USSR

FEDOROVA, M. N., et al., Fazovyy Khimicheskiy Analiz Rud Chernykh Metallov i Produktov ikh Pererabotki, "Nedra" Publishing House, 1972, 160 pp

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USSR

FEDOROVA, M. N., et al., Fazovyy Khimicheskiy Analiz Rud Chernykh Metallov i Produktov ikh Pererabotki, "Nedra" Publishing House, 1972, 160 pp

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USSR

FEDOROVA, M. N., et al., Fazovyy Khimicheskiy Analiz Rud Chernykh Metallov i Produktov ikh Pererabotki, "Nedra" Publishing House, 1972, 160 pp

1/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--DISINFECTION OF FODDER GRASS SEEDS -U-

AUTHOR-(02)-KALASHNIKOV, K.YA., FEDOROVA, M.N.

COUNTRY OF INFO--USSR

SOURCE--KHIM. SEL. KHOZ. 1970, 8(4), 284-6

DATE PUBLISHED-------70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AGRICULTURE CROP SEED, FUNGICIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605002/C07 STEP NO--UR/0394/70/008/004/0284/0286

CIRC ACCESSION NO--AP0139433

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139433

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN FIELD EXPTS., DRY SEED DRESSING WITH GRANOSAN (I) AND 50PERCENT THIRAM (II) IMMEDIATELY OR 109 MONTHS BEFORE SOWING STIMULATING THE GROWTH AND DEVELOPMENT OF MEADOW FESCUE (FESTUCA PRATENSIS), TALL FESCUE (F. ARUNDINACEA), ORCHARD GRASS (DACTYLIS GLOMERATA), CANARY GRASS (PHALARIS CANARIENSIS), AND MEADOW FOXTAIL (ALOPECURUS PRATENSIS). THE SEED YIELDS OF ORCHARD GRASS, CANARY GRASS, AND MEADOW FOXTAIL WERE HIGHER WITH II, WHEREAS THOSE OF MEADOW FESCUE AND KENTUCKY BLUEGRASS (POA PRATENSIS) WERE HIGHER WITH I. I AND II HAD THE SAME EFFET ON THE SEED YIELD OF TIMOTHY (PHLEUM PRATENSE). EARLY SEED DRESSING DID NOT DECREASE THE GERMINATING CAPACITY OF THE FODDER GRASS SEEDS. THE RECOMMENDED DOSES ARE 1-1.5 G AND 3 G-KG SEEDS FOR I AND II, RESP. FACILITY: NAUCH.-ISSLED. BAZA VIZR, PUSHKINO, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--POSSIBLE RECONSTRUCTION OF CHROMATIN AFTER DISSOCIATION IN SALT SOLUTIONS -U-

AUTHOR-(02)-ASHMARIN, I.P., FEDOROVA, N.A.

COUNTRY OF INFO--USSR

SOURCE--TSITOLOGIYA 1970, 12(3), 338-42

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHROMATIN, RAT, LIVER, DNA, DIALYSIS, PROTEIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/0426 STEP NO--UR/9053/70/012/003/0338/0342

CIRC ACCESSION NO--AP0127997

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0127997

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FRACTIONS OF BOTH NATIVE AND RECONSTRUCTED CHROMATIN ISOLATED FROM RAT LIVER AFTER ULTRASONIC TREATMENT WERE FRACTIONATED ON A SEPHADEX G-200 COLUMN. PROTEIN DISSOCN. FROM NATIVE CHROMATIN OCCURRED IN 2.5M NACL. PROTEIN RECOMBINATION WITH DNA WAS ACCOMPLISHED BY MEANS OF STEPWISE DIALYSIS. BOTH PHOSPHOPROTEIN CONTENT AND OPTICAL ABSORPTION AT 230 AND 260 MMU WERE THE SAME IN FRACTION OF NATIVE AND RECONSTRUCTED CHROMATIN.

FACILITY: DEP. BIOCHEM., LENINGRAD UNIV., LENINGRAD, USSR.

UNCLASSIFIED

Molecular Biology

USSR

UDC 578.088.4:547.963.3

FEDOROVA, N. A., and LONSKIY, A. V.

"The Use of Ultrasound to Obtain Chromatin Fractions"

Leningrad, Vestnik Leningradskogo Universiteta, No 9, Biologiya, No 2, 1970, pp 146-149

Abstract: Study of the distribution of various proteins along the DNA helix, and evaluation of the specific functions of proteins in specific sections of DNA, are required to explain the significance of the different groups of proteins in the emerging blue-print of chromatin activity. Difficulties arise in the preparation of samples for such a study because of the presence of proteolytic enzymes. Preparations of chromatin from mice livers with a protein: DNA ratio of 2.4:1 were dissolved in 0.01 M tris buffer at pH 8, and subjected to ultrasonic vibrations in a nitrogen atmosphere at a frequency of 1 megacycle, and intensity of 10 volt/cm^2 for 30 min. Chromatin obtained in this manner was fractionated on Sephadex columns. The gel filtration method was used to determine the molecular weight of the fractions. The data obtained indicate the formation of DNA-protein complexes, which differ in their composition from similar complexes of native chromatin. It was concluded that the chromatin proteins do not possess a pronounced affinity for specific sections of the DNA helix.

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1/2 020 UNCLASSIFIED PROCESSING DATE--020CT70

TITLE--EMISSION HEIGHT DISTRIBUTIONS OF CERTAIN AURORAL FORMS ON HIGH LATITUDES -U-

AUTHOR--FEDOROVA, N.I.

F

COUNTRY OF INFO--USSR

SOURCE--RAZDEL IV, POLYARNYYE SIYANIYA I SVECHENIYE NOCHNOGO NEBA, 1970, NR 10, PP 42-49

DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--AURORA, OXYGEN, RADIATION INTENSITY, GEOGRAPHIC LATITUDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0113 STEP NO--UR/3307/70/000/010/0042/0049

CIRC ACCESSION NO--AP0114509

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--02OCT70

2/2 020

CIRC ACCESSION NO--AP0114509

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEIGHT DISTRIBUTION OF EMISSION INTENSITY WAS DETERMINED IN A NUMBER OF DISCRETE FORMS OF AURORAE. IN ORDINARY AURORAE THE HEIGHT VARIATIONS OF THE INTENSITY OF GREEN ATOMIC OXYGEN LINE ARE SIMILAR TO THOSE OF 1PGN SUB2 AND INGO SUB2 PRIME POSITIVE MOLECULAR BANDS. HOWEVER, IN THE B TYPE AURORAE WHICH HAVE A BOTTOM RED EDGE THE RATIO I SUB5577(OI),I SUB(8.5)1PGN SUB2 IS SOME LOWER (SIMILAR TO 7-9) THAN IN ORDINARY AURORAE OF HA, RA, HB, RB, R AND OTHER TYPES (WHERE IT IS APPROXIMATELY 10-12) WHILE AT THE BOTTOM EDGE OF THE DEFOCUSED RAYS WITHOUT ANY SHARP LOWER BOUNDARY AND IN SOME OTHER FORMS THIS RATIO COMES UP TO OVER 20. THE INTENSITY OF THE RED OXYGEN LINE IS CONSIDERABLY INCREASED WITH HEIGHT. THE RATIO I SUB5577,I SUB6300 IN DIFFERENT FORMS OF AURORAE VARIED FROM 0.1 TO 8.0.

UNCLASSIFIED

FEDOROVA, N.I.

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Acc. Nr.: AP0042570 Ref. Code: UR0293

JPRS 5=162

Study of Geoactive Corpuscles and Photoelectrons

(Abstract: "Study of Geoactive Corpuscles and Photoelectrons on the 'Kosmos-261' Satellite," by A. D. Bolyunova, M. L. Bragin, Yu. I. Gal'perin, V. A. Gladyshev, N. V. Dzhordzhio, G. N. Zlotin, I. N. Kiknadze, R. A. Kovrazhkin, T. M. Mulyarchik, Yu. N. Ponomarev, V. V. Temnyy, N. I. Fedorova, Yu. P. Shilyayev, F. K. Shuyskaya and R. V. Shulenina; Moscow, Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 104-136)

The artificial earth satellite "Kosmos-261" was used in a study of low-energy geoactive corpuscles and fresh photoelectrons and their interaction with the earth's upper atmosphere. The satellite was launched on 10 December 1968. Orbital inclination to the equator was 71°, so that for a relatively long time it moved almost along a tangent along the auroral zone over the Soviet Far North, making it possible to increase the volume of simultaneous measurements from the satellite and from ground observatories. The storage regime made it possible to extend continuous measurements for periods of several revolutions, including passes over the auroral zones in the Arctic and Antarctic and over the polar caps as far as invariant geomagnetic latitudes 82-85°. During the initial period the satellite apogee was at 670 km and perigee was at 217 km, but it finally

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Reel/Frame 19760551

AP0042570

burnt up upon entering into the dense layers of the atmosphere on 12 February 1969 after making 857 revolutions of the earth. The experiment lasted 53 days. The orbit was such that in the northern hemisphere middle and high latitudes the satellite moved below or close to the maximum of the Foregion so that ionospheric electron density along its trajectory and its variations could be determined in a number of regions on the basis of measurements by ground ionospheric stations. The period of the experiment included both quiet periods and those with strong disturbances. The experiment was conducted under the "Program of Cooperation Among Socialist Countries in the Field of Space Research and Peaceful Use of Space." Ground measurements were made in Bulgaria, Hungary, East Germany, Poland, Rumania, USSR and Czechoslovakia. Observatories and special expeditionary stations in the USSR participated: in Yakutia, the Far North, Siberia and middle latitudes. The article cited below is divided into four parts: 1) Description of Experiment; 2) Measurement of Low-Energy Electrons; 3) Measurement of Low-Energy Ions; 4) Measurements of Charged Particles with Intermediate and High Energies. Parts 2)-4) are essentially independent articles and are abstracted separately.

19760552

FEDOROVA, N. I.

Acc. Nr.: AP0042568

Ref. Code: UR0293

JPRS 50162

Measurement of Low-Energy Electrons

(Abstract: "Measurement of Low-Energy Electrons," by Yu. I. Gal'perin, N. V. Dzhordzhio, I. D. Ivanov, I. P. Karpinskiy, E. L. Lein, T. M. Mulyarchik, B. V. Polenov, V. V. Temnyy, N. I. Fedorova, B. I. Khananov, A. V. Shifrin and F. K. Shuyskaya; Moscow, Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 108-119)

[Note: This is part of a sectionalized article "Study of Geoactive Corpuscles and Photoelectrons on the Satellite 'Kosmos-261'," Kosmicheskiye Issledovaniya, Vol VIII, No 1, 1970, pp 104-136]

A spectrometer for low-energy electrons, operating in the energy range 30 eV-15 keV, is described. Electrons undergo energy selection in a cylindrical capacitor and then are accelerated to 17 keV and are registered by a scintillation counter with two photomultipliers operating in a coincidence circuit. The instrument field of view is circular, the aperture angle is ±3.5°, the geometry factor is $2 \cdot 10^{-3}$ cm2.sterad and the energy resolution is $\Delta E/E = 0.19$. In the first range (30-150 eV) energy scanning is done smoothly by applying a sawtooth voltage; in the second analysis it is done smoothly at three fixed energies -- 1, 4.5 and 15 keV. The instrument can be switched from one regime to another by command from

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the earth. The paper gives the first results of measurements on the "Kosmos-261" satellite. The instruments measured the equilibrium energy spectrum of fresh photoelectrons at different latitudes for different pitch angles. Soft auroral electrons with energies from 30 eV to approximately 1 keV were registered both in the "second" zone of auroras and in the main zone of auroras in which electrons with energies 4.5 and 15 keV were also very intensive even during magnetically quiet times. On many revolutions of the satellite about the earth, passing approximately along the auroral oval, with transition from the midnight to the morning sector there is a structureless "background" of electrons with an almost constant intensity and slowly changing angular distribution. The energy flux of these electrons is approximately 1 erg/cm^2·sec. Near the midnight sector and with transition from the midnight to evening sector the fluxes of auroral electrons are far more irregular, with strong peaks, particularly at about 4.5 keV. No measureable electron intensities were discovered in the middle and low latitudes in the keV range. The upper limit of the energy flux in the quiet atmosphere is approximately $\leq 1.5 \cdot 10^{-2}$ erg/cm^2·sec. An exception is the equatorial region of the ionospheric anomaly, where as earlier (on the "Kosmos-5" satellite) there was sporadic registry of soft electrons.

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USSR

UDC: 532.782+541.6

MIKHAYLOV, I. G., SAFINA, E. B., and FEDOROVA, N. N.

"Investigating Ultrasonic Absorption as a Function of Temperature in Concentrated Solutions of Polymethylmetacrylate and Polystyrol in a Broad Frequency Range"

Leningrad, Vestnik Leningradskogo Universiteta, No 10, May 1972, pp 47-49

Abstract: There is a great deal of interest in the effect of temperature on the absorption of ultrasonic waves in concentrated polymer solutions. Hence the reason for this paper, which investigates this absorption in polymethylmetacrylate (PMMA), polystyrol (PS), and polyisobutyl (PIB) as a function of the temperature. These substances were dissolved in toluol and methylethylketone at concentrations of 3, 5, and 8 g/100 ml. The range of frequencies investigated was 9-900 MHz in the temperature range of 0.4-40° C. Absorption measurements for the PMMA and PS solutions were also made at 60° C, and at these temperatures measurements of the ultrasonic wave velocities at a frequency of 23.6 MHz

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MIKHAYLOV, I. G., et al, Vestnik Leningradskogo Universiteta, No 10, May 1972, pp 47-49

were also being conducted. The absorption measurements were made by the pulse method and the velocity measurements were made by the interferometric method. Error for the absorption measurements was 5-7%, and for the velocity measurements 0.5%. This article is the sequel to two earlier articles by the authors named above (Akust. zh. 17, No 3, 1971, p 400; Vestnik LGU, No 4, 1972, p 56).

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1/2 008 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--REGENERATION OF A CATALYST FOR VINYL ACETATE SYNTHESIS -U-

AUTHOR-(05)-KHACHEYAN, KH.YE., TSIRLINA, R.N., FEDOROVA, N.M., BOGOLEPOVA, YE.I., LVOVA, L.N.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,353

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(9)

DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CATALYST REGENERATION, VINYL COMPOUND, ACETATE, CATALYTIC ORGANIC SYNTHESIS, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0828 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0136262

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0136262

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CATALYST FOR VINYL ACETATE SYNTHESIS IS GENERATED BY TREATING IT WITH A CONCD. SOLN. OF KOH WHICH REMOVES CU SALTS.

UNCLASSIFIED

Acc. Nr. AP0053897 Abstracting Service: CHEMICAL ABST. 6-70 Ref. Code 4R0076

117158k **Heating of a convection current during the anodic dissolution of metals.** Fedorova, N. S.; Khachaturyan, O. B. (Mosk. Khim.-Tekhnol. Inst. im. Mendeleeva, Moscow, USSR). *Zh. Fiz. Khim.* 1970, 44(1), 231–2 (Russ). Heating of the convection current obsd. in many electrochem. processes can lead to inversion of the direction of the convection current during electrolysis. Based on exptl. data the amt. of heat consumed in heating of the convection current to the point of inversion, Q_{inv} is calcd. for various electrode processes. In concn.-polarization limited processes, the amt. of heat required for the inversion of the convection current considerably exceeds Q_{inv} for processes with chem. polarization. With increasing d. of the soln. Q_{inv} decreases, esp. in processes the rate of which is detd. by diffusion. With increasing values of the c.d. at which the inversion takes place, Q_{inv} increases and considerably exceeds the Faraday straight line. With increasing diln. of the soln. the c.d. increases at which the inversion takes place. It is assumed that the excess energy of discharging particles which they possess for surmounting the effective energy of the activation of the electrode process is also transformed into heat and thus heats the convective current. L. Holl

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REEL/FRAME
19830974

RN. 18

Acc. Nr: AP0101135 Ref. Code: UR4097

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 3, pp 267-271

EFFECT OF ANTIBIOTIC COMBINATIONS ON PATHOGENIC STAPHYLOCOCCI ISOLATED FROM SURGICAL CASES

Ye. M. Frishman, Ye. A. Vedmina, O. A. Fedorova, T. A. Vasina

Microbiology Chair of Central Post-Graduate Medical Institute, Sanitary Epidemiological Station of the Kalinin Region, Moscow

The effect of 15 combinations of penicillin with other antibiotics on 50 strains of pathogenic staphylococci, isolated from surgical cases was studied in vitro. The analysis of the data obtained during the study of the combinations and their components with the use of various criteria, such as ranges of minimum inhibitory concentrations, bacteriostatic concentrations with respect to most strains, nature of the combined effect, showed 3 double combinations of penicillin with monomycin, chlortetracycline or dichlortetracycline, as well as 1 triple combination of penicillin with pasomycin and dichlortetracycline to be favourable with respect to their effect on pathogenic staphylococci. A significant decrease in the efficacy of penicillin used in combination with erythromycin, oleandomycin or ceporin was observed.

REEL/FRAME
19850760

1/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SYNTHESIS OF 19 NORSTEROIDS. IV. SYNTHESIS OF PLUS OR MINUS,18,ETHYL,DE,A,GON,9,10,ENE,5,17,DIONE -U-

AUTHOR-(03)-FEDOROVA, O.I., GRINENKO, G.S., MAKSIMOV, V.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 690-3

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--STEROL, ORGANIC SYNTHESIS, KETONE, POLYNUCLEAR HYDROCARBON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0930 STEP NO--UR/0079/70/040/003/0690/0693

CIRC ACCESSION NO--AP0124591

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124591

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 2,ETHYL,1,3,CYCLOPENTANEDIONE AND ACCH:CH SUB2 IN MEOH,DOH REFLUXED 5 HR GAVE 2,ETHYL,2,OXOBUTYLCYCLOPENTANE,1,3,DIONE, B SUB0 TIMES 5 126-30DEGREES, WHICH WITH P,MEC SUB6 H SUB4 SO SUB3 H IN REFLUXING C SUB6 H SUB6 4 HR WITH REMOVAL OF H SUB2 O GAVE 8,ETHYL,5,6,7,8,TETRAHYDROINDAN,1,5,DIONE (I), M. 87-8.5DEGREES, WHICH WITH PYRROLIDINE IN MEOH UNDER N IN 45 MIN GAVE 5,PYRROLIDYL,8,ETHYL,2,6,7,8,TETRAHYDRO,1,INDANONE (II), DECOMPD. 57-8DEGREES. I IN MEPH HEATED 0.5 HR AT 70DEGREES WITH ME SUB2 ETCOK, COOLED, TREATED WITH 1,3,DICHLORO,2,BUTENE, HEATED 1 HR, AND TREATED WITH H SUB2 O GAVE 60PERCENT 8,ETHYL,4,(3,CHLORO,2,BUTENYL),5,6,7,8,TETRAHYDROINDAN,1,5,DIONE, AN OIL, PURIFIED ON SILICA GEL; SIMILAR REACTION WITH II GAVE A 75PERCENT YIELD. THE CRUDE ALKYLATE IN ACOH WAS TREATED AT NEGATIVE30DEGREES WITH CONCD. H SUB2 SO SUB4 AND KEPT 20 MIN, FINALLY AT ROOM TEMP., TO YIELD OILY 8,ETHYL,4,(3,OXOBUTYL),5,6,7,8TETRAHYDROINDAN,1,5, DIONE, WHICH WAS HYDROGENATED OVER PD,C IN MEOH 12 HR TO SOME 8,ETHYL,4,(3,OXOBUTYL)HYDRINDAN,1,5,DIONE AND III, SEPD. CHROMATOGRAPHICALLY. THE CRUDE HYDROGENATION PRODUCT HEATED WITH P,MEC SUB6 H SUB4 SO SUB3 H IN ACOH 2 HR GAVE SIMILAR TO 30PERCENT IV, M. 113-14DEGREES: HYDROGENATION OF 8,METHYL,4,(3,OXOBUTYL),5,6,7,8,TETRAHYDROINDAN,1,5,DIONE AS ABOVE GAVE A 3:7 MIXT. OF 9ALPHA, AND 9BETA ISOMERS OF HEXADYDRO DERIV.

FACILITY: VSES. NAUCH. ISSLED. KHIM. FARM. INST. IM. ORDZHONIKIDZE, MOSCOW, USSR.

UNCLASSIFIED

USSR

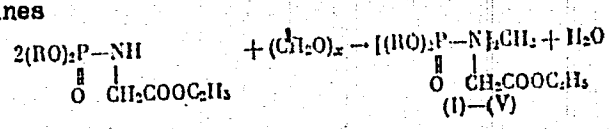
UDC 542.91:547.1'118

FEDOROVA, O. N., ALIMOV, P. I., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov of the USSR Academy of Sciences

"Reaction of N-carbethoxymethylamides of dialkylphosphoric Acids with Paraform"

Moscow, Izvestiya Akademii Nauk SSSR -- Seriya Khimicheskaya, No 11, 1972, pp 2623-2624

Abstract: The reaction of N-carbethoxymethylamides of dialkylphosphoric acids with paraform which yields methylenebis-(N-dialkoxyphosphoryl-N-carbethoxymethylamines



(I)—(V)

R = CH_3 (I); C_2H_5 (II); C_3H_7 (III); i-C_3H_7 (IV); C_4H_9 (V)

is described. The reaction takes place analogously with formaline. Methylenbis(N-dialkoxyphosphoryl-N-carbethoxymethylamines) react with an aqueous ammonia solution to form methylenebis-N-dialkoxyphosphoryl-N-carbaminomethylamines)

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USSR

FEDOROVA, O. N., and ALIMOV, P. I., Izvestiya Akademii Nauk SSSR -- Seriya Khimicheskaya, No 11, 1972, pp 2623-2624

$$[(RO)_2P(O)-NCH_2-CH_2COOC_2H_5 + 2NH_3 \rightarrow [(RO)_2P(O)-NCH_2-CH_2CONH_2 + 2C_2H_5OH$$

(VI) — (VIII)

R = C_2H_5 (VI); C_3H_7 (VII); i-C_3H_7 (VIII).

The constants and yields of the synthesized compounds are tabulated, and the results of analyzing the infrared spectra are presented.

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USSR UDC 632.95

FEDOROVA, O. N., ALIMOV, P. I., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov

"Method of Preparing N-Alkyl-N-(Acylaminomethyl)-Amides of Dialkylphosphoric Acids"

USSR Author's Certificate No 225879, filed 27 Mar 67, published 4 Jan 70 (from RZh-Khimiya, No 15, 10 Aug 70, Abstract No 15N663 P, by L. V. Razvodovskaya)

Translation: Compounds with general formula $(RO)_2P(O)NR'CH_2NHCOR''$ (I) and $(RO)_2P(O)NR'CH_2NHCOOR''$ (II), where R = R' = R'' -- alkyl, are prepared by the reaction of $(RO)_2P(O)NR'CH_2OH$ (III) with amides of carboxylic acids or with urethanes. 0.02 Mole of III (R = Et, R' = Bu), 0.02 mole $MeCONH_2$ in 4 ml of dry benzene, and 1 drop HCl (acid) is heated at 45° for 4 hrs. Then the solvent is distilled off in vacuum, and the residue is redistilled, yielding I (R = Et, R' = Bu, and R'' = Me), yield 50%, b. p. 128-129°/0.5, $n^{20}D$ 1.4650, d_4^{20} 1.1329, and II modifications (R = R' = R'' = Et), yield 40.8%, b.p. 126-128/0.5, $n^{20}D$ 1.4562, and d_4^{20} 1.1229. I and II can be used as pesticides.

1/1

USSR

FEDOROVA, Prof P. I., Chair of Internal Diseases, Stomatological Faculty, Tashkent Medical Institute, Tashkent

"Endocrine Pathology in a Hot Climate"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 9, Sep 70, pp 156-160

Abstract: The specific characteristics of thyroid pathology and of diabetes in the hot climate of Uzbekistan were studied. It was recognized that goiter is not a disease of the thyroid gland only, but of the whole organism. Studies of goiter prevalent in the Fergana Valley indicated that this disease most frequently assumed the form of a euthyroid goiter or of a mild hypothyreosis. In the diffuse thyreotoxicosis following goiter (Basedow's disease), an increase of inhibition reactions in the functioning of the nervous system during spring and summer was observed. This must be regarded as adaptation to the hot weather. Patients with thyrotoxicosis showed ischemia of the myocardium, which disappeared after treatment of the toxicosis; no atherosclerotic lesion of the coronary arteries was involved. A study of vegetative vascular reflexes in toxic goiter indicated that a leading role in the pathogenesis of this disease must be ascribed to the

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FEDOROVA, Prof P. I., Meditsinskiy Zhurnal Uzbekistana, No 9, Sep 70, pp 156-160

hypothalamus. 184 out of 38,167 deaths recorded at medical institutions of Tashkent were attributed to diabetes. One Hundred forty three of the patients with diabetes who died also had atherosclerosis. This, together with data on disturbances of the lipid and cholesterol metabolism in diabetes, would indicate that atherosclerosis is more frequently associated with diabetes than with other diseases. Observations on 138 diabetes patients disclosed disturbances of renal function in 50% of the cases. The majority of patients exhibited lowered glomerular filtration and a reduced plasma flow in the kidneys. Treatment with insulin alleviated disturbances in renal hemodynamics associated with diabetes. Hot weather aggravated these disturbances. Treatment of dogs with alloxan in the summer heat of Tashkent lowered the level of sugar and cholesterol in the blood. On administration of alloxan to dogs, the plasma flow in the kidneys, glomerular filtration, and reabsorption of water in the tubules were lowered. Overheating of the dogs in the sun lowered the plasma flow and filtration in the glomeruli still further, while the reabsorption of water in the tubules increased. Physiological tests showed that the organism of diabetes patients was depleted of vitamin B_6; this justified use of vitamin B_6 in the therapy of diabetes. It was found that the content of Cu and Fe in the blood of diabetes patients was raised,

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USSR

FEDOROVA, P. I., Meditsinskiy Zhurnal Uzbekistana, No 9, Sep 70, pp 156-160

while that of Co, Zn, and especially Mn was lowered. There was a correlation between the reduced tolerance to vitamin B_6 (i. e., its increased decomposition in the body) and the lowered content of Mn in the blood of diabetes patients as well as hypercholesterolemia and fatty infiltration of the liver. In view of the hypoglycemic and lipotropic action of Mn salts and the pronounced decrease of the Mn content in the blood, use of a complex compound of Mn with vitamins (M-35) in the therapy of diabetes was indicated. This therapy was applied successfully. At the request of the Committee on Pharmacology, Ministry of Health USSR, the Chair of Internal Diseases conducted clinical tests with whale insulin and with neutral and crystalline zinc insulin (long-acting). It was found that these types of insulin had a pronounced hypoglycemic action and that they could be applied in the treatment of patients with acute diabetes and diabetes of medium severity.

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1/2 032 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--EFFECT OF SYNTHESIS CONDITIONS ON THE PROPERTIES OF POLY(AMINO AMIDO ACIDS) -U-

AUTHOR-(05)-KORSHAK, V.V., DOROSHENKO, YU.E., TEPLYAKOV, M.M., FEDOROVA, R.D., VOLKOV, B.V.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN. SER. A 1970, 12(3), 677-80

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CHEMICAL SYNTHESIS, POLYMER, POLYCONDENSATION, AMINE, PYROMELLITIC ACID, ANHYDRIDE, LOW TEMPERATURE EFFECT, POLYAMIDE COMPOUND, MECHANICAL STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0309 STEP NO--UR/0459/70/012/003/0677/0680

CIRC ACCESSION NO--AP0111503

UNCLASSIFIED

Exobiology

USSR

UDC 576.807:523

FEDOROVA, R. I., MILEKHINA, Ye. I., and IL'YUKHINA, N. I., Institute of Space Studies, Academy of Sciences, USSR, Moscow

"On the Possibilities of the "Gas Exchange" Method for the Detection of Extraterrestrial Life -- Identification of Nitrogen Fixing Microorganisms"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 6, Nov/Dec 73, pp 797-805

Abstract: The possibility of the identification of nitrogen fixing microorganisms has been investigated in an experiment on Mars, by the reduction of $C_2H_2 \rightarrow C_2H_4$ with concurrent analysis of concurrent changes in the gaseous phase. The inhibiting effect of C_2H_2 has been identified, manifested by the retardation of the multiplication of anerobic nitrogen fixators and in time laps of the appearance of H_2 and C_2H_2. The degree of inhibition depends on the type of soil and on the titre of nitrogen fixators. It has been established that C_2H_2 (0.015; 0.12 atm) inhibits the reduction of N_2O by the denitrificating microorganisms. It is proposed to determine the denitrification ability of soils by means of the blocking activity of acetylene of the

2/2 032 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0111503
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POLYCONDENSATION OF
SUB3 SUB3 (NH SUB2) SUB2-3,4) SUB2 WITH PYROMELLITIC ANHYDRIDE (I) IN
HCONME SUB2, ACNME SUB2, OR N-METHYL-2-PYRROLIDINONE AT MINUS 30DEGREES
TO PLUS 20DEGREES GAVE II. II MOL. WT. WAS MAX. AT MINUS 20DEGREES AND
WAS VERY SUBSTANTIALLY INCREASED WHEN 5PERCENT I MOLE EXCESS WAS USED;
HCONME SUB2 OR ACNME SUB2 WERE THE BEST SOLVENTS. THERMAL DEHYDRATION
OF II GAVE POLYCYCLIC LADDER POLYAMIDES OF INCREASED MECH. STRENGTH.

UNCLASSIFIED

USSR

FEDOROVA, R. I., et al., Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 6, Nov/Dec 73, pp 797-805

reduction stage of N_2O N_2. In the planning stage of the exobiologic studies this makes it possible to identify in one text two physiological groups of microorganisms, improving the reliability of the experiment, i.e. it makes it possible to control the change in the denitrification process by serveral gas components: H_2, N_2O, C_2H_2, N_2.

2/2

FEDOROVA, R.I.

JPRS 57991

16 Jan 73

UDC [illegible]

[illegible] OF THE [illegible] FOR DETECTING EXTRATERRESTRIAL LIFE -- [illegible] OF DENITRIFYING MICROORGANISMS

[Article by R. I. [illegible], Institute of [illegible], USSR Academy of Sciences, [redacted]; [illegible], Russian, No 5, 1972, pp [illegible]]

[illegible] of identifying denitrifying microorganisms in a closed soil-atmosphere system on the basis of gas exchange by using gas chromatography is considered.

In addition to elective nutrient media containing nitrates, the use of the intermediate gaseous denitrification product N_2O is proposed for this purpose. It is shown that this makes it [illegible] to monitor the denitrification process for [illegible] gaseous components -- nitrogen and nitrous [illegible] -- and to include in experiments on Mars a version that does not involve the use of a nutrient medium.

Among the methods for detecting signs of life on other planets, on Mars in particular, are methods based on the detection of the vital activity of microorganisms from gaseous products in a closed soil-atmosphere system ([illegible], [illegible]; Brazhnikov et al, 1971). The appearance of new gas components (O_2, CO_2, [illegible], CH_4, and [illegible]) in an experiment when such components are not present in the control should [illegible] to the presence of living systems in the studied sample. Among such methods is the detection of tagged carbon dioxide that forms on the substrate with radioactive carbon by using a radiation detector ([illegible] et al, 1962). A. A. Imshenetskiy (1970) ascribes special importance to this last method in connection with the fact that it can provide a rough idea of the physiology of microorganisms when substances (sugars or proteins) tagged with various carbon atoms are introduced into the nutrient medium. When a gas chromatograph is used as the detecting device, the possibilities of identifying individual physiological groups of microorganisms are no less extensive.

To date in the development of nutrient media for detecting signs of life on Mars attention has been paid basically to creating media that favor the development of a maximum number of species belonging to various taxonomic

USSR UDC 616-008.9-001.28-092.9-074

GOLYSHEV, Ye. P. and FEDOROVA, T. A., Institute of Biophysics, Ministry of Health USSR, Moscow

"Biochemical Evaluation of the Level of Early Postradiation Cell Destruction in Irradiated Rats"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 5, 1973, pp 44-46

Abstract: The radioisotopes orotic acid-2-C^{14} and thymidine-2-C^{14} were used to determine the content of DNA metabolites in irradiated rats. This value directly reflects the level of cell destruction within 8 hours of irradiation. About 160 million cells are destroyed in the normal rat in 8 hours. Exposure to 100, 300, and 900 r increased this number, according to the above parameter, to 270,000,000, 420,000,000 and 1 billion or 170, 260, and 630% of the normal level, respectively.

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USSR UDC 617-01.28-008.939.6

FEDOROVA, T. A., TERESHCHENKO, O. Ya., and MAZURIK, V. K.

Nukleinovyye Kisloty i Belki v Organizme pri Luchevom Porazhenii (Nucleic Acid and Protein in the Organism With Radiation Injury), Moscow, Meditsina, 1972, 408 pp

Translation: Annotation: The book systematizes and generalizes vast experimental materials concerning the investigation of impairments of the metabolism of the key substrata of life -- nucleic acids and proteins, during radiation sickness in animals and humans.

The analysis of the mechanism of postradiation impairments of DNA and protein metabolism presented in the book is important for understanding the pathogenesis of radiation injury and, therefore, for developing rational therapy and prophylaxis for this illness, and it is also of general biological significance as a result of the connection between exposure of the organism and cancerogenesis, aging, and genetic impairment.

The book is intended for scientific workers -- radiobiologists, biochemists, roentgenologists, and radiotherapists, as well as for other specialists who are interested in current problems of biology.

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FEDOROVA, T. A., et al., Nukleinovyye Kisloty i Belki v Organizme pri Luchevom Porazhenii, 1972, 408 pp

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FEDOROVA, T. A., TERESHCHENKO, O. Ya., and MAZURIK, V. K., Nukleinovyye Kisloty i Belki v Organizme pri Luchevom Porazhenii, 1972, 408 pp

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FEDOROVA, T. A., et al., Nukleinovyye Kisloty i Belki v Organizme pri Luchevom Porazhenii, 1972, 408 pp

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FEDOROVA, T. A., et al., Nukleinovyye Kisloty i Belki v Organizme pri Luchevom Porazhenii, 1972, 408 pp

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FEDOROVA, T. A., et al., Nukleinovyye Kisloty i Belki v Organizme pri Luchevom Porazhenii, 1972, 408 pp

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USSR UDC 577.37

STEPANOVA, N. V., and FEDOROVA, T. A., Institute of Microbiology, Academy of Sciences USSR, Moscow, and Faculty of Physics, Moscow State University imeni M. V. Lomonosov, Moscow

"Optimization of Transition Processes in the Continuous Culturing of Microorganisms (A Model Allowing for Inhibition by Products of Secondary Metabolism)"

Moscow, Biofizika, Vol 16, No 5, Sep/Oct 71, pp 841-848

Abstract: A theoretical study of control procedures to be applied in the operation of an apparatus for the continuous culturing of microorganisms is continued. An apparatus into which fresh culture medium is fed continuously and into which a part of the produced biomass is recirculated, after being freed from spent nutrient medium in a centrifuge, is considered. The spent nutrient medium contains secondary products of metabolism which inhibit the growth of the culture. The methods of phase space and determination of optimal control procedures are used to solve the problem of running the process in such a manner that production is at a maximum and the least time is spent for transitional (auxiliary) stages of the process. It is shown that the optimal procedure from the standpoint of expediting the process consists of programmed control of the inflow of fresh nutrient medium and

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STEPANOVA, N. V., and FEDOROVA, T. A., Biofizika, Vol 16, No 5, Sep/Oct 71, pp 841-848

of the change-over system of centrifuge operation. Calculations show that control of this type would shorten the time required for transitional processes by a factor of 8-10 in the case of cultivation of Propionibacterium shermanii.

2/2

USSR

MINKEVICH, I. G., STEPANOVA, N. V., FEDOROVA, T. A., and SHMAL'GAUSEN, V. I., Physics Faculty, Moscow State University imeni M. V. Lomonosov

"The Shortest Time for Establishing a Steady State in a Cultivator

Moscow, Biofizika, Vol 15, No 5, Sep/Oct 70, pp 867-872

Abstract: Mathematical relationships are established for the formation of a steady state under optimum conditions of operation corresponding to maximum production of biomass in a continuously operating apparatus for the cultivation of microorganisms (fermenter) with complete mixing, to which a part of the outgoing flow consisting of the biomass and nutrient solution is recirculated after centrifuging. The possibility of shortening the time required for the transitional process taking place before a steady state is established is considered. Formulas are derived for an optimal system of programed control, by application of which the time that elapses before a steady state is established can be shortened considerably, e.g., from several days to a few hours in the case of cultivation of Bacterium propioni Sherman.

1/1

USSR UDC 612.017.12:612.461.269.014.482

RUBACHEV, I. G., STREL'NIKOV, V. A., FEDOROVA, T. A., KLEMPARSKAYA, N. N., DUKHOVNAYA, E. M., and FURAYEVA, L. P.

"The Effects of Irradiation on the Urinary Excretion of Thymidine and Beta-Aminoisobutyric Acid in Immunized Rats"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunibiologii, Vol 10, Oct 70, p 142

Translation: Whole-body irradiation of animals induces massive decomposition of desoxynucleoproteins and liberation and depolymerization of DNA in the cells of organs sensitive to irradiation. At the same time, there is an increased urinary excretion of desoxynucleosides -- desoxycytidine and thymidine, and of the products of thymidine catabolism -- beta-aminoisobutyric acid. A study of the dynamics of the excretion of these substances makes it possible to elucidate the nature of DNA metabolism in the body during the 1st day after irradiation and, during the subsequent period, the nature of restoration processes taking place in the rapidly regenerating tissues.

In a previous study, we established that after active immunization, rats have an increased urinary excretion of beta-aminoisobutyric acid, especially during

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200810005-3"

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RUBACHEV, I. G., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunibiologii, Vol 10, Oct 70, p 142

the period of maximum concentration of agglutinins in peripheral blood, and a decreased concentration of plasmocytes in the lymph nodes. In this investigation, we studied the level of DNA decomposition (based on the urinary excretion of thymidine and beta-aminoisobutyric acid) and the dynamics of the formation of antibodies (according to the titers of agglutinins) in vaccinated and irradiated rats. The animals received a single dose of whole-body irradiation (500 r) from the EEGO-2 generator (power, 640 r/min; gamma rays, Co^{60}) 48 hours prior to and 48 hours after vaccination. Immunization was performed with Breslau bacilli killed with heat, which were administered intramuscularly in a dose of 1 billion microbial cells in 0.5 ml. Irradiation prior to and after immunization equally suppressed the formation of agglutinins (approximately three times). During the 1st day after irradiation, the level of thymidine excretion in controls, and immunized animals also increased to an equal degree (5 and 2.5-3 times, respectively). This fact and the equivalent degree of inhibition of antibody formation indicated that immunization performed 48 hours prior to irradiation exerted no protective effects on the

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USSR

RUBACHEV, I. G., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunibiologii, Vol 10, Oct 70, p 142

decomposition of lymphoid tissue during the 1st day after irradiation or on its ability to produce antibodies. Subsequently, the level of thymidine excretion by control animals and those of the experimental group differed considerably from the standpoint of excretion of beta-aminoisobutyric acid (these differences were insignificant). During the subsequent period (up to 11 days), irradiated control animals displayed a considerable decrease (3-5 times) in thymidine excretion as compared to the initial level. Normal or above-normal thymidine excretion was observed on the 7th-11th days after immunization in animals immunized after irradiation, and on the 2nd-6th days after irradiation or on the 4th-8th days after immunization in animals immunized prior to irradiation. This development may be associated with regenerative processes which apparently begin earlier and proceed at a more rapid rate.

3/3

USSR UDC 617-001.28-07:616.633.963.074

FEDOROVA, T. A., RUBACHEV, P. G., and DUKHOVNAYA, E. M.

"Specificity of Nucleosidura in the Irradiated Organism"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 10, Oct 70, pp 42-44

Abstract: The excretion of thymidine and beta-aminoisobutyric acid in the urine was studied in rats exposed to various agents capable of destroying cells including irradiation (Co^{60}), third-degree burns, immunization with Breslau paratyphod vaccine, and hydrocortisone. All four agents increased the excretion of thymidine and beta-aminoisobutyric acid, but not to the same degree or at the same time. The greatest and most rapid increase was produced by irradiation. The effects decreased for hydrocortisone, burns, and immunization, in that order. After irradiation, for example, the excretion of thymidine reached a peak within 24 hours, exceeding the original level by a factor of 5-6. After third-degree burns, it reached a peak on the 11th day and exceeded the original level by a factor of 2.6. All four agents increased the excretion of beta-aminoisobutyric acid in the urine to approximately the same degree.
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USSR

UDC 576.851.095.42:578.088.9.

FEDOROVA, T. A., Institute of Microbiology, Academy of Sciences USSR

"Some Models of Microbial Growth With Gas Nutrition As Illustrated by Hydrogen Bacteria"

Moscow, Mikrobiologiya, No 6, 1972, pp 986-993

Abstract: The simplest of 4 mathematical models proposed for describing microbial growth with gas nutrition is based on the assumption that the specific growth rate is a function of the limiting gaseous substrate alone (the function is determined by the Michaelis-Menten equation). It is further assumed that the microbial cells undergo some physiological changes as they grow, that some of them "age." The equations used for model 2 differ from those of model 1 in having an additional member in the second equation which takes into account the consumption of the substrate for nonsynthetic needs (maintenance of life, movement, etc.). Model 3 is the same as model 2 except that it has a new variable, the concentration of the inactive biomass in the medium. In model 4 it is assumed that the relationship between the specific growth rate of the microorganisms and concentration of a single limiting substance, dissolved gas, is similar to the Michaelis-Menten relationship except that the maximum specific

USSR

FEDOROVA, T. A., Mikrobiologiya, No 6, 1972, pp 986-993

growth rate also varies with the concentration of the biomass (like the Verhulst equation). Model 4 showed the best correlation between the theoretical results and those of actual experiments with Hydrogenomonas eutropha Z-1.

2/2

USSR UDC 576.851.095.42:578.088.9

FEDOROVA, T. A., Institute of Microbiology, Academy of Sciences USSR

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Moscow, Mikrobiologiya, No 6, 1972, pp 986-993

Abstract: The simplest of 4 mathematical models proposed for describing microbial growth with gas nutrition is based on the assumption that the specific growth rate is a function of the limiting gaseous substrate alone (the function is determined by the Michaelis-Menten equation). It is further assumed that the microbial cells undergo some physiological changes as they grow, that some of them "age." The equations used for model 2 differ from those of model 1 in having an additional member in the second equation which takes into account the consumption of the substrate for nonsynthetic needs (maintenance of life, movement, etc.). Model 3 is the same as model 2 except that it has a new variable, the concentration of the inactive biomass in the medium. In model 4 it is assumed that the relationship between the specific growth rate of the microorganisms and concentration of a single limiting substance, dissolved gas, is similar to the Michaelis-Menten relationship except that the maximum specific

USSR

FEDOROVA, T. A., Mikrobiologiya, No 6, 1972, pp 986-993

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1/2 011 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--DETERMINATION OF PALLADIUM BY THE CATALYTIC REACTION BETWEEN STANNOUS CHLORIDE AND ARSENIOUS ACID -U-

AUTHOR-(03)-FEDOROVA, T.I., SHVEDOVA, L.V., YATSIMIRSKIY, K.B.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 307-11

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PALLADIUM, CHEMICAL REACTION RATE, CHEMICAL ANALYSIS, TIN CHLORIDE, ARSENIC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1919 STEP NO--UR/0075/70/025/002/0307/0311

CIRC ACCESSION NO--AP0115733

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115733

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF SNCL SUB2 WITH HASO SUB2 IN A HCL SOLN. WAS STUDIED. THE REACTION RATE DEPENDS ON THE CONCNS. OF PD(II) USED AS CATALYST, HASO SUB2, SNCL SUB2, AND HCL. OPTIMUM CONDITIONS ARE: 0.09M SNCL SUB2, 0.02M HASO SUB2, 2.0M HCL, 1 TIMES 10 PRIME NEGATIVE5 M PDCL SUB2. DURING 3 MIN THERE IS A LINEAR DEPENDENCE BETWEEN THE ABOSRBANCE AND PD(II) CONCN. AU(III), PT(IV), RH(III), OS(VIII), HG(II) CATALYZE THE REACTION. LARGE AMTS. OF TEO SUB4 PRIME NEGATIVE NEGATIVE AND SRO SUB4 PRIME NEGATIVE NEGATIVE REACTING WITH SN(II), AS WELL AS I PRIME NEGATIVE, PO SUB4 PRIME3 NEGATIVE, HNO SUB3, AND HCLO SUB4 INTERFERE IN THE REACTION; FE(III), CO(II), NI(II), CU(II), ZN(II), MN(II), SB(III), RU(III), IR(V), AG(I), AND SIO SUB3 PRIME2 NEGATIVE DO NOT INTERFERE. THE INDICATOR REACTION CAN BE USED TO DET. SMALL AMTS. OF PD WITH A SENSITIVITY OF 0.2 MUG-ML. PLACE THE SOLN. TO BE ANALYZED INTO A MIXT. CONTG. 4 ML 0.1M HASO SUB2, 3 ML HCL, 4 ML 10PERCENT SNCL SUB2 AND 1 ML 1PERCENT FRESHLY PREPD. GELATIN AND BEGIN TIMING. TRANSFER INTO A DRY CELL AND MEASURE THE ABSORBANCE FOR 3 MIN BY USING A BLUE FILTER. THE AV. ERROR IN PURE PDCL SUB2 SOLNS. IS 2.5PERCENT; IN SOLNS. CONTG. 70 FOLD AMTS. OF CU(II) CO(II), NI(II), FE(III), MN(II) AND 10 FOLD RU(III), THE ERROR IS 3.5PERCENT. FACILITY: IVANOV. CHEM. TECHNOL. INST., IVANOVO, USSR.

UNCLASSIFIED

Measuring, Testing, Calibrating

USSR UDC: 535.34

BOREYKO, V. M., KARPOV, V. I., FEDOROVA, T. N.

"Installation for Studying Gasses in the Vacuum Area of the Spectrum by Impulse Photolysis"

Leningrad, Optiko-mekhanicheskaya Promyshlennost', No 8, Aug 72, pp 36-39.

Abstract: An impulse photolysis device is described. Vacuum absorption spectra in the UV area are recorded using a transmission tube consisting of a capillary source producing a continuum to 120 mμ. The design peculiarities of the source are studied. Oscillograms and radiation spectra are presented. The device is made in two versions, with photographic and photoelectric recording. Power supply is through six high-voltage coaxial cables located concentrically around the quartz discharge capillary, in order to assure a short pulse. The device can measure the absorption spectra of particles with lifetimes of over 10 μsec in the vacuum ultraviolet area.

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USSR

UDC 911.3.616.9:597.6(571.18)

KORSH, P. V., RAVDONIKAS, O. V., MAL'KOV, G. B., VORONIN, Yu. K., ZIMINA, V. Ye., KOSTYUKOV, V. P., IVANOV, V. S., FEDOROVA, T. N., YEGOROVA, L. S., RUDAKOV, V. A., CHULOVSKIY, I. K., and SHAYMAN, M. S.

"On Carrier Characteristics and Contacts With Vectors of Viral and Bacterial Infections Among Omskaya Oblast Wild Animals"

V sb. Vopr. infekts. patol. (Problems of Infection Pathology -- collection of works) Vyp. 2, Omsk, 1970, pp 75-78 (from RZh-Meditsinskaya Geografiya, No 4, Apr 71, Abstract No 4.36.51)

Translation: A table is presented of species composition of oblast wild animals and their relative population by individual landscape subzones in Omskaya oblast (64 species). Transmission of infections with natural foci was established in 27 species for the following diseases: tickborne encephalitis, Omsk hemorrhagic fever, rabies, tickborne scrub fever, Q fever, tularemia, erysipelas, toxoplasmosis, and leptospirosis.

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USSR

UDC 911.3:616.99:576.895.42(571)

METSKIY, G. I., BUSYGIN, F. F., PRIGORODOV, V. I., FEDOROVA, T. N., and SHAYMAN, M. S.

"Landscape and Epidemiological Regional Classification of Territories in Relation to Obligate Transmissible Diseases Carried by Ticks, and Reasons for Planned Prophylaxis of Epidemic Outbreaks"

V sb. Materialy XV Vses. sezda epidemiologov, mikrobiologov i infektsionistov, Tezisy Dokl. Ch. 1 (Proceedings of the 15th All Union Meeting of Epidemiologists, Microbiologists, and Infectious Disease Specialists, Theses Reports, Part 1 -- collection of Works), Moscow, 1970, pp 98-99 (from RZh-Meditsinskaya Geografiya, No 2, Feb 71, Abstract No 2.36.54)

Translation: According to an accumulation of collected data, Western Siberia can be preliminarily divided into the following territorial epidemiological zones in relation to specified infectious diseases: central taiga, southern taiga, aspen-birch subtaiga forests, mountainous-taiga, forest-steppe, and steppe. The landscape epidemiological regions of tickborne encephalitis are distributed over all zones, except the steppe. The steppe and the forest-steppe are characterized in this classification as regions of Asian tickborne

USSR

NETSKIY, G. I., et al., RZh-Meditsinskaya Geografiya, No 2, Feb 71, Abstract No 2.36.54)

rickettsiosis. As far as Omsk hemorrhgic fever is concerned, the landscape epidemiological regions are divided between the forest-steppe zones of the Omsk, Novosibirsk, Tyumensk, and Kurgansk districts.

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USSR

UDC 621.355.8

SHUVALOVA, I. N., FEDOROVA, T. V., and ARKHANGEL'SKAYA, Z. P.,

"The Principles of Decreasing the Capacity of the Silver-Oxygen Electrode for Linear Reversible Operations"

Sb. rabot no khim. istochnikam toka. Vses. n.-n akkumulyator. in-t (collection of Works on the Chemical Source of Current. All-Union Scientific Study Institute for Storage Batteries), Vyp 7, 1972, pp 175-181 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L244 by V. S. Levinson)

Translation: A study was made of the reasons for the deterioration in the efficiency of the AgO electrode prepared from different active materials (industrial silver powder, Ag_2O fine grained material, and silver powder with traces of ZrO_2) for a linear cycling in silver-cadmium batteries. A decrease in the coefficient of the utilization of the active areas according to the size of the increase in the operation time of the electrode is related to the deterioration of the discharging area as a result of its aggregation. A high frequency of linear operation characteristics and battery conditions are retained by the electrode made from Ag_2O.

1/1

FEDOROVA, T. V.

JPRS 59203
6 73

12-5. THERMODYNAMIC ANALYSIS OF THE CRYSTALLIZATION CONDITIONS OF SILICON CARBIDE

[Article by E. A. Kuznetsov, Ya. M. Buchkan, T. V. Fedorova, G. N. Kuznetsov, Novosibirsk, Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 120]

A thermodynamic analysis was made of the formation of silicon carbide from the gas phase considering all possible condensed phases and all gas compounds of significance.

The regions of realization of the different phase complexes were defined. Arguments were stated regarding the region of conditions favoring growth of perfect crystals. A qualitative comparison of the calculations with the available experimental results was made.

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FEDOROVA, T. V.

JPRS 59068
6-73

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IX-2. THERMODYNAMIC ANALYSIS OF THE GROWTH PROCESSES OF GERMANIUM ALLOYED WITH TIN BY THE METHOD OF COMBINED GAS-LIQUID EPITAXY

[Article by T. V. Fedorova, N. A. Fominykh, G. A. Kokovin, F. A. Kuznetsov, Novosibirsk; Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 116]

A thermodynamic analysis was made of the Ge-Sn-Cl-H system considering all possible condensed phases. The results of the analysis are applied to the investigation of various schemes for growing epitaxial layers of germanium via a layer of liquid tin by the combined gas-liquid epitaxy method. The conditions of performing the following steps were calculated: application of the layer of liquid tin to the substrate, growth of the germanium layer through the tin-germanium melt layer, and removal of the liquid layer.

FEDOROVA, T.V.

TPRS 59208

6-73

SESSION II

II-1. COMPARISON OF THE RESULTS OF THERMODYNAMIC ANALYSIS WITH EXPERIMENTAL DATA WITH RESPECT TO SILICON GROWTH BY THE CHLORIDE METHOD

(Article by G. A. Kolovin, T. V. Fedorova, P. A. Kuznetsov, Novosibirsk; Novosibirsk, III Simposium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June, 1972, p 11)

Frequently the thermodynamic analysis can not be carried out correctly as a result of the absence of material thermodynamic data for the substances participating in the transport process. In these cases it turns out to be useful to use the apparatus of thermodynamic analysis to approximate the available experimental results with respect to growth or etching and calculation of the integral characteristics of the chemical transport process on the basis of it. The expediency and effectiveness of this approach are illustrated in the example of the silicon-chlorine-hydrogen system.

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FEDOROVA, T.V.

JPRS 59068
6 73

II-13. THERMODYNAMIC ANALYSIS OF THE GROWTH PROCESSES OF ZINCITE CRYSTALS

[Article by T. V. Fedorova, G. A. Kokovin, T. D. Levitskaya, R. R. Nev'yantseva, Novosibirsk; Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June, 1972, p 23]

Using a computer, a thermodynamic analysis was made of the $ZnCl_2$-H_2O-O_2-N_2 system. The equilibrium partial pressures of the components and the limiting yields of ZnO in the process of hydrodynamic oxidation of zinc chloride were calculated.

USSR UDC:511

FEDOROVA, T. V.

"Representation of Numbers in Certain Quadratic Forms With Four Variables"

Nauchn. Zap. Tashkent. In-t Nar. Kh-va [Scientific Writings of Tashkent Economics Institute], No. 55, 1970, pp. 137-142 (Translated from Referativnyy Zhurnal Matematika, No. 12, 1970, Abstract No. 12A88 by A. Malyshev)

Translation: The Jacobi-Walfisch method is used to derive formulas for the number of representations of numbers by quadratic forms

$$x^2+8y^2+2^kz^2+64t^2,\ k=3,\ 4,\ 6,$$

given by Liouville without proof.

1/1

Plant Pathology

USSR UDC 632.4:633.11:582.285.2(47+47)

LESOVOY, M. P., FEDOROVA, V. A., SHKOLENKO, V. I. TERESHCHENKO, B. A., SHOPINA, V, V., IBRAGIMOV, G. R., AKHMEDOV, S. A., YEROGOVA, N. L., MAMONTOVA, A. N., PERESYPKIN, V. F., BOYKO, Yu. I., SHAVARINA, Z. A., CHUMAKOV, A. Ye., YARMENKO, Z. I., PAYCHADZE, L. V., and EL'CHIBAYEV, A. A., All-Union Institute of Plant Protection, Ukrainian Institute of Plant Protection, Ukrainian Agricultural Academy, Azerbaydzhan Institute of Agriculture, Central Asian Institute of Plant Pathology, and Kazan' Institute of Plant Protection, Georgian Institute of Plant Pathology

"Race Formation in Puccinia triticina Eriks. and P. striiformis West. in the USSR"

Leningrad, Mikologiya i Fitopatologiya, No 6, 1972, pp 428-434

Abstract: Study of the causative agents of orange leaf and stripe rusts of wheat in different parts of the Soviet Union and some other European countries showed that, despite the great variety of races, only a few are responsible for epiphytotics. The main races are fairly constant from year to year. This stabilization is due to the fact that more than 90% of all the regionalized wheat varieties in the USSR are susceptible to all races of the pathogens. The racial composition of the pathogens in the USSR is similar to that occurring elsewhere in Europe because of the exchange of original forms and use of the

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LESOVOY, M. P., et al., Mikologiya i Fitopatologiya, No 6, 1972, pp 428-434

same components in breeding wheat varieties. The appearance of new races and biotypes and changes in their virulence are the result of mutation, heterokaryosis, resistant varieties, and sexual hybridization.

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USSR UDC 669.14.018.8

BABAKOV, A. A., LAPIN, P. G., UL'YANIN, YE. A., USPENSKAYA, I. K., and FEDOROVA, V. I.,

"Influence of Nitrogen on the Properties of Chrome-Nickel-Manganese Steel With Molybdenum at Low Temperatures"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works], No 77, Metallurgiya Press, 1970, pp 113-116

Translation: The influence of nitrogen on the mechanical properties of 000Kh20G10N6M2 steel is studied in the 20-253°C temperature range. It is demonstrated that the limiting permissible quantity of nitrogen in the steel is 0.4%. Further increases in the quantity of nitrogen cause a decrease in ductility and impact toughness of the steel at low temperatures.

Introduction of nitrogen to the steel produced an increase in strength at 20°C to σ_b 850 Mn/m^2 (85 kg/m^2); $\sigma_T \geq$ 450 Mn/m^2 (45 Kg/mm^2). 2 figures.

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USSR UDC 616.24-003.66-092.9-07:616.24-008.939.6-074

GEL'FON, I. A., ROZENBERG, P. A., and FEDOROVA, V. I., Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR

"The Content of Scleroproteins and Silicon Dioxide in Lung Tissue of Rats With Experimental Silicosis and the Effect of UHF on These Indices"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 6, 1970, pp 43-45

Abstract: In rats with experimental silicosis, the elastic content of the lungs was substantially higher than in controls within a month of exposure to quartz dust. The increase in collagen was less pronounced at this time. Thereafter the elastin content gradually increased, but at a slower rate than collagen. Collagen content increased sharply after eight months. While the collagen level was rising, the dry weight of the lungs was increasing. UHF irradiation of the animals exposed to quartz dust markedly delayed the development of the silicotic process, slowed the weight increase of the lungs, and decreased the amount of collagen and elastin present, whereas UHF irradiation of healthy rats had no effect on the dry weight of the lungs or on their content of scleroproteins. The effect of UHF was more pronounced when used early and repeatedly. This inhibitory effect

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200810005-3"

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GEL'FON, I. A., et al, Gigiyena Truda i Professional'nyye Zaoolevaniya, No 6, 1970, pp 43-45

of UHF is ascribed to the decrease in formation of scleroproteins resulting from the smaller accumulation in the lungs of the ascorbic acid required for their synthesis, proliferation of fibroblasts, and from the increased excretion of silica from the lungs.

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--SYNTHESIS AND EPR SPECTRA OF SOME NEW IMINOXY BIRADICALS -U-

AUTHOR-(04)-SHAPIRO, A.B., SUSKINA, V.I., FEDOROVA, V.V., RUZANTSEV, E.G.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 694-6

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--EPR SPECTRUM, MOLECULAR STRUCTURE, ORGANIC SULFUR COMPOUND, IMINE, FREE RADICAL, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1777 STEP NO--UR/0062/70/000/003/0694/0696

CIRC ACCESSION NO--AP0123574

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0123574
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. HEATING S((CH SUB2) SUB2 CO SUB2 H) SUB2 IN C SUB6 H SUB6 WITH SOCL SUB2 4 HR GAVE THE ACYL DICHLORIDE, WHICH, FREED OF THE SOLVENT AND RESIDUAL SOCL SUB2 IN VACUO, AND 2,2,6,6,TETRAMETHYL,4,HYDROXYPIPERIDINEOOXY RADICAL GAVE AFTER REACTION IN C SUB6 H SUB6 IN THE PRESENCE OF ET SUB3 N 12 HR AT ROOM TEMP. 62PERCENT I (N EQUALS 2), M. 60.5-1.5DEGREES. SIMILARLY WERE PREPD. I (N EQUALS 4), M. 71-2DEGREES, 73.8PERCENT; I (N EQUALS 6), 50PERCENT, OIL; AND I (N EQUALS 10), OIL, 48PERCENT. EPR SPECTRA WERE GIVEN AND DISCUSSED. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200810005-3"

USSR UDC: 621.373+621.397.331.222+621.386.2/7

BAYKOV, A. P., BELAGO, V. A., BUDARNYKH, V. I., DOTSENKO, V. I., KURASHOV, E. N., LYUBIN, V. N., NALIVAYKO, V. I., [redacted] TSUKERMAN, V. G., and SHESTAK, A. F.

"Methods of Recording X-Ray Images in a Science Research Automation System"

Novosibirsk, Avtometriya, No 6, 1971, pp 67-80

Abstract: A description is given of a complex of pulsed x-ray sources with memory elements for recording fast processes, along with highly sensitive systems for visualizing two-dimensional x-ray images of threshold intensity. The radiation required has a duration of 10^{-9} to 10^{-7} sec with a hardness of several hundred kev. For the recording equipment, photographic film and television systems were used, in which the memory cells were the semiconducting targets of sensor tubes. In such a system, the image is impressed directly on the target of the x-ray vidicon with a controllable memory, or is fixed by re-recording the video signal on a vidicon with optical memory, thus allowing connection of the recording equipment to the input of an electronic computer. The purpose [illegible] is to [illegible] scientific data as part of [illegible] automation of the research process. [illegible]

USSR UDC: 621,373+621.397.331.222+621.386.2/7

BAYKOV, A. P., et al, Avtometriya, No 6, 1971, pp 67-80

of the x-ray and recording equipment as well as sample oscillograms of various equipment items. The authors express their gratitude to Yu. Ye. Nesterikhin and A. M. Iskol'dskiy for their delineation of the problem and their supervision of the work. For his assistance with the experiments made using this equipment, the authors thank E. V. Yanshin.

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USSR

UDC: 621.315.592

AVER'YANOV, V. L., KARPOVA, L. N., KOLOMIYETS, B. T., LYUBIN, V. M., FEDOROVA, Ye. I., Physicotechnical Institute imeni A. F. Ioffe, Academy of Sciences of the USSR, Leningrad

"Investigation of Local States in Glassy Semiconductors of the Selenium-Arsenic System"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 9, Sep 72, pp 1709-1715

Abstract: The authors study the change in photoelectric properties and characteristics of heat-stimulated depolarization with variation in the composition of glassy semiconductors in the selenium-arsenic system. When the concentration of arsenic in the specimen is increased there are changes in the sign of the photorectification effect, the spectral characteristics and kinetics of photoconductivity, the slope of the current-illumination characteristics, and the ratio between low-temperature and high-temperature maxima in the curve for heat-stimulated depolarization. The results are discussed from the standpoint of correlation between composition, structure and parameters of local states.

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USSR

UDC 778.534.83

CHERKASOV, Yu. A., Candidate of Sciences, KISLOVSKIY, I. L., ANDRONOV, V. V., LYUBIN, V. M., Candidate of Sciences, AND FEDOROVA, Ye. I.

"Electrophotographic Spectrovisor for the Visible Area of the Spectrum Based on Recording Vidicon"

Optiko-mekhanicheskaya Promyshlennost', No 10, 1971, pp 28-32.

ABSTRACT: Results are presented from a study of the parameters of an electrophotographic spectrovisor, based on a recording vidicon. The spectrovisor can be used for observation and recording of spectrograms and photomicrograms in the visible area in a periodic mode at 25 frames per second and in the time integration mode with a resolution of 25 mm^{-1} and a sensitivity of up to 200 state standard units. The method of visualization of spectra is based on recording of an optical image by a recording photoconductive layer, so that the optical image is converted to the corresponding potential relief with subsequent visualization.

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UDC 621.372.852.2

FEDOROVA, YE. M.

"Digital Phase Shifter Based on a Rectangular Wave Guide with a Ferrite"

Tr. Mosk. energ. in-ta (Works of Moscow Power Engineering Institute), 1972, vyp. 93, pp 31-33 (from RZh-Radiotekhnika, No 7, Jul 72, Abstract No 7B136)

Translation: The optimal configuration is defined for a digital phase shifter executed in the form of a section of a rectangular wave guide on the side walls of which there is a ferrite plate penetrated by wires for the control current. It is demonstrated that the transmission coefficient from the first to the n-th magnetization segment as a function of the distance between the control wires has a clear peak the presence of which must be considered during the calculation. There is 1 illustration and a 2-entry bibliography.

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FEDOROVA, Ye O.

Meteorology

(3)

CHAPTER 3

DETERMINATION OF THE TRANSPARENCY OF THE ATMOSPHERE

Usually for measurement of the transparency of the atmosphere or the meteorological visibility associated with it systems are used which consist of a light source and a receiver, located at opposite ends of the optical path. The distance separating the radiation source from the receiver is fixed according to the limit of visibility for the poorest atmospheric conditions. This does not make it possible for one instrument to record the transparency of the atmosphere in long tracks. Another shortcoming of such systems is the possibility of practical measurements only on horizontal tracks.

The development of laser locators determining the transparency of the atmosphere and the development of the corresponding methods of measurements, make it possible to perform measurements on any track. An advantage of laser systems also is the possibility of the determination of the visibility at quite long distances and the recording of the variation of the transparency of the atmosphere with a high degree of spatial resolution.

The basic difficulty in the determination of transparency by the method of optical location lies in the correct selection of the forward scattering indicatrix in each specific case and in consideration of multiple scattering in sounding of optically dense media.

Meteorology

In references [24--26] for various models of mists and fogs calculated data of the intensity of forward scattered radiation are given. The calculations of the intensity of light scattered ahead once in the irradiation of fogs by a narrow light beam were performed by V. K. Kozlov and Ye. O. Fedorova [27]. K. S. Shifrin and I. L. Zel'manovich calculated in detail the quantities necessary for the determination of the forward scattering factor [28].

Source: JPRS # 58346
28 Feb 73

Experimental investigations of forward scattered radiation of an OKG, generated on various wavelengths, were performed in artificial fogs and smokes, and also in natural conditions in mists and snowfalls [29, 30]. These measurements made it possible to obtain certain preliminary estimates of the magnitude of reverse scattering.

Information concerning the transparency of the medium is also contained in the variation of the form of a short laser pulse in its propagation in the medium. This phenomenon was observed in natural fogs, where the increase in the attenuation factor from 10^{-3} to 10^{-2} m^{-1} changed the duration of the pulse arriving at the lidar receiver from 2.5 to 0.5 microseconds [31].

In experiments performed at the IOA of the Siberian Division of the USSR Academy of Sciences [32] it was established that with a decrease in the optical density of the medium the duration of the forward front of a reflected pulse increases, and the steepness of its drops. As a radiation source, a semiconductor OKG of gallium arsenide (wavelength 8400 Angstrom units) with a radiated pulse duration of 8 nanoseconds was used. In scattering in artificial water fogs and in smokes, the reflected pulse duration decreases with an increase in the attenuation factor and tends toward the duration of the radiated pulse. This is explained by the fact that with a decrease in the transparency of the medium the length of the layers in which the reflected signal is formed dropped. It was also established that the difference in the scattering indicatricus of the media has an essential effect on the formation of the signal. A pulse reflected in fogs is formed in layers more distant from the OKG than in smokes.

The results of the measurements of the form (shape) of the pulse performed agree well with the calculations obtained in the use of the Monte-Carlo method [33].

The deformation of the pulse of the OKG in the scattering medium makes it possible to use this effect for realization of a lidar intended for the measurement of the meteorological range of visibility. Such a lidar, patented in France [34], must determine the visibility at airports. In the system, measurements of the time of appearance of the maximum intensity of a forward scattered signal in comparison with a radiated signal is provided, as well as measurement of the duration of an arriving pulse at a level of 0.5 from the maximum, and the steepness of the rear front of the pulse.

Another method of measuring the transparency of the atmosphere with a laser locator proposed by Ye. G. Shvidkovskiy and his co-workers [20] lies, briefly, in the following.

Laser radiation scattered in the nearby zone is recorded by a receiving system. By measuring the radiated power and the power arriving at the lidar receiver as a function of distance, we may, according to formulas (2.2) or (2.4), calculate the scattering factor of the atmosphere associated with the meteorological visibility. The method is absolute and does not require measurement of the profile of the arriving pulse. The shortcoming of the method lies in the quite complex laboratory calibration of the apparatus for the performance of measurements with a good accuracy.

The scattering factor measured by a lidar is the sum of the aerosol and molecular scattering factors. The molecular scattering factor may be calculated for any altitude, if the density of the air is known, and the aerosol factor determined accordingly. On the other hand, the aerosol scattering factor may be calculated at a certain previously assumed distribution of the particles by dimensions, the refraction factor of the particles, and their concentration. In accordance with the calculations performed by R. S. Shifrin and E. A. Chayanova [35, 36] for a power function of the distribution of particles by dimensions and a refraction factor of the particles of 1.5, in reference [20] according to data from lidar determination of the transparency of the atmosphere for various conditions, the concentrations of aerosol particles were calculated. The results of the calculations agree well with the data obtained by other methods.

The measurement of the transparency of the atmosphere with a laser locator makes it possible to study the pollution of the atmospheric air and to determine the spatial distributions of the pollutants. For example, in reference [17] the results of the determination of the turbidity factor, visibility, and the profile of the concentration of the particles polluting the air are given.

An increase in the potential of a laser locator gives the opportunity to record a signal arriving from the upper atmosphere. This makes it possible to investigate the transparency of the high layers of the atmosphere. At the same time, the signal being recorded carries information concerning the thermodynamic characteristics, and in certain cases also concerning the composition of the atmosphere.

1/3 036 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--ATMOSPHERIC SCATTERING INDICATRICES MEASURED AT ALTITUDES UP TO 22 KM IN THE REGION NEAR 2.2 MU -U-

AUTHOR-(02)-SHCHUKHOVA, YE.G., FEDOROVA, YE.O.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA AKADEMII NAUK SSSR, FIZIKA ATMOSFERY I OKEANA, VOL VI, NO 6, 1970, PP 585-590

DATE PUBLISHED--------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--INDICATRIX, BALLOON, OPTIC BRIGHTNESS, ATMOSPHERIC SCATTER, ATMOSPHERIC OPTICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605041/F01 STEP NO--UR/0362/70/006/006/0585/0590

CIRC ACCESSION NO--AP0142758

UNCLASSIFIED

2/3 .036 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0142758

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN DEVELOPING A CYCLE OF STUDIES FOR INVESTIGATING THE VERTICAL SPECTRA OF ATMOSPHERIC EMISSION IN THE NEAR INFRARED REGION THE AUTHORS UNDERTOOD MEASUREMENTS OF THE INDICATRIX OF SKY BRIGHTNESS IN 1968. AN INFLIGHT SPECTROMETER WAS EMPLOYED. THIS MADE IT POSSIBLE TO MEASURE THE INDICATRICES OF SKY BRIGHTNESS ON THE SOLAR ALMUCANTAR FOR THE FIXED WAVELENGTH LAMBDA EQUALS 2.2 MU (SPECTRAL WIDTH OF SLIT 0.075 MU). THE TIME FOR REGISTERING THE INDICATRIX WAS APPROXIMATELY 30 SEC; THE ANGULAR FIELD OF VIEW OF THE INSTRUMENT WAS ABOUT 4DEGREES. THEBALLOON WAS LAUNCHED ON 1 OCTOBER 1968 FROM THE KURSK OBLAST BASE OF THE CENTRAL AEROLOGICAL OBSERVATORY. THE FLIGHT LASTED FROM 1050 TO 1310 HOURS LOCAL SOLAR TIME WHEN THERE WAS CONTINUOUS STRATOCUMULUS LOWER LEVEL CLOUDS. SOLAR ALTITUDE VARIED IN THE RANGE FROM 33.2 TO 35.1DEGREES. GOOD RECORDS OF THE BRIGHTNESS INDICATRIX WERE REGISTERED IN THREE ALTITUDE RANGES: 3.4-4.3 KM (8 CURVES), 11-13.6 KM (10 CURVES) AND 20-21.9 KM (12 CURVES). AFTER AVERAGING THE BRIGHTNESS INDICATRICES IN EACH OF THE ALTITUDE INTERVALS IT WAS POSSIBLE TO COMPUTE THE SCATTERING INDICATRICES MU (H, LAMBDA) FOR THE ENTIRE THICKNESS OF THE ATMOSPHERE ABOVE THE OBSERVATION LEVEL. THE ARTICLE GIVES THE SCATTERING INDICATRICES OBTAINED FOR THE AZIMUTHAL VARIATION OF BRIGHTNESS OF THE DAY TIME SKY AT ALTITUDES UP TO 22 KM AND COMPARES THEM WITH EXPERIMENTAL DATA PUBLISHED BY OTHER AUTHORS. THE AUTHORS EMPHASIZE THE PRELIMINARY NATURE OF THE INDICATRICES GIVEN HERE.

UNCLASSIFIED

3/3 .036 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0142758

ABSTRACT/EXTRACT--REFINEMENT OF THESE DATA, PARTICULARLY SOLUTION OF THE PROBLEM OF THE VARIABILITY OF THE VERTICAL INDICATRIX IN THE INFRARED REGION, WILL BE UNDERTAKEN IN A FUTURE STUDY.

UNCLASSIFIED

USSR UDC 535.853.089+621.326.75

SMOLKIN, I. K., FEDOROVA, Ye. P., CHURAKOVA, R. S.

"Miniature High-Stability Infrared Radiation Source"

Optiko Mekhanicheskaya Promyshlennost', No 12, 1972, p 69.

Abstract: The authors have developed a small ceramic infrared light source with indirect heating. The source has a spectral radiative capacity in the 5-50 μ range at up to 1,300°C similar to that of silicon carbide, without its main defects: it does not require forced cooling, is small, has reliable silver contacts and consumes only about 50 w electric power. The source is simple in design: it consists of a ceramic radiating tube 3 mm in diameter and 40 mm long and a platinum spiral heater inside the tube. Repeated measurements showed that after a 30-minute warmup period, if the ceramic light source was protected from air currents, the stability of the light flux produced was within limits of 0.1% for 15 minutes and 0.3% per day.

USSR UDC 666.764.32.001.5

CHURAKOVA, R. S., and FEDOROVA, YE. P., All-Union Institute of Refractories

"Study of the Process of Drying Parts From Finely-Dispersed Aluminum Oxide"

Moscow, Ogneupory, No 8, 70, pp 36-39

Abstract: The effect of acid treatment of finely disperse alumina and corundum on the formation of aluminum hydrates and oxychlorides has been studied. The experiment involved G-00 grade alumina and white electrolytically produced EB corundum. The materials were ground on a vibratory grinding mill to a particle size of 2.5--3.5 microns, and then treated with hydrochloric acid to remove iron impurities. After the acid treatment, the unroasted alumina was found to contain up to 3% hydrates and oxychlorides. Materials roasted at high temperatures showed only traces (0.1%) of hydrates

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CHURAKOVA, R. S., And FEDOROVA, YE. P., All-Union Institute of Refractories, Ogneupory, No 8, 70, pp 36-39

and oxychlorides which had no appreciable effect on the drying of the finished products. It was found that 93.5% of the total moisture contained in the product escaped within 30--50°C. A rational method of drying the finished products is proposed, which specifies a temperature rise within 30--50°C at 1.5 deg/hr. The yield of usable goods after drying and final roasting is 95%. It is recommended that the drying and subsequent roasting be performed continuously.

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USSR UDC 666.764.32

CHURAKOVA, R. S., and FEDOROVA, YE. P., All-Union Institute of Refractory Materials

"Influence of Preliminary Heat Treatment of Aluminum Oxide on Heat Resistance and Strength of Corundum Ceramic"

Ogneupory, No. 2, 1971, pp 44-49

Abstract: The influence of the temperature of preliminary roasting of alumina on the microstructure of corundum materials and their properties is studied. Dense materials with various properties are produced from alumina preliminarily roasted at various temperatures: apparent density from 3.67 to 3.89 g/cm^3, heat resistance from 2-33 heating and cooling cycles, and bending strength from 1210 to 2400 kg/cm^2. The use of a combination of initial aluminas with different roasting temperatures (combination of G-1750 and G-1600 aluminas) has a favorable influence on the heat resistance. The high heat resistance of the material results from the formation of regular, disordered, and densely-packed corundum crystals.

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USSR

UDC 616.988.75-095.383-078

SOLOV'YEV, V. D., NEKLYUDOVA, L. I., BEKTEMIROV, T. A., and FEDOROVA, Yu. D.

"Interferon Formation in Hongkong Influenza Patients"

Moscow, Voprosy Virusologii, No 5, 1971, pp 548-552

Abstract: Influenza A2 virus was isolated from 53 of 99 patients diagnosed as having influenza in January and February 1969. Interferon was found in nasal secretions, urine, and serum, and interferon-synthesizing activity was noted in white blood cells. The titers tended to increase in the nasal secretions and urine by day 3 or 4 of the disease, i.e., the time of onset of clinical recovery. The concentration of interferon varied with the original antibody level, intensity of the fever, and magnitude of the increase in antibodies. The titers were higher in patients with an elevated body temperature and low original level of anti-influenza antibodies. Large amounts of interferon were found in patients with serologically confirmed influenza, particularly in those with a four-fold or greater increase in antibodies. The titers of leukocytic interferon were lowest during the first two days of the disease. They increased in the convalescence period.

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USSR UDC 632.951:635.63

FEDOROVA, Yu. N., and KARCHIK, O. N., All-Union Scientific Research Institute of Plant Protection

"Dynamics of Resorption by the Root System of Sevin and Its Distribution in Cucumber Plants"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 9, No 7, 1971, pp 45-47

Abstract: Cucumber plants were grown on a Knop solution containing a suspension of the insecticide sevin (1-naphthyl-N-methylcarbamate) labeled with ^{14}C in the alpha-position. The resorption of sevin by the roots and its subsequent distribution in the plants were studied by determining the radioactivity in plant parts. The study showed that sevin accumulated rapidly in the root system and then was distributed within a short time throughout the plant, so that ^{14}C was present in the leaves 5-10 min after contact of the plants with the suspension containing radioactive sevin. Accumulation of sevin in the roots proceeded at the highest rate during the first 24 hrs, whereupon sevin was transferred at a high rate to the leaves and accumulated there in the maximum concentration found in the plants. Not withstanding the low solubility of

USSR

FEDOROVA, Yu. N., and KARCHIK, O. N., Khimiya v Sel'skom Khozyaystve, Vol 9, No 7, 1971, pp 45-47

sevin in water (0.01%), the insecticide was resorbed rapidly by the roots and accumulated in the plants in amounts which bore no relation to its concentration in the aqueous solution. This had also been observed for other carbamates. The rapid resorption of sevin and other insoluable substances by the roots of plants can be explained by solution of these substances in lipids present in the roots.

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USSR

UDC 615.387.014.41

FEDOROVA, Z. D., KOTOVSHCHIKOVA, M. A., and KATSADZE, YU. L., Blood Coagulation Laboratory of the Leningrad Scientific Research Institute of Hematology and Blood Transfusion

"A Search for New Methods of Blood Preservation for Improving the Retention of Its Hemostatic Properties"

Moscow, Problemy Gematologii i Perelivaniya Krovi, Vol 16, No 8, 1971, pp 11-18

Abstract: A study was carried out of the effect of tsalol and ε-aminocaproic acid on the activity of plasma factors in the coagulation of blood stored for 21 days. Tests demonstrated that the addition of tsalol and ε-aminocaproic acid to the blood promoted the retention of the full biological value of erythrocytes for a longer period and increased the coagulation properties of the blood. The higher level of antiplasmin and blocking of the activation of plasminogen apparently inhibits the proteolytic and fibrinolytic processes, thus slowing down the decrease of the activity of blood coagulation factors. Particularly important is the fact that up to the 14th day in storage the activity of proacceletin in blood with tsalol and ε-aminocaproic acid was approximately 50%, i.e., definitely higher than in control blood. The

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FEDOROVA, A. D., et al., Problemy Gematologii i Perelivaniya Krovi, Vol 16, No 8, 1971, pp 11-18

results of the study indirectly confirm the fact that the preservation of plasma proteins participating in coagulation depends on the intensity of the proteolytic and fibrinolytic processes. It may be supposed that addition of tsalol and ε-aminocaproic acid to the preserving solution will permit retention of the hemostatic properties of preserved blood for 2 weeks.

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UNCLASSIFIED

TITLE--A CHANGE OF ANTIPLASMIN ACTIVITY IN PATIENTS SUFFERING FROM TUMOUR OF THE URINARY BLADDER -U-

AUTHOR--ZAVADICH, I.B., KOTOVSHCHIKOV, M.A., FEDOROVA, Z.D.

COUNTRY OF INFO--USSR

SOURCE--UROLOGIYA I NEFROLOGIYA, 1970, NR 1, PP 45-47

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SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MEDICAL PATIENT, TUMOR, UROLOGY, FIBRINOGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1979/0761 STEP NO--UR/0606/70/000/001/0045/0047

CIRC ACCESSION NO--AP0047254

UNCLASSIFIED

Acc. Nr: AF0047254 Ref. Code: UR0606

PRIMARY SOURCE: Urologiya i Nefrologiya, 1970, Nr 1, pp 45-47

A CHANGE OF ANTIPLASMIN ACTIVITY IN PATIENTS SUFFERING FROM TUMOUR OF THE URINARY BLADDER

Zavadich, I.B.; Kotovshchikova, M.A.; Fedorova, Z.D.

Summary

Antiplasmin activity was studied on thromboelastograph in 32 patients suffering from tumour of the urinary bladder; the data obtained were compared with the data of fibrinolytic activity of the blood and concentration of fibrinogen. It was shown that there was a distinct shift in the direction of hypercoagulation in these patients, especially with malignant tumours. Surgical intervention and chemotherapy reduced the activity of antiplasmin. There was noted no correlation with the concentration of fibrinogen or negative correlation with the fibrinolytic activity of the blood.

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REEL/FRAME
19790761

1/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--SURFACE DECARBURIZATION OF STEEL IN THE PRODUCTION OF ROLLED MATERIALS -U-

AUTHOR-(04)-POTEMKIN, K.D., NAGOVITSIN, V.V., ZAKHAROV, V.P., FEDORJVA, Z.N.

COUNTRY OF INFO--USSR

SOURCE--METALLURG, FEB. 1970, (2), 36-39

DATE PUBLISHED--------70

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

TOPIC TAGS--METAL ROLLING, METAL DECARBURIZATION, STEEL

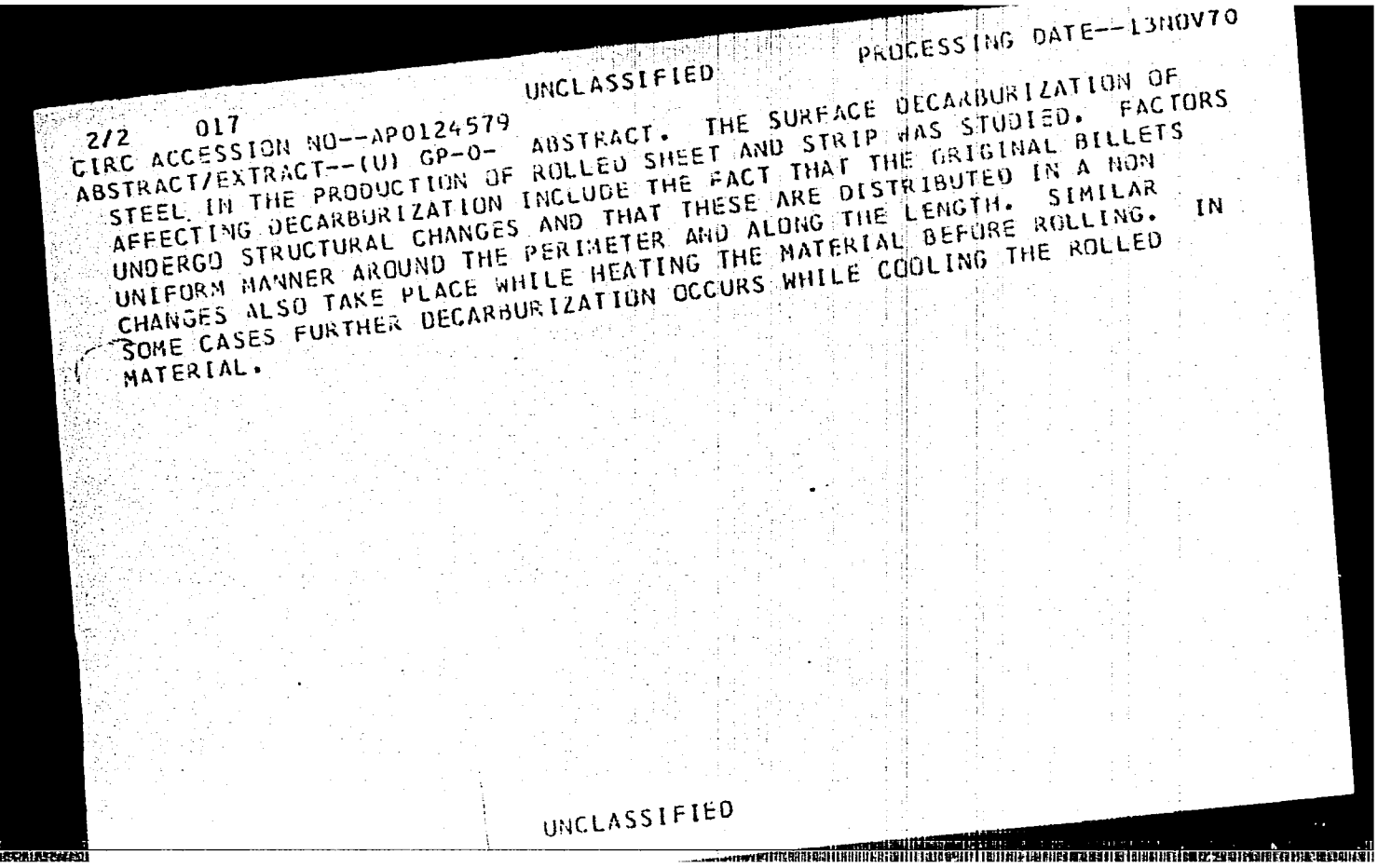
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0918 STEP NO--UR/0130/70/000/002/0036/0039

CIRC ACCESSION NO--AP0124579

UNCLASSIFIED



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CIRC ACCESSION NO--AP0124579

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SURFACE DECARBURIZATION OF STEEL IN THE PRODUCTION OF ROLLED SHEET AND STRIP WAS STUDIED. FACTORS AFFECTING DECARBURIZATION INCLUDE THE FACT THAT THE ORIGINAL BILLETS UNDERGO STRUCTURAL CHANGES AND THAT THESE ARE DISTRIBUTED IN A NON UNIFORM MANNER AROUND THE PERIMETER AND ALONG THE LENGTH. SIMILAR CHANGES ALSO TAKE PLACE WHILE HEATING THE MATERIAL BEFORE ROLLING. IN SOME CASES FURTHER DECARBURIZATION OCCURS WHILE COOLING THE ROLLED MATERIAL.

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UDC 616.155.3-008.1-07:612.766.2

FEDOROV, I. I., FEDOROVA, Z. P., PEKUS, YE. N., and SAKUN, T. L., Kiev Institute for the Advanced Training of Physicians and Kiev Institute of Medical Problems of Physical Culture

"Change in Leukocyte Stability in Hypodynamia"

Kiev, Vrachebnoye Delo, No 4, 1972, pp 44-46

Abstract: Leukocytolysis was studied in rats and humans subjected to hypokinesia for 30 days. Leukocyte stability decreased markedly in rats immobilized in specially constructed cages for 30 days. Whereas leukocytolysis averaged 8% in the controls, it c increased more than threefold in the experimental animals, averaging 25.4%. In 6 human subjects kept in bed with limited motor activity, leukocyte stability began to decrease by days 10 to 14. Leukocytolysis was twice as high as the original level in half the subjects and somewhat lower in the others. The destruction of leukocytes continued for several days after the experiment was concluded. For example, in one person the original value was 18%; 10 to 14 days after the start of hypokinesia it was 35.8, increasing to 54.5 one month later and remaining high (49.2) for 2 weeks after the end of hypokinesia. Leukocytolysis was accompanied by changes inthe digestive function of neutrophils. A brief period of stimula-

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FEDOROV, I. I., et al., Vrachbnoye Delo, No 4, 1972, pp 44-46

tion of phagocytosis was followed by prolonged inhibition, weakening both nonspecific resistance to infection and specific immunologic reactivity.

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UDC 621.313.12:538.4

USSR

APUKHTINA, YE. G., BORDACHEVA, V. V., VAL'DBERG, A. YU., VIKHROV, YE. A., KURKIN, V. P., MOSTINSKIY, I. L., NEKHOROSHEV, R. S., SOROKIN, G. S., FEDOROVA, ZH. S.

"Study of Various Methods of Trapping an Ionizing Additive in the U-02 Experimental Magnetohydrodynamic Generator"

V sb. Magnitogidrodinam. metod polucheniya elektroenergii (Magnetohydrodynamic Method of Obtaining Electric Power--collection of works), vyp. 3, Moscow, Energiya, 1972, pp 202-219 (from RZh-Aviatsionnyye i raketnyy dvigateli,otdel'nyy vypusk, No 11, Nov 72, Abstract No 11.34.137)

Translation: The requirements on additive injection systems are formulated. Methods of trapping an ionizing additive and the structural execution are described. The operating experience using additive injection systems in experimental magnetohydrodynamic generators is described, and results are presented from studies of the efficiency of trapping them with submicron K_2CO_3 dust from a flow of combustion products are presented. A study was made of the advantages and disadvantages of each of the systems. There are 7 illustrations and a 13-entry bibliography.

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L.A. Fedorovich

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Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

241545 VIBRATING LIGHT MODULATOR is made simpler, smaller and stable. The excitation coil 8 is in the collector circuit of a transistor. When it is energised a combined flux in conjunction with permanent magnet 3 is produced which deflects moving armature 2. As it changes its position an emf is induced in both the exciter coil and the feedback coil 9 which is connected in the base of the transistor. An increase of collector current produces a signal in the base which further increases that current. With the armature fully deflected the induced emf drops to zero and the spring action forces the armature to return in the opposite direction; this time the induced emf reverse biases the transistor. This reverse biasing stops when the armature reaches the other

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extreme position so that an initial current is allowed to flow in the exciter coil so that an initial current is allowed to flow in the exciter coil due to a constant forward bias applied to the transistor. The amplitude of oscillation is regulated by screw 6. 19.3.66. as 1062735/26-25. A.M.ALEKSEEV, L.A FEDOROVICH. (10.9.69.) Bul.14/18.4.69. Class 21g. Int.Cl. H01h.

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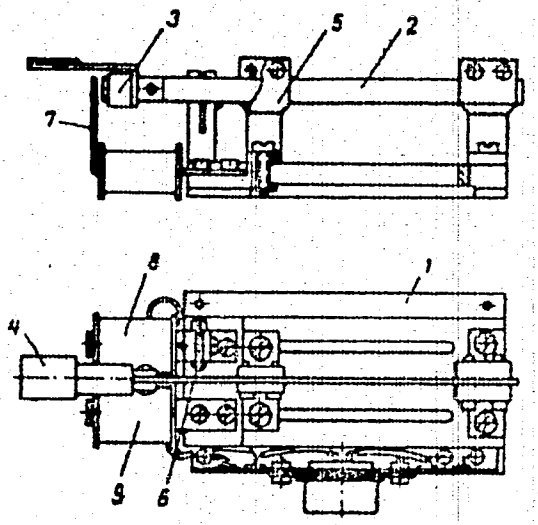

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