

Category: USSR / Physical Chemistry - Crystals

Ref.

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29661

b 10.3, c 5.24 kX; beta 90°. It has a rhombic lattice with a  
a 13, b 14.70, c 5.72 kX, which is in good agreement with goni-  
ometric measurement data. On calcining up to 1000° optical proper-  
ties and structure of anisotropic I undergo no changes; in metamorphic  
variants this brings about a restoration of the original crystalline  
structure.

Card : 2/2

-12-

KOMKOV, A.I.; NEFEDOV, Ye.I.

New data on langite. *Biul.VSEGEI* no.1:157-161 '58. (MIRA 14:5)  
(Langite)

NEPEDOV, Ye.I.; KAZITSYN, Yu.V.

All-Union conference on mineralogical methods used in prospecting  
for rare metal deposits. Zap. Vses. min. ob-va 88 no.5:632-634  
'59. (MIRA 13:2)

(Metal, Rare and minor) (Mineralogy)





NEPESOV, Ye. I. (Moskva); KHUBLANIAN, M. G. (Moskva,

Axisymmetric helical flow through a channel with a given profile.  
Izv. AN SSSR. Mekh. i mashinostr. no.3:173-176 Myune '64.  
MIRA 17:7;

L 20960-66 EWT(1)/EMA(h)  
ACCESSION NR: AP5013341

UR/0109/65/010/005/0879/0889  
621.372.822

AUTHOR: Nefedov, Ye. I.

10  
5  
B

TITLE: Dielectric prism in the bend of a flat wide waveguide: 25

SOURCE: Radiotekhnika i elektronika, v. 10, no. 5, 1965, 879-889

TOPIC TAGS: flat waveguide, waveguide bend, dielectric prism, bending prism

ABSTRACT: A dielectric prism inserted in an easy bend of a wide waveguide compensates the spurious modes caused by one of the waveguide natural modes, when the prism size considerably exceeds the wavelength (at millimeter waves). The problem of falling a natural mode on the prism is solved by the method of longitudinal sections, and the solution is obtained in the form of a small-parameter power series, where  $\gamma \approx (l/a)^2 \ll 1$ ; "l" and "a" are the half-width of the prism base and the waveguide width, respectively. The method permits estimating the variation of amplitude of the mode that passed the prism

Card 1/2

L 20960.06

ACCESSION NR: AP5013341

even in the zeroth order of  $\mu$ ; however, the method is inapplicable for higher incident modes. "The author wishes to thank B. Z. Katsenelembaum for his constant interest and great help in the work, and also G. D. Malyuzhinets, B. V. Kostrov, and V. V. Malin for their attention and useful discussions." Orig. art. has: 4 figures and 45 formulas.

ASSOCIATION: Institut radiotekhniki i elektroniki AN SSSR (Institute of Radio Engineering and Electronics, AN SSSR)

SUBMITTED: 15Apr64

ENCL: 00

SUB CODE: EC

NO REF SOV: 015

OTHER: 001

Card 212 *7105*



SHIRIN, P.K. (Moskva); POVERENNYI, L.D. (Moskva); KAMENEV, M.O. (Moskva);  
BARCH, I.Z., insh. (Khar'kov); PUSHKAREV, V.V. (Novosibirsk);  
BALABAN, A.I. (Khar'kov); DZHILOYEV, I.M. (Khar'kov); RUBINSHTSEY,  
M.Z. (Khar'kov); RYABCHICH, V.F. (Magnitogorsk); SOLOVAREV, K.N.,  
(Kazan'); KHODOROVSKAYA, O.R. (Khar'kov); NAFEDOV, Yu.M. (Leningrad).

Discussion on plans and regulations for the organization and the  
technology of building. Stroi. prom. 35 no.12:5-20 D '57.

(Architecture--Designs and plans)

(MIRA 11:1)

(Construction industry)

NEFEDOV, Ye. Ye.

ZAL'KINDSON, Ye.I.; NEFEDOV, Ye.Ye.; BEREZINSKIY, A.R., professor, doktor  
tekhnikeskikh nauk, redaktor; CHEBYSHEV, Ye.A. tekhnicheskii  
redaktor

[Flat steel gates for hydraulic constructions] Ploskie stal'nye  
zatvory gidrotekhnicheskikh sooruzhenii. Pod red. A.R.Berezinskogo.  
Moskva, Gos. izd-vo lit-ry po stroitel'stvu i arkhitekture, 1951.  
44 p. 60 l. (MLA 8:2)

(Gates, Hydraulic)

NEPEDOV, Ye.Ye., inshener.

Construction of double-walled, twin sluice gates. Gidr.stroi. 22 no.7:  
10-41 JI '53. (MLBA 5:7)  
(Sluice gates)

ZAL'KINDSON, Yevgeniy Il'ich; ~~NEPUDOV, Yevgeniy Yevgen'yevich~~; GUBOVICH,  
I.Ya., red.; VORONETSKAYA, L.V., tekhn. red.; ZABRODINA, A.A.,  
tekhn. red.

[Steel Tainter gates for hydraulic engineering construction]  
Segmentnye stal'nye zatvory gidrotekhnicheskikh sooruzhenii.  
Moskva, Gos. energ. izd-vo, 1958. 168p. \_\_\_\_\_ [Atlas of  
designs] Atlas konstruktsii. 1958. 39 diagrams. (MIRA 11:9)  
(Sluice gates)

KHITRIK, S.I.; VLASENKO, V.Y.; GASIK, M.I.; YEM, A.P.; NEFEDOV, Yu.A.

Refining 75-per cent ferrosilicon from aluminum. *Izv.vys.ucheb.  
zav.; chern.met.* 5 no.4:45-53 '62. (MIRA 15:5)

1. Dnepropetrovskiy metallurgicheskiy institut.  
(Ferrosilicon--Metallurgy) (Aluminum)

BELIKOV, Yu.V.; NEFEDOV, Yu.A.

Using Nikopol', 2d and 3d-grade, lean concentration  
facture of silicomanganese. Nauch. trudy DMI n. 10

1974  
10  
(MIRA 10:10)

L 20785-66 EPF(n)-2/EWP(k)/EWT(m)/ETC(m)-6/T/EWA(d)/ENP(w)/ENP(v)/ENP(t) IJP(c)

ACC NR: AP6005747 EM/JD/JG

SOURCE CODE: UR/0128/65/000/010/0027/0031

AUTHOR: Nekhendzi, Yu. A. (Doctor of technical sciences); Shpindler, S. S. (Engineer)

ORG: none

TITLE: On the theory of the alloying and composition of heat-resistant steels for highly stressed cast turbine blades

SOURCE: Litayaoye proizvodstvo, no. 10, 1965, 27-31

TOPIC TAGS: high alloy steel, turbine blade, metal casting, cooling, austenite, ferrite, high temperature strength

ABSTRACT: Austenitic steels of the Fe-Cr-Ni system containing various amounts of Cr and Ni, e.g. 20/10, 15/15, 20/20, 15/35, etc., additionally treated with Mo, W, Nb, Ti, Al, and other alloy elements which dissolve in the austenite and form hardening phases (carbides, carbonitrides, intermetallides), are widely used in industry for the temperatures 600-750°C. In this connection, and since the cooling rate of castings of Cr-Ni steel greatly affects their phase structure, and particularly the formation of ferrite, the author describes new structural diagrams specially developed for high-alloy steels of the Fe-Cr-Ni system as a function of the cooling rates of thin-walled castings of the gas-turbine-blade type, usually produced by the lost-wax process with pouring into ceramic molds heated to 800°C. In addition, formulas quantitatively re-

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UDC: 669.14.018.44-14

L 20785-66

ACC NR: AF6005747

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lating the chemical composition of the steel to the possible amount of ferrite in % are presented as substitutes for structural diagrams of this kind; by means of these formulas the phase composition of Cr-Ni steel can be determined as a function of the cooling rate of thin-walled castings in ceramic molds. The alloy elements Mo, W, Nb create in the  $\gamma$ -solid solution a nonuniform and distorted electron distribution, thus considerably enhancing its high-temperature strength. A high Ni content is not always necessary to attain high values of stress-rupture strength and creep strength in steel. Given a specific content of Cr, Ni and C in a steel, a specific amount of ferrite-forming elements is required to obtain the limiting saturation of the  $\gamma$ -solid solution under specific production conditions so as to maximize, in relation to a given temperature, the high-temperature strength of the products cast from this steel. These and other principles of the alloying theory expounded here have been experimentally confirmed and used to develop new heat-resistant foundry steels PZh-1 and PZh-2 for the casting of turbine blades and rotors with higher stress-rupture strength, more stable austenitic structure and greater economy (lower content of Ni and Mo). Orig. art. has: 8 figures, 3 tables. 18

SUB CODE: 11, 13, 29/ SUM RATE: none/ ORIG REF: 018/ OTH REF: 005

Card 2/2



BUSYGIN, V.Ye.; NEZHEDOV, Yu.G.

A method for determining the rate of spreading of the pulse wave in  
man and in animals. Biul. eksp. biol. i med. 43 no.1 supplement:48-50  
'57. (MLRA 10:3)

1. Predstavlena deystvitel'nym chlenom AMN SSSR A.I. Nesterovym.  
(PULSE, physiol.  
determ. of pulse wave spreading in animals & in man, method)

USSR / Human and Animal Physiology. Blood Circulation.

T-4

Abs Jour : Ref Zhur - Biologiya, No 1, 1959, No. 3347

Author : Nefedov, Yu. G.

Inst : Not given

Title : On an Experimental Method of Determining Circulating  
Blood Volume

Orig Pub : Byul. eksperim. biol., i med., 1957, <sup>73</sup>No 1, prilozhenie,  
50-52

Abstract : 1 ml of an indicator that contained 30 - 40  $\mu$  Curie Zn<sup>65</sup>  
was injected into the ear vein of a rabbit. Two minutes  
later, 0.5 - 1 ml of blood was taken from the vein of  
the other ear, a smear made on a glass slide of 4 cm<sup>2</sup>  
in surface, and its activity determined by means of a  
counter. The circulating blood volume was calculated  
from the formula

$$M = \frac{A}{a}$$

Card 1/2

BURNAZYAN, A.I.; KAMYSHENKO, I.D.; NEFEDOV, Yu.G.

Sanitary and hygienic measures on the atomic icebreaker Lenin.

Med. rad. no. 4:70-72 Ap '59.

(MIRA 12:7)

(SHIPS,

radiation protection on atomic icebreaker Lenin (Rus))

(RADIATION PROTECTION,

on atomic icebreaker Lenin (Rus))

LEBELINSKIY, A.V.; LEVINSKIY, S.V.; NEFEDOV, Yu.G.

Unique experiment of Soviet scientists. Av. Kosm. 4. 1964. 24-31 N 164. (MIRA 1964)

31942-45 ENT(m) DIAAP

ACCESSION NR: AP5005523

8/0205/65/005/001/0072/0076

AUTHOR: Lebedinskiy, A. V. (Deceased); Nefedov, Yu. G.; Donshtak, M. P.; Ryzhov, N. I.; Darenskaya, N. G.; Bibikova, A. R.; Orushina, A. H.; Lebedev, B. I.

TITLE: The biological effects of fractional irradiation by 510-Mev protons on dogs

SOURCE: Radiobiologiya, v. 5, no. 1, 1965, 72-76

TOPIC TAGS: high energy proton, biological effect, dog

ABSTRACT: Little data has been published on the effect of high-energy protons on larger animals. It is theorized by the authors that the biological effectiveness of protons on larger animals would be more pronounced than on small animals. To test this theory, the authors investigated 12 dogs divided into two groups (6 dogs each) according to conditions of irradiation; the first group was irradiated 19 times over a period of 40 days with a total dose of 650 r. The second group was irradiated 8 times over a period of 15 days with a total dose of 690 r. The radiation doses in the first group ranged from 10 to 79 r and in the second group from 71 to 109 r. The experiments were conducted at the Joint Institute of Nuclear Research on the LYAP synchrocyclotron. The unit was arranged so that a 510-Mev proton beam hit a section 40 cm in diameter at 1 rad/sec. It was found that both

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ACCESSION NR: AP5005523

groups exhibited functional and morphological symptoms of severe radiation sickness, typical of this type of radiation. In comparison with clinical data on the effects of x-rays, protons generally had the same effects. However, dogs irradiated with protons exhibited some symptoms peculiar to this radiation; the hemorrhagic syndrome was more pronounced, and, when death took place, there was a relatively higher leukocyte content in the peripheral blood and generally lower bone-marrow blood formation in the form of a somewhat greater depth of damage to cells of the erythroblastic system. An examination of the structures of the central nervous system revealed damage to neural and glial structures and disruption of blood and fluid circulation. Orig. art. has: 5 figures. [CD]

ASSOCIATION: none

SUBMITTED: 19Feb63

ENCL: 00

SUB CODE: 18

NO REF SOV: 003

OTHER: 007

ATD PRESS: 3201

Card 2/2

NEP 500V YU G

PHASE I BOOK EXPLOITATION

SOV/5294

Akademiya nauk SSSR. Institut biologicheskoy fiziki

Issledovaniye rannikh reaktsiy organizma na radiatsionnoye vozdaystviye (Study of Early Reactions of the Organism to Radiation Effects) Moscow, Izd-vo AN SSSR, 1960. 220 p. Errata slip inserted. 3,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut biologicheskoy fiziki.

Resp. Ed.: G.M. Frank, Corresponding Member, Academy of Sciences USSR; Ed. of Publishing House: B.V. Garian; Tech. Eds.: V. Volkova and Ye.V. Makuni.

PURPOSE: This book is intended for radiobiologists.

COVERAGE: This is a collection of nine articles by different authors on the effects of radiation on life processes. The following are discussed: the relationship between reflector mechanisms and disturbances in hemodynamics; the marked diminution or total absence of hemodynamic reactions under soft irradiation upon preliminary treatment of the skin with novocain; reflector-induced changes in the central nervous system and the almost instantaneous advent of fine physico-chemical reactions following irradiation; changes in the stability of the

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Study of Early Reactions (Cont.)

SOV/5294

erythrocyte level during the first several hours after irradiation; blood albumin changes after irradiation, occurring earlier than believed heretofore by scientists; and new and important data on tissue breathing and disturbances in the physicochemical properties of erythrocytes. N.N. Livshits, Doctor of Biological Sciences, is mentioned. Each article is accompanied by references.

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Nefedov, Yu.G. Disturbances in Blood Dynamics in Acute Radiation Injuries	14
<hr/> Polivoda, A.I. Changes in the Elasticity and Hysteresis of Elastic-Type Arteries Due to a Total X-Ray Exposure	42

Card 2/3



Study of Early Reactions (Cont.)

SOV/5294

Veyze, L.G., and G.M. Frank. Changes in Blood Dynamics and Changes in the Mechanical Properties of Blood Vessels in Total and Local Irradiation	60
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Blokhina, V.D. Albumin Fractions in the Blood Plasma of Animals Exposed to Different Doses of X-Rays	93
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AVAILABLE: Library of Congress

JA/rn/gmp  
7-29-61

Card 3/3

L7 0000

21889  
S/177/61/000/002/002/005  
D234/D305

**AUTHORS:** Bogatkov, P.I., Candidate of Chemical Sciences,  
Nefedov, Yu.G., Candidate of Medical Sciences, and  
Poletayev, M.I.

**TITLE:** Expired air as a source of carbon monoxide contamination  
of air in hermetically sealed rooms

**PERIODICAL:** Voyenno-meditsinskiy zhurnal, no. 2, 1961, 37 - 39

**TEXT:** Carbon monoxide in the expired air of a healthy man is formed endogenously. Shostrand [Abstractor's note: No reference given] measured 0.0021 - 0.0024 % and noted a marked rise in diseases causing an oxygen deficit, after hard physical work and the inspiration of 6 - 7 % CO<sub>2</sub> or oxygen deficient air. Kon-Atre [Abstractor's note: No reference given] added asphyxias and several other pathological processes. The blood level of carboxyhaemoglobin may reach 4 % as a result of endogenous formation. The mechanism of formation is not yet established. In vitro, experiments with animal blood show that carbon monoxide is formed at 38°, the content increasing  
Card 1/4

21889

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D234/D305

Expired air as a source of ...

by 83 % in 20 hours. During haemolysis the carbon monoxide content doubles (Shostrand 1951). It increases in the conversion of haemoglobin to cholehaemoglobin under the influence of ascorbic acid (1952). Analogous results were obtained in in-vitro work on the combined oxidation of myoglobin and ascorbic acid. Myoglobin is converted to bile pigments, giving off carbon monoxide. Endogenous CO is excreted by the reversible dissociation of COHb:  $CO + Hb \rightleftharpoons COHb$ . While studying the air composition in a hermetically sealed room a gradual rise of carbon monoxide concentration was noted. There were no technical sources to cause this, yet by the end of the experiment the concentration was close to the industrially permitted limit. Therefore, the possibility of the rise being caused by the pulmonary and, perhaps, skin respiration of the people in the room was investigated. Three subjects were in a 14m<sup>3</sup> hermetic chamber doing normal physical and mental work. The temperature in the first experiment was maintained at 20 - 22°, in the second at 28° - 30°, relative vapor density 45 - 50 %. A special apparatus was used to replenish oxygen and remove carbon dioxide, and ...

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1789

Expired air as a source of ...

S/177/61/00 /002/002/005  
D234/D305

the air composition in the chamber to be maintained as 19 - 21 % oxygen, 0.2 - 0.8 carbon dioxide. Possible experimental sources of carbon monoxide formation e.g., burning organic material, smoking etc., were excluded as was formation by the replenishing apparatus. Air analysis for CO was made twice per 24 hours using apparatus, type LKB 3267A<sup>1</sup>. The specificity of the method was checked on chemical components of the chamber air - carbon dioxide, ammonia, methylamines and aldehydes, and found to be reliable. Air analysis: the subject made two full expirations through a gas pipette, volume 250 m<sup>3</sup>; two successive trials were chosen; air from the pipette passed through the indicator tube and the carbon monoxide content was determined by comparing the color intensity of the reacting substance with the standard scale. Data for smokers and non-smokers are given in tabulated form. The expired air of non-smokers contains on average 0.016 mg/l of carbon monoxide of smokers 0.038 mg/l. The results for non-smokers are approximately 20 % below Shostrand's due to the different methods of carbon monoxide determination. Carbon monoxide concentration went on rising as long as

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21889

Expired air as a source of ...

S/177/61/000/002/002/005  
D234/D305

the experiment continued reaching 0.023 - 0.027 mg/l after nine to ten days. Temperature had no effect on the rate of increase or concentration. It is not yet possible fully to evaluate the significance of this carbon monoxide formation from a sanitary and hygienic point of view, but such high concentrations of carbon monoxide may be reckoned disadvantageous especially if people have to be in such hermetically sealed chambers continuously and for a long time. There are 1 table and 1 figure. X

SUBMITTED: December 1959

Card 4/4

BURNAZYAN, A.I., kand.med.nauk; GORODINSKIY, S.M., kand.med.nauk; KAMYSHENKO,  
I.D.; NEFFDOV, Yu.G., kand.med.nauk; PRAVETSKIY, V.N.

Providing radiation protection on the atomic icebreaker "Lenin."  
Sudostroenie 27 no.8:11-14 Apr '61. (MIRA 14:9)  
(Lenin (Atomic ship)) (Radiation protection)

LEBEDINSKIY, A.V.; NEFEDOV, Yu.G.

Problems of radiation protection in space flights. Probl.kosm.  
biol. 2:11-24 '62. (MIRA 16:4)  
(SPACE FLIGHT—SHIELDING (RADIATION))

NEFEDOV, Yu.G., kand.med.nauk; SAVINA, V.P., inzh.

Steam ejection cooling machines as sources of air pollution by carbon  
monoxide. Sudostroenie 28 no.5:28-29 My '62. (MIRA 15:00)  
(Ships—Air conditions) (Air—Pollution)



LEBEDINSKIY, A.V., prof.; NEFEDOV, Yu.G.

Space flights and ionizing radiation. Priroda 52 no.7:19-24  
Jl '63. (MIRA 16:8)

(Radiation--Dosage)

LEBEDINSKIY, A. V.; LEVINSKIY, S. V.; NEFEDOV, Yu. G.

"The general principles in reaction of the organism on the complex environmental factors acting in the cabins of cosmic vehicles."

report submitted for 15th Intl Astronautical Cong, Warsaw, 7-12 Sep 64.

NEFEDOV, Yu.G., red.; GORYACHEVA, N.A., red.

[Problems of the radiation safety of space flights;  
physical and biological studies with high-energy protons;  
Problemy radiatsionnoi bezopasnosti kosmicheskikh pole-  
tov; fizicheskie i biologicheskie issledovaniia s proto-  
nami bol'shikh energii. Moskva, Atomizdat, 1964. 237 p.  
(MIRA 17:12)

L 20727-65 EEO-2/FSF(h)/FSS-2/EWG(r)/EWT(1)/FS(v)-3/EEC(k)-2/EWG(v)/EWA(d)/  
EWG(a)/EWG(c)/EWG(j) Pb-4/Po-4/Pe-5/Pq-4/Puc-4/Pae-2/Pi-4 BSD/ASID(a)-5/AFWL/  
AMD/AFETR/APTC(t) TT/DD/GW

ACCESSION NR: AP4049501

S/0209/64/000/011/0024/0031

AUTHOR: Lebedinskiy, A. V.; Levinskiy, S. V.; Nefedov, Yu. G.

TITLE: In anticipation of new space flights, a unique experiment of Soviet scientists

SOURCE: Aviatziya i kosmonavtika, no. 11, 1964, 24-31

TOPIC TAGS: prolonged isolation, cosmonaut training, ionizing radiation, temperature, noise level, carbon dioxide concentration, adaptation

ABSTRACT: This article deals with the problem of studying the reaction of the human organism to a prolonged stay in an hermetically-sealed chamber. Results will make possible the setting up of further experiments using different environments. These experiments, which varied from 10 to 120 24-hour periods in length, studied the effects of this isolation on the vital functions of 10 human beings. Other conditions, including small doses of ionizing radiation and periodic increases in temperature and noise-level, were simulated. Not only did the varying environments influence the human subjects, but the human organism was found to influence the environment. A considerable increase in the number of bacteria in the air of the chamber and on the skin of the subjects was noted. There was also a marked increase in carbonyl hemoglobin in the blood, and CO<sub>2</sub> in the air of the chamber.

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ACCESSION NR: AP4049501

chamber, the latter varying from 10 to 20 times the normal atmospheric content. This caused subjects to experience difficulty in breathing and to demonstrate symptoms of auto-intoxication. During the initial 10 or 15 24-hour periods, major adjustments to the new environment were made. Systole decreased and reaction time delay increased, light sensitivity was lowered and the error factor went up. Nevertheless, adjustment was eventually made, light sensitivity returned, and the number of errors decreased. Fatigue remained constant and heart action was found to be at a sub-normal level. The article also deals with irritability, nervousness, and other non-physical reactions. The influence of the individual on the environment is stressed, with such influences differing from individual to individual. Orig. art. has: 4 graphs.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: PH

NO REF SOV: 000

OTHER: 000

Card 2/2

SECRET  
CONFIDENTIAL

L 45965-66 EWT(1) SCTB DD/RD/JKT/GD/JXT(CZ)

ACC NR: AT6030695

SOURCE CODE: UR/000C/66/000/000/0035/0051

AUTHOR: Nefedov, Yu. I.; Anisimov, B. V.; Veselova, A. A.; Zaloguyev, S. K.;  
Zhuravlev, V. V.; Iseyev, L. R.; Komarov, N. N.; Kartsev, A. N.; Ivanenko, G. T.;  
Levinshiy, S. V.

ORG: none

TITLE: The aeroion composition of the air of hermetic chambers and its influence on the human organismSOURCE: Konferentsiya po kosmicheskoy biologii i meditsine, 1964. Materialy.  
Moscow, Inst. mediko-biol. problem, 1966, 35-51

TOPIC TATS: aeroionization, human physiology, life support system, space physiology

ABSTRACT: A number of previous studies have indicated that while aeroions are of minor consequence, chronic exposure to them can lead to substantial changes in the functional condition of the organism. To further study this factor, five experiments of 20 days duration were conducted on 29 male volunteers from a laboratory (not named). The first experiment was for control purposes to obtain hygienic, chemical, and physiological data. The density of ions in this experiment ranged from 50—2000 pairs of ions/cm<sup>3</sup>. The second, third, and fourth experiments entailed exposure to positive, negative, and bipolar ions generated by "Sateynbox" radioactive ionizers. Ion concentration in the respiratory zone was 700—900 thousand ions/cm<sup>3</sup>.

Card 1/1

L 45065-56

ACC NR: AT6030695

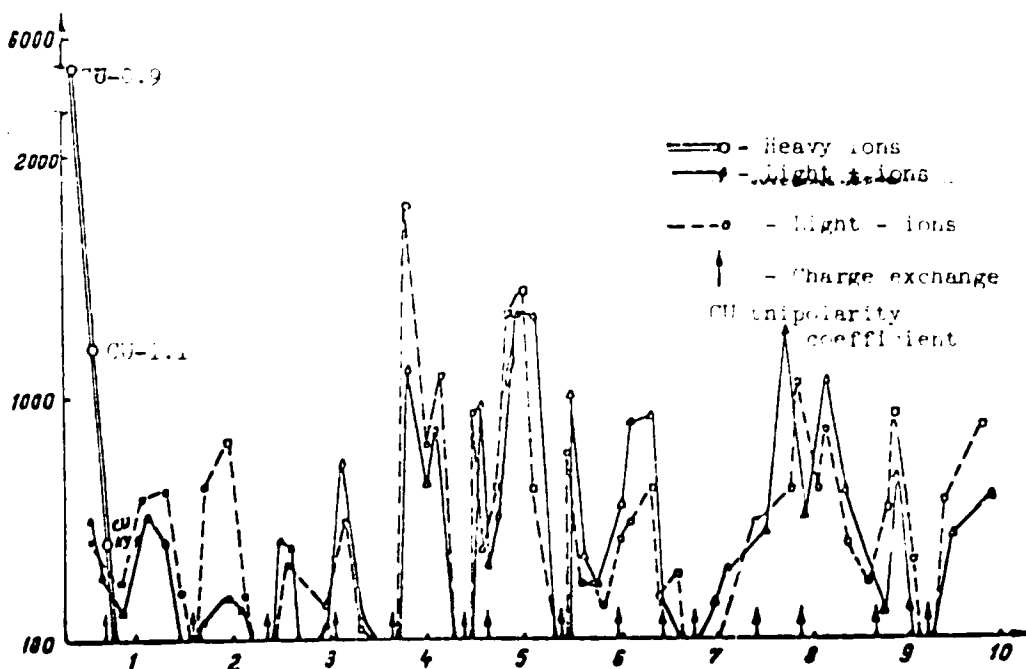


Fig. 1. Aerion composition during a 10-day experiment

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L 45965-66  
ACC NR: AT6030695

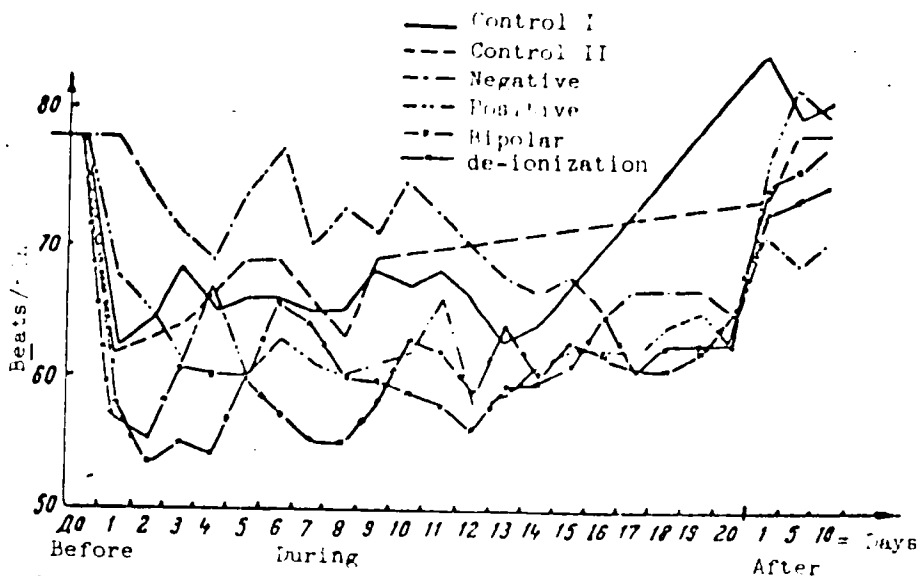


Fig. 2. Pulse dynamics during various experimental regimens

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L 45965-66

ACC NR: AT6030695

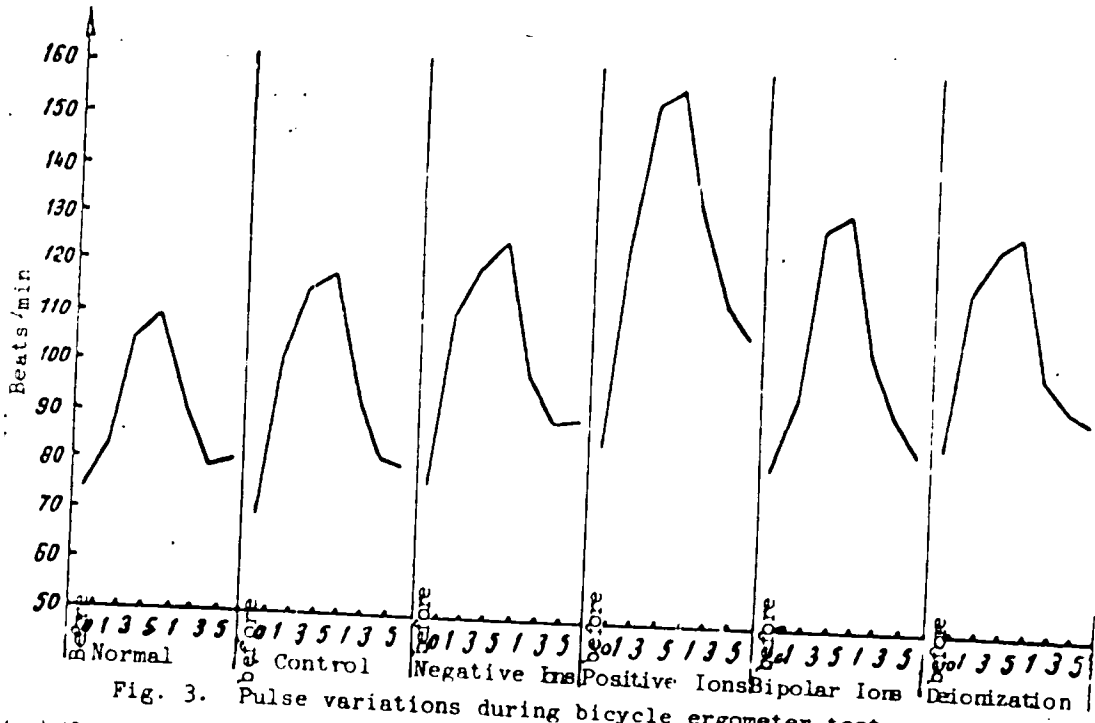


Fig. 3. Pulse variations during bicycle ergometer tests

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L 45965-66  
ACC NR: AT6030695

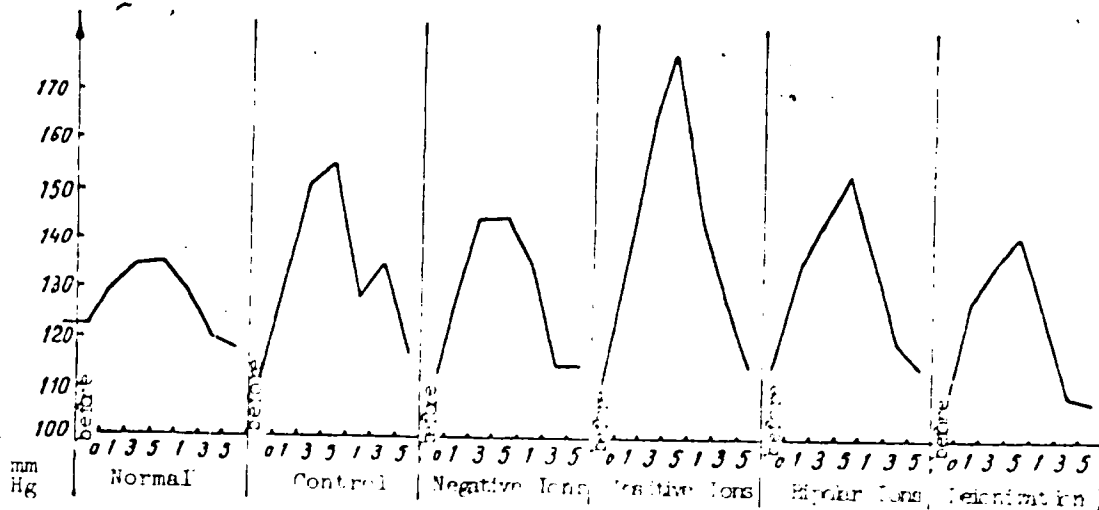


Fig 4. Changes in systolic pressure during exercise on a bicycle ergometer (mean values)

L 45965-66

ACC NR: AT6030695

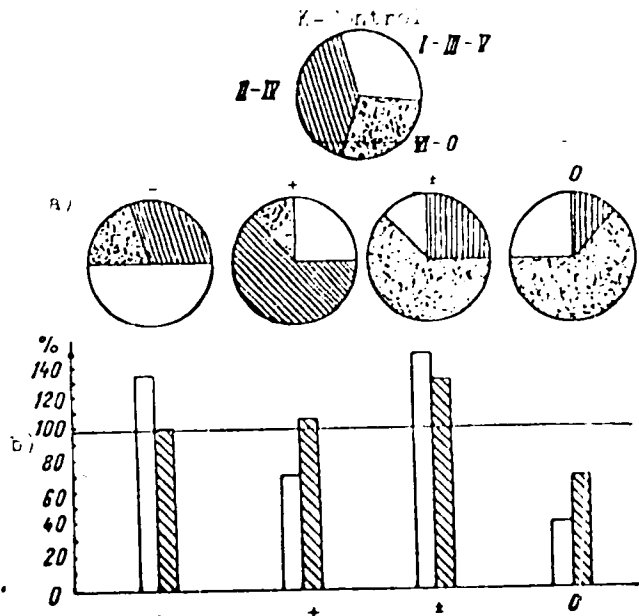


Fig. 5. Comparative characteristics of changes in the strength of neural processes in various experimental regimens (+, -, \*, control)

a - Character of reactivity curves;  
b - changes in the coefficient of reactivity to light (white) and to opening the eyes (striped).

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L 45965-66  
ACC NR: AT6030695

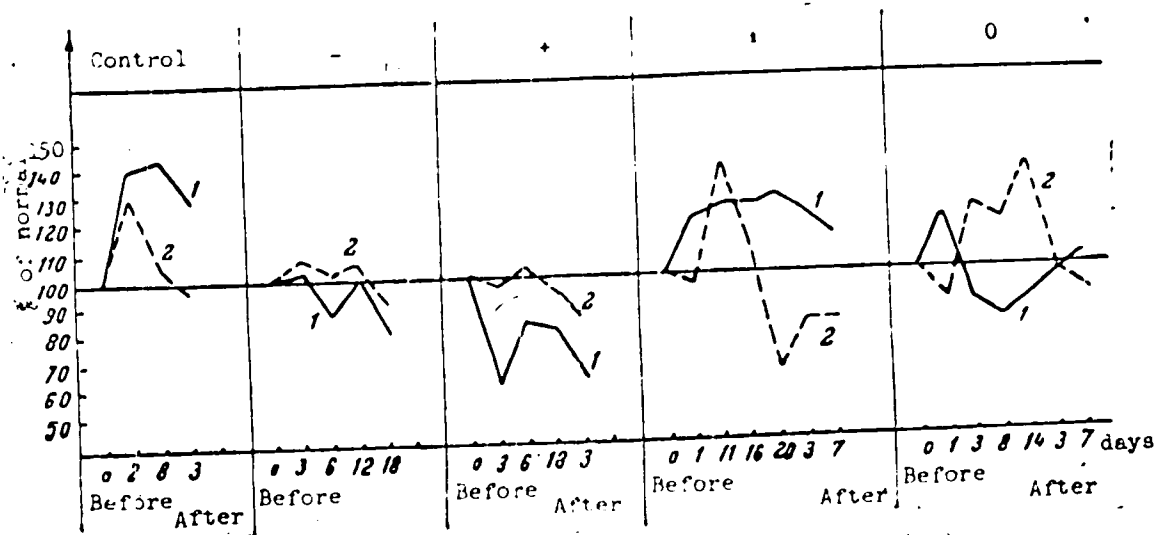


Fig. 6. Changes in the sensitivity of central ( $E_0$ ) and peripheral ( $L_3$ ) components of the visual analyzer (mean values): 1 -  $E_0$ ; 2 -  $L_3$

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L 45965-66

ACC NR: AT6030695

0

during experimentation. Allowing that the natural exposure dose for the lungs is 12.87 mrem/week (Sivintsev, 1960), it was calculated that 1 g of lung receives  $0.33 \cdot 10^{10}$  pairs of ions per day. If, in the respiratory medium, there were 500 pairs of light ions/cm<sup>3</sup> and 5000 pairs of heavy ions/cm<sup>3</sup>, then  $0.7 \cdot 10^{10}$  light and  $7 \cdot 10^{10}$  heavy pairs of ions would reach the lungs of a man during a day. In these experiments, the average subject received approximately  $10^{11}$  pairs of light ions per day. In the fifth experiment, the chamber was de-ionized using a system of filters and special ion traps. However, complete de-ionization could not be achieved and the density was 50-60 pairs of ions/cm<sup>3</sup>. Some results of these experiments are shown in Figs. 1-6. The results of the experiment generally showed increased muscular working capacity, external respiration, and an increased level of gas exchange during exercise in the experiment with negative aeroionization. Partial normalization of some indices occurred during the respiration of negative aeroions. However, for a number of indices, a normalizing effect was also noted in response to the respiration of positive and bipolar ions. Nonetheless, the general trend of the majority of shifts noted during experimentation lends credence to the proposition that prolonged exposure to positive ions or a de-ionized air leads to some changes deleterious to human health. It is possible that an effective approach to this problem would be to combine negative ions with positive or bipolar ions. The establishment of optimum aeroion regimens requires additional research. Orig. art. has: 7 figures. [CD]

SUB CODE: 06/ SUBM DATE: 14Apr66/ ORIG REF: 011/ ATD PRESS: 5086

Card 8/8 ha

L 04625-67 EWT(m) GD

ACC NR: AT6029632

SOURCE CODE: UR/0000/66/000/000/0235/0241

AUTHOR: Darenskaya, N. G.; Derbeneva, N. I.; Nefedov, Yu. G.; Ryzhov, N. I.;  
Seraya, V. M.; Domshlak, M. P. (Professor)

56  
BT/1

ORG: none

TITLE: The RBE of high-energy protons

SOURCE: Voprosy obshchey radiobiologii (Problems of general radiobiology). Moscow, Atomizdat, 1966, 235-241

TOPIC TAGS: proton, radiation biologic effect, dog, rat, mouse, relative biologic efficiency

ABSTRACT: The RBE of 510-, 240-, and 126-Mev protons was studied in comparative experiments with dogs, rats, and mice. A proton flux generated by the OIYal synchro-cyclotron at Dubna was used. Polyethylene and lead absorbers were used to decrease proton energies from 660 Mev, at the same time increasing the beam diameter to enable irradiation of large animals. The dose rate varied from 0.3-1.5 rad/sec. Rats and mice were irradiated in a rotating chamber and dogs were irradiated from two sides in order to equalize the dose distribution. RBE values were determined during both single and multiple irradiation: during multiple irradiation dogs were exposed 8-19 times in the course of 2-5 weeks for total doses of 200-690 rad, and rats were exposed 20 times in the course of 4 weeks for total doses of 750 and 1115 rad. Single

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L 04625-67

ACC NR: AT6029632

proton doses amounted to 136—550 rad for dogs and 100—1200 rad for rats and mice. It was observed that irradiation of dogs with small doses of protons altered their immunological reactivity, as indicated by the depressed phagocytic activity of neutrophils in the first days after irradiation. In proton-irradiated dogs a decrease in oxidative processes was also noted; CO<sub>2</sub> liberation and oxygen consumption dropped 35—50% shortly after irradiation and remained depressed until the animal died or until most radiation sickness symptoms disappeared. Experimental results showed the same periods of appearance of various symptoms of radiation sickness (such as increased temperature, diarrhea, changes in peripheral blood, etc.) for proton- and gamma-irradiated dogs (except that dogs irradiated once with 510-Mev protons developed symptoms somewhat earlier). RBE values for protons in the energy range indicated were based on comparison of percentage survival, duration of life of surviving animals, severity of individual symptoms and results of laboratory tests. It was concluded that the RBE for dogs during multiple irradiation with 510- and 126-Mev protons is 1.0. For single irradiation, the RBE is 1.15 for 510- and 240-Mev protons, and 1 for 126-Mev protons. It should be noted that these RBE determinations are made on the basis of direct radiation effects, and may have to be altered for long-term radiation effects. Analogous experiments were conducted with white rats weighing 180—220 g and mice weighing 18—22 g. It was found that the RBE of 510-, and 240-, and 126-Mev protons for rats was 0.75, 0.73 and 0.69, respectively, based on the LD<sub>50/30</sub>. The RBE based on the LD<sub>100/30</sub> was 0.75 for 510-Mev protons, and 0.79 for 240- and 126-Mev protons. For mice the RBE value for 126-Mev protons was set

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L C4625-67

ACC NR: AT6029632

at 0.7. The difference in RBE values obtained for small and large animals is considerable, and indicates the danger of extrapolating data from small animals for study of the spaceflight radiation hazard to man. Orig. art. has: 2 figures and 2 tables. [JS]

SUB CODE: 06/ SUBM DATE: 23Apr66/ ORIG REF: 006/ OTH REF: 006/ ATD PRESS: 5063

Card 3/3 *leh*

ACC NR: AT6036658

SOURCE CODE: UR/0000/66/000/000/0287/0287

AUTHOR: Nefedov, Yu. G.; Zaloguyev, S. N.; Shilov, V. M.; Borshchenko, V. V.

ORG: none

TITLE: Problem of designing a habitable spacecraft cabin environment [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24-27 May 1966]

SCURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 287

TOPIC TAGS: automicroflora, closed ecological system, life support system, space cabin habitability, space hygiene, immunology

ABSTRACT:

Prolonged spaceflights require that man remain in a closed environment with an altered medium under the influence of a series of unfavorable space-flight factors. In sealed-chamber experiments with human subjects, during which certain spaceflight factors were simulated along with various work and rest schedules, in addition to physiological, psychological, and clinical observations, special attention was given to the study of the microflora of the medium, and the automicroflora and immunological reactivity of the human organism.

Card 1/3

ACC NR 112036658

Experiments with humans in sealed chambers have indicated that as experiments increase in duration, there is an increase in general bacteriological contamination of the surrounding medium in the chamber and that the number of pathogenic microorganisms increases significantly.

Studies of the processes of interchange of microorganisms between humans are of particular interest. Results of preliminary investigations based on phagocytic and serum studies have indicated an exchange of microorganisms between humans under these conditions.

Along with bacterial contamination of the environment, definite shifts in the immunological reactivity of the organism were noted. These shifts are characterized by disruption of the bactericidal function of the skin surfaces, depression of the phagocytic activity of leukocytes, and a reduction in the lysozyme content of the saliva.

The observed changes call attention to the need for finding methods of preventing the occurrence of infectious and autoinfectious diseases, which can arise as a result of the depression of immunological reactivity of the organism, changes in environmental microflora, and disruption of

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ACC NR: AT6036658

the normal microbial biocenosis in cosmonauts.

The problem of biological compatibility of microflora in relation to individual differences of space crew members deserves consideration.

[W. A. No. 22; ATD Report 66-116]

SUB CODE: 06,22 / SUBM DATE: 00May66

Card 3/3

1. The first part of the report deals with the general principles of the theory of the interaction of high energy particles with matter. It is shown that the main processes are ionization and excitation of atoms, and the energy loss of the particle is determined by the number of these processes. The energy loss is proportional to the square of the atomic number of the material and to the inverse of the particle velocity.

2. The second part of the report deals with the theory of the interaction of high energy particles with matter. It is shown that the main processes are ionization and excitation of atoms, and the energy loss of the particle is determined by the number of these processes. The energy loss is proportional to the square of the atomic number of the material and to the inverse of the particle velocity.

3. The third part of the report deals with the theory of the interaction of high energy particles with matter. It is shown that the main processes are ionization and excitation of atoms, and the energy loss of the particle is determined by the number of these processes. The energy loss is proportional to the square of the atomic number of the material and to the inverse of the particle velocity.

end 1/4



ACC NR: AT6036473

SOURCE CODE: UR/0000/66/000/000/0020/0021

AUTHOR: Aleksandryuk, S. P.; Anisimov, B. V.; Komarov, N. N.; ~~Nefedov, Yu. G.~~  
Potapov, A. N.; Sorova, L. V.; Tikhonova, G. P.

ORG: none

TITLE: Air ionization as a spacoflight factor [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24-27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 20-21

TOPIC TAGS: aeroionization, closed ecological system, life support system, human physiology, aeroion biologic effect, cosmic radiation biologic effect

ABSTRACT:

The physical and chemical properties of space cabin atmospheres may be changed by cosmic radiation, which produces ions and dissociated molecules with high (10 to 15 ev) potential energies. The latter have considerable chemical activity. A study was therefore made of the ionization of space cabin air. Radiation equivalent in intensity to average galactic radiation (0.3 ber) produces an atmospheric ion concentration of  $10^5$  mol/cm<sup>3</sup>, which is easily reproduced under laboratory conditions.

Card 1/2

ACC NR: AT6036473

Data from the literature and our own experiments show that air ionization is an active factor causing definite changes in the state of the organism, particularly during stress or injury. Twenty-day experiments have shown that an appropriate air-ion regime can reduce the adverse effects on man of prolonged sojourns in sealed cabins. Single exposures of animals to ionized air caused changes in the resistance of peripheral blood erythrocytes to osmotic hemolysis and in the vital stain sorption properties, shifts in the metabolism of a number of physiologically active substances, changes in the ion permeability of the skin, and increased mitotic activity in the tissues. All these data confirm that even brief exposure to air ions in doses approaching those possible in a space cabin (1 to 5  $10^5$  ion/cm<sup>3</sup>) has a definite effect on the organism.

Because air ionization is an unavoidable spaceflight factor having definite biological effects, its mechanisms of action must be studied further and ways found to realize energy recombination of ions in the living organism.  
[W. A. No. 22; ATD Report 66-116]

SUB CODE: 06 / SUB CODE: 00May66

Card 2/2



L 38519-66 EWT(m)/EWP(w) IJP(c) EM/WW

ACC NR: AR6020062

SOURCE CODE: UR/0124/66/000/001/AC14/A014

AUTHOR: Nefedov, Yu. M.

TITLE: Determination of forced vibrations of nonlinear stabilization systems

SOURCE: Ref zh. Mekhanika, Abs. 1A98

REF SOURCE: Tr. Leningr. in-t aviats. priborostr., vyp. 44, 1964, 43-52

TOPIC TAGS: forced vibration, frequency characteristic, approximation methods, ~~stabilization systems~~

ABSTRACT: The article deals with the application of the method of approximation for determining forced vibrations of nonlinear systems based on logarithmic frequency characteristics for the study of multi-circuit nonlinear stabilization systems. Bibliography of 5 titles. [Translation of abstract] [KP]

SUB CODE: 20/ SUBM DATE: none/

Cord 1/1

L 34411-66 EWT(1) SCTB DD/GD

ACC NR: AT6009451

SOURCE CODE: UR/0000/65/000/000/0297/0301

AUTHOR: Malakhov, A. N.; Maksimov, A. S.; Nefedov, Yu. Ya.

ORG: None

TITLE: Electromagnetic hypothesis on biological communication ✓

SOURCE: AN SSSR. Nauchnyy sovet po kompleksnoy probleme Kibernetika. Bionika (Bionics). Moscow, Izd-vo Nauka, 1965, 297-301

TOPIC TAGS: communication, electromagnetic radiation, spectrum, very low frequency, bionics, animal physiology

ABSTRACT: The authors measured the spectrum of the biopotentials of certain biological objects. The spectrum included the frequency band from 1 to 500 cps. The electromagnetic radiation from biological objects was also measured at frequencies of 3 to 150 kc. These measurements were conducted in order to verify the other results (e. g., W. K. Volkers, W. Candib. 1960. Detection and analysis of high frequency signals from muscular tissues with ultra-low noise amplifiers. —IRE International Convention Record, part 9.). The apparatus and conditions for these measurements are discussed. The results show that the biological activity spectrum of animals is compact and falls with frequency  
Card 1/2

L 34411-66

ACC NR: AT6009451

increase. The compactness of the spectrum indicates a stochastic noisy character of the biopotentials. The dimensions of the spectrum at high frequencies indicate that the energy of biological activity occurs at subsonic frequencies. It is shown that electromagnetic radiation of bioobjects does exist. The final results show that electromagnetic emission by biological objects cannot serve the function of information carrier in biological communication. This conclusion is based on the fact that the electromagnetic emission is too weak up to 150 kc. Orig. art. has: 4 figures.

SUB CODE: 06,<sup>05</sup>09 SUBM DATE: 26Oct65 / ORIG REF: 002 / OTH REF: 001

Card 2/2 BLG

L 59576-65

ACCESSION No: AP5015737

UR/0205/65/005/003/0451/0456  
577.4 : 577.391

19  
B

AUTHOR: Neisidova, A. I.; Popova, E. I.

TITLE: Distribution of Na<sup>22</sup> in the components of a body of water

SOURCE: Radiobiologiya, v. 5, no. 3, 1965, 451-456

TOPIC TAGS: radiobiology, radioisotope, sodium 22, hydrobiology, radioactivity

ABSTRACT: The authors studied the uptake of Na<sup>22</sup> by various organisms in aquariums. The biological specimens included 7 species of plants: water plantain (*Alisma plantago* L.); water thyme (*Elodea canadensis* Rich.); frogbit (*Hydrocharis morsus ranae* L.); duckweeds (*Lemna minor* L. and *Lemna trisulca* L.); foxtail (*Myriophyllum spicatum* L.), and hornwort (*Ceratophyllum demersum* L.)--and 4 species of molluscs: *Limnaea stagnalis* L.; *Radix auricularia* L.; *Anisus vortex* L., and *Bithynia leachi* L. Na<sup>22</sup> was found to have low coefficients of accumulation (ratio of the radioactivity of 1 g of dry substance in the organism to the radioactivity of 1 ml of water) by plants (81-198) and by molluscs (54.5-220). The low levels of accumulation of

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I. 59576-65

ACCESSION NR: AP5015737

0

radiosodium by the hydroblants and its weak absorption by the ground determine the hydrotropic type of distribution of radiosodium by the basic components in the water; at the end of the experiments an average of about 80% of the radioisotope remained in solution while the other 20% was redistributed between the ground and the hydroblants. Among the plants, the highest degree of  $\text{Na}^{22}$  uptake was noted in the frog-bit (activity up to  $17 \times 10^6$  decay/min; coefficient of accumulation up to 1138); the lowest degree in hornwort (activity  $1.5 \times 10^6$  decay/min; coefficient of accumulation about 81.5). The molluscs exhibited insignificant species differences in this respect. The bodies of the molluscs invariably contained much more radiosodium than did the shells. The distribution of  $\text{Na}^{22}$  in bodies of water is very similar to that of its chemical analog--cesium. The latter too is generally characterized by low values of the coefficients of accumulation by aquatic organisms. "The authors thank their coworkers N. V. and Ye. A. Timofeyev-Rosovskiy at the Institute of Biology UFAN SSSR for providing working space, and for valuable comments, I. N. Verkhovskaya of the Institute of Biophysics AN SSSR for reviewing the manuscript and advice, and laboratory assistant L. L. Kononova for help with the experiments." Orig. art. has: 2 figures, 1 table.

Card 2/3

L 59576-65

ACCESSION NR: AP5015737

0

ASSOCIATION: Institut biologicheskoy fiziki AN SSSR, Moscow (Institute of Biophysics, AN SSSR); Institut biologii Komi filiala AN SSSR, Syktyvkar (Institute of Biology, Komi Branch, AN SSSR)

SUBMITTED: 06Jul68

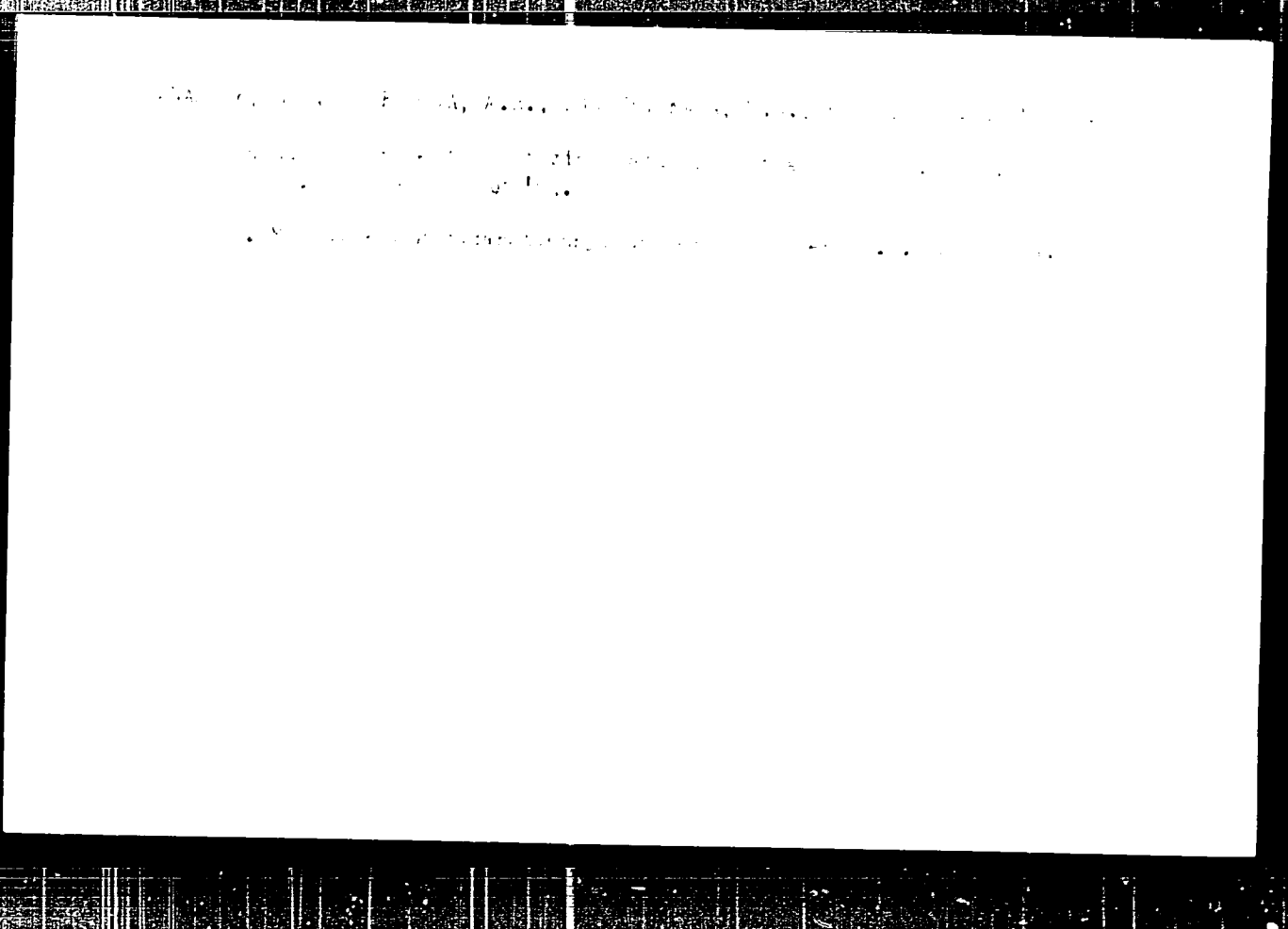
ENCL: 00

SUB CODE: LS, NP

NO REF SOV: 006

OTHER: 000

Card <sup>64</sup>/<sub>83</sub>



LADYZHENSKAYA, F.M.; NEPELOVA, D.I.

New developments in research. Staff 25 no.2:871 S 165. (MIRA 18:9)



SOV/78-3-8-12/48

AUTHORS: Adamovich, L. P., Nefedova, E. I., Vetrova, I. M.

TITLE: On the Problem of the Isomolarity of Solutions According to the Ostromyslenskiy-Zhob Method (K voprosu ob izomolyarnosti rastvorov, izpol'zuyemykh v metode Ostromyslenskogo-Zhoba)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol. 3, Nr 8, pp. 1785-1790 (USSR)

ABSTRACT: It is shown that in working with non-equimolar solutions the position of the maximum in general does not only depend on the initial concentration but also on the parameter characteristic of the equilibrium investigated. A theoretical consideration of the method according to Ostromyslenskiy-Zhob was dealt with. By means of practical examples of complexes with a composition of 1 : 1, 1 : 2 and 1 : 3 it was found that the displacement obtained for the maximum satisfactory agreed with the one calculated. In using non-equimolar solutions also a displacement of the maximum to the middle of the diagram may occur. The Ostromyslenskiy-Zhob method with non-equimolar solutions may also be employed in investigations of complexes of higher coordination numbers.

Card 1/2

SOV/78-3-8-12/48

On the Problem of the Isomolarity of Solutions According to the Ostromyslenskiy-Zhob Method

There are 4 figures, 2 tables, and 11 references, 5 of which are Soviet.

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet A. M. Gor'kogo  
(Khar'kov State University A. M. Gor'kiy)

SUBMITTED: July 8, 1957

Card 2/2

# NEFE DOVA, G Z

307/1936

## PHASE I BOOK EXPLOITATION

International symposium on macromolecular chemistry. Moscow, 1960.

Macromolekularny simpozium 90 makromolekulyarnoy khimii SSSR, Moskva, 14-18 Iyunya 1960 g.; doklady i vyrezeraty. Seriya III. (International Symposium on Macromolecular Chemistry Held in Moscow, June 14-18, 1960; Papers and Summaries) Section III. (Moscow, Izd-vo AN SSSR, 1960) 869 p. 55,000 copies printed.

Trans. Ed.: P. S. Kashina. Sponsoring Agency: The International Union of Pure and Applied Chemistry. Commission on Macromolecular Chemistry.

FOREWORD: This book is intended for chemists interested in polymerization reactions and the synthesis of high molecular compounds.

CONTENTS: This is section III of a multi-volume work containing papers on macromolecular chemistry. The articles in general deal with the kinetics of polymerization reactions, the synthesis of special-purpose polymers, etc. Ion exchange resins, semiconductor materials, etc., methods of catalyzing polymerization reactions, properties, and chemical interactions of high molecular materials, and the effects of various factors on polymerization and the degradation of high molecular compounds. 40 personalities are mentioned. References given follow the articles.

Mabek, T. I., and J. Kozmidel (Poland). Chlorination of Phenol-Formaldehyde Resins	27
Aleksandrov, L. V., M. Orlov, and A. Gerasimov (Rumaria). Cyanomethyl and Maltropropyl Ethers of Polyvinyl Alcohol	34
Kabanovich, A. Ya., G. Ya. Gordon, L. K. Kuznetsova, Ya. B. Gromov, A. I. Kravtsov, and E. A. Kuznetsov (USSR). Study of the Chemical Conversions of Polycarbonate	44
Pomukhin, B. A., M. S. Fel'dshym, and L. K. Kuznetsov (USSR). Chemical Interaction and Mechanism of the Activating Action of Double Systems of Valenzation Accelerators	65
Pinkus, I., M. A. P. Vorob'yev, G. A. Shil'man, and E. B. Gorchakova (USSR). Esters of Sulfuric Acid and Polyvinyl Alcohol	73
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Gardarsh, B. A., B. L. Davydov, B. A. Gerasimov, L. K. Kuznetsov, L. S. Polik, A. V. Popov, and P. A. Zhurav (USSR). The Production of Polymeric Materials which Exhibit Semiconductor Properties	85
Blazek, A., and L. J. Kevicz (Hungary). Chemical Properties of Bipolar Ion-Exchange Resins	93
Mabek, T. I., and J. Kozmidel (Poland). Effect of the Structure of Organic Amino Compounds on the Properties of Anion Exchange Resins from Polystyrene	102
Saldadze, K. M. (USSR). The Problem of the Effect of the Structure of Ionites on Ion-Exchange Processes Between Imitate and Electrolyte Solutions	107
Berlin, A. A., B. L. Kuznetsov, and V. P. Prikaz (USSR). Production and Properties of Some Aromatic Polymers	115
Protyaznaya, Ye. V., I. P. Losh, A. S. Terent'yev, S. B. Sokolov, G. Esigolov, and L. I. Kuznetsov (USSR). Chemical Conversions of Insoluble copolymers of Styrene	124
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TROSTYANSKAYA, Ye.B.; LOSEV, I.P.; NEFEDOVA, G.Z.

Synthesis of insoluble polymer complexes. Zhur. VKHO 5 no.1:108  
'60. (MIRA 14:4)

1. Moskovskiy khimiko-tekhnologicheskii institut imeni D.I.  
Mendeleeva.

(Complex compounds)

(Polymers)

TROSTYANSKAYA, Ye.B.; NEFEDOVA, G.Z.

Cation exchangers of higher selectivity in the processes of  
ion exchange (polymer complexons). Zhur.anal.khim. 17 no.4:  
411-415 J1 '62. (MIRA 15:8)

1. D.I.Mendeleev Moscow Chemico-Technological Institute.  
(Complexons) (Ion exchange)

S/190/63/005/001/007/020  
B101/B186

AUTHORS: Trostyarskaya, Ye. B., Neledova, G. Z.

TITLE: Synthesis of insoluble polymer complexones

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 5, no. 1, 1963, 49-56

TEXT: Styrene divinyl benzene (SD) copolymer containing 3% divinyl benzene was used as initial substance to synthesize insoluble complexones for ion exchange chromatography, which together with cations form chelates. (A) Styrene divinyl benzene was swollen in dichloro ethane, chloromethylated with HCl and paraform in the presence of  $ZnCl_2$ , then aminated in chloroform containing hexamethylene tetramine, and acetylated with chloroacetic, bromoacetic, and iodoacetic acids or with ethyl chloracetate. The resulting products had a very low acid number and no complex-forming capacity. They probably contained more aminoacetic than aminodiacetic radicals. (B) Chloromethylated SD was aminated with diethanol amine, the degree of amination of chloromethyl groups reaching 80%. The hydroxyl groups were then oxidized into carboxyl groups. Experiments with  $KMnO_4$ , chromate mixture, and  $HNO_3$  showed that the optimum  
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Synthesis of insoluble polymer ...

S/190/63/005/001/007/020

B101/B186

oxidant was 56%  $\text{HNO}_3$  at  $70^\circ\text{C}$  in the presence of  $\text{FeCl}_2$ . The resulting -2 (KT-2) complexone had an acid number of 3.5 - 3.7 mg-equ/g and contained 1.7 - 1.9% N. Oxidative degradation of the copolymer occurred as side reaction. Because of this reaction the copolymer is assumed to contain 73% iminodiacetic radicals and 27% carboxyl radicals. Potentiometric titration confirmed a two-stage dissociation. (C) Chloromethylated SD was aminated with iminodiacetic (I) dinitrile or diethyl ester, iminodipropionic (II) dinitrile or diethyl ester, and was then saponified in 0.1 - 0.5 N NaOH. Oxidative degradation did not occur and the degree of amination reached only 60 - 70% in I, 50% in II. Dichloro ethane was the best solvent. The degree of amination was lower in tetrahydrofuran, dimethyl formamide, dioxane, nitromethane, or ethanol. The acid number of -2 (KT-2N) complexone, a copolymer containing I groups, was 2.5 - 2.7 mg-equ/g, that of the -4 (KT-4) complexone, a copolymer containing II groups, was 2.6 - 2.8 mg-equ/g. The swelling capability of these complexones in 0.1 NaOH was 20 - 25%. If the  $\text{K}^+$  sorption is put at unity the following values are obtained for the complex-forming capacities of KT-2N, KT-2, and KT-4:  $\text{Cu}^{2+}$  0.625, 0.432,

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Synthesis of insoluble polymer ...

S/190/63/005/001/007/020  
B101/B186

and 0.380 respectively;  $Zn^{2+}$  0.657, 0.370, and 0.350 respectively;  
 $Ca^{2+}$  0.344, 0.228, and 0.170 respectively. The weaker complex-forming  
capacity of KT-2 by comparison with KT-2-N is explained by the oxidative  
degradation and that of KT-4 by the greater distance between the nitrogen  
atom and the carboxyl group. There are 4 figures and 2 tables.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskii institut im. D. I.  
Mendeleyeva (Moscow Institute of Chemical Technology imeni  
D. I. Mendeleyev)

SUBMITTED: July 14, 1961

Card 3/3



С. П. ЯНСКИЙ, Я. П. МЕДИНСКИЙ.

Инструкция по эксплуатации прибора для измерения  
Высокочастотных сигналов (номера 10-100-1070-10-100).

1970 г.

1. Для получения сведений о приборе необходимо обратиться  
к руководству.

TRIGYANESKAYA, Ye.B.; NEFEDOVA, O.I.

Insoluble polyamplazons. Zhur. khim. i tekhn. 1965, 12, 1111-1112.

1. Vvedenyuy naučno-issledovatel'skiy tsentr khimicheskoy reaktivnosti i obshchey khimii.

ACCESSION NR: AT4033532

S/0000/63/000/000/0162/0169

AUTHOR: Nefedova, I. D. (Candidate of chemical sciences); Somova, A. A. ;  
Maslennikova, A. A.

TITLE: Stainless steel for equipment producing caprolactam by air oxidation of  
cyclohexane

SOURCE: Poluprodukty\*dlya sinteza poliamidov (Intermediates for polyamide synthesis).  
Moscow, Goskhimizdat, 1963, 132-169

TOPIC TAGS: stainless steel, steel corrosion resistance, caprolactam, adipic acid,  
cyclohexane, cyclohexane air oxidation, caprolactam production, adipic acid production,  
cyclohexane oxidation equipment

ABSTRACT: Samples of ten stainless steels (designations and chemical composition  
given) were tested for effects of corrosive environments present in the reactor, separa-  
tor, filter, distillation column, reservoir and sedimentation tank of a plant producing  
caprolactam and adipic acid by air oxidation of cyclohexane. Temperatures ranged from  
140C to room temperature, pressures from 0 to 18 atm. exposures from 784 to 849  
hours. Analysis of the results, expressed in terms of corrosion rates and presented  
graphically and in tabular form, indicates that Mo alloyed steels are best suited for the

Card 1/2

ACCESSION NR: AT4033532

basic separator components of a plant. Steels containing 0.03 to 0.04% and the Nb alloyed steel Kh19N14B exhibited best corrosion resistance in the principal components of a plant producing adipic acid. Orig. art. h us: 3 tables and 3 graphs.

ASSOCIATION: None

SUBMITTED: 12Oct63

DATE ACQ: 06Apr64

ENCL: 00

SUB CODE: MM, OC

NO REF SOV: 000

OTHER: 000

Card 2/2

L 41216-65 EPA(a)-2/EWT(m)/EPF(o)/EWA(d)/EWP(v)/T/EWP(t)/EWP(k)/EWP(b)/EWA(o)  
FE-4 IJP(a) JD/HM/JG/WB  
ACCESSION NR: AP5009175

8/0125/64/000/011/0092/0093

AUTHOR: Gurevich, S. M.; Mafedova, I. D.; Yagupol'skaya, L. N.; Kamenskaya, Ye. A.

TITLE: Corrosion resistance of weld joints of titanium alloys containing 0.1 and 0.2% Pd

SCOURCE: Avtomaticheskaya svarka, no. 11, 1964, 92-93

TOPIC TAGS: titanium, titanium alloy, palladium metal welding, corrosion resistance, hydrochloric acid

ABSTRACT: Owing to the naturally high corrosion resistance of titanium in many corrosive media its use in chemical machinery is continuously expanding. A great many investigations have been carried out in the last few years on the applications of titanium. The problem of further improving its corrosion resistance was solved by alloying it with various elements. It was found that palladium was one of the most effective additives. Addition of 0.1 to 0.2% palladium to titanium significantly increases the stability of the metal to sulfuric and hydrochloric acids as well as other media.

40  
39  
B.

Card 1/4

L 41246-65

ACCESSION NR: AP5009175

Until recently no studies have been made of the behavior of welds made of such an alloy in aggressive media, and furthermore there is little basis for recommending this alloy for welding chemical equipment.

The Institute of Electric Welding imeni Ye. O. Paton /Ukrainian Academy of Sciences/ has investigated the corrosion resistance of welds made of titanium alloyed with 0.1 and 0.2% palladium, as well as type OT4 alloy containing 0.2% Pd in boiling dilute solutions of hydrochloric acid. Plates 1.5 mm thick were welded in an argon chamber with a nonconsumable electrode. The welding conditions were:  $I_w = 100$  to 120 amp,  $U_d = 10$  to 12 volts,  $V_w = 25$  m/hr. Test plates were 25 X 15 X 1.5 mm; test media were 1.0, 1.5, 2.5, and 5.0% solutions of boiling hydrochloric acid. It should be noted that technical-grade titanium at 100°C is stable in hydrochloric acid concentrations not exceeding 0.5%.

Alloying titanium with 0.1 to 2.0% Pd does not noticeably alter the structure of the seam. As for the base material, palladium in the studied quantities has little effect on the mechanical properties of weld joints: the yield point does not rise by more than 5 to 6% and the ductility remains the same as for unalloyed welds.

The corrosion resistance of alloys with 0.1 and 0.2% Pd and their compounds was found to be high to boiling 1.0, 1.5 and 2% solutions of HCl,

Card 2/4

L 41246-65

ACCESSION NO. A15109175

(not more than 0.01 mm/year) Type OT4 alloy with 0.2% Pd and its weld joints are stable only to a 1% boiling solution of HCl; in a 1.5, 2.0 and 2.5% solution of HCl the corrosion rate reaches 0.2 mm/year. Alloys with 0.1 and 0.2% Pd are stable in a 2.5% boiling HCl, but their weld seams are less stable because of the extensive disorder of the metal in the seam and heat-affected zone. A boiling 3% solution of HCl deteriorates the alloys and their weld joints still more, and the latter to an even greater degree. It should be noted in the corrosion tests made on the alloys and their weld seams in boiling 2.5 and 5% HCl that in many cases the corrosion rate is not duplicated in identical samples. Thus, we may say that titanium alloys with 0.1 and 0.2% Pd and their weld joints are resistant to boiling solutions of hydrochloric acid of up to 2% concentration. In 2.5% HCl solutions these alloys maintain their passive state, which in individual instances breaks down. In 5% solutions of HCl weight losses are greater and the breakdown of the passive state is observed more frequently.

The OT4 alloy with 0.2% Pd is resistant only to boiling 1% HCl; a further increase in concentration accelerates corrosion appreciably. In active corrosion processes of weld joints, a deterioration of the weld metal is observed primarily in the heat-affected zone. This indicates that 0.1 and

Card 3/4

L 4124-615

ACCESSION NR: AP5009125

0.2% Pd in the weld, having a coarse-grain structure of the cast metal, is not as effective as in the base metal-rolled alloy. Special measures must be worked out to increase the corrosion resistance of weld joints made of the alloys of the type examined here. Orig. art. has 3 figures.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: MM, IE

NO REF SOV: 000

OTHER: 000

JPRS

Ctd

ps  
4/4



L 25638-65 EPF(n)-2/EMP(m)/IMP(b)/EWA(d)/ENP(t) Pa-4 IJP(c) JD/JG/WB 31  
 ACCESSION NR: AP5004359 8/0076/65/039/001/0181/0184

AUTHOR: Pakhomova, N. M.; Maksimova, N. P.; Nefedova, I. D.; Krasil'shchikov, A. I. 22  
 6

TITLE: Anodic behavior of titanium-niobium alloys

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 1, 1965, 181-184

TOPIC TAGS: titanium, titanium alloy, niobium containing alloy, alloy corrosion, alloy anodic behavior, alloy passivation

ABSTRACT: The anodic behavior of Ti-Nb alloys in 5N H<sub>2</sub>SO<sub>4</sub> at 25C has been investigated. Additions of 2 and 10% Nb decrease the density of the critical passivation current from 222  $\mu\text{amp}/\text{cm}^2$  for unalloyed Ti to 116 and 71  $\mu\text{amp}/\text{cm}^2$  (see Fig. 1 of the Enclosure). However, these additions do not appreciably affect the current density in the passive region. An addition of 35% Nb decreases the critical passivation current density to 7.5  $\mu\text{amp}/\text{cm}^2$  and also the current in the passive region. Additions of 10 and 35% Nb shift the steady potential toward more positive values, from -0.37 to -0.32 and -0.23 v, but at 2% Nb the steady potential becomes more negative. Orig. art. has: 3 figures. [MS]

Card 1/3

L 25658-65

ACCESSION NR: AP5004359

ASSOCIATION: Gosudarstvennyy institut azotnoy promyshlennosti (State Institute  
of the Nitrogen Industry)

SUBMITTED: 19Dec63

ENCL: 01

SUB CODE: MM

NO REF SOV: 004

OTHER: 003

ATD PRESS: 3185

Card 2/4

NEFEDOVA, I. I.

Some biochemical peculiarities of the blood serum of hypertonia patients. A. M. Nogalov and I. I. Nefedova

(Inst. Acad. Med. Sci. U.S.S.R., Moscow). *Ark. Patol.* 12, No. 8, 88-93 (1950); *Chem. Zvez.* 1951, 1, 3519. -- At a dilution of 1:100 serum from normal individuals and that from ulcers, colitis, and arteriosclerosis patients had no effect on the activity of frog heart preps. However, the amplitude of the cardiac contraction was considerably increased by the serum from 34 of the 47 hypertonic individuals studied. The action was myogenic and was not obtained with blood. A much weaker effect was obtained with hemolyzed blood. The effective agent showed no similarity to adrenaline, which acts by way of the sympathetic system. It apparently was not a protein substance. M. G. Moore

*Clinic of Therapeutic Nutrition, Inst. of Nutrition  
Acad. Med. Sci. U.S.S.R.*

KUCHERUK, V.V.; NEFEDOVA, I.N.; DUNAYEVA, T.N.

On the importance of small mammal self-defense against the larvae and nymphs of ixodid ticks [with English summary in insert]. Zool. zhur. 35 no.11:1723-1727 D '56. (MIRA 10:1)

1. Otdel parazitologii i meditsinskoy zoologii Instituta epidemiologii i miktobiologii imeni N.F. Gamaleya Akademii meditsinskikh nauk SSSR.

(Ticks) (Parasites--Rodentia) (Parasites--Insectivora)

NEFTDOVA, L.T.; KRYSTINA, I.I.

Determinants of fat content of female rabbits. 1. Im. volok.  
no. 6/1957. 1957. MIRA 18:17

1. Dugavpilsskiy zavod akkumulyatsiy no volokna.

NEFEDOVA, L.A.

Study of immunogenesis following the application of associated  
vaccines. Vop. virus. 7 no.2:206-211 Mr-Apr '62. (MIRA 15:5)

1. Moskovskiy nauchno-issledovatel'skiy institut virusnykh preparatov.  
(VACCINATION)

NEFEDOVA, L.A.

Immunological activity of a live vaccine against poliomyelitis in the vaccination of children previously vaccinated with an inactivated poliomyelitis vaccine. Trudy Mosk. nauch.-issl. inst. virus. prep. 2:196-200 '61.

(MIRA 17:1)

SOKOLOVA, N.N.; APANASHCHENKO, N.I.; NEFEDOVA, L.A.

Study of the reactogenicity and immunological effectiveness of influenza-diphtherial and influenza-diphtherial-whooping cough vaccines. Vsp.virus. 7 no.6:688-693 N-D '62. (MIRA 16:4)

1. Institut virusologii imeni D.I.Ivanoskogo AMN SSSR i Institut epidemiologii i mikrobiologii imeni N.F.Gamalei AMN SSSR, Moskva.  
(INFLUENZA---PREVENTIVE INOCULATION)  
(DIPHTHERIA---PREVENTIVE INOCULATION)  
(WHOOPING COUGH---PREVENTIVE INOCULATION)



STAROSEL'SKAYA, K.B.; BERIM, M.G.; NAUMOVA, Ye.K.; NEFEDOVA, M.G.

Action of some organic phosphorus compounds on microorganisms.  
Zhur.mikrobiol., epid. i immun. 32 no.11:87-91 N '61.

(MIRA 14:11)

1. Iz Kazanskogo gosudarstvennogo meditsinskogo instituta.  
(PHOSPHORUS ORGANIC COMPOUNDS—PHYSIOLOGICAL EFFECT)  
(BACTERIA, PATHOGENIC)



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Inst. 14164-35...

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BILICH, I.L.; NEFEDOVA, M.G.

Saturation of the organism with vitamins in peptic ulcers.  
Nauch. trudy Kaz. gos. med. inst. 14:373-375 '64.

(MIRA 18:9)

1. Kafedra gospital'noy terapii (zav. - prof. K.A.Mayanskaya)  
i tsentral'naya nauchno-issledovatel'skaya laboratoriya (zav. -  
S.V.Senkevich) Kazanskogo meditsinskogo instituta.

GAL'PERIN, Solomon Il'ich; GOLYSHEVA, Klavdiya Petrovna; NEFEROVA,  
M.M., red.

[Physiology of man and animals] Fiziologiya cheloveka i  
zhivotnykh. izd. 3., perer. i dop. Moskva, Vysshaya  
shkola, 1965. 571 p. (Mir 19:1)

ACC NR: AP6026P99

SOURCE CODE: UR/02/15/11/11.22/20

AUTHOR: Kursanov, D. N.; Setkina, V. N.; Nefedova, M. N.; Nesmerov, A. N.  
 ORG: Institute of Organometallic Compounds, AN SSSR (Institut elementovperechekats  
soyedineniy AN SSSR)

TITLE: Isotopic exchange<sup>19</sup> of hydrogen in alky.ferrocenes

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, No. 11, 1965, 2222-2226

TOPIC TAGS: isotope, hydrogen, ferrocene, electron donor, acetic acid, benzene, chemical kinetics

ABSTRACT: The reaction of the isotopic exchange of hydrogen in acid media was used as a model for investigating the laws of electrophilic substitution in aromatic systems. Ferrocene readily enters into this reaction and the acetyl groups introduced into the ferrocene molecules markedly reduce the exchange rate of the hydrogen atoms on the nucleus. By investigating the effect of electron-donor substituents in ferrocene on its reactivity, the authors determined the rate constants of the isotopic exchange of hydrogen of methyl-, ethyl- and 1,1'-diethylferrocenes in a mixture of deuterioacetic and trifluoroacetic acids. It was shown that the introduction of alkyl groups enhances the reactivity of the ferrocene nucleus to a much smaller degree than that of the benzene nucleus. In alkylferrocenes all the hydrogen atoms of the ferrocene nucleus participate in the exchange, and the kinetics of isotopic exchange is not affected by the differences in the reactivity of the various positions. Orig. art. has: 4 tables. (JPRS: 36,455)

SUB CODE: 07 / SUBM DATE: 21Apr65 / ORIG REF: 003 / OTH REF: 001

Card 1/1

UDC: 542.957+546.72+546.11.2

0976 2657

L 55127-65 EWT(m)/EPP(c)/T/EWP(j) Pc-4/Pr-4 RM  
ACCESSION NR: AP5012767

UR/0020/65/161/006/1349/1351

AUTHOR: Nasheyanov, A. N.; Kursanov, D. N. (Corresponding member AN SSSR);  
Nefedova, M. N.; Setkina, V. N.; Peravalova, E. G.

36  
35  
B

TITLE: The replacement of a halogen by a proton in halogenoferrocenes

SOURCE: AN SSSR. Doklady, v. 161, no. 6, 1965, 1349-1351

TOPIC TAGS: halogen, ferrocene, deuterium

ABSTRACT: In studying the isotopic exchange of hydrogen in acid media an unexpected reaction of iodoferrocene with the acid was detected. In treating solutions of iodoferrocene in organic solvents (benzene, methylene chloride) with deuterio-trifluoroacetic acid (95 atomic percent deuterium) there is a rapid formation of the ferricine cation and a complex compound of iodoferrocene with iodine. The ferricine cation after reduction by sodium sulfite yields ferrocene containing 9.5 atomic percent deuterium, which corresponds exactly to the replacement of the iodine atom by deuterium. In the case of bromo- and chloroferrocene the substitution of deuterium for the halogen also is observed but to a lesser extent than with iodoferrocene. For the test: 1 ml of deuterio-trifluoroacetic acid (95 atomic percent deu-

Card 1/2

L 55127-65

ACCESSION NR: AP0012767

terium, boiling point of 71-72°) which had been previously saturated with nitrogen was added to a solution of 0.6 grams (0.0019 mol) of iodoferrocene (melting point of 45-46°, from methanol) in 1.5 ml of benzene in a stream of pure dry nitrogen. Immediately a violet color appeared and a black-violet precipitate settled out. After 1-2 hours the precipitate was removed and the ferricine cation was extracted from the filtrate with water. The aqueous blue extract was treated with sodium sulfite until a yellow color appeared and was extracted with ether. After driving off the ether the yield was 0.09 grams (0.005 mol) of ferrocene. The precipitate was washed with benzene and purified through sublimation in a vacuum. The bromoferrocene and chloroferrocene were treated in a generally similar manner. Orig. art. has: two sets of equations.

ASSOCIATION: Institut elementoorganicheskogo sinteza Akademii nauk SSSR (Institute of Elementoorganic Synthesis, Academy of Sciences, SSSR)

SUBMITTED: 23Oct64

ENCL: 00

SUB CODE: GC, OC

NO REF. SOV: 005

OTHER: 005

Card 2/2



L 34023-66 EMT(m)/EWP(j) RM SOURCE CODE: UR/0079/66/036/001/0122/0126  
ACC NO: AP6025536

AUTHOR: Nefedov, V. A.; Nefedova, M. N.

ORG: none

TITLE: Synthesis based on organic derivatives of mercury. I. Reaction of mercurated ferrocenes with copper salts

SOURCE: Zhurnal obshchey khimii, v. 36, no. 1, 1966, 122-126

TOPIC TAGS: chemical synthesis, mercury, ferrocene, copper compound, mercury compound, anion, reaction rate, IR spectrum

ABSTRACT: Halo-, thiocyanato-, acetoxy- and phthalimidoferrocenes were prepared from mercurated ferrocenes by exchange of the mercury group for the anion of a copper salt. The rate of exchange of the mercury residue was found to be proportional to the strength of the acid corresponding to the anion of the copper salt. The halogen in bromoferrocenes was replaced by the phenoxy group, yielding previously undescribed phenoxyferrocenes, with potassium phenolate according to the Ullmann reaction. A series of new sulfur derivatives of ferrocene were synthesized from the thiocyanatoferrocenes. The structures of the products were confirmed by their infrared spectra. The authors thank V. N. Drozd for providing some of the substances for comparison. They also thank E. G. Porovalova for her critical remarks on the work. [JPRS: 35,998]

SUB CODE: 07, 20 / SUBM DATE: 12Jun64 / ORIG REF: 008 / OTH REF: CO.

Card 1/1

UDC: 546.261

L 35327-66 EWT(m)/EWP(j) RM

ACC NR: AP6026836

SOURCE CODE: UR/0020/66/166/002/0374/0377

AUTHDR: Nefedova, M.N.; Kursanov, D.N. (Corresponding member AN SSSR); Setkina, V.N.; Perevalova, E.G.; Nesmeyanov, A.N. (Academician)

ORG: none

TITLE: Effect of substituents on the rate of isotopic hydrogen exchange in ferrocene derivatives

SOURCE: AN SSSR. Doklady, v. 166, no. 2, 1966, 374-377

TOPIC TAGS: ferrocene, electron donor, dissociation constant, substituent, reaction rate

ABSTRACT: The authors determined the rate constants for acid isotopic exchange of hydrogen in six monosubstituted and four disubstituted ferrocenes. The relative rate constants  $K_{rel}$  were then calculated assuming unity for unsubstituted ferrocene. The substituents studied included both electro-donor and electron-acceptor types. An analysis of the resultant data shows that the effect of the substituent on the reaction rate in an aromatic compound may be described as a combination of induction and conjugation. The conjugation effect is much less important in this case than it is in electrophilic substitution in the benzene series. It was found that the substituent

Card 1/2

UDC: 546.11.2+542.957+546.72

L 34327-66

ACC NR: AP6026836

constants obtained from the dissociation constants for phenylacetic acids may be used as a quantitative index of the effect which the substituent has on the reaction rate. Curves for  $\ln k/k_0$  for all substituents studied show a linear correlation with these constants. Heterocyclic disubstituted derivatives lie on this same line if doubled values of substituent constants are used, i.e., the substituents have an additive effect within the limits of experimental error. The authors thank S.L. Portnova and G.P. Syrova for taking the nuclear resonance spectra. The authors further thank V.A. Pal'm and N.P. Gambaryan for participating in the discussions of the results. Orig. art. has: 1 figure and 1 table [JPRS: 36, 455]

SUB CODE: 07 / SUBM DATE: 23Sep65 / ORIG REF: 013 / OTH REF: 010

cont 2/2 lllh

DZIZENKO, A.K.; NEFEDOVA, M.Yu.; YELYAKOV, G.B.

Nuclear magnetic resonance and infrared spectra of triterpenoids  
isolated from ginseng. Dokl. AN SSSR 162 no. 3:569-572. My 1974.  
(MIRA 18:5)

1. Institut biologicheskoi khimii i vesenosti Dal'nego vostoka  
Sibirskogo nauchnogo tsentra, Irkutsk. Submitted November 9, 1973.