UDC:669.18:-147:621.746

USSR

POLYAKOV, V. V., SHORSHIN, V. N., NEKHAYEV, V. P., KVITKO, M. P., SINEL'NIKOV, V. A., FILATOV, Yu. V., YUGOV, P. I., and USTYUZHANIN, V. D.

"Study of Technology of Melting in an Oxygen Converter and Pouring of Type K-76 Rail Steel in a Continuous Casting Unit"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 123-132

Translation: Results are presented from a study of a new, progressive metallurgical process--the production of railroad rails of high-quality ingots produced by continuous casting in combination with melting of rail steel in an oxygen converter.

It is assumed that the process is promising for further increases in the strength of railroad rails and reduction of the expense of their production.

5 figures; 4 tables; 5 biblio. refs.

1/1

Therapy

USSR UDC: 616.981.553-036.22

PAK, S. G., ANDRONNIKOV, V. A., NEKHAEVA, N. D., SHEVTSOVA, V. S., KARNOVA, S. K., and SEMENOVA, D. V., First Moscow Medical Institute imeni I. M. Sechenov and Chuvash Republic Sanitary-Epidemiological Station

"Observation of Group Infection With Type E Botulism"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, Vol 48, No 1, Jan 71, pp 59-63

Abstract: A trend toward increased occurrence of type E botulism has been observed all over the world. In the fall of 1967, 5 of 24 persons in the Chuvash ASSR who this type of botulism from salted fish (carp) died. Fourteen of the afflicted persons were seriously ill, seven had maderately severe cases, and only three had mild cases. The incubation period was short: in 22 cases, it varied from 4 to 12 hr, in one case it was 18 hr, and in another case it lasted 7 days (a mild case). In the five fatal cases, the incubation period did not exceed 4 hr. Vaccination with antitoxin is the first therapeutic measure. Four patients of the above group were not treated with the serum and died, since botulism had not been diagnosed. Although introduction of the serum in the early stages of the disease has

USSR

PAK, S. G., et al, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, Vol 48, No 1, Jan 71, pp 59-63

the most beneficial effects, the serum can be administered at any stage in which botulism has been recognized and intoxication phenomena are observed. Comprehensive treatment must cover all fundamental pathogenetic factors, including suppression of growth of the pathogen, detoxification, and changes in the biochemistry of the neuromuscular system. To this end, the remaining 19 patients of the above group were treated by gastric lavage, parenteral introduction of salt solutions, glucose, and blood substitutes; one person received blood plasma and four were treated with polyvinylpyrrolidone. Botulism must be regarded as a toxicoinfectious process; hence levomycin was administered to all 19 patients to cut down further growth of the pathogen. Adenosine triphosphoric acid and cocarboxylase were administered also.

2/2

USSR

UDC 662.75:536.46

KHAVKIN, Yu. I. and NEKHAMKIN, Yu. Z.

"Investigation of the Combustion Process of a Polydispersed Liquid Fuel"

Odessa, 11-ya Vses. Konf. po Vopr. Ispareniya, Goreniya i Gaz. Dinamiki Dispersn. Sistem, 1972--Sbornik (11-th All-Union Conference on Problems of the Evaporation, Combustion, and Gas Dynamics of Dispersed Systems, 1972--Collection of Articles), 1972, pp 43-44 (from Referativnyy Zhurnal -- Aviatsionnyye i Raketnyye Dvigateli, No 1, 1973, Abstract No 1.34.14. Resume)

Translation: A qualitative analysis of the process of atomization, evaporation, and combustion of a stream of atomized liquid fuel is given. It is assumed that the combustion process of a liquid fuel can be broken down into three successive stages: a) the evaporation of drops of polydispersed fuel, b) turbulent intermixing of the evaporated liquid fuel, and c) molecular intermixing. Characteristic times for each of these stages are determined for the case of complete burnout. Average time periods for the stay of a drop in the combustion device are determined; these are regarded as the sum of the times of evaporation, turbulent intermixing, and molecular diffusion. The basic parameters determined in the experiments are compared with the computed data.

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Soviet Inventions Illustrated, Section I Chemical, Derwent, 1-76.

239101 CALCINING SHAFT FURNACE with a fluidised bed includes zone 1 for the calcination, and two zones 2 for preheating with flue gases, as well as zone 3 for cooling the product. The material is loaded by unit 4 feeding the fluidised bed of zone 2. and then passes by external chute 5 into lower zones with flow control by gates. The bottom 6 carries burners 7 using natural gas with nozzles designed for admission of dust-loaded air.

30.6.66 as 1087769/29-33. V.M.DEMENT'EV & YU.P.NEKHLEBAEV. DONETSK FERROUS METALLURGY RES.INST.(14.8.69.) Bul 10/10.3.69. Class 80c. Int.Cl. C 04c.

AUTHORS: Dement'yev, V. M.; Nekhlebayev, Yu. P.

Donetskiy Nauchno-Issledovatel'skiy Institut Chernoy Metallurgii

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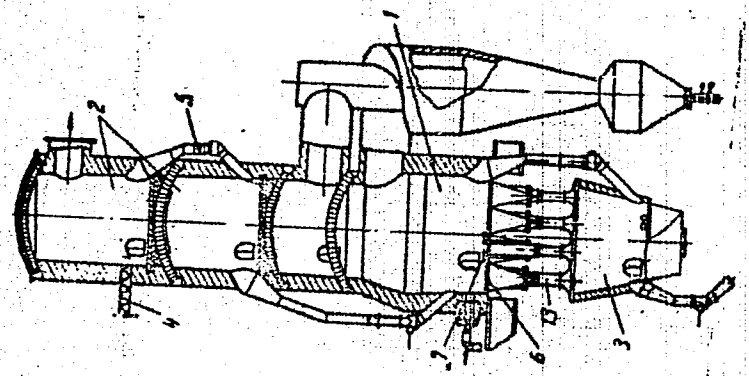

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USSR

MAKSIMENKO, V. A., NEKHOROSHEV, and SUROVIKIN, V.

Diving (Vodolaznoye Delo)

Moscow, 1971, DOSAAF Publishing House, 288 pp

Translation: Annotation: This book is intended for the training of divers and it was written in accordance with the program for training 3d class divers.

For 1st and 2d class divers, the book may serve as a practical manual and reference tool on the operation and care of diving equipment and on safety meausres and performance of a variety of diving tasks.

Besides the principal authorsV. P. Maksimenko, A. S. Nekhoroshev, and the late V. D. Surovikin, the following specialists in diving and hydraulic engineering took part in writing the book: V. S. Razvodoskiy (Chapter 5), P. P. Nikitin (chapter 6), T. S. Leybovich (Chapter 7 and Chapter 10, in part), Yu. K. Senatiskiy (Chapter 7 in part), A. A. Rogov (chapter 8), and A. P. Loyko (Chapter 9).

The authors thank the diving specialists A. M. Gerasimov, B. V. Gromadskiy, N. Kh. Kesopulo, I. I. Rebink, and the physician-physiologist V. I. Tyurin for their help in writing this book.

Please send all comments and suggestions to Moscow, B-66, Novo-Ryazanskaya, 26, DOSAAF Publishing House.

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USSR

MAKSIMENKO, V. A., et al., DOSAAF Publishing House, 288 pp

Introduction: Every year our country sees the construction of more and more gigantic hydraulic works, digging of thousands of kilometers of canals, laying of oil and gas pipes, and launching of river and ocean-going vessels. And everywhere, in all branches of the economy, thousands of highly skilled masters of diving are in demand.

Present-day diving is one of man's production activities which embraces all matters concerned with people descending in water in special equipment to perform underwater tasks or other assignments.

The development of underwater sports has led to the appearance of thousands of persons with diving skills. Underwater sports have great economic and military-applied significance.

Diving is hard work, but noble and honorable. Besides possessing good health, a knowledge of complex equipment, and familiarity with the principles of the physiology of underwater submersion, a diver must have a strong will, stamina, and a good eye. And this is not all. He must also be knowledgeable in locksmithing, carpentry, rigging, electric welding and so forth.

Rating of divers. Divers are divided into three classes according to their rating: first, second, and third.

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MAKSIMENKO, V. A., et al., DOSAAF Publishing House, 288 pp

The highest rating is that of "diving specialist". Depending on the job, diving specialists are subdivided into senior diving and chief diving specialists.

Diving work is divided into group I, II,and III according to the degree of difficulty involved.

Diving ratings are assigned by diving qualification commissions after suitable training, further training, and passing of examinations.

To keep his rating, a diver must work under water a certain number of hours a year. For example, a 3rd class diver of group I must complete at least 180 hours and those of groups II and III 90 and 60 hours, respectively.

The working conditions of divers differ substantially from those of persons on land. For this reason they have a shorter workday and receive additional pay for dives, lump-sum bonuses, and extra annual leave.

If a diver follows the established rules, he will be completely safe when under water.

This book, which was written in accordance with the program for training 3d class divers and with the "Standard Regulations for Work Safety in Diving," takes up all the fundamental questions concerned with underwater work as determined by the program

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MAKSIMENKO, V. A., et al., DOSAAF Publishing House, 288 pp

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MAKSIMENKO, V. A., et al., DOSAAF Publishing House, 288 pp

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MAKSIMENO, V. A., et al., DOSAAF Publishing House, 288 pp

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MAKSIMENKO, V. A., et al., DOSAAF Publishing House, 288 pp

Rigging tool
Rigging accessories and devices used in rigging
Chapter X. PRINCIPLES OF ORGANIZATION AND ECONOMICS OF DIVING
Planning underwater activities. Estimates, contracts.
APPENDIXES
BIBLIOGRAPHY

8/8

APO 024236

UR 9023

AUTHOR-- NEKHOROSHEV, A., SENIOR ENGINEER, ADMINISTRATION OF NAVAL TRAINING OF THE CENTRAL COMMITTEE OF DOSAAF

TITLE-- DIVING DRESS "NEPTUN"

NEWSPAPER-- SOVETSKIY PATRIOT, FEBRUARY 11, 1970, P 4, COL 8

ABSTRACT-- DIVING DRESS "NEPTUN" WILL BE PRODUCED IN 1970 BY A YAROSLAV PLANT "REZINOTEKHNIKA". FIRST UNITS WILL BE MADE AVAILABLE TO MARINE CLUBS OF THE DOSAAF. IN CONTRAST TO "SADKO" AND GKP-4, WHICH ARE IN USE TODAY, THE NEW DRESS IS NOT FULLY WATERPROOF. HOWEVER, WATER THAT GETS INSIDE THE DRESS IS QUICKLY HEATED BY THE BODY HEAT OF THE DIVER.

"NEPTUN" IS MADE OF SPONGE RUBBER, 3-5 MM THICK. TWO MODELS, THE "NEPTUN-1" AND THE "NEPTUN-2" WILL BE MANUFACTURED. THE DIFFERENCE BETWEEN THE TWO IS THE ZIPPER BUILT IN THE JACKET OF THE "NEPTUN-2". SOME MODELS WILL HAVE A LINER. THE NEW SUITS ARE DESIGNED FOR DIVING IN WATER WITH TEMPERATURES PLUS 4 TO PLUS 30 DEGREES C.

A PHOTOGRAPH OF THE "NEPTUN-2" IS GIVEN.

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Soviet Inventions Illustrated, Section II Electrical, Derwent, 2/70

238244 VOLTAGE-TO-CODE CONVERTER matches the outputs of the sources of the signals to be recorded with the inputs of the recording instruments. It contains a scaler counter with a quantizer, a comparator of the signal to be recorded with a reference signal from the output of the scaler counter, and a time selector. The inputs of the latter are connected to a part of the quantizer outputs and through a flip-flop to the comparator output. The selector outputs lead to the inputs of recording instruments.

28.4.67 as 1155752/26-24.A.G.NEKHOROSHEV (2.7.69) Bul 9/20.2.69. Class 42m3 Int.Cl.[illegible] 08].

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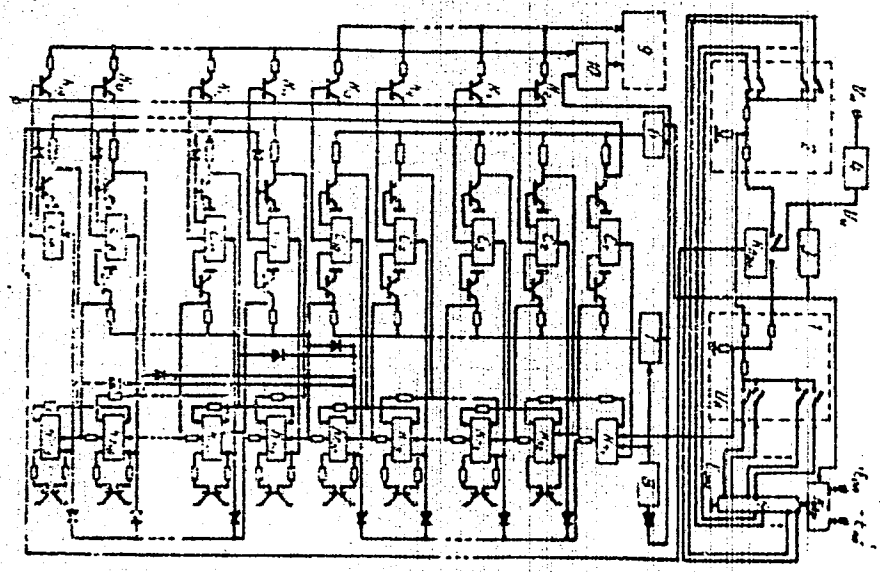

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19761670

USSR UDC 678.746.22.06-405.8

NEKHOROSHEV, A. V., Doctor of Technical Sciences, MERKIN, A. P., Candidate of Technical Sciences, GEYDANS, I. U., PUCHKOV, V. N., Engineers

"Styropore Concrete in Remote Regions and the Arctic"

Moscow, Stroitel'nye Materialy, No 1, Jan. 1973, pp 18-20.

Abstract: The conditions of construction in the Arctic require the development of insulating structural materials. One such material is styropore concrete, developed by "Arktikstroy" Trust. This concrete is made with an artificial filler made of expanded polystyrene beads. Experience has shown that the production of styropore concrete products does not require additional capital investment or the construction of special plants. Styropore concrete has certain technological and economic advantages over other light concretes made with porous fillers: the lightness of the polystyrene beads allows the density of the concrete to be varied widely; the polystyrene beads have minimum water absorption; the raw material for expansion into beads can be economically transported over long distances; the heat conductivity on the material is very low.

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(5)

USSR

UDC 621.313.12:538.4

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

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

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

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

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UNCLASSIFIED PROCESSING DATE--20NOV70

1/2 042

TITLE--CONVERSION OF POTASSIUM CARBONATE INTO POTASSIUM BICARBONATE IN A LOW TEMPERATURE ZONE OF THE GAS CHANNEL OF A MAGNETOHYDRODYNAMIC, MHD,

AUTHOR-(05)-GOLUBKOVA, A.S., ZAKHAROVA, N.I., LARICHEVA, M.A., MOSTINSKIY, L.L., NEKHOROSHEV, R.S.

COUNTRY OF INFO--USSR

SOURCE--TEPLOFIZ. VYS. TEMP. 1970, 8(2), 459-60

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, ENERGY CONVERSION (NON-PROPULSIVE), PROPULSION AND FUELS

TOPIC TAGS--COMBUSTION PRODUCT, IONIZATION, POTASSIUM CARBONATE, MAGNETOHYDRODYNAMIC CONVERSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1913 STEP NO--UR/0294/70/008/002/0459/0460

CIRC ACCESSION NO--AP0132175

UNCLASSIFIED

2/2 042 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132175

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONVERSION OF THE IONIZING ADDN. K SUB2 CO SUB3 TO KHCO SUB3 IN THE LOW TEMP. ZONE OF MHD GENERATORS WAS STUDIED AT COMBUSTION PRODUCT TEMPS. 70-250DEGREES, ABS. PRESSURES 5.5-7.5 N-M PRIME2, AND CO SUB2 CONTENTS IN THE COMBUSTION PRODUCTS OF 8-9.5PERCENT. SHIELDED PROBE AND ISOSTATIC SAMPLING ON GLASS WOOL OF DUST LADEN VAPORS FOLLOWED BY CHEM. ANALS. CONFIRMED THAT KHCO SUB3 FORMED AT TEMPS IS SMALLER THAN 160DEGREES AND THE FRACTION KHCO SUB3 WAS 40 AND 80 WT. PERCENT AT 120 AND 70-90DEGREES, RESP.

FACILITY: INST. VYS. TEMP., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 669.71.472(088.8)

BELYAYEV, A. S., BEKTASOV, O. A., VOVK, P. A., KUROKHTIN, A. N., NEKHOROSHEV, V. S.

"Device for Measuring the Weld Packing Density of the Bottom of an Aluminum Electrolyzer and the Bottom Mass Temperature"

USSR Author's Certificate No 272567, Filed 23 Dec 68, Published 7 Sep 70 (from RZh-Metallurgy, No 4, Apr 71, Abstract No 4G161P)

Translation: The device includes a thermocouple and a galvanometer. For purposes of simultaneous measurement of the weld packing density and temperature of the anode mass, the device comprises a housing with sockets for arrangement of measuring instruments, a hollow connecting rod with a tip inside which a thermocouple is installed, and a short-circuiting device needle. The upper part of the connecting rod has an inclined plane for deflection of the density indicator needle, and the junction of the thermocouple is electrically connected to the short-circuiting device needle and the galvanometer. There are 3 illustrations.

1/1

NEKHOROSHEV, V.S. medical education

SOVIET SOURCES 54514
17 NOV 1971

UDC: 378.661(470)

FIRST RESULTS OF OPERATION OF PREPARATORY DEPARTMENTS AT MEDICAL INSTITUTES OF THE RUSSIAN FEDERATION

[Article by D.N. Chekney, V.S. Nekhoroshev, I.A. Blinov; Moscow, Sovetskoye Zdravookhraneniye, Russian, No 10, 1971, Submitted 20 May 1971, pp 41-45]

As mentioned in the Decree of the Central Committee of the CPSU and USSR Council of Ministers "On the organization of preparatory departments at higher educational establishments" (August 1969), "among VUZ students pursuing their studies on leave from industry, in many major cities there are still too few blue collar and collective farm employed young people." For this reason, problems pertaining to involvement of the best prepared young men and women in medical school studies from industry and rural areas have been repeatedly discussed at special meetings of VUZ vice-chancellors as well as secretaries of enrollment commissions. As a result of the vast work done by enrollment commissions, medical institutes have obtained a considerable increase in representation of rural youth in the student body (Table 1). This was aided, in many respects, by the instructions of the USSR Ministry of Higher and Secondary Specialized Education, which allowed medical VUZ in some cases to accept individuals who are permanent residents of rural areas and whose grades at the entrance examinations were 1 or 2 points lower than required for competitive enrollment into first-year classes.

However, even with 39-40 percent enrollment of rural residents in the first year classes, only a negligible number are referable to blue collar and farm workers, i.e. to individuals directly engaged in industry or agricultural work. As demonstrated by analysis of the social composition of students at the medical and pharmaceutical institutes of the RSFSR Ministry of Health from 1964 through 1970, there was no increase in number of workers or their children enrolled in all years and it constituted 30.7 percent of the total student body in 1970, while the number of farmers or their children dropped to 7.4 percent in 1970 (Table 2).

One could hardly consider this situation to be satisfactory, since the social composition of students enrolled in medical institutes does not even approximately correspond to the structure of our society, the vast majority of which consists of blue collar or farm workers. Furthermore, in a number of cases, such a social structure of the student body in the medical schools of

USSR UDC 616-001.34-06:616.282.1

NEKHOROSHEVA, M. A., and VEL'SKAYA, M. L., Institute of Labor Hygiene and Occupational Diseases, Donetsk

"Cochleovestibular Damage Resulting From Vibration Sickness"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1973, pp 9-11

Abstract: Hearing and vestibular analysor function were studied among 80 miners experiencing 95-137 db noise and local 17-40 Hz vibration and suffering stage I vibration disease coupled with peripheral angiovegetodystonia (35, group 1), stage I vibration disease coupled with sensory polyneuritis (30, group 2), or peripheral angiovegetodystonia (25, group 3). While group 3 patients had normal hearing, groups 1 and 2 had varying degrees of cochlear neuritis. Speech discrimination was 100% for 28.6, 65, and 80% of individuals by 40-45 db in groups 1, 2, and 3 respectively. While all of group 3 and 18 of group 2 demonstrated 100% speech discrimination at 120 db, 13.1% of group 1 were not able to attain this level. Dissociation in data on tonal versus speech audiometry suggests that damage is experienced more by the cortical than the peripheral sections of the acoustic analysor. Responses to thermal and rotary tests indicated that effects on the vestibular analysor were variable.

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USSR

UDC 534.836;534.831:613.164

NEKIPELOV, M. I., Irkutsk State Medical Institute

"Noise of Passing Aircraft and a Subjective Estimation of Its Disturbing Effect"

Moscow, Akusticheskiy Zhurnal, Vol XVIII, No 1, 1972, pp 74-81

Abstract: An experimental study was made of the characteristics of the takeoff noise of the Tu-104 turbojet aircraft in the far sound field. The studies were made in 1967-1969 at the Irkutsk airport and regions adjacent to it along the flight path. The spectrum of the noise varies in accordance with the doppler effect. A characteristic of the effect of the duration of the noise, the number of flights and population density on the subjective estimation of the disturbing effect of the noise is given, and a method is outlined for calculating the direction for duration of the noise effect to the level of perceived noise.

Less disturbance from the aircraft noise is experienced by the residents of regions with low population density and low intensity of air transport traffic, and the greatest disturbance is experienced by residents of regions with high population density and a large number of aircraft during the day. Up to 80 flights per day was found to be acceptable. The distribution law of the level of perceived noise during takeoff of the Tu-104 aircraft at various distances from the starting point is plotted in the form of average data with curves illustrating the standard climbing trajectory, the levels of perceived

USSR

NEKIPELOV, M. I., Akusticheskiy Zhurnal, Vol. XVIII, No 1, 1972, pp 74-81

noise and the levels of perceived noise considering the correction for the duration of its effect.

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USSR

UDC 629.7.036.3:662.75

LITVINOV, A. A., TEREKHIN, V. I., NEKIPELOV, YU. G.

"Laboratory Instruments for Studying the Wear Resistance of Construction Steel under the Conditions of Lubrication with Aviation Fuel"

V sb. Kontaktno-gidrodinamich. teoriya smazki i yeye prakt. primeneniye v tekhn (Contact-Hydrodynamic Theory of Lubrication and Its Practical Application in Engineering--collection of works), Kubyshev, 1972, pp 18-19 (from RZh-Aviatsionnyye i raketnyy dvigateli, otdel'nyy vypusk, No 11, Nov 72, Abstract No 11.34.88)

Translation: It is reported that in order to establish causes for the difference in aviation fuels with respect to the antiwear properties and also to study the mechanism of wear in fuel environments, laboratory instruments have been built which simulate the conditions of operation of the working members of fuel system units. The instruments permit studies to be made under a broad range of external conditions (mutual displacement rate, load, temperature). The small amount of fuel required to perform the experiment permits a study to be made of the effect of the chemical composition of the fuel on the antiwear properties. The instruments built and a number of studies which have been made permit the development of measures to increase the service life and operating reliability of aircraft fuel system units.

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USSR

UDC 542.91:547.1'118

MUSLINKIN, A. A., NEKLESOVA, I. D., KUDRINA, M. A., YEGOROVA, N. V., IRAIDOVA, I. S., and LOGINOV, V. B., Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Acad. Sc. USSR

"Synthesis and Some Properties of Acrylic and Methacrylic Derivatives of Chlorophos and Its Analogues"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 73, pp 883-886

Abstract: Reaction of chlorophos and its analogues with acid chlorides of acrylic, metacrylic and α-fluoroacrylic acids gave new products with fungicidal activity: 0,0-diphenyl-, 0,0-di-n-butyl-, and 0,0-dimethyl-(1-acroyloxy-2,2,2-trichloroethyl)phosphonate, di-n-butyl-(1-metacryloxy-2,2,2-trichloroethyl) phosphonate and 0,0-d-n-butyl-(1-α-fluoroacroyloxy-2,2,2-trichloroethyl) phosphonate. Using 0,0-di-methyl ether of 1-acetoxy-2,2,2-trichloroethylphosphonic acid as control, it has been established that replacement of the acetyl group by an acroyl or metacroyl radical increases the fungicidal activity and toxicity. Introduction of a chlorine atom onto an alkoxy group has a similar effect. Elongation of an alkoxy chain at the phosphorus atom decreases the toxicity.

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UDC 577.150.4

USSR

IRAIDOVA, I. S., and NEKLESOVA, I. D., Candidate of Medical Sciences, Institute of Organic and Physical Chemistry, Academy of Sciences USSR

"Investigation of the Toxic Action Mechanism of O-Methyl-O-2,2-Dichlorvinyl-N-Dimethylamidophosphate on the House Fly"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 11, No 2, 1973, pp 38-40

Abstract: The experiment sought to determine the connection between the depth of poisoning of house flies and the degree of esterase suppression. Laboratory flies Musca domestica L. were poisoned by inhalation, in two groups of 300. The effects of poisoning were observed in one group, while esterase suppression was observed in the other group at 10, 20, 30, 360 and 780 minutes after treatment. Selected flies were decapitated and their heads and bodies were pulverized, centrifuged, then separated and analyzed. The bodies were pulverized in a substratum of acetylcholinchloride for determining cholinesterase activity and in methyl-n-butyrate for determining aliesterase activity. Esterase activity was determined according to Robbins' modification of Hestrin's method. Results showed a connection between the suppression of cholinesterase activity of the head and body, and poisoning symptoms. Suppression of aliesterase activity preceded the state of deep

USSR

IRAIDOVA, I. S., and NEKLESOVA, I. D., Khimiya v Sel'skom Khozyaystve, Vol 11, No 2, 1973, pp 38-40

paralysis; at the time of its onset the enzyme's activity had been completely restored and did not diminish up until the death of the insects.

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USSR

UDC 542.91:547.1'118

ARBUZOV, B. A., ZOROASTROVA, V. M., NEKLESOVA, L. D., KUDRINA, N. A., YEGOROVA, N. V., and tudriy, g. a., Chemistry Institute imeni A. M. Butlerov of Kazan' State University imeni V. I. Ul'yanov-Lenin and Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov of the Academy of Sciences USSR

"Derivatives of Phosphorus Acids and α-Chloroallyl Alcohol. 2. Synthesis of Mixed α-Chloroallyl Esters of Phosphoric Acid and Some of their Biological Properties"

Moscow, Izvestiya Akademii Nauk SSSSR, Seriya Khimicheskaya, No 5, May 72, pp 1155-1159

Abstract: A previous article by the authors described some phosphorous, phosphoric, thiophosphoric and phosphinic acid esters containing an α-chloroallyl radical. A study of biological properties of the synthesized compounds showed that they have a selective fungicidal and antimicrobial effect. Low toxicity and significant activity towards the dermatophytes Trichophyton gypseum and Epidermophyton Kaufmann-Wolf were noticeable in mixed phosphoric acid esters containing one α-chloroallyl radical. Preliminary data showed that the fungicidal activity of the mixed esters increases with lengthening of the hydrocarbon radicals at the phosphorus atom, while toxicity declines.

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USSR

ARBUZOV, B. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 5, May 72, pp 1155-1159

The present article gives a more detailed study of the biological effect of this type of compound. The alkyl radical in the series of compounds

$(RO)_2P(O) - OCH_2 - C(Cl) = CH_2$ was lengthened from C_1 to C_6. An improvement in the synthesis, viz. conducting the reaction between dialkylphosphoric acid chlorides and α-chloroallyl alcohol in an absolute benzene (instead of ether, as before) and at room temperature, increased the yields considerably. The results indicate that the selectivity of the action of the compounds on the dermatophytes is sharply increased by lengthening the alk- radical from C_1 to C_6. Further lengthening of the radical reduces the ant gal activity of the compounds. The top selectivity index is found in di-n-amyl- α -chloro-allyl phosphate.

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USSR

UDC 541.69+547.241+591.0446

NEKLESOVA, I. D., KUDRINA, M. A., IRAIDOVA, I. S., KALIMULLIN, M. K., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Metabolism of Phosphoric Acid Ester Amides"

Moscow, Khimiya v sel'skom khozyaystve, No 11, 1971, pp 39-42

Abstract: A study is described on the selective effectiveness of organophosphorus contact-type insecticides of the DDVP (0,0-dimethyl 0-2,2-dichlorovinyl phosphate) group. The in vitro-based data were followed up and confirmed by in vivo experiments. It is shown that 0-methyl 0-2,2-dichlorovinyl phosphate (II) and 0-ethyl 0-2,2-dichlorovinyl N-dimethylamidophosphate (III) are highly active insecticides, cholinesterase inhibitors in insects and warm-blooded animals and are aliesterase inhibitors in houseflies. 0-2,2-dichlorovinyl N-tetramethyldiamidophosphate (IV) is a relatively weak cholinesterase inhibitor in insects and warm-blooded animals. Compound II exhibits a systemic effect on insects with gnawing mouth parts. The toxicity and anticholinesterase activity of II, III and IV in flies is correlated. As

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USSR

NEKLESOVA, I. D., et al, Khimiya v sel'skom khozyaystve, No 11, 1971, pp 39-42

for warm-blooded animals, the correlation was established only for II and III. Despite its low anticholinesterase activity, compound IV appears to be most toxic to white mice. Compound II is detoxified by liver tissue of warm-blooded animals, while IV is activated by them. Compound IV selectively affects the aliesterase of flies but is weakly active relative to the flies per se. This indicates that the insecticide activity of the organophosphorus compounds is not a result of aliesterase inhibition. The experimental data on the toxicity, antiesterase and anticholinesterase activities of the tested compounds are given in tables.

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USSR

UDC 542.91+541.69:661.718.1

ARBUZOV, B. A., NURETDINOVA, O. N., NEKLESOVA, I. D., IRAIDOVA, I. S., KUDRINA, M. A., and YEGOROVA, N. V., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Synthesis and Biological Activity of Some Thioglycidyl and Thiethanyl Esters of Pentavalent Phosphorus Acids"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 10, Oct 71, pp 2213-2217

Abstract: A series of thioglycidyl and thiethanyl esters of pentavalent phosphorus acid was synthesized and their biological properties were investigated. The thioglycidyl esters of dialkoxythio- and dialkoxydithiophosphoric acid exhibit no contact or systemic insecticidal activity, but they are active against pathogenic fungi. Toxicity of these compounds decreases considerably when C_2H_5O-groups are replaced with CH_3O-, when the alkoxy radical is enlarged to C_4, and when the -P(:O)-S-C group is replaced by -P(:O)-C- group. In contrast to the thioglycidyl, thioethanyl esters show distinct contact and systemic insecticidal properties coupled with higher toxicity towards the warm-blooded animals. The activity of O,O-diethylthiophosphoric ester being much less pronounced than that of O,O-diethyldithiophosphoric ester. Substitution of $-N(CH_3)_2$ for C_2H_5O- lowers the

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ARBUZOV, B. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 10, Oct 71, pp 2213-2217

toxicity towards white mice, and the insecticidal and antifungal activity. When $-N(CH_3)_2$ is substituted by $-N(C_2H_5)_2$, a further reduction in toxicity takes place, the insecticidal activity disappearing altogether.

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UDC 542.91:661.718.1

USSR

NURETDINOV, I. A., NEKLESOVA, L. D., KUDRINA, M. A., IRAIDOVA, I. S., and BUINA, N. A., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Synthesis and Properties of Diethylaryl Seleno- and Thiophosphates"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 71, pp 1266-1270

Abstract: The authors undertook to compare some properties of seleno- and thiophosphoric acid derivatives for the purpose of determining the effect of replacement of sulfur atom by selenium atom in the phosphyl group. For this purpose they synthesized a series of diethyl esters of arylthio- and selenophosphoric acids. The initial substances for the synthesis of these compounds were diethylaryl phosphites obtained by the interaction of phenol, 4-chlorophenol, 2,4-dichlorophenol and 2,4,5-trichlorophenol with diethylphosphorous acid diethylamide. The IR and NMR-P31 spectra of the resultant diethylaryl thio- and selenophosphates were studied. A study of the toxicity and insecticidal properties of these compounds showed that esters of selenophosphoric acid are more toxic for warm-blooded animals than their thio analogs and less toxic for insects. Replacement of the sulfur atom by the selenium atom in the phosphyl

USSR

NURETDINOV, I. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 71, pp 1266-1270

group leads to systemic action. A correlation is established between the anticholinesterase action of diethylaryl selenophosphates and their toxicity for insects.

USSR

UDC 632.95

ALIMOV, P. I., VASHKOV, V. I., VOLKOVA, A. P., ZAKOLODKINA, V. I., IRAMDOVA, I. I., KERBABAYEV, E. B., NEKLESOVA, I. D., STERL'NIKOVA, G. N., FROLOVA, A. I.

"Insecticidal Properties of Methyl-O-Ethyl (Carbethoxymethyl) Dithiophosphonate"

Tr. VNII dezinfektsii i steriliz. (Works of the All-Union Scientific Research Institute of Dininfection and Sterilization), 1971, vyp. 21, t. 2, pp 73-76 (from RZh-Khimiya, No 18, Sep 72, Abstract No 18N427)

Translation: The results of experiments in studying the insecticidal activity of Me(EtO)P(S)SCH_2COOEt (I) (boiling point 89-92°C/0.02, $n^{20}D$ 1.5220) show that the compound has a fumigation effect and some contact action, but less than chlorophos. When applied to absorptive surfaces, the chemical is completely ineffective against household insects. Compound I has fumigatory activity against houseflies and is a larvicide against maggots. T. A. Belyayeva.

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USSR UDC 632.95

ALIMOV, P. I., VASHKOV, V. I., VOLKOVA, A. P., ZAKOLODKINA, V. I., ZUBOVA, G. M., IRANDOVA, I. I., KERBABYEV, E. B., NEKLESOVA, I. L., STREL'NIKOVA, G. N., and FROLOVA, A. I.

"Insecticidal Properties of O-Methyl-O-Dichlorovinyl-N-Dimethyl Amidophosphate"

Tr. VNII dezinfektsii i steriliz. (Works of the All Union Scientific Research Institute of Disinfection and Sterilization), 1971, vyp. 21, t. 2, pp 68-73 (from RZh-Khimiya, No 18, Sep 72, Abstract No 18N423)

Translation: The substance of formula $(MeO)Me_2NP(O)OCH{=}CCl_2$ (I) has strong contact, fumigation and intestinal action at the instant of application on houseflies, bedbugs and red cockroaches; the agent is not as strong as other organophosphorus insecticides with respect to mosquitoes. The most active form for application to a glass surface is a water emulsion prepared from compound I with OP-7 (1:1) and a solution in acetone. An alcohol solution is considerably less active. An investigation is made of the larvicidal activity of compound I. The insecticide has no residual effect. T. A. Belyayeva.

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Single Crystals

USSR

UDC 669.725:621.785.78

GINDIN, I. A., LAPTEV, I. N., NEKLYUDOV, I. M., PAPIROV, I. I., and TIKHINSKIY, G. F., Physicotechnical Institute of the Academy of Sciences UkrSSR

"Change of the Anisotropy of the Resistance to Plastic Deformation of Beryllium Single Crystals After Program Loading"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 4, Oct 73, pp 808-814

Abstract: A study was made of the effect of preliminary programmed loading along the c-axis on the crystal shear stresses in different crystallographic planes of beryllium single crystals. Results of the investigation of the influence of annealing under continuously progressive loading on the anisotropy of the resistance to plastic deformation indicate that program loading lowers the strength of crystals in their tests along the c-axis; but the critical shear stresses on the basal planes, on the other hand, increase approximately by 50%. As a result of the non-additive reaction of the program loading on the shear stresses in different crystallographic planes, the anisotropy of the resistance

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GINDIN, I. A., et al., Fizika Metallov i Metallovedeniye, Vol 36, No 4, Oct 73, pp 808-814

to plastic deformation of beryllium single crystals decreases. The process of disproportionation of point defects, which is assumed to take place in single crystals by annealing under continuously increasing loading applied along the c-axis, goes in two directions: a) diffusion of admixed and internodal atoms with their separation along basal planes and on a-dislocations, and b) diffusion of vacancies generatable by creeping of a-dislocations with formation of prismatic loops of c-dislocations. Three figures, 13 bibliographic references.

Mechanical Properties

USSR UDC: 539.4

GINDIN, I. A., LAPIAZHVILI, E. S., NASKIDASHVILI, I. A., NEKLYUDOV, I. M.,
Tbilisi, Khar'kov

"Influence of Neutron Bombardment on Mechanical Properties and Effect of Programmed Hardening of Titanium"

Kiev, Problemy Prochnosti, No 8, Aug 73, pp 49-52.

Abstract: Results are presented from studies of the influence of neutron bombardment by integral doses of $1.2 \cdot 10^{18}$ n/cm^2 and $3.2 \cdot 10^{18}$ n/cm^2 at 130° C on the mechanical properties of polycrystalline titanium and the effect of additional hardening following annealing without load and under smoothly increasing load in the macroelastic area of deformation at 20 and 200° C. It is shown that bombardment increases the yield point by approximately 40%, while bombardment with subsequent annealing under smoothly increasing load increases the yield point of titanium to almost double its original value. VT-1 titanium was used in the study.

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USSR UDC 539.5

GINDIN, I. A., NEKLYUDOV, I. M., NETESOV, V. M., STAROLAT, M. P., Khar'kov

"Structure and Properties of Type 1Kh18N9T Austenitic Steel Following Programmed Loading"

Problemy Prochnosti, No 11, 1971, pp 28-31.

ABSTRACT: A study is presented of the influence of annealing and programmed loading of 1Kh18N9T steel on the structure and mechanical properties. It is demonstrated that programmed loading of hardened austenitic steel at 400 and 600°C causes an increase in the strength characteristics over a broad temperature interval in subsequent tests. The basic mechanism of hardening at 400°C is formation of a dislocation structure with high density of triple points, dislocation loops and helicoidal dislocations. Programmed hardening at this temperature also causes a reduction in packing defect energy. Hardening at 600°C is achieved by development of evenly distributed, finely dispersed carbide inclusions.

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USSR UDC 539.376

GINDIN, I. A., KHOTKEVICH, V. I., NEKLYUDOV, I. M., LEBEDEV, V. P., and BOBONETS, I. I., Physicotechnical Institute, Academy of Sciences, Ukrainian SSR and Khar'kov State University imeni A. M. Gor'kiy

"Change in Nickel Dislocation Structure and Properties at Varying Loading Rates"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 32, No 1, Jul-Aug 71, pp 139-144

Abstract: Results of investigating the structural change and properties of polycrystalline nickel in relation to rate and degree of pre-strain are presented. Pure nickel (99.996%) in the form of strip rolled at room temperature was used which was annealed at 900°C for one hour in a vacuum resulting in a grain size of 0.3 mm. Loading the samples was accomplished in a special unit at 200°C up to various degrees of strain with rates of 0.2 and 1 x 10^3 kg/mm^2-hr followed by elongation at room temperature at the rate of 30 mm/sec. Electrical resistance was measured after cooling to 77°K. It was found that for relatively rapid rates of loading, principles governing change of resistance to deformation, electrical conductivity, and dislocation structure are observed which are normal for fcc crystals. For slower

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USSR

GINDIN, I. A., et al., Fizika Metallov i Metallovedeniye, Vol 32, No 1, Jul-Aug 71, pp 139-144

rates of loading, when diffusion processes play a substantial role, deviations from these principles are possible. Slow loading rates in the macroelestic region promote diffusion redistribution of defects into energetically suitable points, promote coalescence of point defects, and promote formation of dislocation loops. These processes lower electrical resistance and increase yield strength upon subsequent strain of samples. Five figures, 21 bibliographic references.

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Single Crystals

USSR

UDC 669.72.548.55.539.4

GINDIN, I. A., LAPTEV, I. V., NEKLYUDOV, I. M., TIKHINSKIY, G. F.

"Change in Anisotropy of Plastic Deformation of Beryllium Single Crystals Following Programmed Loading"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 34, No 1, Jul 72, pp 160-165

Abstract: The influence of preliminary programmed loading on the critical stresses of the beginning of twinning and slipping in beryllium single crystals of various orientations was studied. The single crystals were grown by the method of slow cooling of a melt in a vacuum. Programmed loading was conducted at 400°C for 30 hours using stresses not exceeding the critical stress of the beginning of twinning of crystals of the orientations used. The studies showed that extended annealing under smoothly increasing load increases the flow stress for the base planes by approximately 25% and significantly reduces the splitting stress in the other planes. It is concluded that this non-additive effect of programmed loading on shear stress in the different planes results from oriented redistribution of impurities in the volume of the crystal.

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USSR UDC 539.4

GINDIN, A. I., LAPIYASHVILI, E. S., NASKIDASHVILI, I. A., NEKLYUDOV, I. M.,
(Khar'kov, Tbilisi)

"The Bauschinger Effect in Annealed and Irradiated Titanium"

Kiev, Problemy Prochnosti, No 8, 1972, pp 118-120.

Abstract: Results are presented from studies of the influence of the degree of deformation hardening on Bauschinger effect of annealed specimens of titanium following neutron bombardment in a low-temperature channel in a reactor with programmed loading following bombardment. It is demonstrated that irradiation and subsequent programmed loading help to increase the deformation resistance of titanium specimens to both unidirectional and sign-changing loads.

USSR

UDC 576.858.75.095.18:615.373

NEKLYUDOVA, L. I., MAKAROVA, G. I., and ORLOVA, N. G., Institute for Advanced Training of Physicians and Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Moscow

"The Effect of Antineuraminidase Sera on the Enzymatic Activity and Reproduction of Influenza A2/Hong Kong Virus"

Moscow, Voprosy Virusologii, No 5, Sep/Oct 72, pp 599-602

Abstract: Serum antitoxic to cholera vibrio and serum antitoxic to influenza virus were obtained in rabbits. Through repeated adsorption, all types of antibodies (hemagglutinating, complement-fixing, and antitissue) except those with antineuraminidase activity were completely removed. Both purified sera effectively inhibited influenza virus neuraminidase. Similarly, both sera inhibited reproduction of influenza virus in 10-day old chick embryos and in the lungs of immune mice, though the antiviral serum was more powerful than the antivibrio serum. The findings suggest that individuals who have had cholera are more immune to influenza.

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USSR

UDC 616.988.75-095.383-078

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

"Interferon Formation in Hongkong Influenza Patients"

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

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

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1/2 028 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--CLINICAL FORMS OF ACUTE HEPATIC INSUFFICIENCY AND MODES OF THEIR THERAPY -U-

AUTHOR-(05)-GALPERIN, E.I., NEKLYUDOVA, YE.A., IVANOV, P.A., OVNATANOV, B.S., YAREMA, I.V.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 2, PP 40-48

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LIVER FUNCTION, JAUNDICE, CIRRHOSIS, PROTEIN METABOLISM, HEMORRHAGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/1730 STEP NO--UR/0531/70/000/002/0040/0048

CIRC ACCESSION NO--AP0103494

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--090CT70

2/2 028

CIRC ACCESSION NO--AP0103494

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS COMMIT TO PAPER OBSERVATIONS OVER 158 PATIENTS IN WHOM AFFECTION OF THE LIVER AND BILE DUCTS WAS ACCOMPANIED BY MANIFESTATIONS OF HEPATIC INSUFFICIENCY. THESE PATIENTS WERE DIVIDED INTO TWO GROUPS, VIZ. WITH BILIARY HYPERTENSION (OBSTRUCTIVE JAUNDICE) AND WITH CIRRHOSIS AND TUMORS OF THE LIVER, AS WELL AS DISTURBED PORTAL AND HEPATIC CIRCULATION. COMPLEX TREATMENT IS INDICATED IN HEPATIC INSUFFICIENCY IT BEING AIMED AT IMPROVING HEPATIC FUNCTION, CORRECTION OF THE WATER ELCTROLYTE BALANCE, PROTEIN METABOLISM, REDUCTION OF AMMONIA INTOXICATION, CHACKING HEMORRHAGES IN PATIENTS WITH PORTAL HYPERTENSION AND BLEEDING FROM DIALTED ESOPHAGEAL VEINS. WITH THE DEVELOPMENT OF A SEVERE FORM OF INSUFFICIENCY PREMATOUS STATE AND INEFFECTIVENESS OF CONSERVATIVE THERAPY, EXTRACORPOREAL CLEARANCE OF THE BLOOD, WHICH DIMINISHES INTOXICATION, IS INDICATED.

UNCLASSIFIED

USSR

NEKOVALEVA, N. A., Candidate of Medical Sciences, RAKHMATULLAYEV, A. R., and LITVINENKO, T. G., Chair of Roentgenology and Radiology, Chair of Hospital Surgery, and TsNIIL, Rostov Medical Institute, and Uzbek Scientific Research Institute of Hematology and Blood Transfusion

"Histochemical Studies of Alkaline Phosphatase and Glycogen in Leukocytes during Acute Experimental Radiation Sickness"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, 1970, pp 68-70

Abstract: Shifts in alkaline phosphatase and glycogen concentration in leukocytes were studied during radiation sickness. A total of nineteen rabbits were irradiated with 1000 r. After twenty-four hours, ten of them received bone marrow transplants from donor rabbits. The remaining nine rabbits received no transplants and were controls. Blood smears were stained by the Shabadash method to determine glycogen and by the Petrov and Zaretska method to determine alkaline phosphatase. Five control rabbits died within 27 days (on the average), and the other four survived. The number of leukocytes with decreased content of glycogen fell from 8.9%

USSR

NEKOVALEVA, N. A., et al., Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, 1970, pp 68-70

in controls to 38% on the 7th day after irradiation, returned to normal on the 20th day, and rose again to 36% on the 30-60th day. Glycogen concentration per mm^3 of blood decreased three-fold on the 7th day. An increased number of destroyed leukocytes was observed only on the 30-60th day. The number of leukocytes with increased phosphatase concentration rose five times on the 15th-30th day. The average phosphatase concentration in leukocytes increased from 140 in controls to 191 on the 30th day. Phosphatase concentration per mm^3 of blood decreased from 11.9 in controls to 4.5 on the 15th day. In the experimental group of ten animals, four rabbits died within 50 days (on the average). The number of leukocytes with decreased glycogen concentration was 6.3% in controls, remained unchanged on the 7th day after irradiation, rose to 19.6% on the 15th day, and stayed at this level until the 30th day. The average glycogen concentration in leukocytes increased from 179 in controls to 208 on the 15th day and 210 on the 30th day. Glycogen concentration per mm^3 of blood decreased from 13.0 in controls to 8.5 on the 7th day, slightly increased to 9 on the 15th day, and reached 12.2 on the 30th day. This was accompanied by a corresponding drop

USSR

NEKOVALEVA, N. A., et al., Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, 1970, pp 68-70

in leukocyte count. The findings indicate that marrow transplants diminish fluctuations in leukocyte glycogen concentration during radiation sickness. The number of leukocytes with increased phosphatase concentration rose from 10% in controls to 32% on the 15th and 65% on the 20th day. The average phosphatase concentration in leukocytes increased two-fold on the 20th day. Total phosphatase activity rose from 12 in the controls to 17, despite the reduced leukocyte count. The increased phosphatase activity during radiation sickness in animals with bone marrow transplants may be regarded as an intensification of oxidative and restorative processes in the body.

3/3

UNCLASSIFIED PROCESSING DATE--04DEC70

1/2 046

TITLE--HYDRO EROSION OF METALS IN AN ACID MEDIUM -U-

AUTHOR-(03)-NEKOZ, A.I., PREYS, G.A., SOLOGUB, N.A.

COUNTRY OF INFO--USSR

SOURCE--FIZ.-KHIM. MEKHAN. MAT., 1970, 6, (2), 109-111

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CARBON STEEL, AUSTENITIC STAINLESS STEEL, CAST IRON, BRONZE, JET FLOW, FLUID FLOW, WATER, EROSION, CITRIC ACID, PHOSPHATE, METAL CRACKING/(U)KH18N10T STAINLESS STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1674 STEP NO--UR/0369/70/006/002/0109/0111

CIRC ACCESSION NO--AP0129044

UNCLASSIFIED

2/2 046 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0129044

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESISTANCE OF A NUMBER OF C STEELS, AUSTENITIC STAINLESS CR-NI STEEL KH18N10T, GREY CAST IRON, AND A STANDARD BRONZE TO HYDRO EROSION IN NORMAL TAP WATER AND A SOLUTION OF CITRIC ACID CONTG. VARIOUS PHOSPHATES AT P H 6.5 WAS STUDIED. THE TESTS WERE CARRIED OUT IN A JET IMPACT TEST APPARATUS WITH A LIQUID TEMP. OF 50DEGREESC, THE SAMPLES BEING ROTATED AT 60 M-SEC. CRACK FORMATION AND RUPTURE DEVELOPED AFTER A CHARACTERISTIC TIME FOR EACH METAL, THE MECHANISMS DIFFERED FROM ONE CASE TO ANOTHER.

UNCLASSIFIED

USSR UDC: 535.343.1:535.31

NEKRASHEVICH, I. G. and BUSHIK, A. I.

"Measuring the Radiation of an Electrical Discharge Plasma"

Minsk, Zhurnal Prikladnoy Spektroskopii, No 2, 1973, pp 190-193

Abstract: The purpose of this experimental paper is to investigate the form and dimensions of the space occupied by a plasma cloud produced by an electrical discharge between two electrodes in a measuring device. The device is photoelectrical, consisting of an optical system with a magnification of 120X, a monochromator, a photomultiplier, and an oscillograph. The discharge is excited by a long line supplying a rectangular pulse of 180 μsec duration and a current amplitude of 1470 amp. The arrangement was such as to permit recording various parts of the plasma to obtain oscillograms of the spectral line of zinc ions, at 4924 Å. Light of constant intensity from an auxiliary virtual point source was used to determine the plasma shape and dimensions by shifting the source relative to the optical system focus so that the light from the source was incident on the monochromator slit and was recorded by the photomultiplier and oscillograph. The intensity of the light entering the monochromator is plotted against the position of the

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USSR

UDC: 535.343.1:535.31

NEKRASHEVICH, I. G., et al, Zhurnal Prikladnoy Spektroskopii, No 2, 1973, pp 190-193

point source relative to the focus. The results obtained can be used for interpreting experimental data in the investigation of electrical discharge plasmas by optical methods.

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USSR

UDC 533.92:621.039.61

KOVPIK, O. F., KOLYADA, Yu. Ye., KORNILOV, Ye. A., LIFSHITS, Ye. V., NEKRASHEVICH, S. A.

"The Effect of External High-Frequency Modulation of an Electron Beam on Ion Heating Upon Interaction of the Beam With a Plasma"

Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb. (Plasma Physics and Problems of the Controlled Thermonuclear Fusion. Republic Interdepartmental Collection), 1972, No. 3, pp 15-23 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G284)

Translation: The effect of external high-frequency beam modulation on the heating of ions and electrons in a magnetic trap under conditions of beam instability is investigated experimentally. Under beam modulation at a frequency less than the electron-plasma frequency there is observed an increase in the low-frequency fields with a simultaneous increase in both the temperature and the number of accelerated ions. It is hypothesized that acceleration of ions in fields of low-frequency oscillations, the excitation of which is caused by nonlinear interaction of high-frequency

USSR

KOVPIK, O. F., et al, Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb., 1972, No. 3, pp 15-23

oscillations, is of a stochastic nature. The experiment was conducted on an electron beam with an energy up to 20 kev and a current up to 20 a in a magnetic field of mirror configuration 3-1-3 kgauss.

USSR

UDC 621.373.029.7

NEKRASHEVICH, V.B., SHTEYNSHLEYGER, V.B., SHCHERBAK, V.F., EL'KIND, S.A.

"8-mm Wave Band Maser With Microcooler Creating A 35° K Temperature"

Radiotekhnika i elektronika, Vol XVII, No 7, July 1972, pp 1544-1545

Abstract: The paper describes work conducted on a 8-mm wave band maser operating at a ruby temperature on the order of 30--40° K. It was possible to obtain such a temperature from comparatively simple small-sized closed-cycle refrigerating machines (microcoolers). The resonator unit contains signal waveguides, pump waveguides, active resonators, passive resonators, coupling for connection with the microcoder, and the ruby. The amplifier contains a MO-6 microcooler, a vacuum chamber, the resonator unit described above, a magnet, a circulator, and a pumping bridge-divider. The authors thank M.P. Stolpyanskiy who participated in working out the design of the amplifier. 2 fig. 5 ref. Received by editors, 23 July 1971.

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USSR UDC: 536.54:536.722

NEKRASOV, A. A. and REKIN, A. D.

"Calorimetric Sensor for Measuring the Enthalpy of a High-Temperature Gas Medium"

Moscow, Izmeritel'naya tekhnika, No 4, 1972, pp 47-48

Abstract: A device designed for investigating the processes occurring in high-temperature gas flows, for measuring the velocity and temperature of the flow, is described. The device measures the enthalpy by measuring the difference in thermal currents perceived by the sensor with and without the probe sampling. A diagram of the instrument is given together with an explanation of its operation, and the measurement errors of the local indications are determined by comparing them with the readings of thermocouples. A table giving the readings of the instrument and of the thermocouples and the percentage of error in each case shows the error to be limited to 3%. While the instrument can make measurements at air temperatures of about 3000° K, determining the accuracy of the readings at that level is a complex matter.

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Welding

UDC 621.791.85.037(012)

USSR

CHVERTKO, A. I., SVYATSKIY, A. M., and NEKRASOV, A. I., Electric Welding Institute imeni Ye. O. Paton, Academy of Sciences UkrSSR

"Classification of Equipment for Electron-Beam Welding"

Kiev, Avtomaticheskaya Svarke, No 7, Jul 70, pp 61-66

Abstract: Welding with the use of a beam of accelerated electrons has been gaining increasing acceptance in the industry in recent years. The rapid development of this area of technology is due to a number of features and advantages of the electron beam over other heat sources. Electron beam welding can be used successfully for almost any combination of metals and alloys including refractory and chemically active materials. The variety of equipment for electron beam welding has generated a need to classify the equipment according to the most characteristic features. The system described here classes the equipment into 3 categories according to the extent of protection of the weld metal against atmospheric effects. Each class is divided into groups depending on area of application and dimensions of parts to be welded; groups are divided into subgroups with respect to degree of specialization. Examples of classes, groups, and subgroups are given.

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UDC: 536.24:536.42

USSR

STERMAN, L. S., NEKRASOV, A. V.

"Investigation of the Heat-Transfer Crisis When Water is Boiled in Straight Vertical Tubes"

V sb. Teplo- i massoperenos. T. 2. Ch. 1 (Heat Transfer and Mass Transfer, Vol 2, Part 1--collection of works), Minsk, 1972, pp 254-262 (from RZh--Mekhanika, No 9, Sep 72, Abstract No 9B998)

Translation: The paper presents the results of an experimental study of the heat transfer crisis under conditions of forced motion of a steam-water mixture. The experimental section was a vertical tube with a diameter of 12 x 2 mm made of 1Kh18N9T steel. An alternating electric current was used for heating. At a pressure of 98 bars, the heated length was 1570 mm, and at a pressure of 29 bars -- 370, 500 and 1570 mm. The range of mass velocities at a pressure of 29 bars was 835-2040 $mg \cdot m^{-2} \cdot s$, and at a pressure of 98 bars -- 1110-3400 $mg \cdot m^{-2} \cdot s$. An integral relation is found which describes all experimental data with a scatter of no more than ±15%

$$\frac{q_{кр} 10^2}{r \sqrt[4]{\rho''} \sqrt[4]{\sigma g (\rho' - \rho'') F \rho' / \rho''}} = 1.25 - 0.65 \frac{w_0'}{w_*} + 0.05 \left(\frac{w_0'}{w_*} \right)^{2.5}$$

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USSR

STERMAN, L. S., NEKRASOV, A. V., Teplo- i massoperenos. T. 2. Ch. 1, Minsk, 1972, pp 254-262

where $q_{кр}$ is the critical heat flux, r is the latent heat of vaporization, ρ' is the density of water on the saturation line, ρ'' is the density of dry saturated steam, σ is the coefficient of surface tension, g is acceleration due to gravity, F is the Froude number, w_0 is the rate of circulation, w_0'' is the reduced velocity of the vapor phase. Bibliography of 8 titles. E. G. Namsarayev.

2/2

1/2 017 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--GENERAL FORM OF AN EQUATION FOR VALENCE BOND ENERGY -U-

AUTHOR--NEKRASOV, B.V.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 192(3), 572-3

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BOND ENERGY, CHEMICAL VALENCE, ALKANE, HEAT OF FORMATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/1517 STEP NO--UR/0020/70/192/003/0572/0573

CIRC ACCESSION NO--AT0138517

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--11DEC70

2/2 017

CIRC ACCESSION NO--AT0138517

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PREVIOUS EQUATION FOR BOND ENERGY IN COVALENT BONDS IN TERMS OF DYNAMIC ELECTRON AFFINITY OF THE ATOMS INVOLVED AND THEIR FORMAL CHARGES WAS MODIFIED BY USING THE GEOMETRIC MEAN INSTEAD OF ARITHMETIC MEAN FOR THE CONTRIBUTION OF THE ELECTRON AFFINITY ON THE PART OF THE ATOMS. THE NEW EQUATION HAS THE FORM: E SUBAB EQUALS K PRIMEK (E SUBAB .E SUBBA) PRIME0.5 MINUS 332 DELTA SUBA DELTA SUBB OVER TAU SUBAB D SUBAB KCAL-MOLE, WHERE D SUBAB IS THE INTERNUCLEAR DISTANCE AND TAU SUBAB A SCATTERING FACTOR CHARACTERISTIC OF A GIVEN VALENCY BOND WHICH REPLACES THE DIELEC. PERMEABILITY CONCEPT OF THE MACROSCOPIC SYSTEMS; K PRIMEK IS THE COVALENT COEFF. THE FORMULA WAS APPLIED TO A SERIES OF ALKANES USING D EQUALS 1.10 ANGSTROM FOR CH DISTANCE AND 1.54 ANGSTROM FOR CC DISTANCE, WITH TAU SUBAB EQUALS 3.1. THE RESULTING CALCD. BOND ENERGIES WERE COMPARED WITH EXPTL. AT. HEATS OF FORMATION AND WERE IN AGREEMENT GENERALLY WITHIN 0.3 KCAL-MOLE. OTHER FORMS OF THE EXPRESSION ARE BRIEFLY DISCUSSED.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--VALENCE VIBRATION FREQUENCIES AND DISTRIBUTION OF ELECTRON DENSITY IN COMPLEX IRON CYANIDES -U-

AUTHOR-(03)-NEKRASOV, B.V., SEYFER, G.B., KHARITONOV, YU.YA.

COUNTRY OF INFO--USSR

SOURCE--IAV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 266-71

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IRON COMPOUND, CYANIDE, FERROCYANIDE, ELECTRON DENSITY, CHEMICAL VALENCE, VIBRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1509 STEP NO--UR/0062/70/000/002/0266/0271

CIRC ACCESSION NO--AP0120290

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120290

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLES ARE GIVEN FOR BOND POLARITIES, ELECTRON AFFINITIES AND EFFECTIVE AT. CHARGES IN METAL FERROCYANIDES OF THE COMMON METALS AND METAL FERRICYANIDES OF THE SAME METALS. WITH INCREASING ELECTRON AFFINITY IN THE INNER SPHERE CATION, THE C TRIPLE BOND N BOND ENERGY INCREASES ALMOST LINEARLY, THUS EXPLAINING THE NEARLY LINEAR INCREASE OF IR BAND FREQUENCY OF THIS BOND. A SIMILAR VARIATION WAS FOUND FOR THE FE-C BOND, BUT THE EFFECT WAS LESS PRONOUNCED. FACILITY: INST. OBSHCH. NEORG. KHIM. IM. KURNAKOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR UDC: 8.74

LEVIN, D. Ya., NEKRASOV, G. I.

"A Programming System for Machine Translation Problems (Algorithmic Language)"

V sb. Probl. kibernetiki (Problems of Cybernetics--collection of works), vyp. 24, Moscow, "Nauka", 1971, pp 123-146 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V538)

Translation: A language is proposed for recording machine translation algorithms using the "algol" means of expression. Bibliography of 18 titles. Authors' abstract.

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UDC 615.37.032

USSR

VOROB'YEV, A. A., NEKRASOV, I. L., and BANDAKOV, L. F.

Bezygol'nyy Sposob Vvedeniya Biologicheskikh Preparatov v Organizm (Needleless Method of Introducing Biological Preparations into the Organism), Moscow, Meditsina, 1972, 104 pp

Translation: Annotation: This work is the first monograph in domestic and foreign literature on the needleless (jet) method of introducing biological preparations into the organism. From a scientific and practical point of view, the authors present their own material and data from the literature concerning needleless injection with due regard for all its characteristics.

The book gives general information on the jet method of introducing vaccines and serums into the organism and describes the working principles and characteristics of various designs of needleless injectors. There is a detailed presentation of data on the reaction-causing properties and immunological effectiveness of various biological preparations introduced by needleless injection.

The monograph is intended for doctors in various specializations (microbiologists, immunologists, clinical doctors, and pharmacologists), as well as for engineers employed in the design of medical equipment.

Table of Contents

USSR

VOROB'YEV, A. A., et al., Meditsina, 1972, 104 pp

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UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--USE OF INJECTORS FOR IMMUNIZATION AGAINST SMALLPOX. COMMUNICATION II. IMMUNOLOGIC RESPONSE TO INTRADERMAL INOCULATION OF SMALLPOX VACCINE

AUTHOR-(05)-AKATOVASHELUKHINA, E.M., FEDORUV, V.V., CHIMISHKYAN, K.L., GURVICH, E.B., NEKRASOV, I.L.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 3, PP 313-316

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SMALLPOX, IMMUNIZATION, ANTIBODY, VACCINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1845 STEP NO--UR/0402/70/000/003/0313/0316

CIRC ACCESSION NO--AP0125456

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70
IRC ACCESSION NO--AP0125456
BSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER PRESENTS THE RESULTS OF USE OF JET INJECTORS FOR IMMUNIZATION AGAINST SMALLPOX EXPERIMENTALLY IN ANIMALS AND IN A SMALL GROUP OF VOLUNTEERS. IMMUNOLOGIC RESPONSE WAS STUDIED BY DETERMINATION OF HUMORAL ANTIBODY IN THE BLOODS OF VACCINATED PEOPLE AND ANIMALS. AUTOMATIC MULTIDOSE INJECTORS OF NATIONAL AND AMERICAN MAKE WERE USED FOR IMMUNIZATION. THE METHOD OF INOCULATION WAS FOUND TO BE SAFE AND TO PRODUCE ANTIBODY RESPONSE IN SERA OF IMMUNIZED ANIMALS. IMMUNIZATION WITH JET INJECTOR PROTECTED RABBITS FROM DEATH AFTER INTRACEREBRAL INJECTION OF 1000 LD SUB50 OF NEUROVACCINE. A SIGNIFICANT RISE OF TITERS OF ANTIHEMAGGLUTININS AND VIRUS NEUTRALIZING ANTIBODY WAS DEMONSTRATED IN SERA OF VACCINATED HUMAN VOLUNTEERS. FACILITY: MOSKOVSKIY NAUCHNO-ISSLEDOVATEL'SKIY INSTITUT VIRUSNYKH PREPARATOV.

UNCLASSIFIED

AN0102279

UR 9024

TITLE-- OXIDATION-RESISTANT CONCRETE

NEWSPAPER-- STROITEL,NAYA GAZETA, JUNE 5, 1970, P 4, COL 1

ABSTRACT-- INVENTORS K. NEKRASOV AND A. TARASOVA PROPOSED A NEW COMPOSITION FOR WATER GLASS BASED CONCRETE WITH NEPHELITE SLURRY. THIS CONCRETE IS INERT TO SULFUR-CONTAINING GASES, DOES NOT LOSE ITS STRENGTH AFTER EXPOSURE TO HIGH TEMPERATURES, AND CAN BE USED AT TEMPERATURES UP TO 1000 DEGREES C.

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USSR

UDC 621.385.64

NEKRASOV, L. G., ROGOZHNIKOV, A. L., SMIRNOV, N. S.

"The Problem of the Properties of the Space Charge of a Magnetron"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue No 10, pp 132-133 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A166)

Translation: The results which are presented of an experimental investigation of a power pulse magnetron confirm the accepted model of a space charge in the form of an oscillatory circuit. 2 ref. Author's Summary.

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USSR

KAPLER, R., NEKRASOV, L. I., IROSHNIKOVA, N. G., and MANLEYEVA, N. A., Chemistry Faculty, Moscow State University imeni M. V. Lomonosov

"Paramagnetic Properties of Adsorption Layers of Chlorophyll a and b on Aluminum Oxide"

Moscow, Biofizika, Vol 16, No 1, Jan/Feb 71, pp 32-38

Abstract: Analysis of the electron paramagnetic resonance spectra of adsorbed chlorophyll a and b showed that when chlorophyll is adsorbed on aluminum hydroxide, the concentration of paramagnetic centers is 0.6 to 1.1% of the quantity of adsorbed molecules of the pigments. The number of paramagnetic centers was found to be related to the temperature, duration of light, and conditions under which the samples were kept (vacuum or air). The thermal energy required to activate the formation of unpaired electrons was determined. It is conjectured that the source of the electron paramagnetic resonance signal may be dimers formed from the strong inner overlapping of the pi-electrons of two adjacent chromatophores. The dimers are stabilized by the formation of a complex with charge transfer.

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1/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--HIGHER PEROXIDE OF HYDROGEN AND FROZEN RADICALS. XIV. ELECTRON DIFFRACTION STUDY OF AMORPHOUS PEROXIDE RADICAL CONDENSATES -U-

AUTHOR-(02)-MALTSEV, YU.A., NEKRASOV, L.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 431-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTRON DIFFRACTION ANALYSIS, PEROXIDE, FREE RADICAL, OZONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0887 STEP NO--UR/0076/70/044/002/0431/0436

CIRC ACCESSION NO--AP0137915

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137915

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELECTRON DIFFRACTION STUDY OF THE STRUCTURE OF THE AMORPHOUS PEROXIDE RADICAL CONDENSATES WAS MADE BY COMPARING THE POSITIONS OF THE MAXS. OF THE SCATTERING INTENSITIES ON THE EXPTL. AND CALCD. CURVES OBTAINED FOR VARIOUS MODELS. TWO MODELS OF THE PEROXIDE RADICAL CONDENSATE ARE CONSIDERED. MODEL I CONTAINS ONLY H SUB2 O SUB4 MOLS. AND THE MODEL II CONTAINS H SUB2 O SUB4 MOLS. CONNECTED BY H SUB2 O MOLS. THE COMPARISON OF THE CALCD. AND EXPTL. DATA INDICATE THAT THE PEROXIDE RADICAL CONDENSATES SYNTHESIZED FROM OZONE CORRESPOND TO MODEL II. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR UDC 543.422

NEKRASOV, L. I., and YAGODOVSKAYA, T. V., Moscow State University Imeni M. V. Lomonosov

"Some General Properties of the Infrared Spectra of Liquid Ozone and of the Product of Its Reaction With Atomic Hydrogen -- the Peroxide-Radical Condensate"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 46, No 11, Nov 72, pp 2702-2705

Abstract: Ozone obtained by direct condensation of oxygen plasma in a glowing discharge contains an additional component with a more complex structure than O_3. The IR spectrum of this material contains the usual O_3 absorption bands and in addition the following bands: 1200-1300, 940, 890-900 and 769 cm^{-1}. It is proposed that the new component is O_4. To obtain O_4 three conditions must be fulfilled: necessary concentration of atomic oxygen and ozone must be available in the reaction zone; the temperature must be very low [-196°C] to assure formation of a film of liquid ozone; and presence of a liquid ozone film leading to the occlusion of the O_4 molecules formed.

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT7

TITLE--USE OF A ROTATING RING DISK ELECTRODE METHOD TO STUDY THE CATHODIC REDUCTION OF OXYGEN IN DIMETHYLFORMAMIDE SOLUTIONS -U-

AUTHOR-(04)-NEKRASOV, L.N., DUKHANOVA, L.A., DUBROVINA, N.I., VYKHODTSEVA L.N.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(3), 388-90

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTROLYTIC REDUCTION, OXYGEN, FORMIC ACID, AMIDE, GOLD, METAL ELECTRODE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0653 STEP NO--UR/0364/70/006/003/0388/0390

CIRC ACCESSION NO--AP0124325

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--30OCT7

CIRC ACCESSION NO--AP0124325

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROCESS OF O ELECTROREDN. IN APROTIC MEDIUM WAS STUDIED BY USING THE EXAMPLE OF CATHODIC O REDN. IN HCONME SUB2 SOLNS. NAD A ROTATING RING DISK ELECTRODE AND AMALGAMATED AU. THE SUPPORTING ELECTROLYTES WERE THE ANHYD. SALT ET SUB4 NCLO SUB4 AT A CONCN. OF 01.N AS WELL AS NH SUB4 NO SUB3 AT A CONCN. OF 0.5N. THI POLARIZATION CURVE OF O ELECTROREDN. SHOWED 2 WAVES OF SIMILAR HEIGHT, EACH CORRESPONDING TO THE ASSOCN. OF 1 ELECTRON. THE INITIAL STAGE OF THE REACTION INVOLVED THE FORMATION OF A RELATIVELY STABLE MO. O SUB2 PRIME NEGATIVE WITH SIMILAR TO 100PERCENT YIELD. THE NATURE OF PROCESSES IN THE RANGE OF THE 2ND WAVE, I.E. IN THE 2ND PHASE OF THE O REDN., WAS NOT DETD. COMPLETELY AND NEEDS ADDNL. STUDIES.

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

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--ELECTROREDUCTION OF NITROBENZENE STUDIED BY THE ROTATING DISK RING ELECTRODE METHOD -U-

AUTHOR-(02)-NEKRASOV, L.N., PODLIBNER, B.G.

COUNTRY OF INFO--USSR

N

SOURCE--ELEKTROKHIMA 1970, 6(2) 218-22

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTROLYTIC REDUCTION, NITROBENZENE, GOLD, ELECTRODE, CATHODE POLARIZATION, SURFACE ACTIVE AGENT, FREE RADICAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0459 STEP NO--UR/0364/70/006/002/0218/0222

CIRC ACCESSION NO--AP0107065

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210009-3"

2/2 020

CIRC ACCESSION NO--AP0107065

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CATHODIC REDN. WAS STUDIED OF AQ. 10 PRIME NEGATIVE3 M PHNO SUB2 SOLN. ON A AU AMALGAM DISK RING ELECTRODE IN THE PRESENCE OF 0.5 M KOH, WITH OR WITHOUT ADDN. OF CAMPHOR AS SURFACE ACTIVE SUBSTANCE. POLARIZATION CURVES OF PHNO SUB2 REDN. AND THE CURVES OF THE YIELDS OF ANION RADICALS AND PHNHOH VS. DISK POTENTIAL ARE PRESENTED. IN THE PRESENCE OF CAMPHOR AT THE POTENTIAL OF THE SINGLE ELECTRON WAVE ON DISK, THE 2ND WAVE IS ABSENT ON RING AND THE YIELD OF ANION RADICALS IS 100PERCENT; IN ABSENCE OF CAMPHOR, THIS YIELD IS LOWER. IN THE RANGE OF THE 2ND WAVE POTENTIAL (-1.05 V) ON THE DISK, THE YIELD OF ANION RADICALS GRADUALLY DECREASES TO 0 WITH THE INCREASE OF THE CATHODIC POLARIZATION, WHILE THE YIELD OF PHNHOH INCREASES. THE DEPENDENCE OF THE ANION RADICAL YIELD, WHICH IS MAX. AT PH 11, AND OF THE RATE CONST. OF PHNHOH FORMATION FROM THE REDN. OF FREE RADICALS, ON SOLN. PH IS ALSO DISCUSSED.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210009-3"

USSR UDC: 681.32.001

NEKRASOV, M. M., MANZHELO, V. A., MARTYNYUK, Ya. V., ZLOGODUKH, G. M.

"The Future of Utilizing Piezoelectric Elements in Computer Technology"

Poluprovodn. tekhn. i mikroelektronika. Resp. mezhved. sb. (Semiconductor Technology and Microelectronics. Republic Interdepartmental Collection), 1971, vyp. 6, pp 71-74 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, Oct 71, Abstract No 10B143)

Translation: The authors describe the principal types of piezoelectric elements which have been specifically designed for use in computer technology. Data are given on the basic parameters and field of application of analog piezoelectric elements. The possibilities of constructing high-capacity memory units with ferroelectric pulsed piezoelectric register elements are considered. The access time for readout from such a device is measured in fractions of a microsecond. Bibliography of six titles. N. F.

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USSR

UDC 546.431'824'21+546.16

NEKRASOV, M. M., SAVOSHCHENKO, V. S., SYCH, A. M., Kiev Polytechnical Institute

"Fluorine-Containing Barium Titanate"

Moscow, Neorganicheskiye Materialy, Vol 6, No 12, Dec 70, pp 2175-2177

Abstract: A new type of solid solution based on barium titanate is produced by interacting TiO_2 with BaF_2 in BF_2--a substitution solid solution in the anionic portion of the crystalline lattice of $BaTiO_3$ with the general formula $BaTi(OF)_3$. The electrical parameters of the solid solutions produced are determined.

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UDC 681.142

USSR

NEKRASOV, M. M., OSADCHUK, V. S., GIKAVYY, V. A.

"Problem of Inductive Behavior of Superhigh Frequency Transistors"

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No 6, 1971, pp 74-76

Abstract: A study was made of the inductive nature of the behavior of the input impedance of a high-frequency transistor with variation of the feed conditions and the signal frequency. The possibility of controlling the active and reactive parts of the input impedance by means of the emitter current and the external base resistance is demonstrated experimentally. Curves are presented illustrating these conclusions. Both the active and reactive components of the input impedance of the transistor element increase with an increase in the instrument multiplier in the base circuit in accordance with the formula

$$Z = r_e + r_b \left[1 - \frac{\alpha_0}{1 + (\omega/\omega_\alpha)^2}\right] + j \frac{r_b \alpha_0 (\omega/\omega_\alpha)}{1 + (\omega/\omega_\alpha)^2}$$

where ω is the operating frequency, ω_α is the limiting frequency of the amplification coefficient with respect to current in a circuit with a common base,

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NEKRASOV, M. M., Poluprovodnikovaya tekhnika i mikroelektronika, No 6, 1971, pp 74-76

and α_0 is the low-frequency value of the current amplification coefficient; r_e is the emitter resistance and r_b is the high frequency base resistance. The investigated transistor element provided for adjustment of the inductance twice on variation of the emitter current from 0 to 14 milliamps. Adjustment of the inductance by varying the instrument multiplier in the base circuit is most effective.

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UDC 681.142

USSR

NEKRASOV, M. M., OSADCHUK, V. S., and GIKAVYY, V. A.

"Inductive Behavior of UHF Transistors"

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No. 6, 1971, pp 74-76

Abstract: Experiments are described to investigate the inductive characteristics of uhf transistors connected in a common base circuit. The block diagram of the equipment for the experiments is shown, in which the transistor output is short-circuited for alternating current through a capacitor. In a preliminary mathematical analysis, a formula for the input impedance of the transistor is derived, and it is shown that one of the terms in the formula indicates an inductive component. This conclusion is confirmed by the experimental data, in which the effect of the distributed impedances of the input leads and the transistor casing are taken into account. Curves plotted for the active and reactive components as functions of the base resistance indicate that the most effective means of tuning the inductance is by changing the external resistance of the base circuit. The authors are associated with the Kiev Polytechnical Institute.

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USSR

UDC 621.37/39+631.004

NEKRASOV, M. M., LAVRINENKO, V. V., OSADCHUK, V. S., KVITKA, N. A., and KOVAL'CHUK, B. N.

"Low-Frequency Dielectric Transformers"

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No. 6, 1971, pp 69-70

Abstract: This short informative article amounts to an introductory treatment of the development of piezoelectric transformers with an operating frequency of 50 and 400 Hz, of the type widely used in technology. A schematic diagram of piezoelectric transformers of the bending type is shown and explained; it consists of two dielectric plates glued together with epoxy resin, and connected through copper or silver electrodes to the external circuit. The theory of operation of the transformer is explained in qualitative terms, and a formula for the fundamental frequency of the bending oscillations is given in terms of the Young's modulus, the density, the thickness, and the length of the second -- i.e., the output or bending -- plate of the transformer. Curves are plotted for the transformer characteristic as a function of the bending magnitude; they indicate that the transformation characteristic depends essentially on the

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NEKRASOV, M. M., et al., Poluprovodnikovaya tekhnika i mikroelektronika, No 6, 1971, pp 69-70

input signal amplitude and the applied voltage. The data was taken for transformer type No 3, made from ceramics of the TsTS-23 brand. The authors are with the Kiev Polytechnical Institute.

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USSR

UDC 539.238.661.888.2

NEKRASOV, M. M., BOGDAN, G. I.

"Electric Properties of Niobium Oxide Films"

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No 5, 1971, pp 33-37

Abstract: The results of studying Nb_2O_5 oxide films in the Nb-Nb_2O_5-metal structure are presented. The volt-ampere characteristics of thin films (d ~ ~ 100 Å) are used to determine the height of the potential barrier at the dielectric-metal interface and the magnitude of the electron affinity of Nb_2O_5. The dependence of the capacitance of thick films (d ~ 1,000 Å) on the constant bias is established. This confirms the presence of a p-i-n junction in the oxide film.

The height of the potential barrier at the Nb-Nb_2O_5 interface was found to be 1.64 electron volts, the electron affinity for niobium oxide Nb_2O_5 was $\psi \approx 2.34$ electron volts, and the dependence of the capacitance on the voltage for the p-i-n structure of niobium oxide films ~1,000 Å thick is expressed by the law $C \sim 1/\sqrt{U_{space}}$.

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USSR

UDC 681.142.65

NEKRASOV, M. M., MANZHELO, V. A., MARTYNYUK, YA. V., ZLOGODUKH, G. M.

"Prospects for Using Piezoelements in Computer Engineering"

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No 6, 1971, pp 71-74

Abstract: A study was made of the basic types of piezoelements the designs of which were especially developed for application in computer engineering. Data are presented on the basic parameters and range of application of analog piezoelements. Special attention is given to the ferroelectric piezoelements designed for storing discrete information. The basic principles of constructing a memory of significant capacity using such elements are noted. The reference cycle when reading out of the described memories can be fractions of a microsecond. The length of the write cycle is on the order of a hundred microseconds, which permits application of relatively low writing voltages and simple write shapers. A write cycle frequency of several kilohertz is attainable. The memory circuit based on pulse elements is similar with respect to complexity to a magnetic memory with linear access.

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UDC 621.37/39+631.004

USSR

NEKRASOV, M. M., LAVRINENKO, V. V., OSADCHUK, V. S., KVITKA, N. A., KOVAL'CHUK, B. M.

"Low-Frequency Dielectric Transformers"

Kiev, Poluprovodnikovaya tekhnika i mikroelektronika, No 6, 1971, pp 69-70

Abstract: A study is made of the problems of creating low-frequency dielectric transformers. Several versions of the designs of such transformers are investigated, and data are presented for individual specimens. Conclusions are drawn regarding the prospects of utilization of low-frequency dielectric transformers. In the transformers, the transformation coefficient depends to a significant extent on the magnitude of the input signal. With a load of 10^6 ohms and an input voltage of 0.1 volts, it reaches values on the order of 20 for one of the investigated transformers manufactured on the basis of the type TsTS-23 ceramic. A formula is presented showing that the basic parameters affecting the resonance frequency of piezotransformers of the flexible type are the length and thickness of the plates. The parameters of several designs of piezotransformers and their operating frequencies are presented in a table.

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USSR

UDC 621.315.592:546.289

NEKRASOV, M. M., RYABCHENKO, G. V.

"Production of Profile Single Crystals of Germanium by the Vertical Zone Leveling Method"

V sb. Vopr. mikroelektroniki (Problems of Microelectronics -- Collection of Works), Kiev, "Nauk. dumka," 1971, pp 143-146 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B93)

Translation: Homogeneous single crystals of germanium of any profile were grown by the vertical zone leveling method. The principal scheme of the equipment is given. The following characteristics were studied of the ingots obtained: 1) inhomogeneity of resistivity; 2) integral density of dislocations; 3) magnitude of residual stress; and 4) diffusion length of carriers. 3 ref. I. V.

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UDC 621.396.6-181.5

USSR

NEKRASOV, M. M., LAVRINENKO, V. V.

"Piezonics -- a New Area of Microelectronics"

Elektron. tekhnika. Nauch.-tekhn. sb. Materialy (Electronic Engineering. Scientific and Technical Collection. Materials), 1971, No 2, pp 44-51 (from RZh-Radiotekhnika, No 10, Oct 71, Abstract No 10V176)

Translation: In recent years numerous examples of using the electromechanical properties of a solid state in the construction of elements and devices for electronics have appeared. It is proposed that the work with respect to creation and study of such devices be placed in a field called piezoelectronics (piezonics, for short). A study was made of the general attributes and characteristics of piezoelectronic elements permitting the conclusion to be drawn that work in this area is important.

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USSR

UDC 537.311.32

NEKRASOV, M. M., and BOGDAN, G. I.

"Electrical Properties of Niobium Oxide Film"

Poluprovodn. tekhn. i mikroelektronika. Resp. mezhved. sb. (Semiconductor Technics and Microelectronics. Republic Interdepartmental Collection), 1971, Issue 5, pp 33-37 (from RZh-Elektronika i yeye primeneniye, No 9, September 1971, Abstract No 9B53)

Translation: The results are presented of a study of a Nb_2-Nb_2O_5-Me. The height of the potential barrier at the boundary of the dielectric and metal and the magnitude of the electron affinity of Nb_2O_5 are determined by the voltampere characteristics of thin films (d $\sim$ 100 Å). The dependence of the capacitance of thick films (d $\sim$ 1000 Å) on a fixed bias is established which confirms the presence of a p-i-n junction in the oxide film. 14 ref. Summary.

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USSR

UDC 546.431'824'21+546.16

NEKRASOV, M. M., SAVOSHCHENKO, V. S., SYCH, A. M., Kiev Polytechnical Institute

"Fluorine-Containing Barium Titanate"

Moscow, Neorganicheskiye Materialy, Vol 6, No 12, Dec 70, pp 2175-2177

Abstract: A new type of solid solution based on barium titanate is produced by interacting TiO_2 with BaF_2 in BF_2--a substitution solid solution in the anionic portion of the crystalline lattice of $BaTiO_3$ with the general formula $BaTi(OF)_3$. The electrical parameters of the solid solutions produced are determined.

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