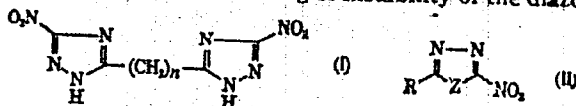


AP0100367

gave 25% 2-nitro-5-methyl-1,3,4-oxadiazole, m. 75°. For this prepn. it was essential to shorten the contact with acids, as 1,3,4-oxadiazoles are unstable in acids. The following I were reported (\* shown): 0, m. 256-7°; 1, m. 280-2°; and 2, m. 260-1°. Although 2-aminoimidazole and 2-aminopyridine failed to yield nitro derivs. by this method owing to instability of the diazonium



forms, the results confirmed the previously suggested mechanism for the introduction of the NO<sub>2</sub> group. (B., *et al.*, 1969). The following II were similarly prepd. (Z and R shown): S, H, m. 82°; S, Me, m. 62°; S, Ph, m. 141°; S, *o*-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>, m. 131°; S, *p*-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>, m. 179°; O, Me, m. 75°; and CH<sub>3</sub>, H, m. 175°. The yields were 25-76%.

G. M. Kosolapoff

1/2

19841790

USSR

UDC 591.488.4-135.044:597.82

VINNIKOV, Ya. A., GAZENKO, O. G., TITOVA, L. K., GOVARDOVSKIY, V. I.,  
GRIBAKIN, F. G., BRONSHTEYN, A. A., PEVZNER, R. A., ARONOVA, M. Z.,  
MASHINSKIY, A. L., PAL'MBAKH, L. R., IVANOV, V. P., TSIRULIS, T. P.,  
KHARKEYEVICH, T. A., and PYATKINA, G. A., Laboratory of Evolutional  
Morphology, Institute of Evolutionary Physiology and Biochemistry imeni  
I. M. Sechenov, Academy of Sciences USSR, Leningrad

"Development of the Vestibular Apparatus (Labyrinth) of the Frog *Rana temporaria* in Weightlessness"

Leningrad, Zhurnal Evolyutsionnoy Biokhimii i Fiziologii, Vol 8, No 3,  
May/Jun 72, pp 343-350

Abstract: To study the effect of weightlessness on development of vertebrate vestibular apparatus, 43-hour artificially fertilized *Rana temporaria* eggs were subjected to a 40-hour flight in the Soyuz-10, after which they were fixed and observed with an electron microscope. Embryos in the early gastrula stage were used to ensure that takeoff acceleration was experienced prior to establishment of definitive vestibular apparatus, in light of evidence that acceleration does have considerable impact on receptor cell development at the later stages. Normal development proceeded to the tail bud stage during  
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USSR

VINNIKOV, Ya. A., et al., Zhurnal Evolyutsionnoy Biokhimmii i Fiziologii, Vol 8, No 3, May/Jun 72, pp 343-350

the flight, as it did in control embryos, and no differences were detected in development of the presumptive otocysts and the eighth ganglion. Morphology is described in detail, the main feature being the beginning of differentiation of receptor and support cells in the presumptive otocysts and of bipolar neuroblasts in the eighth ganglion. Thus weightlessness has no effect on development in general and on differentiation of the future vestibular apparatus in frog embryos.

2/2

- 65 -

USSR

UDC 512.897

PEVZNER, S. L., Komsomol'sk on Amur

"Invariant Pairs of Real Quadratic Forms"

Kazan', Izvestiya VUZ, Matematika (News of the Higher Educational Institutions, Mathematics) No. 7(98), July 1970, p 83-91

Abstract: A system of invariant pairs of forms consists of elementary finite and infinite divisors and minimal indexes of matrix  $A - \lambda G$ . Each real and infinite elementary divisor has a corresponding arithmetic invariant that can take values of +1 and -1. These arithmetic invariants are called "signatures of real elementary divisors." A theorem is given that offers a new method for calculating the powers of the elementary divisors of matrix  $A - \lambda G$  (which holds for both real and complex forms). Also, a method is given for finding the signatures of real elementary divisors for any pair of forms. The manipulation of the matrix transformations is amply illustrated for each of the three theorems given. Orig. art. has 8 refs.

1/1

USSR

UDC: 531.383

BALYASNIKOVA, A. N., KOROVKIN, A. M., PEVZNER, Ye. M., Leningrad Institute  
of Precision Mechanics and Optics

"Calculating the Potential of the Rotor in an Electrostatic Gyroscope"

Leningrad, Izvestiya VUZov: Priborostroyeniye, Vol 16, No 2, 1973, pp 72-77

Abstract: A procedure is outlined and expressions are derived for calculating the potential of the rotor of an electrostatic gyroscope in the case of arbitrarily directed displacements of the rotor which are small in comparison with the electrode-rotor gap for geometrically distinct electrode systems. An electrode system classification is proposed which enables determination of the general properties of a given system. In accordance with the proposed classification, conditions are found which guarantee zero rotor potential for electrode systems of various geometry.

1/1

- 95 -

USSR

UDC: 531.383

BALYASNIKOVA, A. N., KOROVKIN, A. M., PEVZNER, Ye. M., Leningrad Institute  
of Precision Mechanics and Optics

"Concerning the Influence of Orthogonal Axes of the Suspension of an Electrostatic Gyroscope in the Case of Zero Rotor Potential"

Leningrad, Izvestiya VUZov: Priborostroyeniye, Vol 16, No 2, 1973, pp 84-87

Abstract: The paper deals with the question of determining the mutual influence of a system of electrodes in a suspension with three mutually perpendicular axes, assuming conditions of zero rotor potential for small rotor displacements. The proposed formulas can be used to derive expressions for the forces acting on all three axes at large rotor displacements as well.

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PEVZNER, Ye. M.

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12 Nov 73

COMPUTING THE ROTOR POTENTIAL OF AN ELECTROSTATIC GYROSCOPE

UDC 531.383

Article by A. H. Bilyarskiy, A. M. Korovkin, and Ye. M. Pevzner, Leningrad, Institute of Precision Mechanics and Optics, Leningrad, TEKHNIKA, 1973, No. 1, January 1973, recommended by Chair of Electrical Engineering, submitted 13 April 1972, pp 72-77

In the article the problem of the determination of a rotor potential of an electrostatic gyroscope is considered, with respect to motions of the rotor that are arbitrary with respect to direction and small with relationship to the clearance between the electrode and the rotor. A classification of systems of electrodes is proposed, which makes it possible to determine the general properties of some system or other. In accordance with the proposed classification, conditions are derived for provision of a zero potential of the rotor for systems of electrodes that differ with respect to geometry.

As is well known, the magnitude of the drift of an electrostatic gyroscope is determined basically by the moments of the forces of electrostatic and magnetic origin. The moments of the forces of the electric field depend upon the potential induced in the rotor, the value of which varies in the motion of the rotor. Thus, for an estimate of the moment acting on the rotor of a gyroscope it is necessary to know the magnitude and the sign of the rotor potential.

The problem of the determination of the rotor potential is considered with reference to a suspension (gimbals) operating on direct voltage, with the following conditions and assumptions: the electrodes are arranged along the three mutually perpendicular axes of the gimbal; the displacements of

the rotor are small in comparison with the electrode-rotor clearance; boundary effects do not exist and the electrical field is localized in the clearance between the electrode and the rotor.

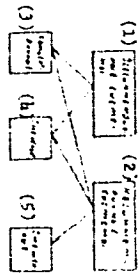


Figure 1. Classification of electrodes: 1) axially symmetrical systems; 2) asymmetrical systems; 3) concentric; 4) contiguous; 5) mixed.

Systems of electrodes are encountered in practice, providing for suspension of the rotor, which, with respect to design formulation, may be divided in the following manner (Figure 1):

- 1) axially symmetrical systems--systems in which the dimensions and mutual arrangement of the electrodes along each of the axes of the suspension coincide (Figure 2, a, b);
- 2) asymmetrical systems--systems in which, for the purpose of giving the device as a whole some definite properties, the dimensions or mutual arrangement of the electrodes along one of the axes of the suspension do not coincide with the dimensions or mutual arrangement of the electrodes along the other axes (Figure 2, c, d).

Depending upon the design formulation of the electrodes, along each of the axes of the suspension, the systems listed above may be: concentric (Figure 2, a)--systems in which some axis of the suspension is the axis of symmetry of all the electrodes, providing for suspension of the rotor along this axis; contiguous (Figure 2, b)--systems in which the pairs of electrodes providing the forces in the direction of some axis of the suspension are arranged contiguously relative to this axis, which is also the axis of symmetry of the pairs of electrodes; or mixed (Figure 2, c, d).

Such a classification makes it possible to determine the general properties proper to some system or other of electrodes.



USSR

UDC 669.71'24.018.9

PEYDIK, Kh. I.

"Some Peculiarities of Explosions of Aerosols of Binary Alloys in the Aluminum-Nickel System"

Probl. inzh. okhrany truda [Problems of Engineering Protection of Labor -- collection of works] (Moscow Institute of Steels and Alloys, 63), Moscow, 1970, 45-49, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract No.1 6157 by the author).

Translation: The dependence is established between the maximum explosion pressure and the rate of pressure increase and the content of Ni in the alloy. Data produced indicate extreme danger of explosions of powders of Al plus Ni alloys at plants. 2 figures; 1 table.

1/1

Immunology

USSR

UDC 576.851.45.077.3

PEYSAKHIS, L. A., LARIONOV, G. M., and STEPANOV, V. M., Central Asian Plague Research Institute, Alma-Ata

"Diagnostic Value of Serological Tests in Detecting Antibodies to Pasteurella pestis"

Moscow, Laboratornoye Delo, No 3, 1973, pp 162-165

Abstract: Experiments were performed with gerbils exposed to fleas infected with Past. pestis strain 151 to determine the relative merits of the passive hemagglutination and antigen neutralization tests as a means of detecting fraction one of the microbe and specific antibodies to it. Four days after exposure, blood was drawn from the animals to run the two tests simultaneously. The antigen neutralization test was found to be superior during both the infectious and postinfectious periods in the three main criteria of the immunological response: frequency of occurrence of antibodies, mean geometric titers, and maximum titers. The antibodies were found more frequently and in higher titers not only during the first two weeks after infection, but throughout the 6 months' observation period.

1/1

USSR

UDC: 598.842.8:616.981.452

PEYSAKHIS, L. A., STOGOV, I. I., STEPANOV, V. M., and HIBIKOV, D. I., Central Asian Scientific Research Antiplague Institute, Alma Ata

"Experimental Study of Plague in the Wheatear (*Oenanthe isabellina*) in Connection With Its Possible Role in Natural Foci of the Disease"

Moscow, Zoologicheskii Zhurnal, Vol 49, No 11, Nov 70, pp 1691-1696

Abstract: Contrary to the widely held view that birds are not susceptible to plague, the wheatear (*Oenanthe isabellina*) proved to be highly sensitive to the agent of the disease. Of 46 birds inoculated with doses of  $10^2$  to  $10^7$  microbial cells, 33 died 2 to 19 days later with the septic form of plague. *Xenopsylla cheopis* and *Ceratophyllus laeviceps* fleas allowed to feed on the sick birds just before they died became infected. When placed on healthy wheatears and several rodent species, the fleas transmitted the disease to these animals. Since the wheatear lives in close contact with rodent plague vectors, it probably participates in circulation of the agent and its dissemination throughout the natural foci. The fact that many of the experimentally infected birds did not show any symptoms of plague for more than 6 days indicates the possibility that during their seasonal migrations sick birds may carry the agent long distances during the incubation period of the disease.

1/1

USSR

UDC 669.721.472(088.8)

CHEPRASOV, I. M., SELEDTSOV, D. K., CHIKODANOV, A. I., BESTAURAYEV, M. B.,  
PEYSAKHOV, I. L., and BYKHOVER, L. N.

"Method of Purifying Waste Gases"

USSR Author's Certificate No. 267586, Filed 12/05/68, Published 14/07/70,  
(Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract  
No.1 G171 P).

Translation: A method is suggested for purifying waste gases to remove  
 $Cl_2$  and  $Cl_2$ -containing products by transmitting the gases through  
inorganic reagents. In order to increase the degree of purification and  
simplify the process, the inorganic reagents used are wastes of Ti and  
its alloys in the form of fine sponge or chips. Example. The gases  
pumped from the cathode space of a magnesium electrolyzer, at  $360^\circ$ ,  
containing 5-6 mg/l  $Cl_2$ , are passed without preliminary drying to a layer  
of crushed, unheated titanium sponge. The sponge is heated by the gases  
themselves to  $250-280^\circ$ . All of the  $Cl_2$  contained in the gases is trapped  
by the sponge, forming lower chlorides of Ti, which are then dechlorinated  
to produce  $TiCl_4$ .

1/1

- 93 -

USSR

UDC: 621.396.69:621.314.2

PEYSAKHOVICH, V. A., MIRSKIY, N. L.

"A High-Frequency Transformer With an Open Ferrite Core"

Tr. VNII tokov vysok. chastoty (Works of the All-Union Scientific Research Institute of High-Frequency Currents), 1970, v. 12, pp 208-217 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1V318)

Translation: The peculiarities of the transformer are considered. The coupling factor has decisive importance for evaluating the advisability of using the transformer. A formula is recommended for determining this factor. Data are given from industrial tests of an experimental model of the transformer in the high-frequency unit of a mill for welding aluminum sheathing on communications cable. It is shown that the use of a transformer with an open ferrite core in a high-frequency welding device makes it possible to increase welding speed, reduce the capacitance of the condenser bank, and simultaneously reduce the voltage of the load circuit and increase the load of the vacuum-tube oscillator. Six illustrations, two tables, bibliography of three titles.

1/1

172 027 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--OPTICS OF SPECTRAL INSTRUMENTS -U-  
AUTHOR--PEYSAKHSON, I.V. *P*  
COUNTRY OF INFO--USSR  
SOURCE--OPTICS OF SPECTRAL INSTRUMENTS (OPTIKA SPEKTRAL'NYKH PRIBOROV)  
LENINGRAD, MASHINOSTROYENIYE, 1970, 270 PP  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--PHYSICS  
  
TOPIC TAGS--OPTIC SYSTEM, OPTIC PRISM, OPTIC INSTRUMENT, LIGHT DISPERSION,  
SPECTROGRAPH, MONOCHROMATOR, SPECTROSCOPE, DIFFRACTION GRATING  
  
CONTROL MARKING--NO RESTRICTIONS  
  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3006/0032 STEP NO--UR/0000/70/000/000/0001/0270  
CIRC ACCESSION NO--AM0133914

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--27NOV76

CIRC ACCESSION NO--AM0133914

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PREFACE 3. INTRODUCTION 5.  
CHAPTER I BASIC CHARACTERISTICS OF OPTICAL SYSTEMS OF SPECTRAL  
INSTRUMENTS 11. II DISPERSION DEVICES 30. III SPECTROGRAPHS 64.  
IV MONOCHROMATORS 126. V SPECIAL TYPES OF SPECTROGRAPHS,  
POLYCHROMATORS AND SPECTROSCOPES 184. VI INSTRUMENTS WITH CONCAVE  
DIFFRACTION GRATINGS 206. VII INSTRUMENTS WITH PRISM AND FLAT  
GRATING IN NONPARALLEL BEAMS 248. APPENDIXES 261. LITERATURE 167.

THE BOOK THROWS LIGHT ON QUESTIONS OF THEORY AND DESIGN OF OPTICAL  
SYSTEMS OF SPECTRAL INSTRUMENTS. IT WAS WRITTEN FOR SCIENTIFIC AND  
ENGINEERING TECHNICAL WORKERS, OCCUPIED WITH THE DESIGN OF OPTICS,  
CONSTRUCTION AND PRODUCTION OF SPECTRAL APPARATUS. IT MAY BE USEFUL TO  
SPECTROSCOPIST PRACTITIONERS OF SCIENTIFIC INSTITUTES AND FACTORY  
LABORATORIES, AND ALSO TO SENIOR STUDENTS SPECIALIZING IN OPTICS AT  
TECHNICAL INSTITUTES AND UNIVERSITIES.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--CONCAVE DIFFRACTION GRATINGS WITH VARIABLE SPACING -U-

AUTHOR--(04)-GERASIMOV, F.M., YAKOVLEV, E.A., PEYSAKHSON, I.V., KOSHELEV,  
B.V.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(4), 790-5

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--DIFFRACTION GRATING, ASTIGMATISM, SPECTROSCOPY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/1266

STEP NO--UR/005L/70/028/004/0790/0795

CIRC ACCESSION NO--AP0124917

UNCLASSIFIED



2/2 013

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0124917

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROPERTIES OF CONCAVE DIFFRACTION GRATINGS WITH LINEARLY CHANGING LINE DISTANCE ARE DISCUSSED IN RELATION TO THE IMAGE STIGMATISM. A METHOD IS GIVEN FOR THE PREPN. OF GRATINGS WITH VARIABLE SPACING FOR REDUCING ASTIGMATISM IN THE WAVELENGTH REGION USED IN SPECTROSCOPY.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--DISCONTINUOUS COMMUNICATION IN A MULTIBEAM CHANNEL WITH SYMBOL  
OVERLAPPING -U-  
AUTHOR--PEYSIKHMAN, A.L. P  
COUNTRY OF INFO--USSR  
SOURCE--MOSCOW, RADIOTEKHNIKA, NO 3, 1970, PP 5-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--NAVIGATION  
TOPIC TAGS--INTERFERENCE IMMUNITY, RADIO ECHO, SIGNAL RECEPTION, MULTIPLEX  
SIGNAL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1999/1290 STEP NO--UR/0108/70/000/003/0005/0008  
CIRC ACCESSION NO--AP0123249  
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123249

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESISTANCE TO INTERFERENCE AND THE RELATIVE EFFICIENCY OF AN INTERRUPTED CHANNEL ARE DETERMINED. THE OPERATING THRESHOLD OF THE CHANNEL IS ESTABLISHED AND CORRECTED WITH RESPECT TO THE ECHO SIGNAL AMPLITUDE RATIO.

UNCLASSIFIED

I/2 021 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--METHOD OF GRAVITY DETERMINATION IN MOTION -U-  
AUTHOR--(05)-LISITSIN, YU.N., LOZINSKAYA, A.M., MARAYEV, L.S., NEMTSOV,  
L.D., PEYSIKOV, YU.V.  
COUNTRY OF INFO--USSR  
SOURCE--GEOfIZICHESKAYA APPARATURA, 1969, NR 39, P 161; AUTHOR CERTIFICATE  
NR 204618  
DATE PUBLISHED-----70  
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY  
TOPIC TAGS--GRAVIMETER, GRAVITY, TOWED BODY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAme--3007/1779 STEP NO--UR/0482/70/000/000/0000/0000  
CIRC ACCESSION NO--AA0137019  
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0137019

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD OF GRAVITY DETERMINATION IN MOTION, BASED ON TOWING THE GRAVIMETER IN A GONDOLA AT A GIVEN DEPTH WHILE SIMULTANEOUSLY MEASURING DEPTH VALUES AND GRAVIMETER READINGS, IS REPORTED. TO EXCLUDE PERTURBING ACCELERATIONS AND TO INCREASE ACCURACY, THE VERTICAL ACCELERATIONS OF THE FOUNDATION ARE DETERMINED FROM DEPTH MEASUREMENTS AND THE OBTAINED VALUES COMPUTED FROM THE GRAVIMETER READINGS.

UNCLASSIFIED

USSR

UDC 581.192.08

PEYVE, YA. V., YAGODIN, B. A., and BAKYEVA, N. M.

"Preparative Electrophoresis of Proteins on Polyacrylamide Gel"

Moscow, Biofizicheskiye Metody v Fiziologii Rasteniy, Nauka, 1971, pp 5-13

Translation of Russian Abstract: A method of preparative electrophoresis of proteins on polyacrylamide gel is described. The method makes it possible to separate proteins according to their molecular weight, structure, and magnitude of charge. The work was done with equipment made entirely of plexiglas. It was built according to the type B apparatus designed by D. Rakusen and N. Kal'vaniko. The equipment was modified as follows. A cooling jacket was mounted around the upper electrophoretic column; instead of the bolts affixing the column to the elution chamber, a slip mantle and a screw-on lower column were used. To reduce resistance, the lower gel was eliminated, and contact is established by filling the lower electrophoretic column with the electrode buffer solution. The method is demonstrated by using hemoglobin obtained from the tubers of bean plants: fodder beans, soy beans, and lupine. The formulas for the buffer solutions and the gel polymerization solutions were taken from the recommendations on the analytical disc electrophoresis of hemoglobin. The isolated protein fractions contain the various hemoglobin components in the unchanged state and in a sufficiently highly purified condition.

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1/2 006

UNCLASSIFIED

PROCESSING DATE--30OCT7

TITLE--THE ROLE OF MICROELEMENTS IN SYMBIOTIC NITROGENFIXATION -U-

AUTHOR--PEYVE, YA.V.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA BIOLOGICHESKAYA, 1970, NR 2,  
PP 238-245

DATE PUBLISHED--70

SUBJECT AREAS--AGRICULTURE

TOPIC TAGS--ENZYME ACTIVITY, LEGUME CROP, FERTILIZER APPLICATION, PROTEIN  
NITROGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0572

STEP NO--UR/0216/70/000/002/0238/0245

CIRC ACCESSION NO--AP0124267

UNCLASSIFIED

2/2 006  
CIRC ACCESSION NO--AP0124267

UNCLASSIFIED

PROCESSING DATE--30OCT7

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. APPLICATION OF MICROFERTILIZERS (MOLYBDENIC, COBALTIC, BORIC, COPPERY AND OTHERS) PERMITS TO REGULATE ENZYME ACTIVITY CONNECTED WITH SYMBIOTIC NITROGEN FIXATION AND TO INCREASE CONSIDERABLY THE YIELD OF LEGUMES CULTURES, PROTEIN CONTENTS I THE CROP AND NITROGEN ACCUMULATION IN THE SOIL. FACILITY: TIMIRYAZEV INSTITUTE OF PLANT PHYSIOLOGY, ACADEMY OF SCIENCES USSR.

UNCLASSIFIED



1/2 027 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--NEW HIGH SPEED STOMATOLOGICAL APPARATUS AND SOME FEATURES SPECIFIC  
TO THEIR USE -U-  
AUTHOR--(03)-PODOBED, A., PEYZAN, R., YATSKOVETS, N.  
COUNTRY OF INFO--USSR  
SOURCE--STOMATOLOGIYA, 1970, VOL 49, NR 2, PP 75-78  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--ORAL DISEASE, MEDICAL APPARATUS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1985/1847 STEP NO--UR/0511/70/049/002/0075/0078  
CIRC ACCESSION NO--AP0101892  
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0101892

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUMMARY. THE PAPER DISCUSSES THE  
DESIGNS OF NEW HIGH SPEED STOMATOLOGICAL APPARATUS. THE AUTHORS  
DESCRIBE THE MAIN TECHNICAL DATA AND THE ADVANTAGES OF UNIVERSAL  
STOMATOLOGICAL APPARATUS IN COMPARISON WITH SIMILAR EQUIPMENT  
MANUFACTURED PREVIOUSLY BY THE SOVIET INDUSTRY AND FOREIGN MODELS.  
INFORMATION IS GIVEN OF THE FEATURESPECULLIAR TO THE OPERATION OF THE  
REFERRED TO EQUIPMENT AND MAINTENANCE FOR LONG TERM WORK.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--PHOTOMETRIC CHARACTERISTICS OF WHITE TITANIUM ENAMELS IN RELATION  
TO COOKING AND FIRING CONDITIONS -U-  
AUTHOR-(03)-ZASUKHINA, L.Z., SMIRNOVA, G.P., PEYZNER, B.Z.  
COUNTRY OF INFO--USSR  
SOURCE--STEKLO KERAM. 1970, 27(2), 27-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--TITANIUM, ENAMEL, PHOTOMETRIC ANALYSIS, OPTIC BRIGHTNESS,  
MATERIAL TESTING EQUIPMENT/(U)FB2 PHOTDELECTRIC BRIGHTOMETER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1995/1258 STEP NO--UR/0072/70/027/002/0027/0029  
CIRC ACCESSION NO--AP0116720  
UNCLASSIFIED

P

2/2 029

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0116720

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHOTOMETRIC CHARACTERISTICS OF A LARGE NO. OF TI ENAMELS OF KNOWN COMPS. AS WELL AS AS A NO. OF OTHER COATINGS WERE STUDIED, BOTH OF DOMESTIC AND OF FOREIGN ORIGIN. THE MEASUREMENTS WERE MADE WITH A PHOTOELEC. BRIGHTOMETER FB-2, AND THE BRIGHTNESS COEFF. WAS MEASURED. FROM THE DATA OBTAINED IT FOLLOWS THAT THE DIFFUSE REFLECTION COEFF. CANNOT SERVE AS THE INDICATOR FOR THE WHITENESS OF ENAMEL COATINGS. THE CHARACTERISTICS OF SOME OF THE BEST DOMESTIC AND FOREIGN ENAMELS ARE NOTED. THE COLOR CHARACTERISTICS OF TI ENAMELS WERE MEASURED ALSO ON PLATELETS PREPD. FRM FRITS OBTAINED FROM VARIOUS DOMESTIC AND FOREIGN FIRMS. IT IS OBVIOUS THAT THE HIGH WHITENESS AND THERMAL STABILITY OF THE COLOR INDEXES OF ENAMEL COATINGS CAN BE ACHIEVED ONLY BY A COMPLEX OF MEASURES: HIGH QUALITY RAW MATERIALS, STRICT CONTROL OF THE PRODUCTION CONDITIONS OF THE ENAMELS, AND THE FIRING CONDITIONS OF THE COATINGS. THERMAL STABILITY OF PHOTOMETRIC CHARACTERISTICS OF TI ENAMELS CAN BE ACCOMPLISHED BY THE INTRODUCTION OF CERTAIN STABILIZING MICRO ADONS. FACILITY: LENINGRAD. TEKHNDL. INST. IN. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 669.296

SUMIN, V. V., KORNILOV, I. I., and PEYZHILAYEV, Sh. I.

"Distribution Factors of Titanium and Iron in Zirconium"

Moscow, Tsvetnyye Metally, No. 7, Jul 71, p 50

Abstract: The behavior of titanium and iron admixtures in electron-beam zone melting of zirconium was experimentally investigated on the basis of the relation

$$\frac{C_n}{C_0} = \left( \frac{K}{K+g} \right)^n, \text{ where}$$

K = distribution factor of Ti and Fe in Zn ; C<sub>n</sub> = concentration of the admixture in the quasi-stationary region of the ingot after n passages of the zone ; C<sub>0</sub> = concentration of the admixture in the initial ingot ; g = reduced vaporization coefficient of the admixture calculated from a given formula. Tabulated experimental data show the distribution of Fe and Ti after zone melting of Zn. The average distribution coefficients of Fe and Ti in Zn were found to be K<sub>Fe</sub> = 0.29 and K<sub>Ti</sub> = 0.48 . Two tables, two formulas, five biblio. refs.

1/1

USSR

UDC 621.371.029.55

8

VSEKHOSVYATSKAYA, I. S., GLADYSHEVA, M. V., GORSHKOVA, E. Z.,  
DUMBRAVA, Z. P., YEROFEYEV, N. M., ZOLOTAREV, A. Ye., KIYANOVSKIY,  
M. P., MAL'SHAKOV, V. N., NOVIKOVA, L. N., PEZHEMSKAYA, M. D.,  
PODDEL'SKIY, N. P., and RUDYKA, L. V.

"Some Results of Investigations Into Tilted Short-Pulse Sounding  
in Ranges up to 400 km Long"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl.  
Sekts. 1 (Tenth All-Union Conference on the Propagation of Radio  
Waves; Report Theses; Section 1--collection of works) "Nauka,"  
1972, pp 347-348 (from RZh--Radiotekhnika, No 10, 1972, Abstract  
No 10A333)

Translation: Results are given of the selection of optimal operat-  
ing frequencies for ranges of varying extent, the identification  
of propaganda modes, and the determination of the spectral char-  
acteristics of the fluctuations in signal level. A. L.

1/1

USSR

UDC 621.375.826

PFAYFFER, M., VERNKE, V., LAU, A., VAYGMAN, KH. I., LENTS, K., GADOV, P.

"Procedure for Separating the Weak Lines of Forced Combination Scattering by Means of Selective Absorption on the Frequency of the Strongest Stokes Component"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), Moscow, No 5, 1971, pp 129-131 (from RZh-Radiotekhnika, No 1, 1972, Abstract No 1D342)

Translation: In the presence of forced combination scattering, usually only the combination scattering component with the largest amplification coefficient appears in the spectrum. Its appearance causes such strong depletion of the intensity of the exciting laser that the other combination scattering signals cannot grow to the sensitivity threshold of the receiver. By selective absorption for the predominant Stokes component it is possible to facilitate the appearance of other combination scattering frequencies. It was theoretically demonstrated that when using an absorbing liquid for which the ratio of the absorption coefficient on the frequency of the first Stokes component and on the laser frequency of 100:1 is obtained, the detection threshold of the weak component can be reduced by 7 times. The bibliography has 5 entries.

1/1

USSR

UDC: 621.375.826+621.039.64

SIGEL, R., WITKOWSKI, S., BAUMHACKER, H., BÜCHL, K., ELDMANN, K.,  
HORA, H., MENNICKE, H., MULSER, P., PFIRSCH, D., SALZMANN, H.

"Survey of Studies of Laser-Produced Plasmas at the Max Planck  
Institute of Plasma Physics in Garching, West Germany"

Moscow, Kvantovaya Elektronika, Sbornik Statey, No 2(8), 1972,  
pp 37-44

Abstract: The paper is a survey of experimental and theoretical  
research on laser-produced plasmas done at the Max Planck Insti-  
tute of Plasma Physics in Garching. Experiments are described  
on heating of a plasma by emission from a neodymium laser with  
energy of 30 J and pulse duration of approximately 30 ns. The  
plasma temperature was measured by a filter method; the time of  
flight and average kinetic energy of the ions were measured by  
probes. A laser with a single pulse lasting a few picoseconds  
is described. The results of theoretical studies done on com-  
puters are presented. [The article is a brief version of a paper  
presented to the editors by the organizational committee of the

1/2



USSR

SIGEL, R. et al., Kvantovaya Elektronika, Sbornik Statey, No 2(8), 1972, pp 37-44

International Conference on Laser-Produced Plasmas, Moscow, 1970. Translation by A. S. Shikanov.] Nine illustrations, bibliography of seven titles.

2/2

- 40 -

1/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--STUDIES ON THE SOLUBILITY AND SORPTION BEHAVIOR OF RARE EARTH  
PHOSPHATES, AND THE PROSPECTS OF UTILIZING THESE AS TARGET MATERIALS IN  
AUTHOR--(02)--PFREPPER, G., PFREPPER, R. P  
COUNTRY OF INFO--EAST GERMANY, USSR  
SOURCE--BERLIN, KERNENERGIE, VOL 13, NO 2, FEB 1970, PP 58-62  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS, CHEMISTRY  
TOPIC TAGS--SYNCHROCYCLOTRON, SORPTION, SOLUBILITY, RARE EARTH COMPOUND,  
PHOSPHATE, IRRADIATION, ISOTOPE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1992/1147 STEP NO--GE/0025/70/013/002/0058/0062  
CIRC ACCESSION NO--AP0112252  
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0112252

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHOSPHATES OF CE, DY, AND YB (BOTH NEUTRAL AND ACIDIC) WERE PREPARED AND INVESTIGATED AS TO SOLUBILITY AND EFFECTIVE YIELD OF SPALLATION PRODUCTS. THE RESULTS INDICATE THAT THESE PHOSPHATES ARE PROMISING CANDIDATES AS TARGETS IN SYNCHROCYCLOTRON IRRADIATION FOR THE PREPARATION OF NEUTRON DEFICIENT ISOTOPES BY MEANS OF THE SUSPENSION METHOD. THE AMOUNT OF TARGET THAT CAN BE USED FOR SUCH PURPOSES IS LIMITED ONLY BY THE AMOUNT CAPABLE OF BEING DISSOLVED IN THE QUANTITY OF SOLVENT EMPLOYED. FACILITY: JOINT INSTITUTE FOR NUCLEAR RESEARCH. FACILITY: INSTITUTE FOR APPLIED RADIOACTIVITY. FACILITY: GERMAN ACADEMY OF SCIENCES.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--STUDIES ON THE SOLUBILITY AND ADSORPTION BEHAVIOR OF RARE EARTH  
PHOSPHATES, AND THE PROSPECTS OF UTILIZING THESE AS TARGET MATERIALS IN  
AUTHOR--(02)--PFREPPER, G., PFREPPER, R. P  
COUNTRY OF INFO--EAST GERMANY, USSR  
SOURCE--BERLIN, KERNENERGIE, VOL 13, NO 2, FEB 1970, PP 58-62  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS, CHEMISTRY  
TOPIC TAGS--SYNCHROCYCLOTRON, ADSORPTION, SOLUBILITY, RARE EARTH COMPOUND,  
PHOSPHATE, IRRADIATION, ISOTOPE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1992/1147 STEP NO--GE/0025/70/013/002/0058/0062  
CIRC ACCESSION NO--AP0112252  
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0112252

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHOSPHATES OF CE, DY, AND YB (BOTH NEUTRAL AND ACIDIC) WERE PREPARED AND INVESTIGATED AS TO SOLUBILITY AND EFFECTIVE YIELD OF SPALLATION PRODUCTS. THE RESULTS INDICATE THAT THESE PHOSPHATES ARE PROMISING CANDIDATES AS TARGETS IN SYNCHROCYCLOTRON IRRADIATION FOR THE PREPARATION OF NEUTRON DEFICIENT ISOTOPES BY MEANS OF THE SUSPENSION METHOD. THE AMOUNT OF TARGET THAT CAN BE USED FOR SUCH PURPOSES IS LIMITED ONLY BY THE AMOUNT CAPABLE OF BEING DISSOLVED IN THE QUANTITY OF SOLVENT EMPLOYED. FACILITY: JOINT INSTITUTE FOR NUCLEAR RESEARCH. FACILITY: INSTITUTE FOR APPLIED RADIOACTIVITY. FACILITY: GERMAN ACADEMY OF SCIENCES.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--COMPLEXES OF ALUMINUM WITH INORGANIC ACIDS ANIONS AND  
8, HYDROXYQUINOLINE -U-  
AUTHOR--(02)-GOLUB, A.M., PHAM, V.CH.  
COUNTRY OF INFO--USSR  
SOURCE--UKR. KHIM. ZH. 1970, 36(3), 233-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--ALUMINUM COMPLEX, HYDROXYL RADICAL, QUINOLINE, IR SPECTRUM,  
THIOCYANATE, CHLORINE, NITRATE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3008/0893 STEP NO--UR/0073/70/036/003/0233/0238  
CIRC ACCESSION NO--AP0137921  
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137921

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING AIX SUB2 L, WHERE L  
PRIME NEGATIVE EQUALS 8, HYDROXYQUINOLINATE ANION, ARE REPORTED (X AND  
NEGATIVE LOG SOLY. PRODUCT GIVEN): CL PRIME NEGATIVE, 11.17; NO SUB2  
PRIME NEGATIVE, 14.40; NO SUB3 PRIME NEGATIVE, 16.25; NCS PRIME  
NEGATIVE, 17.26. BASED ON IR SPECTRA IT IS BELIEVED THAT AL IS BOUND TO  
NCS PRIME NEGATIVE AND NO SUB2 PRIME NEGATIVE VIA THE N ATOM.  
FACILITY: KIEV. GOS. UNIV. IM. SHEVCHENKO, KIEV, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--EFFECT OF CONDITIONS FOR THE PREPARATION OF A POLY VINYL ALCOHOL  
SOLUTION ON THE PROPERTIES OF POLYVINYL BUTYRAL -U-  
AUTHOR--(04)-PIASTRO, O.V., YEZHENKOVA, L.L., TYAZHLO, N.I., ROZENBERG,  
M.E.  
COUNTRY OF INFO--USSR  
SOURCE--PLAST. MASSY 1970, (2), 13-14  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--POLYVINYL ALCOHOL, AQUEOUS SOLUTION, SAPONIFICATION,  
ALKYLATION, POLYMER CROSS LINKING  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1992/1690 STEP NO--UR/0191/70/000/002/0013/0014  
CIRC ACCESSION NO--AP0112684

UNCLASSIFIED



2/2 010

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0112684

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF THE DISSOLN. CONDITIONS OF POLY(VINYL ALC.) (I) IN H SUB2 O AND THE COOLING OF THE AQ. SOLN. ON THE PROPERTIES OF POLY(VINYL BUTYRAL) (II) WERE STUDIED. REPEATED SAPON. OF I SOLNS., USE OF A COOLING AGENT (TEMP. MINUS 3DEGREES) PRIOR TO ACETALATION OF I WITH PRCHO, AND PROLONGED COOLING INCREASED THE VISCOSITY AND CAUSED FORMATION OF INSOL. II PARTICLES (DUE TO CROSSLINKING). THUS, CROSSLINKING OF DISSOLVED I NEAR THE COOLED SURFACE OF THE REACTOR FACILITATED INTERMOL. ACETALATION WHICH, IN TURN, GAVE INSOL. II PARTICLES.

UNCLASSIFIED

USSR

UDC 621.376.029.4:.621.38 (1)

VOLKOV, YU. P., KALINCHUK, B. A., KOLTIK, YE. D., PICHUGIN, O. A., and  
PIASTRO, V. P.

"Optoelectronic Modulators for the Measurement of Small Signals of Infrasonic  
Frequencies"

Moscow, Izmeritel'naya Tekhnika, No 8, Aug 73, pp 52-54

Abstract: Optoelectronic modulators are described, and the specifications  
and performance of various types of optoelectronic modulators are presented.  
It is shown that in comparison to optoelectronic modulators constructed on the  
basis of gas-discharge tubes, optron-based optoelectronic modulators have a  
lower excitation power, simpler electrostatic screening, and possess higher  
reliability. 2 figures. 1 table. 4 references.

1/1

USSR

UDC: 621.317.681.325.07(088.8)

KOLTIK, Ye. D., KOROVKIN, Ye. I., PIASTRO, V. P., KHANTEL', A. D.

"A Device for Measuring Correlation Functions of Random Processes"

USSR Author's Certificate No 266378, filed 23 Apr 68, published 22 Jul 70  
(from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2A317 P)

Translation: The authors note the comparatively low accuracy of conventional devices of the multiplication type which contain analog-digital converters, multipliers, an integrator and a registration unit. In order to improve accuracy, a device is proposed which is distinguished by the fact that decoders are connected at the output of each analog-digital converter, and a sampling module is connected between the outputs of both decoders and the input of the switching circuit. E. L.

1/1

USSR

*P*  
PICHKILY, L. O., Botanical Institute, Academy of Sciences USSR,  
Leningrad

"Dynamics of the Quantity and Biomass of Phytoplankton in the Aral Sea"

Kiev, Gidrobiologicheskii Zhurnal, Vol 6, No 1, 1970, pp 31-36

Abstract: The dynamics of the qualitative and quantitative composition of the phytoplankton of the Aral Sea was studied in 1957-58 and 1964-66. A total of 494 samples of plankton collected in May, July-August, and October were used for determination of biomass by Kiselev's method (measuring the volumes of algal cells). The bottom layers were more rich in number of species and in algal biomass, apparently, due to the presence of benthic forms. In spring the plankton is poor in number of species, with mostly diatoms (72.3-98.5%) in the biomass. Pyrrophyta are in second place (0.8-25.7%), followed by green (0.1-1.7%) and blue-green (0.05-1.2%) algae. In summer the diversity in species and the biomass of plankton are increased. The content of algae changes: diatoms predominate (42.9-97.6%), but not in such a degree as in the spring. The amount of pyrrophyta is increased (1.9-54.2%), and also of green algae (0.1-0.9%) and blue-green algae (0.04-11.9%).

1/2

USSR

PICHKILY, L. O., et al., Kiev, *Gidrobiologicheskii Zhurnal*, Vol 6,  
No 1, 1970, pp 31-36

In fall the development of benthic diatoms is observed, reaching 90.2 - 96.7% of the biomass. At this time pyrrophyta constitute 2.9-8.5%, green algae 0.70-0.6% and blue-green algae - 0.02-07%. Thus, all seasons are characterized by the dominance of diatoms.

2/2

USSR

UDO 621.314.14(088.8)

PICHKUR, E.V.

"Inverter"

USSR Author's Certificate No 259255, filed 12 June 68, published 24 Apr 70 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1B463P)

Translation: A circuit is proposed for a converter of a-c voltage into d-c with a power amplifier in which high-speed protection from an overload or short circuit is accomplished. The protection circuit of the converter contains a relay, a reservoir capacitor, a neon lamp, two transistors and current and voltage data units [ датчик ]. In normal operating conditions of the converter, the voltage from the current data unit is less than from the voltage data unit. The transistor controlling the cut-in relay blocks and the transistor connected parallel to the reservoir opens. At the time of an overload one of the transistors is blocked and the capacitor is charged from the voltage of a supplementary source. The neon lamp is ignited, and the transistor controlling the operation of the relay is unblocked, which interrupts the energizing circuit of the power amplifier. The converter is maintained in this state up to interference by the operator. The protection circuit has a high sensitivity; in addition a zone of instability of operation of the relay is absent. 1 ill. V.Sh.

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36

AA0040621

UR 0482 9-70

Soviet Inventions Illustrated, Section I Chemical, Derwent,

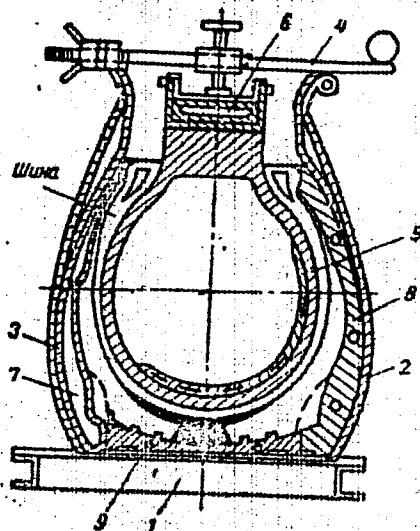
235983 SECTIONALISED TYRE REPAIR MOULD includes  
base 1, fixed wall 2, movable wall 3,  
clamp 4, metal heating mandrel 5 with elastic punch  
6, and a die containing elastic side 7, rigid  
side 8 and protective part 9. The vulcanising pro-  
cess is controlled by special instruments.

AUTHORS: Zhukov, I. I.; and Pichugin, E. P.

Gosudarstvennyy Nauchno - Issledovatel'skiy  
Institut Avtomobil'nogo Transporta i  
Novgorodskiy Zavod Elektrooborudovaniya

19750172

AA0040621



25.5.66. as 1079054/23-5, ZHUKOV, I.I. and  
PICHUGIN, F.P. Automobile Transport Res. Inst.  
and NovGorod Electrical Equipment Plant.  
(5.6.69) Bul. 6/24.1.69. Class 39a<sup>o</sup> Int. Cl.  
B 29h. |

19750173



USSR

UDC 619:616.981.452.636.4

ARKHIPOV, N. I., PICHUGIN, L. M., BURTSEV, V. I., and KUSHNIR, A. T., All-Union Scientific Research Institute of Veterinary Virology and Microbiology

"Cytochemical Evaluation of Hog Cholera Virus Vaccine"

Moscow, Veterinariya, No 4, 1971, pp 43-45

Abstract: Comparative cytomorphological and cytohistochemical study of immunity production was conducted in gilts immunized with avirulent lapinized and cultural hog cholera virus vaccines (by inhalation and intramuscular injection). The lymph nodes, spleen, liver, lungs, and blood were examined at various times after vaccination. The various changes produced by the vaccines were most pronounced after 4 to 6 days: hyperemia in the lymph nodes, hyperplasia of the lymph follicles, and a sharp plasma cell reaction, especially in the regional lymph nodes and spleen (where the plasma cells increased 3- to 4-fold). The lymphocytes in the peripheral blood showed a similar increase. Biochemical analysis of the blood revealed marked changes in the serum proteins: sharp decrease in albumins and increase in the alpha- and gamma-globulins. All the animals were completely immune to cholera at this time. The cultural vaccine elicited the strongest and most prolonged immunomorphological response and conferred the highest degree of immunity.

1/1

USSR

UDC 621.376.029.4:.621.38 (1)

VOLKOV, YU. P., KALINCHUK, B. A., KOLTIK, YE. D., PICHUGIN, O. A., and  
PIASTRO, V. P.

"Optoelectronic Modulators for the Measurement of Small Signals of Infrasonic  
Frequencies"

Moscow, Izmeritel'naya Tekhnika, No 8, Aug 73, pp 52-54

Abstract: Optoelectronic modulators are described, and the specifications  
and performance of various types of optoelectronic modulators are presented.  
It is shown that in comparison to optoelectronic modulators constructed on the  
basis of gas-discharge tubes, optron-based optoelectronic modulators have a  
lower excitation power, simpler electrostatic screening, and possess higher  
reliability. 2 figures. 1 table. 4 references.

1/1

1/2 019 UNCLASSIFIED PROCESSING DATE--230C170  
TITLE--COLLATERAL CORONARY BLOOD FLOW FOLLOWING ADMINISTRATION OF  
HOMFOTHIN COMBINED WITH ANTIHISTAMINIC DRUGS -U-  
AUTHOR--(03)-GUBAREV, YE.A., PICHUGIN, V.V., MITCHENKO, P.P.  
COUNTRY OF INFO--USSR P  
SOURCE--VRACHEBNOYE DELO, 1970, NR 6, PP 25-26  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--HEART, BLOOD CIRCULATION, DOG, DRUG EFFECT, ANTIHISTAMINIC  
DRUG  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3002/0339 STEP NO--UR/0475/70/000/006/0025/0026  
CIRC ACCESSION NO--AP0127920  
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0127920

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ACUTE EXPERIMENTS ON 34 DOGS INDICATE THAT COMBINATION OF THE CARDIAC GLYCOSIDE HOMOFOTHIN WITH DIMEDROL IMPROVES THE COLLATERAL CORONARY BLOOD CIRCULATION, WHEREAS THE COMBINATION OF THIS GLYCOSIDE WITH DIPRAZINE WEAKENS THE CORONARODILATING EFFECT OF HOMOFITHIN. FACILITY: . KAFEDRA FARMAKOLOGII KURSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

USSR

UDC 621.384.634

ALEKSANDROV, I. A., FRACHEV, M. I., GUBRIYENKO, K. I., YE MENKO,  
YE, V., KOTOV, V. I., NEKRASOV, A. N., PRILEPIN, A. A., PISHUGIN,  
V. A., RSAYEV, R. A., SAMOYLOV, A. V., SELEZNEV, V. S.,  
SEREBRSKOV, B. A., KHANAMIRYAN, A. YE., and KHODYREV, YU. S.

"Negative Particle Channel With Momentum up to 60 Gigaelectron  
Volts/Second"

Moscow, Atomnaya Energiya, Vol 29, No 1, Jul 70, pp 29-34

Abstract: This article contains a description of a channel for transporting negative particles generated in an internal accelerator target with momentum up to 60 fifelectron volts/second and an accelerated proton energy of 70 gigaelectron volts. The channel is designed so that for an accelerated proton energy of 70 gigaelectron volts it can be adjusted to momentum in the range of 40-60 gigaelectron volts/second. On reducing the energy of the accelerated protons, the channel can be adjusted to lower momentum. The lower limit corresponds to an accelerated proton energy of 20 gigaelectron volts and is equal to 11.4 gigaelectron volts/second.

The optical system of the channel and its characteristics

USSR

ALEKSANDROV, I. A., et al., Atomnaya Energoya, Vol. 29, No 1, Jul 70, pp 29-34

are presented. The limiting solid capture angle of the secondary particles by the channel is 32 microsteradians. The best resolution with respect to momentum is 0.3 percent without decreasing the capture angle. The channel was investigated primarily using a secondary beam with a momentum of  $p = 50$  giga-electron volts/second. The procedure for adjusting the channel and the calculated data are described. The differences between the calculated operating conditions of the elements and the conditions after adjustment together do not exceed the errors of the fringing field of the accelerator, the magnetization curve, and the curve for calibrating the bypasses of the magnet. On the whole, the beam parameters agree well with the calculated data.

A detailed diagram of the channel layout is presented, and graphs are presented for the radial position of the targets and the production angle as functions of the momentum of the secondary particles, the optical system of the channel and path of the beams in the horizontal and vertical planes, the momentum

USSR

ALEKSANDROV, I. A., et al., *Atomnaya Energiya*, Vol 29, No 1, Jul 70, pp 29-34

resolution of the channel, the beam profile with momentum of 50 gigaelectron volts/second in the parallel section and slit width of the aperture collimators of +20 mm and the pulse collimator +6mm, the beam profile with momentum of 50 gigaelectron volts/second in the final representation on including the lens doublet, and the beam profile with momentum of 50 gigaelectron volts/second in the final representation on including a lens triplet.

3/3

USSR

UDC 621.391:519.27

BULGAKOV, A. A., PICHUGINA, L. V., SERIKOV, V. A., and SMIRNOV, G. A.

"Determining the Current Characteristics of Steady, Ergodic, Random Processes With Respect to Long Duration Realization Using the Razdan-2 Electronic Digital Computer"

Tr. Leningr. in-t aviats. priborostr. (Works of the Leningrad Institute of Aviation and Instrument Building), 1972, vyp. 74, pp 98-102 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 A17)

Translation: The authors study the use of the Razdan-2 electronic digital computer for calculating the current characteristics of steady, ergodic, random signals obtained from a receiver, noise generator or magnetic recording instrument. Further insignificant improvements in the computer make it possible to register signals in real time after their discretization and quantization directly on the magnetic tape of the storage element, thus bypassing the memory unit. This increases the length of the analyzed realization by approximately two orders of magnitude. Recording in a single 4- and 8-digit element raises the higher signal discretization frequency. It is shown that the indicated improvements make it possible to carry out a broad program of statistical studies on realizations, up to one minute in duration, at a discretization frequency of up to 10-15kc and quantization to 256 levels. The accuracy of characteristic determination is evaluated. Original article: one illustration and two bibliographic entries. Resume.

1/1



USSR

UDC 669.721.074.2

PICHUKOV, A. P., KRIVITSKAYA, L. I., FIALKOV, Yu. G.

"Variation of pH with Composition of Solutions Produced in Purification of Magnesium Production Gases"

Tr. Vses. N-i. i Projektn. In-ta. Alyumin., Magn. i Elektrodn. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1970, No. 72, pp. 133-138. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G204 by the authors).

Translation: The pH of aqueous, alkaline, and acid solutions of  $\text{CaCl}_2$  in the 0-4 mol/l concentration interval and of  $\text{Ca(OH)}_2$  and  $\text{CaCO}_3$  solutions with and without added  $\text{CaCl}_2$  was measured. The pH decreases from 12.65 to 10.0 for saturated  $\text{Ca(OH)}_2$  solutions and from 9.25 to 5.10 for saturated  $\text{CaCO}_3$  solutions as the  $\text{CaCO}_2$  content is varied from 0 to 4 mol/l. Similar dependences are produced for acid solutions of  $\text{CaCl}_2$ . These regularities indicate the possibility of creating an automatic system for testing and control of the process of HCl and Cl removal from gases, based on measurement of the pH and redox potential of the solution. 4 figs.

1/1

USSR

UDC 669.721.074.2

FIALKOV, Yu. G., TARAT, E. Ya., PICHUKOV, A. P., NIKITINA, A. P., SHKODINA, V. G.

"Purification of Magnesium Production Gases to Remove Chlorine in Hollow Scrubber"

Tr. Vses. N-i. i Proyechn. In-ta. Alyumin., Magn. i Elektrodn. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1970, No. 72, pp. 123-132. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G203 by the authors).

Translation: The influence of the composition of the absorbent, speed and direction of gas flow, and sprinkling density on absorption of Cl by lime milk was studied in an industrial scrubber. The decrease in the degree of gas purification resulted from a change in the hydrodynamic conditions in the scrubber due to foaming of the absorber. Foaming began at concentrations of  $\text{Ca}(\text{ClO})_2$  of 45-60 g/l with various contents of  $\text{Ca}(\text{OH})_2$  and resulted from decomposition of the  $\text{Ca}(\text{ClO})_2$ . Addition of  $\text{CaCl}_2$  to the absorbent (initial content 100 g/l) did not change the indices of absorption. With counterflow movement of the phases, increasing the gas speed from 1 to 2.5 m/sec improved purification. The effectiveness of operation of the direct flow zone of the scrubber was decreased with increasing gas speed. Increasing the sprinkling density from 18 to 60  $\text{m}^3/\text{m}^2 \cdot \text{hr}$  helps to improve the absorption indicators. With counterflow, the empirical equation  $K_v = 2.75 \cdot W^{1.25} \cdot L^{-0.67}$  was produced, where  $K_v$  is the volumetric coefficient of the rate of absorption,  $\text{Kmol}/\text{m}^3 \cdot \text{hr} \cdot \text{bar}$ ,  $W$  is the gas speed, m/sec, and  $L$  is the sprinkling density,  $\text{m}^3/\text{m}^2 \cdot \text{hr}$ . 6 figs.

1/2 025 UNCLASSIFIED PROCESSING DATE--13NOV70  
 TITLE--DETERMINATION OF THE TRACTIVE FORCE IN THE SHAPING OF STEEL TUBES  
 IN A FUNNEL DIE -U-  
 AUTHOR--(04)-SHVEYKIN, V.V., GRABARNIK, L.M., PROSKURYAKOV, B.I., PICHURIN,  
 I.I.  
 COUNTRY OF INFO--USSR  
 SOURCE--IZVEST. V. U. Z., CHERNAYA MET., 1970, (2), 66-71  
 DATE PUBLISHED-----70  
 SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS  
 TOPIC TAGS--STEEL MANUFACTURING PROCESS, ROLLING MILL, FRICTION  
 COEFFICIENT, DIE FORGING  
 CONTROL MARKING--NO RESTRICTIONS  
 DOCUMENT CLASS--UNCLASSIFIED  
 PROXY REEL/FRAME--2000/0117 STEP NO--UR/0148/70/000/002/0066/0071  
 CIRC ACCESSION NO--AP0123889  
 UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123889

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

ABSTRACT. A MATHEMATICAL ANALYSIS OF THE FORCES INVOLVED IN THE SHAPING OF STEEL TUBES IN A SPECIAL DIE IS PRESENTED, WITH SPECIAL REF. TO THE TRACTIVE FORCES REQUIRED AND THE COMPONENTS OF WHICH THESE ARE MADE UP. THE TOTAL TRACTIVE FORCE INCLUDES THE FORCE REQUIRED TO DEFORM THE MATERIAL PASSING INTO THE DIE, THE FORCE REQUIRED TO OVERCOME FRICTION IN THE LATTER, AND THE FORCES ASSOCIATED WITH THE PASSAGE OF THE TUBE THROUGH THE PULLING ROLLS. THE ADVANTAGES OF THE 'FUNNEL' METHOD OVER CONVENTIONAL TECHNIQUES ARE CONSIDERED.

UNCLASSIFIED

USSR

UDC: 911.3.616.831-002

BAROYAN, O. V., MEDVEDEVA, G. I., SHATKIN, A. A., PICHUSHKOV, A. V., BESKINA, S. R.,  
ARUTYUNOVA, I. A., MARTYNOVA, V. R.

"Immunological-Epidemiological Research on Tick-Borne Encephalitis"

V sb. Materialy XV Vses. s'ezda epidemiologov, mikrobiologov i infektzioney,  
tezisy dokl. Ch. I (Proceedings of the 15th All Union Conference of Epidemiolo-  
gists, Microbiologists and Specialists in Infectious Disease, Thesis Reports  
Part I -- collection of works) Moscow, 1970, pp 186-187 (from RZh-36. Meditsin-  
skaya geografiya, No 1, Jan 71, Abstract No 1.36.86)

[No abstract]

1/1

USSR

UDC 577.1:615-7/9

PIDEMSKIY, Ye. L., and SAKHARNAYA, T. Ya.

"Effect of Diantipyrilmethane on the Course of Chronic Mercury Poisoning in White Rats"

Izv. Yestestvennonauchn. in-ta pri Permsk. un-te (News of the Institute of Natural Sciences, Perm University), 1970, 14, No 14, pp 107-112 (from RZh-Biologicheskaya Khimiya, No 9, May 71, Abstract No 9 F1901 from the résumé)

Translation: In white rats chronically poisoned with mercury, the injection of diantipyrilmethane (200 mg/kg daily for 90 days) helped to reduce the accumulation of mercury in the liver and kidneys. It had no perceptible effect on the excretion of mercury with urine.

1/1

USSR

UDC 577.1:615.7/9

PIDEMSKIY, Ye. P., and SAKHARNAYA, T. YA.

"Effect of Diantipyrilmethane on the Distribution of Thorium in White Rat Organs"

Izv. Yestestvennonauchn. in-ta pri Permsk. un-te (News of the Institute of Natural Sciences, Perm University), 1970, 14, No 10, pp 103-106 (from RZh-Biologicheskaya Khimiya, No 9, May 71, Abstrast No 9 F1903 by M. Sh.)

Translation: Rats were injected intraperitoneally with  $\text{Th}(\text{NO}_3)_4$  once or once a week for 7 weeks (single dose 100 mg/kg). Some of the animals were also injected with diantipyrilmethane (I). The Th content in the spleen was higher than in the liver and it was 4 to 5 times higher after a single injection than after repeated injections. The Th concentration of the blood was virtually equal to the control (without I). The authors concluded that I had little effect on the distribution of Th in organs or on its excretion with urine.

1/1

Microbiology

USSR

UDC 575.123:576.851

IGNATOV, V. V., SHENDEROV, B. A., PANASENKO, V. I., PIDENKO, A. P., and  
MAGAGINA, A. N., Saratov State University imeni N. G. Chernyshevskiy,  
Saratov

"Elimination of the Genetic Determinants of Resistance in Staphylococcus  
aureus Under the Effect of an Intensive Electromagnetic Field"

Moscow, Genetika, Vol 9, No 4, Apr 73, pp 57-61

Abstract: Two strains of Staph. aureus, 33 and 1074, were subjected to the  
action of an electromagnetic field with a frequency of 2375 megacycles and  
an intensity of 1516 kw. The strains, which had been isolated from patients,  
were typical with respect to their microbiological properties. They were  
polyresistant to penicillin, tetracycline, chloramphenicol, streptomycin,  
erythromycin, mercuric chloride, and albucide. Under the action of the  
electromagnetic field, some of the determinants of drug resistance were  
eliminated. The effect was due to the action of heat produced by the  
electromagnetic waves. A great number of cultures differing with respect  
to the determinants of drug resistance that had been eliminated could be  
segregated. After being stored for 10 mos in 0.8% Hottinger agar at 4°, the  
majority of segregated cultures retained their new type of drug resistance.

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USSR

IGNATOV, V. V., et al., Genetika, Vol 9, No 4, Apr 73, pp 57-61

In some cases, however, there was restoration of some of the lost factors of drug resistance, but not of all of them. The phenomenon described can be used for the study of the extra-chromosomal determinants in microorganisms that are responsible for drug resistance.

2/2

- 31

USSR

UDC 615.217:547.751

PIDEVICH, I. N., SENOVA, Z. P., and FEDOROVA, I. B., Laboratory of the Pharmacology of Cardio-Vascular System and the Psychopharmacology Laboratory of the Institute of Pharmacology Ac. Med. Sc. USSR, Moscow

"Study of the Peripheral Antiserotonin Properties of a Series of Novel Indole Derivatives"

Moscow, Farmakologiya i Toksikologiya, Vol 34, No 2, Mar-Apr 71, pp 155-159

Abstract: The investigated indole derivatives exhibit different effect on the serotonin reactive structures of the D-, M-, and the T- type. The strongest D-antiserotonin properties are shown by diamind and indocarb, strongest M-antiserotonin activity is exhibited by K-277, and T-antiserotonin properties - by tipindol. The serotonin-reactive structures leading to positive inotropic effect of serotonin on isolated rabbit's atrium are closely related to T-serotonin reactive structures of the cardio-pulmonary reflexogenic zone of cats, as far as the sensitivity to the investigated blocking agent is concerned.

1/1

Pharmacology and Toxicology

USSR

UDC 612.018-547.756]:577.23

VINOKUROV, V. G., and PIDEVICH, I. N., Laboratory of Organic Synthesis and Laboratory of Pharmacology of the Cardiovascular System, Institute of Pharmacology, Academy of Medical Sciences USSR, Moscow

"The Energy of the Highest Filled Molecular Orbit and Antiserotonin Activity of Certain Drugs"

Moscow, Byulleten Eksperimentalnoy Biologii i Meditsiny, Vol 71, No 2, Feb. 71, pp 51-54

Abstract: The energy coefficients  $K_i$ , which serve as a measure of electron-donor properties, of the outer filled molecular orbits of several serotonin antagonist were calculated by the simplified Hückel theory with LCAO approximation. The lower the  $K_i$  value, the higher the electron-donor activity of chemical compounds. It had been proposed that serotonin and its antagonists form charge-transfer complexes with tissue receptors, which is of significance for their pharmacological effect. A number of new indole derivatives with D-, M-, and T-antiserotonin activity were included in this study: cyproheptadine ( $K_i = 0.327$ ), dialkylindoles ( $K_i = 0.5-0.53$ ), and thiopyranoindole derivatives ( $K_i = 0.091, 0.057$ ). No relationship between D-, M-, and T-antiserotonin activity and the  $K_i$ -values of the individual compounds was found.

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USSR

VINOKUROV, V. G., et al, Byulleten Eksperimentalnoy Biologii i Meditsiny,  
Vol 71, No 2, Feb 71, pp 51-54

This indicates that other factors, such as the total-charge values and the geometry of individual atoms, the existence of hydrogen bonding, must also play a role in the above complex formation. Thus, the results of this study did not indicate whether the electron-donor properties of these drugs are of significance for complex formation. Additional studies of the above serotonin antagonists are proposed, which should include other quantum-chemical characteristics such as bond orders, atomic charges, free valences, and other parameters.

2/2

- 32 -

Microbiology

USSR

UDC 576.851.55.097

CHERKAS, H. P., KALINICHENKO, M. F., BIRYUKOVA, S. V., and PIDHORNA, L. H.,  
Kharkov Scientific Research Institute of Vaccines and Sera imeni I. I.  
Mechnikov

"Toxins and Toxoids of *Clostridium perfringens*"

Kiev, Mikrobiologicheski Zhurnal, Vol 33, No 2, Mar/Apr 71, pp 173-175

Abstract: Several series of pancreatic, pepsin and acidic hydrolysates were prepared in an attempt to find a reproducible inexpensive culture medium for production of *Clostridium perfringens* toxin. It was determined experimentally that the best medium consisted of one part pancreatic hydrolysate, two parts acid hydrolysate diluted with distilled water to give 160-180% amine nitrogen and 1.5-2% peptone; pH of the medium -- 7.6-7.8. To simulate growth, 4% brewers yeast was added (amine nitrogen 400-500 mg-%). In such a medium after 5 hrs of incubation of *Cl. perfringens* at 37°C the pH dropped to 5.4-5.6 yielding material with toxin activity 400-600 MLD/ml. To obtain *Cl. perfringens* toxoid the culture liquid was filtered, formalin (0.3 and 0.2%) was added twice with an interval of 16-18 hrs. The deactivation of the culture medium lasted 7-14 days, the pH being kept at 7.2-7.4; it was then filtered, purified, and concentrated by the polyphosphate method in presence of sul-

USSR

CHERKAS, H. P., et al., Mikrobiologicheskiy Zhurnal, Vol 33, No 2, Mar/Apr  
71, pp 173-175

furic acid and 0.35% of hexametaphosphate. The toxoid yield was 60-70%  
with specific activity of 200-350 EC/mg. The toxoids exhibited high immuno-  
genic activity in experiments with white mice.

2/2

- 13 -

1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--COMPOSITION AND SOME PROPERTIES OF LIPIDS OF YEASTS GROWN IN TOP  
PEAT HYDROLYZATES -U-  
AUTHOR-(04)-ZALASHKO, M.V., ABRAZTSOVA, N.V., PIDOPLICHKO, G.A., GINZBURG,  
YA.I. P  
COUNTRY OF INFO--USSR  
SOURCE--VESTSI AKAD. NAVUK DELARUS. SSR, SER. BIYAL. NAVUK 1970, (2),  
76-81  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--BIOSYNTHESIS, LIPID, YEAST, GLUCOSE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3007/0226 STEP NO--UR/0440/70/000/002/0076/0081  
CIRC ACCESSION NO--AP0135722  
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0135722

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPARATIVE GROWTH AND BIOSYNTHESIS OF LIPIDS BY YEAST (2 STRAINS OF LIPOMYCES AND ONE STRAIN OF CRYPTOCOCCUS) GROWING ON PEAT HYDROLYZATES AND SYNTHETIC MEDIUM CONTG. GLUCOSE WERE STUDIED. THE RATE OF YEAST LIPID BIOSYNTHESIS IN PEAT HYDROLYZATES IS APPROX. THE SAME AS IN GLUCOSE MEDIUM. REGARDLESS OF THE SUBSTRATE ON WHICH THEY WERE GROWN, THE YEAST LIPIDS CONTAIN PRIMARILY TRIGLYCERIDES (71.3-78.1PERCENT) AND PHOSPHOLIPIDS (4.2-5.5PERCENT). IN THE CASE OF PEAT HYDROLYZATE A CHANGE IN THE RATIO OF SOME LIPID FRACTIONS WAS OBSD. THIS CAN BE ATTRIBUTED TO THE SOURCE OF NUTRIENT C PRESENT IN THE HYDROLYZATE.

UNCLASSIFIED



172 025  
UNCLASSIFIED  
TITLE--TOXIN PRODUCING MICROSCOPIC FUNGI AND HUMAN AND ANIMAL DISEASES  
CAUSED BY THESE FUNGI -U-  
AUTHOR--(02)-BILAY, V.I., PIDOPLICHKO, N.M. PROCESSING DATE--27NOV70  
COUNTRY OF INFO--USSR P  
SOURCE--TOXIN PRODUCING MICROSCOPIC FUNGI AND HUMAN AND ANIMAL DISEASES  
CAUSED BY THESE FUNGI (TOKSINOBRAZUYUSHCHIYE MIKROSKOPICHESKIYE GRIBY I  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--FUNGUS, MORPHOLOGY, TOXIN, ECOLOGY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3003/0062 STEP NO--UR/0000/70/000/000/0001/0288  
CIRC ACCESSION NO--AM0129338  
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AM0129338

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

ABSTRACT. TABLE OF CONTENTS: INTRODUCTION

3. CHAPTER 1 GENERAL MORPHOLOGICAL CHARACTERISTICS OF FUNGI 7. 2

TAXONOMIC CHARACTERISTICS OF TOXIC MICROMYCETES 20. 3 TOXIC

MICROMYCETES AND HUMAN AND ANIMAL DISEASES CAUSED BY THEM 81. 4

METHODS FOR CULTIVATION OF TOXIC MICROMYCETES AND DETERMINATION OF THEIR

TOXICITY 216. 5 CERTAIN DATA ON ECOLOGY OF TOXIN FORMING FUNGI AND

THEIR CONTROL METHODS 231. BIBLIOGRAPHY 247. SUBJECT INDEX 282.

INDEX OF LATIN NAMES 286. THE BOOK DEALING WITH MORPHOLOGY AND

CLASSIFICATION OF TOXIN FORMING MICROSCOPIC FUNGI, WAS WRITTEN FOR

MICROBIOLOGISTS, PHYTOPATHOLOGISTS, PHYSICIANS, SCIENTISTS, AND STUDENTS

OF BIOLOGY, MEDICINE AND VETERINARY MEDICINE.

UNCLASSIFIED

USSR

UDC 582.288.4-11

PIDOPLIČKO, V. M., Institute of Plant Protection

"Phytotoxic Properties of *Helminthosporium sativum* R. K. et V."

Kiev, Mikrobiologicheskii Zhurnal, Vol 33, No 3, May/Jun 71,  
pp 325-329

Abstract: The toxicity of products formed during the metabolism of different strains of *Helminthosporium sativum*, isolated from winter wheat root tissue affected with root rot was studied. Studies were conducted under conditions prevailing in the area of the Donetskaya Oblast Agricultural Station. The strains were grown on potato and must agars forming colonies of varying character: colonies with poorly developed mycelia and normally sporiferous; colonies with normally developed mycelia and normally sporiferous; colonies with strongly developed mycelia but weakly sporiferous; and colonies abundantly sporiferous. The toxicity of the metabolic products of *H. sativum* was determined by planting winter wheat seeds (Mironovskaya variety) in filtrates of the fungus obtained by culturing the fungus in a liquid nutrient medium of the Luke-Wheeler formula, centrifuging and filtering  
1/2

- 18 -

USSR

PIDOPLICHKO, V. M., Mikrobiologicheskiy Zhurnal, Vol 33, No 3, May/Jun 71, pp 325-329

the culture (liquid). It was found that the different strains of *H sativum* produce toxins which inhibit germination and also retard the growth of seedlings. The toxicity of the products is diminished with dilution of the filtrates; in dilution of 1:100 no toxic effect is noted. Most toxic were strains which formed colonies with strongly developed mycelia and colonies which were abundantly sporiferous; less toxic were those which formed colonies with poorly developed mycelia and were poorly sporiferous. Metabolic products in cultures of some of the strains begin to decompose in 1-4 weeks, forming substances which stimulate germination.

2/2

USSR

UDC 582.288-113

PIDOPLICHKO, V. M., Ukrainian Scientific Research Institute of Plant Protection

"Toxicity of Fusarium Fungi Agents of Root Rot of Winter Wheat"

Kiev, Mikrobiologicheskii Zhurnal, Vol 32, No 6, Nov/Dec 70, pp 700-703

Abstract: Eleven strains of Fusarium fungi were investigated: 5 species of *F. gibbosum*, 2 of *F. moniliforme* var. *lactis*, 1 of *F. sambucinum* var. *minus*, 1 of *F. moniliforme* var. *subglutinans*, 1 of *F. oxysporum* var. *orthoceras*, and 1 of *F. graminearum*. Fusarium fungi of the species included in the investigation cause root rot of winter wheat in the southwest of the Ukrainian SSR. The toxicity of filtrates from cultures of the fungi was determined by observing their effects on the germination of winter wheat of the variety Mironovskaya 808, and on the early growth of plants after germination. The products of Fusarium metabolism present in the undiluted filtrates inhibited germination, reducing the ratio of germinating seeds, and suppressed the development of sprouts of germination, particularly the growth of rootlets. In 1:10 dilution the filtrates no longer reduced the ratio of germinating seeds, but still inhibited the development of sprouts, especially the growth of rootlets. The toxicity of the filtrates for wheat increased with increasing age of the Fusarium cultures from one to four weeks.

1/1

1/2, 011 UNCLASSIFIED PROCESSING DATE--30OCT70  
 TITLE--IMPROVEMENT IN THE PREPARATION OF PHOSPHATIDE CONCENTRATES -U-  
 AUTHOR--(05)-KLYUCHKIN, V.V., ZUYEV, E.I., SAVELYEVA, V.L., KONDRASHIN,  
 N.A., PIDRIYKO, YE.V.  
 COUNTRY OF INFO--USSR  
 SOURCE--MASLO-ZHIR. PROM. 1970, 36(2), 34-7  
 DATE PUBLISHED-----70  
 SUBJECT AREAS--CHEMISTRY, MATERIALS  
 TOPIC TAGS--HYDROLYSTS, CRUDE OIL, PETROLEUM PRODUCT, PHOSPHOLIPID  
 CONTROL MARKING--NO RESTRICTIONS  
 DOCUMENT CLASS--UNCLASSIFIED  
 PROXY REEL/FRAME--1996/1559 STEP NO--UR/9085/70/036/002/0034/0037  
 CIRC ACCESSION NO--AP0118542  
 UNCLASSIFIED

2/2 011

CIRC ACCESSION NO--AP0118542  
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--30OCT70

PHOSPHOLIQDS CAUSED BY THEIR SEPN. DURING HYDRATION OF OILS ARE  
HYDROLYSIS AND FORMATION OF DARK PHOSPHATIDES. THEREFORE, THE METHOD  
OF PRODUCTION MUST EXCLUDE OXIDN. PROCESSES AND HYDROLYSIS OF OIL. FOR  
THIS PURPOSE, THE CRUDE OIL FROM THE EXTN. EQUIPMENT FLOWS DIRECTLY TO  
HYDRATION WITH NEARLY COMPLETE ABSENCE OF CONTACT WITH AIR. THE CONTACT  
TIME OS OIL PHOSPHOLIQDS WITH H SUB2 O IS CONSIDERABLE DECREASED. THE  
HYDRATION PPT. IS SEPD. FROM THE OIL ON A SUPERCENTRIFUGE AT 15,000 RPM.  
DRYING AND DEODORIZING THE PPT. TAKES PLACE AT 730 MM AND SMALLER THAN  
110DEGREES IN 0.8-2.4 MM LAYERS DURING 2.5-7 MIN. THE QUALITY AND  
STABILITY OF THE PHOSPHOLIQDS OBTAINED ARE VERY GOOD. FACILITY:  
KHABAROVSK. MASLO-ZHIR. KOMB., KHABAROVSK, USSR.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--20NOV70

1/2 036

TITLE--MULTIPLE IONIZATION IN A STRONG SHOCK WAVE -U-

AUTHOR--PIOSTRIGACH, T.S.

COUNTRY OF INFO--USSR

SOURCE--UKRAINS'KII FIZICHNII ZHURNAL, VOL. 15, MAR. 1970, P. 364-371

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--STRONG SHOCK WAVE, IONIZATION, HYDROGEN, NITROGEN, SULFUR,  
OXYGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1998/0557

STEP NO--UR/0185/70/015/000/0364/0371

CIRC ACCESSION NO--APO121229

UNCLASSIFIED



2/2 036

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0121229

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. NUMERICAL SOLUTION OF A SYSTEM OF EQUATIONS DESCRIBING MULTIPLE IONIZATION DUE TO A STRONG SHOCK WAVE MOVING IN WEAKLY IONIZED HYDROGEN WITH SMALL ADDITIONS OF NITROGEN, OXYGEN, AND SULFUR. PARAMETERS DESCRIBING THE STATE OF THE GAS ARE TAKEN FROM A PREVIOUS STUDY WHICH CONSIDERED THE STRUCTURE OF A SHOCK WAVE WITH ALLOWANCE FOR DEEXCITATION. CURVES OF THE MULTIPLE IONIZATION PROCESS ARE CONSTRUCTED FOR EACH OF THE THREE IMPURITY ELEMENTS. THE RESULTS ARE DISCUSSED IN TERMS OF THE EFFECTS OF SHOCK WAVE INTENSITY AND DURATION ON THE ELECTRON TEMPERATURE PROFILE AND ION CONCENTRATIONS.

FACILITY: GOR'KOVSKII GOSUDARSTVENNYI UNIVERSITET, GORKI, USSR.

UNCLASSIFIED

Miscellaneous

USSR

UDC 539.377

PIDSTRYGACH, Ya. S., Academician of the Academy of Sciences of the UkrSSR,  
BURAK, Ya. Y., ZOZULYAK, Yu. D., Physicomechanical Institute, Academy of  
Sciences of the UkrSSR

"On Determining the Optimum Force Load for the Case of Localized Heating of  
a Cylindrical Shell"

Kiev, Dopovidi Akademii Nauk Ukrainiskoi RSR: Seriya A, Fizyko-Tekhnichni  
ta Matematychni Nauki, No 11, Nov 72, pp 1024-1028

Abstract: The authors formulate and solve the problem of determining the  
optimum external normal load for the case of axisymmetric localized heating  
of an infinite cylindrical shell. The condition of minimum elastic energy  
of the shell is taken as the functional criterion of optimality. The ef-  
fectiveness of the resultant solution is illustrated by a specific example.

1/1

Acc. Nr:

AP0050458

Abstracting Service:  
INTERNAT. AEROSPACE ABST

Ref. Code:

5-70 UR 0170

A70-23866 # Heat transfer in a cylindrical layer of an absorbing medium bounded by nonblack surfaces (Perenos tepla v tsilindricheskom sloe pogloshchayushchei sredy, ogranichenom nechernymi poverkhnostiami). L. A. Pigal'skaya (Akademiia Nauk SSSR, Institut Kristallografi, Moscow, USSR). *Inzhenerno-Fizicheskii Zhurnal*, vol. 18, Jan. 1970, p. 31-38. In Russian.

Calculation of the temperature field and of the combined radiative-conductive heat flux in a cylindrical layer of a weakly absorbing medium bounded by nonblack surfaces which have given temperatures. It is assumed that the radiative and conductive fluxes are additively combined and that the medium's absorption, refraction, and molecular heat conduction are independent of temperature within the considered range of differences between wall temperatures. Attention is given to the dimensionless radiative heat flux as a function of the system configuration, optical thickness of the layer, and the ratio of the reflection coefficients of the bounding surfaces.

T.M.

LD

21

REEL/FRA  
ME 19810437

USSR

UDC 616.831-008.922.1.04-085.835.12

BEREZIN, I. P., and FIGAREV, V. A., All-Union Scientific Research Institute of Surgical Apparatus and Instruments and Central Institute for the Advanced Training of Physicians, Moscow

"Inhalation of Oxygen at Increased Pressure as a Method of Combating Cerebral Hypoxia"

Moscow, Voprosy Neyrokhirurgii, Vyp 6, Nov/Dec 71, pp 46-49

Abstract: Experimental brain hematoma, produced in rats, rabbits, and cats by injecting up to 3 ml of the animal's own blood into the brain's internal capsule, causes severe cerebral hypoxia (recorded by implanted electrodes), loss of consciousness, and eventually death. No significant improvement is achieved by placing the animals in a hyperbaric chamber filled with pure oxygen at 1 atm. However, when the partial pressure of oxygen is raised to 3 atm, oxygen tension in brain tissue returns to normal within 2 hrs, and the animals resume an almost normal activity. After these animals are switched back to room air, cerebral oxygen tension falls again, but not to critical levels. The over-all condition of the animals deteriorates less severely, and the animals survive.

1/1

USSR

UDC: 612.674

BEREZIN, I. P., SULTANOV, T. A., FIGAREV, V. A., and NABATOV, Yu. A., All Union Scientific Research Institute of Surgical Apparatus and Instruments, and Central Institute for Advanced Training of Physicians, Moscow

"Early Manifestations of the Toxic Effects of Hyperbaric Oxygen"

Moscow, Eksperimental'naya Khirurgiya i Anesteziologiya, No 6, Nov/Dec 70, pp 50-54

Abstract: Four stages were traced in the manifestation of the toxic effects of oxygen (3 atm) inhaled by dogs and cats: (1) slowing of the respiratory and pulse rates; (2) appearance of slow waves on the EEG, acceleration of the respiratory and pulse rates, and autonomic disturbances (pupil contraction or dilatation); (3) maximum increase in slow waves, high-amplitude discharges of acute waves, local hyperkinesia, restlessness, intensification of autonomic disturbances (salivary hyperkinesia, pupil contraction and dilatation), and further acceleration of the respiratory and pulse rates; and (4) epileptic convulsions, continuous acute hypersynchronized discharges on the EEG, and further acceleration and onset of respiratory and pulse dysrhythmias. EEG shifts were observed in all experimental animals, whereas shifts in respiration and pulse rate prior to the convulsive

USSR

BEREZIN, I. P., et al, Eksperimental'naya Khirurgiya i Anesteziologiya, No 6,  
Nov/Dec 70, pp 50-54

period did not occur invariably. Hence electroencephalography would appear to be the most reliable method of detecting early signs of oxygen intoxication. The safe period for inhaling hyperbaric oxygen (3 atm) while awake was found to be  $133 \pm 4.6$  minutes for cats and  $74 \pm 13.6$  minutes for dogs.

USSR

UDC: 621.318.1

POLIVANOV, K. M., MIROSHNIK, I. A., YEZHOV, S. N., PIGAREV, Ye. N., SHUKH-  
MIN, L. N., Voronezh Polytechnical Institute

"A Method of Sorting Magnetically Soft Ferrites"

USSR Author's Certificate No 282454, filed 25 Apr 69, published 17 Dec 70  
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V464 P)

Translation: This Author's Certificate introduces a method of sorting magnetically soft ferrites used for work in weak magnetic fields as cores in wide-band transformers. As a distinguishing feature of the method, the sorting process is simplified by using double grading of the ferrites on the lower and upper frequency of the working band with measurement of the absolute value of the permeability of a ferrite.

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USSR

UDC 615.281.875:615.385.3.011.17

PIGAREVSKIY, V. YE., SOROKIN, A. V., YEFREMOV, O. M., MOSHKIN, S. A., and  
TOLYBEKOV, A. S., Institute of Experimental Medicine, Academy of Medical  
Sciences USSR, Leningrad

"Antiinfluenza Antitoxic Activity of Leucocytic Pyrogen"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 72, pp 439-444

Abstract: The prophylactic effect of pyrogen obtained from rabbit leucocytes in peritoneal exudate was studied by injecting pyrogen intravenously into rabbits subsequently infected with AO/32 influenza virus. When injected 24 hours prior to viral infection, pyrogen prevented death and the tissue and vascular destruction typical of influenza intoxication. (The pyrogen also altered the body temperature pattern in response to influenza virus infection, causing disappearance of an early hypothermic phase, and development of a rapid temperature reaction.) A similar reaction was observed with injection of Newcastle disease virus prior to infection. This virus induced formation of interferon and pyrogens in rabbits. Though the mechanisms by which pyrogen increases resistance to virus in toxication are unknown and require further study, there is now an obvious connection between leucocyte products, including pyrogen, released during intoxication or infection and the increase in body resistance to virus toxin. The possibility of employing leucocytic pyrogen as a prophylactic or therapeutic agent against influenza must be studied.

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USSR

.UDC 576.858.097.29+616.988-056

PIGAREVSKIY, V. YE., Institute of Experimental Medicine, Academy of Medical Sciences USSR, Leningrad

"Nonspecific Body Resistance to the Toxic Action of Viruses"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 72, pp 387-394

Abstract: This review of 98 papers and the author's own experiments investigates body defenses against viral and bacterial toxins. There is evidence that intoxication and infection are two different phenomena: Noninfectious toxic fractions containing hemagglutinin have been isolated from influenza virus, though the nature of the toxin is unknown. It has also been shown that different mechanisms are involved in the body's resistance to toxin and viruses. Mild preliminary infection of laboratory animals with bacterial toxins protects them from subsequent lethal virus doses, while infection by viruses suppresses the subsequent action of bacterial toxins. The precise mechanisms by which the body develops resistance to toxins remain unclear. Production of interferon has been implicated, but it appears that its antitoxic action is not direct and that it alone does not necessarily suppress toxicity. For example, adrenalectomized animals produce greater quantities of interferon, but resistance to bacterial intoxication does not increase and occasionally decreases.

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USSR

FIGAREVSKIY, V. YE, Voprosy Virusologii, No 4, Jul/Aug 72, pp 387-394

Corticosteroids may increase resistance by stabilizing lysosome walls and preventing their lysis by viral and bacterial toxins. Activated leucocytes have also been implicated, as they produce not only interferon but also pyrogens, which have been demonstrated to inhibit the action of toxins. The nature of the antitoxic activity of pyrogens is unknown. But there appears to be a general association between fever and inflammation on one hand and antitoxic resistance on the other. Although no single, specific defense reaction can be hypothesized, and despite the complexity of the antitoxic phenomenon, there can be no doubt that activated leucocytes participate in the development of resistance to viral and bacterial intoxication.

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USSR

UDC 621.396.6.049.75.002

PESKOV, M. I., PIGARIN, Ye. G., MAR'IN, Yu. A.

"High-Speed Automatic Equipment for Making Photographic Positives of Multilayered Circuit Boards"

V sb. Obmen opytom v radioprom-sti (Experience Pooling in the Radio Industry--collection of works), vyp 7, Moscow, 1971, pp 31-34 (from RZh-Radiotekhnika, No 11, Nov 71, Abstract No 11V383)

Translation: The paper describes the control circuitry of equipment for automatic reproduction of photopositives of printed circuit boards from information recorded on punched cards. A buffer memory is added to the control device, which increases the productivity of the equipment by reproducing information on a complete line of the drawing on the photographic positive in the line-by-line method of reproduction. The quantity of information on the punched tapes was reduced by using the principle of separate drawing of horizontal and vertical lines. Ye. M.

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USSR

UDC 621.396.6.048.75.002

PESKOV, M. I., PIGARIN, Ye. G.

"Methods for Semiautomatic Preparation of Photopositives of Printed Circuit Boards From a Drawing"

V sb. Obmen opytom v radioprom-sti (Experience Pooling in the Radio Industry--collection of works), vyp. 7, Moscow, 1971, pp 34-38 (from RZh-Radiotekhnika, No 11, Nov 71, Abstract No 11V385)

Translation: Two methods are described for semiautomatic production of photopositives of printed circuit boards without drawing exact photo originals. In the first method the designer transfers the drawing on a special device (copier) to a photographic plate in a certain scale, and in the second, the designer's drawing, made on standard graph paper, is coded either manually or on a special coding-decoding device to give a set of punched cards. The methods eliminate the step of making precision photo originals, cut down the labor expended on this step by a factor of 7-10, and guarantee stable accuracy in making photopositives. Bibliography of two titles. Ye. M.

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Miscellaneous

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USSR

UDC 669.782.018.9(088.8)

GUSAROV, V. N., MIKULINSKIY, A. S., RYSS, M. A., GETMANCHUK, V. M.,  
PIGASOV, S. Ye., BELYAYEV, G. S., BEDOV, I. S., and POMOVGAYEV, V. N.

"Method of Melting Calcium-Silicon".

USSR Author's Certificate No. 26515, Filed 22/04/67, Published 17/06/70,  
(Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract  
No.1 G164 P).

Translation: A method is suggested for producing Ca-Si in an electric arc furnace by reducing CaO with Si-containing material in the presence of CaF<sub>2</sub> with creation of a reducing atmosphere in the furnace by adding a C-containing material to the fused charge during the period of Ca reduction. The charge is fused in the presence of the C-containing material in order to increase the content of Ca in the melt, while the Si-containing reducer is introduced after melting.

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1/2 015 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--BIOLOGY OF THE NEMATODE MECISTOCIRRUS DIGITATUS, LINSTOW, 1906, THE  
PARASITE OF THE ABOMASUM OF CATTLE -U-  
AUTHOR-(03)-DEMSHIN, N.I., PIGOLKIN, A.U., TEPOV, N.V.

COUNTRY OF INFO--USSR

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UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 015

CIRC ACCESSION NO--AP0134182

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

ABSTRACT. FREE LIVING STAGES WERE STUDIED. LARVAE ARE FORMED IN EGGS AT A TEMPERATURE OF 18-25DEGREES DURING THE FIRST 2-3 DAYS. AT THE END OF THE 3RD OR AT THE BEGINNING OF THE 4TH DAY LARVAE LEAVE EGG'S MEMBRANE AND ON THE 5TH DAY THEY MOLT. IN 11 OR 12 DAYS THEY MOLT FOR THE 2ND TIME AND BECOME INVASIONAL. DESCRIPTIONS OF THE 1ST-IIIIRD STAGE LARVAE ARE GIVEN.

UNCLASSIFIED

USSR

UDC: 517.514

FIGOLKINA, T. S.

"A Weight Class of Differentiable Functions of Many Variables Given in Unbound Regions"

Teoremy Vlozheniya i Ikh Prilozheniya [Imbedding Theorems and Their Applications--Collection of Works], Moscow, Nauka Press, 1970, pp 192-194, (Translated from Referativnyy Zhurnal Matematika, No 8, 1970, Abstract No 8E86, by the author).

Translation: Functions from weight spaces with fractional differentiability indices are studied. The weight has an exponential nature  $(1+\rho)^{\alpha}$ . Theorems of imbedding for these spaces upon transition to manifolds of lower dimensions are proven.

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USSR

UDC 661.668:621.9-492:541.12.01

BELOZERSKIY, N. A., KRICHEVSKAYA, O. D., PIGROVA, G. D., BELOZERSKIY, G. N.,  
SEGAL', L. D.

"Phase Composition of Carbonyl Iron-Nickel Powders"

Kiev, Poroshkovaya Metallurgiya, No 8, Aug, 1972, pp 8-13.

Abstract: Studies were performed using powders produced by thermal decomposition of a mixture of liquid nickel and iron carbonyls sprayed into the heated space of the decomposition apparatus through a water-cooled sprayer. A thermodynamic evaluation is given for the secondary reactions which are the source of the carbon and oxygen in the carbonyl powder. It is thermodynamically possible for carbon to be present in iron-nickel powders as free carbon (black) or as  $Fe_3C$  cementite; nickel carbide may also be formed.

Oxygen can be bonded as wustite, magnetite and nickel oxide. Iron-nickel carbonyl powders with 20, 50 and 80% nickel are studied for content of carbon and oxygen and the phase state of the impurities is determined. Chemical phase analysis shows that in carbonyl iron-nickel powders, carbon is present to a significant extent in the form of the carbide. Oxygen is bonded in the form of  $Fe_3O_4$ . The content of carbide carbon in iron-nickel powders is determined as a function of composition. It is shown that upon transition from a powder with 20% nickel to 80% nickel, the content of carbide carbon de-

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USSR

UDC 661.668:621.9-492:541.12.01

BELOZERSKIY, N. A., KRICHEVSKAYA, O. D., PIGROVA, G. D., BELOZERSKIY, G. N.,  
SEGAL', L. D., Kiev, Poroshkovaya Metallurgiya, No 8, Aug, 1972, pp 8-13.

creases from 1.20 to 0.86%. It is shown that the content of carbide carbon  
in an iron-nickel powder of a given composition is relatively stable.  
Fluctuations in the quantity of total carbon in powder of the same composi-  
tion as a function of technological parameters of thermal decomposition occur  
due to changes in the content of carbon black.

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USSR

UDC 621.791.011

BRIDAVSKIY, M. S., ZEMZIN, V. N., PIGROVA, G. D., and DEMYANTSEVICH, S. V.,  
Leningrad

"Heat Resistance of Nickel-Base Weld Seams"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 4, Jul-Aug 71, pp 117-123

Abstract: Data on the effect of molybdenum and tungsten on the heat resistance of nickel-base weld seams, suitable for long-time service at high temperatures, are absent in the literature, and for this reason the present investigation is devoted to determination of the optimum quantities of alloying elements from the view-point of long-time heat resistance and engineering strength of a nickel-base weld seam. Thirteen compositions, containing a varying amount of Mo (from 7 to 22%), including the compositions of INET-10 and TsT-28 electrodes, were studied as well as compositions in which the niobium content changed from 1 to 1.7%. The welded metals were given the following designations: Kh15N60W7, Kh15N65M14V4 (TsT-28), Kh15N65M18, Kh10N65M22 (INET-10), Kh13N50B, Kh15N70B2, Kh15NB2, MZh0, MZh2, MZh3, MZh4, MZh5, MZh8, Zh3, Zh6, and Zh8.

A nickel-base seam metal with added Mo possesses higher strength and better long-time strength than when alloyed with niobium. Optimum concen-  
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BRIDAVSKIY, M. S., et al., Fizkka i Khimiya Obrabotki Materialov, No 4, Jul-Aug 71, pp 117-123

trations of Mo in the seam metal of the Ni-Cr-Mo system with 10-15% Cr were 12-14%, which corresponds to its greatest solubility in the matrix. Cause of embrittlement and lowering of long-time strength of the seam metal alloyed with Mo is precipitation of the rich molybdenum mu-phase; intensive formation of this phase is observed in the presence of iron and silicon and for molybdenum in amounts exceeding the limit of its solubility in the matrix. The mechanism of appearance of hot welding cracks in seams alloyed with Mo in quantities of the lowest limit of its solubility and significantly exceeding this quantity and limit were different. Five figures, 2 tables, 9 bibliographic references.

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