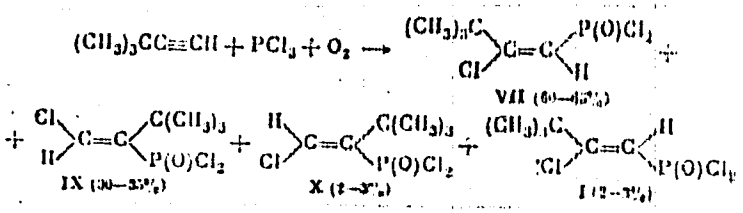
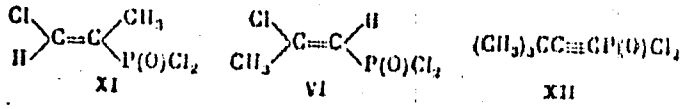
"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

USSR

DOGADKINA, A. V., et al., Zhurnal Obshchey Khimii, Vol 42(104), Vyp 10, 1972, pp 2186-2193

Other acid dichlorides (VIII-XII) were prepared in the course of the following reactions:





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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

USSR

DOGADKINA, A. V., et al., Zhurnal Obshchey Khimii, Vol 42(104), Vyp 10, 1972, pp 2186-2193

Reaction of the obtained acid dichlorides with ethanol in the presence of pyridine yields corresponding diethyl phosphonates. Some acid dichlorides (I-IV), (XII) react with ethylmagnesium bromide yielding 2-chloro-2-alkenyl and alkynyl phosphine oxides. Properties of all prepared compounds along with their PMR and NMR are given.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

UDC 547.26'118

USSR

MINGALYEVA, K. S., RAZUMOVA, N. A., PETROV, A. A., YEVTIKHOV, Zh. L., and NAGROV, F. V., Leningrad Technological Institute imeni Lensovet

"Dipole Moments of Derivatives of Trivalent Phosphorus Which Contain a Dioxaphospholane Ring"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 11, Nov 1971, pp 2,431-2,434

Abstract: In trivalent phosphorus compounds, hybridization of the phosphorus atom varies readily in response to change in the type of substituent, and thanks to this the phosphorus may exhibit bifilarity. However, there is very little published information on variation in the dipole moments of compounds containing trivalent phosphorus. The present study, based on the dipole moment method, is intended to show the mutual effect of atoms in compounds containing dioxaophospholane rings. Data of electrographic research on molecules of 2-chloro-1,3,2-dioxaphospholane and triethyl phosphite were used to compute dipole moments. The group moment of the dioxaphospholane cycle was estimated from M. J. Aroney's data. Moments of the phosphorus-halogen bonds were determined from the dipole moments of the corresponding phosphorus trihalides. Laboratory measurements were made using dilute solutions in benzene at 20+ 0.05°. All experimental and calculated data are included in the paper. It is concluded that increase in the electron-acceptor capacity of the substituents is accompanied by an increase in the dipole moment.

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UDC 547.558.1

USSR

MINGALEVA, K. S., CHISTOKLETOV, V. N., KOSOVTSEV, V. V., and PETROV, A. A., Leningrad Technological Institute imeni Lensovet

"Dipole Moments and the Structure of Alkenylphosphines and of the Derivatives of Phosphonous Acid"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 4, Apr 71, pp 862-865

Abstract: Dipole moments were used in a study analyzing the distribution of electron density in alkenylphosphines and in derivatives of alkenylphosphonous acids. Replacing an ethoxy group in triethyl phosphite by a vinyl group led to a slight drop of the dipole moment, as did the replacement of α or β hydrogen atoms in $(C_2H_5O)_2PCH{:}CH_2$ by methyl groups. Replacement of a $(C_2H_5)_2P$ group by $[(CH_3)_2N]_2P$ has practically no effect on the dipole moment. In general the electron state of the phosphorus atom in above compounds depends on the substituents. As the p character of the unshared pair of electrons of the phosphorus atom increases, its acceptor capacity is decreased.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

1/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ON THE THEORY OF NON STATIONARY DIFFUSION -U-

AUTHOR--MINIM, I.N.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK LENINGRADSKOGO UNIVERSITETA, NO 1, MATEMATIKA, MEKHANIKA, ASTRONOMIYA, 1970, NR 1, PP 154-159
DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PHYSICAL DIFFUSION, ASYMPTOTIC PROPERTY, SPECIFIC DENSITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0354 STEP NO--UR/0043/70/000/001/0154/0159

CIRC ACCESSION NO--AP0055145
UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

2/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0055145

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NONSTATIONARY PROBLEM OF THE TRANSFER IN THE INFINITE REGION IS CONSIDERED. EXPLICIT EXPRESSIONS FOR ASYMPTOTIC BEHAVIOR OF THE DENSITY ARE FOUND. THE RESULTS ARE COMPARED WITH ONE FOR CLASSICAL DIFFUSION THEORY.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

USSR

UDC 613.644-073.43-78

CHUMAK, P. N., MININ, B. A., and FALIN, N. I., Moscow

"An Instrument for Integral Hygienic Assessment of Noises"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1973, pp 48-50

Abstract: A noise exposure meter developed by the authors (Inventor's Certificate No 290305) can be used to register noise produced within a large area or that experienced by a single worker over long periods of time without attendance. It employs a mercury capillary coulometer-integrator as the memory. An amplifier need not be used at noise levels above 100 db. Tests with the meter showed that it has a sensitivity of 10 $\mu$amps at 100 db and can be used continuously at this level for 680 hours. Cumulative noise is read out in arbitrary units or in $\mu w/hr/cm^2$. The integral noise assessment criterion provided by this instrument would be of value in public health studies when combined with the noise characteristics utilized traditionally (intensity, spectrum).

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

USSR

UDC: 621.317.757(088.8)

PAVLYUK, A. P., MIKHAYLOV, V. A., MININ, V. A., TARASOV, N. S., DONSKOY, M. K.

"A Device for Measuring the Bandwidth of Radio Frequency Signals"

USSR Author's Certificate No 255403, filed 4 Apr 68, published 31 Mar 70 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11A324 P)

Translation: It is pointed out that existing devices for measuring bandwidth have a number of disadvantages: a lack of continuous visual monitoring of the spectrum of the emission being studied, inadequate precision, and poor operational efficacy. The purpose of the proposed invention is to automate measurements and improve precision. A block diagram of the device is given and its operating principle is described. E. L.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4



USSR

UDC 681.327.67'12

BRODOLIN, L. I., VAYNSHTEYN, V. D., DRACHEV, L. A., KAN, A. Z., KUZNETSOV, B. A., MININ, Yu. P., and PETRUNICHEV, V. N.

"Long-Term Photoscopic Memory"

USSR Author's Certificate No 260926, filed 7 Oct 68, published 10 Jun 70 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 6, Jun 71, Abstract No 6 B325 P)

Translation: A long-term photoscopic memory designed for storing, retrieving, and selecting a symbol image is proposed. The memory contains a light spot commutator -- for example, a cathode ray tube -- a projection objective with telecentric behavior of the beams in the image space, a lense raster information unit, a fast collective, a transmitting cathode ray tube with storage -- for example, the superorthicon type and digital and analog tracking systems for setting the spot on a given address. The memory is distinguished by the fact that to prevent charging the target when retrieving the required microframe, the device contains an electronic image modulator in the transfer section of the transmitting TV-tube. In order to insure a broad range of variation of the capacity of the TV frame and the selection rate, the target of the transmitting TV tube is executed in the form of a metal fiber disc with a coefficient of secondary emission



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USSR

BRODOLIN, L. I., et al., USSR Author's Certificate No 260926, filed 7 Oct 68, published 10 Jun 70 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika , No 6, Jun 71, Abstract No 6 B325 P)

of the side turned toward the photocathode equal to one. In order to simplify the design and insure the possibility of recording the service information used during operation of the tracking systems in the microframe, the device contains a fiber, vacuum-tight coherent light guide with a cross section equal to the size of the symbol in the focal plane of the collective. The photocathode of the transmitting TV tube is applied to the output end of the light guide, and the input ends of the light guides connected with the photomultipliers of the tracking address system are arranged around the perimeter of the input end. In order to insure the required levels of light flux from the standing light spot, the light spot commutator executed in the form of a cathode ray tube contains a built-in screen which vibrates in its own plane. There is 1 illustration.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

USSR

MININA, L.

"Engineers and Doctors"

Moscow, Sovetskaya Rossiya, 29 Sep 70, p 4

Abstract: A nontechnical discussion is presented of a visit to the Moscow Electromedical Apparatus Plant. Sixty types of instruments are produced at the plant, including microwave instruments for medical therapy, diagnostic devices, dental equipment, equipment to monitor the electrical activity of the stomach, and an echo-device for sonic probing of the brain. This instrument whose operation is based on the fact that health and diseased tissues reflect sound differently, is being used, for instance, to delineate the contours and topography of brain tumors. The plant is also producing transistorized electrosleep devices. In addition to the above highly sophisticated devices, such items as operating tables and oscillographs are produced. Cooperation between the engineers who design this equipment and the medical staff who will use it is very close. The engineer working on an instrument must himself be well-versed in the particular medical specialty. The objective in all cases is to produce a series of a given device rather than just a single instrument. Frequently, 500-1,000 instruments of a given type are required.
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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

1/2 017 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--DESIGN OF MEDICAL APPARATUS -U-

AUTHOR--MININA, L.

COUNTRY OF INFO--USSR

SOURCE--SOVETSKAYA ROSSIYA, SEPTEMBER 29, 1970, P 4, COLS 2-5

DATE PUBLISHED--29SEP70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MEDICAL APPARATUS, ULTRASONIC GENERATOR, DIAGNOSTIC MEDICINE, BIOMEDICAL ENGINEERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605036/C07 STEP NO--UR/9022/70/000/000/0004/0004

CIRC ACCESSION NO--AN0142432

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

2/2 017 UNCLASSIFIED PROCESSING DATE--11DEC7

CIRC ACCESSION NO--AN0142482

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MOSCOW PLANT OF ELECTRICAL MEDICAL APPARATUS (EMA) MANUFACTURES 60 KINDS OF MEDICAL APPARATUS, SUCH AS THE "APPARATUS FOR INDUCTION HEATING (IKV-4)", "APPARATUS FOR DECIMETER WAVELENGTH THERAPY", OR THE "APPARATUS FOR ULTRASONIC THERAPY". THE BASIC OUTPUT OF THE PLANT, HOWEVER, CONSISTS OF DIAGNOSTIC DEVICES. THE JOINT EFFORTS OF ENGINEER IGOR ALEKSEYEVICH ANTONENKO AND PROFESSOR AND MEDICINE M. A. SUBAKIN HAVE PRODUCED THE "EGS-4", AN ELECTROGASTROGRAPH. ENGINEER S. I. GRODZINSKIY IS GIVEN CREDIT FOR IMPROVING THE TRANSISTERIZED SLEEP DIETECTOR "ELECTROSON". M. G. PARFENYUK IS REFERRED TO AS CHIEF DESIGNER OF THE PLANT. ONE OF THE DESIGN TEAMS IS HEADED BY ALEKSANDR YAKOVLEVICH RAPOPORT. THEY HAVE BEEN RESPONSIBLE FOR DEVELOPING THE "EVN", A DEVICE THAT CAN BE USED TO DETERMINE THE IRRITABILITY FACOTR OF A TOOTH NERVE.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CONCERNING THE FUNCTIONAL RESTORATIVE TREATMENT OF POLIOMYELITIS AND CEREBRAL SPASTIC PARALYSIS OUTCOMES IN CHILDREN -U-

AUTHOR-(02)-MININA, R.M., KASHIN, A.D.

COUNTRY OF INFO--USSR

SOURCE--ZDRAVOOKHRANENIYE BELORUSSII, 1970, NR 5, PP 47-50

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--POLIOMYELITIS, THERAPEUTICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1612 STEP NO--UR/0477/70/000/005/0047/0050

CIRC ACCESSION NO--AP0125234

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

2/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125234

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN SPECIALIZED BOARDING SCHOOLS AND CHILDREN'S SANATORIA OF BYELORUSSIA A SYSTEM OF THE FUNCTIONAL RESTORATIVE TREATMENT OF CHILDREN WITH POLIOMYELITIS AND CEREBRAL SPASTIC PARALYSES OUTCOMES HAS BEEN ORGANIZED. CURATIVE EXERCISES, HYDROKINEZOTHERAPY, DIFFERENT KINDS OF MASSAGE HAVE BEEN THE LEADING LINK. A RESTORATIVE TREATMENT IN THESE INSTITUTIONS HAS LED TO DECREASING INVALIDITY AMONG CHILDREN. THE SENIOR SCHOOL CHILDREN HAVE BEGUN TO JOIN THE SOCIAL USEFUL LABOUR. FACILITY: BELORUSSIY NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT TRAVMATOLOGII I ORTOPEDII.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

UNCLASSIFIED PROCESSING DATE--11DEC70

1/2 022

TITLE--SIMPLIFIED METHOD FOR ISOLATING CLOSTRIDIUM PERFRINGENS -U-

AUTHOR-(03)-MININA, R.S., GORODETSKAYA, I.A., NEKRASOVA, N.M.

COUNTRY OF INFO--USSR

SOURCE--VETERINARIYA, 1970, NR 5, P 107

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CLOSTRIDIUM PERFRINGENS, CULTURE MEDIUM, CULTURE METHOD, DYSENTERY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/005049/012 STEP NO--UR/0346/70/000/005/0107/0107

CIRC ACCESSION NO--AP0143380
UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

2/2 022 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0143380

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN IMPROVED METHOD OF ISOLATING CL. PERFRINGENS TYPES B, C, AND D, AGENTS OF INFECTIOUS ENTEROTOXEMIA AND ANAEROBIC DYSENTERY, CONSISTS OF SOWING PATHOLOGICAL MATERIAL FROM DEAC SHEEP ON KITT TAROTSTSI MEDIUM (A MODIFIED MEAT PEPTONE BROTH), HEATED AND SATURATED WITH GLUCOSE. AFTER HEATING AT 65 C FOR 10 MIN AND INCUBATION FOR 18-24 HRS, PURE CULTURES WERE USED FOR BIOASSAY ON GUINEA PIGS IN THE NEUTRALIZATION TEST WITH ANTITOXIC SERA. PURE CULTURES WERE ISOLATED IN 90-95PERCENT OF CASES. A TOTAL OF 970 TESTS CONDUCTED BETWEEN 1961 AND 1968 RESULTED IN 143 POSITIVES FOR ENTEROTOXEMIA, DYSENTERY AND BRAXY. FACILITY: KIRGIZSKAYA RESPUBLIKANSKAYA VETERINARNAYA LABORATORIYA, KIRGIZ REPUBLIC VETERIANRY LABORATORY.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

Acc. Nr #0034224 Abstracting Service: CHEMICAL ABST. 4-70 Ref. Code: UR0078

M

71198t Solubility of solid phases in cerium(III) nitrate-water-hydrazine nitrate and cerium(III) nitrate-water-aniline nitrate systems. Mininkov, N. E.; Zhuravlev, E. F. (Kafedra Fiz. Khim., Voronezh. Politekh. Inst., Voronezh, USSR). *Zh. Neorg. Khim.* 1970, 15(1), 205–10 (Russ). Soly. diagrams (25 and 50° isotherms) of systems $Ce(NO_3)_3$-$N_2H_5NO_3$-$H_2O$ and $Ce(NO_3)_3$-$PhNH_3NO_3$-$H_2O$ (system I and II, resp.) are constructed. Congruently sol. $Ce(NO_3)_3.2N_2H_5NO_3$, supposedly $(N_2H_5)_2[Ce(NO_3)_5]$, forms in I. II is a simple eutonic system. $Ce(NO_3)_3.6H_2O$ has a strong salting out effect for $PhNH_3NO_3$. Soly. data and $n_D$ of II solns. at 50° are tabulated. HMJR

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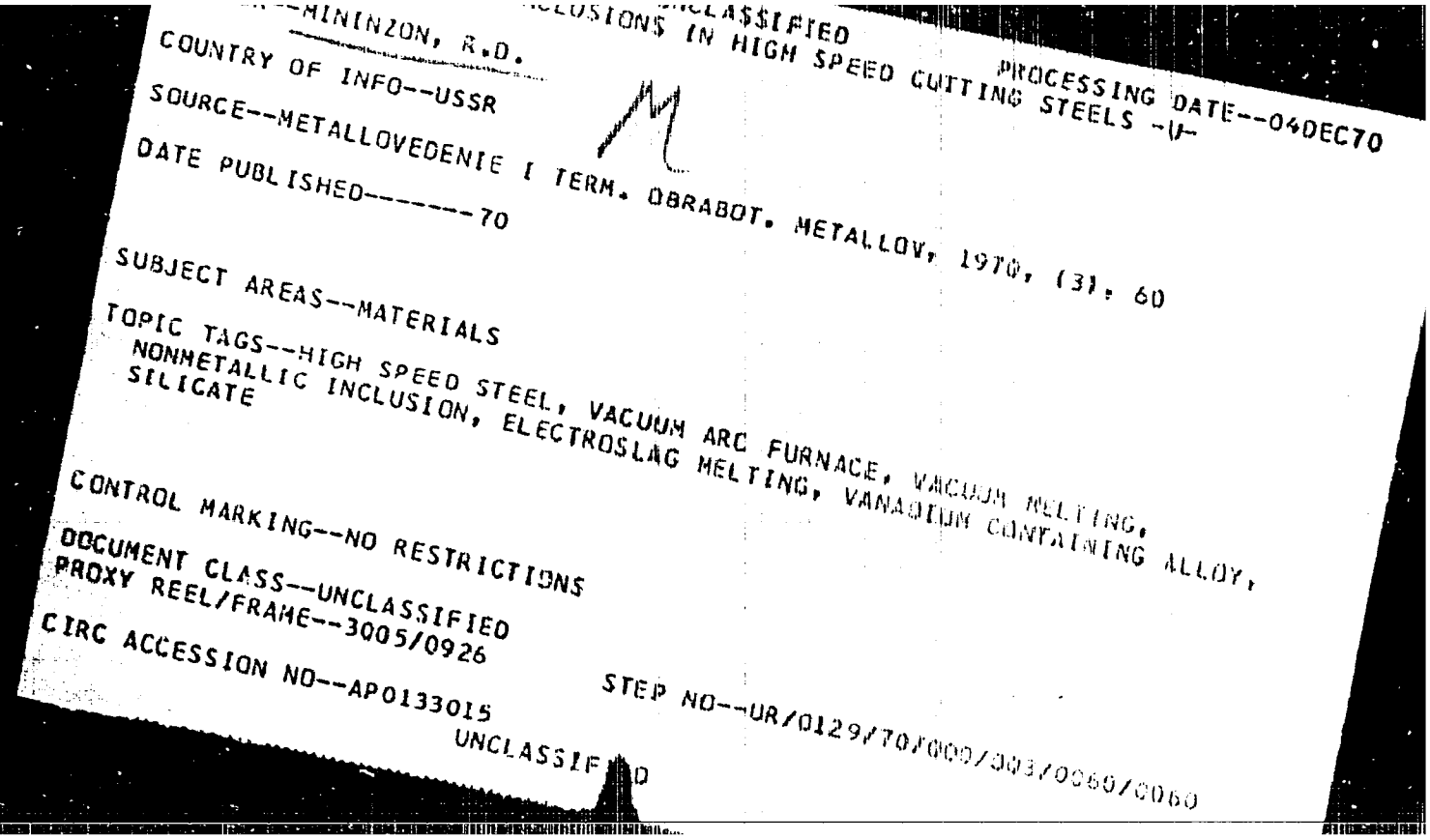

UNCLASSIFIED

--MININZON, R.D.

CLUSIONS IN HIGH SPEED CUTTING STEELS -U-

PROCESSING DATE--04DEC70

COUNTRY OF INFO--USSR

SOURCE--METALLOVEDENIE I TERM. OBRABOT. METALLOV, 1970, (3), 60

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--HIGH SPEED STEEL, VACUUM ARC FURNACE, VACUUM MELTING, NONMETALLIC INCLUSION, ELECTROSLAG MELTING, VANADIUM CONTAINING ALLOY, SILICATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0926

CIRC ACCESSION NO--AP0133015

STEP NO--UR/0129/70/000/003/0060/0060

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

2/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133015

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE INITIAL MELTING CONDITIONS (OPEN ARC MELTING, ELECTRO SLAG REMELTING, OR VACUUM ARC REMELTING) ON THE DEGREE OF CONTAMINATION OF HIGH SPEED CUTTING STEEL WITH NON METALLIC INCLUSIONS WAS STUDIED. THIS TYPE OF CONTAMINATION WAS GREATLY REDUCED BY USING VACUUM ARC OR ELECTROSLAG REMELTING, OXIDE INCLUSIONS BEING ALMOST ELIMINATED IN THE FORMER CASE. THE PRESENCE OF V IN HIGH SPEED CUTTING STEELS TENDED TO REDUCE SILICATE INCLUSIONS AS A RESULT OF A CHEMICAL INTERACTION BETWEEN V AND SIO SUB2.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

1/2 018 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--LIQUID GAS EQUILIBRIUM IN A WATER AMMONIA POTASSIUM NITRATE CALCIUM NITRATE POTASSIUM CHLORIDE SYSTEM -U-

AUTHOR-(03)-SORINA, G.A., MINKOVICH, V.M., YEFREMOVA, G.D.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(5), 1015-19

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHASE EQUILIBRIUM, AQUEOUS SOLUTION, AMMONIA, POTASSIUM NITRATE, CALCIUM COMPOUND, NITRATE, POTASSIUM CHLORIDE, SOLUBILITY, CRYSTALLIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0938 STEP NO--UR/0050/70/043/005/1015/1019

CIRC ACCESSION NO--AP0131523

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

UNCLASSIFIED PROCESSING DATE--11DEC70

2/2 018

CIRC ACCESSION NO--AP0131523

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CRYSTN. TEMPS. IN THE H SUB2 O,NH SUB3 AND SUB3 CA(NO SUB3) SUB2 KCL SYSTEM AND THE SOLY. OF NH SUB3 IN AQ. SOLNS. OF THE NITRATES OF K AND CA, AND OF KCL AT PRESSURES UP TO 1 ATM WERE STUDIED. THE SOLY. OF THESE SALTS DECREASES WITH INCREASED CONCN. OF NH SUB3 IN THE SOLN. THIS SYSTEM FOLLOWS HENRY'S LAW TO SMALLER THAN OR EQUAL TO 50DEGREES AND AMMONIA CONCNS. SMALLER THAN OR EQUAL TO 7 MOLES-1000 G H SUB2 O. THE PRESENCE OF THE SALTS DOES NOT CHANGE THE SOLY. OF NH SUB3 IN WATER.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

1/2 034 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--APPROXIMATE THEORY OF THE UNSYMMETRICAL PROCESS OF CALENDERING POLYMER MATERIALS -U-
AUTHOR-(03)-KRASOVSKIY, V.N., MINISHKI, V.I., MIRZOEV, R.G.

COUNTRY OF INFO--USSR

SOURCE--KAUCH. REZINA 1970, 29(2), 31-4

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--RUBBER, POLYMER, MECHANICAL STRESS, PLASTIC FABRICATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0389 STEP NO--UR/0138/70/029/002/0031/0034

CIRC ACCESSION NO--AP0113307

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

2/2 034 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0113307

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE TITLE PROCESS PARAMETERS (ROLLER ROTATION RATES, ANGLE SUBTENDED BY THE CLOTH, PRESSURE BETWEEN THE ROLLERS) ON THE DISTRIBUTION OF STRESSES IN THE RUBBER OF POLYMERIC MASS WAS ANALYZED MATH. FACILITY: LENINGRAD. TEKHNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

1/3 019 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--COMPARATIVE DATA OF THE STUDY OF ALKALINE AND ACID PHOSPHOTASE ACTIVITY OF THE BLOOD SERUM AND NEUTROPHILS IN PATIENTS WITH NONSPECIFIC

AUTHOR-(03)-MASUYEV, A.M., MINKAILOV, M.D., DIBIROV, D.A.

COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 4, PP 94-97

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PHOSPHATASE, BLOOD SERUM, LUNG, RESPIRATORY SYSTEM DISEASE, PNEUMONIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/1965 STEP NO--UR/0504/70/042/004/0094/0097

CIRC ACCESSION NO--AP0114378

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

2/3 019 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0114378

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS INVESTIGATED ALKALINE AND ACID PHOSPHOTASE IN THE BLOOD SERUM AND NEUTROPHILS IN 26 HEALTHY INDIVIDUALS AND 109 PATIENTS WITH DIFFERENT NONSPECIFIC INFLAMMATORY DISEASES OF THE LUNGS. (47 SUFFERED FROM ACUTE PNEUMONIA, 34, CHRONIC PNEUMONIA OF THE 1ST STAGE AND 28, FROM BRONCHIAL ASTHMA AND ASTHMATIC BRONCHITIS). THE ACTIVITY OF ALKALINE AND ACID PHOSPHOTASE IN THE BLOOD SERUM WAS DETERMINED WITH THE AID OF A. BODANSKY'S TECHNIQUE, IN NEUTROPHILS, BY THE METHOD OF NITROGEN COMPOUND, QUANTITATIVE DETERMINATION OF THE ACTIVITY, ACCORDING TO THE PRINCIPLE SUGGESTED BY KEPLOW. IT WAS ESTABLISHED THAT THE ACTIVITY OF ALKALINE IN THE BLOOD SERUM OF HEALTHY PERSONS WAS 3.65 PLUS OR MINUS 23 UNITS, IN NEUTROPHILS, 36.0 PLUS OR MINUS 3.6 UNITS, OF ACID PHOSPHOTASE IN THE BLOOD SERUM, 0.54 PLUS OR MINUS 0.31 UNITS, IN NEUTROPHILS, 30.0 PLUS OR MINUS 3.0 UNITS. ACTIVITY OF THE ALKALINE PHOSPHOTASE IN THE BLOOD SERUM IN ACUTE PNEUMONIA WAS EQUAL TO 15.19 PLUS OR MINUS 0.22 UNITS, IN CHRONIC PNEUMONIA, 15.35 PLUS OR MINUS 0.56 UNITS AND ASTHMATIC BRONCHITIS AND BRONCHIAL ASTHMA, 15.83 PLUS OR MINUS 0.94 UNITS; IN NEUTROPHILS IT CONSTITUTED 193.0 PLUS OR MINUS 6.9 UNITS IN ACUTE PNEUMONIA, 128.0 PLUS OR MINUS 6.4 UNITS, IN CHRONIC PNEUMONIA AND 158.0 PLUS OR MINUS 10.0 UNITES IN BRONCHIAL ASTHMA. ACTIVITY OF ACID PHOSPHOTASE IN THE BLOOD SERUM OF PATIENTS WITH ACUTE PNEUMONIA WAS 2.6 PLUS OR MINUS 0.09 UNITS, NEUTROPHILS, 135.0 PLUS OR MINUS 6.0 UNITS; IN CHRONIC PNEUMONIA CORRESPONDINGLY, 2.3 PLUS OR MINUS 0.07 AND 114.0 PLUS OR MINUS 7.6 UNITS; IN BRONCHIAL ASTHMA, 2.5 MINUS 0.08 AND 110.0 PLUS OR MINUS 9.6 UNITS.

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3/3 019 PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0114378

ABSTRACT/EXTRACT--ALL THE DATA ARE STATISTICALLY SIGNIFICANT. THE INCREASE OF THE PHOSPHOTASE ACTIVITY IN THE BLOOD SERUM AND NEUTROPHILS IS INTERCONNECTED AND SERVE AS AN INDEX OF THE ACTIVITY OF THE INFLAMMATORY PROCESS IN THE LUNGS. FACILITY: KAFEDRA FAKUL'TETSKOY TERAPII DAGESTANSKOGO MED. INST.

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USSR

MINKEVICH, I. G.

"The Distribution of Models of Spatially Homogeneous Microbiological Cultures"

Mat. Modelir. Mikrobiol. Protsessov [Mathematical Modeling of Microbiological Processes -- Collection of Works], Pushchino-na-Oke, 1973, pp 127-169 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V284)

Translation: Cultures of micro-organisms, growing in a strongly agitated medium, are presently widely used for scientific research and production purposes, since with sufficient agitation, all cells are under practically identical conditions. The mathematical description of the kinetics of the growth of such cultures is frequently produced using the apparatus of ordinary differential equations and achieves good adequacy to the actual process, particularly for the case of stable growth under flow conditions.

However, in a number of situations it becomes necessary to consider the differences between the properties of individual groups of cells in the culture. This article studies models allowing these differences to be considered, which is achieved by a transition to systems with distributed parameters, described by differential equations with partial derivatives.

Author's view

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USSR

UDC 663.0:512.1

MINKEVICH, I. G. and YEROSHIN, V. K., Institute of Biochemistry and Physiology of Microorganisms, Academy of Sciences USSR

"Consumption of Oxygen and Water Associated With the Growth of Microorganisms"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 2, Mar/Apr 72, pp 245-254

Abstract: Two important aspects of industrial culturing of microorganisms are analyzed: the consumption of oxygen and water as a function of a) $\nu_5$, the type of carbon substrate used (that is, the degree of reduction present in the substrate) and b) $y_c$, the efficiency with which the microbes utilize the substrate. The latter factor is defined as the ratio of the weight of carbon in the synthesized biomass to the weight of carbon in the utilized substrate, while $\nu_5$ is determined by the average reduction of one atom of carbon in a molecule of substrate.

K, the unit consumption of oxygen, that is, the amount of oxygen consumed during the synthesis of 1 gram of dry biomass, was found to be a linear function of $\nu_5$ and $y_c$, given by the ratio $\frac{\nu_5}{y_c}$. In order to decrease K one must either



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USSR

MINKEVICH, I. G. and YEROSHIN, V. K., Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 2, Mar/Apr 72, pp 245-254

increase $y_c$ or decrease $\nu_5$. These two values are not independent; $y_c$ depends on $\nu_5$ as well as on the type of culturing process used.

With regard to the consumption of water, it was found that both the amount of water supplied to the microorganisms and the amount of water formed during the growth of the biomass could be reduced by the same three methods, all of which increased the concentration of the biomass: 1) increasing the concentration of the substrate in the medium supplied to the cells, 2) increasing the weighted efficiency factor $Y_c$, and 3) decreasing the unused portion of the substrate.

It was also found that when the speed of the flow of material supplied to the cultivator is lowered, the consumption of both oxygen and water are minimal. However, the speed must not be lowered past a certain critical point, or else oxygen ceases to be the limiting factor and is not completely consumed.



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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.

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BIOLOGY

Agriculture

USSR

UDC 576.8.01:632.42/49 A/z

CHUMAKOV, A. YE., and MINKEVICH, I. I., All-Union Institute of Plant Protection, Leningrad

"Basis for the Territorial Type of Long-Range Forecasting of Plant Diseases"

Leningrad, Mikologiya i Fitopatologiya, Vol 5, No 1, 1971, pp 55-62

Abstract: Long-range forecasts of plant diseases over a number of years can be made with respect to the time at which the diseases will appear and the territories that will be affected. Forecasts of both epiphytotic and enphytotic diseases can be made; the enphytotic type of forecast is of particular practical importance. Territorial prognoses make it possible to determine in advance the damage from a disease, taking into consideration changes in the system of agriculture in various regions of the country. Determination of potential new areas over which a disease may spread is of particular importance in connection with changes in the method of growing (e.g., introduction of crop irrigation) and introduction of crops into new areas. To obtain the necessary data for long-range forecasts from the phytopathogeographic standpoint, the following studies should be conducted: determination of the location of foci of a disease; study of the extent of the area affected by the disease with annual mapping; differentiation of zones with respect to intensity

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USSR"

CHUMAKOV, A. YE., and MINKEVICH, I. I., Mikologiya i Fitopatologiya, Vol 5, No 1, 1971, pp 55-62

of the disease; differentiation of zones with respect to the frequency of epiphytotic outbraks; estimation of the probability of epiphytotic outbreaks taking into account agrobiological data on the relationship between the pathogenic organism and the host, climatic conditions, and other factors. The procedures to be followed in arriving at forecasts of this type are illustrated by examples of Fusarium wilt of cabbage, downy mildew of sunflowers and of cabbage, leaf rust of barley, and root rot of winter wheat. Maps showing the extent of these diseases in the USSR are included.

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MINKH, A.A.

MEDICINE

PRESENT STATUS AND RECENT PROBLEMS DEALING WITH HYGIENE OF SCHOOL CHILDREN

[Article by A.A. Minkh, G.N. Serdyukovskaya (Moscow); Moscow, Vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No 4, 1972, pp 13-22]

Hygiene of children and adolescents which works on prophylactic problems concerning protection of the health of new generations became an independent branch of social hygiene in 1923, as a special course of instruction on the medical faculties of Moscow universities.

This was based on the fact that there was a significant scope to state measures regarding organization of the public education system and the major tasks concerning improvement of the health of children and adolescents which confronted public health agencies in the early years of Soviet power, as well as that there was need to broaden training of special physicians to provide medical care for the child population.

In the early years of its existence this discipline was called school hygiene, then, because of expansion of the area it dealt with and extension of its influence to different age groups, it was named hygiene of children and adolescents. In 1960, the special Institute of Hygiene of Children and Adolescents was founded and it coordinates scientific research in the field in the entire country.

Hygiene of children and adolescents deals chiefly with development of hygienic norms referable to various aspects in the life of children, directed toward providing optimum environmental conditions that would not only preserve but also strengthen health. For this reason, the chief issues are hygiene of teaching and upbringing, industrial hygiene for working adolescents, hygiene of school and children's institution construction, investigation of health and physical development of children and adolescents, and hygiene of physical training.

Development and formation of the child depend in many respects on environmental conditions, upbringing, work and rest schedule, and conditioning of the organism. Here, the environment should not be interpreted in the narrow sense, but as a complex set of natural, living, and industrial factors without which man does not exist.



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MINKH, A. A.

JPRS 55320
1 May 72

UDC: 612.015.641-06:612.766.1

CHANGES IN SOME INDICES OF PYRIDOXINE AND NICOTONIC ACID METABOLISM UNDER PHYSICAL STRESS

[Article by Ye.M. Zaburkin, A.A. Minkh, Institute of Nutrition, USSR Academy of Medical Sciences, Central Institute of Physical Culture, Moscow; Moscow, Voprosy Meditsinskoy Khimii, Russian, No 1, 1972, pp 60-65]

In modern athletics rather high physical loads are used which induce significant changes in the functional state of the body, which are greater in many respects than those known in the earlier literature. Quite often there are two training periods a day in contests and when training for them athletes perform 2-3 times a day in many types of sports, and this presents great demands to the body and makes it necessary to utilize potential means of expanding the range of adaptation to considerable exercise.

The nutrition factor plays a considerable part in broadening the adaptational capabilities of the organism (A.A. Pokrovskiy; A.A. Minkh, 1967). In this respect, investigation of the role of different vitamins in the process of athletic training is quite interesting. In studies dealing with supply and demand of vitamins for athletes during athletic and heavy physical exercise attention has been focused mainly on vitamins A (I.M. Korigov et al., 1971), B1 (M.A. Vytchikova), B2 (Yu.L. Karpukhina et al., 1967), and C (Carrillo). On the basis of the data submitted by these authors, one could think that the body's vitamin requirements increase when engaged in athletics. In view of the positive correlation between metabolism of vitamins (T. Terruhn), it is interesting to investigate the influence of physical loads on indices of metabolism of other vitamins.

As we know, the extent of action of exogenous factors (climate, season, type of activity, diet) has a significant effect on metabolism of vitamins B6 and PP (N.V. Zaferman, 1969, and N.F. Shkir et al.; G.V. Nemytinnova et al.). Physiological stress factors do not alter the vitamin requirements to the same degree. Determination of changes in pyridoxine and nicotinic acid metabolism under the influence of physical stress is of interest for establishing norms for these vitamins in the diet during periods of intensive athletic training.



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Public Health, Hygiene and Sanitation

USSR

UDC 613.647:612.484

KINKH, A. A., NEPOMNYASHCHIY, P. I., and PORTNOV, F. G., (Moscow, Riga), Medical Institute, Institute of Elementary and Clinical Medicine

"Hygienic and Occupational-Pathological Aspects of the Biological Effect of Static Electric Fields in Industry"

Moscow, Gigiyena Truda i Professionallnyye Zabolevaniya, No 6, Jun 71, pp 42-44

Abstract: The general level of disease incidence was found to be higher in persons subjected to the effect of static electric fields; there was a higher incidence of particularly acute respiratory diseases in this group than in the control group. In a wood-processing plant, the disease incidence was found to be more than two times that of the control group; the latter group had not been exposed to electrification of the production process. No harmful substances had been found in the air, meteorological factors had been normal and they had been maintained at a normal level by an air-conditioning syster. The noise level was 67 decibels and 90-95 decibels respectively. The various differences systems were attributed to the presence of static electric fields in the factories.

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USSR

UDC 612.015.6:577.161.11/:612.766.1

BORISOV, I. M., and MINKH, A. A., Central Institute of Physical Culture, Moscow, and Latvian Institute of Physical Culture, Riga

"Vitamin A and Physical Loads"

Moscow, Gigiyena i Sanitariya, No 1, Jan 71, pp 42-46

Abstract: Animal experiments showed that physical effort results in an increase in the rate at which vitamin A is used up in the body. A shortage of vitamin A in rabbits not receiving a supplementary dose of it or receiving a supplementary dose of 3 gamma/day while during periods of physical effort lasting fro 3-5 hrs per day resulted in deterioration of their physical condition, which could be improved by administering 7.5 or 15 gamma/day of the vitamin. Sixty percent of students undergoing training in skiing, whose daily intake of vitamin A was 2,277-2,475 gamma, showed a reduction of the level of vitamin A in the blood in the initial part of a 42-day training period involving 3-3.5 hrs of physical effort per day. The level of carotenoids was also lowered and the students had an impaired capacity for dark adaptation. A supplementary intake of 990-1,980 gamma/day of the vitamin raised its level in the blood and removed symptoms of vitamin deficiency. A supplementary intake of vitamin A in this range, bringing the total consumption of vitamin A

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USSR

BORISOV, I. M., et al, Gigiyena i Sanitariya, No 1, Jan 71, pp 42-46

to 3,000-3,960 gamma/day, may be recommended for athletes and other persons whose bodies are subjected to the stress associated with physical effort.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

UDC 621.385.632

USSR

GOLUBENTSEV, A.F., MINKIN, L.M.

"Concerning The Effect Of Current Settling In Electron Gun On Minimum Noise Factor Of TWT"

V sb. Vopr. elektron.tekhn. (Problems Of Electronic Technology--Collection Of Works), Issue 2, Saratov, Saratov University, 1971, pp 137-145 (from RZh--Elektronika i yeye primeneniye, No 3, March 1972, Abstract No 3A80)

Translation: The effect is theoretically investigated of current settling [tokoosedaniye] in an electron gun (EG) on the minimum noise factor of a TWT. The conclusion is made that current settling in an EG, in contrast to current settling in the interaction region, does not constitute a serious threat in the sense of a considerable increase of the noise factor of a TWT. Use of special electrodes leading to current interception in the region of the EG is able to prevent current settling inside the delay system, which leads to a decrease of the noise factor. 7 ref. R.M.

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UDC 6.1.385.633

USSR

GOLUBENTSEV, A.F., MINKIN, L.M.

"Effect Of Current Interception At Input To Delay System On The Noise Factor Of BWT"

V sb. Vopr. elektron.tekhn. (Problems Of Electronics Technology--Collection Of Works), No 2, Saratov, Saratov University, 1971, pp 146-149 (from RZh:elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2A158)

Translation: It is known that current subsidence [tokooseduniye] in the interaction region leads to a significant increase of the minimum noise factor of a traveling-wave tube (TWT). The effect of current interception [tokoperekhvat] on the noise factor of a backward-wave tube (BWT) is analyzed. It is shown that under specific conditions, the minimum noise factor of a BWT is smaller than the noise factor of a TWT. Consequently, during construction of super low noise microwave amplifiers with current subsidence conditions at the input to a delay system it is preferable to use a BWT. V.M.

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UDC 621.385.632

USSR

GOLUBENTSEV, A. F., MINKIN, L.M.

"Amplitude And Phase Noise Of A TWT Resulting From Low-Frequency Fluctuations Of Current (Summary Of Deposited Manuscript)"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 6, pp 110-111 (from RZh--Elektronika i yeye primeneniye, No 10, October 1970, Abstract No 10A162)

Translation: The paper considers the high-frequency noise of the output voltage in a TWT caused by low-frequency fluctuations of the electron beam current. It is assumed that the upper limit of the fluctuation frequency is considerably below the signal frequency so that a calculation of the spectrum of low-frequency amplitude and phase noise can be conducted quasistatically, i.e., it can be reduced to a calculation of the indicated magnitudes which are determined by a static solution. The following conclusions were made on the basis of the investigation conducted: 1) The low-frequency fluctuations of the current lead to low-frequency fluctuations of the amplitude and phase of the output voltage of the TWT; 2) The basic sources of modulation of the low-frequency noise are the noise of current distribution and the ionization effect, and at sufficiently low frequency-- the flicker effect; 3) The spectrum of the amplitude and phase noise resulting from the low-frequency current fluctuations is significantly determined by the operating conditions of the TWT. Summary.

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Acc. Nr.: AP0046775 Ref. Code: UR 0113

USSR UDC 621.43-713:629.113

MINKIN, M. L., Candidate of Technical Sciences, and KHMEL'NITSKIY, E. YE., NAMI [Abbreviation unknown]

"A New Branch Standard for Thermostats With Solid Filler"

Moscow, Avtomobil'naya Promyshlennost' (Motor Vehicle Industry), No 1, 1970, pp 26-27

Translation: The advantages of thermostats with solid filler and direct valve stroke are presented, and initial data are substantiated. A description is given of the basic contents of the branch standard OH 025 284-68 for these thermostats. (1 illustration)

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UDC 547.279

USSR

TKALENKO, V. G., AMARSKAYA, A. P., KOLODYAZHNYY, Yu. V., SADEKOV, I. D., MINKIN, V. I., and OSIPOV, O. A., Rostov-on-the-Don State University

"Synthesis and Physical Chemical Properties of Aromatic and Heterocyclic Derivatives of Tellurium. V. Investigation of the Complex Formation of $TeCl_4$ With Schiff's Bases"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 9, Sep 73, pp 1943-1947

Abstract: Novel complex compounds of $TeCl_4$ with benzalanilines and β-hydroxynaphtalanilines have been synthesized. On the basis of IR spectroscopic study of these complexes the conclusion was reached as to the localization of the coordination bond in azomethine molecules. It has been shown that the equimolecular complexes are energetically more feasible and their structures have been discussed. The heats of complex formation reactions are correlated with the substituent constants in the aldehyde ($\sigma^+$) and aniline ($\sigma^o$) nuclei of the azomethine molecules.

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USSR

UDC 547.757'759.3:542.958.1:543.544

YUDIN, L. G., PAVLYUCHENKO, A. I., BUDYLIN, V. A., MINKIN, V. I., and KOST, A. N., Moscow State University imeni M. V. Lomonosov, and Rostov State University at Rostov-na-Donu

"Indole Chemistry. XXI. Nitration of 3-Acylindoles"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 11, Nov 71, pp 1506-1511

Abstract: In nitration of 3-acyl- and 3-carbetoxindoles with various nitrating agents, relative prominence of hydrogen atom substitution in position 4, and replacement of the acyl radical by a nitro group in position 3, very largely depends on the immediate conditions of the experiment. Here the authors compare available experimental data with reactivity figures obtained with use of the LCAO-MO method (linear combination of atomic and molecular orbits). It is concluded that hydrogen atom substitution in the benzene ring of the models studied represents an electrolytic attack on the unprotonized molecule of the indole compound.



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TITLE--TRANSFER OF SUBSTITUENT EFFECTS ACROSS THE INDOLE RING -U-

AUTHOR-(05)-KOST, A.N., MINKIN, V.I., SAGITULLIN, R.S., GORBUNOV, V.I., SADEKOV, I.D.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 845-53

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--INDOLE DERIVATIVE, CARBOXYLIC ACID, ELECTRON DONOR, CHEMICAL SUBSTITUENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2081 STEP NO--UR/0366/70/006/004/0845/0853

CIRC ACCESSION NO--AP0125668

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

2/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125668

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PK VALUES AND SIGMA CONSTS. (TAFT, HAMMETT, WEBSTER, AND DEWAR CONSTS.) HERE DETD. FOR SUBSTITUTED INDOLE-2-CARBOXYLIC ACIDS (I). THE TRANSFER OF THE ELEC. CHARGES IN THIS RING SYSTEM IS WEAKER THAN IN CARBOCYCLIC SYSTEMS. THE ELECTRON DONATING GROUPS HAVE VERY LITTLE EFFECT. THE RELATION OF STRUCTURE WITH THE PK OF I IS BEST EXPRESSED IN TERMS OF THE DEWAR THEORY.

FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--INTRAMOLECULAR HYDROGEN BONDING AND REACTIVITY OF ORGANIC COMPOUNDS -U-

AUTHOR-(03)-SADEKOV, I.D., MINKIN, V.I., LUTSKIY, A.YE.

COUNTRY OF INFO--USSR

SOURCE--USP. KHIM. 1970, 39(3), 380-411

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HYDROGEN BONDING, IONIZATION, ALKYLATION, CHELATE COMPOUND, CHEMICAL REDUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0076 STEP NO--UR/0074/70/039/003/0380/0411

CIRC ACCESSION NO--AP0127911

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

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2/2 019

CIRC ACCESSION NO--AP0125911

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW WITH 200 REFS. THROUGH 1968 COVERING THE EFFECTS OF H BONDING ON VARIOUS REACTIONS SUCH AS IONIZATION OF CARBOXYLIC ACIDS, ALKYLATION REACTIONS, DECARBOXYLATIONS, REDN., SUBSTITUTION, CHELATION AND BASCITY, INHIBITION OF REACTIONS BY INTERNAL H BONDING AND STABILIZATION OF COMPDS., THEREBY.

FACILITY: ROSTOV.-NA-DONU GOSUNIV., ROSTOV-ON-DON, USSR.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--PALLADIUM (II) N CYCLOHEXYLSALICYLALDIMINATES -U-

AUTHOR-(03)-OSIPOV, O.A., MINKIN, V.I., TUMAKOVA, ZH.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. STRUKT. KHIM. 1970, 11(1), 154-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PALLADIUM COMPOUND, ORGANIC COMPLEX COMPOUND, DIPOLE MOMENT, MOLECULAR STRUCTURE, POLYNUCLEAR HYDROCARBON, HETEROCYCLIC BASE COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1235 STEP NO--UR/0192/70/011/001/0154/0155

CIRC ACCESSION NO--AP0116697

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

2/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0116697

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PROOF THAT THE N,ALKYLSALICYLALIMINATES OF PD (II) WITH ALOYL GROUPS CONTG. BRANCHING AT THE ALPHA C ATOM BELONG TO THE FAMILY OF COMPDS. WITH A NONPLANAR CONFIGURATION OF THE CHELATE UNIT IS CONDUCTED BY DETN. OF DIPOLE MOMENTS OF A SERIES OF COMPLEXES OF THE TYPE I, WHERE R EQUALS H, NET SU82 AND R PRIME2 EQUALS ARYL, N,ALKYL. THE DATA IS IN AGREEMENT WITH THE CONCEPT CONCERNING THE INFLUENCE OF THE STRUCTURE OF THE SUBSTITUTE UPON THE N ATOM IN THE CHELATE UNIT OF DIVALENT METALS WITH N SUBSTITUTED SALICYLALDIMINES. THE FACT THAT THE STRUCTURE OF THE N,ALKYL GROUP APPEARS TO BE SIGNIFICANTLY MORE MARKED THAN THAT OF N,ARYL CONFORMS TO THE DATA CONCERNING THE FREE ENERGY OF THE EQUIL: SQUARE IN EQUILIBRIUM TETRAHEDRON. FACILITY: ROSTOV. GOS. UNIV., ROSTOV, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

1/2 012 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--STRUCTURE OF COMPLEXES OF DELTA PRIME2,1,2,4,TRIAZOLINE,5,THIONES WITH AMINES -U-

AUTHOR-(03)-VLASOVA, L.A., MINKIN, V.I., POSTOVSKIY, I.YA.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 372-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HETEROCYCLIC NITROGEN COMPOUND, HETEROCYCLIC SULFUR COMPOUND, COMPLEX COMPOUND, MOLECULAR STRUCTURE, DIPOLE MOMENT, MORPHOLINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1504 STEP NO--UR/0079/70/040/002/0372/0375

CIRC ACCESSION NO--AP0135165

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

UNCLASSIFIED PROCESSING DATE--27NOV70

2/2 012
CIRC ACCESSION NO--AP0135165
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPLEXES FORMED BY 4,PHENYL,1,2,4,TRIAZOLINE,2,THIONE (I) AND DELTA PRIME2,1,2,4,TRIAZOLINE,5,THIONE (II) WITH AMINES EVIDENTLY HAVE STRUCTURE III, ON THE BASIS OF THEIR DIPOLE MOMENT VALUES, WHICH RANGE ONLY FROM 3.5 TO 4.07 D IN DIOXANE OR C SUB6 H SUB6. COMPLEXES OF I WITH MORPHOLINE, PIPERIDINE AND ET SUB2 NH HAD BEEN REPORTED EARLIER; THOSE OF II WITH MORPHOLINE M. 130DEGREES; WITH PIPERIDINE M. 132DEGREES. FACILITY: URA. POLITEKH. INST., SVERDLOVSK, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

1/2 020 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--STRUCTURE AND TAUTOMERISM OF O,HYDROXYALDEHYDE ANILS STUDIED BY AN INFRARED SPECTROSCOPIC METHOD -U-

AUTHOR--MINKIN, V.I., OSIPOV, O.A., SHEYNKER, V.N.

M

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 23-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IR SPECTRUM, SPECTROSCOPIC ANALYSIS, MOLECULAR STRUCTURE, ALDEHYDE, HYDROXYL GROUP, AMINE DERIVATIVE, IMINE, BENZENE DERIVATIVE, STEREOCHEMISTRY, TAUTOMERISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1044 STEP NO--UR/0076/70/044/001/0023/0028

CIRC ACCESSION NO--AP0104442

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

UNCLASSIFIED PROCESSING DATE--11SEP70

2/2 020

CIRC ACCESSION NO--AP0104442

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IR SPECTRA OF PHN:CHAR (I) AND PH, PRIMEL5 N:CHAR WERE MEASURED IN THE SOLID STATE AND IN CCL SUB4, DIOXANE, AND CHCL SUB3 (AR EQUALS PH, O-HOC SUB6 H SUB4 (II), 3,HYDROXY,2,NAPHTHYL (III), 2,METHOXY,1,NAPHTHYL, 2,HYDROXY,1,NAPHTHYL (IV), 1,HYDROXY,2,NAPHTHYL (V), AND 2,HYDROXY,1,ANTHRYL (VI)) (NU(AR) AND NU(C:N) ARE GIVEN IN A TABLE). VALENCE VIBRATION OF THE C:N BOND IS COMPLEX AND GIVES 2 ABSORPTION BANDS. THE RESULTS CONFIRM THE EXISTENCE OF BENZENOIDQUINONOID TAUTOMERISM FOR SOLNS. OF 1 (AR EQUALS IV, V), AND PROVE THE ENOL IMINE STRUCTURE FOR I (AR EQUALS II, III) AND KETO AMINE STRUCTURE FOR I (AR EQUALS VI, AND 9,HYDROXY,10,PHENANTHRYL).

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

UNCLASSIFIED PROCESSING DATE--02OCT70

1/2 017

TITLE--BENZENOID QUINOID TAUTOMERISM OF AZOMETHINES AND THEIR STRUCTURAL ANALOGS. V. ACYLOTROPIC TAUTOMERISM OF S,ACETYL, P,THIOBENZALDIMINES -U-

AUTHOR-(04)-ZHDANOV, YU.A., MINKIN, V.I., OLEKHNOVICH, L.P., MALYSHEVA, YE.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(3) 554-9

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZENE DERIVATIVE, TAUTOMERISM, ORGANIC SULFUR COMPOUND, IMINE, AROMATIC AMINE, UV SPECTRUM, BOND ENERGY, MOLECULAR ORBITAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1533 STEP NO--UR/0356/70/006/003/0554/0559

CIRC ACCESSION NO--AP0112527
UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

UNCLASSIFIED PROCESSING DATE--02OCT70

2/2 017

CIRC ACCESSION NO--AP0112527

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF 4-ACSC SUB6 H SUB4 CHO (I) WITH AROMATIC AMINES IN NONPOLAR SOLVENTS GAVE 4-ACSC SUB6 H SUB4 CH:NR (II) (R EQUALS H, 4-MEO, 4-NME SUB2, OR 4-NO SUB2). THE REACTION OF I WITH MORE BASIC ALKYL AMINES 4,HSC SUB6 H SUB4 CHO PLUS AGNHR. IN POLAR SOLVENTS (HCONME SUB2, MECN) I REACTS WITH AROMATIC AMINES TO GIVE ACNHR, ALSO. THIS IS DUE TO THE SHIFT OF THE BENZENOID THIOQUINOID I EQUIL. TOWARDS THE THIOQUINOID FORM, WHICH IS HYDROLYZED (WITH H SUB2 O PRODUCED DURING THE REACTION) TO GIVE 4,HSC SUB6 H SUB4 CHO AND ACNHR. THIS WAS CONFIRMED BY STUDYING UV SPECTRA OF II (R EQUALS 4-OME) IN BENZENE-DP(NME SUB2) SUB3 MIXTS. THE EQUIL. OF NONACETYLATED II ANALOGS 4-HSC SUB6 H SUB4 CH:NR (III) IS SHIFTED MORE TOWARDS THE THIOQUINOID FORM IN POLAR SOLVENTS THAN II EQUIL. THE DIFFERENCE IS DUE TO WEAKENED C-N PI-BONDING ENERGY OF THE THIOQUINOID II FORMS COMPARED WITH THESE FORMS OF III. THE LCAO-MO CALCNS. CONFIRMED THIS.

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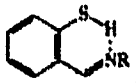
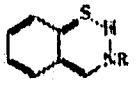
"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

Acc. Nr. AP0053774 Abstracting Service: CHEMICAL ABST. Ref. Code UR0366

110953g Benzenoid-quinonoid tautomerism of azomethines and their structural analogs. III. Synthesis, structure, and thermochromism of N-substituted o-mercaptobenzaldimines. Minkin, V. I.; Olekhnovich, L. P.; Nivorozhkin, L. E.; Zhdanov, Yu. A.; Knyazhanskii, M. I. (Rostov.-na-Donu Gos. Univ., Rostov-on-Don, USSR). *Zh. Org. Khim.* 1970, 6(2), 348–54 (Russ). The reaction of 2-NCSC$_6$H$_4$CHO with Na$_2$S gave 2-HSC$_6$H$_4$CHO which was condensed with amines to give 2-HSC$_6$H$_4$CH:NR (I), R is Ph, 4-C$_6$H$_4$OMe, 4-C$_6$H$_4$NMe$_2$, 2-C$_6$H$_4$OH, or Bu. Similarly, the condensation of 2-MeSC$_6$H$_4$CHO with amines gave 2-MeSC$_6$H$_4$CH:NR (II). The comparison of uv and ir spectra of I and II showed that I exist in their tautomeric



(I)



(Ia)

colored quinonoid forms (Ia) due to H bonding. The equil. between I and Ia depends on the polarity of the R group. Less nucleophilic R groups shift the equil. towards Ia. CPJR

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

1/2 009 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--BENZENOID QUINOID TAUTOMERISM OF AZOMETHINES AND THEIR STRUCTURAL ANALOGS. IV. TAUTOMERIC EQUILIBRIUM IN SOLUTIONS OF N SUBSTITUTED O AND

AUTHOR-(04)-MINKIN, V.L., OLEKHNOVICH, L.P., ZHDANOV, YU.A., OSTROUMOV, YU.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970 6(3) 549-54

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZENE DERIVATIVE, TAUTOMERISM, AZO COMPOUND, MERCAPTAN, IMINE, MOLECULAR ORBITAL, ISOMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1554 STEP NO--UR/0366/70/006/003/0549/0554

CIRC ACCESSION NO--AP0112528
UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

2/2 009 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0112528

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF R IN O-HSC SUB5 H SUB4 CH:NR (I) (R IS ALKYL, PH, P-MEC SUB6 H SUB4, P-CLC SUB6 H SUB4, P-ME SUB2 NC SUB6 H SUB4, P-O SUB2 NC SUB6 H SUB4, OR 2,NAPHTHYL) ON THE EQUIL. BETWEEN I AND ITS THIOQUINOID ISOMER (II) IS SOLN. WAS DEDUCED BY THE MO METHOD. THE INCREASE OF R ELECTRON REPELLING CHARACTER SHIFTS THE EQUIL. TOWARDS II.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4



USSR

UDC 614.484:615.285.7]:614.72

TUNIK, A. I., ANANOVSKIY, L. N., PRAVE, V. Ye., TIKHOTSKAYA, A. N., DERNITSYNA, Ye. A., and MINKINA, T. A., Moscow Municipal Disinfection Station

"Hygienic Evaluation of the Air in Places Treated With Chlorophos"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, 1971, pp 17-20

Abstract: Analysis of 250 air samples in a special experimental chamber and of air samples from well-ventilated places in cafes, hostels, hospitals, and restaurants showed that 3 hours after treatment with a 5% water solution of the organophosphorus insecticide chlorophos, the air contained no more than 0.5 mg/m$^3$ of the compound (maximum permissible concentration). With very poor ventilation it took as long as 24 hours before the concentration of the insecticide dropped to the permissible level. The external temperature was an important factor. When the outdoor and indoor temperatures differed considerably and the windows were open, all traces of chlorophos disappeared within one hour of treatment.



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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

RAN / /R-760/5-AKN-73

Dec 72

85

Goncharov, V. K., A. N. Loparev, and L. Ya. Min'ko. Self-igniting pulsed optical discharge in an erosive laser plasma. ZhETF, v. 62, no. 6, 1972, 2111-2114.

A variant on the optical plasmatron is described in which a self-igniting optical discharge is obtained from irradiation of a target surface. The technique was to defocus the incident beam such that the focal point was several millimeters above the target surface; vapor products from the surface, traveling at about 100 m/sec, would ignite on reaching the focal point and provide a "hanging" optical discharge for the remainder of the laser pulse. The experiment cited used an Nd glass laser at 1.5 μs pulsewidth and generating relatively low surface intensities on the order of $10^6$ w/cm$^2$. Various metals and dielectrics were tested as target materials, including ebonite, textolite, brass and a type POS-40 alloy. Depending on the material, a stable discharge was achieved in a 10 - 20 mm range above the target surface; spectral studies show discharge temperatures ≈ 22,000°K. Streak photos of the discharge development are given; Fig. 1 shows one form of the discharge.

MIN'KO, L. Ya.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

MIN'KO, L. Ya.

Balanov, V. A., V. K. Goncharov, and L. Ya. Min'ko, Powerful optical radiation plasmatron. ZhPS, v. 16, no. 5, 1972, 911-914.

A versatile laser-driven plasmatron is described which may be compared to the one described previously by Goncharov et al in this report. In the present design the simple chamber shown in Fig. 1 was used to



Fig. 1. Laser plasmatron
1- quartz window; 2- chamber;
3- target material; 4- exit nozzle

generate a plasma jet from any given target material, with the plasma driven out through the nozzle by generated pressure. By varying pulse parameters, chamber dimensions, fill gas, etc., a wide range of plasma jet characteristics can be obtained, ranging from subsonic to supersonic. The authors used an ltd glass laser at 0.8 millisecond pulses of 5 kj peak energy, in a quasi-cw regime, to develop target surface densities on the order of $10^6$ w/cm$^2$. Glass textolite was used as target material, and helium at pressures from $5 \times 10^{-2}$ ton to several atmospheres served as the fill gas. The many possible variations in jet parameters are discussed and both high-speed and streak photos are given of jet propagation. Table 1 compares results of two modes. The results generally show the versatility of this type of low temperature plasmatron.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4



USSR

UDC 533.9.07

YEL'YASHEVICH, M. A., Academician of the Belorussian SSR Academy of Sciences, LABUDA, A. A., NIN'KO, L. YA., NEKTRASHEVICH, I. G., NOVIK, G. M., BAKANOVICH, G. I., Belorussian State University imeni V. I. Lenin, Physics Institute of the Belorussian SSR Academy of Sciences

"Generation of High-Speed Plasma Fluxes by a Pulse Accelerator on the Basis of the Phenomenon of Electric Detonation of Conductors and Dielectric Erosion"

Minsk, Doklady Akademii Nauk BSSR, Vol XVI, No 2, 1972, pp 115-117

Abstract: A study was made of a pulse generator of a moving plasma created by electric detonation of conductors of defined form in a bounded volume. The described plasma generator can operate in two versions — on the basis of electric detonation of conductors as a source of a metal plasma or using pulse surface discharge where the plasma is formed as a result of erosion of the walls of the discharge chamber and the electrodes. The described pulse plasma generator permits the creation of incompletely expanded supersonic erosion plasma jets at atmospheric pressure with given gas dynamic characteristics determined by the discharge conditions and parameters.

Utilization of the phenomenon of electric detonation of conductors of a defined form under conditions of operating the plasma generator with an



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USSR

YEL'YASHEVICH, M. A., et al., Doklady Akademii Nauk BSSR, Vol XVI, No 2, 1972, pp 115-117

auxiliary gap introduced into the discharge chamber permitted flows of a low-temperature metal plasma of any given chemical composition to be obtained with relatively high efficiency of utilization of the stored initial energy. The energy in the discharge gap for V = 4 kilovolts and C = 200 microfarads (mode I) was calculated from the current and voltage oscillograms as 1.3 kilojoules with an initial energy of 1.6 kilojoules. This essentially exceeds the energy contributed in the case of operating the generator with an external auxiliary gap (0.5 kilojoules). Optimization of the discharge conditions and the geometry of the discharge chamber and, consequently, the detonated conductor permitted incompletely expanded supersonic plasma jets to be obtained at atmospheric pressure with an escape velocity of v = 25 km/sec for a contributed energy of 1.3 kilojoules (mode I). The presence of intense continuous and linear spectra is a characteristic feature of the emission of the erosion plasma (V = 5 kilovolts, C = 1,950 microfarads (mode II) without electric detonation of the conductors) formed inside the discharge chamber. Spectroscopic measurement of the plasma temperature and concentration (T = 6,000° K, $n_e = 5 \cdot 10^{16}$ cm$^{-3}$)

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

USSR

YEL'YASHEVICH, M. A., et al., Doklady Akademii Nauk BSSR, Vol XVI, No 2, 1972, pp 115-117

indicates the formation of a relatively dense low-temperature plasma. When the plasma generator is operated with electric discharge of the conductors under the same discharge conditions, the plasma concentration increases appreciably.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

USSR

UDC 621.378.325

GORCHAROV, V.K., MIN'KO, L.YA., MIKHNOV, S.A., STRIZHNEV, V.S.

"Peculiarities Of The Effect Of Emission Of Rhodamine Laser On Absorbing Materials"

Kvantovaya elektronika, Moscow, No 5, May 71, pp 112-116

Abstract: A study is conducted of the damaging action on absorbent materials of emission generated by a laser based on a standard solution of Rhodamine-6 Zh. Generation excitation was accomplished by two series-connected IFP-2000 lamps located in a magnesium oxide cylindrical illuminator. A battery of IM-50-3 capacitors with a capacitance of 56 microfarad at a voltage of ~ 10 kv was used for energy storage. The duration of the pumping pulse was 120 microsec (at a 0.1 level). An energy output of 12 joule with a generation duration of ~ 55 microsec was assured. The maximum flux density of the emission amounted to $3 \cdot 10^6$ watt/cm$^2$. As a result of the action a quasistationary ultrasonic plasma jet is formed with a relatively large angle of emergence. In it a stationary shock wave is formed, the configuration of which is determined by the geometry of the jet's emergence and has a dome-shaped form. With the aid of high-speed spectral filming it is established that excitation of the spectrum primarily takes place in the stationary shock wave. A discontinuous

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

USSR

GORCHAROV, V. K., et al., Kvantovaya elektronika, Moscow, No 5, May 71, pp 112-116

structure of the plasma jets is displayed, probably resulting from the explosion-formed (volumetric) character of vaporization. The recurrence frequency of the individual microbunches during laser action on lead (or tin-lead solder) amounts to $\sim$ 1 MHz (the flux density of the emission is $\sim 3 \cdot 10^6$ watt/cm$^2$). The exhaust velocity of the plasma jet was measured. Pressure in the zone of action is evaluated. Some peculiarities of the action on the absorbing material are studied. Received by editors, 20 Apr 71. 2 fig. 18 ref.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

Acc. Nr.: AP0046770 Ref. Code: UR0115

USSR UDC 691.2.002.3

MINAKOV, A. G., ZOLOTAREVA, R. S., MIN'KO, N. I., ORLOVA, ME. S., LEVITSKIY, A. V., and GURILEVSKIY, A. A.

"Introduction of Pyroceramics in the Instrument-Making Industry"

Moscow, Izmeritel'naya Tekhnika (Measurement Technology), No 1, 1970, p 107

Translation: At the Scientific Research Institute of Auto Glass, transparent and semi-transparent pyroceramics were synthesized, replacing the jewels used in the instrument-making industry. Information is presented on the course of tests and adoption of the pyroceramics. (1 table)

1/1 1 P.M.

Reel/Frame

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

1/2 012 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--FEATURES OF PRODUCTION TECHNOLOGY AND MECHANISM OF PORE FORMATION IN LIGHT WEIGHT PERLITE GROG CERAMICS -U-

AUTHOR-(05)-FAIN, I.A., KAMENETSKIY, S.P., RABINOVICH, M.A., GRIGORYEV, I.V., MINKOV, D.B.

COUNTRY OF INFO--USSR

SOURCE--OGNEUPORY 1970, 35(2), 3-6

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--FOAM, REFRACTORY MATERIAL, INDUSTRUAL PRODUCTION, POROSITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1979 STEP NO--UR/0131/70/035/002/0003/0006

CIRC ACCESSION NO--AP0112943
UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

UNCLASSIFIED PROCESSING DATE--09DCT70

2/2 012

CIRC ACCESSION NO--AP0112943

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BLOATING PERLITE SAND IS RECOMMENDED INSTEAD OF FOAM PERLITE. IT ENABLES PRODUCING 2.3-2.4 MORE PRODUCTS. POROSITY OF BLOATING PERLITE IS 0.6-0.75 KG-CM PRIME2. TO PROTECT THE STRUCTURE OF PERLITE A SPECIAL HORIZONTAL MIXER WAS USED.

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Acc. Nr: AP0046628 Abstracting Service: CHEMICAL ABST. 4/70 Ref. Code: UR 0131

82448a Technological production and properties of granular oxide refractories. Poluboyarinov, D. N.; Balkevich, V. L.; Lemeshev, V. G.; Mi'kov, D. E.; Makarova, T. S.; Vinogradova, L. V. (Mosk. Khim.-Tekhnol. Inst. im. Mendeleeva, Moscow, USSR). *Ogneupory* 1970, 35(1), 11-14 (Russ). The technol. of granular oxide refractories is based on the use of coarse-dispersive powders prepd. from presintered or elec. fused oxides. The ruling opinion that coarse-granular powders of pure elec. fused oxides are inert at sintering and that they do not form sufficiently dense and solid ceramics is faulty. If high pressures (1000–2000 kg/cm²) are used, and if the min. amt. of fine-dispersive powders of an oxide is added to the ceramic mass or even no binder is used when the porosity proper for refractories (i.e. 15–20%) is reached at the annealing temps. ordinary for a given oxide. The strength and deformation properties of these products are satisfactory. The deformation temp. of porous granular refractories under load prepd. from pure elec. fused oxides is 50–100% lower than that of nonporous materials. Refractories prepd. from elec. fused oxides show a substantially lower strength, however, sufficient for service at high temps. From the powders of elec. fused oxides one can prep. high-class products comparable in properties with products manufd. from powders of sintered oxides. The main technol. parameters of the manuf. of oxide refractories are practically the

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same for both initial materials. The technol. by using sintered oxide powders needs: the preliminary thermal treatment of initial components ($Al_2O_3$, MgO, $ZrO_2$), the fine grinding, the briquetting, the annealing of briquets, and their crushing and partial grinding. The elec. fusion permits using raw initial powders; further, it makes possible to realize the stabilization of $ZrO_2$ with CaO or the synthesis of complicated compds., namely spinels, zirconates, silicates, and other highly fire-resistant substances. J. Jindra

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UNCLASSIFIED PROCESSING DATE--17JUL70

TITLE--TECHNICAL PRODUCTION AND PROPERTIES OF GRANULAR OXIDE REFRACTORIES -U-

AUTHOR--PELDBCYARINCV, C.A., BALKEVICH, V.L., VINOGRADOVA, L.V., LEMESHEV, V.G., MINKOV, D.B.

COUNTRY OF INFO--USSR

SOURCE--OGNEUPORY 1970, 35(1), 11-14

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--REFRACTORY PRODUCT, REFRACTORY MATERIAL, OXIDE, ALUMINA, ZIRCONIUM COMPOUND, MAGNESIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1978/1939 STEP NO--UR/0131/70/035/011/0011/0014

CIRC ACCESSION NO--APOO46628
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USSR UDC 621.382:535.376

MIN'KOV G.M., SHUR, V.YA.

"Redistribution Along P-N Junction Of The Radiation Of Injected Light Sources Of Gallium Arsenide In A Magnetic Field"

Uch.zap.Ural'sk.un-ta (Scientific Notes, Ural University), 1971, No 118, pp 45-51 (from RZh--Elektronika i yeye primeneniye, No 5, March 1972, Abstract No 5B291)

Translation: The paper reports on a study of the change of intensity of spontaneous radiation along a p-n junction in a transverse magnetic field as a function of the geometry of the diode, the intensity of the magnetic field, and the current across the specimen. The resolution amounted to 3-5 micrometer. In the magnetic field pronounced redistribution was observed of the radiation at the edges of the specimen, the relative magnitude of which practically did not depend on the width of the diode. 4 fig. 8 ref. Yu.M.

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UDC 621.396.677

USSR

MINKOVICH, B. M.

"Optimization of the Parameters of a Line-Source Antenna"

Radiotekhnika. Resp. mezhved. nauchno-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collections), 1970, vyp. 14, pp 148-153 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4B6)

Translation: The concept of the generalized parameter of an antenna fully defined by the radiation pattern is introduced. The bibliography has 12 entries.

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USSR UDC: 621.396.677

MINKOVICH, B. M.

"Effect Which the Directivity of a Unit Radiator Has on the Characteristics of an Equidistant Line Antenna Array When Maximizing the Directive Gain or Slope of the Sum or Difference Radiation Patterns"

V sb. Antenny (Antennas--collection of works), vyp. 9, Moscow, "Svyaz'", 1970, pp 3-12 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12B43)

Translation: The author studies the effect which the radiation pattern of a unit radiator $f(v)$ has on the optimum pattern, the directional gain or slope, and the current distribution of an equidistant line antenna array with half-wave spacing between radiators $d = 0.5\lambda$ when maximizing the directional gain or generalized slope of the sum or difference radiation pattern. By using orthogonal polynomials, the investigated characteristics and parameters are obtained in explicit form and their asymptotic behavior is found in the case of a large number of radiators. Arrays with an odd $(2N + 1)$ number of radiators are analyzed in detail. In particular, for certain $f(v)$ such systems degenerate into arrays with $N + 1$ radiators with double spacing $d = \lambda$. Three illustrations, bibliography of four titles. Resumé.

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MINKOVICH, B. M.

"On a Class of Optimum Linear Equivalent Antenna Arrays With Additive or Subtractive Radiation Patterns"

V sb. Antenny (Antennas--collection of works), Vyp. 8, Moscow, "Svyaz'", 1970, pp 3-17 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7B32)

Translation: The optimum pattern $F^0(x)\left(x=\cos\frac{\pi d}{\lambda}\cos v\right)$ minimizes the integral $\int_{-1}^{1}|F(x)|^2(1-x^2)^{-\frac{1}{2}}w(x)dx$, where the structure of the weight function $w(x)>0$ depends on the distance $d$ between the elements of the array and on the required spatial redistribution of the radiated power. With adequate selection of $w(x)$, many of the known problems of optimization coincide with the problem under consideration. The function $w(x)$ generates a system of orthogonal polynomials $p_n(x)$ in terms of which $F^0(x)$ is expressed, while the corresponding currents are expressed in terms of their coefficients. This type of computational procedure is especially convenient where

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MINKOVICH, B. M., Antenny, Vyp. 8, Moscow, "Svyaz'", 1970, pp 3-17

the $p_n(x)$ are known in explicit form. In particular, when $d = \lambda/2$ and $w(x) = (1-x^2)^{\lambda}F^0(x)$ are expressed in terms of the derivatives of Gegenbauer polynomials. The asymptotic form of $F^0(x)$ and current distributions are found from the known asymptotic behavior of the $p_n(x)$. Two illustrations, bibliography of 16 titles. Resumé.

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UDC 621.396.677.012.12

MINKOVICH, B. M., PRILEPSKIY, Ye. D.

"Sum and Difference Radiation Patterns with Minimum Fringe Radiation"

Moscow, Radiotekhnika i Elektronika, Vol XV, No 7, 1970, pp 1374-1384

Abstract: This article contains an investigation of sum and difference radiation patterns of linear and circular apertures with minimum fringe radiation or with maximum proportions of power within the limits of the main lobe. The solution is presented in terms of spheroidal functions the asymptotics of which made it possible to obtain analytically simple expressions both for the radiation patterns and for the amplitude distribution.

Significant improvement in the structure of the fringe radiation is achieved when building antennas with radiation patterns which are optimal in the sense of maximum radiated power within the limits of the main lobe or minimum fringe radiation. When solving problems related to this concept as applied to sum and difference radiation patterns of linear (rectangular with separating amplitude distribution) and round apertures, the solutions obtained are compared, and patterns close to optimal described by expressions of the type

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MINKOVICH, B. M., et al, Radiotekhnika i Elektronika, Vol XV, No 7, 1970, pp 1374-1384

$\Lambda_{1/2}(\sqrt{v^2 - B^2})$, which can be especially useful in engineering practice, are found. Fourier and Hankel transformations from the amplitude-phase distribution are used to express the patterns. Graphs of the difference functions and quasioptimal patterns of the round aperture and the corresponding amplitude distributions are presented for values of B from 0 to 5.

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MINKOVSKAYA, S. M.

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Soviet Inventions Illustrated, Section II Electrical, Derwent,

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243680 CABLE LAYING MACHINE digs trenches for cables along an old cable. A track laying motor vehicle pulls a plough. The couplingbetween the plough and the towing motor is pneumatic and it is controlled by radio signals. The level and the direction of ploughing are determined by the relative position of the plough to the cable.

23.3.68 as 1228413/29-14. YA.I.MARCHEVSKI et al(3.10.69) Bul 17/14.5.69. Class 21c. Int.Cl. H 02g.

AUTHORS: Marchevskiy, Ya. I., Furto, G. S., Fishgal, S. I., Balaban, A. S., Pil'ganchuk, P. N., Imereli, V. B., Stepanenko, L. K., Parkhomenko, A. I., Min'kovskaya, S. M., Voznesenskiy, I. A., Vishnyakov, I. Ye., Zinoveyev, A. I., Razumovskiy, O. V., Khrulev, V. V., Politova, A. Ye., Khayzeruk, Ye. M., Smirnov, V. I., Malakhova, V. M.

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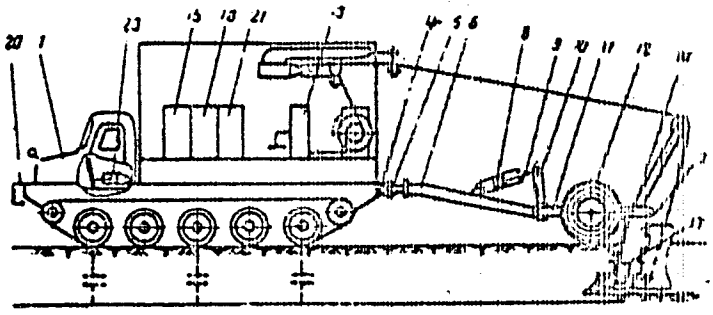

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

USSR

UDC: 681.3(02)

MIN'KOVSKIY, Ye. M., OVSYANNIKOV, N. N.

"Operation of Computers"

Ekspluatatsiya Vychislitel'nykh Mashin [English version above], Third edition, revised and supplemented, Moscow, Statistika Press, 1970, 383 pp (translated from Referativnyy Zhurnal Avtomatika, Telemekhanika I Vychislitel'naya Teknika, No 3, 1971, Abstract no 3 B18 K by V. M.)

Translation: This book is written for the course "Operation of Computers" for training of operators and instructors. The course is based on the experience of operation and training of workers on the KZSM computer models VMP-2 and VMA-2 and "Bystritsa," the "Vil'nyus" and "Vyatka" relay computers, and the "Vega" electronic computer. The more recent "Zoyempron" and "Tsellatron" computers (GDR) and the VK-2 computer are also described. The book consists of six sections. The first section presents a general description, brief characterization, and schematic diagrams of the operation of the various computers. Here also are given the primary principles of the theory of computation. Section 2 presents the operations of the computer process and describes the computer elements. The authors have used the unified nomenclature for parts of relay and electromechanical computers here for the first time. The third section covers arithmetic and combined calculations on

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UDC: 681.3(02)

MIN'KOVSKIY, Ye. M., OVSYANNIKOV, N. N., Ekspluatatsiya Vychislitel'nykh Mashin, Third edition, revised and supplemented, Moscow Statistika Press, 1970, 383 pp

computers. The specifics of the application of computers in algebraic calculations are analyzed in section 4. The fifth section familiarizes the reader with the use of computers in economics calculations, accounting, planning, and statistics. Section 6 is devoted to the description of the "Vega" computer. The book contains methodological instructions, allowing it to be used by teachers in this course.



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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202030008-4

Acc. Nr: AP0046224 Ref. Code: UR0646

PRIMARY SOURCE: Teoreticheskaya i Matematicheskaya Fizika, 1970, Vol 2, Nr 2, pp 230-243

# INVESTIGATION OF THE SPECTRA OF SOME STOCHASTIC OPERATORS ARISING IN THE LATTICE GAS MODELS

R. A. Minlos, Ya. G. Sinai

The spectrum of the transfer-matrix $A_L$ is investigated for the case of the general lattice models with finite interaction. The limiting stochastic operator $P_\infty$ is constructed as the limit of the stochastic matrices $P_L$, which are obtained from the transfer-matrix $A_L$ by means of a natural normalization. The first and the second invariant subspaces of the operator $P_\infty$ with small values of the parameter $\beta$ are found. The spectrum of the operator $P_\infty$ in the first subspace coincides with the values of a certain function $a(\lambda)$ $(0 < \lambda < 2\pi)$ while in the second subspace this spectrum contains the values of the function $a(\lambda_1)a(\lambda_2)$ $(0 < \lambda_1 < \lambda_2 \leq 2\pi)$ plus perhaps several additional segments. The latter result is in a good agreement with the well-known work by L. Onsager, where the spectrum of $P_\infty$ was found in the explicit form for the case of the Ising model.

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USSR

UDC 612.76+612.013.7]-053.7

SARKISYANTS, E. E., DOSKIN, V. A., MUMINBAYEV, T. Sh., and MARKIN, A. A., Chair of Hygiene of Children and Adolescents, First Moscow Medical Institute imeni I. M. Sechenov

"Motor Activity and Daily Energy Expenditure of Students"

Moscow, Gigiyena i Sanitariya, No 11, 1972, pp 56-59

Abstract: Questionnaires and time-and-motion studies were used to analyze the daily routine of over 600 young men and women attending the First Moscow Medical Institute and Moscow Energy Institute. The students were relatively inactive 83% of the time, even during their leisure hours, which they spent mostly reading, watching television, or going to the movies. Only about 7% of all the students engaged in sports of any kind. The women were even less active than the men, the energy expenditure averaging 2290 and 3536 kcal, respectively. The students housed in dormitories tended to be more passive than those living at home. All students, male and female, became more active on Sundays possibly because the body's natural need of exercise is curbed on school days.

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USSR

UDC 629.78.015.4

MOSTOVOY, A. S., MINORANSKIY, E. I., CHURAKOV, A. A., FROLOVA, L. K.

"Theoretical Determination of Durability of A Specimen in Extension and Compression"

Tr. Kuybyshev. Aviats. In-t. [Works of Kuybyshev Aviation Institute], No 48, 1971, pp 222-230, (Translated from Referativnyy Zhurnal, Raketostroyeniye, No 2, 1972, Abstract No 2.41.185 from the Resume).

Translation: This work presents a mechanism of fatigue rupture, according to which the specimen is looked upon as a set of discrete fiber elements, exerting no pressure on each other. The linear theory of adding of fatigue damage is applied to an individual fiber. With this approach, the accumulation of damage in a fiber is determined by its stressed state, studied considering its loading history. The dependence of stress in the fiber on the rupture number of cycles, the fatigue curve for a crack, can be produced experimentally. Appearance of the first microcrack is interpreted as rupture of the most highly stressed fiber. Thus, if the time corresponding to the development of a crack is known and the process of crack propagation is described, the durability of the specimen can be calculated. 7 Figures; 2 Tables; 3 Biblio. Refs.

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1/2 025 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--COMPARISON STUDY OF IRON FLUORIDE MATERIALS IN AIR AND VACUUM -U-

AUTHOR-(04)-ZOZULYA, V.D., MINOSHNIKOV, V.N., FEDORCHENKO, I.M., SHEVCHUK, YU.F.
COUNTRY OF INFO--USSR

SOURCE--FIZIKO-KHIMICHESKAIA MEKHANIKA MATERIALOV, VOL. 6, NO. 2, 1970, P. 71-74.
DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--CAST IRON, WEAR RESISTANCE, CALCIUM FLUORIDE, CHROMIUM CONTAINING ALLOY, NICKEL CONTAINING ALLOY, IRON COMPOUND, IRON ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0060 STEP NO--UR/0369/70/006/002/0071/0074

CIRC ACCESSION NO--AP0125895

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2/2 025 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125895

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE ANTIFRICTION PROPERTIES OF WHITE CAST IRON, AND IRON BASED MATERIALS WITH ADDITIONS OF C, CR, NI, AND CAF2. THE TESTS WERE CARRIED OUT AT A FRICTION SLIDING RATE OF 0.28 M-SEC AND PRESSURES RANGING FROM 8 TO 25 KG-SQ CM. CERTAIN TECHNIQUES FOR INCREASING THE WEAR RESISTANCE OF MATERIALS ARE EXAMINED. FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR, INSTITUT PROBLEM MATERIALOVEDENIIA, KIEV, UKRAINIAN SSR.

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USSR

UDC 533.6.011.55:541.124

BURDEL'NYY, A. K., MINOSTSEV, V. B., Moscow

"Calculation of the Supersonic Region of a Three-Dimensional, Nonequilibrium Air Flow Over Bodies"

Moscow, Mekhanika zhidkosti i gaza, No. 5, Sep/Oct 72, pp 124-129

Abstract: Supersonic, nonequilibrium, three-dimensional flow over bodies when there is a plane of flow symmetry present is considered. All flow parameters in the shock layer are assumed given up to a certain surface of the three-dimensional type, i.e., a surface at each point of which the velocity component normal to it is greater than the local frozen velocity of sound. The flow of nonequilibrium gas is consequently investigated only in the purely supersonic region of the flow. Molecular transfer processes are neglected. A sample of a calculation of nonequilibrium air flow over a segmented body is given. It is noted that there has been previously only one published study on the calculation of nonequilibrium three-dimensional gas flow in the supersonic region. This paper investigated the effect of nonequilibrium dissociation in the flow around blunt reverse cone in a supersonic



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BURDEL'NYY, A. K., MINOSTSEV, V. B., Mekhanika zhidkosti i gaza, No. 5, Sep/Oct 72, pp 124-129

oxygen flow. Pictures of the flow in the distribution of flow lines between the surface of the body in the shock wave and the supersonic region show a different character of the flow from the leeward and windward sides of the flow. On the windward side of the flow the shock wave is very close to the surface of the body and the entire gas flow entering the shock layer in the subsonic flow region close to the curvature and a region of fans of rarefaction waves occurs. The flow temperature then drops sharply leading to freezing of the physicochemical processes and a decrease in their energy contribution to zero. The flow picture is somewhat different from the leeward side. The flow lines passing through the high-temperature region and consequently along which physicochemical processes arising in the flow lead to a considerable change in the composition occupy a considerably greater portion of the shock layer.

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USSR

UDC: 629.78.015:533.6.011.5

MINOSTSEV, V. B.

"Studying the Supersonic Three-Dimensional Flow Around Segmental Bodies"

Tr. Sektsii po chisl. metodam v gaz. dinamike 2-go Mezhdunar. Kollokviuma po gazodinamike vzryva i reagiruyushchikh sistem, 1969 (Works of the Section on Numerical Methods in Gas Dynamics of the Second International Colloquium on the Gas Dynamics of Explosions and Reacting Systems, 1969), Moscow, Vol 2, 1971, pp 68-80 (From Ref. Zh-41. Raketostroyeniye, Moscow, No 3, Mar 1972, Abstract No 3.41.140)

Translation: The supersonic, three-dimensional flow around bodies of segmental shape has been studied since 1966 at the Institute of Mechanics of Moscow State University under the supervision of G.F. Telenin. In calculating streamlining, methods were used in which the gas dynamics functions on the layers are represented by Lagrangian polynomials with two variables, while a system of ordinary differential equations is solved for the transition from layer to layer in calculating the subsonic and transonic regions of flow. The characteristics method is used for calculating the supersonic region of flow. Since the developed methods are adapted for calculating smooth flows, the contour of the segmental bodies was approximated by a single analytic formula. The approximation used made it possible to calculate the flow around bodies whose contour differs from the contour of segmental bodies

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USSR

MINOSTSEV, V. B., Tr. Sektsii po chisl. metodam v gaz. dinamike 2-go Vsesoyuzn. kollokviuma po gazodinamike vzryva i reagiruyushchikh sistem, 1965, Moscow, Vol 2, 1971, pp 68-86

with a break in the generating line practically in the region of the midsection. Calculations were conducted for numbers $M_\infty \geq 5$, angles of attack $\alpha$ up to $30^\circ$, various central angles for any spherical segment ($2\theta^\circ$), and various slope angles for the generating line of the rear cone ($\beta$). As a result of these calculations, distributions are obtained for the gas dynamics parameters in the shock layer and on the body surface. Shock waves, flow line distribution charts, and an isobar in the flow symmetry plane and on the body surface were constructed. The effect of the real properties of gas on the flow chart, the distribution of gas dynamics parameters, and on aerodynamics characteristics was studied. Original article: 11 illustrations and five bibliographic entries. Resume.

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USSR

MINOSTSEV, V. B.

"Study of Supersonic Three-Dimensional Flow Around Segmented Bodies"

Tr. Sektsii po Chisl. Metodam v Gaz. Dinamike 2-go Mezhdunar. Kollogviuma po Gasodinamike Vzryva i Reagiruyushchikh Sistem, 1969, T. 2 [Works of Section on Numerical Methods in Gas Dynamics, Second International Colliquim on Gas Dynamics of Explosions and Reacting Systems, 1969, Vol 2], Moscow, 1971, pp 68-86, (Translated from Referativnyy Zhurnal, Mekhanika, No 4, 1972, Abstract No 4 B222 by M. G. Lebedev).

Translation: A review is presented of the results of numerical investigation of a supersonic, three-dimensional flow (with angles of attack up to 30°) around bodies with faces consisting of a spherical segment and side surfaces consisting of an inverted cone; the body has slight curvature in the midsection. Calculations of flow around the face and side surfaces where performed by the method of G. F. Telenin (Telenin, G. F., Tinyakov, G. P., Dokl. AN SSSR, 1964, Vol 154, No 5, pp 1,056-1,058 -- RZhMekh, 1964, 6 B212) and the layer method of method of characteristics (Minostsev, V. B., Izv. AN SSSR, Mekhan. Zhidkosti i Gaza, 1967, No 2, pp 121-125 -- RZhMekh, 1967, 8 B190) respectively. The positions of shockwaves, sonic lines, flow lines and isobars are given with flow around the face. The flow structure in the area of the critical point is analyzed in detail. The influence of physical and

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USSR

MINOSTSEV, V. B., Tr. Sektsii po Chisl. Metodam v Gaz. Dinamike 2-go Mezhdunar. Kollookviuma po Gasodinamike Vzryva i Reagiruyushchikh Sistem, 1969, T. 2, Moscow, 1971, pp 68-86.

chemical conversions on the picture of flow around the face and side surfaces is investigated, as well as the distribution of gas dynamic parameters. The problem of possible influence of viscous properties of the gas on flow around the body is studied and it is concluded that the influence of the separation and zone on the side surface of a segmented body on flow outside of this zone and on the aerodynamic characteristics of the body can be modeled well by calculating the flow for an ideal gas. It is shown that with three-dimensional flow around sufficiently long segmented bodies, over flow of the stream near the surface of the body results in the formation of a suspended compression jump on the lee side of the flow. 5 Biblio. Refs.

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USSR

UDC: 533.6.011

MINOSTSEV, V. B., TELENIN, G. F.

"Investigation of Supersonic Three-Dimensional Flow Around Blunt Bodies"

Nauch. tr. In-t mekh. Mosk. un-ta (Scientific Works of the Institute of Mechanics, Moscow University), 1970, No 5, pp 4-19 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7B310)

Translation: The paper generalizes the results of studies of supersonic three-dimensional flow around smooth bodies carried out in recent years at the Institute of Mechanics of Moscow State University with the use of numerical methods developed under the direction of G. F. Telenin. The flow is first analyzed on the frontal surfaces of bodies. It is noted that in the case of small angles of attack, the flow pattern in the neighborhood of the critical point for all bodies is practically indistinguishable from the flow pattern at the zero angle of attack. The gradients of velocity on the body in the plane of symmetry and perpendicular to the plane of symmetry are similar, and the geometric pattern of flow from the critical point differs little from a dicritical node. For large angles of attack in the case of a monotonic increase in the curvature of the con-

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MINOSTSEV, V. B., TELEMIN, G. F., Nauch. tr. In-t mekh. Mosk. un-ta, 1970, No 5, pp 4-19

tour of the body along a generatrix, all stream lines (with the exception of those lying in the plane of symmetry) approach the critical point with a common tangent perpendicular to the plane of symmetry. The stream line with maximum entropy is located closer to the axis of symmetry of the body than the critical stream line. With an increase in the curvature of the body along the generatrix, all stream lines at the stagnation point have a common tangent lying in the plane of symmetry of the flow, and the stream line with maximum entropy lies further from the axis of symmetry of the body than the critical line. Flow around blunt bodies of low aspect ratio of the spherical sector type is then considered. A typical characteristic of flow around such bodies is the presence of a detached zone on the lee side, which cannot be realized in an ideal gas flow. With the use of pressure levels in the detached zone borrowed from experimental data, an approximate method is proposed to account for the detached region. It is shown by numerical calculations that the proposed method satisfactorily simulates real flow of a viscous gas round a body while the boundary layer on the forward surface is fairly thin. Graphs present the results of calculations for a body with a frontal surface close to a sixty-degree spherical sector with an inverted cone angle from 0° to 30° at angles of attack of up

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MINOSTSEV, V. B., TELENIN, G. F., Nauch. tr. In-t mekh. Mosk. un-ta, 1970, No 5, pp 4-19

to 30° and Mach numbers of oncoming flow $M_\infty \geq 5$.

Flow around high-aspect blunt bodies at angles of attack also revealed a number of singularities. It is noted in particular that even at low angles of attack there is considerable gas overflow leading to an increase in the pressure on the leeward side over the pressure on the windward generatrix beginning at a certain length. This length is practically independent of the angle of attack. In numerical calculations on the lee side the characteristics start to intersect at some distance from the blunting, which is due to the development of a compression shock.

The last part of the work gives an approximate account of the effect of the real nature of the gas in hypersonic flow around segmental bodies. It is proposed that flow around the frontal section be considered equilibrium flow with an adiabatic exponent determined from the condition of equality of the density ratio in the forward compression shock. Calculation of the supersonic region is done at an adiabatic coefficient obtained from the condition of "freezing" of the state of the gas at the midsection of the body. A comparison with the results of calculation of nonequilibrium streamline flow shows satisfactory accuracy of the proposed model. The data of numerous calculations are presented in graphs. Bibliography of 13 titles. I. N. Murzinov.

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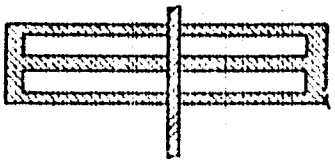
USSR UDC: 621.317.738

YARIN, N. V., MINOV, O. N., LANDYK, V. A., DOBROVINSKIY, V. R.

"A Resonator for Measuring the Permittivity of Sheet Specimens of Dielectrics on Superhigh Frequencies"

Moscow, Otkrytiya, Izobreteniya, Promyshelnnyye Obraztsy, Tovarnyye Znaki, No 31, Nov 71, Author's Certificate No 317994, Division G, filed 3 Jun 69, published 19 Oct 71, pp 171-172

Translation: This Author's Certificate introduces a resonator for measuring the permittivity of sheet specimens of dielectrics on superhigh frequencies. The device contains a coaxial section shorted at both ends. As a distinguishing feature of the patent, measurement accuracy is improved by making the length of the resonator close to an odd number of $\frac{1}{2}$-waves of the working frequencies, and making a transverse slot through the middle of the resonator to accommodate the dielectric specimen to be studied.



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AUTHOR-(03)-MINSKER, K.S., KRATS, E.O., PAKHOMOVA, I.K.

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