

1/2 009 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ISOLATION OF AGAROSE AND GRANULATION OF AGAR AND AGAROSE GEL -U-
AUTHOR-(03)-EGOROV, A.M., VAKHABOV, A.KH., CHERNYAK, V.YA.
COUNTRY OF INFO--USSR
SOURCE--J. CHROMATOGR. 1970, 46(2), 143-8
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--AGAR, GEL, MECHANICAL SEPARATION

CONTROL MARKING--NO RESTRICTIONS
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CIRC ACCESSION NO--AP0117729
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--23OCT70

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AGAROSE WAS ISOLATED FROM DIFCO BACTAGAR BY FRACTIONATION WITH (NH SUB4)SUB2 SO SUB4 AND ME SUB2 CO. A MODIFICATION OF THE METHOD OF L. PHILIPSON AND S. BENGTSSON (1964) WAS USED FOR GRANULATION OF AGAR AND AGAROSE. A SPRAYER HAVING REMOVABLE DISKS WAS DESCRIBED WHICH PERMITTED PREPN. OF BEAD SHAPED GRANULES OF ANY SIZE AT GEL CONCNS. OF 2-7PERCENT. SINCE THE SPRAYING OF 1L. OF AGAR REQUIRED IS LESS THAN OR EQUAL TO 2 MIN., NO COOLING OF THE WATER ETHER MIXT. WAS NECESSARY AND THE GEL DID NOT CONGEAL IN THE SPRAYER. ALSO, THE N PRESSURE USED FOR SPRAYING HAD LESS EFFECT ON THE GRANULE SIZE THAN SQUEEZING THE SOLN. THROUGH A NEEDLE. FACILITY: LAB. BIOORG. CHEM., MOSCOW STATE UNIV. MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.385.032.26

GORBATOV, D.N., CHERNYAK, YE.YA.

"Some Problems Of An Experimental Investigation Of Electron Beams"

Ukr.fiz.zh. (Ukrainian Journal Of Physics), 1971, 16, No 6, pp 995-998 (from RZh--Elektronika i yeye primeneniye, No 11, Nov 1971, Abstract No 11A25)

Translation: During an experimental investigation of the process of shaping and focusing of an electron beam (EB), the geometry of the EB and the distribution of the current density were measured at various cross sections. The analyzer which was developed and the method of measuring the parameters made it possible to study an EB with any form of cross section. The experimental relationships were automatically recorded on the tape of electron recording potentiometers, which made it possible to increase the precision and information of the measurements. The results of measuring the outline of a ribbon diverging EB in the transnode space of the gun during the presence and in the absence of a channel close to the surrounding EB are compared with the data of modeling and computation. Summary.

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CHERNYAKOV, G. A.

Anti-flu vaccination

J-8605

62

REF ID: A616921
501 Airway Research Institute
Nov 1973

EFFECTIVENESS OF ANTI-FLU VACCINATION
IN TRUSS OF FID ESTABLISH
G. A. Chernyakov, Lieut.-Col., Red. Ser.
V. I. Zhuravskiy, Major, Red. Ser.

Opinions as to the effectiveness of anti-flu vaccination are divided. Thus, I. P. Maslov (1972) regards inoculations against influenza as not very effective. In the other hand, the majority of authors point to the lowering of the incidence of flu among persons who had been vaccinated. According to the figures of L. I. Melnyuk (1960), the incidence of the disease among those who had been inoculated in four time less than among those who haven't, according to A. A. Shorodnikov (1972) - 15 to three times less. Good results in using anti-flu vaccination in the armed forces were obtained by I. V. Shantrenska in 1957 and L. P. Kartsev (1972). Many researchers note the efficacy of the vaccination with the percentage of coverage in a given collective (A. A. Shorodnikov et al., 1953; V. P. Gerasimova et al., 1963) as well as with the number of individual inoculations (A. A. Stepanov et al., 1960). Nevertheless, anti-flu vaccinations are not included in the list of mandatory inoculations for armed forces personnel. Generally, such inoculations are not given even in the presence of epidemiological indications or not given even in the case of anti-flu vaccination. In this connection, we consider it useful to share the results of our study of the effectiveness of anti-flu vaccination carried out during the period of the flu epidemic of January - February 1970.

Under observation were three military collectives, differing neither in age (18 - 21) nor in living or working conditions. Such nature of the groups was obtained in a separate building and by the very nature of their service, had extensive contact with the civilian population.

In the first collective, 60 percent of the personnel were given anti-flu inoculations on 9, 19 and 29 December 1969. The remainder of that group was inoculated on 25 December 1969 and on 5 and 25 January 1970. Used for inoculation was vaccine No. 1 prepared by the Krasnodar Scientific-Research Institute of Virology and prepared by the Krasnodar control No. 506, expiration date: 28 March 1970, and vaccine No. 1 prepared by the Dnepropetrovsk Plant for bacteriological preparations (expiration date: 31 October 1969, expiration date: 28 February 1970). The method used in both cases consisted of spraying the vaccine into the nasal passages with the aid of an atomizer. In accordance with instructions, the entire personnel of the unit was vaccinated with inoculations. No adverse reactions to the vaccination were observed.

In the second collective, on 8, 11 and 14 January 1970, a seroprophylactic was carried out on 80 percent of the personnel, with the use of an anti-flu serum of type A and B with aluminum, with preparation of the Establishment for the Production of Anti-Bacterial and Serum (Serum No. 776, control No. 616, expiration date: 7 May 1971). The serum was introduced in the form of a powder spray into the nasal passages, with the aid of a pulverizer, in accordance with instructions.

Immunology

USSR

UDC 616.921.5-084

CHERNYAKOV, G. A., Lt Col Med Serv, and DVORNIKOV, N. P., Maj Med Serv

"The Effectiveness of Influenza Vaccine During an Influenza Epidemic"

Moscow, Voenno-Meditsinskiy Zhurnal, No 11, 1970, pp 46-48

Abstract: Just before the 1969-1970 influenza epidemic peaked in December and early January, a group of young soldiers was vaccinated intranasally with A₂ vaccine while a similar group received anti-influenza serum. A third group that received neither vaccine nor serum served as the control. The vaccinations reduced the incidence of the disease by a factor of 4.6 while seroprophylaxis reduced it only 1.4 times. Whereas in the control group cases were reported early in January, no cases were reported in the other two groups until February and the distribution by days among the vaccinated was more uniform than among the nonvaccinated. However, the course of the disease caused by A₂ virus, was essentially the same in both the vaccinated and nonvaccinated.

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Aerospace Medicine

USSR

UDC 613.693

MAKSOMOV, I. V., Candidate of Medical Sciences, Maj Med Serv, RITTER, V. V.,
and CHERNYAKOV, I. N., Doctor of Medical Sciences, Lt Col Med Serv

"Procedures for Preparing Oxygen-Nitrogen Gas Mixtures for Breathing in an
Altitude Chamber"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 2, 1973, pp 65-68

Abstract: Apparatus for preparing hyperoxic and hypoxic gas mixtures during altitude chamber tests and the relevant nomograms have been developed. Environmental air is mixed with nitrogen and oxygen from two separate tanks in a T-junction before entering the altitude chamber. Gas feed is pressure-regulated by spray nozzles before the T-junctions. Spray nozzle pressure is preset to correspond with the needed final gas mixture parameters. Formulas for determining gas mixture consumption within 10-40 nanoliters/min are provided. Nomograms included can be used to determine the necessary feed rates of oxygen, nitrogen, and air when the total gas mixture feed rate and percent oxygen required are known, and to determine the percent oxygen content that corresponds to a particular simulated altitude.

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USSR

UDC 632.95

MEL'NIKOV, N. N., SHVETSOVA-SHILOVSKAYA, K. D., SAPOZHKOY, YU. N., and
CHERNYAKOV, I. YE.

"Dicresyl Compound"

V sb. Khim sredstva zashchity rast. (Chemical Agents for Plant Protection -- collection of works), vyp 1, Moscow, 1970, pp 56-60 (from RZh-Khimiya, No 11, Jun 72, Abstract No 11N399)

Translation: A mixture of meta- and para-cresyl esters of N-methylcarbanic acid, called dicresyl, is recommended for use against ticks on animals and birds. The mixture in a ratio of 1:1 is no less effective than pure meta-cresyl ester. Dicresyl can be synthesized by reacting a mixture of cresols with phosgene in the presence of acid-binding agents with subsequent methylamine treatment of the resultant chloroformate ester; by amidizing absolute cresyl carbonate, and by reacting a mixture of cresols with K_2CO_3 .
P. V. Popov

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USSR

YARLYKOV, M. S. and CHERNYAKOV, M. V.

"Suboptimal Approach for Noncoherent Signals in Asynchronous Address Systems with Frequency-Time Coding"

Probl. Peredachi Inform. [Problems of Information Transmission], 1973, 9, No 2, pp 43-52 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V475)

Translation: On a Bayes basis, using methods of optimal statistical decisions, a suboptimal receiver is synthesized for noncoherent signals in an asynchronous address system with frequency-time coding. The signal is studied in the presence of additive white noise and pulse noise within the system, approximated by a Poisson stream. Modulation of signals by the message transmitted is assumed various, and their initial phases are considered random, distributed evenly between $-\pi$ and π .

Author's view

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USSR

UDC: 669.14.018.8.004.12

GAVRILENKO, Yu. V., CHERNYAKOV, V. A., VOYNOV, S. G., Central Scientific Research
Institute of Ferrous Metallurgy
"Nonmetallic Inclusions in Chromium Stainless Steel"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 12,
1973, pp 53-55.

Abstract: Nonmetallic inclusions in chromium stainless steel were studied by various methods in steels produced by ordinary steel making processes and in steels treated in the ladle with liquid synthetic slag. The studies showed the effectiveness of this technology for the production of metals with low content of sulfur, oxygen and nonmetallic inclusions. The inclusions were studied by metallographic testing, electrolytic dissolution and micro-spectral analysis. It was shown that the nonmetallic inclusions in the experimental metal include large quantities of alumina, some manganese oxide and ferrous oxide, creating good conditions for assimilation and removal from the metal. The mean and maximum percentages of oxides and globules, as well as the contents of oxygen and nonmetallic inclusions were lower in the metal treated by the synthetic slag, sharply reducing the danger of hairline cracking.

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USSR

UDC 669.18.046.558

USHAKOV, S. T., CHERNYAKOV, V. A., VOINOV, S. G., KEYS, N. V., and PRONICHKIN, A. A., Chelyabinsk Metallurgical Plant and Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Improving the Properties of Kh18N10T Steel From 100-ton Electric Furnaces by Refining the Steel in the Ladle with Liquid Synthetic Slag"

Moscow, Stal', No 3, Mar 73, pp 230-232

Abstract: Two variants of refining 100-ton melts of Kh18N10T stainless steel with liquid synthetic aluminaceous-lime slag were tested at the Chelyabinsk Metallurgical Plant: 1) Simultaneously with titanium alloying (in the form of 70% ferrotitanium on sponge titanium briquettes), and 2) After alloying, introduction of 30% or 70% ferrotitanium into the furnace. The contents of O, N, S, and nonmetallic inclusions in the steel, the degree of Ti-adaption in the alloying process, and some technological properties of the metal were investigated. The experimental metal of the first variant possessed higher anticorrosive and plastic properties, and is characterized by lower S- and O-contents and lower nonmetallic inclusions. The introduction of the first variant into industrial production contributed to an increase of technological plasticity and to an improvement of the surface quality of slabs, tubes, and sheets. Three figures, one table, two bibliographic references.

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USSR

UDC: 532.526

CHERNYAKOV, V. M.

"Turbulent Boundary Layer in Multicomponent Mixture on a Chemically Active Surface"

Tr. Leningr. politskhn. in-ta (Works of the Leningrad Polytechnical Institute) No. 313, 1970, pp 72-82 (from RZh-Mekhanika, No. 8, Aug 70, Abstract No. 8B920)

Translation: An apparatus and a method are proposed for solving the problem of the destruction of a chemically active surface in a flow of a dissociating gas in the formation of a turbulent boundary layer. The investigation is conducted on the basis of a semi-empirical theory in the framework of a two-layered system of the turbulent boundary layer. The surface of the plate is considered ideally catalytic. It is assumed that the reaction in the boundary layer is "frozen." The diffusion flows in the laminar sublayer are determined with the various effective diffusion coefficients characteristic of each component, taken into account.

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USSR

CHERNYAKOV, V. M., Tr. Leningr. politekhn. in-ta, No 313, 1970,
pp 72-82

The solution is constructed with consideration given to the variation of the effective Schmidt and Prandtl numbers at right angles to the laminar sublayer. The turbulent analogs of the Prandtl and Schmidt numbers are taken equal to unity. As an illustration, the method is used in the consideration of the destruction of a plate consisting of a complex chemical composition with the formation of combustion products involving H, C, N, and O. Bibliography of 10. Author's abstract

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USSR

UDC 536.246:532.517.4

CHERNYAKOV, V. M.

"Turbulent Boundary Layer in a Multicomponent Mixture on a Chemically Active Surface"

Trudy Leningradskogo Politekhnicheskogo Instituta, Aerotermodinamika
(Works of the Leningrad Polytechnical Institute, Aerothermodynamics),
No 313, 1970, pp 72-82

Translation: The statement and method of solving the problem of destruction of a chemically active surface in a flow of dissociated gas are presented in the case of formation of a turbulent boundary layer. The study is performed on the basis of semiempirical theory within the framework of the double-layer scheme of a turbulent boundary layer. The plate surface is considered ideally catalytic. It was proposed that the reactions in the boundary layers are "frozen." The diffusion flows in a laminar sublayer are determined considering various effective diffusion coefficients inherent in each component. The solution is constructed considering the variability of the effective Schmidt number and the

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USSR

CHERNYAKOV, V. M., Trudy Leningradskogo Politekhnikheskogo Instituta, Aerotermodinamika (Works of the Leningrad Polytechnical Institute, Aerothermodynamica), No 313, 1970, pp 72-82

Prandtl number across the laminar sublayer. The turbulent analogs of the Prandtl and Schmidt numbers are assumed equal to 1. Destruction of the plate made of material of complex chemical composition with the formation of products of combustion consisting of the elements H, C, N and O was investigated as an illustration of the proposed method. There are 4 illustrations and a 10-entry bibliography.

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Chernyakova, A.M. Physics - Atlantic Photosyn. Layer

JPRS 56398

30 June 1972

Rate of Chemical Processes in Tropical Atlantic Photosynthesis Layer

This paper gives a quantitative estimate of the rate of production and biochemical consumption of oxygen, the rate of assimilation and regeneration of the principal biogenous elements in the photosynthesis layer, and also the rate of the photosynthesis process in summer in the Atlantic Ocean at 16.5°N at 32-33°W. This estimate is given on the basis of use of data on the variability in situ of the content of oxygen, nitrates and silicic acid at two stations occupied for three days. It was found that half the primary production is created in the lower part of the photosynthesis layer. This picture is characteristic not only for the investigated area, but also for the entire tropical zone of all the oceans. The quantity of diurnal primary production under a unit area in summer for the particular region was four times greater than indicated in the literature. Accordingly, there was also a greater rate of production and consumption of oxygen, assimilation and regeneration of the principal biogenous elements. In the photosynthesis layer in the tropics the daily consumption in oxygen and regeneration of nitrogen and phosphorus compounds is 90-95 percent of the diurnal oxygen production and the consumption of nitrates and phosphates.

(Abstract: "Rate of Chemical Processes in the Photosynthesis Layer in the Tropical Atlantic," by V. N. Ivanenkov, V. V. Sapozhnikov, A. M. Chernyakova and A. N. Gusarova, Institute of Oceanology; Moscow, Okeanologiya, Vol XII, No 2, 1972, pp 243-250)

Oceanology
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USSR

UDC 621.187:669.018.2

CHERNYAKOVA, L. YE., SHUGAYENKO, V. K., VORONTSOV, N. M., SANDLER, N. I.,
and PATSEKA, R. F., Ukrainian Scientific Research Institute of Metals

"Electron-Microscope Study of Excess-Phase Precipitation in the Deformation of Alloy 36NKhTYu"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 8, Aug 73, pp 16-19

Abstract: The structural properties of alloy 36NKhTYu containing (in %): 0.04 C, 1.1 Mn, 0.36 Si, 36 Ni, 12-13 Cr, 3 Ti, 1.2 Al, balance-Fe, were studied in relation to degree of deformation and tempering mode. Strip samples 0.15 mm thick were water quenched from 1100°C, rolled with a high degree of reduction (50-70%), and tempered at 600-750°C for two hours. It was found that decomposition of the solid solution in the alloy with precipitation of the metastable gamma'-phase (NiFe)₃ (TiAl) with an FCC lattice starts even in the deformation process: at 50% primarily along the grain boundaries and at 70% -- in the grain volume. Decomposition of the solid solution when deformed at 600-650°C is characterized by discontinuous precipitation along the grain boundaries and in 1/2

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USSR

CHERNYAKOVA, ET AL., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 8, Aug 73, pp 16-19

the colonies of grains in the volume of metastable gamma'-phase particles; at 700-750°C it is characterized by continuous precipitation of finely dispersed gamma'-phase particles in the matrix volume. The formation of the stable intermetallic nu-phase, leading to softening, starts during alloy deformation after tempering at 700°C for two hours. Three figures, eight bibliographic references.

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USSR

UDC 612.6.054.017.4

CHERNYAKHOVSKAYA I. Yu., SHAGIYAN, F. Sh., and SVET-MOLDAVSKIY, G. Ya.,
Virology Laboratory, Institute of Experimental and Clinical Oncology, USSR
Academy of Medical Sciences

"Correlation Between the Degree of *Trichinella spiralis* Invasion of Mice and
Suppression of Transplantation Immunity"

Moscow, Doklady Akademii Nauk SSSR, Vol 196, No 6, 1971, pp 1,490-1,492

Abstract: This investigation was performed in support of our previously expressed view that certain parasitic helminths produce substances which suppress the host's immunological reactions and thus facilitate their own survival. Skin grafts were transplanted from healthy mice onto mice invaded with *Trichinella spiralis* (experimental group) and onto healthy mice (control group). The survival time of the grafts was determined; after completion of observation, the recipients were sacrificed and the concentration of trichina per 1 gram body weight was determined. In the control group, necrosis of the grafts began on about the 10th day, full necrosis was reached on the 13th day, and healing occurred on the 19th day on the average. In the experimental

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USSR

CHERNYAKHOVSKAYA, I. Yu., et al., Doklady Akademii Nauk SSSR, Vol 196, No 6, 1971, pp 1,490-1,492

group, the corresponding periods were 15, 18 and 24 days. The large individual variations in the experimental group showed a good correlation with trichina concentration: the greater the latter the more delayed were the reaction periods. Thus, the results indicate that the presence of *Trichinella spiralis* suppresses the rejection of skin grafts in direct proportion to the degree of invasion but does not completely inhibit immunoreactivity of the host. The mechanism of the suppression is not yet clear. It may well be that the immunological effectiveness of lymphocytes is diminished by certain substances produced by *Trichinella spiralis*.

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Organ and Tissue Transplantation

USSR

UDC 612.6.054.017.4

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SVET-MOLDAVSKIY, G. Ya., SHAGIYAN, G. Sh., MKHEIDZE, D. M., LITOVCHENKO, T. A.,
OZERETSKOVSKAYA, N. N., KADAGIDZE, Z. G., and CHERNYAKHOVSKAYA, I. Yu., Institute
of Experimental and Clinical Oncology, Academy of Medical Sciences USSR, Moscow
(Presented by Academician V. V. Parin)

"Inhibition of Transplantation Immunity in Mice Infected With *Trichinella spiralis*"

Moscow, Doklady Akademii Nauk SSSR, Vol 190, No 4, Feb 70, pp 999-1000

Abstract: In this study the authors attempted to get experimental support for the theory proposed by Svet-Moldavskiy that helminths produce substances which drastically inhibit the immunity of the host. Experiments were based on skin transplants. It was determined that in mice infected with *Trichinella spiralis*, the allogenic skin transplant survived much longer, and the detachment of necrotic sections occurred much later than in controls.

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1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--PHASE EQUILIBRIUMS IN SYSTEMS INVOLVING ALKALI METAL METABORATES
-U-
AUTHOR--(03)--LESNYKH, D.S., YEIKHENBAUM, I.G., CHERNYAKHOVSKAYA, S.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 824-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--TERNARY FLUID SYSTEM, PHASE EQUILIBRIUM, ALKALI METAL HALIDE,
BORATE, MELTING POINT, EUTECTIC
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FAME--1994/1375 STEP NO--UR/0078/70/015/003/0824/0828
CIRC ACCESSION NO--AP0115694
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0115694

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHASE EQUIL. WERE DETD. IN THE MUTUAL TERNARY SYSTEMS LI PRIME POSITIVE, NA PRIME POSITIVE MAGNITUDE OF CL PRIME NEGATIVE, BO SUB2 PRIME NEGATIVE AND NA PRIME POSITIVE, CS PRIME POSITIVE MAGNITUDE OF BR PRIME NEGATIVE, BO SUB2 PRIME NEGATIVE AND PROJECTIONS OF THEIR PHASE DIAGRAM ARE GIVEN. THE DIAGONAL SECTIONS OF LI PRIME POSITIVE, NA PRIME POSITIVE MAGNITUDE OF CL PRIME NEGATIVE, BO SUB2 PRIME NEGATIVE, OF NA PRIME POSITIVE, CS PRIME POSITIVE MAGNITUDE OF BR PRIME NEGATIVE, BO SUB2 PRIME NEGATIVE, OF NA PRIME POSITIVE (K PRIME POSITIVE, RB PRIME POSITIVE, CS PRIME POSITIVE) MAGNITUDE OF CL PRIME NEGATIVE, BO SUB2 PRIME NEGATIVE, OF NA PRIME POSITIVE (K PRIME POSITIVE, RB PRIME POSITIVE) MAGNITUDE OF BR PRIME NEGATIVE, BO SUB2 PRIME NEGATIVE, AND OF NA PRIME POSITIVE (K PRIME POSITIVE, RB PRIME POSITIVE) MAGNITUDE OF I .PRIME NEGATIVE, BO SUB2 PRIME NEGATIVE ARE PRESENTED. SUBSTITUTION OF LESS POLARIZABLE FOR A MORE POLARIZABLE ION IN THESE SYSTEMS CAUSES PHASE SEPN. AND M.P. OF 14 EUTECTICS OF THESE SYSTEMS ARE GIVEN.

UNCLASSIFIED

CHERNYAKHOVSKIY, F. R.

JPRS - 54173
01 OCT 91

UDC 615.835.25

HYPERBARIC CHAMBER 'OKSIBAR-1'

Article by S. A. Glukhov, F. R. Chernyakhovskiy, and Ye. N. Roydman of the All-Union Scientific Research Institute of Medical Instrument Manufacturing, Moscow; Moscow, Meditsinskaya Tekhnika, Russian, No 2, 1971, pp 36-40]

A large number of experimental and clinical investigations during the last decade have demonstrated the future possibilities for applying the therapeutic method of hyperbaric oxygenation in various fields of medicine. The method provides the required conditions for a rapid and effective increase in the partial pressure of physically diluted oxygen and an increased stress gradient and diffusion rate of oxygen between the blood and hypoxic tissues.

There is now an opinion in the special literature regarding the advisability of applying hyperbaric oxygenation in cases of acute and regional oxygen deficiencies of different origin, certain infectious processes, and other pathologies. Depending on the purpose and conditions of their application, hyperbaric chambers are used for therapeutic and surgical procedures as well as for radiation therapy.

One-person therapeutic chambers rule out the simultaneous presence of medical personnel and patient, and this factor significantly limits the scope of therapeutic and reanimation measures during hyperbaric oxygenation. Large pressure chambers designed to include medical personnel and to permit reanimation procedures broaden the possibilities of treatment when the seriousness of the condition requires the presence of physician or nurse (for example, during the postoperative period). The desirability of a physician's presence in the chamber during the treatment period may also be caused by a need to define and further process clinical methodology for certain illnesses, as well as to check

USSR

UDC 531.717.11

CHERNYAKOVA, M. M., VOYTSEKHOV, YU. R.

"Instrument for Quality Control of Conducting and Semiconductor Coatings"

USSR Author's Certificate No 306337, filed 4 Jan 70, published 13 Aug 71 (from RZh--Avtomatika, Telemekhanika i vychislitel'naya tekhnika, No 4, Apr 72, Abstract No 4A551P)

Translation: A device is proposed for quality control of conducting and semiconductor coatings containing a white light source and a shield between which a vessel is placed with a frosted inside surface filled with liquid in which the monitored part is located. The coefficients of refraction for a defined wavelength of the light spectrum of the liquid and the material of the vessel in the temperature range coincide. In order to simplify the instrument design and increase the monitoring efficiency, the instrument is equipped with two beveled mirrors -- one outside reflecting and one inside semitransparent -- which surround the vessel with the monitored part, the axes of symmetry of which coincide with the axis of the vessel, and the geometric apexes are turned toward the opposite ends of the vessel. There is 1 illustration.

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USSR

UDC: 621.7.08

CHERNYAKOVA, M. M., VOYTSEKHOV, Yu. R.

"A Device for Quality Control of Metal and Semiconductor Coatings"

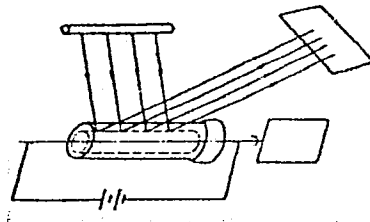
Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 10, Apr 72, Author's Certificate No 332141, Division C, filed 27 Oct 69, published 14 Mar 72, p 105

Translation: This Author's Certificate introduces a device for quality control of metal and semiconductor coatings. The device contains a unit for visualizing a heat field and a mechanical scanning system. As a distinguishing feature of the patent, in order to simplify the design of the device and the process of checking for flaws in coatings, the instrument contains a liquid-filled vessel with a matte inner surface in which a component such as a resistor which is to be inspected is placed. The device also includes a source of white light, the material of the vessel and the liquid being selected so that their indices of refraction coincide at each temperature in a certain interval such as the working temperature range of a resistor for a unique wavelength of the white light spectrum which varies uniquely with temperature.

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USSR

CHERNYAKOVA, M. M., VOYTSEKHOV, Yu. R., USSR Author's Certificate No 332141



2/2

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1/2 018 UNCLASSIFIED PROCESSING DATE--02JCT70
TITLE--CRYSTALLIZATION OF SULFIDE CONTAINING SLAG GLASSES -U-
AUTHOR--(02)-CHERNYAKOVA, R.M., PAVLUSHKIN, N.M.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 357-61
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--SULFIDE, GLASS CRYSTALLIZATION, CALCIUM OXIDE, ALUMINUM OXIDE,
SILICON DIOXIDE, GLASS COMPOSITION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FAME--1989/0502 STEP NO--UR/0363/70/006/002/0357/0361
CIRC ACCESSION NO--AP0107107
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107107

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT WAS STUDIED OF SULFIDE S ON CRYSTN. OF SLAG GLASS IN THE CADAL SUB2 O SUB3 SID SUB2 SYSTEM, THE COMPN. OF WHICH LIES WITHIN THE CRYSTN. FIELD OF WOLLASTONITE NEAR THE BOUNDARY LINE WITH TRIDYMIT. THE CONTENT OF THE SULFIDE S USED VARIED FROM 0.1 TO 0.5PERCENT. THE RESULTS SHOW THAT THE PRESENCE OF SULFIDE S IN SLAG GLASSES INTENSIFIES THEIR TENDENCY TOWARDS SEGREGATION AND THEREBY CREATES THE PRECONDITION FOR THE SUBSEQUENT BULK CRYSTN. THE CONTENT OF THE SULFIDE S PRESENT IN THE GLASSES STUDIED HAS NO EFFECT ON THE PHASE COMPN. OF THE MATERIAL; IT DOES, HOWEVER, DET. TO A SIGNIFICANT DEGREE THE TOTAL AMT. OF THE PPTG. CRYST. PHASE AND THE PROPERTIES OF THE CRYSTD. GLASSES. THE CONC. OF 0.3PERCENT IS THE OPTIMUM AMT. OF THE SULFIDE S ENHANCING BULK CATALYTIC CRYSTN. OF THE GLASSES STUDIED AS WELL AS MAKING FOR THE GREATEST CHANGE IN THEIR PROPERTIES DURING THE CRYSTN. PROCESS. UPON FURTHER INCREASE IN THE SULFIDE S CONTENT THE PROPERTIES OF THE FINISHED MATERIAL FOR ALL PRACTICAL PURPOSES DO NOT CHANGE.

UNCLASSIFIED

CHERNYAKOVA T.A.

Acc. Nr: AP0044698

Ref. Code:
UR 0497

PRIMARY SOURCE: Klinicheskaya Meditsina, 1970, Vol 48,
Nr 2, pp 25-29

RADIOISOTOPE SCANNING OF THE LUNGS

V. S. Afanas'yeva, T. A. Finikova, A. N. Zbants, Yu. V. Balabzov,
T. A. Chernyakova

Summary

Scanning opens up new vistas in the diagnosis of circulatory disturbances in diseases of the lungs. The report is based on an analysis of investigations carried out in 102 patients suffering from different diseases of the lungs (embolism of the pulmonary artery, pulmonary tuberculosis, malignant tumors). After roentgen-tomographic investigation scanning of the lungs was performed 5-10 minutes after intravenous introduction of 200-300 μ C of radio-iodine-labeled macroaggregate albumin. The scintigrams reflected the degree of vascularization of the pulmonary tissue and enabled to establish the volume of disturbances by the presence of «silent» zones and reduction of the radioactivity. The technique is simple and safe for the patients.

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CHERNYAKOVA, V. N.

ENCEPHALOGRAPHIC INVESTIGATIONS OF THE PROCESS OF HUMAN ADAPTATION TO A MODIFIED DAILY SCHEDULE

Article by V. N. Chernyakova, Moscow, Kosmicheskaya Bioloziya i Meditsina, Russian, Vol 6, No 1, pp 38-42, 1972, submitted for publication 5 July 1971

3189 514-87
1-2 1108 1972
UDC 612.822.3.052

Abstract: The period of man's adaptation to an inverted work and rest schedule is dependent on his individual characteristics. Test subjects with unstable circadian rhythms of cerebral bioelectric activity adapted themselves most rapidly. A 72-hour period of wakefulness used as a disturbing factor shortened the time of the restructuring only during the early period of exposure to the inverted schedule. The restructuring period was characterized by a great nature of observational data even during the periods when the mean curve exhibited a tendency to acquire a new rhythm. The scatter decreased as the newly developed rhythm became more stable.

In studying human EEG changes during the day most researchers have noted substantial differences between the EEG registered during wakefulness and sleep. This served as a basis for a detailed study of the successive stages of the EEG for sleep and the transition from wakefulness to sleep (P. Gulyayev, V. Ye. Mayorchik). In experiments with prolonged wakefulness and also under conditions of a modified daily schedule the EEG served as one of the indices of the functional state of the human cerebral cortex (Rodin, et al.; Armitage and Nitiski; D. I. Ivanov, et al.)

In this study an attempt was made to use the peculiarity of the diurnal dynamics of the EEG in an investigation of the possibility of human adaptation to an unusual, modified work and rest schedule, for estimating the degree and time of adaptation, and determining individual peculiarities of this process.

1/2 008 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SYNTHESIS OF SOME DIARYL KETONES -U-
AUTHOR-(05)-MIRNOV, G.S., CHERNYAKOVSKAYA, K.A., FARBEROV, M.I.,
TYULENEVA, I.M., RUSAKOVA, M.S.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(3), 620-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ORGANIC SYNTHESIS, AROMATIC KETONE, AROMATIC HYDROCARBON,
PHOSGENE, ALUMINUM CHLORIDE, CHLOROMETHANE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/1944 STEP NO--UR/0080/70/043/003/0620/0627
CIRC ACCESSION NO--AP0132205
UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0132205
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DIARYL KETONES WERE PREPD. EITHER
BY THE DIRECT REACTION OF AROMATIC HYDROCARBONS WITH PHOSGENE AND ALCL
SUB3, OR BY THE REACTION OF AROMATIC HYDROCARBONS WITH CCL SUB4 FOLLOWED
BY HYDROLYSIS OF THE INTERMEDIATE DIARYLDICHLOROMETHANE.
FACILITY: YAROSLAV. TEKHNOL. INST., YAROSLAVL, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--CONCERNING OPTIMAL BY QUICK RESPONSE CONTROL OF SEVERAL OBJECTS -U-
AUTHOR--CHERNYATIN, V.A. C
COUNTRY OF INFO--USSR
SOURCE--AVTOMATIKA I TELEMEXHANIKA, 1970, NR 3, PP 25-31
DATE PUBLISHED-----70

SUBJECT AREAS--MATHEMATICAL SCIENCES, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--OPTIMAL AUTOMATIC CONTROL, TIME OPTIMAL CONTROL, AUTOMATIC
CONTROL

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/1482 STEP NO--UR/0103/70/000/003/0025/0031
CIRC ACCESSION NO--AP0106238
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106238

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROBLEM OF CONSTRUCTING AN OPTIMAL CONTROL OF SEVERAL OBJECTS SIMULTANEOUSLY ON THE BASIS OF THE CONDITION OF SECURING THE MINIMUM TIME OF CONTROL IS INVESTIGATED. THE NECESSARY OPTIMALITY CONDITIONS REPRESENTING THE COMBINATION OF THE PRINCIPLE OF MAXIMUM AND THE CONDITIONS OF TRANSVERSABILITY IN A CERTAIN INTERMEDIATE POINT ARE OBTAINED. AN EXAMPLE IS CONSIDERED.

UNCLASSIFIED

USSR

CHERNYAUSKAS, V.-A. Yu., TEL'KSNIS, A.-L. A., SRUOGIS, Yu.-V. K.

"Device for Determination of Changes in the Properties of a Random Signal"

Otkrytiya Izobreteniya Promyshlennyye Obraztsy Tovarnyye Znaki, No 5, 1972,
Patent No 355617.

Translation: A device for determination of changes in the properties of a random signal at the output of systems such as oscillating circuits, containing an analog-digital convertor, a shift register, a squaring circuit, adders, multipliers, circuits for calculation of the logarithm of the product of determinants, a control unit, memory register and unit for calculation of the maximum, differing in that in order to increase the accuracy and resolving capacity of the moment of time of change of correlation properties of a random signal, the output of the analog-digital convertor is connected to the input of the shift register; the output of the next to last location in the shift register is connected to the input of the first location and through a squaring circuit, the first adder and the first multiplier, to the first input of the second adder, the second input of which is connected through the second multiplier, the third adder, the second squaring circuit and the fourth adder to the outputs of the next to last and third from last locations of the shift registers; the third input of the second adder is connected through the
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USSR

CHERNYAUSKAS, V.-A. Yu., TEL'KSNIS, A.-L. A., SRUOGIS, Yu.-V. K., Otkrytiya Izboreneniya Promyshlennye Obraztsy Tovarnyye Znaki, No 5, 1972, Patent No 355617.

third multiplier, the fifth adder, the third squaring circuit and the sixth adder to the outputs of the three last locations of the shift register; the fourth input of the second adder is connected to the output of the circuit for calculation of the logarithm of the products of the determinants, the input of which is connected to the output of the control unit, the other outputs of which are connected to the shift register, memory register and inputs of the first, third and fifth adders respectively, while the output of the second adder is connected to the input of the memory register, the outputs of which are connected to the corresponding inputs of the circuit for calculation of the maximum.

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USSR

TEL'KSNIS LAYMUTIS, CHERNYAUSKAS VALENTINAS

"Determination of Changes in Properties of Random Signals"

Stat. Probl. upr. Tr. Seminara. Vyp. 1 [Statistical Problems of Control, Works of a Seminar, No 1 -- Collection of Works], Vil'nyus, 1971, pp 9-30 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1975, Abstract No 1 V342 by Ye. Troitskiy).

Translation: This work is a continuation of earlier works by the authors ("Determination of the Most Probable Moment of Change of the Nature of a Random Process," Nelineynye i Optimal'nye Sistemy [Nonlinear and Optimal Systems -- Collection of Works], Moscow, Nauka Press, 1971), (Tel'ksnis, L. A., "Determination of the Most Probable Moment of Change of Properties of Random Signals," Avtomatika i Vychislitel'naya Tekhnika, No 1, 1970). It is suggested that a certain modification of a posteriori probability $\beta(u|\bar{X})$ be used (where u is the moment of change of properties of process $X(t)$, $\bar{X} = X_1, \dots, X_N$ is the vector of readings of the process), allowing the number of additions necessary in calculation of $\beta(u|\bar{X})$ to be reduced by a factor of N . The determinants of correlation matrices $|k_{ij}|$ can be calculated by using the apparatus of the theory of orthogonal poly-
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USSR

TEL'KSNIS LAYMUTIS, CHERNYAUSKAS VALENTINAS, Stat. Probl. upr. Tr. Seminara. Vyp. 1, Vil'nyus, 1971, pp 9-30.

nomials in a unit circle with a weight equal to the spectral density of process $X(t)$. Examples of calculations of functions $\beta(u|\bar{X})$ are presented, when process $X(t)$ is described up to moment in time u by correlation function $K_1(\theta, \tau)$, and after moment u by function $K_2(\theta, \tau)$. For these examples, data from statistical experiments are presented. In the case when the process $X(t)$ does not change its statistical properties in the interval $[0, T]$, it is suggested that the form of the function $\beta(u|\bar{X})$ be used to distinguish processes with correlation functions $K_1(\theta, \tau)$ and $K_2(\theta, \tau)$.

2/2

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1/2 021

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--THE EFFECT OF SOME VASO ACTIVE SUBSTANCES ON THE CAPACITANCE AND
RESISTANCE VESSELS OF THE SKELETAL MUSCLES -U-

AUTHOR--CHERNYAVSKAYA, G.V.

COUNTRY OF INFO--USSR

SOURCE--FIZIOLOGICHESKIY ZHURNAL SSSR IMENI I. M. SECHENOVA, 1970, VOL 56,
NR 3, PP 325-383

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MUSCLE PHYSIOLOGY, ACETYLCHOLINE, EPINEPHRINE, SEROTONIN,
CIRCULATORY SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1982/1606

STEP NO--UR/0239/70/056/003/0375/0383

CIRC ACCESSION NO--AP0052801

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0052801

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESPONSES OF THE CAPACITANCE AND RESISTANCE VESSELS OF THE SKELETAL MUSCLES WERE STUDIED UNDER CONDITIONS OF AUTO PERFUSION WITH CONSTANT VOLUME PERFUSION PUMP. EPINEPHRINE, NOREPINEPHRINE, ACETYLCHOLINE, SEROTONINE, PAPAVERINE, COFFEIN WERE ADMINISTERED INTRARTERIALY WITH AID OF PERFUSION PUMP. EPINEPHRINE, NOREPINEPHRINE, SEROTONIE INDUCED CONSTRICTION OF THE CAPACITANCE VESSELS AND BIPHASIC RESPONSES OF THE RESISTANCE VESSELS (A DILATATION WITH THE FOLLOWING MORE DISTINCT CONSTRICTION). COFFEIN ALSO INDUCED A CONSTRICTION OF THE CAPACITANCE VESSELS, BUT THE RESISTANCE VESSELS SHOWED BIPHASIC RESPONSES (A CONSTRICTION WITH THE FOLLOWING DILATATION). PAPAVERINE AND ACETYLCHOLINE EXERTED DILATATION EFFECT ON THE RESISTANCE VESSELS, WHEREAS IN THE CAPACITANCE VESSELS EITHER CONSTRICTION OR DILATATION WERE NOTED. FACILITY: INSTITUTE FOR EXPERIMENTAL MEDICINE ACAD. MED. SCI. USSR, LENINGRAD.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE---27NOV70
TITLE--NICKEL NITRATE PRODUCTION -U-

AUTHOR--(051)-PETRACHKOV, F.A., KARLOV, V.P., SHERSHNEV, N.G., SERGUNKIN,
V.N., CHERNYAVSKAYA, L.A.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,380
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRATSY, TOVARNYE ZNAKI NR 1970
DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, NICKEL COMPOUND, NITRATE, CRYSTALLIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1450

STEP NO--UR/0482/70/000/000/0000/0000

AIRC ACCESSION NO--AA0126981

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--27NOV70

IRC ACCESSION NO--AA0126981

BSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NI NITRATE IS PREPD. WITHOUT THE
FORMATION OF AN NH SUB4 NO SUB3 BYPRODUCT BY DISSOLVING METALLIC NI IN
HNO SUB3 CONTG. 700-1000 G-L. NI(NH SUB3) SUB2. 6H SUB2 O IN THE
PRESENCE OF 20-70 G-L. NH SUB4 NO SUB3 IN THE FORM OF A MOTHER LIQUOR
OBTAINED AFTER EVAPN. AND CRYSTN. OF NI NITRATE.

UNCLASSIFIED

USSR

UDC: None

KUZNETSOV, A. Ya., CHEPNEYAVSKAYA, N. A., OKATOV, M. A., BURMISTROV, A. N.

"A Method of Preparing Band-Pass Filters for the Long-Wave Infrared Region of the Spectrum"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 31, 1973, p 144, 391520

Abstract: The filter is designed as a sharp cutoff device and is filled with hygroscopic, powdered materials such as KBr, NaCl, NaF, and CsBr heated to temperatures of 120°C and above for at least two hours before and after pulverization. The filling is then processed by a water-proofing solution. Some examples of the latter are named.

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CSO: 1862-W

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1/2 018 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ESTROGENIC ACTIVITY OF SOME STEROIDS OF THE C SUB18 SERIES -U-

AUTHOR--(04)-TORGOV, I.V., CHERNYAVSKAYA, N.A., SEOAL, G.M., BARKOV, T.I.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA BIOLOGICHESKAYA, 1970, NR 2,
PP 208-213
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ESTROGEN, ESTRADIOL, ESTER, MOLECULAR STRUCTURE, HYDROGEN
BONDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/0124

STEP NO--UR/0216/70/000/002/0208/0213

CIRC ACCESSION NO--AP0119120

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119120

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ESTROGENIC ACTIVITY OF SOME ESTRADIOL DERIVATIVES POSSESSING ELECTROPHILIC SUBSTITUENTS IN THE RING A, ESTRENDIOLS WITH THE DOUBLE BOND IN DIFFERENT POSITIONS, ESTRADIOL ESTERS AND 15,16,DEHYDROESTRONE HAS BEEN STUDIED ACCORDING ALLEN DOISY METHOD. IT HAS BEEN SHOWN THAT IN SOME CASES EVEN INSIGNIFICANT CHANGES IN THE MOLECULE OF A NATURAL ESTROGEN (FOR INSTANCE FLATTENING OF THE D RING OR THE CHANGE OF THE HYDROXYL POSITION IN THE RING A) CAUSES A DECREASE OF ESTROGENIC ACTIVITY. ONLY A STRICTLY DEFINITE DISTRIBUTION OF ELECTRON DENSITIES IN THE HORMONE MOLECULE AS WELL AS ITS CONFORMATIONAL PROPERTIES GUARANTIES HIGH AFFINITY TOWARDS THE RECEPTOR. INTRODUCTION OF SUBSTITUENTS INTO THE 2 AND THE 4 POSITION CAUSES A COMPLETE LOSS OF ESTROGENIC ACTIVITY OF THE MODIFIED MOLECULE DUE TO A STERIC HINDRANCE OR OWING TO A POSSIBLE FORMATION OF INTRAMOLECULAR HYDROGEN BONDS WITH THE PHENOL HYDROXY GROUP.
FACILITY: INSTITUTE FOR CHEMISTRY OF NATURAL PRODUCTS, ACADEMY OF SCIENCES USSR.

UNCLASSIFIED

1/2 049 UNCLASSIFIED PROCESSING DATE--02JCT70
TITLE--SUPRAMOLECULAR STRUCTURE OF BLOCK POLYSTYRENE AND POLYCARBONATE -U-

AUTHOR--(05)-GERASIMOV, V.I., KARGIN, V.A., NOVIKOV, N.P., SALUYENYA, S.S.,
CHERNYAVSKAYA, O.A.
COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(2) 382-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS, PHYSICS

TOPIC TAGS--MOLECULAR STRUCTURE, LASER RADIATION, POLYSTYRENE RESIN,
POLYCARBONATE, X RAY DIFFRACTION, ELECTRON MICROSCOPY, IR SPECTROSCOPY,
POLYMER STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED.
PROXY REEL/FRA--1989/0253

STEP NO--UR/0459/70/012/002/0382/0387

CIRC ACCESSION NO--AP0106909
UNCLASSIFIED

2/2 049

UNCLASSIFIED

PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0106909

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. LASER IRRADN. OF RELATIVELY LOW ENERGY CAUSES THE SEPN. BETWEEN MOL. AGGREGATES (N., 1968); HIGHER ENERGY LASER BEAMS PRODUCE MICROFISSURES. X RAY DIFFRACTOMETRY, ELECTRON MICROSCOPY, AND IR SPECTROSCOPY OF BLOCK POLYSTYRENE (I) AND POLYCARBONATE (II) SAMPLES BEFORE AND AFTER LASER IRRADN. SHOWED THAT BOTH ARE AMORPHOUS; I HAS A GLOBULAR AND II A FIBRILLAR STRUCTURE.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--PIGMENTED NEVUS TIME OF APPEARANCE, DURATION OF EXISTENCE AND ROLE
OF HEREDITY IN THEIR ORIGIN -U-
AUTHOR--CHERNYAVSKAYA, U.S. C
COUNTRY OF INFO--USSR
SOURCE--VESTNIK DERMATOLOGII I VENEROLOGII, 1970, NR 5, PP 9-12
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--SKIN DISEASE, HEREDITY, BIOLOGIC PIGMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0181 STEP NO--UR/0206/70/000/005/0009/0012
CIRC ACCESSION NO--AP0120879
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0120879

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXAMINATION OF 1140 SUBJECTS OF DIFFERENT AGES FOR NEVUSES SHOWED THAT NEVUS PIGMENTOSUS OR THE SO CALLED NEVUS MATERNUS IN THE MAJORITY OF CASES WERE NOT DETECTED AT BIRTH BUT WERE FIRST FOUND IN CHILDHOOD. THE NUMBER AND FREQUENCY OF NEVUSES INCREASES WITH AGE, REACHING MAXIMUM AT 16-25 YEARS AND THEN DECLINES. IN ORDER TO ESTABLISH THE ROLE OF HEREDITY IN THE ORIGIN OF NEVUSES 50 PAIRS OF ONE EGG AND 50 PAIRS OF TWO EGG TWINS WERE EXAMINED. A GREAT ROLE OF HEREDITY IN THE ORIGIN OF NEVUSES WAS ESTABLISHED. IN ONE EGG TWINS COMPLETE SIMILARITY OF ALL PIGMENTED NEVUSES COULD BE FOUND IN 18PERCENT (MIRROR OR HOMOLATERAL). THE ENTIRE MATERIAL WAS TREATED STATISTICALLY. FACILITY: KAFEDRA PATOLOGICHESKOY ANATOMII MINSK. MEDITSINSKOGO INST.

UNCLASSIFIED

Heat, Combustion, Detonation

USSR

UDC:534.113+532.593

PLOTNIKOV, M. A., CHERNYAVSKAYA, R. A., SIMELEVA, A. F., Moscow

"Determination of the Thermodynamic Properties of Gases at Pressures Over 10-15 Kbar"

Novosibirsk, Fizika Goreniya i Vzryva, Vol. 6, No. 3, Sep 70, pp. 263-267

Abstract: A number of practical applications, including calculation of processes of explosion and compression of gases by strong shock waves and other problems require determination of the thermodynamic properties of strongly compressed gases. Recent machine calculations of the fourth and fifth virial coefficients using the Leonard-Jones intermolecular interaction potential have significantly expanded the area of applicability of the virial equation for the state of a gas into the area of pressures of 30-40 Kbar and higher for gases with spherically symmetrical nonpolar molecules. Precise experimental data on the thermodynamic properties available for a number of gases allow semiempirical corrections to be introduced to this formula, thereby expanding the area of practical appli-

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USSR

UDC:534.113+532.593

PLOTNIKOV, M. A., CHERNYAVSKAYA, R. A., SHMELEVA, A. F., Novosibirsk, Fizika Goreniya i Vzryva, Vol. 6, No. 3, Sep 70, pp. 263-267

cation of the equation over a broader temperature and pressure interval. Examples from the literature are presented. At higher pressures, the Tate equation suggested for description of the compressibility of liquids at high pressures is applicable for description of the behavior of gaseous nitrogen. In correspondence with the methodology described, the thermal and caloric properties of nitrogen were calculated in the 16-20 Kbar pressure range at 700-3000°K. The results of the calculation are presented in tabular form.

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USSR

UEC 669.187.5:669.017

KRASNIKOVA, S. I., and CHERNYAVSKAYA, S. G.

"Dependence of Mechanical Properties of EP56 (1K216M4B) Steel on the Quantity and Shape of Delta-Ferrite"

Dnepropetrovsk, Metallurgicheskaya i Gornorudnaya Promyshlennost', No 1(79), Jan/Feb 73, pp 39-40

Abstract: Rods (150 mm in diameter) made of steels produced by electric arc smelting (A), electroslag melting (B), and vacuum electric arc melting (C) were homogenized at 1150-1230°C for 15 hours. The quantity of delta-ferrite (areawise) in A, B, and C steels after homogenization was 0.1, 0.1, and 2.46-2.1, respectively, compared with 2.9-3.2, 2.45-3.0, and 8.7-10.2 before homogenization, respectively. A lower concentration of delta-ferrite in homogenized samples increased the impact toughness (two-fold) in a transverse direction with respect to the steel fibers. The ferrite particles also became rounded and shaped like spheroids. The plastic properties and strength of the samples did not change much with a decreasing quantity of delta-ferrite, but the relative elongation across the fibers increased. The mechanical properties of the two melts are tabulated.

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Steels

USSR

UDC 669.187.5

CHERNYAVSKAYA, S. G., KALININA, N. YE., SULIMENKO, A. V., and DOMORATSKIY, V.A.

"Cold Brittleness of 1Kh16N4B Steel"

Dnepropetrovsk, Metallurgicheskaya i Gornorudnaya Promyshlennost', No 1(79),
Jan/Feb 73, pp 38-39

Abstract: The critical brittleness temperature for 1Kh16N4B steel produced by electroslag melting was -100°C and -80°C in the longitudinal and transverse directions, respectively (rods 150 mm in diameter were studied). The critical brittleness temperature for the same type of steel produced by electric arc smelting was -80 and -60°C in the longitudinal and transverse directions, respectively. A decrease of the critical temperature in the first case by 20°C is attributed to a higher steel purity with respect to sulfur, phosphorus, and gases.

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USSR

UDC 669.14.018.8:620.186.1

CHERNYAVSKAYA, S. G., KRASNIKOVA, S. I., and SULIMENKO, A. V., Dnepropetrovsk University

"Change of Delta-Ferrite in 1Kh16N4B Steel During Homogenization"

Moscow, Metallovedeniye, No 9, Sep 72, pp 66-67

Abstract: The effect of isothermal homogenization at 900-1300°C was studied to determine the amount and shape of the delta-ferrite formed in 1Kh16N4B cast steel (0.05% C, 0.28% Mn, 0.35% Si, 15.2% Cr, 3.6% Ni, 0.007% S, 0.028% P and 0.1% Nb). The investigation was conducted using blanks cut from a 780-kg commercial ingot produced at the Dneprospeetsstal' Plant by vacuum arc remelting. It was found that between 900 and 1150°C the amount of delta-ferrite formed decreases with time. For instance, at 900°C, 14% delta-ferrite in the steel to start with ends up with only 12.5% after 30 hours at that temperature. The same process, decrease in amount of delta-ferrite with time at temperature, holds true up to 1150°C where 14% delta-ferrite is reduced to 6% after 30 hours. At 1200°C the decrease in amount of the delta-ferrite begins the same as for the other temperatures except that after 10 hours the quantity of delta-ferrite begins to increase from a low of about 7% up to 13.5% after 18 hours. The decrease in delta-ferrite followed by an increase after a few hours at
1/2

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USSR

CHERNYAVSKAYA, S. G., et al., Metallovedeniye, No 9, Sep 72, pp 66-67

temperature is due to a polymorphous gamma-alpha transformation, as opposed to the alpha-gamma transformation at the lower temperatures. 4 figures, 2 bibliographic references.

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1/2 007 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--CHLOROMETHYLATION OF METHYL CARBONATES OF 4,ALKYLPHENOLS -U-
AUTHOR--(03)-CHERNYAVSKAYA, T.A., ROMADANCE, I., CHIZHIKOVA, V.P.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(3), 475-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ALKYLATION, CHLORINATION, CARBONATE, PHENOL, CONDENSATION
REACTION, BROMINATED ORGANIC COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/1673 STEP NO--UR/0366/70/005/003/0475/0477
CIRC ACCESSION NO--AP0112667
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0112667

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONDENSATION OF 2,4,6,R,R
PRIME1,R PRIME2,C SUB6 H SUB2 ONA WITH CLCO SUB2 ME IN ACETONE GAVE
75-95PERCENT 2,4,6,R,R PRIME1,R PRIME2,C SUB6 H SUB2 OCO SUB2 ME (I) (R,
R PRIME1, AND R PRIME2 GIVEN): H, ISO-PR, H; H, ET-MECH, H; H, TERT-BU,
H; H, ETCME SUB2, H; BR, ETMECH, H; BR, ETCME SUB2, H; CL, TERT-BU, H;
CL, ETCME SUB2, H; BR, TERT-BU, BR; BR, ETCME SUB2, BR. THE
CHLOROMETHYLATION RATE OF I (M. SOMMELET, 1933) DEPENDS ON THE SIZE AND
BRANCHING OF I. THE FOLLOWING CHLOROMETHYL DERIVS. OF I WERE PREPD. (R
EQUALS R EQUALS R PRIME2 EQUALS H, R PRIME1 GIVEN): ME, ISO-PR, ETMECH,
TERT-BU, ETCME SUB2. FACILITY: RIZH. POLITEKH. INST., RIGA,
USSR.

UNCLASSIFIED

Refractory Materials

C
USSR

BUGAYEV, N. F., SIMONOV, K. V., CHERNYAVSKAYA, V. P., KATSAY, YE. V., VORONIN, I. G.

"Refractories of Caustic Magnesite"

Moscow, Ogneudory. No 3, Mar 70, pp 2-3

Abstract: This article describes the experience in manufacture and service testing of magnesite refractories based on 0-1 mm fraction powder produced by roasting caustic magnesite without sintering additives. The experimental products were made using the technological process for the production of ordinary magnesite products and roasted at 1650°C. The properties of the roasted products are described. The deformation temperature under load is 80°C higher than that called for by the standards. Furnace tests showed that the experimental brick wears evenly during operation. The experimental refractories held up to usage as well as standard refractories.

1/1

USSR

UDC 621.382.3(C88.8)

DANILIN, V.N., KONSTANTINOV, P.B., MROZOV, A.A., FILATOV, A.L., CHERNYAVSKIY, A.A.

"Transistor For Circuits With Automatic Gain Control"

USSR Author's Certificate No 256084, filed 10 June 67, published 19 March 70 (from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11B163P)

Translation: In the proposed structure of a transistor for circuits with AGC, the electrodes for the emitter and base are made by alloy-diffusion technology (in contrast to deposition in mesa structures), and the small active area of the emitter junction, necessary to assure a decrease of gain at high frequency, is assured because of a radial clearance between the base layer and the emitter electrode. A high-resistance semiconductor wafer with a resistivity not less than 1 ohm.cm serves as the base for the device, and the invariability of the dimensions of the emitter electrode assures reliability of the emitter lead out connection irrespective of the area of the emitter junction. By changing the area of the radial clearance, it is possible to obtain transistors of various classes with constant dimensions of the initial blank [zagotovka]. P.S.

1/1

USSR

UDC 621.382.3

DANILIN, V.N., KONSTANTINOV, P.B., MORZOV, A.A., FILATOV, A.L., CHERNYAVSKIY, A.A.

"Increase Of Cutoff Frequency Of Gain Of Alloy-Diffused Transistors"

Elektron. tekhnika. Nauchno-tekhn. sb. Poluprovodn. pribory (Electronic Technology. Scientific-Technical Collection. Semiconductor Devices), 1970, No 1(51), pp 152-161 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12B417)

Translation: Methods are described for an increase of the cutoff frequency of the gain P_T of alloy-diffused transistors (to 1.5--2 GHz). The technological method proposed makes it possible directly to decrease the thickness of the active base and the area of the emitter junction of the transistor. With an increase of the cutoff frequency, it is possible to increase the value of the breakdown voltage of the emitter junction, and also to obtain a transistor suitable for use in circuits with direct automatic gain control. Experimental results are presented. 10 ref.

Summary.

1/1

1/2 022

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--RAISING THE ACCURACY OF AN EXPERIMENTAL DETERMINATION OF CONTACT FORCES IN THE CENTRE OF DEFORMATION; AND THEORY OF THE MATHEMATICAL

AUTHOR--(U4)--CHEKMAREV, A.P.; CHERNYAVSKY, A.A.; MELESHKO, V.I., KILIYEVICH, A.F.

COUNTRY OF INFO--USSR

SOURCE--IZVEST. V.U.Z., CHERNAYA MET., 1970(2), 91-96

DATE PUBLISHED-----70

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

TOPIC TAGS--METALLURGIC RESEARCH FACILITY, ACCURACY STANDARD, METAL ROLLING, METAL DEFORMATION, MATHEMATIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0561

STEP NO--UR/0148/70/000/002/0091/0096

CIRC ACCESSION NO--AP0124256

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0124256

ABSTRACT/EXTRACT--(U). GP-0- ABSTRACT. CF. IBID., 1969, (12), 83; EMT. A., 7007-52 0432. THE QUESTION OF THE MATHEMATICAL ANALYSIS OF EXPERIMENTAL DATA RELATING TO CONTACT FORCES ARISING IN THE ROLLING OF METALS, REPRODUCED ELECTRONICALLY IN THE FORM OF A SERIES OF OSCILLOGRAMS, IS CONSIDERED WITH SPECIAL REF. TO THE PROBLEM OF CORRECTING THE END EFFECT OF THESE OSCILLOGRAMS SO AS TO INCREASE THE ACCURACY OF THE EXPERIMENTAL DETERMINATION OF CONTACT FORCES. IN TYPICAL EXISTING EXPERIMENTAL METHODS, THE ACCURACY WITH WHICH THE POSITION OF THE NEUTRAL SECTION MAY BE DETERMINED IS SIMILAR TO 3PERCENT.

UNCLASSIFIED

USSR

UDC: 535.37

VOLOD'KO, L. V., DEMCHUK, M. I., SEVCHENKO, A. N., ZAZHOGIN, A. P.,
and CHERNYAVSKIY, A. F.

"Investigating the Statistical Method for Recording the Laws of
Luminescence Scintillation"

Minsk, Zhurnal Prikladnoy Spektroskopii, vol 16, No 6, 1972, pp
1001-1007

Abstract: The purpose of this paper is to further the development of physical investigation of the processes accompanying luminescence by looking into a better method for statistically recording the laws of luminescence scintillation in the time range of 10^{-9} to 10^{-5} sec, in which there are no principal defects as in the stroboscopic method or in the method of synchronous photon counting. The basic idea of this superior method was first considered in an earlier paper published in this same journal by some of the authors listed above (A. F. Chernyavskiy, et al, 13, 1970, p 840). The present paper gives the results of a thorough investigation into the method and describes an experimental device for investigating luminescence. A block diagram of the device is given and its operation explained. It is found that this method is useful in a practically unlimited range of luminescence intensity and has high resolving power and low error.

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USSR

UDC 621.374.5

YEFIMCHIK, M. K., CHERNYAVSKIY, A. F., BAKINOVSKIY, K. N.

"Nanosecond Time-Amplitude Converter"

Tr. 7-y Konferentsii po vadem. elektron. T. 1. Ch. 4 (Works of the 7th Conference on Nuclear Electronics. Vol 1, Part 4), Moscow, Atomizdat Press, 1970, pp 182-185 (from PZh-Radiotekhnika, No 4, Apr 71, Abstract No 4G26?)

Translation: The high speed circuit of a time-amplitude converter with shaping and sorting of the photomultiplier signals is investigated. The circuit is executed from semiconductor devices and is designed for operation in the nanosecond range. The output signals of the device are shaped in the short circuit segments of a coaxial cable, and the transition time of the shaped pulses through the zero line is fixed by the bridge circuit.

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1/2 029 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--METHOD OF SPARK DISCHARGES FOR MASS TRANSFER ACCELERATION IN A
SOLID LIQUID SYSTEM -U-
AUTHOR--(04)--MOLCHANOV, A.O., AKSELRUD, G.A., CHERNYAVSKIY, A.I.,
FIKLISTOV, I.N.
COUNTRY OF INFO--USSR
SOURCE--INZH.-FIZ. ZH. 1970, 17(2), 293-8
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--SPARK DISCHARGE, OSCILLATION, ACOUSTIC EMISSION, MASS TRANSFER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1826 STEP NO--UR/0170/70/017/002/0293/0298
CIRC ACCESSION NO--AP0118790
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0118790

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPARK DISCHARGES CAUSING ACOUSTIC PULSED OSCILLATIONS IN THE LIQ. PHASE WERE EFFECTIVE IN ENHANCING DISSOLN. OF SOLIDS IN LIQS. THE EFFECT OF THE DISCHARGES WAS STUDIED EXPTL. BY USING KNO SUB3 CYLINDERS HANGING IN A LIQ. OR FASTENED PARTICLES OF GYPSUM. A MAX. INCREASE IN THE MASS TRANSFER COEFF. IS OBSD. IN THE RESULTING AMPLITUDE OF OSCILLATIONS RANGE OF 190-200 HZ WHEN THE FASTENED PARTICLES SHOWED AN INCREASE OF 500PERCENT; FOR THE LOOSE PARTICLES IT WAS 230PERCENT. THE INTENSITY OF SPARKING WAS 0.5-1 J AND THE DURATION OF A DISCHARGE WAS 25 MU SEC. FACILITY: POLITEKH. INST., LVOV, USSR.

UNCLASSIFIED

1/2 047

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--POLYMER MICRODEFECTS AS THE CENTRES OF DESTRUCTIVE CRACKS INDUCED BY LASER IRRADIATION -U-

AUTHOR--(05)-AGRANAT, M.B., CHERNIAVSKIY, F.N., NOVIKOV, N.P., SALUENIA, S.S., LAMPOLSKIY, P.A.

COUNTRY OF INFO--USSR

SOURCE--NATURE, VOL. 226, APR. 25. 1970, P. 349-351

DATE PUBLISHED--25APR 70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--LASER RADIATION, CRACK PROPAGATION, DIELECTRIC MATERIAL, POLYMETHYLMETHACRYLATE, POLYSTYRENE RESIN, POLYCARBONATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1997/0433

STEP NO--UK/0000/70/226/000/0349/0351

CIRC ACCESSION NO--AP0119369

UNCLASSIFIED

2/2 047

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0119369

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE SIZE, LOCATION, STRUCTURE, AND PROPERTIES OF MICRODEFECTS IN POLYMERS WHICH ACT AS CENTERS OF DISK SHAPED DESTRUCTIVE CRACKS INDUCED IN THESE MATERIALS BY LASER IRRADIATION. IRRADIATED TRANSPATENT DIELECTRICS INCLUDING POLYMETHYLMETHACRYLATE, POLYSTYRENE, AND POLYCARBONATE ARE CONSIDERED, AND THE EXPERIMENTAL PROCEDURE IS DESCRIBED. THE EXPERIMENTAL RESULTS SUGGEST THAT THE MICRODEFECT NUCLEI ARE MICROPORES OF THE EXAMINED MATERIALS. FACILITY: AKADEMIIA NAUK SSSR, INSTITUT PROBLEM MEKHANIKI. MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.382

FEDOTOV, YA. A., SOPOV, O.V., ABRAMOVA, L.I., CHERNYAVSKIY, I.A.

"Investigation Of The Parameters Of Boundary States In Oxide-Semiconductor Structures"

Elektron. tekhnika. Nauchno-tekhn. sb. Poluprovodn. pribory (Electronic Technology. Scientific-Technical Collection. Semiconductor Devices), 1970, No 1(51), pp 140-151 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12B1C6)

Translation: The density and energy distribution of the boundary states in Si-SiO₂ structures were studied. From a comparison of the theoretical volt-farad dependence, constructed on the basis of the ideal theory of Garretta--Brattena, and the experimental volt-farad dependence, the distribution was found of the magnitude of the charge captured by the boundary states as a function of the surface potential of the semiconductor. It is shown that the boundary states have a different energy distribution in the forbidden band of the semiconductor. It is revealed that different technological operations on the MOS structures have an uneven effect on boundary states with a different energy position. 6 ref. Summary.

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1/2 036 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--TWO QUANTUM BENZOYL CHLORIDE PHOTSENSITIZED CROSSLINKING OF
POLYTHYLENE -U-
AUTHOR-(04)-ANDRUSHCHENKO, D.A., KACHAN, A.A., CHERNYAVSKIY, G.V.,
SHRUBOVICH, V.A.
CCUNTRY OF INFO--USSR
SOURCE--KHIM. VVS. ENERG. 1970, 4(2), 169-70
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--POLYMER CROSS LINKING, POLYTHYLENE, CHLORINATED ORGANIC
COMPOUND, BENZENE DERIVATIVE, RADIATION EFFECT, CHEMICAL REACTION
MECHANISM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/1622 STEP NO--UR/0456/70/004/002/0169/0170
CIRC ACCESSION NO--AP0112616
UNCLASSIFIED

2/2 036

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0112616

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT 22DEGREES AND 3 MM PARTIAL BZCL
PRESSURE POLYETHYLENE (I) FILM ABSORBS SIMILAR TO 0.2PERCENT BZCL IN 2-3
MIN. IRRADN. OF THIS FILM FOR 20 MIN GAVE SIMILAR TO 60PERCENT
CROSSLINKING. THIS REACTION IS 1.87 ORDER, WHICH INDICATES THAT 2 LIGHT
QUANTA PARTICIPATE. THE REACTION INVOLVES THE FORMATION OF PH AND CLCO
RADICALS WHICH ADD TO I, CROSSLINKING IT. FACILITY: INST. KHIM.
VYSOKOMOL. SOEDIN., KIEV, USSR.

UNCLASSIFIED

172 033 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--PHOTOCHEMICAL CROSSLINKING OF POLYETHYLENE FIBERS IN THE PRESENCE
OF PHOSPHORUS TRICHLORIDE -U-
AUTHOR--(02)-TKACHENKO, A.A., CHERNYAVSKIY, G.V.
COUNTRY OF INFO--USSR
SOURCE--KHIM. VOLOKNA 1970, (2), 30-1
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--POLYMER CROSSLINKING, POLYETHYLENE, PHOSPHORUS CHLORIDE,
SYNTHETIC FIBER, DYE, TENSILE STRENGTH, PHOTOCHEMISTRY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0042 STEP NO--UR/0183/70/000/002/0030/0031
CIRC ACCESSION NO--AP0132337
UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0132337

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CROSSLINKED POLYETHYLENE (I) FIBERS, OBTAINED BY PHOTSENSITIZED CROSSLINKING OF I IN A COMPARTMENT SATD. WITH PCL SUB3 VAPORS, HAD SUPERIOR TENSILE STRENGTH AT ROOM AND HIGH TEMPS., AND HIGH OXIDATIVE STABILITY. THE MODIFIED FIBERS WERE READILY DYEABLE WITH BASIC DYES.

UNCLASSIFIED

1/3 027 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--DETERMINATION OF THE GAS SATURATION OF BLAST FURNACE SLAGS -U-
AUTHOR--ZYATKOVA, L.R., CHERNYAVSKIY, I.YA. C
COUNTRY OF INFO--USSR
SOURCE--ZAVOD. LAB. 1970, 36(1) 49-51
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS
TOPIC TAGS--BLAST FURNACE, SYNTHETIC SLAG, METAL CONTAINING GAS, CARBON
DIOXIDE, GAS FLOW
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0272 STEP NO--UR/0032/70/036/001/0049/0051
CIRC ACCESSION NO--AP0113204
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2/3 027

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0113204

ABSTRACT/EXTRACT--(U) G2-0- ABSTRACT. BLAST FURNACE SLAGS DO NOT APPRECIABLY ENTRAP OR DISSOLVE CO SUB2. SINCE CO SUB2 IS SOL. IN KOH AND THE GASES USUALLY CONTAINED IN SLAGS ARE NOT, THE GAS CONTENT OF SLAGS COULD BE DETD. BY UTILIZING CO SUB2 AS A CARRIER GAS AND BY COLLECTIN THE SLAG GASES IN A GAS BURET OVER A SOLN. OF KOH. APPROX. 3 G POWD. SLAG WAS PLACED IN A CORUNDUM COMBUSTION BOAT. THE BOAT WAS PLACED IN THE CORUNDUM TUBE OF A TUBE FURNACE, THE INLET END OF WHICH WAS ATTACHED TO A KIPP GENERATOR (SET UP TO PRODUCE CO SUB2) THROUGH A FLOW METER. THE OUTLET END WAS ATTACHED TO A GAS DELIVERY TURE WHICH LED TO THE GAS BURET FILLED WITH A 40PERCENT KOH SOLN. CO SUB2 WAS ALLOWED TO FLOW AT 30 L:-HR FOR 1 HR, WHILE THE SLAG WAS HEATED FROM 800 TO 1400DEGREES, WITH THE EXIT GASES BEING VENTED TO THE ATM. AFTER PURGING, THE CO SUB2 GAS FLOW WAS DECREASED TO 12L:-HR AND THE EXITING GASES WERE PASSED INTO THE GAS COLLECTING SYSTEM. A TIMER WAS STARTED WITH THE 1ST APPEARANCE OF GAS IN THE BURET AND THE KOH LEVEL WAS MONITORED EVERY 5 MIN. THE TEST WAS CONTINUED UNTIL THE GAS LEVEL WAS CONST. FROM 1 READING TO THE NEXT. A BLANK TEST WAS RUN TO DET. THE VOL. OF KOH INSOL. GAS EVOLVED FROM THE SYSTEM CONTG. NO SLAG UNDER EXACTLY THE SAME CONDITIONS OF TIME, TEMP., AND CARRIER GAS FLOW. THE GAS CONTENT OF THE SLAG WAS EASILY CALCD. FURTHER EXPTS. ON A SYNTHETIC SLAG, COMPRISING CAO 31, SIO SUB2 28.38, AL SUB2 O SUB3 24.66, AND MGO 6.46PERCENT, WAS CARRIED OUT BY THE USE OF FLOW METERS AT THE INLET AND OUTLET ENDS OF THE SYSTEM, TO ASCERTAIN COMPLETENESS OF REMOVAL OF ENTRAPPED SLAG GASES.

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UNCLASSIFIED

3/3 027

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0113204

ABSTRACT/EXTRACT--CALCN. SHOWED THAT GAS RECOVERY WAS GREATER THAN
97PERCENT UNDER THE CONDITIONS USED. DEVIATIONS OF GAS CONTENT FROM
DUPLICATE DETNS. WERE SMALLER THAN OR EQUAL TO 10PERCENT. SLAGS FROM
DIFFERENT PLANTS CONTAIN ESSENTIALLY EQUAL VOLS. OF GAS (900-1200 CM
PRIME3-100 G SLAG).

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UNCLASSIFIED

1/2 - 031 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--SILICATE LINED CAST IRON PIPES -U-
AUTHOR-(04)-CHERNYAVSKIY, I.YA., MILLER, S.N., KVARNBERG, A.F.,
OSHCHEPKOV, G.I.
COUNTRY OF INFO--USSR
SOURCE--GER. 1,558,346
DATE PUBLISHED--02JAN70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CAST IRON, SILICATE, SAND, ORE, SLAG, CONCRETE, PROTECTIVE
COATING, PIPE, CHEMICAL COMPOSITION, METAL COATING, PROTECTIVE COATING,
CHEMICAL PATENT, MATERIAL HANDLING EQUIPMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1985/0928 STEP NO--GY/0000/70/000/000/0000/0000
CIRC ACCESSION NO--AA0101234
UNCLASSIFIED

272 031

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AA0101234

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TUBES WHICH ARE USEFUL E.G. FOR THE TRANSPORT OF ABRADING MATERIAL (CONCRETE, SLAG, SAND, ORES) CONSISTS OF A CAST IRON SHEATHING AND AN INNER LINING OBTAINED BY APPLYING A SILICATE MELT CONTG. E.G. SIO SUB2 40-1, CAO 45-7, AL SUB2 0 SUB3 5-7, MGO 5-6, MNO 0.25, FEO 0.47, S 0.56PERCENT, THE SILICATE LINING EXTENDING OVER THE WHOLE LENGTH OF THE TUBE AND BEING TAPERED AT THE ENDS OF THE TUBE AT AN ANGLE OF 5-20DEGREES.

UNCLASSIFIED

USSR

UDC 539.385

CHERNYAVSKIY, K. S.

"Effect of Cyclic Deformation on the Dislocation Structure of Prehardened Aluminum"

Uch. zap. Petrozavodsk. un-ta (Scientific Notes of Petrozavodsk University), 1971, 16, No 6, pp 31-33 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10V864)

Translation: Specimens of 99.99 percent pure polycrystalline aluminum were subjected to symmetric cyclic bending deformation, the amplitude of deformation on the surface of the specimen being 0.002, corresponding to a durability of 36 000 cycles. The structure was studied on thin foil specimens by transmission electron microscopy. The size of the subgrains in the initial rolled aluminum was less than 2.2 microns. After testing for one percent of the durability life, the average size of the subgrains had increased to 2.5-2.7 microns and their boundaries had bent, indicating migration. Boundary migration is attributed to nonconservative motion of dislocation thresholds, caused by a considerable increase in vacancy concentration during cyclic tests. Subgrains are formed with large-angle boundaries; these act as recrystallization centers by coalescence of subgrains. E. I. Braynin.

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USSR

UDC 620.172.253.05

VASIL'CHENKO, G. S., CHERNYAVSKIY, L. L., ROMANOV, V. S., and MART'YANOV,
N. S., Moscow

"The VRD-300 Installation for Strength Testing of High Speed Turbine Disks"
Kiev, Problemy prochnosti, No 1, 1971, pp 97-100

Abstract: The VRD-300 installation, planned and constructed at the Central Scientific Research Institute for Heavy Machine Building in 1965, is designed for strength testing of turbine wheels up to 300 mm in diameter weighing up to 15 kg at rotating speeds up to 75,000 rpm and temperatures up to 900°C under conditions approaching actual operating conditions. The machine is similar to the VRD-500 machine designed for larger, heavier and slower turbine wheels; the VRD-300 is driven by a centripetal air turbine and rides on bearings using copper inserts between the babbitt and steel bushing. Drawings of the device and a description of its principal characteristics are presented.

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USSR

ANZON, Z. V., et al, Institute of Nuclear Physics, Academy of Sciences, Kazakh SSR, Alma-Ata; BOZOKI, G., et al, Central Research Institute of Physics, Budapest; DALKHAZHAY, N., et al, High-Energy Laboratory, Joint Institute of Nuclear Research, Dubna; BABETSKIY, Ya., et al, Laboratory of High-Energy Physics, Institute of Nuclear Research, Polish Academy of Sciences, Krakow; MASLENNIKOVA, N. V., TRET'YAKOVA, M. I., CHERNYAVSKIY, M. M., Physics Institute imeni P. N. Lebedev of the Academy of Sciences, USSR, Moscow; ALEKSEYEVA, K. I., Scientific Research Institute of Nuclear Physics, Moscow State University, Moscow; CHERNEV, Kh., TODOROV, P. T., Institute of Nuclear Physics, Academy of Sciences of the People's Republic of Bulgaria, Sofia; TUVENDORZH, D., SHARKHI, D., CHADRAA, V., Institute of Physics and Mathematics of the Academy of Sciences, Mongol People's Republic, Ulan-Bator); AZIMOV, S. A., et al, Institute of Nuclear Physics Academy of Sciences, Uzbek SSR, Tashkent

"Coherent Generation of Particles by π^+ -Mesons With Momenta of 45 and 60 Giga-electron-Volts/Sec on the Basis of Photoemulsion Nuclei"

Moscow, Izvestiya Akademii Nauk SSR. Seriya Fizicheskaya, No 9, 1970, pp 1938-1943

Abstract: In the present report are presented data concerning the coherent generation of π^+ -mesons by π^- -mesons at 45 and 60 gigaelectron-volts/sec, obtained by means of nuclear photoemulsion by the laboratories of a number of institutes

USSR

ANZON, Z. V., ET AL, Izvestiya Akademii Nauk SSR. Seriya Fizicheskaya, No 9, 1970, pp 1938-1943

of the Soviet Union and countries of the Soviet bloc. The joint study was organized by the Photoemulsion Committee of the Joint Institute of Nuclear Research. The preliminary results of this project were presented at the International Conference on Elementary Particles in Lund in June 1969 and at the International Conference on Cosmic Rays in Budapest in August 1969. The path value of the coherent generation of three and five charged particles is obtained from the distribution of charged particles and the angular characteristics of secondary particles on the basis of multiplicity. Comparison of the path value with the corresponding values at lower and higher energies shows a decrease of the run (and, consequently, an increase of the coherent particle-generation cross section) as the energy increases. 5 figures, 11 bibliographic entries.

2/2

USSR

UDC 62-503.55

CHERNYAVSKIY, S. M.

"On the Problem of Programmed Motion Control of an Aircraft"

Kazan', IVUZ Aviatsionnaya Tekhnika, No 4, 1971, pp 19-27

Abstract : Solutions by methods of functional analysis are presented of two problems of optimum motion control of the aircraft for the case when its motion is described by linear differential equations with parameters. In the first problem, the motion $u^0(t)$ is sought which yields a minimum of mean square deviation from a preassigned condition $I_1(u, t_1)$. In the second problem, a pair of motions $u^0(t)$ and $w^0(t)$ is sought which yield a maximum of mean square deviation from a preassigned condition $I_2(u, w, t_1)$. The solutions of the problems are reduced to maximization of subsidiary functionals. The use of derived solutions is demonstrated on the example of the control of a pilotless aircraft by order from the ground and holding the aircraft in a directed plane. Twenty three formulas, five biblio. refs.

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USSR

UDC 629.7.018.3

CHERNYY, G. G., Corresponding Member of the USSR Academy of Sciences,
CHERNYAVSKIY, S. Yu., Scientific Research Institute of Mechanics, Moscow
State University imeni M. V. Lomonosov

"Motion of Blunt Bodies at High Velocity in a Hydrogen-Oxygen Atmosphere"

Moscow, Doklady Akademii Nauk SSSR, Vol 212, No 2, 11 Sep 73, pp 316-319

Abstract: To determine the conditions of existence of a stationary detonation wave, an experimental study was done on the influence of pressure of a stoichiometric hydrogen-oxygen mixture $2H_2 + O_2$ and flight speed on the pattern of flow around a spherically blunted cylinder 12.7 mm in diameter. The models were fired from a gas gun into the mixture. The flow pattern was studied by the schlieren method using a spark light source with flash duration of 0.05 μ s. The pressure of the mixture was varied from 50 to 380 mm Hg, and model velocity was varied from somewhat less than the detonation velocity to values appreciably greater than the detonation velocity. Stationary flow conditions were observed at velocities below the detonation velocity (up to 2.88 km/s). An abrupt change in the flow pattern occurred when the model of the velocity was increased to 3.06 km/s

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USSR

CHERNYY, G. G., CHERNYAVSKIY, S. Yu., Doklady Akademii Nauk SSSR, Vol 212, No 2, 11 Sep 73, pp 316-319

with initial pressure of 186 mm Hg. The detonation wave does not arise in the flow zone in immediate proximity to the model but moves in the direction of flight of the model at the normal detonation velocity. Steady-state flow can be maintained with increasing velocity if only the pressure is increased simultaneously.

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USSR

UDC 576.851.55.094

LISENKO, A. I., CHERNYAVS'KIY, V. I., KULAKOVA, G. S., and ISKRITS'KIY, G. V., Khar'kov Scientific Research Institute of Vaccines and Sera, Khar'kov

"Ultrastructure of Type E Clostridium botulinum During the Process of Toxin Formation"

Kiev, Mikrobiologichniy Zhurnal, Vol 35, No 3, May-Jun 73, pp 308-312

Abstract: The structure of Cl. botulinum in relation to the amount of toxin formed during cultivation at 24-26° in Martin broth + 3% dextrin was studied by electron microscopy. It was established that while a small amount of toxin entered the medium in the initial stages of development of the bacterial population, the principal quantity of toxin was released in the stage of logarithmic death of the bacterial cells. At the time of the highest toxin activity, the maximum amount of cells with a destroyed wall was observed and the cells exhibited a lowered electron-optical density of the cytoplasm.

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USSR

UDC: 512.25/.26+519.3:330.115

CHERNYAVSKIY, V. S., KAPUSTIN, G. M.

"BESM-3M Computer Realization of an Algorithm for a Stochastic Programming Problem"

Tr. In-ta mat. i mekh. AN KazSSR (Works of the Institute of Mathematics and Mechanics, Academy of Sciences of the Kazakh SSR), 1971, 2, pp 334-336 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V833)

Translation: The paper deals with one of the formulations of a two-stage problem in stochastic programming as realized on the BESM-3M digital computer. According to the given algorithm, a program is set up and calculations are done for selecting the optimum parameters for use of irrigation systems when water supply is predetermined by uncontrolled (random) river drainage. Authors' abstract.

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USSR

UDC: 621.362.2

PETROV, G. S., TAYTS, D. A., CHERNYAVSKIY, V. V., Special Design Office of Semiconductor Devices

"A Method of Thermostabilization"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 11, Apr 72, Author's Certificate No 333645, Division G, H, filed 1 Apr 70, published 21 Mar 72, p 213

Translation: This Author's Certificate introduces a method of thermostabilization of an object by means of a thermopile located inside a solid and having a nonstationary heat source. As a distinguishing feature of the patent, in order to maintain the temperature of the heat-sensitive section constant, a thermal wave is generated which is directed toward the heat-sensing section in such a manner that the thermal wave arrives in the heat-controlled area in antiphase with respect to the heat wave of the nonstationary source.

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Acc. Nr:

AF0047321

Ref. Code: UR 0300

PRIMARY SOURCE: Ukrayns'kiy Biokhimichniy Zhurnal, 1970,
Vol 42, Nr 1, pp 76-80

ON THE EFFECT OF SUBFRACTION OF CARCINOMATOUS RABBIT
SERUM β -GLOBULIN ON THE GLYCOLYSIS AND RESPIRATION

N. P. Galagan, G. V. Stepanchenko, Y. I. Chernyavsky

Institute of Biochemistry, Academy of Sciences, Ukrainian SSR, Kiev

Summary

The effect of blood serum proteins of healthy rabbits and animals with the transplanted Brown-Pierces carcinoma on the processes of glycolysis and respiration as well as the effect of β -globulin subfraction on them which gives a positive sedimentation test for the Brown-Pierce carcinoma were studied.

It is shown that blood serum of carcinomatous rabbits, β -globulin and one of its subfractions, which is conditionally called "protein positively reacting in the sedimentation test for carcinoma" (PPR-STC) evoke a sharp activation of the process to lactic acid formation in the extracts of the rabbit skeletal muscles. With addition of healthy rabbit sera and their β -globulin to such extracts the intensity of lactate formation in comparison with the control considerably decreases.

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REEL/FRA
19790841

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AP0047321

The results of the investigation of the effect of sera of healthy and carcinomatous rabbits on the oxygen absorption by mitochondria of the rabbit myocardium showed that the addition of healthy rabbit sera activates this process by 32% in comparison with the control and cancer serum added inhibits it almost to the same degree. β -Globulin and PPR-STC produce a greater inhibition—by 59 and 75%, respectively.

A conclusion is drawn on the presence in the blood of the animals, affected with the Brown-Pierces carcinoma, of substances capable of regulating energetic processes in tumours.

2/2

19790842

USSR

UDC 681.142.37:61

ANTONOVA, N. G., IVANOVSKAYA, G. A., NADENENKO, V. K., SEL'DIMIROVA, Ye. M. and
CHERNYAVSKIY, V. S. Fourth Clinical Hospital

"Processing Medical Information With the "Minsk-22M" Computer and "Blank-P"
Automatic Counting System"

Minsk, Zdravookhraneniye Belorussii, No 6, 1970, pp 62-66

Abstract: Machine storage of medical information and the use of a ready retrieval system were discussed. In addition, a form No 266-M, divided into 60 zones and 490 cells, capable of deciphering 999 pertinent medical problems was added. After detailed presentation of the workings of the "Minsk-22M" computer in conjunction with these blanks, it was concluded that: Machine processing of medical information with the aid of formal documents improves the quality of book-keeping, insures veracity of the data, improves accountability by compiling additional summaries and indicators, and standardizes the discrepancies in diagnoses and therapeutic processes for all medical personnel. In addition, computer processing improves the organization of the initial documentation, perfects the organization of work for accounting personnel and other institutional personnel by freeing them from search and grouping operations, substantially increases the productivity of statisticians, and increases the quality and efficiency of management of a medical establishment.

1/1

USSR

UDC 002.513.5:681.3:621.3

MALININ, S.G., ~~CHERNYAVSKIY, V.S.~~, and SHNEYERSON, A.Z.

"Experiment in Debugging an Automated Information Retrieval System for Electrical Engineering"

Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 2, Informatsionnyye Protsessy i Sistemy, No 1, 1971, pp 21-25

Abstract: The Information-Reference Center for Electrical Engineering, which is part of the Department for Scientific-Technical Information of VNIIEP [Vsesoyuznyy Nauchno-Issledovatel'skiy Institut Elektromekhaniki; All-Union Scientific Research Institute of Electromechanics], is adopting the "Pusto-Nepusto-2" information retrieval system. This article describes the technological aspects of the problem of automatic indexing of documents for the system.

Today, the center already has some 150,000 secondary documents (abstracts, annotations, patents, and so on) available, and 1,000-2,000 documents are automatically indexed each week, each document requiring 50-60 seconds of machine time. However, in 1967, when debugging of the automatic indexing process was begun, although indexing and retrieval had already been turned over to the computer and 15,000 documents had been coded, attempts to cope with the regular input of as few as 100 documents a week had been unsuccessful. The reasons for this fell into three basic categories: 1) the staff's lack of understanding of

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USSR

MALININ, S.G., et al., Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 2, Informatsionnyye Protsessy i Sistemy, No 1, 1971, pp 21-25

the meaning of "technological process" when applied to semantic processing of information; 2) inconsistencies, lack of coordination, and lack of clear distribution of responsibility in the organizational structure of the center; and 3) psychological factors.

After giving examples of all three types of reasons, the authors discuss the steps that were taken to improve the situation. First, the center was reorganized as an independent subdivision; and second, in order to reduce the Minsk-22's downtime, reorganization and retraining of computer operators and electricians were carried out. This program was successful -- in the first six months of 1968, only 44 hours of downtime were due to machine breakdowns. Next, changes were made in the structure of the center in accordance with the following basic principles: 1) separation of experimental and routine work; 2) the organization of a dispatcher service as the core for automatic indexing. Finally, the indexing process itself was analyzed in detail and, based on this analysis, a preliminary system to process 200 documents a week was set up and then tested.

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USSR

MALININ, S.G., et al., Moscow, Nauchno-Tekhnicheskaya Informatsiya, Seriya 2, Informatsionnyye Protsessy i Sistemy, No 1, 1971, pp 21-25

The process of indexing was conceived of in terms of the processing of industrial components, and the system was organized along these lines. Every effort was made to establish psychological contact between the system and the staff using it. Therefore, losses of machine time and excessive manual labor were ignored and, instead, personnel were required to carry out each component operation slowly and with as few mistakes as possible. Another essential point that was emphasized was the need to strictly observe the production cycle: that is, to carry out an operation only on the days and at the times of day allotted to it. After this system had been thoroughly tested and mastered, a new one, intended for the processing of a larger number of documents, was set up, and so on, until the present level of competence was attained.

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USSR

UDC 621.382.5

ZVYAGINA, E. N., OSTROVSKIY, G. I., TIKHONOV, V. I., KILIPENKO, V. V.,
CHERNYAVSKIY, V. V.

"Study of Contact Resistances in Thermoelectric Materials"

V sb. Nizkotemperaturn. termoelektrich. materialy (Low-Temperature Thermo-
electric Materials -- Collection of Works), Kisinev, 1970, pp 44-47 (from
RZh--Elektronika i yeye primenneiye, No 5, 1971, Abstract No 5B187)

Translation: A method is proposed for measurement of the contact resistances of
thermopiles, based on an increase of the number of switching layers in the
specimen. In contrast to the sonde-type, the proposed method has great
sensitivity, gives good reproducibility of results ($\sim 4\%$, whereas the sonde
type is as much as 20% [sic]) and makes it possible to measure contact re-
sistance in a wide range of temperature. 2 ill. 4 ref. Author's Abstract.

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USSR

UDC 621.52:681.32

CHERNYAVSKIY, YE. A. And TIKHONOV, G. A., Leningrad Electrotechnical Institute

"Automatic Counting and Monitoring Apparatus"

Avtomaticheskaya Ustroystva Ucheta i Kontrolya. Sb. statey (cf English above--collection of articles), Izhevsk, Udmutriya, 1973, 239 pp, illustrated, 1 ruble, 15 kopeks (from RZh Avtomatika Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 73, abstract No 11 A347 K)

Translation: The collection includes materials from a scientific-technical conference conducted in 1971 at the Instrument Design Faculty of the Izhevsk Mechanical Institute. The materials reflect questions of the theory and principles of design of elements and apparatus for computers and automated recording and monitoring systems. Much attention is given to questions of pattern recognition and prediction. The collection is intended for engineers and scientific workers involved in the development of cybernetic control and monitoring systems.

Abstract from the annotation.

1/1

USSR

SMOLOV, V. B., ISMAILOV, Sh. Yu., CHERNYAVSKIY, Ye. A., DOBORDZHGINIDZE, D. D., USSR Author's Certificate Number 290226, filed 29/07/69, published 9/04/71 (translated from Referativnyy Zhurnal Avtomatika Telemekhanika i Vychislitel'naya Tekhnika, No 3, 1972, Abstract No 3 A256 P)

is connected to the common terminal of the second switch, one terminal of which is connected to the register of the digital-analog multiplier, while the other is connected to the output of the entire device. Two figures.

2/2

- 6 -

Converters

USSR

UDC 681.142.6:681.142.53

SMOLCV, VLADIMIR BORISOVICH; ~~CHERNYASHIN, YEMGENIY ALEKSANDROVICH~~; POLYANSKAYA, TAT'YANA IVANOVNA; LURDIKOV, BORIS ALEKSANDROVICH

"All-Purpose Electronic Information Converter"

Universal'nyye elektronnyye preobrazovateli informatsii (of English above),
Leningrad, "Mashinostroyeniye," 1971, 312 pp. 2 tab. 160 ill. 54 ref. 1 r 28 k

Abstract: In the book the theoretical prerequisites are considered which lie at the base of planning of electronic information converters; an account is presented of the basic elements and units fulfilled by semiconductor elements. Great importance is allotted to problems of conversion of the normalized amplitude of a-c voltage into binary code; the possibility is shown of fulfillment of mathematical operations with coding of the d-c and a-c voltages; and problems are considered of the evaluation of information reliability of voltage conversion. The book is intended for engineers concerned with problems of the construction of up-to-date systems of monitoring and control, both in the field of contemporary machine-building and in other branches of technology which use digital and combined computing devices. It will be useful also for students and graduate students of higher educational institutions who are connected with the development of devices for computing, control, and information-measuring techniques.

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USSR

SMOLOV, VLADIMIR BORISOVICH, et al., Universal'nyye elektronnyye preobrazovatelyi informatsii, Leningrad, "Mashinostroyeniye," 1971, 312 pp. 2 tab. 160 ill. 54 ref. 1 r 28 k

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USSR

SMOLOV, VLADIMIR BORISOVICH, et al., Universal'nyye elektronnyye preobrazovateli informatsii, Leningrad, "Mashinostroyeniye," 1971, 312 pp. 2 tab. 160 ill. 54 ref. 1 r 28 k

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