya Meditsina, No 2, 1973, pp 147-148

Abstract: Of more than 300 cases of tetanus observed by one of the authors during 35 years of medical practice (1934-1969) in different parts of the Soviet Union, 2 were caused by the pecking of roosters and 1 by a dog bite. One developed general tetanus after a rooster nicked his hand and another suffered kopf-tetanus when a rooster scratched her forehead. The third person developed the symptoms of a generalized infection after he was bitten in the palm of the hand by a healthy dog. It is assumed that the spores of the causative agent were already present on the bodies of the victims and that the animals were merely mechanical factors in forcing the spores into the skin. All three persons had applied brilliant green or iodine to the site of the bite, thereby creating anaerobic conditions favorable for the growth of the causative agent.

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USSR UDC 632.952:634.75

BYCHENKO, N. I., and ANTONYAN, L. K., Sochi Toxicological Laboratory, All-Union Institute of Plant Protection

"The Effectiveness of New Fungicides Against Grey Mold of Strawberries"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 6, 1972, pp 33-35

Abstract: In the experiments, in Krasnodarskiy Kray, the following fungicides were used: benomyl, a 50% wetting powder from Dupont, U.S.; Basfungin, and 70% wetting powder from BASF, FRG; El-273, a 4% wetting powder from Elanco, England; captan, a domestic 50% wetting powder; sclex, a 30% wetting powder from Sumitomo, Japan; and Eparen, a 50% wetting powder from Bayer, FRG. Preliminary tests were conducted in a greenhouse on early Sochinskaya strawberries, with the following concentrations: sclex -- 0.2; Eparen -- .5; benomyl -- .1, and captan (the standard) -- .5. Control plots were treated with water. The strawberries were sprayed first at the beginning of blossoming (18 Feb), then at the end of blossoming (9 Mar), and finally on 1 June. Infection with grey mold was measured at the two bearing times, on a 6 point scale. Later a field experiment was conducted, which correlated with the greenhouse results. It was found that in local conditions benomyl increased the average yield 79%, captan 61%, sclex 55% and Eparen 49% over the control. These fungicides also retarded the development of brown blight. The other fungicides were not effective.

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USSR UDC 195

BYCHENKO, N. I., Sochi Toxicological Laboratory of the All-Union Institute of Plant Protection, Sochi

"Effectiveness of Various Fungicides Against Powdery Mildew of Cucumbers Grown in Hothouses"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 9, No 5, 1971, pp 29-31

Abstract: The effectiveness of the fungicides colloidal S + urea (USSR), figon, caratan (USA), MS 1053 (England), morestan (GFR), morocide (USA), udoncor (Japan), and benleite (USA) against powdery mildew caused by Sphaerotheca fuliginea Poll and Erysiphe cichoracearum and affecting cucumbers grown in hothouses was tested. The fungicides were effective in the following concentrations: figon, 0.3-0.5%; S + urea, 0.75 and 1%; MS 1053, 0.2%; morocide and udoncor, 0.15%; benleite, 0.2-0.3%; morestan 0.03 and 0.05% (no data on caratan are given). To avoid the leaf burns caused by figon and colloidal S + urea, it was best to apply these fungicides in the lowest effective concentrations. A single spraying with the fungicides was effective for the following length of time: figon (0.3%), morocide (0.15%) and udoncor (0.15%) - 7-10 days; morestan (0.03%) and MS 1053 (0.2%) - 15 days; benleite (0.2%) - 30-35 days. Morestan, benleite, morocide, MS 1053, and udoncor also reduced damage to cucumbers caused by the red spider mite.

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USSR UDC 669.822:621.039.5

GOLOVCHENKO, YU. M., VOROB'YEV, M. A., BYCHKOV, B. A., DAVIDENKO, A. S., PORTNOV, V. F.

"Mechanical Properties of Uranium Irradiated to 0.45 Atomic % Burn-up"

Radiatsion. fiz. tverd. tela i reaktornoye materialoved. -- V sb (Radiation Solid State Physics and Reactor Material Science -- collection of works), Moscow, Atomizdat Press, 1970, pp 185-191 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4I825)

Translation: Uranium samples containing $\leq$ 0.3 weight % of admixtures (Fe, Si, Al, and C) were irradiated to 0.45 atomic % burn-up with a maximum temperature of 500°. Mechanical tensile, compressive, bending, and fatigue testing was carried out at temperatures up to 500°. The properties of the irradiated uranium depend essentially on the type ("rigidity") of the tests. This is not only connected with the difference in the stress state but also the characteristic features of accumulation of the defects. For uranium irradiated at higher temperatures, σ_{-1} is lower. This is explained by annealing the defects of the first and second type. However, even at an irradiation temperature of 350 and 450°, σ_T is higher than for the unirradiated samples since

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200520005-5"

USSR

GOLOVCHENKO, YU. M., et al., Radiatsion. fiz. tverd. tela i reaktornove materialoved., Moscow, Atomizdat Press, 1970, pp 185-191

defects of the third type are not annealed. At a test temperature of 20°, σ_B is lowered with an increase in burn-up. This lowering is sharper for an irradiation temperature up to 360°. There are 3 illustrations and a 5-entry bibliography.

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1/2 035 UNCLASSIFIED PROCESSING DATE--23OCT7(
TITLE--MECHANICAL PROPERTIES OF IRRADIATED URANIUM -U-

AUTHOR-(04)-VOROBYEV, M.A., GOLOVCHENKO, YU.M., DAVIDENKO, A.S., BYCHKOV, B.A.

COUNTRY OF INFO--USSR

B

SOURCE--AT. ENERG. 1970, 28(2), 107-11

DATE PUBLISHED-------70

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

TOPIC TAGS--MECHANICAL PROPERTY, URANIUM, IRRADIATION, TENSILE STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1561 STEP NO--UR/0089/70/028/002/0107/0111

CIRC ACCESSION NO--AP0120340

UNCLASSIFIED

2/2 035 UNCLASSIFIED PROCESSING DATE--23OCT7

CIRC ACCESSION NO--AP0120340

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TENSILE STRENGTH OF U SAMPLES IRRADIATED TO 0.09-0.4PERCENT BURNUP AT 250-450DEGREES DECREASES WITH INCREASING BURNUP, IN PARTICULAR FOR SAMPLES IRRADIATED AT 250-360DEGREES; E.G., THE STRENGTH OF SAMPLES IRRADIATED TO GREATER THA 0.3PERCENT BURNUP MAY BE LESS THAN 10 KG-MM PRIME2, WHILE THAT OF NONIRRADIATED SAMPLES IS 60-70 KG-MM PRIME2. THE COMPRESSIVE STRENGTH OF IRRADIATED SAMPLES AT ROOM AND ELEVATED TEMPS. IS HIGHER THAN THAT O NONIRRADIATED SAMPLES. THE IRRADN. REDUCES THE FATIGUE RESISTANCE OF U E.G., IN A STD. TEST (AT ROOM TEMP.) UNDER A LOAD OF 12-15 KG-MM PRIME2 THE NO. OF CYCLES TO FAILURE RANGED FROM 1 TIMES 10 PRIME4 TO 4.5 TIMES 10 PRIME5 FOR IRRADIATED SAMPLES AND FROM 1.5 TIMES 10 PRIME6 TO 3.1 TIMES 10 PRIME6 FOR NONIRRADIATED SAMPLES.

UNCLASSIFIED

USSR

UDC: 621.372.413(088.8)

GAYNANOV, Kh. N., BYCHKOV, L. V., Ural Polytechnical Institute imeni S. M. Kirov

"A Method of Temperature Stabilization"

USSR Author's Certificate No 281574, filed 24 Jun 68, published 10 Dec 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6B174 P)

Translation: A method is proposed for temperature stabilization of a ferrite resonator by orientation of a ferrite sphere relative to a magnetic field. To simplify the stabilization process and reduce the temperature coefficient of the resonator, the sphere is oriented directly in the resonator on the central frequency of the working band in a "quasi-isotropic" direction. The sphere is set in without preorientation in the crystallographic plane.

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USSR

UDC: 532.582.82+533.601.314

BYCHKOV, N. M., DUBROVSKIY, B. L., KOVALENKO, V. M., Institute of Theoretical and Applied Mechanics, Siberian Department of the Academy of Sciences, Novosibirsk

"Experimental Investigation of the Magnus Effect on a Finned Body of Revolution of Large Elongation at a Mach Number of M = 4"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Tekhnicheskikh Nauk, No 13(208), Issue 3, Oct 72, pp 24-28

Abstract: When a rotating missile or rocket flies at an angle of attack, aerodynamic forces arise which are directed along the normal to the plane of the attack angle, i. e. the so-called Magnus effect appears. This lateral force deflects the missile from its intended direction, so that the size of the Magnus force and the point of application must be known to calculate the missile trajectory. In this paper the authors determine the Magnus force experimentally on an installation developed for holding the model in a wind tunnel in the proper position, rotating it at the required angular velocity, and measuring the lateral force and yaw moment. The results showed that the Magnus force is positive at low angles of attack.

USSR

BUCHKOV, N. M. et al., Izv. SO AN SSSR, Ser. Tekhn. Nauk, No 13(208), Issue 3, Oct 72, pp 24-28

As the angle increases, the Magnus effect abruptly changes sign and increases considerably in magnitude. At the same time, the point of application of the force shifts toward the nose section. In these experiments, the change in the direction of action of the force took place at anlges of attack of 6-7°. The absolute values of the Magnus forces and moments increase linearly as a function of the angular rotation of the model.

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USSR

UDC: 681.3:519.2

PETROV, I. Ye., BYCHKOV, N. P., SABAYEV, L. V., CHEKIN, S. G., PAVLENKO, L. V., ZHARKIKH, V. V.

"A Device for Digital Processing of Radio Signals"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 25, Soviet Patent No 278228, class 42, filed 6 Jan 69, published 5 Aug 70, pp 134-135

Translation: This Author's Certificate introduces a device for digital processing of radio signals which contains an analog-to-code converter and an arithmetic device. As a distinguishing feature of the patent, the device is designed for realizing the operation of digital detection. For this purpose the unit contains digital weight coefficient generators; and the arithmetic unit contains a multiplier, squarer, adder, and a device for extracting the square root. The output of the analog-to-code converter and the outputs of the digital weight coefficient generators are connected to the inputs of the multiplier. The multiplier output is connected to an accumulator, which is connected, in turn, through the squarer to the adder input. The outputs of the adder are connected to the device for extracting the square root.

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USSR

B

UDC: 621.039.524.4

KASPEROVICH, A. I., and BYCHKOV, N. V.

"Activation of Corrosion Products in the Primary Loop of a Nuclear Reactor with Water under Pressure"

Moscow, Atomnaya energiya, Vol 28, No 6, Jun 70, pp 490-491

Abstract: The authors conducted a theoretical study of the accumulation of corrosion products consisting of radioactive isotopes in the primary loop of a reactor with water under pressure. The following were assumed to be the primary sources of activity: activation of corrosion deposits on the active zone surfaces of the reactor and corrosion of the activated structural materials of the reactor. The contribution to this problem of activity formed by the activation of corrosion products in water during circulation through the active zone of the reactor was considered negligible, along with the activity contributed by the bypass purification system. On the basis of these suppositions a differential equation was derived for the activation of the products of corrosion in the primary loop of the reactor. A precise solution is given for (n, γ) reactions and for a loop made from one type of material. A series solution is given for a loop made from several kinds of material. The derived formulas were used for calculating the accumulation of activity (with respect to Cr^{51}, Fe^{59}, and Co^{60} isotopes) in a stainless steel loop.

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USSR

UDC: 621.396.6:621.315.612

BYCHKOV, P. S., STROGANOVA, V. V.

"A Method of Two-Stage Annealing of Ceramic Radio Components"

USSR Author's Certificate No 268234, filed 15 May 67, published 20 Jul 70 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V375 P)

Translation: A method is proposed for two-stage annealing of ceramic radio components made by hot pressure casting from high-clay materials. To shorten the duration of the annealing cycle and eliminate contamination of the air by binder vapors, the first stage of annealing is done in porous ceramic vessels covered with ceramic lids.

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1/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--SYNTHETIC FIBERS -U-

AUTHOR-(03)-BONDARENKO, V.M., BYCHKOV, R.A., SHOSHIN, A.V.

COUNTRY OF INFO--USSR

B

SOURCE--USSR. 265,367
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--09MAR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--SYNTHETIC FIBER, CELLULOSE RESIN, POLYACRYLONITRILE FIBER, POLYOLEFIN FIBER, CHEMICAL PATENT, PLASTIC FABRICATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1437 STEP NO--UR/0482/70/000/000/0000/0000

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2/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AA0126836

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SYNTHETIC FIBERS ARE PREPD. BY ESTRUDING POLYMER SOLNS. INTO A COAGULATING BATH IN WHICH THE HARDNESS IS CHANGED GRADUALLY OR STEPWISE BY REGULATING ITS COMPN. AND CONCN. FOR REGENERATED CELLULOSE FIBERS THE COAGULATION BATH CONCN. IS INCREASED FROM 2PERCENT TO 80PERCENT. FOR SYNTHETIC FIBERS (E.G., POLYACRYLONITRILE, POLYOLEFINS), THE CONCN. IS INCREASED FROM 1 TO 95PERCENT.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--LEVEL OF ESSENTIAL AMINO ACIDS IN POTATO TUBERS IN RELATION TO THE LEVEL OF MINERAL FEEDING -U-

AUTHOR-(02)-TIKHONOV, N.I., BYCHKOV, V.A.

B

COUNTRY OF INFO--USSR

SOURCE--KHIM. SEL. KHOZ. 1969, 7(12), 885-7

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MINERAL FERTILIZER, AMINO ACID, AGRICULTURE CROP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0519 STEP NO--UR/0394/70/007/012/0885/0887

CIRC ACCESSION NO--AP0126267

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2/2 008 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0126267

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF THE EFFECT OF PROLONGED APPLICATIONS OF N-P-K FERTILIZERS AND MANURE ON THE COMPN. OF ESSENTIAL AMINO ACIDS IN POTATO TUBERS AND ON THE BIOL. VALUE OF THE NITROGENOUS COMPDS. THE YIELD OF POTATOES AND THE LEVELS OF PROTEIN AND FREE AND BOUND AMINO ACIDS WAS INCREASED. THE CONTENT OF EACH INDIVIDUAL ESSENTIAL AMINO ACID IN THE TUBERS WAS INCREASED BY FERTILIZATION. THE BIOL. VALUE OF THE NONPROTEIN FRACTION OF THE POTATO TUBERS WAS LOW. THE BIOL. VALUE OF THE TOTAL PROTEIN IN THE POTATO UNDER THE VARIANT N-P-K PLUS MANURE WAS LOWER THAN IN THE CONTROL, BUT YIELD OF PROTEIN PER HECTARE WAS 3 FOLD GREATER.

UNCLASSIFIED

BYCHKOV, V. M.

USSR: [illegible]

CENTRALIZATION OF MEDICAL CARE IN RURAL AREAS (ON THE MODEL OF KALININGRADSKAYA OBLAST)

[Article by V.P. Fofanov, I.Ya. Sobolevskaya, V.P. Bychkov, I.A. Velikova, V.M. Bychkov, All-Union Scientific Research Institute of Social Hygiene and Public Health Organization [illegible] USSR Ministry of Health, Moscow; Sovetskoye Zdravookhraneniye, Russian, No 1, 1973, submitted 3 August 1972, pp 18-23]

The program of the CPSU provides for meeting in full the demands of the urban and rural population with respect to all forms of highly qualified medical care. The need for bringing the level and quality of medical care in rural areas closer to the level provided to urban regions was indicated in the decision of a session of the USSR Supreme Council (June, 1968) and Decree of the Central Committee of the CPSU and USSR Council of Ministers, No 517 dated 5 July 1968: "On Measures for Further Improvement of Public Health and Development of Medical Science in the Country"; this was also discussed at the 24th Congress of the CPSU.

The system of medical care based on the principle of stage development and combining a set of therapeutic and prophylactic institutions, provides the rural population with all forms of qualified specialized medical care. More than 100,000 different therapeutic and prophylactic institutions participated in implementing this task in 1971; they included more than 15,000 hospitals, 247 of them oblast hospitals (regional, republic level), 2,899 central rayon, [illegible] (numbered), and 11,051 rural district hospitals.

The existing system of public health organization has made it possible to eliminate almost entirely the difference between [illegible] ability of hospital care for the rural and urban population. [illegible] achieved, to some extent, by hospitalization of rural residents in urban hospitals. In some republics, more than 40 percent of the rural population was hospitalized in urban hospitals in 1970. For the USSR as a whole, an average of 204 per 1,000 rural residents were hospitalized, and this applied to 207 per 1,000 urban residents.

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Acc. Nr. AP0032549 Abstracting Service: CHEMICAL ABST. 3-70 Ref. Code NE0000

B

55601p Reactions of bis(triphenylgermyl)cadmium with protic reagents. Vyazankin, N. S.; Bychkov, V. T.; Linzina, O. V.; Razuvaev, G. A. (Polym. Stabil. Lab., Gorki, USSR). *J. Organometal. Chem.* 1970, 21(1), 107–13 (Eng). Reactions of bis(triphenylgermyl)cadmium with H_2O, EtOH, PhOH and carboxylic acids occur with heterolytic cleavage of one of the germanium-cadmium bonds. $Ph_3GeCdOR$ (R = H, Et, Ph, Ac, CF_3CO, Bz), are formed as the final or intermediate products. In the latter case they decomp. to cadmium and Ph_3GeOR or react immediately with protic reagents with scission of the Ge–Cd bond. Some complexes of bis(triphenylgermyl)cadmium, and related compds., with electron donors were investigated.

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