

PROCESSING DATE--23OCT70

UNCLASSIFIED

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CIRC ACCESSION NO--ANO122643

ABSTRACT/EXTRACT--BUT THEY ARE EFFECTIVE ONLY IN THE EARLY DAYS OF THE DISEASE, WHEN THEY ARE CAPABLE OF ABORTING IT OR PREVENTING IT FROM FOLLOWING A SEVERE COURSE. THE SYMPTOMS OF INFLUENZA ARE EASILY RECOGNIZED. THE DISEASE USUALLY STARTS WITH CHILLS, GENERAL MALAISE, HEADACHE AND SOMETIMES HIGH TEMPERATURE. THE PATIENT HAS ACES AND PAINS IN THE SMALL OF THE BACK, ARMS, LEGS, AND BACK, INFLAMMATION OF THE MUCOUS MEMBRANES, A COLD, DRY COUGH. HIS VOICE BECOMES HOARSE AND HE SOMETIMES EXPERIENCES PAIN ON SWALLOWING. HIS EYES BECOME RED AND TEARY. SUCH A PERSON MUST BE PUT TO BED PROMPTLY AND TREATED UNTIL HE COMPLETELY RECOVERS. INFLUENZA MUSTN'T BE TRIFLED WITH. THIS WARNING MUST BE GIVEN REPEATEDLY BECAUSE MANY PATIENTS INSTEAD OF GOING TO A DOCTOR THE VERY FIRST DAY TRY TO TREAT THEMSELVES. THEY SOMETIMES USE BARBAROUS MEANS AND IRRITATE THE MUCOUS MEMBRANES (E.G. BY DRINKING VODKA WITH SALT OR ASPIRIN) AND THEY OFTEN TAKE ANTIBIOTICS (TETRACYCLINE, BIOMYCIN, PENICILLIN, ETC.). ANTIBIOTICS ARE NECESSARY ONLY IN CERTAIN CASES, MOSTLY WHEN THERE ARE COMPLICATIONS. IN OTHER CASES THEY ARE EITHER USELESS OR EVEN HARMFUL. ONLY A PHYSICIAN OR FIELDSHER SHOULD PRESCRIBE THEM. ATTEMPTS AT "SELF TREATMENT", STILL WIDESPREAD AMONG THE POPULATION, MUST BE HALTED AS DANGEROUS TO HEALTH. EVERY PERSON WHO GETS SICK SHOULD SEEK MEDICAL HELP AS SOON AS POSSIBLE AND DO EXACTLY WHAT THE DOCTOR TELLS HIM TO. FACILITY: CENTRAL ORDER OF LENIN INSTITUTE FOR ADVANCED TRAINING OF PHYSICIANS.

UNCLASSIFIED

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SEPPI, I., Professor Central Order-of-Lenin Institute for Advanced Training
of Physicians

"Influenza, a Treacherous Disease"

Moscow, Sovetskaya Rossiya, 17 Jan 70, p 4.

Translation: No infectious disease spreads with such rapidity and complete indifference to geographical, age, or any other kinds of boundaries as influenza. Every year 10-15 percent of people all over the world get the disease and in some years it attacks almost the entire world population.

The influenza virus is exceptionally variable. The defensive forces of the body that are mobilized when a person is infected by one type of virus are helpless against another type. Moreover, lack of susceptibility resulting from the disease disappears fairly quickly, in 1-3 years. That is why outbreaks, epidemics, or pandemics occur after these intervals. During the past 10 years they were caused by the type A₂ or B virus. The epidemic that is now raging in many countries is caused by the A₂ virus.

People sometimes get the impression that mankind is fated to have frequent encounters with influenza epidemics against which it is defenseless, but this

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SEPP, I., Sovetskaya Rossiya, 17 Jan 70, p 4

impression is false. Due to the progress made by medicine, virology in particular, we have many powerful means of controlling the disease. Their effectiveness was manifested in the pandemic of Hong Kong Flu in 1968-1969, when the incidence of the disease in the USSR was much lower than in some of the highly developed countries and deaths were uncommon.

The first means of protection against influenza is healthy work and rest conditions, frequent walks outdoors, physical exercise, attention to personal hygiene and sanitary conditions at home.

Clinical experience shows that the course of influenza is particularly severe in those who abuse alcohol and in those suffering from metabolic, cardiovascular, and respiratory diseases. On the other hand, people who are physically fit, hardy, who have a healthy mode of living either do not contract influenza or have only a mild bout with no complications.

Conditioning of the upper respiratory tract is very beneficial. It is a well-known fact that skiers and lovers of other kinds of winter sports, "walkers", rarely have colds. The secret lies not only in their general health

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SEPP, I., Sovetskaya Rossiya, 17 Jan 70, p 4

and good condition, but in the unusual resistance of the mucous membranes of their respiratory tract. This resistance can be built up by inhaling fresh frosty air, rinsing the mouth and throat with cold water (one should start with warm water and gradually lower the temperature day by day), putting drops of warm and then increasingly cold water into the nose, and cleaning the mouth and teeth carefully. On the other hand, abuse of alcohol or overuse of sharp food seasonings and smoking destroy the integrity of the tissues and lower the resistance of the mucous membranes of the mouth and respiratory tract.

The second method of controlling influenza is compulsory and early isolation of a victim who is to receive free treatment at home or in a hospital. Unfortunately, people often do not follow this procedure, thinking that suffering with the disease "on their feet" and continuing on the job even when running a high temperature is a unique kind of "valor". But this is selfish because such a "manly" patient infects others around him and may develop serious complications and subsequent nervous, cardiovascular, and other disorders.

Besides the general social and hygienic methods already mentioned, we have some specific and nonspecific means of protection. Among the specific means are influenza vaccine and anti-influenza immunoglobulin. Neither of these agents is capable of completely preventing influenza from spreading,

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but they can reduce the incidence of the disease twofold or more and prevent the severe and complicated forms. These agents should therefore be used primarily among the most threatened groups -- children, workers in retail shops, transport, hospitals and clinics, etc.

One of the great medical accomplishments of recent years is the development of nonspecific means of protection against viral diseases, influenza in particular. These means are new, but they have already demonstrated their value. One of them is interferon, a protein that prevents virus from multiplying in human cells. Interferon can be produced artificially and then introduced into the respiratory tract (e.g., by instilling drops into the nose). Interferon elaborated by the body itself after the introduction of special stimulants is even more active.

Trials of interferon conducted by the laboratories of Academicians Z. V. Yermol'yeva and V. D. Solov'yev and by Academician O. V. Baroyans' department in the Central Institute of Advanced Training of Physicians showed it to be highly effective against influenza.

It should be noted that all these specific and nonspecific agents are used both to prevent and to treat influenza. But they are effective only in

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SEMPI, I., Sovetskaya Rossiya, 17 Jan 70, p 4

the early days of the disease, when they are capable of aborting it or preventing it from following a severe course.

The symptoms of influenza are easily recognized. The disease usually starts with chills, general malaise, headache and sometimes high temperature. The patient has aches and pains in the small of the back, arms, legs, and back, inflammation of the mucous membranes, a cold, dry cough. His voice becomes hoarse and he sometimes experiences pain on swallowing. His eyes become red and teary. Such a person must be put to bed promptly and treated until he completely recovers.

Influenza mustn't be trifled with. This warning must be given repeatedly because many patients instead of going to a doctor the very first day try to treat themselves. They sometimes use barbarous means and irritate the mucous membranes (e.g. by drinking vodka with salt or aspirin) and they often take antibiotics (tetracycline, biomycin, penicillin, etc.). Antibiotics are necessary only in certain cases, mostly when there are complications. In other cases they are either useless or even harmful. Only a physician or feldsher should prescribe them. Attempts at "self-treatment", still widespread among the population, must be halted as dangerous to health.

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SEMPI, I., Sovetskaya Rossiya, 17 Jan 70, p 4

Every person who gets sick should seek medical help as soon as possible and do exactly what the doctor tells him to.

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SEPPI, I. V., Professor, and GAVRILINA, V. V., Engineer-technologist,
Institute of Nutrition, Academy of Medical Sciences USSR

"Botulism"

Moscow, Zdorov'ye, No 8, Aug 72, pp 16-17

Abstract: in this popularized article Professor Seppi characterizes botulism and its insidiousness. He points out that under present Soviet conditions botulism is most often caused by improperly prepared homemade foods, chiefly mushrooms. As an example he quotes a case where a person had consumed only a small piece of sausage given to her on a fork that was previously used in eating mushrooms which were the cause of severe poisoning of several persons by botulinus toxin. He notes that the power of this toxin surpasses all other bacterial toxins and chemical poisons. One gram of it is sufficient to poison one hundred million persons. Although such quantities do not accumulate in foodstuffs, even the slightest amount of it presents a great danger.

Statistical data show that in every second person affected by botulism, the poisoning was caused by homemade mushroom preserves, in every fifth case homemade salt or smoked fish was responsible, and in every sixth case homemade vegetable preserves were the cause. Homemade fruit or pork preserves accounted for other cases.

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SEPPI, I. V. and GAVRILINA, V. V., Zdorov'ye, No 8, Aug 72, pp 16-17

Its insidiousness consists in the fact that botulinus toxin, with rare exceptions, does not change either appearance, or taste, or odor of foods. Moreover, the vomiting and intestinal disorders which usually accompany poisonings are rarely present in botulism; body temperature is almost normal, and to such symptoms as dryness of the mouth, hoarseness, clouding of vision, especially when combined with ingestion of alcohol, often no importance is attached in the beginning.

V. V. Gavrilina gives detailed recommendations on how to prepare homemade preserves, in order to avoid botulism. Her recipes include: preserved stewed fruits (compotes), pickled cucumbers and tomatoes, salt mushrooms, salt fish, and dried fish.

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1/2 023 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--CERTAIN CHARACTERISTICS OF THE F1 LAYER -U-

AUTHOR--SERAFIMOV, K.B.

COUNTRY OF INFO--USSR

SOURCE--IN: IONOSPHERIC STUDIES. NUMBER 19 (IONOSFERNYE ISSLEDOVANIIA.
NUMBER 19). (A70-32076 15-13), MOSCOW, IZDATEL'STVO NAUKA, 1970, P.
DATE PUBLISHED-----70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--F LAYER, OXYGEN, ATOM, SOLAR ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1071

STEP NO--UR/0000/70/000/000/0124/0135

CIRC ACCESSION NO--AT012472B

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0124728

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF THE FORMATION OF THE F1 LAYER AS THE RESULT OF THE STRATIFICATION OF THE F LAYER. EXPRESSIONS ARE GIVEN TO DETERMINE THE CONDITIONS FOR THE FORMATION OF A WELL LEVELED F1 LAYER. A POSSIBLE LINK BETWEEN THE OCCURRENCE OF THIS LAYER AND THE VARIATIONS IN THE CONCENTRATION OF ATOMIC OXYGEN AND IN THE ZENITH ANGLE IS INDICATED. THE DYNAMIC BEHAVIOR OF ION PRODUCTION MAXIMA AND THE EFFECTS OF THE LINEAR AND QUADRATIC LAWS OF RECOMBINATION ARE ALSO CONSIDERED AS POSSIBLE FACTORS IN THE FORMATION OF THIS LAYER. EXPERIMENTAL DATA ARE GIVEN CONCERNING THE TIME OF APPEARANCE AND DISAPPEARANCE OF THE F1 LAYER. ION PRODUCTION RATES IN THIS LAYER ARE ESTIMATED FROM OBSERVATIONS DURING HIGH AND LOW SOLAR ACTIVITY PERIODS.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--CERTAIN POSSIBILITIES OF A MORE ACCURATE DETERMINATION OF THE
STRUCTURE OF THE IONOSPHERE -U-
AUTHOR--SERAFIMOV, K.B.
COUNTRY OF INFO--USSR
SOURCE--IN: IONOSPHERIC STUDIES. NUMBER 19 (IONOSFERNYE ISSLEDOVANIIA.
NUMBER 19). (A70-32076 15-13), MOSCOW, IZDATEL'STVO NAUKA, 1970, P.
DATE PUBLISHED-----70
SUBJECT AREAS--ATMOSPHERIC SCIENCES
TOPIC TAGS--IONOSPHERE, SOLAR RADIATION ABSORPTION, STRUCTURAL ANALYSIS,
RADIOPHYSICAL METHOD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1070 STEP NO--UR/0000/70/000/000/0114/0123
CIRC ACCESSION NO--AT0124727
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0124727

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF A REVISED PROCEDURE FOR STUDYING THE STRUCTURAL CHARACTERISTICS OF THE IONOSPHERE BY RADIOPHYSICAL METHODS. THE PROCEDURE CALLS FOR ADDITIONAL RADIATION ABSORPTION MEASUREMENTS AND IS DESIGNED TO IMPROVE THE RESULTS OBTAINED BY CONVENTIONAL RADIO PHYSICAL OBSERVATIONS. THE POSSIBILITY OF USING NONDEFLECTING ABSORPTION FOR DETERMINING THE N(Z) PROFILE IN THE D AND INTERMEDIATE D-E REGIONS IS ANALYZED. ALSO EVALUATED IS THE USE OF DEFLECTING ABSORPTION FOR OBTAINING INDEPENDENT CONTROL DATA FOR THE N(Z) DISTRIBUTION IN THE MIDDLE AND HIGHER IONOSPHERE. PROCEDURES FOR SEPARATION OF DEFLECTING AND NONDEFLECTING ABSORPTIONS AND FOR THE DETERMINATION OF THE STRUCTURE OF THE E-F2 REGION ARE ALSO DESCRIBED.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--AFTERNOON AND EVENING MAXIMA IN THE F2 LAYER -U-
AUTHOR--(02)--SERAFIMOV, K.B., GORINOV, N.
COUNTRY OF INFO--USSR
SOURCE--IN: IONOSPHERIC STUDIES. NUMBER 19 (IONOSFERNYE ISSLEDOVANIIA.
NUMBER 19((A70-32076 15-13), MOSCOW, IZDATEL'STVO NAUKA, 1970, P.
DATE PUBLISHED-----70
SUBJECT AREAS--ATMOSPHERIC SCIENCES, ASTRONOMY, ASTROPHYSICS
TOPIC TAGS--F LAYER, IONIZATION, SOLAR ACTIVITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1069 STEP NO--UR/0000/70/000/000/0109/0113
CIRC ACCESSION NO--AT0124726
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0124726

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

ABSTRACT. STUDY OF THE DEPENDENCE OF THE PARAMETERS OF THE AFTERNOON AND EVENING IONIZATION MAXIMA IN THE F2 LAYER ON THE SEASON, ZENITH ANGLE, AND SOLAR ACTIVITY LEVEL. IT IS SHOWN THAT THESE MAXIMA INCREASE DURING A SOLAR ACTIVITY MINIMUM WHILE THE TIME OF THEIR OCCURRENCE IS NOT SUBSTANTIALLY AFFECTED BY VARIATIONS IN SOLAR ACTIVITY.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--INVESTIGATION OF IONIZATION NEUTRALIZATION PROCESSES IN THE MIDDLE
IONOSPHERE BY RADIOPHYSICAL MEASUREMENTS -U-
AUTHOR--SERAFIMOV, K.B.
COUNTRY OF INFO--USSR
SOURCE--IN: IONOSPHERIC STUDIES. NUMBER 19 (IONOSFERNYE ISSLEDOVANIYA.
NUMBER 19). (A70-32076 15-13), MOSCOW, IZDATEL'STVO NAUKA, 1970, P.
DATE PUBLISHED-----70
SUBJECT AREAS--ATMOSPHERIC SCIENCES
TOPIC TAGS--IONIZATION, ION NEUTRALIZATION, ION RECOMBINATION, E LAYER,
RADIOPHYSICAL METHOD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1068 STEP NO--UR/0000/70/000/000/0099/0108
CIRC ACCESSION NO--AT0124725
UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0124725

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. DISCUSSION OF TECHNIQUES FOR STUDYING RECOMBINATION AND NEUTRALIZATION PROCESSES IN THE F AND E REGIONS OF THE IONOSPHERE. A METHOD FOR DETERMINING THE EFFECTIVE RECOMBINATION COEFFICIENT IN THE E REGION BY RADIOPHYSICAL MEASUREMENTS IS DESCRIBED. VALUES OF THE COEFFICIENT OBTAINED BY RADIOPHYSICAL OBSERVATIONS AT VARIOUS POSITIONS OF THE SUN ARE FOUND TO VARY FROM LESS THAN 10 TO THE MINUS 8 CU CM PER SEC TO MORE THAN 10 TO THE MINUS 7 CU CM PER SEC DURING THE DAY, WITH VALUES OF ABOUT 10 TO THE MINUS 7 CU CM PER SEC PREVAILING. THE CAUSES OF THESE VARIATIONS ARE DISCUSSED.

UNCLASSIFIED

Acc. Nr: **AP0046351**

Ref. Code: **UR000**

PRIMARY SOURCE: Razdel V, Ionosfernyye Issledovaniya, 1970,
Nr 19, pp 114-123

K. B. Serafimov. Some possibilities of more accurate determination of structure of ionosphere

It is proposed to use additional measurement absorption for elimination of main shortcomings in modern methods of determination of ionosphere structure with the help of radio physical measurements. Possibility to use nondiverting absorption is analyzed for determination $N(z)$ of profiles in region D and intermediate D -- E region and application of diverting absorption to get control independent data on distribution of $H(z)$ in the middle and higher ionosphere. Some methods of division of total absorption are described into diverting and non-diverting and determination of structure of intermediate E -- F2 region. Some examples of application of these methods are given.

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19781516

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Acc. Nr: AP0046352

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Ref. Code: UR0000

PRIMARY SOURCE: Razdel V, Ionosfernyye Issledovaniya, 1970,
Nr 19, pp 109-113

K. B. Serafimov, N. Gorinov. About afternoon and evening maximum
in layer F2.

As is known an afternoon increase of ionization is a specific element of around
the clock motion of F2.
It is shown that specific parameters of afternoon and evening maximum depend
on a season, zenith angle of the sun and solar activity. So with maximum activi-
ty the value of this maximum is the greatest and changes of solar activity do not influen-
ce greatly upon a moment of appearance of this maximum.

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REEL/FRAME
19781517

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Acc. Nr: AP0046367

Ref. Code: UR0000

PRIMARY SOURCE: Razdel V, Ionosfernyye Issledovaniya, 1970,
Nr 19, pp/24-135

K. B. Serafimov. Some regularities of layer F1.

Conditions of stratification of region F of ionosphere are discussed leading to appearance of layer F1. Analytical expression is given for conditions of appearance of well distinguished layer F1. It can be connected with some change of concentration of atomic oxygen making a main contribution into the rate of ionization and zenith angle of the sun. Another explanation of appearance can be connected with coincidence or non-coincidence of levels where is a maximum rate of ionoformation and where effects of linear and quadratic laws of recombination are compared. Some experimental data are described about moments of appearance and disappearance of layer F1 and also some peculiarities of behaviour of F1. On the basis of experimental data some estimations of rate of ionoformation are made in the region of F1 under high and poor activity of the sun.

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REEL/FRAME
19781532

Acc. Nr: **AP0046353**

Ref. Code: **VR0000**

PRIMARY SOURCE: **Razdel V, Ionosfernyye Issledovaniya, 1970, Nr 19, pp 79-108**

K. B. Serafimov. About investigations of ionization -- neutralization processes in the middle Ionosphere by the way of radio-physical measurements .

A question of determination of main parameters of ionization -- recombination cycle of processes in regions E and F1 of ionosphere is discussed. A method of determination of α_E is described. Some results of determination of α_E are given on the basis of radiophysical observations, carried out in different angles of the sun. It is shown that during twenty four hours an effective coefficient of recombination is essentially changed from $\alpha_E < 10^{-8} \text{ cm}^3 \text{ sec}^{-1}$ to $\alpha_E > 10^{-7} \text{ cm}^3 \text{ sec}^{-1}$. However in the prevailing part of a day $\alpha_E \approx 10^{-7} \text{ cm}^3 \text{ sec}^{-1}$. The indicated changes α_E can not probably be explained by variations of atmosphere temperature only, an essential role should also be played by some change of ionic composition around the clock.

For region F1 some curves of change with height of maximum and minimum values of effective coefficient of recombination are drawn up limiting actual value α_{F1} . Possibilities of investigations of α' in the lower part of ionosphere (region D) is shortly discussed.

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REEL/FRAME
19781518

12/ 12

1/2 011

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--PHASE EQUILIBRIUM IN A VINYL ACETATE ACETIC ACID WATER SYSTEM AT
ATMOSPHERIC PRESSURE -U-

AUTHOR--(04)-TIKHONOVA, N.K., TIMOFEYEV, V.S., SERAFIMOV, L.A., TOLKACHEVA,
N.L.

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COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(2), 175-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHASE EQUILIBRIUM, VINYL COMPOUND, ACETATE, ACETIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0791

STEP NO--UR/0153/70/013/002/0175/0177

CIRC ACCESSION NO--AT0132889

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132889

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EQUIL. COMPNS. IN THE 2 LIQ. PHASE REGION AND ALONG THE BINODAL SOLY. CURVE FOR THE TERNARY SYSTEM VINYL ACETATE HOAC-H SUB2 O ARE GIVEN FOR 13 POINTS AT 20DEGREES, AND FOR 11 POINTS AT THE B.P., AND A TERNARY ISOTHERMAL ISOBARIC DIAGRAM IS PRESENTED. VAPOR LIQ. EQUIL. AND B.P.S. ARE ALSO GIVEN FOR 27 TERNARY MIXTS. AT ATM. PRESSURE. THE SYSTEM IS DEFINED AS TYPE 4ALPHA CLASS I ACCORDING TO THE CLASSIFICATION METHOD OF GURIKOVA, AND THE CONC. TRIANGLE IS SEPD. INTO 2 RECTIFICATION REGIONS. FACILITY: MOSK. INST. TONKOI KHIM. TEKHNOL. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 013

UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--USE OF CHROMATOGRAPHIC APPARATUS TO STUDY THE STRUCTURE OF LIQUID VAPOR PHASE EQUILIBRIUM DIAGRAMS -U-

AUTHOR--(03)-KIVA, V.N., PARIYCHUK, L.V., SERAFIMOV, L.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 225-7

DATE PUBLISHED-----70

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SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHASE EQUILIBRIUM, PHASE DIAGRAM, ORGANIC SOLVENT, GAS CHROMATOGRAPHY, AZEOTROPIC MIXTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1989/0805

STEP NO--UR/0076/70/044/001/0225/0227

CIRC ACCESSION NO--AP0107347

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0107347

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

ABSTRACT. THE GAS CHROMATOGRAPHIC SEPN. IS DESCRIBED OF BINARY MIXTS. OF ORG. SOLVENTS (C SUB6 H SUB6, DIOXANE, ME SUB2 CO, CCL SUB4, CHCL SUB3, HEXANE, ETC.) BY EVAPN. OF A SAMPLE INTO FLOWING H OR HELIUM WITH A COLUMN FILLED WITH LOW ADSORPTION ACTIVITY PACKING WITHOUT A STATIONARY PHASE. THE POSSIBILITY OF USING THE KATHAROMETER RESPONSE TO THE LIQ. COMPN. TO IDENTIFY AZEOTROPIC MIXTS. IS SHOWN.

UNCLASSIFIED

USSR

UDC 528.021.6

SERAPINAS, B. B., Candidate of Technical Sciences, Moscow Institute of
Engineers of Geodesy, Aerial Photography and Cartography

"Effect of Navigation Errors on the Accuracy of Measuring Long Lines by the
Range Intersection Method"

Moscow, Izvestiya Vysshikh uchebnykh zavedeniy, Geodeziya i aerofotos'yemka,
No. 3, 1970, pp 9-16

Abstract: The relationship between navigation errors and errors of individual sums and errors of minimal sums in the Shoran method of measuring long lines is derived. It is noted that at the present time the accuracy of measurements made by such systems due to the effect of many sources of error in the intersection system is of the order of the relative error of measurement equal to $1 \cdot 10^{-5}$ or even sometimes as high as $3 \cdot 10^{-5}$; navigation errors are ordinarily not considered but since these errors are independent of the accuracy of the radiogeodesic equipment and are determined only by the state of the atmosphere, the type of aircraft and the perfection of the navigation, the question arises as to how the aircraft should go along a line intersecting the range and how

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SERAPINAS, B. B., Izvestiya Vysshikh uchebnykh zavedeniy, Geodeziya i aerofotos'yemka, No. 3, 1970, pp 9-16

one should strictly maintain constant ground speed and time intervals over which the sums of distances measured by modern equipment are fixed. It is shown that the effective navigation errors on the minimum sums is considerably less in comparison with the effect on individual sums. The effect of navigation errors drops sharply with a decrease in the height of flight and an increase in the lengths of the lines. Errors in altitude have the greatest effect of all navigation errors. It is emphasized that particular attention in crossings of the range should be paid to maintaining a constant flight altitude. This is especially important in measurements of the order of 100 kilometers or less and at altitudes of >2 km. In this case the range should be intersected no less than 4-9 times to reduce navigation errors to $1/300,000$. In flights along the range sometimes made to check equipment, it is assumed that the sum of the distances remains fixed. This occurs only close to the middle of the line and altitude fluctuations of the aircraft may distort the measured sum of the distances by several meters.

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USSR

UDC 528.517

SERAPINAS, B. V.; Moscow Institute of Geodetic Engineers, Aerial Photography and Cartography

"Certain Triangulation Schemes and the Accuracy of Geodetic Constructions with Help of Tellurometers Having Dispersed Transceivers"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Geod. i Aerofotos'yemka, No 4, 72, pp 49-54

Abstract: The use of tellurometers with dispersed transceivers makes possible reduction in the expense of building survey markers, which, in fact can be eliminated entirely with use of the "Luch" tellurometer in flat and thinly wooded areas.

The present study concerns the possibility of constructing geodetic networks based on rhomboidal links. It is assumed that in every link a tellurometer of this type is used to measure all sides and one diagonal, and a theodolite to measure the two angles opposite this diagonal and the angle between adjacent links. Markers are set up only at points of angle measurement; masts, with signals and transceivers at other points. The estimate of the accuracy of such networks is even superior to that of triangulation in some situations. An economy of more than 20 percent is realized by the reduction in the number of markers.

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1/2 017
UNCLASSIFIED
TITLE--ON SEGMENTS OF THE HUMAN LIVER AND SURGICAL ACCESSES TO THEM -U-
PROCESSING DATE--23OCT70
AUTHOR--SERAPINAS, I.L.
COUNTRY OF INFO--USSR
SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 4, PP
48-55
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--LIVER, SURGERY, ANATOMY, AUTOPSY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/0028
STEP NO--UR/0589/70/104/004/0048/0055
CIRC ACCESSION NO--AP0105127
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105127

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BASED ON THE STUDY OF 431
POSTMORTEM PREPARATIONS OF EXTRA AND INTRAORGANIC BLOOD VESSELS AND
BILIARY PASSAGES OF THE LIVER OF HUMANS AT THE AGE FROM A 3 MONTH OLD
FOETUS TO 96 YEARS OLD PERSONS A NEW CLASSIFICATION OF HEPATIC SEGMENTS
IS GIVEN, AS WELL AS MOST RATIONAL SURGICAL APPROACHES TO THEM.
THORACOABDOMINAL INCISIONS ARE FELT TO BE RATIONAL FOR ACCESS TO THE
INFERIOR VENA CAVA ABOVE THE DIAPHRAGM, TO HEPATIC VEINS OSTIA, AS WELL
AS TO THE MEDIAN AND RIGHT SETORS OF THE LIVER AND THEIR SEGMENTS.

UNCLASSIFIED

Acc. Nr: AA 0101009

SERAVIN

3.70

Ref. Code: UR 0482

Abstracting Service: Soviet Inventions Illustrated, Section III Mechanical and General, Derwent,

241382 FORMING APERTURES IN THIN-WALLED PIPES uses a device with a point (8) which is fixed on the press's slide block (9), a matrix (2) a mechanism for longitudinal movement of the pipe, a mechanism for turning the pipe in relation to the matrix, and a programming device which provides for the pre-set movements of the pipe. In order to enable automation of the process of piercing and to increase the precision of tooled details, the point's cross-section corresponds to the dimensions of the smallest window and enables a consecutive formation of a contour of a window of a pre-set configuration. The mechanism for the longitudinal movement of the pipe, which is synchronised with the point's movement, is a carriage (15) with a pipe-clamping mechanism (17). The carriage is moved by the lead screw (13) and has ball guides (16). The mechanism for turning the pipe round its axis is made in the form of a lead roller (23) which is kinematically connected with the clamping mechanism.

In order to synchronise the movement of the

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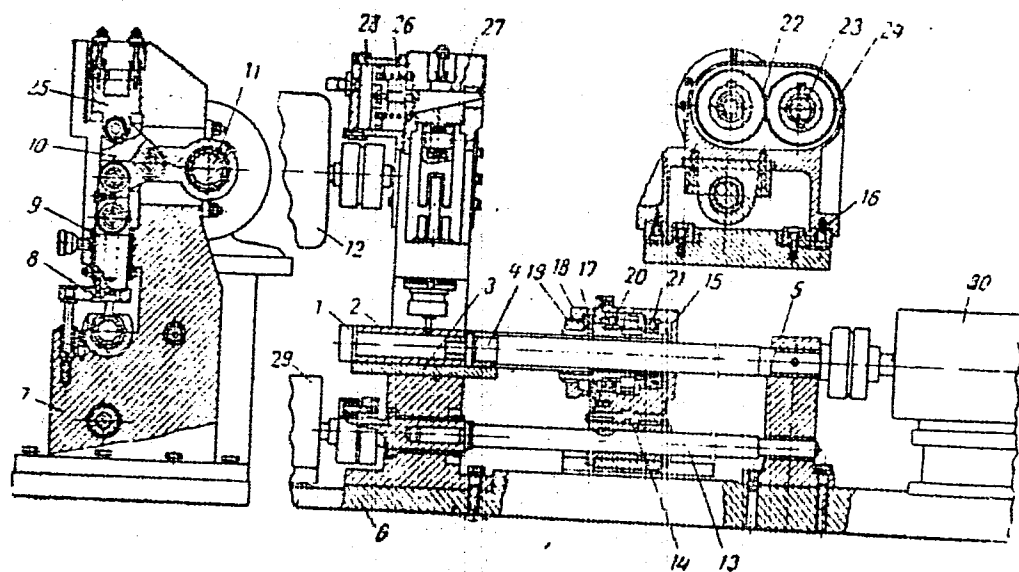
pipe with the movement of the point, torque hydro-amplifiers are used for driving the lead roller of the pipe-turning mechanism. The hydro-amplifiers are controlled by servo motors which provide for the pipe's movement, and determine the dimensions and the interposition of windows with the pre-set programme.
11.8.62. as 790903 25-8. SERAVIN, F.A. and MAKALOV, A.N. (10.9.69) Bul. 14/18.4.69. Class 7c, Int. Cl. B 21d.

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19850564

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CK

SERAVIN, G. N.

HYDROACOUSTIC TELEMETRY

Translation of Russian language book by G. N. Seravin, *Gidroakusticheskaya Telemekhika*, 1973, signed to 176 pages, *Izdatel'stvo Sudostroyeniya*, Leningrad.

HYDROACOUSTIC TELEMETRY

JPRS 61084
28 January 1974

ANN - PLS
FACETS
R. M. ANKER

(5)

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[1 - USSP - E]

2

UDC 621.398:681.883

ANNOTATION

The purpose of this book is to acquaint the reader with a new, rapidly developing field of telemechanics--hydroacoustic telemetry, which covers problems of the theory and practical application of technical devices for remote transmission of the results of measurements under water with the use of a hydroacoustic communications channel.

The appearance of hydroacoustic telemetry was caused by the widespread advance of mankind to the ocean, the enormous volume of work in the location and extraction of minerals and fish products at great depths and on the bottom of the sea, where the application of cable communications lines causes considerable difficulty. Hydroacoustic telemetric systems and instruments are used on board oceanographic vessels for the transmission of information from pickups that monitor the temperature, salinity, speed of sound, or remote transmission of data concerning the width of the opening of the trawl, the distance of the lower set of a trawl from the ground, the quantity of fish in the trawl, and also for remote control of drill rigs, petrol-eum pipelines, and other underwater production objects.

The task of the authors lay in generalizing available data and explaining the bases of the calculation and use of hydroacoustic telemetric systems of various designations. In the book conditions of the propagation of acoustic oscillations in the oceans and seas are considered in detail, and the range requirements imposed upon the telemetric apparatus is determined, while the telemetric channel and upon signals are explained, an analysis is given of the features of the transmission of the results of measurements by means of hydroacoustic signals, and a description is given of the most interesting systems which are now in operation among oceanographers, fishermen, specialists in the naval fleet, and marine geologists.

The book discloses the prospect of the further development of methods and means for hydroacoustic telemetry, shows paths for an increase

In the range of their operation, with observation of the given requirements imposed upon the speed of transmission of the data.

Theoretical methods and practical recommendations explained in the book will be useful to specialists engaged in the development, designing, and operation of hydroacoustic telemetric systems.

82 illustrations, 3 tables, bibliography of 64 titles.

Scientific Editor, Engineer V. A. Pokrovskiy. - 47774

Reviewers, Candidate of Naval Sciences A. I. Protsakov and Candidate of Engineering Sciences Ye. I. Chervatin.

9

PREFACE

The great attention of the leading countries of the world to the study of the ocean and the development of its resources have led to the rapid development of hydroacoustics, mainly because of its enormous applied value.

The practical requirements of oceanography, the development of the fisheries resources of great depth, and prospecting for and extracting minerals on the bottom of the sea, etc., have predetermined the development of a new trend in hydroacoustics in recent years--hydroacoustic telemetry. The development of hydroacoustic telemetric instruments lies in the automatic remote measurements of various physical parameters of the medium at great depths, in monitoring the behavior of objects under water and on the bottom of the sea, with the transmission of information along a hydroacoustic channel.

The ever increasing requirements imposed on the technical character-istics of hydroacoustic telemetric apparatus, on the one hand, and the inadequate satisfaction of them in specific systems, on the other hand, are forcing specialists in hydroacoustics and telemetry to devote their thoughts to the most optimal possibilities of the new trend in hydroacoustics and to seek the most optimum means of realization of the problems stated.

A survey of the literature discussing the problems mentioned demonstrates that at the present time there are no special works in hydroacoustic telemetry which are systematized in nature.

This book is the first attempt to generalize the enormous amount of material, and also to determine the general principles of hydroacoustic telemetry understandable to specialists working in the fields of shipbuilding, telemechanics, radioelectronics, and hydroacoustics, for the purpose of uniting their efforts in the matter of studying the World Ocean and the development of its riches which are hidden at great depths.

2

SERAVIN, L.N.

Cybernetics

30 Oct 70

118

PERIODICALS

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SERAVIN, L. N.

UDC: 691.1

Foundational Laws of Information Science, Conversion, Utilization and Transmission in Biological and Cybernetic Systems

By S. N. Seravin

Moscow, Vostochno-Siberiyskiy Universitet, Biologiya, No 9, Yp. 2, May 70.

Summary: This article is devoted to formulation of the basic laws of information science to enable biologists to perform a uniform qualitative analysis of the information flow in animal systems. Although many of the laws have not been formally presented, they are well known in the form of generalization or another form. The author refers the reader to the pertinent literature and points to the main trends in the development of cybernetics and their relation to the information science of presenting detailed processes. The laws involved deal with the primary data as only touched on in passing.

The terms of the process of the utilization of internal information contained in one system to another are considered: 1) transfer of information together with the

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30 Oct 70

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Author: L. N. Seravin, Leningradskoye Universitet, Biologiya, No 9, Yp. 2, May 70, by S. N.

transfer system and 2) transmission of the information via an information communication system of the living organism. Parting of a book from one library to another is an example of the transfer of information, and the brain controlling all the organs of the organism is an example of information transfer along the nerves of the transmitting system. The data relating to the transmission of information are given in the form of a table. The author also points to the need for the development of the theory of information transmission along communication channels (by means of signals) and considers.

The article contains a discussion of the following laws: 1) law of necessity of internal information communication channels for information exchange between two systems; 2) law of necessity of information utilization; 3) law of necessity of information transmission from one system to another along communication channels; 4) law of utilization of information in logical (and cybernetic) communication channels; 5) the law of utilization of information in systems for controlling internal processes; 6) the law of relative information value for larger processes (systems); 7) the law of disappearance of information.

2/6

USSR

UDC 535.215.12+621.382.28

LITOVCHENKO, V. G., SERBA, A. A., GORBAN', D. N., MOSKAL', D. N., IVANOVA, T. P.,
TKACHIK, V. P., PROKUROV, A. V.

"Use of an Optoelectronic Converter based on a Metal-Dielectric-Semiconductor
Photovaricap in a Dosimetric Device"

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No 5, 1971, pp 108-113

Abstract: A study was made of the basic characteristics of a new type of semiconductor voltage modulator using a surface metal-dielectric-semiconductor photovaricap as the active element. The theoretical analysis of the physical phenomena determining the operation of the MDS photovaricaps and also some experimental results of studying their characteristics were presented previously [V. G. Litovchenko, et al., Elektronnaya tekhnika, Series 2, No 1, 96, 1967; V. G. Litovchenko, et al., Radiotekhnika i elektronika, Vol 12, No 1, 76, 1967]. An optoelectronic modulator of constant and low-frequency voltages from high-resistance sources was developed on the basis of an MDS photovaricap and a light diode. The modulator is characterized by high-frequency parameters (10^5 - 10^7 hertz), high input impedance ($> 10^{12}$ ohms), small size and weight. Experimental data were obtained which illustrate the operation of the MDS photovaricap in the optoelectronic modulator, in particular, combined with the

USSR

LITOVCHENKO, V. G., et al., Poluprovodnikovaya tekhnika i mikroelektronika, No 5, 1971, pp 108-113

ionization chamber. The application of these optoelectronic modulators permits an increase in their modulation frequency by several orders (by comparison with mechanical dynamic capacitors) and, therefore, use of ordinary alternating voltage amplifiers instead of electrometric input cascades.

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- 12 -

USSR

UDC 535.215.12+621.382.28

LITOVCHENKO, V. G., ~~SEBBA, A. A.~~, GORBAN', D. N., MOSKAL', D. N.,
IVANOVA, T. P., TKACHIK, V. P., and PROKUROV, A. V.

"Using Optical-Electronic Converters Using MOS Photovaricaps in
Dosimetric Equipment"

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No. 5, 1971,
pp 108-113

Abstract: An investigation is made of the basic characteristics of a new type of semiconductor voltage modulator used as the active element in a surface metal oxide semiconductor photovaricap. This paper is thus a sequel to two earlier articles (Elektronnaya tekhnika, Series 2, 1967, 1, 96, and Radiotekhnika i elektronika, 1967, 12, 1, 76) written by the same authors, which dealt with the theoretical analysis of the physical phenomena determining the operation of MOS varicaps of the optical variety, and the experimental results of research into their characteristics. The experiments described in the present paper were conducted with p-type silicon specimens of various resistivities, from 10^2 to 10^4 ohm-cm, the surfaces of which were cleaned and sputtered with a layer of SiO_2 . A block diagram of the measuring equipment is shown and its operation described. The authors conclude that these photovaricaps can

USSR

LITOVCHENKO, V. G., et al., Poluprovodnikovaya tekhnika i mikro-
elektronika, No. 5, 1971, pp 108-113

be successfully used in equipment for measuring small constant or slowly varying currents and voltages from high-resistance sources. They are associated with the Semiconductor Institute, Ukrainian Academy of Sciences.

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- 31 -

USSR

UDC 621.383.5+621.382.28+535.215.12

LITOVCHENKO, V. G., SERBA, A. A., GORBAN', A. P.

"Some Physical Processes in the Metal-Dielectric-Semiconductor System under Conditions of Strong Nonstationary Depletion of the Semiconductor"

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No 5, 1971, pp 11-18

Abstract: A method is proposed for a combined study of the capacitance and conductivity of a metal-dielectric-semiconductor structure converted to the nonstationary depletion condition by means of a rectangular-pulse voltage. The system was studied under two conditions: in the absence of intensification (the thermodynamically equilibrium situation in a neutral space) and with intensification (thermodynamically known equilibrium situation in neutral space).

In the thermodynamically equilibrium situation, measurement of the capacitance and longitudinal conductivity permits determination of the concentration of the equilibrium carriers (without distorting the effect of the mobility, the Hall constant, and so on) and the mobility of the majority carriers (including the distribution of the mean mobility with respect to thickness of the specimen). In the thermodynamically nonequilibrium situation, the investigated system has high collector properties for nonequilibrium electron-hole pairs; it permits obtaining of a "gigantic" photocapacitive

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USSR

LITOVCHENKO, V. G., et al., Poluprovodnikovaya tekhnika i mikroelektronika,
No 5, 1971, pp 11-18

effect ($k = C_{\text{eff}}/C_{\text{eff}0} \sim 10^4-10^5$) and determination of the photogeneration
function of the electron-hole pairs in the semiconductor in absolute units.
Extraordinarily small light fluxes can be recorded here ($\sim 10^{-12}$ watts/cm²).
Experimental results are presented which confirm the theoretical analysis.

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- 97 -

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Soviet Inventions Illustrated, Section I Chemical, Derwent,

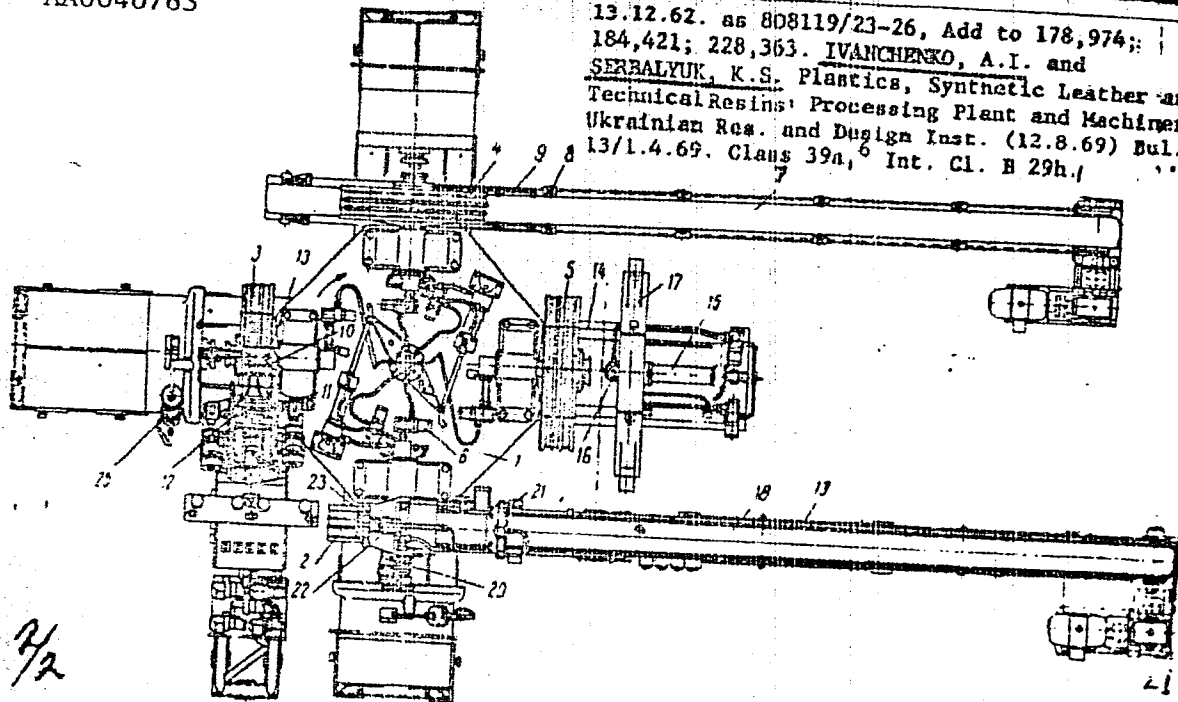
240992 AUTOMATIC ASSEMBLY LINE for the manufacture of sets of removable protecting ring comprises a four-position carousel type stand with standards which interact with the hinged transporter going round the stand. There are also mechanisms for cutting the band, guide and pressing rollers and a photoelectric detector sending signals to line control arrangements. The line is also provided with cord laying and cutting devices, individual ring manipulators and vulcanising arrangements.

Ukrainskiy Nauchno - Issledovatel'skiy i Konstruktorskiy Institut po Razrabotke Mashin i Oborudovaniya dlya Pererabotki Plastmass, Iskusstvennoy Kozhi i Tekhnicheskoy Reziny

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AA0040763

13.12.62. as 808119/23-26, Add to 178,974;
184,421; 228,363. IVANCHENKO, A.I. and
SERBALYUK, K.S. Plastics, Synthetic Leather and
Technical Resins Processing Plant and Machinery
Ukrainian Res. and Design Inst. (12.8.69) Bul.
13/1.4.69. Class 39a, Int. Cl. B 29h.



19750457

USSR

Infrared Rays

UDC: 621.382.2

GREKHOV, I. V., LEVINSHTEYN, M. Ye., L'VOVA, T. V., OTBLESK, A. Ye.
and SERBIN, A. I., A. F. Ioffe Physico-Technical Institute, Lenin-
grad

"Silicon Injection Modulator of Infrared Radiation"

Leningrad, Fizika i tekhnika poluprovodnikov, No 7, 1972, pp
1327-1334

Abstract: This paper describes experiments for investigating silicon injection modulators and discusses methods for computing injection modulators operating in the pulse mode. The experimental equipment uses a CO₂ laser of the OKG-15 type, with a wavelength of 10.6 μ , the beam incident on the face of the silicon specimen. The transmitted beam falls on a photosensitive device, and the signal from the latter is applied to a microvoltmeter of the V6-2 type, in the d-c mode, or to a pulse amplifier and thence to an oscillograph, in the pulse mode. Rectangular pulses are applied to the specimen. A block diagram of the apparatus and an explanation of the experimental procedures are given. Curves are plotted for the modulation coefficient as a function of the d-c current density in different types of specimens under various conditions,

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UDC: 621.382.2

GREKHOV, I. V., et al, Fizika i tekhnika poluprovodnikov, No 7, 1972, pp 1327-1334

the coefficient being calculated from the formula $K = (I_0 - I_J)/I_0$, where I_0 is the signal recorded by the microvoltmeter with no current, and I_J is the signal for a specified current density. It is found that the rate of growth of the coefficient with time is not determined by the reactances in the circuit but by the modulation of the resistance in the diode specimen base through the injected carriers. In the theory section of this paper, the results of the experiments are discussed on the basis of a model according to which the current through the diode remains constant during the time of the pulse.

2/2

- 27 -

1/2 010 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--EFFECT OF RARE EARTH METALS ON THE FLAKE SENSITIVITY OF ALLOY STEEL
-U-
AUTHOR--(05)--SERBIN, A.P., SKLYUYEV, P.V., SOKOLOV, V.YE., ROMANOV, A.A.,
FRIDMAN, A.YA.
COUNTRY OF INFO--USSR S
SOURCE--IZV. AKAD. NAUK SSSR, METAL. 1970, (1), 245
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--RARE EARTH METAL, NONMETALLIC INCLUSION, STEEL FLAKE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1981/0458 STEP NO--UR/0370/70/000/001/0245/0245

CIRC ACCESSION NO--AP0050475

UNCLASSIFIED

2/2 010

CIRC ACCESSION NO--AP0050475

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADDN. OF 0.2-0.3PERCENT RARE
EARTH METALS REDUCED THE TENDENCY TO FLAKE FORMATION TO 215, WHILE
IMPROVING THE DEGREE OF FINENESS OF NONMETALLIC INCLUSIONS.

USSR

MEDYANIK, A. N. and ~~SERBIN, I. A.~~

UDC: 532.132

"Device for Investigating the Second Sound in Rotating Superfluid Solutions of ^3He - ^4He "

Trudy, Fiziko-tekhnicheskiy institut nizkikh temperatur (Physico-technical Institute for Low Temperatures--collection of works) Academy of Sciences, Ukrainian SSR, No. 10, 1970, pp 183-191 (from RZh-Fizika, No. 9, 1971, Abstract No. 9E37)

Translation: A device is described for investigating the second sound in rotating superfluid solutions of ^3He - ^4He at temperatures above 1.40 K and at rotational velocities of 0.5-240 rpm with a rotational nonuniformity of 0.3-0.5%. The device differs from that described in the literature in that the excitation and detection of the second sound are realized by the contactless method with the help of a system of connected tuned circuits; the construction of the device takes into account the peculiarities of work with ^3He - ^4He solutions. Also described is a radio measuring system which permits measuring the velocity and added absorption of the second sound in the rotation. Author's abstract.

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USSR

UDC 621.791.053.011:669.15-194:55 + 669.25
+ 669.28 + 669.295

KUDINGV, YE. D., Engineer, PROKHOROV, P. A., Candidate of Technical Sciences, ARISTOV, V. S., Candidate of Technical Sciences, and SERBIN, N. G., Engineer

"Effect of Cobalt, Molybdenum, Titanium, and Chromium on Properties of Maraging Weld Metal"

Moscow, Svarochnoye Proizvodstvo, No 12, Dec 70, pp 22-23

Abstract: The authors studied the effect of cobalt, molybdenum, titanium, and chromium on the mechanical properties and structure of the weld metal in the welding of maraging steels ON18X8M5T and ON14Kh5M3T. The study specimens were prepared from 500 x 500 x 32 mm welded billets. Butt welds with a double-V symmetric groove were welded by manual argon-arc nonconsumable-electrode welding. The mechanical properties of the weld metal were determined after precipitation hardening of the specimens. The results indicate the following optimum contents for the weld metal: 5-7 percent cobalt, 2.5-3.5 percent molybdenum, 0.25-0.35 percent titanium, and 2.3-4.2 percent chromium.

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USSR

UDC 669.046.5

NEPERSHOK, V. Ye., LADYZHENSKIY, S. N., OPEJENGENSK, A. M., and SERBIN, V. A.

"Slag Formation and Metal Desulfuration in Covering Slag With Duct-like Lime"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (NISIS) (Collection of Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys) Izd-vo "Metallurgiya," No 61, 1970, pp 132-134

Translation of Abstract: The results of an investigation on slag formation and metal desulfuration in a 142-ton martin furnace with lime blowing are presented. 2 figures, 1 table.

1/1

- 52 -

1/2 013 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--PHOTOMETRIC MICRODETERMINATION OF NONPROTEIN NITROGEN -U-
AUTHOR--(03)-SERBINA, G.N., LITVINENKO, G.V., VISHNEYSKAYA, I.G.
COUNTRY OF INFO--USSR
SOURCE--LAB. DELD 1970, (1), 31-2
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY
TOPIC TAGS--MICROCHEMICAL ANALYSIS, BLOOD SERUM, NITROGEN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0214 STEP NO--UR/9099/70/000/001/0031/0032
CIRC ACCESSION NO--AP0119210
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119210

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MODIFICATION OF THE HYPOBROMITE METHOD FOR THE MICRODETN. OF NONPROTEIN N IS DESCRIBED. BLOOD SERUM (0.02 ML) IS DEPROTEINIZED WITH 1 ML OF THE PPTG, MIXT. CONTG. TUNGSTIC ACID. AFTER CENTRIFUGATION 1 ML OF THE SUPERNATANT IS MIXED WITH 0.5 ML OF THE HYPOBROMITE SOLN. AFTER 3 MIN 0.5 ML OF 5PERCENT KI AND 0.5 ML OF IN HCL ARE ADDED. AFTER 10 MIN THE ABSORBANCE IS DETO. AT 400 NM AGAINST H SUB2 O. THIS METHOD WAS USED FOR 20,000 ANALYSES DURING 2 YEARS AND ITS RESULTS AGREE FAVORABLY WITH THE OTHER HYPOBROMITE METHODS. FACILITY: GL. KLIN. VOEN. GOSP. IH. BURDENKO, MOSCOW, USSR.

USSR

UDC 612.82

SERBINENKO, M. V., and ALIMYAN, E. S.

"An Estimation of the Integrating Activity of the Brain on the Example of the Orientation Reaction"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenova, Vol 59, No 6, Jun 73, pp 849-854

Abstract: The cross-correlation of the EEG response of various sections of the brain was determined in experiments on rabbits in which an orientation reaction of the defensive type was induced by a sound stimulus. Implanted electrodes were applied. The EEG responses from the temporal area of the cortex of both hemispheres, two symmetrical points of the left and right dorsal hippocampus, the reticular formation of the middle brain, and the septum were recorded by means of a multichannel electroencephalograph. The EEG signals were transformed on a magnetic code recorder. The experimental data were used to calculate by means of a computer the functions of cross-correlation between different brain formations taken in sets of two. The coefficients of cross-correlation increased during the stage in which the orientation reaction was activated and then decreased during the period
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USSR

SERBINENKO, M. V., and ALIMYAN, E. S., Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova, Vol 59, No 6, Jun 73, pp 849-854

of inactivation. In both stages vertical connections between brain formations predominated over horizontal connections; the horizontal connections between the right and left temporal regions of the cortex and between the right and left hippocampus were only weakly pronounced. As indicated by the coefficients of cross-correlation, there was a left-right asymmetry (predominance of ipsilateral over contralateral connections) in the interaction of the two temporal regions of the cortex with the reticular formation and of the latter with the left and right hippocampus.

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USSR

UDC 621.396.69:621.372.54(088.8)

SERBINENKO, Yu P.

"An Electromechanical Filter"

USSR Author's Certificate No 255425, Filed 6 Jul 68, Published 31 Mar 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10V384 P)

Translation: This Author's Certificate introduces an electromechanical filter which contains electromagnetic input and output converters, and a vibrator consisting of two H-shaped half-elements interconnected by a bridge. As a distinguishing feature of the patent, filter construction is simplified by fastening the vibrator to the geometric center of the bridge which connects the vibrator halves, and locating the transducers (converters) in the middle section of the halves.

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USSR

UDC: 621.372.54(088.8)

SERBINENKO, Yu. P.

"An Electromechanical Band Filter"

USSR Author's Certificate No 280705, filed 21 Nov 68, published 10 Dec 70
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6v438 P)

Translation: An electromechanical band filter is proposed which contains an oscillatory system made in the form of Π -shaped vibrators interconnected by an internal flexible bridge. The device also contains input and output piezoelectric converters. In order to narrow the passband of the filter, the converters are mounted on the inside of the outer bridges of the Π -shaped vibrators.

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USSR

UDC 621.385.017.72:536.58(088.8)

BAKEYEV, P.B., BOYKO, B.I., ITUNIN, L.L., SERBINOV, A.M., KRCMCY, YU. D.

"Unit For Control Of The Temperature Of Electrovacuum Devices"

USSR Author's Certificate No 262527, filed 2 Dec 68, published 13 May 70 (from RZh--Elektronika i yeye primsneniye, No 12, December 1970, Abstract No 12A113P)

Translation: A unit is proposed for control of the temperature of electrovacuum devices, which contains a curved thermosensitive plate acting on the regulating organ for the flow rate of a coolant flowing in a spiral which encircles the body of the device. At the extremes of the coils of the spiral, two intermediate plates are attached at the outer extremity of which the thermosensitive plate is secured and at the inner, fixed screws for adjustment of the moment of turning on of the regulating organ. Such construction of the device assures production of a signal proportional to the average temperature of the body. B.B.

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AA0044231



UR 0482

Soviet Inventions Illustrated, Section II, Electrical, Derwent,

2/70

243742 ANODE-GRID UNIT of gas-discharge rectifier has an anode shutter and a control grid which are both of spherical shape with a common centre. The absence of a field inside the anode reduces the secondary electron emission and the likelihood of backfires. It also makes for a more robust design and has a higher receiving area of the anode to enable it to operate at high impulse loads.

I.6.68 as 1244022/24-7. I.G. KESAEV et al. (3.10.69.)
Bul 17/14.5.69. Class 2lg. Int.Cl. H 01 j.

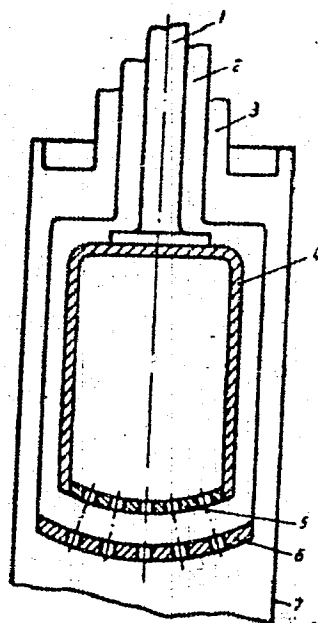
AUTHORS: Kesayev, I. G., Khromoy, Yu. D., Serbinov, A. M.

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gc

USSR

UDC 620.195

TOLSTAYA, M. A., FLEGONTOVA, L. N., and SERBINOVSKAYA, YE. L., Moscow:
Aviation Technological Institute

"Electrochemical and Corrosion Behavior of SAP Metallooxide Composition in
Electrolyte Solutions"

Moscow, Zashchita Metallov, Vol 7, No 5, 1971, pp 540-546

Abstract: A study was made of the electrochemical and corrosion behavior of unclad SAP-1 in electrolyte solutions by comparing its behavior with that of pure AV00 Aluminum and AD1 technical grade aluminum in similar solutions. The test were made in artificial sea water, Moscow tapwater, distilled water, and in one- and two-component solutions of KNO_3 , Na_2SO_4 , and $NaCl$. In synthetic sea water at pH 7.9-8.0, the corrosion losses of SAP-1 are sharply reduced compared with the losses of AV00 and AD1 not only at ordinary temperature, but also at the boiling point. However, in sea water with artificially increased alkalinity (pH 9.8-10) the corrosion resistance of SAP-1 is sharply reduced. In neutral solutions, with a concurrent content of passivating and activating anions, the stability of the passive state of the SAP-1 material during anodic polarization is higher than in pure (AV00) and technical grade (AD1) aluminum. (The comparison grades of aluminum were chosen because these

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USSR

TOLSTAYA, M. A., et al., Zashchita Metallov, Vol 7, No 5, 1971, pp 540-546

materials are close to SAP-1 in chemical content, but differ sharply in structure.) It was suggested that the electrochemical and corrosion behavior of SAP-1 differs from the comparison metals because of its special distribution in the aluminum matrix of iron and silicon impurities, and also because of its content of γ - Al_2O_3 particles.

2/2

Acc. Nr:

APO054284

Ref. Code: UK0463

PRIMARY SOURCE: Molekulyarnaya Biologiya, 1970, Vol 4, Nr 2 ,
pp 205-212

FRACTIONATION OF VALINE ISOACCEPTOR tRNAs FROM BAKER'S YEAST

S. K. VASILENKO, F. F. DIMITROVA, L. V. OBUKHOVA, V. F. PODGORNYI
and N. A. SERBU

Institute of Organic Chemistry, Siberian Branch of the Academy of Sciences,
USSR, Novosibirsk

A new method for the chromatography of isoacceptor tRNAs^{Val} from baker's yeast is described. The chromatography is carried out on TEAE-cellulose columns at 33-40° in solution of 7 M urea and 0.1 M CH₃COOH, in NaCl linear gradient from 0.35 to 0.5 M. Mg⁺² ions and EDTA in concentrations 0.005-0.01 M have a marked influence on the fractionation. tRNA^{Val} was fractionated into a few isoacceptor fractions. Structural difference of these fractions was confirmed by the analysis of guanylo-ribonuclease digests of ¹⁴C-valyl-tRNA on TEAE-cellulose columns in linear gradient of HCOOH and NaCl in 7 M urea. The final purification of tRNA^{Val} was performed by the chemical method of periodate oxidation.

REEL/FRA
19831422

DI 2

1/2 031 UNCLASSIFIED PROCESSING DATE--04DEC80
TITLE--REACTION OF GAS MOLECULES WITH SOLID ADSORBENT SURFACES -U-
AUTHOR--(03)-~~SEBRYAKOV~~, G.A., POLYAKOV, I.T., KOSTROV, V.V.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOLOGI, 1970, 13(3), 435-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ADSORPTION, SURFACE PROPERTY, ACTIVATION ENERGY, HYDROGEN BONDING, COPPER, NICKEL, ALUMINUM, ZINC, THERMAL EFFECT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0621 STEP NO--UR/0153/70/013/003/0435/0437
CIRC ACCESSION NO--AT0137706
UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0137706

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

ABSTRACT. THE CALCN. OF THE ACTIVATION ENERGY FOR THE DISSOCN. OF A GAS ON THE SURFACE OF AN ADSORBENT IS PRESENTED. DATA ARE GIVEN FOR THE ENERGIES OF THE METAL H BONDS AND FOR THE ENERGY OF THE GAS MOLLS. ON THE SURFACES OF CU, NI, AL, AND ZN. THE ESTD. ACTIVATION TEMPS. FOR H ON THESE METAL SURFACES ARE GIVEN. FACILITY: IVANOV. KHIM.-TEKHNDL. INST., IVANOV, USSR.

UNCLASSIFIED

SERBULENKO, M. G.

3 PMS 57908

6-72

4

VIII-3. RELATION BETWEEN THE NATURE OF CLEAVAGE AND THE DEGREE OF STRESS OF SINGLE CRYSTALS OF PROUSTITE

Article by A. A. Godovikov, M. G. Serbulenko, B.G. Krennshay, V. K. Chirnyy, Novosibirsk; Novosibirsk, II Symposium on Polymers, Reactions and Solvents, Novosibirsk, 1972, p 103

Ag₂S₃ proustite is a compound with a quite clear rhombohedral cleavage (1011). The study of the cleavage of single crystals grown by the Stoberger method demonstrated that the degree of exhibition of the cleavage surfaces using a scanning electron microscope revealed significant differences in its surface in different crystals. The optical (conoscopic) study of such crystals permitted establishment of the fact that they are distinguished by less perfect cleavage. Optically uniaxial crystals were characterized by less perfect cleavage. The crystals with strong internal stresses arising during rapid cooling of them turned out to be optically biaxial with perfect rhombohedral cleavage.

The surface of the cleavage can obviously be used for a fast qualitative estimate of other single crystals characterized in the unstressed state by insufficiently perfect cleavage. The same characteristic can also be applied to crystals of many natural minerals, the degree of perfection of the cleavage of which will be determined by the thermal history of the minerals themselves and the enclosing minerals.

USSR

UDC: 53.07/.08+53.001.5

SERBULOV, Yu. A., KOLOBASHKIN, V. M.

"A Method of Radiometric Analysis of Noble Gases Under Conditions of a ^{222}Rn Background"

V sb. Vopr. dozimetrii i zashchity ot izluch. (Problems of Dosimetry and Radiation Shielding--collection of works), vyp. 12, Moscow, Atomizdat, 1971, pp 72-76 (from RZh-Fizika, No 4, Apr 72, Abstract No 4A681)

Translation: The authors discuss the difficulties of measuring the radioactivity of noble gases in the presence of ^{222}Rn background activity. A method is proposed for reducing the activity of background emitters by constant segregation of the products of decay of ^{222}Rn settling on the walls of the measurement space and extraction of the decay products beyond the shielding. It is shown that one way to do this is to use a chamber with moving walls. The optimum parameters of such a chamber are calculated. It is concluded that the activity of background radiations from emitters in a fairly large sensing space may be reduced by more than two orders. M. L.

1/1

USSR

UDC: 621.3.049.75

SERCHUGOVA, A. G., OSHARIN, V. I., FILIP'YEVA, N. I., ORLOVA, L. N.

"A Method of Making Printed-Circuit Boards"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 5, Feb 71, Author's Certificate No 293312, Division H, filed 31 Mar 69, published 15 Jan 71, p 182

Translation: This Author's Certificate introduces a method of making printed-circuit boards with metallized holes by a positive combined method. As a distinguishing feature of the patent, the quality and reliability of the boards is improved and cost is reduced by electrophoresis polymer coating of the printed-circuit drawing formed by chemical and galvanic copper plating. This polymer coating is stripped off after removal of the photoresist and etching of the copper foil.

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USSR

UDC 621.396.6.004.5

SERDAKOV, A.S.

"Automatic Checkout Testing and Technical Diagnosis"

Avtomaticheskii kontrol' i tekhnicheskaya diagnostika (cf. English above),
Kiev, "Tekhnika," 1971, 242 pp, 1 r. 1 k. (from RZh-Avtomatika, Telemekhanika
i Vychislitel'naya Tekhnika, No 1, Jan 72, Abstract No 1A468K by B. U.)

Translation: The book considers questions in the automatic checkout testing and technical diagnosis of electronic equipment. A classification of automatic test systems is introduced and their construction principles are set forth. A description is given of the quality evaluation of the basic characteristics of the processes of checkout testing and trouble location, and the choice of object parameters and test system operating conditions is substantiated. Considerable attention is devoted to questions of the synthesis of optimal technical diagnosis programs according to the criterion of minimum average troubleshooting time and minimax criteria. Methods for the synthesis of such programs are considered, as well as algorithms for calculating them on a digital computer. 54 illustrations. 33 tables. Bibliography with 70 titles.

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Instruments and Measurements

USSR

UDC 621.396.6.004.5

SERDAKOV, ALEXANDR SEMENOVICH, Candidate Of Technical Sciences

"Automatic Checking And Technical Diagnosis"

Avtomaticheskii kontrol' i tekhnicheskaya diagnostika (cf English above),
Kiev, Izd. "Tekhnika," 1971. 244 pp. 54 ill. 33 tab. 70 ref. 1 r 1 k.

Abstract: The problems are considered of automatic checking of fitness for operation and the technical diagnosis of the condition of electronics equipment. A classification of automatic checking systems is introduced and the principles of their construction are stated. A quantitative evaluation is described of the principal characteristics of fitness checking and the localization of faults, and grounds are given for the choice of parameters of the object and the operating conditions of the checking system. Considerable attention is given to problems of the synthesis of optimum programs of technical diagnosis with respect to the criterion of the minimum average time of localization of faults and the minimax criteria. Methods of synthesis of such programs and algorithms of their calculation on an electronic computer are considered. The book is intended for engineers occupied with problems of the development, introduction, and operation of automatic checking systems for electronic equipment, and it can also be useful to students of senior courses specializing in the area of automatic checking of electronic equipment.

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USSR

SERDAKOV, ALEKSANDR SEMENOVICH, Avtomaticheskiy kontrol' i tekhnicheskaya diagnostika, Kiev, Izd. "Tekhnika," 1971. 244 pp. 54 ill. 33 tab. 70 ref. 1 r 1 k.

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USSR

SERDAKOV, ALEKSANDR SEMENOVICH, Avtomaticheskiy kontrol' i tekhnicheskaya diagnostika, Kiev, Izd. "Tekhnika," 1971. 244 pp. 54 ill. 33 tab. 70 ref. 1 r 1 k.

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USSR

SERDAKOV, ALEKSANDR SEMENOVICH, Avtomaticheskiy kontrol' i tekhnicheskaya diagnostika, Kiev, Izd. "Tekhnika," 1971. 244 pp. 54 ill. 33 tab. 70 ref. l r l k.

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USSR

SERDAKOV, ALEKSANDR SEMENOVICH, Avtomaticheskiy kontrol' i tekhnicheskaya diagnostika, Kiev, Izd. "Tekhnika," 1971. 244 pp. 54 ill. 33 tab. 70 ref. 1 r 1 k.

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Equipment / Machinery

USSR

UDC: 621.313.322-81:66.045.5

ROZENFEL'D, L. M., SERDAKOV, G. S., CHEKHOVICH, V. Yu., and
FILIPPOV, I. F.

"Experimental Rack for Investigating Low-Temperature Vaporization
Cooling for Turbogenerator Piping"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR--
Seriya Tekhnicheskikh Nauk, No 3, 1972, pp 50-57

Abstract: This article represents part of the continuing search for new systems of cooling turbogenerators. A description is here given of an important stage in cryogenic cooling of the electrical windings in the generator by direct Freon vaporization in the form of an experimental rack for investigating this type of cooling. It consists of a measuring section, a double system of cooling, a power supply block, blocks for readoff, recording, and writeout devices, automation and protection systems, and a control panel. A drawing for the overall system is given together with a photograph of the rack and the measuring block. A diagram for the structure of the heating system and the temperature sensors plus a schematic of the power supply block are also presented. The experiments performed with the aid of the device are described; they can determine the temperature distribution of
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USSR.

UDC: 621.313.322-81: 66.045.5

ROZENFEL'D, I. M., et al, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR--Seriya Tekhnicheskikh Nauk, No 3, 1972, pp 50-57

on the conductor wall surfaces and the current of the working fluid inside the channel, the hydraulic resistance distribution over the length, and other factors. The authors are associated with the Institute of Thermal Physics, Novosibirsk.

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226

USSR

UDC: 621.313.322--81:66.045.5

SERDAKOV, G. S.

"Effect of the Hydrodynamics of the Operating Fluid Flow on the Energy Indices of Electric Turbogenerator Low-Temperature Cooling Systems"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR--
Seriya Tekhnicheskikh Nauk, No 3, 1972, pp 58-66

Abstract: This paper considers the effect of hydraulic resistances to the flow of the operating fluid on the energy indices of the low-temperature cooling system in turbogenerators. Using the basic diagram of such a system and its thermodynamic cycles, the author analyzes liquid or single-phase cooling of the electric windings in the generator, and then proceeds to a discussion of the vaporization or two-phase cooling method. Formulas are developed for the refrigerating capacity of the system and for qualitatively estimating the effect of the fluid hydrodynamics on the energy losses in vaporization cooling; curves giving the results of computations with these formulas are shown. It is found that the hydrodynamics of the cooling fluid causes additional irreversible losses in the cooling equipment cycle and increases the total energy losses of the generator. The author is associated with the Institute of Thermal Physics, Novosibirsk.

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characteristics for operation, where a change in voltage across the gate causes a considerable change in output impedance. However, the circuit may require thermostatic control since a slight instability of transistor characteristics may lead to instability of the resonance frequency.

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USSR

UDC: 621.372.8.092.22

SERDAKOV, V. S.

"Analyzing the Losses in a Ctenoid Band Delay System"

V sb. Radioelektron. v nar. kh-ve SSSR, Ch. 2 (Radioelectronics in the National Economy of the USSR, Part 2--collection of works, Kuybyshev, 1970, pp 223-226 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 35134)

Translation: Expressions are derived for loss components (in the metal and the dielectric) in a ribbon delay system. Results of the computations are confirmed by measurements. Two illustrations, bibliography of one.

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USSR

UDC: 621.372.8.092.22

SERDAKOV, V. S.

"Determining the Parameters and Structural Dimensions of a Band Delay System of the Ctenoid Type"

V sb. Radioelektron. v nar. kh-ve SSSR. Ch. 2 (Radioelectronics in the National Economy of the USSR, Part 2--collection of works) Kuybyshev, 1970, pp 216-222 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3E131)

Translation: Expressions are derived for determining the principal electronic parameters and dimensions of the examined delay system. Two illustrations, bibliography of two.

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1/2 022 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--TENSODIODE EFFECT DURING THE BENDING OF ELONGATED SEMICONDUCTOR
DIODE PLATES -U-
AUTHOR-(04)-GRIBNIKOV, Z.S., ZHADKO, I.P., ROMANOV, V.O., SERDEGA, B.K.
COUNTRY OF INFO--USSR
SOURCE--UKRAIN'KII FIZICHNII ZHURNAL, VOL. 15, FEB. 1970, P 300-317
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--SEMICONDUCTOR DIODE, ELECTRIC CURRENT, ELECTRIC PROPERTY,
BENDING STRESS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1991/0335 STEP NO--UR/0185/70/015/000/0300/0317
CIRC ACCESSION NO--AP0110223
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0110223

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL AND EXPERIMENTAL STUDY OF THE EFFECT OF BENDING ON THE CURRENT VOLTAGE CHARACTERISTIC OF ELONGATED FLAT SEMICONDUCTOR DIODES. PROCEDURES ARE GIVEN FOR CALCULATING THE CURRENT VOLTAGE CHARACTERISTICS OF DIODES OF THIS CLASS, SUBJECTED TO BENDING. THE CURRENT VOLTAGE CHARACTERISTICS OF GERMANIUM DIODES OF THIS CLASS ARE MEASURED. THE DEPENDENCE OF THESE CHARACTERISTICS ON THE TYPE AND DEGREE OF BENDING AND THE LENGTH OF THE DIODE BASE IS STUDIED. THE EXPERIMENTAL RESULTS ARE FOUND TO BE IN GOOD AGREEMENT WITH THEORETICAL EXPECTATIONS. IT IS BELIEVED THAT THESE DIODES CAN BE EFFECTIVELY USED IN AUTOMATIC CONTROL SYSTEM.
FACILITY: AKADEMIIA NAUK UKRAINS'KOI RSR, INSTITUT NAPIVPROVIDNIKIV, KIEV, UKRAINIAN SSR.

UNCLASSIFIED

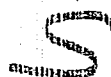
1/2 033

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--ON FORCED STANDING WAVES OF A FINITE AMPLITUDE IN SOLIDS -U-
AUTHOR--(02)-ZAREMBO, L.K., SERDOBOLSKAYA, O.YU.

COUNTRY OF INFO--USSR



SOURCE--VESTNIK MOSKOVSKOGO UNIV. FIZ. ASTRON. USSR, VOL. 11, NO. 1, P.
62-7 1970
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--APPROXIMATION CALCULATION, STANDING WAVE, SOLID STATE,
NONLINEAR EFFECT, AMPLITUDE MODULATION, FORCED VIBRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/1327

STEP NO--UR/0188/70/011/001/0062/0067

CIRC ACCESSION NO--AP0109411

UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0109411

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

ABSTRACT. THE SECOND ORDER APPROXIMATION IS USED FOR THE CALCULATION OF EXCITATION OF FINITE AMPLITUDE STANDING WAVES (WITHOUT DISSIPATION) IN A SOLID LAYER. THE METHOD ALLOWS FOR DETECTION OF AMPLITUDE MODULATED LONGITUDINAL AND TRANSVERSE WAVES CAUSED BY THE NONLINEAR PROPERTIES OF THE MEDIUM. THE DEPENDENCE OF DAMPING ON FREQUENCY IS ANALYSED.

UNCLASSIFIED

USSR

SERDOBOL'SKIY, V. I.

"Mathematical Model of a Self-Teaching Neuron"

Upr. i Inform. Protsessy v Zhivoy Pripode [Control and Information Processes in Living Nature -- Collection of Works], Moscow, Nauka Press, 1971, pp 155-157, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V586 by N. Fastova).

Translation: It is suggested that a model of a neuron be studied as a self-teaching classifier dividing input situations into two classes. Equations are presented for one version of the model, describing the process of self-teaching.

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USSR

1/2 025

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--ELIMINATION OF THE INFLUENCE OF THE COMPOSITION AND DISPERSITY OF
SAMPLES DURING THE SPECTRAL ANALYSIS OF SULFIDE ORES AND MINERALS BY
AUTHOR--(02)-RUSANOV, A.K., SERODOVA, L.I.

S

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(4), 596-601

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--SPECTRUM ANALYSIS, SULFIDE, LEAD SULFIDE, ZINC SULFIDE, SODIUM
CHLORIDE, PLASMA ARC, MINERAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3008/0473

STEP NO--UR/0368/70/012/004/0596/0601

CIRC ACCESSION NO--AP0137564

UNCLASSIFIED

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CIRC ACCESSION NO--AP0137564
ABSTRACT/EXTRACT--(U) GP-0--

UNCLASSIFIED

PROCESSING DATE--04DEC70

ABSTRACT. THE CHANGES IN SPECTRAL LINE INTENSITIES OF SULFIDE MINERALS DURING THE SPECTRAL ANAL. OF SULFIDE ORES AND MINERALS OF VARYING COMPN. WERE STUDIED BY USING PBS AND ZNS AS MODELS. THE SYSTEMATIC ERRORS OF THE ELEMENT DETNS. ARISING IN THESE ANAL. WERE DESCRIBED. THE MAJORITY OF ADMIXTS. CAUSED AN INCREASE OF LINE INTENSITIES. THE SYSTEMATIC ERRORS WERE ESP. SIGNIFICANT IN THE DETN. OF ELEMENTS WITH LOW IONIZATION POTENTIALS. THE EFFECT OF THE TOTAL COMPN. OF AN ORE ON SPECTRAL LINE INTENSITIES OWING TO CHANGE OF PLASMA COMPN., PLASMA TEMP., AND DIFFUSIONAL ESCAPE OF ATOMS FROM THE ARC WAS RELATIVELY EASY TO REMOVE BY ADDN. OF A BUFFER POWDER CONTG. ELEMENTS WITH LOW IONIZATION POTENTIALS. THE ADDN. OF 40PERCENT NACL TO ZNS AND PBS SAMPLES DECREASED THE EFFECT OF TOTAL COMPN. AND THE SYSTEMATIC ERRORS WERE VIRTUALLY ELIMINATED. THE USE OF SYNTHETIC STDS. WAS RECOMMENDED.

UNCLASSIFIED

USSR

UDC 612.822.3+612.821.6

MERZHANOVA, G. Kh. and SERDYUCHENKO, V. M., Laboratory of Conditioned Reflexes, Institute of Higher Nervous Activity and Neurophysiology, Academy of Sciences USSR, Moscow

"Potentials Evoked by Stimulation of the Red Nucleus in the Case of Direct and Feedback Conditioned Associations"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti, Vol 23, No 3, May/June 73, pp 632-635

Abstract: Experiments were conducted with cats to find how a feedback conditioned association is expressed electrographically. An electrode was implanted in the cats' red nucleus, and a conditioned food-getting response was developed in association with a feeder. It was found that potentials registered during a strong conditioned reflex had no extra components. However, tests for the feedback association, accomplished by electrical stimulation of the red nucleus in the absence of the feeder, evoked potentials which registered late, negative, low-amplitude components. Their latent phase fluctuated from 30-60 milliseconds in different cats. The presence of these components indicates the conditioned nature of the feedback association.

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USSR

UDC: 8.74

PITYATIN, Ye. P., SERDYUCHENKO, V. Ya.

"Problems in the Theory of Edge Contrast in Human Vision"

Probl. bioniki. Resp. mezhved. temat. nauch.-tekhn. sb. (Problems of Bionics. Republic Interdepartmental Thematic Scientific and Technical Collection), 1971, vyp. 6, pp 32-39 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V1110)

Translation: The paper deals with an axiomatic method of constructing a mathematical model of the edge contrast in human vision. Authors' abstract.

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USSR

UDC 612.014.425.426

SERDYUK, A. M. and YERSHOVA, N. K., Kiev Institute of General and Communal Hygiene

"Effect of a Low-Intensity Ultrahigh-Frequency Electromagnetic Field on Brain Bioelectrical Activity in the Rabbit"

Kiev, Fiziologichnyi Zhurnal, No 6, 1972, pp 802-807

Abstract: The response of rabbits exposed to a low-intensity ultrahigh-frequency electromagnetic field (0.05 to 6 v/m) for 60 days was two-phase. The first 2 to 4 weeks were characterized by the stimulation of cortical activity manifested by an intensification of the frequency of the alpha waves on the EEG. The second stage lasting about 2 weeks was one of inhibition, reflecting the appearance of delta waves. The magnitude of the reaction varied directly with the intensity of irradiation. There were wide differences in the responses of the individual animals. In general, however, the experiments showed that the cerebral cortex of rabbits is highly sensitive to a low-intensity ultrahigh-frequency electromagnetic field.

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USSR

UDC: 621.762.045

MAKSIMENKO, L. A., SHTERN, M. B., RADOMYSEL'SKIY, I. D., SERDYUK, G. G., Kiev State University Imeni T. G. Shevchenko, Institute of Problems of Material Science, Academy of Sciences, UKRSSR

"The Existence of Strong Shock Waves During High-Speed Pressing of Metal Powders"

Kiev, Poroshkovaya Metallurgiya, No 4, 1972, pp 17-20.

Abstract: It is proven that strong shock waves, i.e., discontinuities of all parameters of the compacted medium (density, pressure, velocity, entropy) can arise with high-speed (impact) loading of metal powders. The authors observed compression jumps upon impact pressing of type PZh2M iron powder with initial pressing speeds of over 100 m/sec. This provides experimental confirmation of the existence of strong shock waves in metal powders when the pressing speed exceeds the speed of sound in the powder.

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Acc. Nr:

AP0043734

Abstracting Service: S/70
INTERNAT. AEROSPACE ABST.

Ref. Code:
UR0226

A70-23122 # Shaping of metal powders (Formovanie
metallicheskikh poroshkov). I. D. Radomyseľ'skii and G. G. Serdyuk
(Akademiia Nauk Ukrainskoi SSR, Institut Problem
Materialovedeniia, Kiev, Ukrainian SSR). *Poroshkovaia Metallurgii*,
vol. 10, Jan. 1970, p. 10-20. 43 refs. In Russian.

Outline of the fundamentals of a discret, contact compaction
theory of metal powders. A review is made of the experimental
results concerning the regular compaction methods. It is pointed out
that specialized facilities were developed for compacting the metal
powders but they were found to be unreliable. A study is made of
new compaction methods involving vibrations, shock, detonation and
hydrodynamical pressure. It is stated that these methods can be
widely utilized in the industry.

Z.IV.

ALS

REEL/FRAME
19770140

18

USSR

UDC 8.74

SERDYUK, G. I., SMIRNOV, YE. N.

"DZhOSS Systems Program in AIST-0"

V sb. Teoriya yazykov i metody postroyeniya sistem programmir. (Language Theory and Methods of Constructing Programming Systems--collection of works), Kiev-Alushta, 1972, pp 217-227 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V487)

Translation: The structure and operating principles of the DZhOSS systems program in the system for collective execution of AIST-0 is described. The input language of the DZhOSS systems program is compiled on the basis of the JOSS language developed by the Rand Corporation and it is a Russian version of this language. The operation in the DZhOSS language takes place in the dialog mode. The DZhOSS instructions can be direct and indirect. The directly given instruction is executed immediately after it is given by the subscriber; after this execution all the information about it in the DZhOSS language is destroyed. The instructions given directly are not executed immediately. They are arranged by DZhOSS with respect to the values of the numerical tags and they constitute the subscriber program the execution of which the subscriber can initiate by special instructions in the language. If the subscriber desires to construct a large-volume program he can use the capabilities of the language which permit languages

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to be written from individual modules accumulated in the personal archives of the subscriber. The subscriber can then organize the calling sequence and the execution of these modules. The number of direct instructions which can be given by the subscriber during a communications session with the DZhOSS is unlimited. The reaction time of the DZhOSS to a single direct command is 3-7 seconds (depending on the type of instruction and on the number of subscribers operating at a given point in time with the system). The systems program is written in the EPSILON language and its length is about 12,000 M-220 instructions. The entire systems program is divided functionally into two parts: the master program and the execution program. The master program is run by the dispatcher on appearance of the corresponding requests from the terminals. If the given subscriber is the first subscriber connected to the DZhOSS, the master program dispatches a request to the dispatcher for resources, that is, for a number of units of the high speed external memory (magnetic drums, discs) for allocation of the execution program, and it copies the program from the standard tape reserves into the ordered reserves. Then the individual process is created for the given subscriber; the individual process memory is loaded with the initiating program, the subscriber boxes are transmitted to the individual process, and the latter is started. If the subscriber is not the first one, the execution

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program is already in the high speed external memory. In this case, the work is done with respect to creating the individual process, loading it and starting it. The execution program is divided into three parts: the master section, the decomposition program and the interpretation program. The master section reads the subscriber's instructions from the box and performs the initial editing of them (removes the deleted symbols and the register symbols). The decomposition program recognizes the instruction and forms the corresponding unit in the internal language. The interpreting program organizes the execution of the subscriber's program and interprets the structural elements of the internal language. An example of utilizing the DZhOSS systems program in AIST-0 is presented. The CONSUL-254 (Czechoslovakia) electric typewriters were used as the terminals. The subscriber input to the system, its relation to the DZhOSS systems program and an example of the dialog in the DZhOSS language are demonstrated. The bibliography has 8 entries.

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LEONOV, P. K., SERDYUK, G. I.

UDC 8.74

"Internal Structure of Operating Programs of the BASIC-6 System"

V sb. Teoriya yazykov i metody postroyeniya sistem programmir. (Language Theory and Methods of Constructing Programming Systems--collection of works), Kiev-Alushta, 1972, pp 244-256 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V467)

Translation: The internal structure of the operating programs in the BASIC-6 system is described. The compilation of the program from the BASIC-6 language will be carried out by a step-by-step transmitter, that is, the operating program is created during the construction process. On destroying any operator, a "gap" is formed in it requiring extension of the section of the operating program located below the "gap" in memory. In order to simplify the work with respect to memory allocation for all elements pertaining to the program, a quantized structure is proposed in the BASIC-6 system which is a special form of list organization of information. A study was made of two quantization procedures: constant quanta and variable-length quanta. It is noted that it is possible to execute such languages as IOSS and APL on the basis of the structure of the BASIC-6 system.

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ОБЪЕКТЫ, И.И.

UNCLASSIFIED

biochemistry

Name: Protein Research Institute, Pushchino
Description:

SECTION IV Sci. Selected Areas
FEDERATION
PCG-89
June 1971
(16)

(U) During this quarterly reporting period, two new articles were located from the Protein Research Institute at Pushchino. On the basis of one of the articles, which dealt with escherichia coli ribosomes, it was possible to associate one new person, N. I. Smirnov, with the institute (32). The other article, also on escherichia coli, was issued jointly from the Institute of Genetics and Selection of Microorganisms, Moscow, and the Protein Research Institute at Pushchino (33). Previous articles by V. I. Parmogorov have been issued from the former institute. No previous facility association could be located for V. D. Vasil'yev, but it is likely that he represents the latter institute. This article probably represents some joint work between the latter institutes.

(U) As a ready source of reference, given below is a complete listing of personalities identified with the Protein Research Institute to the present time:

- | | |
|-----------------------------|----------------------------|
| <u>Belotelina, N. V.</u> | <u>Ritvalov, P. I.</u> |
| <u>Barabekyn, T. M.</u> | <u>Pitayn, O. B.</u> |
| <u>Chirpadsa, Yu. M.</u> | <u>Zashovskaya, Ye. P.</u> |
| <u>Fedorov, B. A.</u> | <u>Serdnyuk, I. N.</u> |
| <u>Finkel'shteyn, A. V.</u> | <u>Smirnov, N. I.</u> |
| <u>Ginskaya, O. V.</u> | <u>Solikh, A. S.</u> |
| <u>Levtikova, L. P.</u> | <u>Tikopulo, Ye. I.</u> |
| <u>Копылова</u> | <u>Vasil'yev, V. D.</u> |
| <u>Klein, Yu. V.</u> | |

all direct, etc.

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I I N I A S C I E N C E

USSR

UDC 581.524.1+576.8

SERDYUK, I. S., and YURCHAK, L. D., Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR, and Central Republic Botanical Garden, Ukrainian SSR

"Allelopathic Effect of Melanins of *Stachybotrys alternans*"

Moscow, Prikladnaya Biokhimiya i Mikrobiologiya, Vol 7, No 2, Mar/Apr 71, pp 174-177

Abstract: Two melanin fractions (SA-1 and SA-2) were isolated from the biomass of the fungus *Stachybotrys alternans* grown on barley straw. SA-1 was extracted with 2 N or 0.5 N KOH from the fungi defatted by treatment with methylene chloride and then ground. It was precipitated from alkaline solutions by acidification to pH 4-5 with HCl. SA-2 was isolated from the fungus biomass, hydrolyzed by boiling for 12 hrs with 6 N HCl. The composition of SA-1 was C 75.23, H 10.65, N 2.10, O 11.82% MeO groups were absent. A solution of SA-1 in 0.5 N KOH had a linear absorption spectrum at 400-600 nm ($tg \alpha = 0.0035$). The EPR spectrum of SA-1 indicated the presence of a stable free radical (half-width of line 8 oe). SA-2 had a similar linear spectrum at 400-600 nm ($tg \alpha = 0.0029$) and also formed a free radical in a

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dilute KOH solution (half-width of the line 5 oe). SA-1 and SA-2 applied in concentrations of 0.1-2% to seedlings of wheat, rye, and cress plants inhibited the growth of roots to an extent which increased with increasing concentration of melanin fractions. The growth of roots was suppressed 100% for rye and cress at a 2% concentration of either melanin fraction. The effect on wheat was somewhat less pronounced. SA-2 was more effective in inhibiting the growth of roots than SA-1. Cress was more sensitive to the effect of melanin fractions than either wheat or rye, showing SA-2. In tests conducted on seedlings, solutions of SA-1 and SA-2 in 0.05 N KOH were applied.

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