

USSR

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UDC 622:621.395/.396(022).004

BIZIN, P. S., VERESCHAGIN, G. P., ROL'NIK, M. A.

"Mine Communication and Signaling"

Shakhtnaya svyaz' i signalizatsiya (cf. English above), Moscow, "Nedra," 1970, 156 pp, ill. 1 r, 23 kop (from RZh--Elektrosvyaz', No 6, June 1970, Abstract No 6.64.50K)

Translation: The distinctive features are considered of the explosiveproof use of apparatus for mine communication. The organizational principles and new systems of dispatcher and general mine communication are given, and also the means of communication and signaling which assure operative direction of production processes with respect to the mining and transportation of coal. Communication systems at the period of construction of shafts [shakhta] are described and also the communication means during mine rescue operations. Methods of adjustment and operational maintenance for new communication are presented. Standard design solutions are presented for the arrangement in mines of the apparatus under consideration. The book is intended for specialists occupied with the planning, installation, and operation of apparatus for mining communication and signaling; it may also be useful to students of mining institutes and tekhnikums. 109 ill. 14 tab. 40 ref. Summary.
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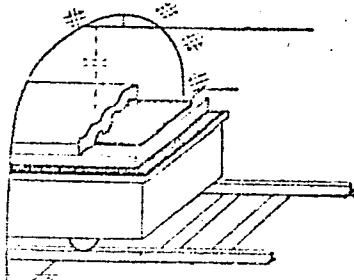
UDC: 621.396.676.2

FURMANOV, B. M., ZVORYGIN, A. G., BIZIN, P. S., LEKHTMAN, L. N., Institute of Mining imeni A. A. Skochinskiy

"An Antenna"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki, No 12, 1970, Author's Certificate No 266864, filed 21 Oct 68, pp 47-48

Abstract: This Author's Certificate introduces an antenna made in the form of a capacitor in the transmitter output circuit. As a distinguishing feature of the patent, the current in the antenna is increased by making it in the form of two insulating sheets (e. g. porolon) with an electrically conductive layer such as foil between them. This layer is one plate of the capacitor in the transmitter output circuit, and the other plate is the upper cover of the battery box in an electric locomotive.



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USSR

UDC: 621.382.002

CHAGULOV, V. S., GOYKHMEN, I. E., BLAGIDZE, Yu. M., NAKASHIDZE, G. A., ELIZBARASHVILI, O. A., Institute of Cybernetics, Academy of Sciences of the Georgian SSR

"An Optron"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7, Mar 72, Author's Certificate No 329602, Division H, filed 26 May 70, published 9 Feb 72, p 210

Translation: This Author's Certificate introduces an optron which contains a photoreceiver, an emitter and a shell. As a distinguishing feature of the patent, sealing is improved and optical coupling is provided between the receiver and the emitter by making the shell from transparent copolymers with a low index of refraction, and by filling the space between the photoreceiver and emitter with a polymerized copolymer with a high index of refraction.

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USSR

UDC: 662.998:536.4

~~BLAGINYA, E. V.~~, KISELEV, G. A., KUTS, S. M., NIKIFOROV, D. S.,
and SHADRIN, YU. A.

"Equipment for Investigating the Thermophysical Characteristics of
Materials by Quasi-Stationary Methods"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR--
Seriya Tekhnicheskikh Nauk, No 3, 1972, pp 39-43

Abstract: Two types of devices are described for investigating the thermophysical characteristics of heat-insulating materials by the complex quasi-stationary method in a broad temperature range and with the dependence of the characteristics on the temperature taken into account. In addition, a system has been developed for automatically controlling the temperature in these devices by realizing the condition for the quasi-stationary mode in the 77-2000° K range. The devices are of the plane and cylindrical types, the cross sectional diagrams of each being given. Also shown is the block diagram of the equipment for programmed automatic control, in which high-accuracy temperature regulator blocks of the RT-2 type are used. The authors are connected with the Institute of Theoretical and Applied Mechanics, in Novosibirsk.

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USSR

UDC 576.895.42:576.852.2.1

BLAGODARNYY, YA. A., Professor, MAKAREVICH, N. M., Candidate of Medical Sciences, and BLEKHMEN, I. M., Kazakh Scientific Research Institute of Tuberculosis, and Central Institute of Tuberculosis, Ministry of Health USSR

"Isolation of Atypical Mycobacteria From Spontaneously Infected *Argas persicus* Mites"

Moscow, Problemy Tuberkuleza, No 6, 1971, pp 74-75

Abstract: Twenty-four Mycobacterium strains were isolated from argasid mites taken from chickens on Southern Kazakhstan poultry farms infected with tuberculosis. Sixteen of the strains were identified as typical Mycobacterium avium, while the other eight were regarded as atypical. The morphology of the cultures was variable, the microorganisms ranged from short acid-resistant coccoid forms to granular mycobacteria. All the cultures were resistant to streptomycin, isoniazid, and tibon. Only one of the atypical strains was pathogenic for guinea pigs. None of the eight strains produced any symptoms of the disease in rabbits or mice. Intratesticular inoculation of guinea pigs previously sensitized with horse serum resulted in infection.

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1/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--INFLUENCE OF THE TITRANT SOLVENT DURING ACID BASE TITRATION OF
NONAQUEOUS SOLUTIONS -U-
AUTHOR--(03)-BYKOVA, L.N., ARDASHNIKOVA, V.D., BLAGODATSKAYA, Z.G.
COUNTRY OF INFO--USSR
SOURCE--Zh. Prikl. Khim. (Leningrad) 1970, 43(5), 1155-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--TITRATION, SOLVENT ACTION, METHANOL, PROPANOL, BENZENE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/1953 STEP NO--UR/C080/70/043/005/1155/1157
CIRC ACCESSION NO--AP0132214
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132214

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

ABSTRACT. THE MAX. DECREASE IN THE BASIC LIMIT OF THE ACIDITY SCALE OF THE SOLVENT WAS OBSERVED ON ADDING MECH, WHICH HAS MORE PROMINENT ACID PROPERTIES COMPARED TO ISO-PROH AND TERT-BUGH. C SUB6 H SUB6 ADDN. DOES NOT DECREASE THE BASIC LIMIT OF THE ACIDITY SCALE OF THE SOLVENT UP TO 60PERCENT (VOL.-VOL.). FOR TITRATING QUARTEARNARY AMMONIUM SALTS THE USE OF MIXED SOLVENT CONTG. C SUB6 H SUB6 AND AN ALC. WITH LESS ACIDIC PROPERTIES WAS SUGGESTED.

UNCLASSIFIED

USSR

UDC 517.966:517.934

BLAGODATSKIKH, V. I.

"A Sufficient Optimality Condition"

Minsk, *Differentsial'nyye Uravneniya*, No 3, 1973, pp 416-422

Abstract: This paper considers the problem of the rapidity of action, with respect to the coordinate origin, of a differential inclusion, defined as $x \in F(x)$, where $F: E^n \rightarrow \Omega(E^n)$ is some specified mapping and $x(t)$ is the solution of the inclusion. The sufficient condition of optimality is obtained in the form of a support principle in the fulfillment of the requirements for local controllability of the inclusion and the concavity of the support function. The sufficient condition for optimality is obtained in the case in which the controlled object is described by a system of linear differential equations. The author refers to an earlier paper of his, published in the same journal (8, No 12, 1972) in which he found the sufficient condition for the convexity of the sphere of attainability; in the present paper the latter is defined as the set of all points $x \in E^n$ from which transition can be made to the origin of coordinates within a particular time interval.

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USSR

UDC 58.004.12:632.4

SANIN, S. S., SADKOVSKIY, V. T., and BLAGODEROV, N. V., North Caucasian Scientific Research Institute of Plant Pathology, Krasnodar

"A Device for Trapping Fungus Spores in the Air"

Leningrad, Mikologiya i Fitopatologiya, No 5, 1971, pp 464-466

Abstract: The device designed by the authors consists of a rod with a vane attached at one end and two sidepieces 70 mm apart at the other end. Several slides coated with vaseline are inserted into grooves on the sidepieces. Above the latter is a shield to protect the surface of the slides from rain and direct sunlight. The rod, sidepieces, and vane rotate on a pivot set in a vertical stand. The device can be used not only to establish whether spores are present in the air, but also to determine the average daily concentration of spores, is calculated from the equation

$$C = 0.046 \frac{N}{v},$$

where C is the average daily concentration of spores in the air, N is the total number of spores on 4 slides, and v is the average daily wind velocity (m/sec). Tests of the device showed its trapping capacity to be 3.4 to 4 times greater than that of the ordinary vane-type apparatus and 7 to 12 times more sensitive on rainy days.

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AA0039854

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UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 3-70

237633 REMOVAL OF SCALE or dense oxide layers
 from a plurality of relatively small
 articles made of ferrous metals or copper alloys,
 is carried out by immersing the articles in an
 aqueous medium containing 2.5-5% of HCl, 1.5%
 of an emulsifier (OF-7 or OP-10), and 10-20%
 of polishing grains (e.g. white electrocorundum),
 at room temperature, and applying mechanical
 vibrations for 15-40 mins. The weight ratio
 articles: liquid is 1:2. The scale is effectively
 and rapidly removed. 6.6.67. as 1161895/25-8.
 E.S. BLAGODETELEVA et alia. (16.6.69.) Bul.8/
 12.2.69. Class 67a. Int.Cl. B24d.

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AUTHORS: Blagodeteleva, Ye. S.; Shermazanov, G.-I. K.; Kozlov,
A. Ye.; Antonyuk, Yu. K.; Solodkin, L. A. and
Tikhonov, V. Yu.

19741244

USSR

UDC 615.281.8:547.775

SARATIKOV, A. S., YAVOROVSKAYA, V. YE., PRISHCHEP, T. P., BLAGERMAN, S. K., KISELEVA, V. N., IL'INSKIY, H. N., and GICHEVA, T. A., Chair of Pharmacology, Tomsk Medical Institute, Tomsk, and Chair of Microbiology, Novosibirsk Medical Institute, Novosibirsk

"The Antivirus Effect of Some Pyrazolone Derivatives in a Cell Culture in Vitro"

Moscow, Farmakologiya i Toksikologiya, Vol 36, No 1, Jan/Feb 73, pp 67-73

Abstract: In experiments carried out with human fibroblast cell cultures, butadion, stearic acid antipyrylamide, and p-aminobenzoic acid N-methyl-N-antipyrylamide had an antivirus effect on the Coxsackie A13 virus with which the cell culture was infected. This effect was due to the formation by the culture cells of an inhibitor which was not identical with interferon, because it was inactivated at pH 2.2. The pyrazolone derivatives studied stimulated the functional activity of the culture cells and did not damage their nuclear structures. These derivatives had no bactericidal effect on hemolytic streptococci. However, the culture liquid containing the inhibitor had a bacteriostatic effect on these streptococci. Hemolytic streptococci are often present together with Coxsackie virus A 13 in patients with rheumatic fever, particularly in the acute stage of this disease.

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1/3 051 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--AT THE FOREFRONT OF SCIENCE AND TECHNOLOGY, REVIEW OF PROGRESS IN
SPACE EXPLORATION -U-
AUTHOR--BLAGONRAVOV, A.A.

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COUNTRY OF INFO--USSR

SOURCE--MOSCOW, KRYL'YA RODINY, NO 4, APRIL 1970, PP 23-24

DATE PUBLISHED-----70

SUBJECT AREAS--SPACE TECHNOLOGY, BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--SPACE PROGRAM, SPACE STATION, MANNED ORBITAL LABORATORY,
UNMANNED ORBITAL LABORATORY/(U)SOYUZ 4 MANNED SPACECRAFT, (U)SOYUZ 5
MANNED SPACECRAFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1516

STEP NO--UR/0085/70/000/004/0023/0024

CIRC ACCESSION NO--AP0131872

UNCLASSIFIED

2/3 051

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--APG131872

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE SOVIET SPACE PROGRAM AN IMPORTANT ROLE IS ASSIGNED TO AUTOMATIC VEHICLES IN STUDY OF THE UNIVERSE, MOON, PLANETS AND PRACTICAL USE OF SPACE. AUTOMATIC VEHICLES ARE CONSTANTLY BEING IMPROVED AND THEIR CAPABILITIES ARE INCREASING WITH EACH PASSING YEAR. SOLUTION OF CERTAIN PROBLEMS REQUIRES THAT VEHICLES BE MANNED. EVEN THE MOST PERFECT AUTOMATIC VEHICLES CANNOT REPLACE MAN'S CREATIVE THOUGHT. SOVIET SCIENTISTS ARE WORKING ON THE CREATION OF ORBITAL STATIONS WITH EXCHANGEABLE CREWS AS THE MOST PRACTICAL APPROACH TO MAN'S PENETRATION INTO SPACE. THEY CAN BECOME "COSMODROMES IN SPACE," LAUNCHING PLATFORMS FOR FLIGHTS TO OTHER PLANETS. THEY WILL SERVE AS THE BASIS FOR SCIENTIFIC LABORATORIES FOR SPACE BIOMEDICINE, GEOPHYSICS, ASTRONOMY AND ASTROPHYSICS. EVERY NEW SOVIET MANNED FLIGHT HAS SOLVED SPECIAL PROBLEMS ASSOCIATED WITH THE CREATION OF FUTURE ORBITAL STATIONS. THE FIRST SOVIET EXPERIMENTAL SPACE STATION WAS CREATED IN JANUARY 1969. IT WAS ASSEMBLED FROM THE "SOYUZ-4" AND "SOYUZ-5" SHIPS. IN THE FUTURE ORBITAL STATIONS WILL CARRY LARGE TELESCOPES; THERE WILL BE NO DEFORMATION OF LENSES CAUSED BY THEIR OWN WEIGHT AND NO DISTORTIONS CAUSED BY THE EARTH'S ATMOSPHERE. IT WILL BE POSSIBLE TO STUDY STARS IN THE X RAY, GAMMA RAY AND THERMAL RANGES AND PICK UP VAST AMOUNTS OF INFORMATION WHICH EARLIER COULD NOT PENETRATE THROUGH THE EARTH'S ATMOSPHERE. INSTRUMENTS ON ORBITAL STATIONS WILL BE ABLE TO SURVEY THE EARTH'S NATURAL RESOURCES, THE WEALTH OF ITS SEAS AND OCEANS, MINERAL AND FOREST RESERVES.

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3/3 051

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PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0131372

ABSTRACT/EXTRACT--THE TIME IS FAST APPROACHING WHEN MAN WILL BE ABLE TO
MAKE FLIGHTS TO THE NEAREST PLANETS, CELESTIAL BODIES, COMETS AND
ASTEROIDS.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--AUTOMATION OF CHARGE FEEDING FOR CUPOLA MELTING -U-
AUTHOR--(04)--TRESHCHALIN, V.V., SUKHARCHUK, YU.S., BLAGUNRAVDV, B.P.,
NIKITIU, P.A.
COUNTRY OF INFO--USSR
SOURCE--LITEINOE PROIZVOD. 1970, 2, 8-10
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--CAST IRON, TECHNICAL STANDARD, METAL MELTING, AUTOMATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1379 STEP NO--UR/0128/70/002/000/0005/0010
CIRC ACCESSION NO--AP0116828
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0116828

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VARIATIONS IN THE CHEM. COMPN. OF THE CHARGE COMPONENTS (AS ALLOWED BY GOVERNMENT STDS.) HAS A MUCH LARGER EFFECT ON VARIATIONS IN THE CHEM. COMPN. OF THE CAST IRON MELTED, THAN THE VARIATIONS IN WEIGHING OF THE COMPONENTS WITH ERRORS SMALLER THAN OR EQUAL TO 10-15PERCENT. THE AUTOMATED WEIGHING OF CHARGES TO THE CUPOLA SHOULD NOT BE TOO ELABORATE AND A SIMPLE ARRANGEMENT WITH THE ACCURACY OF 10-15PERCENT IS QUITE SATISFACTORY, PROVIDED A LARGE INTERMEDIARY STORAGE IS PROVIDED IN WHICH THE VARIATIONS IN CHEM. COMPN. ARE EQUALIZED.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--KINETICS OF THE DISSOCIATION OF BLOCKED ISOCYANATES -U-
AUTHOR--(03)-TARTAKOVSKAYA, A.M., BLAGONRAVOVA, A.A., STREPIKHEYEV, YU.A.
COUNTRY OF INFO--USSR *B*
SOURCE--VYSOKOLMOL. SOEDIN., SER. B 1970, 12(1), 84-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--DISSOCIATION, ORGANIC ISOCYANATE, BENZENE DERIVATIVE,
SPECTROPHOTOMETER, THERMAL DECOMPOSITION, CARBAMATE/(U)IKS14
SPECTROMETER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1987/1198 STEP NO--UR/0460/70/012/001/0084/0088
CIRC ACCESSION NO--AP0104564
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104564

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISSOCN. KINETICS OF BLOCKED ISOCYANATES (I) E.G., PHMHGO SUB2 PH, 4-METHYLPHENYL N-PHENYLCARBAMATE, 2-METHYLPHENYL N-PHENYLCARBAMATE, 4-CHLOROPHENYL N-PHENYLCARBAMATE, 2-CHLOROPHENYL N-PHENYLCARBAMATE, 2-BROMOPHENYL N-PHENYLCARBAMATE, 4-NITROPHENYL N-PHENYLCARBAMATE, AND 2-NITROPHENYL N-PHENYLCARBAMATE WAS STUDIED WITH AN IKS-14 SPECTROPHOTOMETER IN MINERAL OIL AT 85-180DEGREES. THE POSITION OF THE SUBSTITUENT AND ITS NATURE AFFECTED THE DISSOCN. RATE. ELECTRON WITHDRAWING SUBSTITUENTS INCREASED THE RATE; THE EFFECT OF PARA SUBSTITUENTS OBEYED THE HAMMETT EQUATION (SIMILAR TO P EQUALS PLUS 2.00). ADDN. OF 3.38 TIMES 10 PRIME NEGATIVES MOLE-L. BU SUB2 SN(O SUB2 CC SUB11 H SUB23) SUB2 (II) TO THE I SOLN. LOWERED THE DECOMP. TEMP., ESP. AT THE HIGHER TEMP. RANGE. THE CATALYZED DISSOCN. RATE MARKEDLY INCREASED IN THE PRESENCE OF THE ORTHO ELECTRON WITHDRAWING SUBSTITUENTS IN THE RING OF THE BLOCKING PHENOL.

UNCLASSIFIED

USSR

UDC 632.954

BLAGONRAVOVA, L. N., and KHOLCHENKOV, V. A., Nikita Botanical Garden

"Effect of Insecticides on the Damage of Apple Leaves by the Borer Moth, on Their Chlorophyl Content, and on the Quality of the Fruits Ripened for Harvesting"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 11, No 10 (120), 1973, pp 37-39

Abstract: Metaphos and metathione appeared to be the most effective agents against the moth, among those investigated; their usage had a positive effect on the apple leaves and fruits. During the entire experiment the treated leaves had more chlorophyl than the controls, so that their photosynthesis and sugar forming processes were intensified. When diphterex was used, the results were poorer, and DDT appeared completely ineffective. The chlorophyl content in the leaves of Champagne Renet was the same as in the controls.

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BALOSHIN, O. N., et al., Yadernaya Fizika, Vol 18, No 3, Sep 73, pp 542-544 with one camera. The reaction was studied on the negative particle beam of the IFVE accelerator. The K^- -mesons were distinguished by a differential Cerenkov counter. The beam was focused on a liquid hydrogen target 40 cm long which was set approximately three meters from the first chamber of the spectrometer. Approximately $5 \cdot 10^7 K^-$ -mesons were passed through the equipment and 1020 photographs taken. Pairs of uniformly charged tracks were measured on the photographs. The measurement results were then processed on the Razdan-3 computer. Only 270 intersecting tracks were found. A graph is given for the differential cross section of the reaction. The results show that the cross section value of 7.4 ± 1.2 microbarns obtained by the authors in comparison to data obtained for lower energies elsewhere shows the logarithmic dependence of the charge exchange cross section on the pulse, equal to -1.58 ± 0.05 . The authors thank K. G. Borekov, A. M. Lapidus, S. T. Sukhorukov, and K. A. Ter-Martirosyan for their presentation of the computational results as the dependence of the differential cross section on pulse transfer (do/dt). This dependence is compared with predictions of the Regge pole model.

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USSR

UDC: 533.6.011

BLAGOSKLONNOV, V. I., MINAYLOS, A. N.

"Supersonic Flow of a Perfect Gas Around a Circular Cylinder"

Uch. zap. Tsentr. aerogidrodinam. in-ta (Scientific Notes of Central Aerohydrodynamics Institute), 1972, 3, No 2, pp 130-134 (from RZh-Mekhanika, No 9, Sep 72, Abstract No 9B460)

Translation: The paper presents the results of numerical calculations of flow around a cylinder in the Mach number range of $M_{\infty} = 1.5-1000$, at specific heat ratios of the gas from 1.05 to 1.66. Empirical dimensionless numbers are given for a number of flow characteristics which enable presentation of the results in the form of analytical relations. Bibliography of 12 titles. Resumé.

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USSR

UDC 629.78.015:533.6.011.5

BLAGOSKLONOV, V. I. and MINAYLOS, A. N.

"Supersonic Flow of an Ideal Gas Around a Round Cylinder"

Uch. Zap. Tsentr. Aerogidrodinam. In-ta (Scientific Writings of the Central Aerohydrodynamics Institute), Vol 3, No 2, 1972, pp 130-134 (from Referativnyy Zhurnal--Raketostroyeniye, No 8, 1972, Abstract No 8.41.88)

Abstract: Results of numeric calculations of flow around a cylinder in the range of Mach numbers from 1.5 to 1000 and the specific gas heat capacity ratios from 1.05 to 1.66 were presented. For a number of flow characteristics, empirical criteria of comparison were given making it possible to present results in the form of analytical functions. Author's view, 5 figures, 12 bibliographical references.

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Materials

USSR

UDC 662.997.621.316.344.4

TOROPTSEVA, T. N., BAYBAKOVA, N. N., GREBELYUK, I. I., BLAGOVESHCHENSKAYA, I. F., All-Union Order of the Red Banner Scientific Research Institute of Current Sources

"An Investigation of the Behavior of Silicone Polymer Materials Under the Operating Conditions of Solar Power Installations"

Tashkent, Geliotekhnika, No 6, 1970, pp 38-39

Abstract: A report is given on an analysis and operational testing of three new types of bonding material - silylmethylene, polysiloxysilazane, and silazane, with regard to their use in solar power installations. It is found that L-24-7 polysiloxysilazane varnish and L-24-7 silazane varnish have favorable long-time aging properties against light and weather, stability to abrupt temperature changes, which, in conjunction with good properties of adhesion to concentrators and semiconductors, mechanical strength and resistance to solvents, qualify them for use as protective coatings for the workings surfaces of photocells and concentrators.

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USSR

UDC 616.28-008.1-02:615.33

BLAGOVESHCHENSKAYA, N. S., Professor, Institute of Neurosurgery imeni
Academician N. N. Burdenko, Academy of Medical Sciences USSR

"Auditory and Vestibular Disorders Occurring After the Use of Ototoxic Anti-
biotics"

Moscow, Vestnik Otorinolaringologii, No 1, Jan/Feb 72, pp 3-8

Abstract: Many of the currently used antibiotics selectively affect the peripheral and central portions of the auditory nerve by gradually accumulating and remaining for long periods in the inner-ear lymph. The vestibular nerve is readily injured by streptomycins (including neomycin, canamycin, viomycin, and gentamycin). The resulting disorders, such as vertigo, imbalance, vomiting, and nystagmus, are often reversible. The cochlear nerve is especially severely damaged by neomycins (including monomycin, canamycin, streptomycin, dehydrostreptomycin, viomycin, restomycin, and vancomycin). The first sign of toxicity is persistent noise in the ears. Subsequently, hearing acuity is reduced and eventually complete bilateral, usually permanent deafness develops. Ototoxic antibiotics are contraindicated in pregnancy and in persons with renal insufficiency or neuritis of the auditory nerve; they should be given with caution to children and old persons. Whenever feasible, nontoxic antibiotics such as penicillin, erythromycin, and semisynthetic penicillins (meticillin, oxacillin, and ampicillin) should be administered.

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USSR

UDC 617-001.28-06:616.8

GLAZUNOV, I. S., BLAGOVESHCHENSKAYA, V. V., IVANOV, V. A., and MALAKHOVA, V. V.,
Moscow

"Clinical Characteristics and Some Problems of the Pathogenesis of Neurological Disturbances in Severe Forms of Acute Radiation Sickness"

Moscow, Zhurnal Nevropatologii i Psikhiiatrii imeni S.S. Korsakov, Vol 73,
Vyp 2, 1973, pp 165-168

Abstract: Nervous system pathology of eight patients receiving 400-900 rem gamma or neutron radiation is described. In the first stage acuteness could be diagnosed on the basis of the intensity of the initial reaction and the time of its appearance. Meningeal and general brain symptoms were most frequently characteristic of the intensity. Judging by them all patients had either mild or more pronounced radiation sickness. In the second stage these symptoms became less pronounced but persisted. In the critical third stage these symptoms intensified again, and various degrees of cerebral edema developed (the degree and the rapidity of onset depending on radiation dose). The whole range of neurological disruptions in the severe form of radiation sickness is described as a parenchymatic-meningeal syndrome of varying severity. Recovery was extremely slow, especially from vegetative-vascular instability accompanied by vestibular-vegetative reactions and asthenia. Rheoencephalographic studies supported the idea that such disruptions of the central nervous

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USSR

GLAZUNOV, I. S., et al., Zhurnal Nevropatologii i Psikhatrii imeni
S. S. Korsakov, Vol 73, Vyp 2, 1973, pp 165-168

system are a product of vascular disturbances and changes in vessel wall permeability. Venous outflow from the brain cavity was found to be encumbered very early, prior to appearance of edematic symptoms. Such studies also revealed considerable damage to the brain ventricular system. Thus in severe and extremely severe forms of radiation sickness the damage to various nervous system structures is considerable and can be direct or indirect.

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USSR

UDC 531/534:001.8

BLAGOVESHCHENSKIY, A. S.

"Concerning Some New Correct Problems for a Wave Equation"

Leningrad, Tr. V Vses. Simpoz. po Difraktsii i Raspostr. Voln (Works of the Fifth Symposium on Wave Diffraction and Propagation), Nauka, 1971, pp 29-35 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2A16 by A. A. Zaytsev)

Translation: The article is a unification of the solutions of two independent problems. In the first part of the work is obtained the asymptotic form of solution of the Cauchy problem for a wave equation with a right-hand part during the motion of a point at infinity at the velocity of sound in an arbitrary direction. The basic result is the omega-limit of the theorem which is proven by means of the definition p , introduced by the author. At all values of p , $\omega \in \mathbb{R} \times S^2$ there exist the limits $\lim_{t \rightarrow \infty} p, \omega^{4\pi i t}(x, t) = F_{\pm}(p, \omega)$

Further in the formulation of the theorem, there is indicated the method of computing the functions $F_{\pm}(p, \omega)$ by means of the Radon transformation. The necessary and sufficient conditions are presented, which must be imposed upon the function $F_{\pm}(p, \omega)$ in order that it be the p, ω
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BLAGOVESHCHENSKIY, A. S., Problemy Matematicheskoy Fiziki, No 5, 1971,
pp 38-62

theorem of invariant subspaces, which the author formulates in a theorem that he proceeds to prove. He then solves one multidimensional inverse problem and generalizes the results. The article contains 10 bibliographic entries.

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Measuring, Testing, Calibrating

USSR

UDC: 681.2.083.3.531.768

SUBBOTIN, V. M., KUZNETSOV, Yu. I., BLAGOVESHCHENSKIY, M. N., Perm' Poly-technical Institute

"A Compensation Accelerometer"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrazttsy, Tovarnyye Znaki, No 21, Jul 72, Author's Certificate No 344357, Division G, filed 16 Oct 70, published 7 Jul 72, p 182

Translation: This Author's Certificate introduces a compensation accelerometer which contains a housing, a liquid-filled chamber, an inertial body with force pickup winding and two cylindrical depressions on the ends, a force pickup magnetic circuit located in the depressions of the inertial body, a displacement pickup and an amplifier. As a distinguishing feature of the patent, the device is designed for obtaining the signal of the derivative of the measured acceleration. The accelerometer is equipped with a float and a pickup for displacement of the float relative to the inertial body. An axial channel is made in the inertial body, and the float is connected by an elastic element to the inertial body and is accommodated in the axial channel.

1/1

USSR

UDC 533.652/.661.013

BLAGOVESHCHENSKIY, N. A., KOSTYUK, K. K., EL'GUDINA, B. A.

"Experimental Investigation of the Effect of the Reynolds Number on the Aerodynamic Characteristics of a Wing-Fuselage Combination at Mach Eight"

Uch. zap. Tsent. aero-gidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamics Institute), 1970, 1, No 6, pp 58-66 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10B240)

Translation: This paper presents the results of an experimental study of schematized models of a maneuverable hypersonic aircraft at Mach eight. Rough calculations of the quantity K_{max} for a change in the Reynolds number over the range of $2 \cdot 10^5 - 2 \cdot 10^6$ are compared with the experimental results. Possible methods of reducing the losses of K_{max} in pitch balancing are considered. Authors' abstract.

1/1

- 21 -

USSR

UDC 576.851.555.098.345.4

IVANOVA, L. G., BLAGOVESHCHENSKIY, V. A., and BULATOVA, T. I., Institute of Epidemiology and Microbiology imeni Gamaleya, USSR Academy of Medical Sciences, Moscow

"Carbohydrate Composition of Type A Cl. Botulinum Belonging to Different Serological Groups"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1973, pp 98-103

Abstract: Ion exchange column chromatography and paper chromatography were employed to investigate the carbohydrate composition of two serologic strains (98 and Memphis) of Cl. botulinum type A. Culture media did not have an effect on their carbohydrate composition and both strains contained glucose, glucosamine, ribose. However, strain Memphis differed from strain 98 in that it contained muramic acid, and a higher concentration of glucose and an unidentified neutral sugar than did strain 98.

1/1

- 43 -

USSR

UDC 615.272:576.851.553].012.8

BLAGOVESHCHENSKIY, V. A., RESHETNIKOVA, L. N., BULATOVA, T. I., and PEROVA, Ye. V., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR, Moscow

"Purification and Concentration of Cl. botulinum F Toxoid"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1972, pp 22-25

Abstract: Highly immunogenic toxoids can be obtained by a 2-stage method of purification and concentration. Primary purification is achieved by precipitating crude toxoid with 1 N hydrochloric acid in the isoelectric zone after adding 15% NaCl. Secondary purification involves repeated precipitation of the toxoid with 1 N hydrochloric acid in the isoelectric zone after adding NaCl (for toxoids prepared on casein media) or by precipitating it in the cold with 1 1/2 parts chilled acetone (for toxoids prepared on fish media). White mice immunized once with the purified and concentrated toxoids (5 toxoid binding units) survived the injection of 5000 MLD of type F toxin.

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- 26 -

USSR

UDC 576.851.555.098.31,577.156

TEL'BUKH, V. P., BLAGOVESHCHENSKIY, V. A., ISPOLATOVSKAYA, M.V., and BORISHPOLETS, Z. I., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR

"Some Characteristics of Proteolytic Systems of *Cl. perfringens* Type A"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 12, 1971, pp 93-97

Abstract: The relationship between the proteolytic and lecithinase activities of *C. perfringens* type A cells was studied during the first hours of growth on a casein-mushroom medium containing B complex vitamins. The level of proteolytic and lecithinase activities was high in the initial growth stages (2-hour culture), but after 6 hours no lecithinase activity could be detected. In another series of experiments, lecithinase was destroyed by the proteolytic enzymes present in resting cells of a 2-hour culture at both acid and weakly alkaline pH values. Lecithinase activity decreased even when incubated in an acid medium with endoproteinase isolated from cells of 2- and 6-hour cultures. The high proteolytic activity at both acid and alkaline pH suggests the existence of two endoproteinases or one proteinase with a wide spectrum of action. Proteinase was resistant to trypsin as an inhibitor. Proteinase treated with urea did not lose its activity when heated (to 80°C for 15 min), whereas untreated proteinase became half as active after heating.

1/1

USSR

UDC 615.372:576.851.553/.012

SEYRANYAN, I. B., and BLAGOVESHCHENSKIY, V. A., Institute of Epidemiology and Microbiology imeni Gamaleya, Academy of Medical Sciences USSR, Moscow

"Preparation of a Purified and Concentrated Botulinus Toxoid Type B"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, Apt 71, p 142

Abstract: The purpose of the work conducted was preparation of a highly purified and concentrated botulinus toxoid type B by a simple and cheap method that would be suitable for the mass production of the septatoxoid developed in 1968 at the Institute imeni Gamaleya. Toxoids were prepared by detoxifying with formalin and heat (37°C) toxic filtrates from cultures of *Cl. botulinum*, Type B, strain No 175. The cultures had been grown on casein nutrient media of different composition (a casein-fungus medium or casein acid hydrolysate to which 2% vitamin B complex or yeast water and 5% corn extract had been added). The activity of the initial (natural) toxoids varied in the 7-20 SU/ml range. Their content of total and protein N also varied considerably. The first purification stage consisted of precipitation with 1 N HCl in the isoelectric range in the presence of 15% NaCl. The pH at the isoelectric point varied in the 2.9-3.5 range for different series. The precipitate was 1/2

USSR

SEYRANYAN, I. B., and BLAGOVESHCHENSKIY, V. A., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, Apr 71, p 142

separated by centrifuging and dissolved in physiological saline, concentrating the toxoid by a factor of 10; then the pH was brought to 7-8 with NaOH. The yield of active substance in the concentrate was 65-92.8%; the purification was 98-99.3 and 86-98.8% with reference to total and protein N, respectively; and the increase in specific activity was by a factor of 12-67. Thus, the principal amount of extraneous nitrogen was removed in the first purification stage. To purify the concentrates further, the simplest method that gave the best yield was precipitation with acetone at a low temperature. The primary concentrate cooled to minus 20°C was precipitated with an equal volume of acetone brought to the same temperature. The precipitate was dissolved in physiological saline, concentrating it in the process by a factor of 3-4. As a result purification with respect to the natural toxoid reached 99.3-99.6% and 98.9-99.7% in regard to total and protein N, respectively. The specific activity increased by a factor of 1.3-2.6 vs. that of the primary concentrate and by a factor of 21-85 vs. that of the natural toxoid, amounting on the average to 414.9 SU/mg protein N. The mean yield of antigen reached 81.8%.

2/2

- 13 -

USSR

UDC 621.397(204)

BLAGOVESHCHENSKIY, V. P., GANICH, P. Ya., PREDKO, K. G., SHIMYANSKIY, S. L.

"Using a Television System to Evaluate the Contrast Characteristics of Underwater Objects"

Izv. AN BSSR. Ser. fiz.-mat. n. (News of the Academy of Sciences of the BSSR. Physics and Mathematics Series), 1971, No 3, pp 118-121 (from RZh-Radiotekhnika, No 11, Nov 71, Abstract No 11G258)

Translation: A series-produced television installation is used to measure the frequency-contrast characteristics of layers of water of various thickness. It is shown that the resolution of underwater viewing systems is determined by the scattering properties of the water. The principles of modeling and dimensionless scaling parameters are used to analyze the visibility of objects in a scattering medium. Two illustrations, bibliography of eight titles.

1/1

- 76 -

USSR

UDC: 547.26'118.07

NIFANT'YEV, E. Ye., BLAGOVESHCHENSKIY, V. S., SOKURENKO, A. M.,
and SKLYARSKIY, L. S.

"Method for Obtaining Functional-Replacing Dialkyl Phosphates"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye
znaki, No. 33, 1971, p 77

Abstract: In this method, hypophosphorous acid is combined with alcohol, carbon tetrachloride, and a base of the type of triethylamine, under heating at from 100-125° C. The process is done in a medium of an inert organic solvent like dioxane. Patent claimed by the M. V. Lomonosov State University.

1/1

- 67 -

USSR

UDC: 621.317.799;621.382

BLAGOVESHCHENSKIY, V. S., ZYRYANOV, G. Kh., and YANYUSHKIN, V. L.

"Measuring Semiconductor Diode Loss Resistance"

Moscow, Pribory i Tekhnika Eksperimenta, No. 3, 1971, pp 145-147

Abstract: The loss resistance, usually designated r_s , is one of the semiconductor diode parameters determining the frequency range of the diode. This article describes an instrument for measuring this quantity which overcomes the defect of an earlier device for the same purpose by using a peak detector instead of the low-frequency filter used in the earlier system, thus increasing the signal obtained from the diode under test. A block diagram of the new system plus a schematic are given, together with an explanation of its operation. The instrument can be used for measuring the loss resistance in tunnel diodes and in varactors biased in the forward direction. The authors are associated with the Tomsk Polytechnical Institute.

1/1

- 139 -

USSR

UDC: 547.26'118

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

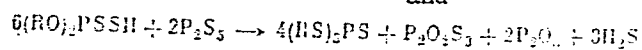
"Preparation of Trialkyltetrathiophosphates from Alcohols and Phosphorus Pentasulfide"

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

Abstract: Trialkyltetrathiophosphates (C₁-C₁₀) were synthesized by reaction of primary alcohols with phosphorus pentasulfide: $3ROH + P_2S_5 \rightarrow (RS)_3PS$

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

and



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

1/1

1/2 019

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--ADDITION REACTIONS OCCURRING AT THE DOUBLE BOND OF DELTA PRIME2
DIHYDROTHIOPYRAN -U-

AUTHOR--(04)--BLAGOVESHCHENSKIY, V.S., KAZIMIRCHIK, I.V., IVANOVA, M.I.,
ZEFIROV, N.S.

COUNTRY OF INFO--USSR

B

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 877-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CONDENSATION REACTION, THIOL, HETEROCYCLIC OXYGEN COMPOUND,
PHOSPHORUS SULFIDE, ORGANIC SYNTHESIS, ORGANIC SULFUR COMPOUND, ORGANIC
PHOSPHORUS COMPOUND, PESTICIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/2067

STEP NO--UR/0366/70/006/004/0877/0879

CIRC ACCESSION NO--AP0125654

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--300CT7C

CIRC ACCESSION NO--AP0125654

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONDENSATION OF DELTA PRIME2
 DIHYDROTHIOPYRAN (I) WITH ALCS. IN ET SUB2 O SOLN. CONTG. HCL GAVE 2 (OR
 3), R, SUBSTITUTED, TETRA, HYDROPYRANS (II) (R IS OME, OBU). SIMILARLY,
 TREATING I WITH BUSH GAVE II (R EQUALS SBU). I WITH DIALKYL
 DITHIOPHOSPHATES GAVE II (R IS SP(:S)(OME) SUB2 OR SP(:S)(GET) SUB2).
 THE REACTIONS OF I WITH TETRA-ET BISTHIOPHOSPHATE GAVE 2,4,3,R
 PRIME1, DI, SUBSTITUTED, TETRAHYDROPYRAN (III) (R AND R PRIME1 ARE
 SP(:O)(GET) SUB2). SIMILARLY, I REACTED WITH HG(OAC) SUB2 IN MECH TO
 GIVE III (R EQUALS OME, R PRIME1 EQUALS HGOAC), WHICH WAS CONVERTED INTO
 III (R EQUALS OME, R PRIME1 EQUALS HGCL). II AND III ARE POTENTIAL
 PESTICIDES. FACILITY: MDSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW,
 USSR.

UNCLASSIFIED

1/2 050

UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--ANTIFRICTION PROPERTIES AND WEAR RESISTANCE OF A PLASTIC PLASMA
COATING PAIR DURING DRY FRICTION -U-

AUTHOR--(03)--KUTKOV, A.A., KALNITSKIY, V.S., BLAGOVESTNY, A.S.

COUNTRY OF INFO--USSR

B

SOURCE--MEKH. POLIM. 1970, 6(1), 177

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--WEAR RESISTANCE, PLASTIC COATING, MATERIAL TESTING EQUIPMENT,
PLASMA TORCH SPRAYING, ALUMINUM OXIDE, POLYAMIDE RESIN, CAPRONE,
POLYETHYLENE, POLYTETRAFLUORGETHYLENE, VINYL RESIN, FRICTION
TEST/(U)VINIPLAST VINYL RESIN, (U)FTOROPLAST4 FLUORINE RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0811

STEP NO--UR/0374/70/006/001/0177/0177

CIRC ACCESSION NO--AP0107353

UNCLASSIFIED

2/2 050

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107353

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PLASTICS, E.G., POLYAMIDE P-68, KAPRON, POLYETHYLENE, VINIPLAST, AND FTOROPLAST-4 WERE TESTED IN A FRICTION TESTING APP. AGAINST A PLASMA AL SUB2 O SUB3 COATING 60-300 MU THICK. THE ANTIFRICTION PROPERTIES AND WEAR RESISTANCE OF THE PAIRS TESTED WERE MARKEDLY SUPERIOR TO THOSE OF A STEEL PLASTIC PAIR. THE PLASMA COATINGS WERE ENTIRELY UNAFFECTED DURING THE FRICTION OF PLASTICS.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--DETERMINATION OF THE QUANTITY OF MECHANICAL IMPURITIES IN ADDITIVES
AND OILS -U-
AUTHOR--(03)-BLAGOVIDOV, I.F., VSELYUBSKIY, S.B., RUTTER, A.A.
COUNTRY OF INFO--USSR **B**
SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (3), 10-12
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS, PROPULSION AND FUELS
TOPIC TAGS--GASOLINE, TECHNICAL STANDARD, TEST METHOD, QUANTITATIVE
ANALYSIS, LUBRICATING OIL, LUBRICANT ADDITIVE, FILTRATION/(U)GOST 637059
LUBRICANT STANDARD, (U)GOST 1227566 LUBRICANT STANDARD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1515 STEP NO--UR/0318/70/000/003/0010/0012
CIRC ACCESSION NO--AP0118502
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118502

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DETN. BY GOST 12275-66 OF MECH. IMPURITIES IN OILS CONTG. AND LACKING ADDITIVES WAS ACCURATE ACCORDING TO ELECTRON MICROGRAPHS OF THE PPTS. AND EVAPD. FILTRATES WHEN THE OIL AND ADDITIVE WERE REMOVED FROM THE RESIDUE ON THE NO. 4 NITROCELLULOSE MEMBRANE FILTER (PORE SIZE 0.9 MU) BY WASHING IT 3 TIMES WITH 30 ML PORTIONS OF KALOSH GASOLINE. DETNS. BY GOST 6370-59 WERE INACCURATE.

UNCLASSIFIED

Petroleum Processing Technology

USSR

UDC 665.637.6:621.892.096/.097

BLAGOVIDOV, I. F., SHOR, G. I., TROFIMOVA, G. L., and LAPIN, V. P.

"Some Aspects of the Development of Contemporary Motor Oils"

Moscow, Neftepererabotka i Neftekhimiya, No 10, 1973, pp 29-32

Abstract: Compatibility of alkyl salicylate, sulfonate, succinimide, and dithiophosphate additives was investigated as well as their pickup by oils of various chemical compositions. On the basis of experimental results effective motor oils have been developed for the current high performance engines, containing a selection of contemporary additives with consideration of maximum utilization of their functional properties.

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1/2 023 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--SOUND VELOCITY IN LIQUEFIED GAS SOLUTIONS. III. ADIABATIC AND
ISOTHERMAL COMPRESSIBILITIES OF THE ARGON KRYPTON SYSTEM -U-
AUTHOR-(C4)-SUTKO, A.YE., NIKHAYLENKO, S.A., SLAGOV, YU.P., SOROKIN, V.A.
COUNTRY OF INFO--USSR **B**
SOURCE--UKR. FIZ. ZH. (RUSS ED.) 1970, 15(4), 563-70 (RUSS)
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--ARGON, KRYPTON, SOUND TRANSMISSION, ULTRASONIC VELOCITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--3007/0139 STEP NO--UR/0185/70/015/004/0563/0570
CIRC ACCESSION NO--AP0135636
UNCLASSIFIED

272 023 UNCLASSIFIED PROCESSING DATE--11DEC70
CIRC ACCESSION NO--AP0135635
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COEFF. OF ADIABATIC
COMPRESSIBILITY AND THE SPEED OF SOUND (V) IN THE SYSTEM AR,KR INDICATED
A STRONG DEVIATION OF THIS SYSTEM FROM IDEAL BEHAVIOR. ASSUMING IDEAL
BEHAVIOR, THE DEPENDENCE OF V ON THE COMPN. OF THE LIQS. SHOULD HAVE A
MIN. AT MOLE RATIO OF KR EQUALS 0.6 AT 120-40DEGREE SK. CURVES BASED ON
THE EXPTL. DATA ARE QUAL. DIFFERENT AND SHOW A STEADY INCREASE OF V WITH
INCREASING AMTS. OF KR IN THE MIXTS. FACILITY: FIZ. TEKH. INST.
NIZKIKH TEMP., KHARKOV, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--SURFACE TENSION OF KRYPTON, METHANE, DEUTEROMETHANE, AND OXYGEN -U-
AUTHOR--(04)-BLAGOY, YU.P., KIREYEV, V.A., LOBKO, M.P., PASHKOV, V.V.
COUNTRY OF INFO--USSR *B*
SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(3), 427-32
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--SURFACE TENSION, KRYPTON, METHANE, OXYGEN, DEUTERIUM COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/0948 STEP NO--UR/0185/70/015/003/0427/0432
CIRC ACCESSION NO--AP0136379
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136379

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIFFERENTIAL METHOD OF CAPILLARY RISE WAS USED TO DET. THE TEMP. DEPENDENCE OF THE SURFACE TENSION, SIGMA, FOR KR, CH SUB4, CD SUB4 AND O SUB2 OVER THE ENTIRE RANGE OF TEMPS. AT WHICH THEY EXIST IN THE LIQ. FORM. THE RESULTS ARE TABULATED AND SHOWN GRAPHICALLY ALONG WITH THE OTHER EXPTL. DATA. THE RESULTS CAN BE DESCRIBED BY THE VAN DER WAALS EQUATION. THE DEVIATIONS WERE DISCUSSED FROM THE LAW OF CORRESPONDING STATES FOR A LARGE NO. OF SUBSTANCES AND THE REASONS FOR THE DEVIATIONS WERE CONSIDERED.
FACILITY: FIZ. TEKH. INST. NIZKIKH TEMP., KHARKOV, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--HYDROSTATIC EFFECT IN A BINARY SOLUTION NEAR THE CRITICAL SOLUTION
POINT -U-
AUTHOR--(02)-BLAGOY, YU.P., SOKHAN, V.I. **B**
COUNTRY OF INFO--USSR
SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(6), 291-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--METHANE, FLUORINATED HYDROCARBON, CRITICAL POINT, HYDROSTATICS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1995/1252 STEP NO--UR/0386/70/011/006/0291/0295
CIRC ACCESSION NO--AP0115714
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0115714

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SHADOW METHOD (S. ABRUKOV, 1962) WAS USED TO STUDY THE CONC. DISTRIBUTION IN THE BINARY SOLN. CH SUB4-CF SUB4 WHICH HAS AN UPPER CRIT. POINT OF MIXING AT T SUBC 94.72DEGREES K AND 43.5PERCENT CF SUB4. THE MAX. CONC. GRADIENT IS FOUND AT THE LIQ. SURFACE AND IT DECREASES SHARPLY AS THE DISTANCE FROM THE SURFACE IS INCREASED. THE CONC. DISTRIBUTIONS OBTAINED BELOW T SUBC ARE DUE TO THE EFFECT OF THE GRAVITATIONAL FIELD AND ARE HYDROSTATIC EFFECT (A. V. VORONEL AND M. SH. GITERMAN, 1965).
FACILITY: FIZ. TEKH. INST. NIZK. TEMP., KHARKOV, USSR.

UNCLASSIFIED

USSR

UDC: 534.22;541.8

MIKHAYLENKO, S. A., BLAGOY, Yu. P., and BUTKO, A. Ye.

"Speed of Sound in Liquefied Gas Solutions"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, No 2, 1973, pp 184-189

Abstract: This article is the fifth of a series under the general title given above; the title of this installment is "Systems Containing a Component of Molecules ($C_3H_6-CH_4$; C_3H_6-Kr) Without Spherical Symmetry." The four earlier installments investigated liquid solutions and obtained expressions for changes in their thermodynamic characteristics, including the speed of sound. In the present paper, the authors investigate methane-propylene and krypton-propylene systems in which the purity of the krypton was 99.92%; of methane, 99.95%; and of the propylene, 99.81%. Results of the measurements for the speed of sound as a function of the temperature for these solutions are given in tabular form, and curves are plotted for the speed of sound as a function of the solution concentration for comparison with similar curves for ideal solutions. The authors regret that in the absence of a satisfactory theory, they cannot explain the phenomena they observed in terms of the liquid's structure and its changes in solution.

1/1

USSR

UDC: 632.951:631.563.006.5

BLAKITNAYA, L. P., Candidate of Biological Sciences, BOGDAN-BLAKIT-
NAYA, L. R., Stavropol' Agricultural Institute

"Toxicity of Sumithion for Pests of Grain and Grain Products"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 10, No 5, 1973, pp 39-
41

Abstract: Sumithion [0,0-dimethyl-0-(3-methyl-4-nitrophenyl)-
thiophosphate], a pesticide made by the Japanese company "Sumitoma"
was field-tested in the Stavropol'skiy Kray. It was found that
Sumithion in a dose of 0.2 g/m² has excellent insecticidal and
acaricidal properties, and is lethal for most insect and mite pests
of granaries. When applied to a glass surface, the chemical showed
contact action for about 20 days on the most harmful granary insects
and mites. Because of its insecticidal and acaricidal properties
against a broad spectrum of warehouse pests in the imaginal and
pre-imaginal forms, and its low toxicity for warm-blooded animals,
Sumithion (and possibly its analogs -- Metathion from Czechoslovakia,
Folithion from West Germany, and Methylnitrophos made in the Soviet
Union) may be extensively used for treating elevators and their
environs and also equipment used in connection with grain storage.
1/1

- 56 -

1/2 008

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--USE OF A STEP BY STEP DYNAMIC EXPERIMENT FOR DETERMINING THE OPTIMUM CONDITIONS OF A CATALYTIC PROCESS -U-

AUTHOR--(05)-BLANDIN, YU.V., KALININA, E.V., KUDRYAVTSEY, B.M., MAYOROV, D.M., MOROZOV, G.A.

COUNTRY OF INFO--USSR

B

SOURCE--NEFTEPERARAB. NEFTEKHIM. (MOSCOW) 1970, (2), 32-4

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CATALYSIS, HYDROGENATION, FATTY ACID, CHEMICAL REACTOR, CHEMICAL PRODUCT PRODUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0567

STEP NO--UR/0318/70/000/002/0032/0034

CIRC ACCESSION NO--AP0119485

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119485

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD WAS APPLIED TO DIRECT HYDROGENATION OF FATTY ACIDS TO ALCS. USING FACTORIAL PLANNING BY MEANS OF A PILOT PLANT. THE MAX. PRODUCTIVITY, TAKEN AS OPTIMIZATION CRITERION, WAS OBTAINED AT 240DEGREES AT THE REACTOR BOTTOM INTAKE STOCK SPACE VELOCITY 0.3 ML-HR AND INTAKE STOCK H RATIO 1:700.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--USE OF A FACTOR PLANNING METHOD FOR THE STUDY AND OPTIMIZATION OF A
CATALYTIC PROCESS -U-
AUTHOR--(05)-BLANDIN, YU.V., KALININA, E.V., KUDRYAVTSEV, E.M., MUSHENKO,
D.V., PLUTITSINA, L.V.
COUNTRY OF INFO--USSR
SOURCE--KHIM. TEKHNL. TOPL. MASEL 1970, 15(3), 42-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HYDROGENATION, FATTY ACID, ALCOHOL, CHEMICAL PLANT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FILE/FNAME--1092/1487 STEP NO--UR/0055/70/015/003/0042/0045
CIRC ACCESSION NO--AP0112481
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0112481

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD WAS APPLIED TO THE DIRECT HYDROGENATION OF SYNTHETIC FATTY ACIDS TO ALCS., BY USING THE FEED SPACE VELOCITY, BOTTOM REACTOR TEMP., MOLE RATIO OF FEED TO H, AND CONTENT OF FATTY ACIDS ABOVE C SUB16 IN THE FRACTION AS VARIABLES. THE OPTIMIZATION CRITERION WAS THE HIGHER PRODUCTIVITY OF THE PLANT, WHICH WAS 0.175 HR PRIME NEGATIVE1, 246DEGREES, AND RATIO 1:50, RESP. THE PRODUCTIVITY WAS THUS INCREASED BY 35PERCENT OVER THAT OBTAINED UNDER CONDITIONS SUGGESTED BY THE ALL UNION SCIENTIFIC RESEARCH INSTITUTE FOR PETROCHEMISTRY (0.13 HR PRIME NEGATIVE1).

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--MAGNETIC SURFACE LEVELS IN A SUPERCONDUCTOR -U-
AUTHOR--BLANK, A.YA. **B**
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 5, PP 1862-70
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS
TOPIC TAGS--SUPERCONDUCTOR, MAGNETIC FIELD, EXCITATION SPECTRUM

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/0013 STEP NO--UR/0056/70/058/005/1862/1870
CIRC ACCESSION NO--AP0127663
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0127663

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS SHOWN THAT FINITE MOTION OF SINGLE PARTICLE EXCITATIONS IN A MAGNETIC FIELD NEAR A SUPERCONDUCTOR SURFACE MAY LEAD TO THE EXISTENCE OF A COMPARATIVELY LARGE NUMBER OF DISCRETE QUANTUM LEVELS LOCATED BELOW THE ENERGY GAP. THE QUASICLASSICAL PROBLEM OF SURFACE EXCITATIONS IS SOLVED AND THE SPECTRUM OF THE EXCITATIONS IS FOUND. THE RESULTS ARE ILLUSTRATED BY COMPUTER CALCULATIONS. FACILITY: INSTITUT TEORETICHESKOY FIZIKI IM. L. D. LANDAU AN SSSR.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--THROMBASTHENIA IN WORKERS HANDLING BENZENE AND ITS HOMOLOGUES -U-
AUTHOR--BLANK, N.L. **B**
COUNTRY OF INFO--USSR
SOURCE--GIGIYENA TRUDA I PROFESSIONAL'NYYE ZABOLEVANIYA, 1970, NR 5, PP
32-35
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--INDUSTRIAL HYGIENE, BENZENE, BLOOD CHEMISTRY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/0449 STEP NO--UR/0391/70/000/005/0032/0035
CIRC ACCESSION NO--AP0116115
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116115

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESEARCH DATA REFLECTING FUNCTIONAL PROPERTIES OF THROMBOCYTES IN 53 WORKERS DEALING OCCUPATIONALLY WITH BENZENE, IN WHOM MILD OR MODERATE MANIFESTATIONS OF BLEEDING WITH NORMAL THROMBOCYTE COUNT WERE EVIDENT, ARE REPORTED. INVESTIGATIONS COVERED AGGLUTINATION, ADHESIVE AND RETRACTILE CAPACITY OF THROMBOCYTES, ALONG WITH THE EFFECT PRODUCED BY FIBRINOLYSIS ON THE BLOOD CLOT RETRACTION. INFERENCE IS DRAWN THAT HEMORRHAGIC MANIFESTATIONS IN WORKERS EXAMINED ARE CAUSED BY QUALITATIVE CHANGES OF THE PLAQUES ASSUMING THE FORM OF THROMBASTHENIA, WHICH MAY BE INTERPRETED AS ONE OF THE FIRST LINKS IN THE DEVELOPMENT OF A HEMORRHAGIC SYNDROME PRODUCED BY BENZENE. EXTENSIVE THROMBASTHENIA MAY BE CONSIDERED TO BE ONE OF THE INITIAL SYMPTOMS OF BENZENE POISONING.

FACILITY: OBLASTNOY KLINICHESKIY INSTITUT IM. M. F. VLADIMIRSKOGO.

UNCLASSIFIED

USSR

UDC 661.143(088.8)

SOROKIN, O. O. M., BLANK, V. A., and LEBEDEVA, G. A.

"A Method for the Production of Fluorinated Photocathodes?"

USSR Author's Certificate No 357621, filed 19 Jun 70, published 25 Jan 73
(from RZh-Khimiya, No 19, Oct 73, Abstract No 19L149 P)

Translation: To lower the long wave sensitivity, the metal layer (alkaline or alkaline-earth) or the fluoride of one of these elements deposited on a base together with Pv are fluorinated to the stoichiometric point with fluorine formed by decomposition of an F-containing compound. The vacuum space containing the base with deposited layer of metal or fluoride is evacuated to a pressure of 10^{-5} mm using a nonoil pump. The base is heated to $300 \pm 10^\circ$, the pump is sealed off and the container with XeF_2 is heated to about 50° , resulting in the formation of a 2-4 mm pressure of XeF_2 vapors in the system. Decomposition (pyrolysis) of XeF_2 occurs in the proximity of upper Pv of the base and the atomic fluorine reacts with its layer compensating for its deficiency of fluorine. Xenon being liberated during the pyrolysis is inert and does not react with the layer.

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USSR

UDC 621.791.08:620.17

BLANTER, M. Ye., and FINEKL'SHTEYN, M. L.

"Kinetics of Dissolution of Oxide Film and Strength of Welded Joints"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No. 2, 1971,
pp 53-55

Abstract: The nature of the change in strength of welded joints, rate of dissolution of the oxide film and degree of deformation by creep were studied for various initial states of the surfaces joined. Studies were performed on 23-mm specimens 16 mm in diameter consisting of type-E steel (0.04% C; 0.15% Mn; 0.18% Si; 0.026% S; 0.006% P). The surface states were created by oxidation in air for 20 minutes at 100, 200, 300, and 400°C, as well as 1 hour at room temperature. A dependence is demonstrated between the degree of dissolution of the oxide film and strength of the welded joint produced by heating and pressure in the solid state. The rate of dissolution of the oxide film can sometimes be determined by the nature of the change in strength of the welded joint.

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USSR

UDC 539.4.015

BLANTER, M. YE., KOVALEVA, L. A., and TISKOVICH, N. L., (Moscow)

"Nature of the Strengthening of Maraging Steel"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70, pp 151-153

Abstract: A previous article by the authors reported the anomalous effect of decreased strength with 90% deformation of steel pre-aged at 475°. The article showed that an ultimate strength of 250-270 kg/mm² can be obtained in maraging steel after combined treatment. The present article attempts to study the nature of the high strength of maraging steel. Maraging steel with the composition 18% Ni, 8% Co, 5% Mo, and 1% Ti was treated under the following regime: hardening + aging + deformation (with shrinkages of up to 90%) + aging. Hardening was performed from 950° C in air. The first aging was under the following conditions: 375° for 1 hour, 475° 30 min. and 475° 3 hours. Re-aging took place at 450° for 3 hours. The results indicate that aging processes take place

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USSR

BLANTER, M. YE., et al., Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70, pp 151-153

in maraging steel during deformation at room temperature, and the increase in deformation hardness is due not only to cold hardening, but also to precipitation hardening. A study of data on variations in the electrical resistance and lattice parameter of the solid solution indicates that back dissolution of strengthening zones occurs in steel pre-aged at 475° C, and this results in reduced strength of the steel under 90% deformation.

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B

Heat Treatment

USSR

UDC 001.18:621.78

BLANTER, M. YE., All-Union Correspondence Institute of
Mechanical Engineering

"Advancements in the Theory of Heat Treatment"

Moscow, Metallovedeniye, No 4, Apr 70, pp 56-61

Abstract: The paper presents a historical review of progress in metallurgy beginning with the Soviet revolutionary period. It notes the training of Soviet metallurgists and heat-treatment specialists and their research in theoretical problems such as isothermal transformation of supercooled austenite, C-diagrams, and high-temperature pearlitic transformations. The subsequent period is marked with the concept of structural correspondence related to the physical inhomogeneity of alloys and structural imperfections. In this manner, the concept of the essence of transformations and alloys is intimately linked with those of the real structure of alloys. The consecutive

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USSR

BLANTER, M. YE., Metallovedeniye, No 4, Apr 70, pp 56-61

stage of advancement in theory is related to the experimental confirmation of the existence of metals having theoretical strength. The idea of crystal structural defects responsible for low strength characteristics was thus corroborated. Electron microscopy of labeled atoms was additional proof of the defectiveness of the crystalline structure of metals and alloys. Internal friction led to the study of the interaction between impurity atoms and dislocations. The fundamental study of substructural defects resulted in the development of thermo-mechanical treatment. Wide use has been made of patenting, a heat treatment method of making high-strength metals. The advancement of the theory of heat treatment in the immediate future is likely to be devoted to research in the initial stages of transformations, earlier termed as pre-processes; the interaction of interstitial atoms with dislocations and the effects of the alloying elements on these processes; and the mechanism of nucleation and growth of particles of the new phase relative to the substructure of the solid alloy. It may be necessary to relate the thermodynamic conditions of transformations to the

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USSR

BLANTER, M. YE., Metallovedeniye, No 4, Apr 70, pp 56-61

localized substructure of the alloy. The advancement of knowledge in the area of physical inhomogeneity of metals and alloys will thus become the basis of the new stage for the active development of the phase transformation theory and the treatment technology of metals and alloys.

3/3

1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DEVELOPMENT OF THE HEAT TREATMENT THEORY -U-
AUTHOR--BLANTER, M.YE. *B*
COUNTRY OF INFO--USSR
SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (4), 56-61
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--THERMAL-EFFECT, METAL HEAT TREATMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1414 STEP NO--UR/0129/70/000/004/0056/0061
CIRC ACCESSION NO--AP0133366
UNCLASSIFIED

2/2 019
CIRC ACCESSION NO--AP0133366

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HISTORY OF HEAT TREATMENT IS OUTLINED BRIEFLY, AND THE CONTEMPORARY TRENDS IN ITS DEVELOPMENT ARE PRESENTED. THE DEVELOPMENT OF HEAT TREATMENT THEORY IN THE FUTURE IS DISCUSSED. FACILITY: VSES. ZAACH. MASHINOSTR. INST., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.791.052:620.193:669.295

BLASHCHUK, V. YE., Engineer, GUREVICH, S. M., Doctor of Technical Sciences, SHELENKOV, G. M., Engineer, Electric Welding Institute imeni Ye. O. Paton; TKACHENKO, N. N., Candidate of Technical Sciences, VASILENKO, I. I., Candidate of Technical Sciences, LISKEVICH, I. YU., Engineer, ZAFIYOVSKIY, YU. M., Engineer, ISAYEVA, M. M., Engineer, and MELEKHOV, R. K., Engineer, Physico-mechanical Institute of the Academy of Sciences UkrSSR

"The Tendency of AT3 Titanium Alloy Welded Joints to Mechanical Corrosion Failure"

Moscow, Svarochnoye Proizvodstvo, No 1(471), Jan 74, pp 39-40

Abstract: A study was made of the tendency of AT3 titanium alloy and its welded joints to breakdown at increased temperature and pressure in a 0.6% solution of H_2SO_4 , as applicable to the working conditions of hydrolytic apparatus. Specimens of AT3 alloy were cut from 24-mm-thick hot-rolled sheet. The failure of welded joints took place at stresses exceeding the yield limit of the alloy. The conditional limits of the corrosion-fatigue strength in axial load with symmetric tension and compression of AT3 alloy and its manually welded joints are close. Automatically welded joints show, in comparison with AT3 alloy, 1/2

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USSR

BLASHCHUK, V. YE., et al., Svarochnoye Proizvodstvo, No 1(471), Jan 74, pp 39-40

some decrease in strength at stresses exceeding the conditional limit of corrosion-fatigue strength. The AT3 alloy and its welded joints show practically the same durability at cyclic torsion. AT3 alloy is recommended for the production of welded experimental hydrolytic apparatus. Four figures, one table, eight bibliographic references.

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USSR

UDC 621.791.753.9

LANGER, N. A., Candidate of Technical Sciences, ONOPRIYENKO, L. M., Engineer,
BLASHCHUK, V. YE., Engineer, GORBAN', V. A., Engineer, Electric Welding Institute
imeni Ye. O. Paton of the Academy of Sciences UkrSSR, ISAYEV, M. M., Engineer,
All-Union Scientific Research Institute of the Hydrolysis Industry, Leningrad,
and SHELENKOV, G. N., Sumsk Machinery Manufacture Plant imeni M. V. Frunze

"Corrosion Resistance of Welded Joints of AT3 Alloy in Sulfuric Acid"

Kiev, Avtomaticheskaya Svarka, No 1(250), Jan 74, pp 67-68

Abstract: An experimental study was made of the corrosion resistance and the change of mechanical properties of AT3 titanium alloy and its compounds in 0.6-1.2% concentrated sulfuric acid at 180 and 200° C. The results of electrochemical investigation in 0.9% H₂SO₄ at 90° C show that automatically welded specimens behave analogously to the base metal and active zone. Manually welded specimens have an active zone of anodic dissolution; in their passive zone the current density is $2 \cdot 10^{-2} \text{ mA/cm}^2$, which is less than in the base metal ($4 \cdot 10^{-2} \text{ mA/cm}^2$). Tests conducted with sample specimens revealed that the base metal corrodes after 44 weldings at a rate of 0.014 mm/year, automatically
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USSR

LANGER, N. A., et al., *Avtomaticheskaya Svarka*, No 1(250), Jan 74, pp 67-68

welded joint corrodes at a rate of 0.016 mm/year, and a manually welded joint corrodes at a rate of 0.013 mm/year. Two figures, one table, two bibliographic references.

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USSR

UDC 620.194'196

ZOTOVA, L. M., BLASHCHUK, V. YE., MAKSIMOV, YU. A., and VAVILOVA, V. V.,
Institute of Metallurgy imeni A. A. Baykov, Academy of Sciences USSR

"Stress Corrosion of Titanium Alloy AK-1 and AK-2 Weld Joints"

Moscow, Zashchita Metallov, Vol 9, No 6, 1973, pp 707-709

Abstract: The tendency of titanium alloys AK-1 and AK-2 to suffer stress corrosion cracking was investigated along with the same study into the stress corrosion cracking of weld joints made from these alloys. Alloys AK-1 and AK-2 and their weld joints possess good stability in chloride salts. No cracks or surface cracking were observed in visual inspection. Metallographic studies revealed no cracks in the samples for saturated CaCl_2 and MgCl_2 , but in saturated NH_4Cl the samples suffered corrosion failures in the heat-affected zone of the welded alloys. Thus, the investigated alloys and weld joints do not undergo surface cracking in 10% HCl , but alloy AK-2 and its weld joints do suffer stress corrosion after 600 hours in the gaseous phase of 99% HNO_3 . Consequently, alloying titanium with vanadium significantly improves its resistance to corrosion cracking. 2 tables, 3 bibliographic references.

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USSR

UDC 621.791.011:669.295

GUREVICH, S. M., Doctor of Technical Sciences, and SHELENKOV, G. M. and
BLASHCHUK, V. YE., Engineers

"Weldability of Titanium Alloy VT3"

Moscow, Svarochnoye Proizvodstvo, No 11, 1973, pp 20-21

Abstract: The weldability of titanium alloy AT3, with a complex composition, was studied and compared to unalloyed titanium VT1-0. Composition of VT3 was (in %): 2.5 Al, 0.4 Fe, 0.17 Si, 0.3 Cr, 0.1 O₂, 0.004 H₂, and 0.016 N₂. Samples 24 mm thick were submerged-arc welded with a 10 mm diameter tungsten electrode. Mechanical tests showed that the impact strength and elongation at normal and low temperatures change very little for either material while for AT3 there is a significant lowering of relative reduction in area at low temperatures (-196 C) with a rise in threshold energy. This was a result of increased oxygen content in the seam metal. Thus, the studies showed that the ductility and impact strength of the seam and heat-affect zone metal of the joint, produced by welding AT3 changes very little for different values of threshold energy and are analogous to the changes in technical titanium VT1-0. 3 figures, 2 tables, 7 bibliographic references.

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USSR

UDC: 669.29.295:621.791.052

GUREVICH, S. M., BLASHCHUK, V. Ye., ONOPRIYENKO, L. M. Electric Welding Institute imeni Ye. O. Paton, Academy of Sciences UkrSSR.

"Properties of Welded Joints of Alloys in the Systems Ti-V, Ti-V-Al and Ti-Zr-Al with High Oxygen Content"

Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1973, pp 6-8.

Abstract: This work presents a study of the mechanical and corrosion properties of welded joints of the alloys AK1 (Ti + 2.5% V), AK2 (Ti + 2.5% V + 3% Al) and AK3 (Ti + 5% Zr + 2% Al), containing 0.25-0.35% O. Rolled specimens 6 mm thick were studied. The plates were welded by an automatic single-pass argon-arc welding machine using infusible tungsten electrodes. It is shown that the strength, ductility and corrosion resistance of the welded joints are quite close to the figures for the base metal.

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USSR

UDC: 621.791.754

ZAGREBENYUK, S. D., GIREVICH, S. M., BLASHCHUK, V. Ye.,
Electric Welding Institute imeni Ye. O. Paton

"Heat Treatment of Welded Joints in VTZ-1 Alloy"

Kiev, Avtomaticheskaya Svarka, No 8, Aug 73, pp 69-70.

Abstract: A study is presented of the influence of heat treatment on the properties of joints in VTZ-1 alloy. Argon-arc welding with infusible electrodes was used to produce butt joints in the alloy in the following mode: $\delta = 3$ mm, $I_w = 300$ a, $U_d = 10$ v, $v_w = 31$ m/hr; $\delta = 7$ mm, $I_w = 500$ a, $U_d = 12$ v, $v_w = 29$ m/hr. The studies showed that the seams in VTZ-1 alloy had a primarily needle-like α' structure. Heating of seams to 800° C has no significant influence on the phase composition. The results of mechanical testing after hardening and aging showed that the strength of the seams was maximal after hardening from 860° C with aging at 500° C for 3 to 5 hours. Increasing aging time decreases the seam strength due to coagulation of the finely dispersed phases.

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USSR

UDC 621.791.754:546.821

GUREVICH, S. M., BLASHCHUK, V. Ye., Ye. O. Paton Electric Welding Institute,
LUK'YANENKO, V. M., SHELENKOV, G. M., Suma Machine Building Plant

"Welding of Chemical Apparatus of AT3 Titanium Alloy"

Kiev, Avtomaticheskaya Svarka, No 11, Nov 72, pp 45-48

Abstract: This work studies the weldability and develops a production technology for welding of chemical apparatus of AT3 titanium alloy. The alloy studied had the following chemical composition: 2.5% Al, 0.41% Fe, 0.17% Si, 0.3% Cr, 0.1% O, 0.004% H, 0.016% N. The butt joints were produced by argon-arc welding with a tungsten electrode by manual welding with X-shaped placement of edges and automatic welding with an infusible electrode. The welding technology developed was used in the production of hydrolytic apparatus with capacities of 6-50 m³, wall thickness 10-24 mm. The use of AT3 alloy allows interior volume to be increased by 15-35% over lined steel apparatus, increasing interior volume utilization factor from 74% to 95%.

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Mechanical Properties

USSR

UDC 620.17:669.295:621.791.052

GUREVICH, S. M., BLASHCHUK, V. Ye., PERADZE, T. A., and VAVILOVA, V. V.,
Institute of Metallurgy imeni A. A. Baykov

"Mechanical Properties of Weld Joints Made From Titanium Alloy AK-3 With
an Increased Oxygen Content"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, Jan 73,
pp 72-73

Abstract: The mechanical properties of AK-3 titanium alloy weld joints was studied for which the oxygen content was increased in the initial alloy by adding a titanium-oxygen alloy containing 23.63% oxygen during the remelting process, which yielded an oxygen content of 0.31% in the final alloy. After argon-arc welding with a nonconsumable tungsten electrode the oxygen content in the seam metal was 0.384%. Strength properties were slightly lower after annealing than after welding, but ductility and reduction in area were increased after annealing while impact strength also improved after annealing. The conclusion was made that weld joints of AK-3 titanium alloy (Ti-Al-Zr system) with an increased oxygen content (0.35%) possess satisfactory mechanical properties. 2 tables, 8 bibliographic references.

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USSR

UDC: 539.4

Blashchuk, V. Ye., Voynitskiy, A. G., Grabin, V. F., Gurevich, S. M., Kas'yan, V. V., Novikov, N. V.

"Deformation Resistance of AT-2 and AT-3 Titanium Alloys and Their Welded Joints at High and Low Temperatures"

Kiev, Problemy Prochnosti, No 7, 1972, pp 96-99.

Abstract: The deformation resistance of AT-3 and AT-2 alloys and seam metal is studied in the 400-700°K temperature interval. The strength of the metal of seams in these alloys in the interval up to 500°K does not fall below 90% of the strength of the alloys. The temperatures dependences of strength and yield point of the metals of the seams and alloys are similar. At 700°K, the strength of the seam metal drops to 80% of the strength of AT-3 alloy. The ductility of the seam metals at normal and high temperatures is similar to the ductility of the base alloys, but falls below the ductility of the base metal at low temperatures. As temperature drops, the decrease in the value of coefficient α_k is greater in the alloys than in the seam metal, but throughout the entire temperature range studied $\alpha_k > 1$.

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USSR

UDC 620.17:669.295:621.791.052

GUREVICH, S. M., KORNILOV, I. I., ~~BLASHCHUK, V. YE.~~, VAVILOVA, V. V., and MAKSIMOV, YU. A., Institute of Metallurgy imeni A. A. Baykov

"Mechanical Properties of Welded Joints of Titanium Alloys With an Increased Oxygen Content"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 39-41

Abstract: A study was made of the effect of oxygen on the weldability of Ti-V-O and Ti-V-Al-O alloys. Results are presented from estimating the mechanical properties of the welded joints at room temperature. Alloys of 8 compositions were manufactured for the investigation. Data from the chemical and gas analysis of the initial alloys, the results of the effect of oxygen on the mechanical properties of titanium alloys with 2.5% V and 2.5% V + 2% Al at room temperature, and the results of gas analysis of the weld metal were tabulated. From the data it is concluded that the mechanical properties, including impact toughness of the

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USSR

GUREVICH, S. M., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 39-41

base metal and the welds of alloys with an oxygen content up to 0.3%, remain high. With 0.5% O in alloys of the Ti-V-O system the impact toughness of the weld is the same as that of the base metal. In alloys of the Ti-V-Al-O system with 0.58% O, the plasticity drops sharply as a result of the occurrence of a second phase in the structure. Some microstructural characteristics of one of the alloys are presented. Preliminary conclusions are drawn that alloys of the Ti-V-O system with 2.5% V, and the Ti-V-Al-O system with 2.5% V, and the 3-3.5% Al system are less sensitive to oxygen and be welded with an oxygen content up to 0.3% in the base metal.

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USSR

UDC 539.4

MAKSIMOV, Yu. A., KORNILOV, I. I., VOYNITSKIY, A. G., ~~BLASHCHUK, V. Yc.~~,
ZAGREBENYUK, S. D., Moscow, Kiev

"Mechanical Properties of Alloys of Titanium with Vanadium and Aluminum as
Functions of Oxygen Content"

Problemy Prochnosti, No 11, 1971, pp 54-55.

ABSTRACT: The possibilities are studied for production of alloys of titanium
with high contents of oxygen, but retaining high mechanical properties. It
is shown that the addition of vanadium and aluminum produces oxygen-contain-
ing alloy with the required mechanical properties.

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USSR

UDC 621.791.011:546.821:546.833

BLASHCHUK, V. YE., GUREVICH, S.M., ZOTOVA, L.M., LANGER, N.A., GRINEVICH, V.V.,
and STENDER, N. V., Kiev

"Weldability and Corrosion Resistance of an Alloy of Titanium With 5% Ta"

Kiev, Avtomaticheskaya Svarka, No 6, Jun 71, pp 16-18

Abstract: Development of new chemical products, particularly those in which the basic component of the medium is hydrochloric acid, and introduction of rational technological processes requires the use of new corrosion-resistant structural materials. One of these is titanium and its alloys. An alloy of the system titanium - 5% tantalum with a stable alpha-solid solution has been designated for use in hydrochloric acid in the presence of oxidizers at an elevated temperature. Production of this alloy has been mastered and designated alloy grade 4204. The corrosion resistance of alloys 4204, VT1, and OT4 and their weld joints was studied in 18% HCl at 90°C and with a continuous flow of chlorine gas at the rate of 70 ml/min. It was found that alloy 4204 possesses higher corrosion stability than alloys OT4 and VT1. 4 figures, 1 table, 7 bibliographical references.

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USSR

UDC 620.17:669.295:621.791.052

GUREVICH, S. M., KORNILOV, I. I., BLASHCHUK, V. YE., VAVILOVA, V. V., and MAKSIMOV, YU. A., Institute of Metallurgy imeni A. A. Baykov

"Mechanical Properties of Welded Joints of Titanium Alloys With an Increased Oxygen Content"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 39-41

Abstract: A study was made of the effect of oxygen on the weldability of Ti-V-O and Ti-V-Al-O alloys. Results are presented from estimating the mechanical properties of the welded joints at room temperature. Alloys of 8 compositions were manufactured for the investigation. Data from the chemical and gas analysis of the initial alloys, the results of the effect of oxygen on the mechanical properties of titanium alloys with 2.5% V and 2.5% V + 2% Al at room temperature, and the results of gas analysis of the weld metal were tabulated. From the data it is concluded that the mechanical properties, including impact toughness of the

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USSR

GUREVICH, S. M., et al., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 3, 1971, pp 39-41

base metal and the welds of alloys with an oxygen content up to 0.3%, remain high. With 0.5% O in alloys of the Ti-V-O system the impact toughness of the weld is the same as that of the base metal. In alloys of the Ti-V-Al-O system with 0.58% O, the plasticity drops sharply as a result of the occurrence of a second phase in the structure. Some microstructural characteristics of one of the alloys are presented. Preliminary conclusions are drawn that alloys of the Ti-V-O system with 2.5% V, and the Ti-V-Al-O system with a 5% V, and the 3-3.5% Al system are less sensitive to oxygen and be welded with an oxygen content up to 0.3% in the base metal.

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USSR

UDC 669.018.8

GUREVICH, S. M., KORNILOV, I. I., VAVILOVA, V. V., ZOTOVA, YE. M.,
BLASHCHUK, V. YE., and MAKSIMOV, A. M., Academy of Sciences
USSR, Institute of Metallurgy imeni A. A. Baykov

"Study of Corrosion Resistance of Titanium Alloys in the Titanium-
Vanadium-Oxygen and Titanium-Aluminum-Oxygen Systems"

Moscow, Zashchita Metallov, Vol 7, No 2, Mar-Apr 71, pp 159-160

Abstract: The authors studied the resistance of alloys in the systems mentioned in the title with oxygen contents from 0.1 to 0.5 wt %, vanadium and aluminum contents constant at 2.5 and 3 wt. % respectively, and of their welded joints, to corrosion cracking under stress in fused $MgCl_2$. No intercrystalline cracks were observed visually or with a microscope. Photographs of the microstructure of welded joints of the metal are presented.

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Welding

USSR

UDC 621.791.856.3.011:546.821

GUREVICH, S. M., Doctor of Technical Sciences, BLASHCHUK, V. Ye., Engineer,
ZAGREBENYUK, S. D., Engineer, KORNILOV, I. I., Doctor of Technical Sciences,
GLAZOVA, V. V., Candidate of Chemical Sciences, and MAKSIMOV, Yu. A., Engineer

"Weldability of Titanate Alloys with Increased Content of Oxygen"

Kiev, Avtomaticheskaya Svarka, No 5, May 71, pp 72-73

Abstract: The weldability of alloys of the systems titanium-vanadium and titanium-vanadium-aluminum with 0.25-0.35% of O parts by weight was investigated at the Electric Welding Institute imeni Ye. O. Paton and the Institute of Metallurgy imeni A. A. Baykov, in order to determine the possibility of increasing the oxygen concentration in weldable titanium alloys and the conditions under which welded joints with satisfactory properties, even with an increased O content, can be produced. A demonstrated comparison of mechanical properties of welded joints of the investigated alloys and alloys of the system titanium-molybdenum-zirconium shows that only the alloys with vanadium possess high endurance and plasticity at increased O concentration. Preliminary experiments proved the possibility of using titanium with a raised O concentration for producing satisfactorily weldable titanium alloys. One figure, one table.

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USSR

UDC 621.791.756.011:546.821

GUREVICH, S. M., BLASHCHUK, V. Ye., NOVOKOV, V. I., and LEBEDEV, V. K.,
Institute of Electric Welding imeni Ye. O. Paton

"Local Thermal Processing of Welded Vessels Made of AT3 Titanium Alloy"

Kiev, Avtomaticheskaya Svarka, No 2, Feb 71, pp 12-14

Abstract: A study was made of the possibilities for removing the residual stresses in the weld seams of AT3 vessels and in the area near the seams by local thermal processing. Because there were no available data on the residual stresses in the AT3 alloy, the nature and amount of these stresses in welded joints of thick sections of the metal had to be studied through experimentation, which was done on approximately square specimens of the alloy. Preliminary work, consisting of heating the specimen to 600-650°C for two hours, then cooling, was to determine the extent to which the residual stresses in the welded seam and its surroundings were removed and whether local heating could reduce the longitudinal residual stresses. The latter received special attention since cracks in titanium alloy welds are usually at right angles to the seam. The residual stresses were measured with DK-20 tensometers. It is concluded that local thermal treatment

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GUREVICH, S. M., et al, Avtomaticheskaya Svarka, Kiev, No 2, 1971, pp 12-14

is effective in reducing or eliminating residual longitudinal stresses, and such treatment is recommended for circular welds on vessels. A table of the stresses measured with and without local thermal processing is given.

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BLASHKOVSKIY, V. A.

Radiation
Medicine

COLEEN

SO:SPRS 53448
24 JUNE 71

UDC 629.782:539.16.08

DIAGNOSTIC MEASUREMENTS ABOARD A SPACESHIP USING NUCLEAR EMULSIONS

Article by V. A. Blashkovskiy, B. S. Skvortsov and L. H. Shteynlyk, Moscow, *Kosmicheskaya Biologiya i Meditsina*, Vol 5, No 2, 1971, pp 50-53, submitted for publication 8 May 1971

Ionizing radiation is one of the negative spaceflight factors which affects man in circumterrestrial space. At the flight altitude of the "Soyuz-3" ship a component is subjected to galactic cosmic radiation which for the most part consists of fast protons and heavy nuclei. In addition, a component is also exposed to the softer radiation of the earth's radiation belt, which in the region of the Brazilian anomaly descends to the flight altitude of the "Soyuz-3" spaceship. A peculiarity of these types of radiation is that the quality factor can differ from unity. Accordingly, for determining the true dose it is necessary to analyze the composition of the ionizing radiation. For this purpose nuclear emulsions were incorporated in the individual dosimeters during flight of the "Soyuz-3" ship piloted by G. P. Hergevoy. These emulsions were rectangular layers 400 μ thick with linear measurements 35 x 45 mm. M-2 emulsions were used; these are sensitive to all charged particles, including relativistic electrons. Layers of Ya-2 emulsion sensitive to particles having ionization losses greater than 7 MeV/cm and layers of M-3 and M-4 emulsions which register only heavy nuclei were also used.

Using nuclear emulsions it was possible not only to separate flakes of singly and multiply charged particles, but also to separate the doses created by corpuscular radiation and background γ -radiation.

The following method was used for this purpose. Layers of Ya-2 emulsions from the same consignment from which the layers were prepared for measurement on the "Soyuz-3" ship were exposed to γ -radiation from a ⁶⁰Co source in the range of exposure dose from 0.02 to 1 R. The density of the granular background created by soft electrons generated in the photolayer during absorption of γ -radiation was counted under the microscope in the irradiated and developed layers. The density of developed silver bromide grains per 1,000 μ^2 was determined. Data from calibration of the nuclear emulsions

USSR

UDC 621.315.592

BLASHKU, A. I., VOLTAKS, B. I., BURDIYAN, I. I., DZHAFAROV, T. D., RZAYEV, M. A.

"Temperature and Concentration Dependencies of the Diffusion Coefficient of Zinc in Gallium Antimonide"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 3, 1972, pp 467-472

Abstract: In order to exclude the concentration dependence of the diffusion coefficient in each separate sample and discover the migration mechanism of zinc in gallium antimonide, a study was made of diffusion by the isoconcentration diffusion method. The chemical diffusion of zinc in GaSb specimens alloyed with tellurium with different concentrations was also investigated.

Radioactive isotopes were used to investigate the chemical and isoconcentration diffusions of ^{65}Zn in n-type and p-type gallium antimonide alloyed with tellurium or zinc in the temperature range of 510-680° C. During chemical diffusion, the effective diffusion coefficient (D_{eff}) depends linearly on the concentration. As follows from experiments in electron transfer, zinc in gallium antimonide is shifted in the form of positive ions with an effective charge close to +1. A model is proposed for explaining the observed behavior of zinc in gallium antimonide.

During chemical diffusion, the values of D_{eff} are less than during

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BLASHKU, A. I., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 3, 1972, pp 467-472

isoconcentration diffusion, and with an increase in temperature, the difference in the values of D_{eff} decreases. It was proposed that the observed decrease in D_{eff} during chemical diffusion may be the result of the effect of braking internal electric fields occurring during diffusion of zinc in n-type gallium antimonide. The effect of the zinc vapor pressure on diffusion was also investigated. The diffusion mechanism is of a dissociative nature. The decrease in the effective diffusion coefficient in n-type GaSb heavily alloyed with tellurium can be connected with the effect of both electron-hole interaction and complex formation between the zinc and tellurium on diffusion [A. I. Blashku, et al., FTP, No 5, 755, 1971].

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USSR

UDC: 621.373.072.6

BLATT, A. A.

"Automatic Frequency Control of a Sutton Tube With a Discriminator Based on Two Cavity Resonators"

Sb. tr. Leningr. in-t inzh. zh.-d. transp. (Collected Works of the Leningrad Institute of Railway Transportation Engineers), 1971, vyp. 316, pp 3-10 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D382)

Translation: An investigation is made of frequency stabilization of a Sutton tube with the use of AFC with a discriminator based on two cavity resonators. The dynamic properties of the system are determined, and the errors which arise in the system due to the effect of various destabilizing factors are evaluated. Bibliography of seven titles. Resumé.

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Luminescence

(8)

USSR

UDC 661.143:546.431'821'185(088.8)

GUGEL', B. M., LODYGIN, N. A., GOLUBEV, I. F., KHIZHA, V. S., BLYAKHMAN, E. A., KUTSENKO, N. A., SIDOROV, M. D., ZVIYAGIN, V. B., VAKHRAMOV, V. P., AGAPOV, V. I., GARKUSHA, V. A., KHUSAINOVA, R. S.

"Phosphor for Low-Pressure Luminescent Tubes"

USSR Author's Certificate No 336342, filed 19 May 70, published 22 May 72 (from RZh-Khimiya, No 2(II), Feb 73, Abstract No 2L148P)

Translation: In order to increase the light yield of the tubes, the proposed phosphor includes the following: barium-titanium phosphate, calcium halophosphate, strontium and magnesium orthophosphate and magnesium fluorogermanate. The barium-titanium phosphate, the calcium halophosphate, the strontium orthophosphate, magnesium orthophosphate and magnesium fluorogermanate are introduced in the following proportions by weight: 4-6:2.5-4:0.4-0.8:0.13-0.25 respectively. As an example, let us take weighed samples of 4.36 kg of barium-titanium phosphate, 3.84 kg of calcium halophosphate, 0.40 kg of magnesium-strontium orthophosphate and 0.24 kg of magnesium fluorogermanate. Put them in a porcelain cylinder and mix for 1 hour. A suspension is prepared from the mixture obtained and it is applied to the tubes.

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USSR

UDC 620.17

AZARKEVICH, L. B., BLAYKHMAN, YE. M., MAKOVETSKIY, V. A., and MIL'KOV, V. G.

"A Rubber-Like Optically Sensistive Material on the Basis of Oligodiene Epoxy FDI-3A"

Tallin, VII Vses. Konf. po Plyarizats.-Optich. Metodu Issled. Napryazh., 1971
-- Sbornik (Seventh All-Union Conference on the Polarization-Optical Method of Stress Research -- Collection of Works), Vol. 2, 1971, pp 106-109 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2V1656)

Translation: A report is given on the composition and opticomemchanical properties of optically sensitive materials made of the oligodiene epoxy FDI-3A in combination with epoxy resins. When applied as photoelastic coatings such materials make possible the measurement of plastic deformations from 2 to 30%. A calibration diagram is presented for one of the materials. Samples from the obtained materials were subjected to repeated loadings (stretching or pure fracture), and on the basis of 1.5 -- 2.0 thousand cycles the stability of the opticomemchanical properties of the photoelastic coating was shown. In addition, these materials possessed low optical sensitivity. The last two properties are particularly useful in the measurement of accumulated deformations during repeated loadings.

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USSR

UDC: 612.81.08

BLAYVAS, A. S., Laboratory of Analyzer Physiology (Headed by V. G. Samsonova), Institute of Higher Nerve Activity and Neurophysiology, USSR Academy of Sciences, Moscow

"A Method of Stimulating Conducting Brain Paths by an Electric Current"

Leningrad, Fiziologicheskiy zhurnal SSSR imeni I. M. Sechenova, No 10, vol 58, 1972, pp 1633-1636

Translation: In modern experimental neurophysiology, the stimulation of conducting paths in the depths of the brain is usually accomplished by bipolar stimulating electrodes (SE) with small (up to 1 mm) interelectrode distances, without taking into account the shape and dimensions of the structure to be investigated (/7,10,12/ and others). Such small distances are used to avoid an "overflow" of current into neighboring portions of the brain tissue that may cause excitation of nearby cell groups or fibers of a different type. Similar methods of stimulation are fully justified for studying the overall evoked potentials (EP). In investigating the reactions of individual neurons, however, such SE may turn out to be stronger in their effect on nearby fibers and weaker for fibers at a distance even if the latter are at the limits of the stimulating structure.

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BLAYVAS, A. S., Fiziologicheskiy zhurnal SSSR imeni I. M. Sechenova, No 10, vol 58, 1972, pp 1633-1636

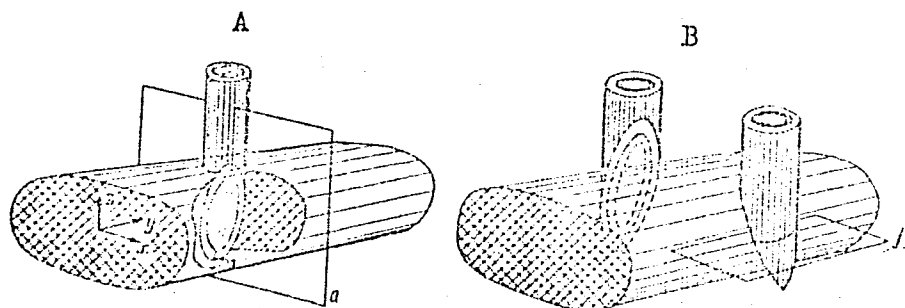


Fig. 1. Schematic Drawing of the Electrodes

A -- Electrode 13K14 in the optical tract of the cat. On the end of the tract, the direction of the stereotaxic x, y, and z axes is indicated; B -- Schematic of the "two-trunk" electrode. Planes a and b are explained in the text.

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