

BYALLOZOR, S.G.

Effect of some organic substances on the anodic dissolution of metals in neutral solutions. Part 2: Anodic dissolution of zinc. Elektrokimiia 1 no.9:1137-1141. S '65. (MIRA 18:10)

1. Politeknicheskii Institut, Gdan'sk, Polska.

BYALLOZOR, S.G.

Effect of some organic substances on the anodic dissolution of metals in neutral solutions. Part 3: Anodic dissolution of cadmium. *Elektrokhimiya* 1 no.10:1297-1300 0 '65.

(MIRA 18:10)

1. Politekhicheskiy institut, Gdan'sk, Pol'sha.

Byalo, A.

4-2-10/18

AUTHORS: Byalo, A., and Fuks, B.

TITLE: Health Technique (Tekhnika zdorov'ya)

PERIODICAL: Znaniye-Sila, 1958, # 2, pp 26-27 (USSR)

ABSTRACT: Six short articles accompanying photos.

1. High frequency irradiator for the even "massage" of tissues.
2. Plastic infant's inhaler cot for an "aerozol" mixture of antibiotics and oxygen. Sick infants often suffer from inadequate "gas exchange" and die from a lack of oxygen.
3. Ultra high frequency gear for healing hypertonic conditions, by irradiation of the solar plexus.
4. New portable electrocardiograph; unlike others which need photographic development, this inks its findings directly onto a strip of record-paper.
5. Universal "aerozol" inhaler, permitting the spraying of the medicament right into the lungs. The patient adjusts action by the lever, to suit her breathing.
6. Ultrasonic apparatus for diagnosing the growth of tumors; acts like radar through reflection from tissues of different density. Now being tested, will be widely used.

Card 1/2

Health Technique

4-2-10/16

There are 6 photos.

AVAILABLE: Library of Congress

Card 2/2

POLAND / Forestry. Dendrology.

K

Abs Jour: Ref Zhur-Biol., No 7, 1958, 29528.

Author : ~~Byalobok, S.~~

Inst : Institute for Dendrology and Pomology in Kurnik, Poland.

Title : Preliminary Results of the Cultivation of Poplars in the Institute for Dendrology and Pomology in Kurnik (Poland).
(Predvaritel'nyye rezul'taty vyrashchivaniya topoley v institute dendrologii i pomologii v Kurnike (Pol'sha).

Orig Pub: Arboretum korn., 1956 (1957), 2, 175-194.

Abstract: Results are described of the crossing of poplars from the Leuce, Aigeiros and Tacamahaca tree sections in 1950-1955. It is noted that the interspecies hybrids of Populus canescens proved

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POLAND / Forestry. Dendrology.

K

Abs Jour: Ref Zhur-Biol., No 7, 1958, 29528.

Abstract: to be lacking in viability. Low vitality marked the hybrids P. canescens x P. alba, P. conescens x P. tremula, P. tremula x P. conescens and P. alba x P. canescens. They are characterized by a large morphological variability. Those hybrids are considerably more viable which deviate in their morphological characteristics on the side of P. alba, the hybrids which veer toward aspen are less viable. It is characteristic for all the hybrids that those obtained from crosses between sharply diverse geographical ecotypes are more vital and sturdy than hybrids from crosses between identical or like ecotypes (especially local ones). The hybrids from P. regenerata x P. robusta, P. regenerata x P. mari-

Card 2/3

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CO

Standardization of metallic coatings. A. Byalobzheskii. *Vestnik Metalloprom.* 1938, No. 5, 107; *Khim. Referat.* *Zh.* 1, No. 11-12, 107 (1938).— Expts. were made to det. the necessary thickness of coatings, depending on the conditions of their use. This is a report of the initial stages of the investigation on (1) decorative Cr and Ni plating on steel, latten, Cu, Zn and (2) the Cu coating of steel to preserve it from cementation. Much material of other investigators is included. W. R. Henn

COACH ELEMENTS

GENERAL NOTE

AS A S L A METALLURGICAL LITERATURE CLASSIFICATION

BYALOBZHESKIY, H. V.

10000

USSR .

Resistance to erosion of anodic oxidation films on alumi-
num alloys. N. D. Tomashov, A. V. Savel'der, and A. V.
Byalobzheskii, *J. Appl. Chem. U.S.S.R.* 26, 1201-4
(1953) (Engl. translation).--*See C.A.B.* 49, 741c. H. L. H.

M 2014

TOMSHOV, N.D.; BYALOBZHESKIY, A.V.

~~Methods of measuring the porosity of anodic oxide films on aluminum and its alloys.~~ Trudy Inst. Fiz. Khim., Akad. Nauk S.S.S.R. 3, Issledovaniya Korrozii Metal. No.2, 17-23 '51. (MLRA 5:2)
(CA 47 no.17:8559 '53)

TOMASHOV, N.D.; BYALOBZHESKIY, A.V.

Some relations in the growth of anodic oxide films on aluminum in sulfuric acid. Trudy Inst. Fiz.Khim., Akad. Nauk S.S.S.R. 2, Issledovaniya po Korrozii Metal., No.1, 136-45 '51. (MLRA 4:10)
(CA 47 no.15:7346 '53)

6.

"APPROVED FOR RELEASE: 06/09/2000

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CIA-RDP86-00513R000307820015-5"

BYALOB ZHESKIY, A.V.

5

~~Effect of various factors on the growth of the anodic oxide film on aluminum in sulfuric acid solutions. N. D. Tomashov and A. V. Bvalobzheskiy. Trudy Inst. Fiz. Khim. Akad. Nauk S.S.S.R. No. 5, Issledovan. Korrozii Metal. No. 4, 99-112 (1955).~~

The object of this work was the investigation of the effect of temp. and motion of the electrolyte and compn. of the anode on the growth of the oxide films of internally cooled Al samples. The samples were disks 64 mm. in diam., cut out of sheets of com. Al 1 mm. thick. The corroding media were 2N and 4N H₂SO₄ solns. Expts. were made at temps. varying from 0 to 20° because beyond this temp. the mech. quality of the film became unsatisfactory. The thickness of the oxide film increases with temp., reaching a max. at 10° and drops off for higher temps. It decreases with the c.d. and the concn. of the electrolyte. Any addn. to pure Al decreases the quality of the film, which becomes porous. The addn. of Cu is particularly harmful, while Mg and Si (up to 10%) have much less effect. Continuous mixing of the electrolyte is essential to avoid local heating of electrolyte in the porosities, leading to partial soln. of the film produced. A table of phys. properties of films obtained under different conditions accompanies the article.

N. Goldowski

RM [signature]

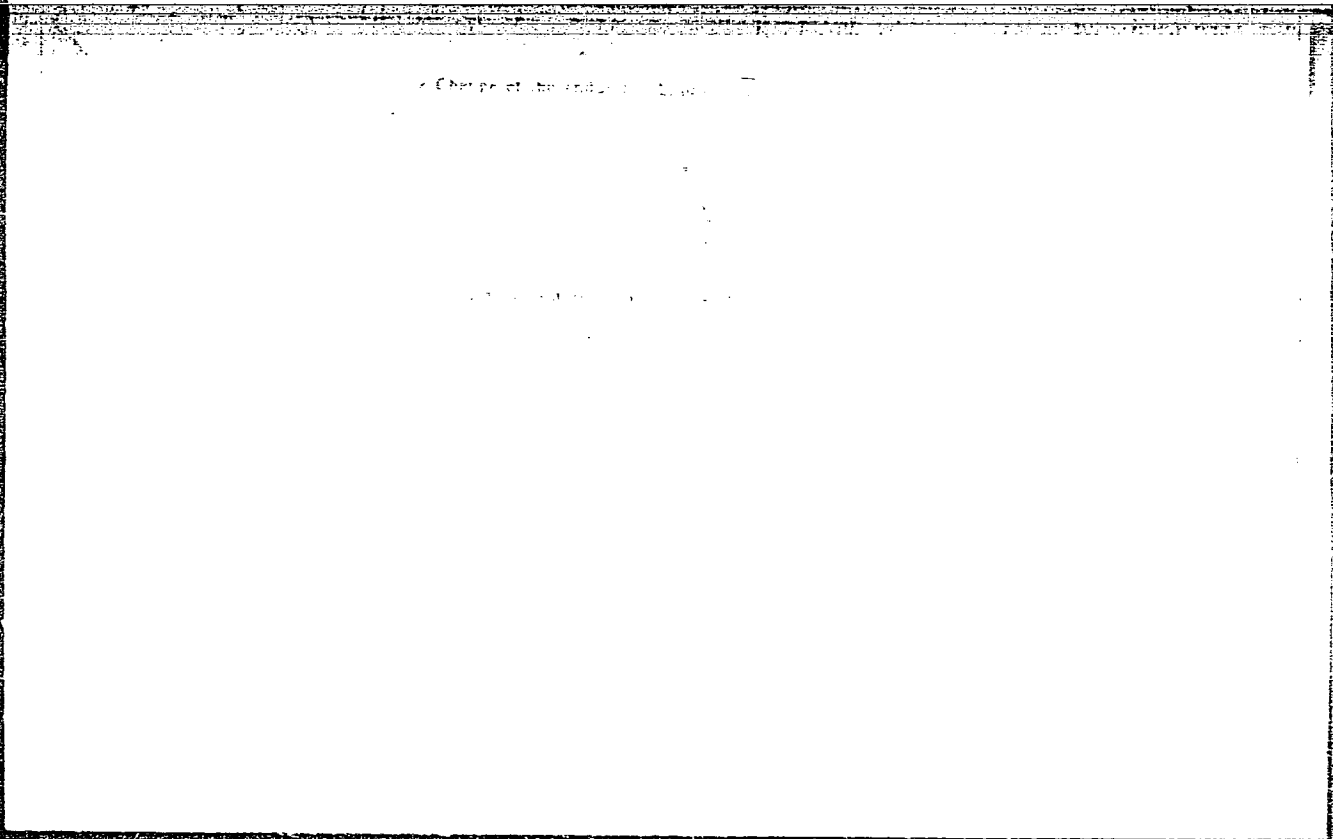
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BYALOBZHESKIY, A. V.

APPROVED FOR RELEASE: 06/09/2000

CIA-RDP86-00513R000307820015-5"



AUTHORS: ~~Byalobzheskiy, A. V., Val'kov, V. D.~~ SOV/89-5-1-7/28

TITLE: A Method of Determining the Number of ~~Decelerated~~ Electrons and the Absorbed Energy of a Monoenergetic Electron Beam (Metod opredeleniya kolichestva zaderzhannykh elektronov i pogloshchennoy energii monoenergeticheskogo elektronogo puchka)

PERIODICAL: Atomnaya energiya, 1958, Vol. 5, Nr 1, pp. 68-69 (USSR)

ABSTRACT: A method was worked out for the purpose of measuring the number of fast electrons held back in the various domains of a system. This is necessary in order to be able to take the influence exercised by electrochemical phenomena (as e.g. the polarization of electrodes) into account. Experimentally such coefficients were measured as are necessary for solving the system of equations which was set up theoretically. The experimental structure consists of 6 aluminum disks which are insulated from one another by means of mica of 10μ thickness. The plates are fastened to a common conductor. A parallel electron beam having a cross section of exactly 1 cm^2 incides upon the first Al plate. By varying the manner of connecting the measuring apparatus with the terminals of the aluminum disks direct measurement of the

Card 1/2

A Method of Determining the Number of Decelerated
Electrons and the Absorbed Energy of a Monoenergetic
Electron Beam

SOV/89-5-1-7/28

number of electrons held back in the various plates is made possible. On the strength of the data obtained by means of experiments the following curves were plotted:

The dependence:

- 1.) of electron absorption
 - 2.) of the average energy of the electrons, and
 - 3.) of the intensity of the electron beam upon the thickness of the absorbed layer.
- There are 2 figures.

SUBMITTED: December 26, 1957

1. Electron beams--Energy
2. Electrons--Absorption
3. Electron beams--Intensity
4. Electron beams--Testing equipment

Card 2/2

AUTHOR:

Byalobzheskiy, A. V.

20-119-3-33/65

TITLE:

The Atmospheric Corrosion of Metals Under the Influence of Radiation (Atmosfernaya korroziya metallov pod vozdeystviyem izlucheniya)

PERIODICAL:

Doklady Akademii Nauk SSSR, 1958, Vol. 119, Nr 3, pp. 515-517 (USSR)

ABSTRACT:

Until now works on the effect of a radiation upon the atmospheric corrosion of metals were not yet published. The investigations were made in a sealed glass container at a relative humidity of 98%. As sources of radiation served an electron tube, an X-ray tube ^{60}Co - 70, and a Co^{60} - preparation. A table illustrates the influence of the radiation upon the corrosion of various metals in an air atmosphere at a relative humidity of 98%. A strong acceleration of the corrosion of iron, copper, and zinc was found. The corrosion of aluminum under the influence of an ionizing radiation goes noticeably slower and an intensifying effect of the radiation upon the corrosion of stainless steel was not found at all. On atmospheric conditions the radiation has the least effect upon metals, which on their surface can form solid oxide films. A

Card 1/3

The Atmospheric Corrosion of Metals Under the Influence of Radiation 20-119-3-33/65

photograph of iron samples after the irradiation is added. In dry atmospheric with no radiation at all a corrosion was found. The corrosion on occasion of irradiation under atmospheric conditions takes place below a moist film, which forms on the surface of the metal by condensation or adsorption of steam. Therefore the corrosion as well as the common atmospheric corrosion has an electrochemical character. An intensification of the intensity of irradiation also accelerates the corrosion of iron. The main role in the intensification of the corrosion under irradiation play the products of the radiation-conditioned change in the atmosphere and not the activation of the metal surface. The authors also investigated the influence of oxygen and nitrogen. The nitrogen, which under common conditions is inactive, becomes corrosion-active when a radiation is present. This activation of nitrogen, however, only occurs when oxygen is present and therefore must be traced back to the formation of oxygen products (mainly N_2O_5). After the irradiation the author found in the container from 0,4-0,5% ozone and ~0,08% nitric oxides. Undoubtedly these compounds intensify the processes of corrosion. Even more active are the short-lived products of the action of the radiation, namely the radicals OH and OH_2 , atomic oxygen, the compounds of the type

Card 2/3

The Atmospheric Corrosion of Metals Under the Influence of 20-119-3-33/65
Radiation

NO₃ etc. As an interesting fact the corrosion does not noticeably intensify in pure oxygen compared with the corrosion in an argon-oxygen mixture. The radiation products, which form obviously reinforce the corrosion current of the micropairs by acting as energy-rich cathodic depolarizers. This supposition experimentally is controlled at present. The author thanks professor N. D. Tomashov for some valuable advice in the discussion of this work. There are 2 figures, 3 tables, and 2 references, all of which are Soviet.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry, AS USSR)

PRESENTED: October 16, 1957 by A. N. Frumkin, Member, Academy of Sciences, USSR

SUBMITTED: October 11, 1957

AVAILABLE: Library of Congress

Card 3/3

BYALOBZHESKIY, A.V.

TOMASHOV, Nikon Danilovich. Prinimali uchastiye: TYUKINA, M.N.; PALEOLOG, Ye.N.; CHERNOVA, G.P.; MIKHAYLOVSKIY, Yu.N.; LUNEV, A.F.; TIMONOVA, M.A.; MODESTOVA, V.N.; MATVEYEVA, T.V.; BYALOBZHESKIY, A.V.; ZHUK, N.P.; SHREYDER, A.V.; TITOV, V.A.; VEDENEYEVA, M.A.; LOKOTILOV, A.A.; BERUKSHTIS, G.K.; DERYAGINA, O.G.; FEDOTOVA, A.Z.; FOKIN, M.N.; MIROLYUBOV, Ye.N.; ISAYEV, N.I.; AL'TOVSKIY, R.M.; SHCHIGOLEV, P.V.. YEGOROV, N.G., red.izd-va; KUZ'MIN, I.F., tekhn.red.

[Theory of the corrosion and the protection of metals] Teoriya korrozii i zashchity metallov. Moskva, Izd-vo Akad.nauk SSSR, 1959. 591 p. (MIRA 13:1)

(Corrosion and anticorrosives)

FRASE I BOOK REPLICATIONS 80V/4271

Akademiya nauk SSSR. Institut fizicheskoy khimii

Lesdomeniya po korrozii metallor. [vyp. 15]. Novyye metody i pribory dlya korrozionnykh issledovaniy (Investigations of Corrosion of Metals and Alloys: New Methods and Instruments for Corrosion Studies) Moscow, Izdat. AN SSSR, 1959, 176 p. (Series: Iss. Trudy, vyp. 7) Krasnaya slip linierov. 3,000 copies printed.

Red. Ed.: N. D. Tomashov, Doctor of Chemistry, Professor; Ed. of Publishing House: N. G. Zegorov; Tech. Eds: G. A. Artaf'yeva and Ye. V. Zelenkova; Editorial Board: N. D. Tomashov, A. V. Byalobzheskiy, Candidate of Chemistry, and P. V. Shchigolev, Candidate of Chemistry.

REMARKS: This collection of articles is intended for scientific workers at research institutes and technical personnel of plant laboratories.

CONTENTS: The articles included in this collection deal basically with methods of corrosion investigation which have not yet been published in Soviet periodical literature but are of definite interest for studying corrosion processes.

The articles are arranged in order of increasing complexity. The methods described in the articles provide some practical data which may be of considerable value in the solution of each individual method. No particularities are mentioned. References accompany each article.

Investigations on Corrosion (Cont.)

Byalobzheskiy, A.V., and Ye.D. Yal'kov. Methods of Corrosion and Electrochemical Investigations of Metals in the Current of a Liquid Subjected to Ionizing Radiation	119
Byalobzheskiy, A.V. Instrument for Studying Atmospheric Corrosion of Metals Under the Action of Ionizing Radiation	133
Yal'kov, Ye.D. Instrument for Corrosion and Electrochemical Measurements on a Rotating Electrode Subjected to Radiation	139
Luzki, A.F. Determination of the Continuity of Coatings by the Electrochemical Method	141
Clark, G.B., and M.I. Mikheylovskaya. Use of the Resistance-Capacitance Method for Studying Protective Paint Coatings on Metals in Electrolytes	145
Bozhenko, I.L., and Yu.F. Glibanovskiy. The Constant-Current Method for Determining the Thickness and Continuity of Protective Paint Coatings on Metals	155

Card 5/6

Byalobzheskiy, A.V.

18 (5)

AUTHORS:

Tomashov, N. D., Byalobzheskiy, A. V., SOV/32-25-6-31/53
Val'kov, V. D., Zalivalov, F. P.

TITLE:

Device for the Rapid Determination of the Quality of Anodic Oxide Films on Aluminum and Its Alloys (Pribor dlya bystrogo opredeleniya kachestva anodnykh okisnykh plenok na alyumini i yego splavakh)

PERIODICAL:

Zavodskaya Laboratoriya, 1959, Vol 25, Nr 6, pp 738-739 (USSR)

ABSTRACT:

For the detection of defective parts of anodic films the device K-1 by G. V. Akimov and Ye. N. Paleolog is usually used. The device permits the detection of very small defects, does, however, not indicate the general quality of the film; another disadvantage is the use of a sodium chloride solution which may lead to a corrosion of the film. Therefore, a new device was designed, K-2 - very similar to K-1; the mode of operation of the new device is based upon the fact that the conductivity of the anodic oxide film is the greater the more porous it is. The construction of the detector of defects (Fig 1) is somewhat modified, stainless steel 1 Kh18N9 or zink serve e. g. as electrode as copper and aluminum may together form an electric cell. The device

Card 1/2

Device for the Rapid Determination of the Quality of Anodic Oxide Films on Aluminum and Its Alloys SOV/32-25-6-31/53

(Fig 2, Scheme) has piles as direct-current transmitters (2-4 v) so that a non corroding electrolyte may be used (0.1 % solution of potassium- or sodium bichromate). There are 2 figures.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences, USSR)

Card 2/2

5 (4), 18 (7)

AUTHOR:

Byalobzheskiy, A. V.

SOV/76-33-6-14/44

TITLE:

Effect of Ionizing Radiation on the Corrosion of Metals Under Atmospheric Conditions (Vliyaniye ioniziruyushchego izlucheniya na korroziyu metallov v atmosferykh usloviyakh)

PERIODICAL:

Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 6, pp 1256-1262 (USSR)

ABSTRACT:

The ever greater developments in the nuclear energy field add importance to the still pending problem of corrosion by gases under irradiation. Pertinent investigations were carried out here by the aid of a glass device consisting essentially of two glass balls (one with the sample and the other containing the salt solution by which humidity is controlled). The samples investigated consisted of Armco iron, copper, zinc, aluminum and 1Kh18N9T steel in a static atmosphere and with an air blast through the apparatus. Table 1 supplies data concerning the radiation sources employed. Experimental results reveal (Table 2) that in the case of a relative air humidity of 98 %, radiations promote corrosion in Armco iron in a marked manner, and the same applies to Cu and Zn as well as Al corrosion (the latter is considerably weaker), while the

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Effect of Ionizing Radiation on the Corrosion
of Metals Under Atmospheric Conditions

SOV/76-33-6-14/44

stainless 1Kh18N9T steel did not exhibit any corrosion phenomena. Experimental results show furthermore (Table 3) that an increase in the ray intensity usually accelerates corrosion. A noticeable intensification of iron corrosion is observable with a radiation intensity amounting to a minimum of 10^{14} ev/l sec of absorbed energy in the atmosphere and a maximum of 10^{19} ev/cm³ sec in the sample. Experiments (partly made with a special method (Fig 4) by the aid of an X-ray tube BFV-70) concerning the causes of corrosion increase revealed that products of an atmosphere change by radiation (acting as energetic cathode depolarizers), as for example O_3 , H_2O_2 , N_2O_5 and especially the short-lived HO_2 , OH , NO_3 etc play the main role, and not a casual change in the metal surface condition. Nitrogen promotes corrosion in humid atmosphere under irradiation (Table 4), owing to the formation of N_2O_5 , by which nitric acid is formed with air humidity. An increase in the oxygen concentration does not

Card 2/3

Effect of Ionizing Radiation on the Corrosion
of Metals Under Atmospheric Conditions

SOV/76-33-6-14/4A

effect any noticeable increase in corrosion, apparently because of an indirect passivating effect of the oxygen. There are 4 figure, 4 tables, and 7 references, 5 of which are Soviet.

ASSOCIATION: Akademiya nauk SSSR, Institut fizicheskoy khimii, Moskva
(Academy of Sciences of the USSR, Institute of Physical Chemistry, Moscow)

SUBMITTED: October 29, 1957

Card 3/3

83456

S/137/60/000/007/008/013
A006/A001

216100 also 2508

Translation from: Referativnyy zhurnal, Metallurgiya, 1960, No. 7, p. 319,
16391

AUTHORS: Byalobzheskiy, A. V., Val'kov, V. D.

TITLE: Methods for the Corrosional and Electrochemical Investigations of
Metals in a Liquid Flow Under the Effect of Ionizing Radiation 19

PERIODICAL: Tr. In-ta fiz. khim. AN SSSR, 1959, No. 7, pp. 119-132

TEXT: The authors describe a device for corrosion tests in electrolyte current in the presence of ionizing radiation, with simultaneous measurement of the temperature in the operational zone and of the electrode potentials of the specimens. Methods are given to calculate the motion speed of the electrolyte, the number of electrons absorbed in the irradiated system and the amount of energy absorbed. Corrosion of Al in 3% NaCl solution was investigated at 2.10²⁰ ev/cm² sec irradiation intensity with electrons of 0.8 ev energy; the corrosion behavior of Zr-Al and Ti-Al pairs in 30% HNO₃ solution was determined at the same irradiation. It was established that the products obtained from water radiolysis and the increase in the ionic conductivity promoted the formation

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83456

S/137/60/000/007/008/013
A006/A001

Methods for the Corrosional and Electrochemical Investigations of Metals in
a Liquid Flow Under the Effect of Ionizing Radiation

of a thick and compact oxide film on Al. The current generated in the system (due to the deceleration of electrons to thermal speeds) caused intensive Al failure in the sections where it acted as an anode. Heating of the metal and the electrolyte, as a result of the irradiation energy absorbed, promoted disintegration of the formed layer. The interaction of these factors entailed considerably localized pitting of Al. Electron irradiation increased considerably the corrosion current of Zr-Al and Ti-Al pairs. In the case of the Zr-Al pair the increase in the corrosion current was to a high degree caused by long-lasting changes arising in the system and exerting an effect even after irradiation discontinued. There are 11 references.

A. F.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

S/123/60/000/014/002/005
A004/A001

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1960, No. 14, p. 122,
73143

AUTHOR: Byalobzheskiy, A. V.

TITLE: Device for the Investigation of Atmospheric Metal Corrosion¹⁸
Effected by Ionizing Radiation

PERIODICAL: Tr. In-ta fiz. khimii. AN SSSR, 1959, No. 7, pp. 133-138

TEXT: The author describes a device for the investigation of atmospheric corrosion of metals and gives a brief account of the results of investigating, the effects of ionizing radiation on the atmospheric corrosion of iron carried out with the aid of the device. ✓

S. N. S.

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

83562

5.4600

S/O20/60/134/001/014/021
B004/B060

AUTHORS: Byalobzheskiy, A. V., Val'kov, V. D.

TITLE: The Influence of Semiconductor Properties of Oxide Films¹⁾
on the Electrochemical Behavior of Metals in Electrolytes¹⁾
Under the Action of Ultraviolet Light¹⁾

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 134, No. 1,
pp. 121 - 124

TEXT: The authors proceed from a paper by V. I. Veselovskiy (Ref. 1) who noted that oxide films bear an influence on the electrochemical behavior of metals under UV-light irradiation, but studied these effects on anodic processes only. The authors found that in some metals photoelectrochemical processes arise only in the range of cathodic polarization. Table 1 supplies experimental data for Zn/ZnO¹⁾; Zr/ZrO₂¹⁾; Ta/Ta₂O₅¹⁾; Ti/TiO₂¹⁾; Ni/NiO¹⁾; Cu/Cu₂O¹⁾; Cd/CdO¹⁾. The results are: 1) The direction of the shift of the metal potential under the action of UV-light depends on the type of conductivity of the oxide film. In n-type oxide films

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The Influence of Semiconductor Properties of S/020/60/134/001/014/021
Oxide Films on the Electrochemical Behavior of B004/B060
Metals in Electrolytes Under the Action of Ultraviolet Light

the potential shifts toward more negative values, while in the case of p-type oxide films it shifts toward more positive values. 2) An increase in the oxide film thickness increases this effect. An exception is given by Cd/CdO which exhibits photoeffects both with anodic and cathodic polarization, and which requires further investigations. Since the variation of the oxygen concentration in the solution bears an influence on the photoeffect, the authors assumed that the potential shifts under the action of UV-light are to be explained by a variation in the adsorption properties of the oxide film for oxygen and, perhaps, also for water. Fig. 1 shows the photoeffects of the metal-metal oxide electrodes investigated. The two photoeffects occurring with copper are explained, as to the first effect, by the reaction $2\text{Cu} + 2\text{OH}^- \rightleftharpoons \text{Cu}_2\text{O} + \text{H}_2\text{O} + 2\text{e}^-$, and as to the second effect, by the reaction $\text{Cu}_2\text{O} + 2\text{OH}^- + \text{H}_2\text{O} \rightleftharpoons \text{Cu}(\text{OH})_2 + 2\text{e}^-$. In the case of Ta/Ta₂O₅ in 0.5 N H₂SO₄, the photocurrent varies with increasing thickness d of the oxide film. Three sections must be distinguished (Fig. 2). Section I is not treated by the authors, as it requires closer studies. In section II, I_{ph} increases with d: X

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83562

The Influence of Semiconductor Properties of Oxide Films on the Electrochemical Behavior of Metals in Electrolytes Under the Action of Ultraviolet Light
8/020/60/134/001/014/021
B004/B060

$I_{ph} = en_d \alpha$ (1) (e - electron charge, n_d - total number of current carriers, α - coefficient of carrier production on the surface), or, in agreement with Ref. 4: $I_{ph} = An[1 - \exp(-BV)]$ (3) (A, B - constants).

Equation (3), however, holds only as long as a value d_{max} is not attained. On a further increase of d there forms a layer d_1 of high resistance, I_{ph} becomes smaller and then obeys equation (4): $I_{ph} = k\eta V$, where η is a coefficient which reproduces the voltage drop in d_{max} .

There are 2 figures, 1 table, and 4 references: 2 Soviet, 1 US, and 1 British. X

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences USSR)

PRESENTED: April 28, 1960, by A. N. Frumkin, Academician

SUBMITTED: April 8, 1960

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S/089/61/010/005/012/015
B102/B214

21.4210

AUTHORS: Byalobzheskiy, A. V., Val'kov, V. D.

TITLE: Investigation of the corrosion of metals in the experimental hole of the MPT(IRT) reactor

PERIODICAL: Atomnaya energiya, v. 10, no. 5, 1961, 525-528

TEXT: The behavior of the corrosion couples Zr - Al, Zr - Fe, and Fe-Al in 0.5 N solution of NaCl has been investigated for a thermal neutron flux of $\sim 2 \cdot 10^{12}$ n/cm²sec at the IRT reactor of the ordena Lenina Institut atomnoy energii im. I. V. Kurchatova (Lenin Order Institute of Atomic Energy imeni I. V. Kurchatov). The metal mentioned first was used as the cathode. (V. V. Goncharov reported on the method of corrosion couples at the Second Atomic Conference at Geneva in 1958). The cell used for the investigations is shown in Fig. 1. The metals investigated had the form of wire spirals and equal surface areas of 3.5 cm². The time dependence of the current density and the electrolyte temperature were measured during heating in the reactor and during cooling outside it. It was

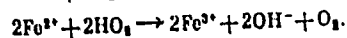
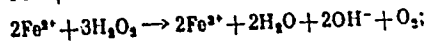
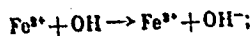
Card 1/4

22884

S/089/61/010/005/012/015

Investigation of the corrosion of metals... B102/B214

observed in all cases that the current density first increased (almost linearly) on heating in the reactor, then remained constant for a shorter or longer interval, and finally (after 20 minutes the sample was taken out of the reactor) fell exponentially. The couple Fe-Al showed the highest increase of the current density. All curves were obtained also in control experiments in which there appeared, particularly in the Zr-Fe couple, significant deviations which can be attributed to the effect of the radiolysis products of water. Fig. 3 shows the polarization curves for the electrodes of the corrosion couples investigated. In the radiolysis of aqueous solutions HO, HO₂, and H₂O₂ were found to act as depolarizers. The interaction of the electrode substance with the products of radiolysis can, for example, be described for the couple Zr-Fe by the following mechanism: The iron is the anode and goes in solution: $\text{Fe} \rightarrow \text{Fe}^{2+} + 2\bar{e}$; on account of the interaction the divalent ion goes over into the trivalent ionized one:



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22864

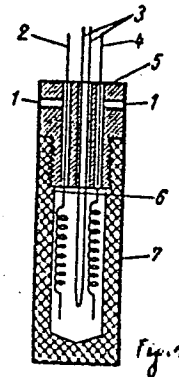
Investigation of the corrosion of metals...

S/089/61/010/003/012/015
B102/B214

The trivalent ionized iron is, however, a good depolarizer: $Fe^{3+} + e^- \rightarrow Fe^{2+}$. This also explains the corroding effect (25-30 %) of iron ion in Zr - Fe couple. The authors thank Yu. F. Chernilin for help in experiments. There are 3 figures, 1 table, and 3 Soviet-bloc references.

SUBMITTED: October 29, 1960

Legend to Fig. 1: 1) zirconium screw, 2) and 4) samples; 3) copper constantan thermoelement with thin polystyrene coating, 5) polystyrene stopper, 6) electrolyte level, 7) polystyrene case



Card 3/4

2288h

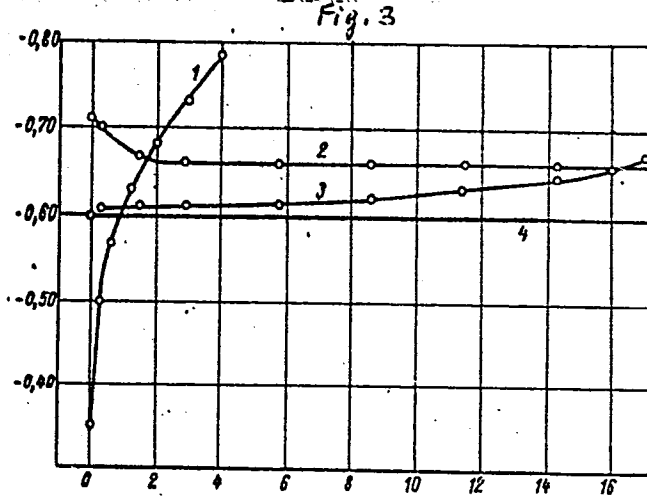
S/089/61/010/005/012/015
B102/B214

Investigation of the corrosion of metals...

Legend to Fig. 3: Cathode and anode polarizations of the metals in 0.05 N NaCl at 25°C;

- 1) cathode polarization of Zr,
- 2) anode polarization of Al,
- 3) cathode polarization of Fe,
- 4) anode polarization of Fe;

ordinate: potential (in volts) referred to saturated KCl;
abscissa: current density (in $\mu\text{a}/\text{cm}^2$).



Card 4/4

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26370
S/089/61/011/002/006/015
B102/B201

AUTHORS: Byalobzheskiy, A. V., Lukinskaya, V. N.

TITLE: Effect of ionizing radiation upon the corrosion behavior of metals in carbon tetrachloride

PERIODICAL: Atomnaya energiya, v. 11, no. 2, 1961, 170-176

TEXT: Whereas CCl_4 has practically no corrosive action upon most metals, considerable corrosion is observed in the presence of ionizing radiation. This paper presents the results of experimental investigations on this subject. The authors used an open cell and a hermetically sealed one (cf. Fig. 1); the cells were made of glass, and the open one was equipped with a stirrer. The air volume in the cells was 130 ml, and the absorbed X-ray dose was $0.37 \cdot 10^{16}$ ev/cm³sec. All of the experiments were performed at 25°C within 10 hours (integral dose $0.8 \cdot 10^{20}$ ev). They showed that 99% of the radiation was absorbed in the 0.5-cm thick liquid layer above the specimen, and the latter could therefore be regarded as not irradiated. The specimens (small metal disks, 10 mm in diameter, 0.8-2.8 mm thick)

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26370

S/089/61/011/002/006/015
B102/B20:

Effect of ionizing radiation ...

consisted of titanium, aluminum, zirconium, stainless steel of the types X18H12M3T (Kh18N12M3T) and 1Y18H9T (Kh18N9T), Monel metal, Cr-3 (St-3) steel, and copper; corrosion on them was established by determining the loss in weight (within an accuracy of 0.00002 g). Specimens in nonirradiated CCl_4 displayed no loss in weight after 10 hr; the corrosion rates ($\text{g}/\text{m}^2\text{hr}$) at 25°C of the materials mentioned above in irradiated CCl_4 were (in the same succession): 0.0057, 0.424, 0.032, 0.798, 0.90, 1.045, 1.54, 2.35. The high corrosion rate is explained by a change of the composition of the corrosive medium due to irradiation. A strong corrosive action was, above all, displayed by free chlorine ions (Cl^-) resulting from radiolysis of CCl_4 . Experiments in this respect were performed with steel specimens. The formation of Cl^- was examined with and without irradiation, and ionizing radiation was found to raise the Cl^- content by up to three orders of magnitude. The formation of Cl^- is reduced both in the one-phase and in the two-phase system ($\text{CCl}_4 + \text{H}_2\text{O}$) by intense mixing, as the products of radiolysis are thereby removed from the zone of irradiation. The Cl^- content in the two-phase system is in all cases higher than in the one-phase system. In addition, the authors studied the effect of radiation upon the

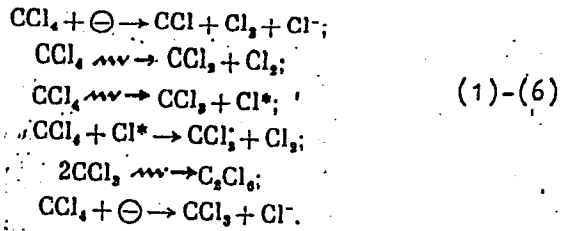
Card 2/6

26370

S/O89/61/011/002/006/015
B102/B201

Effect of ionizing radiation ...

formation of Cl^- and the corrosion resistance of 1Kh18N9T steel in CCl_4 in nitrogen and air atmospheres under different conditions. Experiments⁴ performed in moist air yielded the highest degree of corrosion; it was higher in the open vessel than in the sealed one under otherwise equal conditions. This means that atmospheric oxygen has a stimulating action. The reactions



may take place under the action of gamma radiation; the reaction $CCl_4 + 2H_2O = CO_2 + 4HCl$ may take place if there is much moistness,

Card 3/6

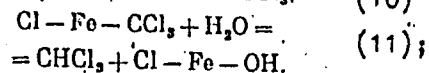
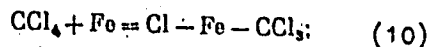
26370

S/089/61/011/002/006/015

B102/B201

Effect of ionizing radiation ...

$\text{CCl}_4 + \text{H}_2\text{O} = \text{COCl}_2 + 2\text{HCl}$ if there is little, and $2\text{CCl}_4 + \text{O}_2 = 2\text{COCl}_2 + 2\text{Cl}_2$ if there is none. In addition, the formation of organic metal compounds is possible:



phosgene and chloroform may, when reacting with water, give rise to hydrochloric acid. Finally, reactions between CCl_4 and products of radiolysis may also take place. No chloroform was, however, detected in the experiments, and phosgene only in one-phase system. It is, however, safely proved that, as a result of irradiation, additional products of radiolysis are formed apart from phosgene, which are partly volatile. The formation of HCl continues even after irradiation is finished. The growth with time of the Cl^- content in the solution after irradiation is shown in Fig. 2. Corrosion analyses on copper were performed at the Laboratoriya mikroanaliza Instituta metalloorganicheskikh soyedineniy (Laboratory for

Card 4/6

26370

S/089/61/011/002/006/015

B102/B201

Effect of ionizing radiation ...

Microanalysis of the Institute of Organometallic Compounds). There are 2 figures, 4 tables, and 14 references: 2 Soviet-bloc and 12 non-Soviet-bloc. The three references to English-language publications read as follows: M. Stern, H. Uhlig. J. Electrochem. Soc. 99, 389 (1952) and 100, 543 (1953); A Prevot-Bernas et al. Diss. Faraday Soc. 12, 98 (1952); U. Burger, E. Clanahan. Industr. and Engng. Chem., 50, No. 2, 153 (1958).

SUBMITTED: September 19, 1960

Fig. 2: Concentration of Cl^- in the solution after irradiation. Legend: (1) Cl^- amount in the solution, mg/ml CCl_4 ; (2) time after irradiation, hours.

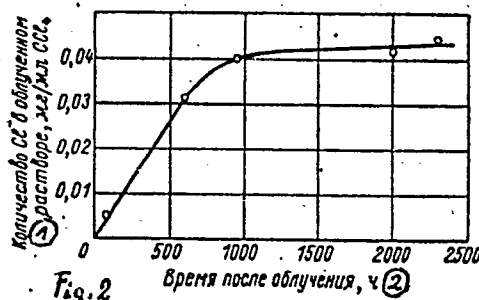


Fig. 2

Card 5/6

TOMASHOV, N.D.; BYALOBZHESKIY, A.V.; IGNATOV, N.N.; VAL'KOV, V.D.

Weakly corrosive electrolytes for anodization of large surfaces
and parts with complex configurations. Zhur. prikl. khim. 34
no.5:1072-1077 My '61. (MIRA 16:8)

(Protective coatings) (Electrolytes)

BYALOBZHESKIY, A. V.

90

PHASE I BOOK EXPLOITATION

sov/6176

Konobeyevskiy, S. T., Corresponding Member, Academy of Sciences
USSR, Resp. Ed.

Deystviye vadernykh izlucheniy na materialy (The Effect of
Nuclear Radiation on Materials). Moscow, Izd-vo AN SSSR,
1962. 383 p. Errata slip inserted. 4000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye tekhnicheskikh nauk; Otdeleniye fiziko-matematicheskikh nauk.

Resp. Ed.: S. T. Konobeyevskiy; Deputy Resp. Ed.: S. A. Adasinskiy; Editorial Board: P. L. Gruzin, G. V. Kurdyumov, B. M. Levitskiy, V. S. Lyashenko (Deceased), Yu. A. Martynyuk, Yu. I. Pokrovskiy, and N. F. Pravdyuk; Ed. of Publishing House: M. G. Makarenko; Tech. Eds: T. V. Polyakova and I. N. Dorokhina.

Card 1/14

90

The Effect of Nuclear Radiation (Cont.)

SOV/6176

PURPOSE: This book is intended for personnel concerned with nuclear materials.

COVERAGE: This is a collection of papers presented at the Moscow Conference on the Effect of Nuclear Radiation on Materials, held December 6-10, 1960. The material reflects certain trends in the work being conducted in the Soviet scientific research organization. Some of the papers are devoted to the experimental study of the effect of neutron irradiation on reactor materials (steel, ferrous alloys, molybdenum, avial, graphite, and nichromes). Others deal with the theory of neutron irradiation effects (physico-chemical transformations, relaxation of internal stresses, internal friction) and changes in the structure and properties of various crystals. Special attention is given to the effect of intense γ -radiation on the electrical, magnetic, and optical properties of metals, dielectrics, and semiconductors.

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The Effect of Nuclear Radiation (Cont.)	SOV/6176
Konozenko, I. D., and V. I. Ust'yanov. Effect of γ -Rays on Properties of CdS Single Crystals	318
Titov, P. P., A. K. Kikoin, and A. Ye Buzynov. Stimulating Action of X- and γ -Rays on Flotation Process	329
Byalobzheskiy, A. V., V. D. Val'kov, and V. N. Lukinskaya. Effect of Radiation on Corrosion Properties of Metals and Alloys	332
Galushka, A. P., P. G. Litovchenko, and V. I. Ust'yanov. Methods of Investigating Properties of Semiconductors Irradiated by γ -Quanta	341
Starodubtsev, S. V., S. A. Azizov, I. A. Domsryad, Ye. V. Peshikov, and L. P. Khiznichenko. Change in Mechanical Properties of Some Solids Subjected to γ -Radiation	347

Card 12/14

- 6 -

L 12696-63 EWT(1)/EWT(w)/BDS/ES(w)-2 AFFTC/ASD/ESL-3/SSD - Pub-4 RD
ACCESSION NR: AP3002923 S/0075/63/037/006/1205/1212

AUTHOR: Val'kov, V. D.; Byalobzheskiy, A. V.

TITLE: Mechanism of change in rate of electrode reactions under the effect of electron irradiation

SOURCE: Zhurnal fizicheskoy khimii, v. 37, no. 6, 1963, 1205-1212

TOPIC TAGS: electrode reaction rate, electron irradiation, ionizing radiation, radiolysis product, polarization, electrochemical behavior

ABSTRACT: It has been shown that ionizing radiation causes two types of effects: 1) radiation-electrochemical, when the change in rate of the electrodic reaction is due to the appearance of new substances, radiolysis products of the corrosion medium, in the solution; and 2) photoelectrochemical, when the change in the course of the electrodic reaction is associated with the photosensitivity of the oxide film on the electrodic surface. The principal part is played by the radiationelectrochemical effect, which occurs both on cathodic and anodic polarization of the metals. The formation or growth in thickness of oxide layers considerably lowers this effect. The semiconductor nature of these layers affects the electrochemical behavior of the metals in the radiation process. For

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ACCESSION NR: AP3002923

electrodes with n-type films, the photoelectrochemical effect appears only on anodic polarization and with films of the p-type, only on cathodic polarization. This effect increases with the thickness of the oxide films. Orig. art. has: 9 figures and 1 table.

ASSOCIATION: Akademiya nauk SSSR, Institut fizicheskoy khimii (Institute of Physical Chemistry, Academy of Sciences SSSR)

SUBMITTED: 19Nov60

DATE ACQ: 16Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 017

OTHER: 004

Card 2/2

BYALOBZHESKIY, A.V.

Effect of neutron radiation on the corrosion behavior of
aluminum in water. Dokl. AN SSSR 152 no.4:899-900 0 '63.

(MIRA 16:11)

1. Institut fizicheskoy khimii AN SSSR. Predstavleno akademikom
V.I. Spitsynym.

~~L 5457-66 EWP(m)/EPP(c)/EWP(1)/EPP(n)-2/EWA(d)/T/EWP(t)/EWP(e)/EWP(b)~~

ACC NR: AT5023815 IJP(c) MJW/JD/HW/ SOURCE CODE: UR/0000/62/000/000/0332/0340
JG/WB/GG/GS

AUTHOR: Byalobzheskiy, A. V.; Val'kov, V. D.; Lukinskaya, V. N.

ORG: none

TITLE: Effect of irradiation on the corrosion behavior of metals and alloys

SOURCE: Soveshchaniye po probleme deystviye yadernykh izlucheny na materialy. Moscow, 1960. Deystviye yadernykh izlucheny na materialy (The effect of nuclear radiation on materials); doklady soveshchaniya. Moscow, Izd-vo AN SSSR, 1962, 332-340

TOPIC TAGS: irradiation, ionizing irradiation, corrosion, metal corrosion, alloy corrosion, irradiation induced corrosion

ABSTRACT: The corrosion behavior of metals and alloys irradiated with x-rays, gamma rays, and fast electrons has been investigated. It was found that irradiation increases the atmospheric corrosion of iron, copper, and zinc much more than that of aluminum, but has no effect on stainless-steel corrosion. Gamma-rays sharply increase the corrosion of metals in carbon tetrachloride: the corrosion rate of copper reaches 2.35 g/m² per hour; of steel 3, 1.54 g/m²; of stainless Kh18N9T steel, 1.14 g/m²; of monel metal, 1.05 g/m²; and of stainless Kh18N12M2T steel, 0.79 g/m². Only the corrosion rates of aluminum, zirconium, and especially titanium were not increased significantly by irradiation. It has also been observed that

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L 5457-66

ACC NR: AT5023815

2

ionizing radiation increases the corrosion of metals, particularly in a damp atmosphere, in a carbon tetrachloride medium, and under various conditions of contact between dissimilar metals. Corrosion induced by radiation greatly depends upon the electrochemical radiation effect, inasmuch as the new substances formed during the radiolysis of the corrosive medium are strong cathodic or anodic depolarizers. Particularly effective are the products of water radiolysis, such as H_2O_2 , and also OH and HO_2 , which substantially facilitate the cathodic process. Whenever metal has an oxide film, the radiation may also produce a photoelectrochemical effect; in this case the number of charge carriers in the film increases during the absorption by the film of the energy of irradiating particles. This effect is observed only in a certain range at potentials for each individual metal, and is associated with the conductivity of the oxide film. As a rule, the effect is weak and is considerably weaker than the electrochemical radiation effect. Orig. art. has: 7 figures and 2 tables. [ND]

SUB CODE: MM, NP/ SUBM DATE: 18Aug62/ ORIG REF: 010/ OTH REF: 001/ ATD PRESS: 4134

Card 2/2 *md*

L 09337-67 EWI(m)/EWP(t)/ETI IJP(c) GG/JD/ND
ACC NRI AP6027523 (R,N) SOURCE CODE: UR/0317/66/000/005/0054/0055

43

AUTHOR: Byalobzhoskiy, A. (Doctor of chemical sciences)

ORG: None

TITLE: Radioactive radiation and corrosion 14

SOURCE: Tekhnika i vooruzheniye, no. 5, 1966, 54-55

TOPIC TAGS: nuclear radiation, corrosion protection, metallurgic conference, radiation affect, radioactive corrosion

ABSTRACT: The article represents an abbreviated version of a report presented in 1965 in Prague to the international convention devoted to the protection of metals against corrosion. The author referring to the studies of the Soviet scientists I. Snatalov and V. Nikitina points out that copper, aluminum and iron developed a stronger corrosion in humid air under the action of alpha rays radiated from Polonium-210 element. However, the stainless steel samples were not affected by corrosion. It is mentioned that beta and gamma rays also caused a sharp increase of corrosion in iron, copper and zinc. A lesser increase was observed in aluminum. The development of corrosion is accelerated with the increase of radiation intensity as it is shown in experimental curves obtained for armco-iron samples. In general, the radioactive corrosion takes place only on condition that the surface is covered with a film of moisture. Sometimes, the moisture is evaporated due to the rise of temperature (up to 230 C) caused by radiations. In this case,

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ACC NR: AP6027523

no corrosion effect is observed. An experiment with the irradiation of a sample composed of two exterior amoo-iron plates and an intermediary layer of lead (illustrated in a figure) proved that the corrosion effect is a result of radiolytic decomposition of atmosphere. The radioactive radiation does not originate the electrochemical corrosion but only accelerates its process. Orig. art. has: 2 figures.

SUB CODE: 11, 18/ SUBM DATE: None

Card

2/2 11 1/2

BYALOBZHESKIY, G.V.; YAKUNINA, V.V.

Controlling ice on highways in foreign countries. Avt. dor. 22
no.10:29-30 0 '59. (MIRA 13:2)
(Roads--Maintenance and repair) (Ice)

BYALOKOZ, I. Ye.

BYALOKOZ, I. Ye.: "The method of distributing the weights of angles in series of first-class triangulations." Min Higher Education USSR. Leningrad Order of Lenin and Order of Labor Red Banner Mining Inst. Leningrad, 1956. (Dissertation for the Degree of Candidate in Technical Sciences)

Knizhnaya letopis', No 39, 1956, Moscow.

BYALOBZHSKIY, G.V.; SUSLOVA, A.I., redaktor; GOIUBKOVA, L.A., tekhnicheskii redaktor.

[Snow and ice] Sneg i led. Izd. 2-e. Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1952. 62 p. (Nauchno-populiarnaia biblioteka, no. 36)

[Microfilm] (MLRA 7:11)

(Ice) (Snow)

BYALOBZHESKIY, G.V.

IVANOV, F.M., kandidat tekhnicheskikh nauk; BYALOBZHESKIY, G.V.; MEZEMTSEV,
V. A. redaktor; GAVRILOV, S.S., tekhnicheskiiy redaktor.

[Artificial stone] Iskusstvennye kamni. Moskva, Gos. izd-vo tekhniko-
teoreticheskoi lit-ry, 1954. 47 p. (Nauchno-populiarnaya biblioteka
no.75] (MLRA 8:9)

(Stone, Artificial)

BYALOBZHESKIY, G. V.

166 Sneg. I Led. (Per. So 2-Go Izd.) Tallin, Estgosizdat, 1954, 60 S. S III
20Sm. (Nauch.--Popul. Seriya). 7.000 Ekz. 95 k.--Na--Eston. Yaz.--
(54-54124)

551.578.46 † 551.311. 12/18

SO: knizhnaya, Letopis, Vol. 1, 1955

BYALOBZHESKIY, G. V.

4346. BYALOBZHESKIY, G. V. --Snegi led. Per Suranchiyev A. Frunze. Kirgizgosizdat,
1954. 72s. s ill. 20 sm. (Nauch.--popul. B-ka) 7.000 ekz. lp. 10k. --Na
kirgiz. yaz--(54-57825)

551/578.46 & 551.311.12/18

SO: Knizhnaya Letopsis', Vol. 1, 1955

BYALOZHESKIY, G. V.

BYALOZHESKIY, G. V. --"Study of Increased Effectiveness and Economy of Show Arresting Arrangements." (Dissertations For Degrees In Science and Engineering Defended at USSR Higher Educational Institutions) (29) Moscow Automobile Road Inst imeni V. M. Molotov, Moscow, 1955

SO: Knizhnaya Letopis' No 29, 16 July 1955

* For the Degree of Candidate in Technical Sciences

BYALOBZHESKIY, Grigoriy Valeryanovich;

BYALOBZHESKIY, Grigoriy Valeryanovich; ALEKSEYEV, A.P., redaktor; MAL'KOVA, N.V., tekhnicheskiy redaktor

[Snow drifts and how to fight them] Sneshnye sanosy i bor'ba s nimi.
Isd.2-oe, perer. Moskva, Nauchno-tekhn. isd-vo avto-transportnoi lit-
ry, 1955. 47 p. (MIRA 9:1)

(Snow removal)

G. V. BYALOBZHESKIY

N/5
754.5
.T2

Soderzhaniye I Remont Avtomobil'nykh Dorog (Maintenance and Repair of Highways, By) MIKHAIL YAKOVLEVICH TELEGIN, G. V. Byalobzheskiv (1) M. E. KORSUNSKIY. Moskva, Avtotransizdat, 1955. 185 P. Illus., Diags., Tables.
Literatura: P. (184)

BYALOBZHESKIY, Grigoriy Valerianovich; AMBROS, Rikhard Andreyevich;
USPENSKIY, B.V., redaktor; MAL'KOVA, N.V., tekhnicheskiy redaktor

[Increasing the efficiency and economy of snow retaining structures]
Povyshenie effektivnosti i ekonomichnosti snegozaderzhivaiushchikh
ustroystv. Moskva, Nauchno-tekhn. izd-vo avtotransp. lit-ry, 1956.
102 p. (MLRA 9:10)

(Snow)

PRYAKHIN, V.D.; BYALOBZHESKIY, G.V.

Combine snow control on roads with snow retention in adjacent fields.
Avt. dor.19 no.2:22-23 P '56. (MIRA 9:6)
(Snow fences)

BYALOBZHESKIY, G.V.

YELENOVICH, Aleksey Savel'yevich, dots. kand.tekhn.nauk; NIKITIN, Pavel
Ivanovich, inzh.; BYALOBZHESKIY, G.V., red.; KOGAN, F.L., tekhn.
red.

[Maintenance and repair of automobile roads] Soderzhanie i remont
avtomobilnykh dorog. Moskva, Nauchno-tekhn. izd-vo avtotransp.
lit-ry, 1957. 150 p. (MIRA 11:2)
(Roads--Maintenance and repair)

BYALOBZHESKIY, G.V.

GUSEV, Anatoliy Yakovlevich; PAVLOV, Aleksandr Vasil'yevich; BYALOBZHESKIY,
G.V., redaktor; MAL'KOVA, N.V., tekhnicheskiy redaktor

[Winter maintenance of automobile roads] Zimnee sodержanie
avtomobil'noy dorogi. Moskva, Nauchno-tekhn. izd-vo avtotransp.
lit-ry, 1957. 22 p. (MIRA 10:7)
(Roads--Maintenance and repair)

BYALOBZHESKIY, G.V., inzhener; YAKUNINA, V.V., inzhener.

Foreign machinery for cleaning snow from automobile highways.
Stroi.i dor.mashinostr.no.1:32-35 Ja '57. (MLRA 10:2)
(Snow removal) (Road machinery)

~~BYALOBZHESKIY, Grigoriy Valerianovich~~, nauchnyy sotrudnik; ~~PRYAKHIN, Viktor~~
Dmitriyevich, nauchnyy sotrudnik; UTKIN, Boris Vasil'yevich,
nauchnyy sotrudnik; YAKUNINA, Valentina Vladimirovna, nauchnyy
sotrudnik; SERGEYEV, A.F., red.; ZUYEVA, N.K., tekhn.red.

[Winter maintenance of automobile roads] Zimnee sodержanie
avtomobil'nykh dorog. Moskva, Nauchno-tekhn.izd-vo avtotransp.
lit-ry, 1958. 120 p. (MIRA 11:5)

1. Gosudarstvennyy vsesoyuznyy dorozhnyy nauchno-issledovatel'skiy
insitut (for Byalobzheskiy, Prykhin, Utkin, Yakunina)
(Roads--Maintenance and repair)

KORSUNSKIY, Mark Borisovich, kand.tekhn.nauk, starshiy nauchnyy sotrudnik;
BYALOBZHESKIY, G.V., red.; LAKHMAN, F.Ye., tekhn.red.

[Inspecting and evaluating the strenght of pavements covered with
soft material] Obsledovanie i otsenka prochnosti dorog s nezhest-
kimi odezhdami. Moskva, Nauchno-tekhn.izd-vo M-va avtomobil'nogo
transp. i shosseinykh dorog RSFSR, 1959. 63 p. (MIRA 12:9)
(Pavements, Asphalt)

~~BYALOBZHESKIY, Grigoriy Valerianovich; YAKUNINA, Valentina Vladimirovna;
MOROZOV, V.I., red.; LAKHMAN, F.Ye., tekhn.red.~~

[Removing snow from highways] Snegochistka avtomobil'nykh dorog.
Moskva, Nauchno-tekhn.izd-vo M-va avtomobil'nogo transp. i
shosseinykh dorog RSFSR, 1959. 77 p. (MIRA 12:5)
(Snow plows)

BYALOBZHESKIY, G.V., kand.tekhn.nauk; DYUNIN, A.K., kand.tekhn.nauk;
KOMAROV, A.A., kand.tekhn.nauk

Improving design of snow fences. Avt.dor. 22 no.12:17-18
D '59. (MIRA 13:4)

(Snow fences)

TELEGIN, Mikhail Yakovlevich, kand.tekhn.nauk; BYALOBZHESKIY, Grigoriy
Valerianovich, kand.tekhn.nauk; KORSUNSKIY, Mark Borisovich,
kand.tekhn.nauk; ALEKSEYEV, A.P., red.; GALAKTIONOVA, Ye.N.,
tekhn.red.

[Road maintenance and repair] Soderzhanie i remont avtomobil'nykh
dorog. Izd.2., perer. i dop. Moskva, Nauchno-tekhn.izd-vo avto-
transp.lit-ry, 1960. 254 p. (MIRA 14:4)
(Roads--Maintenance and repair)

BYALOBZHESKIY, G.V.

IGOLKIN, Nikolay Ivanovich, inzh.; GAYDUK, Kirill Vasil'yevich, inzh.;
GUDIMA, Vladimir Savvich, inzh.; KORSUNSKIY, Mark Borisovich, kand.
tekhn.nauk; NIKONOV, Petr Vasil'yevich, inzh.; SARKIS'YANTS, Georgiy
Aleksandrovich, inzh.; SARSATSKIKH, Prokhor Ignat'yevich, inzh.;
ORNATSKIY, N.V., prof., doktor tekhn.nauk, glavnyy red.; BYALO-
BZHESKIY, G.V., kand.tekhn.nauk, red.; IVANOV, S.S., red.; GALAKTIO-
NOVA, Ye.N., tekhn.red.

[Manual for road builders; maintenance and repair of highways]
Spravochnik inzhenera-dorozhnika; sodержanie i remont avtomobil'nykh
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TUSHINSKIY, Georgiy Kazimirovich, prof., doktor geograf.nauk. Prinsipal
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stitut (SOYUZDORNI) (for Byalobzheskiy).
(Roads--Snow protection and removal)

BYALOBZHESKIY, Grigoriy Valerianovich, kand.tekhn.nauk; MATYAKIN, Georgiy
Il'ich, kand.sel'skokhoz.nauk; PROKHOROVA, Zara Aleksandrovna,
nauchnyy sotrudnik; PRYAKHIN, Viktor Dmitriyevich, nachnyy so-
trudnik; IVANOV, S.S., red.; MAL'KOVA, N.V., tekhn.red.

[Using narrow forest snowbreaks along highways] Primenenie uzkiikh
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(Windbreaks, shelterbelts, etc.)
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[Building automobile roads] Stroitel'stvo avtomobil'nykh dorog. Pod red. N.N.Ivanova. Moskva, Nauchno-tekhn.izd-vo M-va avtomobil'nogo transp.i shosseinykh dorog RSFSR. Pt.3. [Road construction enterprises and quarries] Proizvodstvennye predpriatia i kar'ery. 1961. 318 p. (MIRA 14:7)
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kand. tekhn. nauk; ZUBKOVA, M.S., red.; DONSKAYA, G.D., tekhn. red.

[Snow shields and fences] Snegozashchitnye shchity i zabory. Moskva,
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BYALOBZHESKIY, G.V.; DYUNIN, A.K.; KOMAROV, A.A.; CHINDIN, V.V.

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no.1:20-22 Ja '62. (MIRA 15:2)
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BYALOBZHESKIY, G.V.; DYUNIN, A.K.

"Design of snow-protection equipment for highways" by
A.A. Kungurtsev. Reviewed by G.V. Bialobzheskii, A.K. Diunin.
Avt.dor. 25 no.4:29 Ap '62. (MIRA 15:5)
(Snow fences) (Kungurtsev, A.A.)

BYALOBZHESKIY, G. ; MATYAKIN, G.

Placing and planting snow protection hedges along highways.
Avt.dor. 25 no.11:22-23 N '62. (MIRA 15:12)
(Roadside improvement)

IGOLKIN, N.I., red.; GRIGORENKO, M.G., red.; STANKEVICH, V.A., red.;
TELEGIN, M.Ya., red.; SOROKIN, B.S., red.; ALEKSANDROV,
B.S., red.; BYALOBZHESKIY, G.V., red.

[Technical specifications for the maintenance and repair of
automobile roads] Tekhnicheskie pravila sodержaniia i re-
monta avtomobil'nykh dorog (VSN 22-63). Moskva, Transport,
1965. 264 p. (MIRA 18:10)

1. Russia (1917- R.S.F.S.R.) Ministerstvo avtomobil'nogo
transporta i shosseynykh dorog.

L 40340-66 EWP(j)/EWT(m)/T IJP(c) RM/WW

ACC NR: AP6007524

SOURCE CODE: UR/0419/65/000/002/0096/0098

AUTHOR: Byal'kevich, P. L.; Yakabson, B. V.; Hayduk, K. A.; Sakalov, A. D.

ORG: None

TITLE: Using peat as an active filler in plastic made from molding powders

SOURCE: AN BSSR. Vestsi. Seryya khimichnykh navuk, no. 2, 1965, 96-98

TOPIC TAGS: plastic filler, processed plant product, material crushing, synthetic material, phenolformaldehyde

ABSTRACT: It is shown that pine-moss peat subjected to 30% decomposition by heat may be used as a filler in producing standard phenolformaldehyde plastics from molding powders. Analysis of the raw material showed the following composition: benzene—3.91%; hydrolyzable material—31.26% including 14.50% fulvic acid and 34.80% humic acid; nonhydrolyzable residue—22.81%; ash—14.33%. The peat was air-dried, crushed to a particle size of 0.25 mm and subjected to heat treatment in a thermostatically controlled vacuum at 150, 200 and 250°C for 10, 30, 60, 90 and 120 minutes. It was found that the most effective heat treatment is 250°C for 60 minutes. This type of filler increases the strength and reduces the hygroscopic properties of molding powders without changing the remaining indices in conformity with GOST 5689-60. Orig. art. has: 2 figures.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 005

Card 1/1

L 28880-66 EWP(c)/EWP(k)/EWT(d)/EWT(m)/T/EWP(v)/EWP(t)/ETI IJP(c) JD/HW/JG/WB
ACC NR: AP6016039 SOURCE CODE: UR/0030/66/000/004/0139/0140

AUTHOR: Byalobzhevskiy, A. V. (Doctor of chemical sciences)

ORG: none

TITLE: Scientific and technical conference on the problems of corrosion and protection of metals

SOURCE: AN SSSR. Vestnik, no. 4, 1966, 139-140

TOPIC TAGS: corrosion, metal corrosion, corrosion protection, metal protection, metallurgic conference

ABSTRACT: A scientific-technical conference on the problems of corrosion and protection of metals held in Prague 6-10 December 1965, was attended by about 100 scientists and engineers from Hungary, the GDR, Poland, Roumania, and the Soviet Union. The Soviet delegation presented five reports: The effect of solution components on the kinetics of anodic dissolution of metals, Ya. M. Kolotyrkin; Overvoltage of the discharge of ions of the iron group metals, Yu. Yu. Matulis; The feasibility of determining the adhesion of a deposited metal and its corrosion properties from the reflective ability of the built-up deposit, A. T. Vagramyan; The mechanism of the pitting corrosion of aluminum alloys, Ye. I. Storchay; and The effect of radioactive radiation on the atmospheric corrosion of metals, A. V. Byalobzheskiy. K. Bartonys, D. Chermakova, M. Rikhter, Ya. Spanili, P. Burda, I. Ganosek (Czechoslo-

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L 28880-66

ACC NR: AP6016039

15

vakia) and Ye. Zavadskiy (Poland) reported on the factors which cause metal corrosion under ordinary and tropical atmospheric conditions. Czechoslovak scientists maintain special stations for metal corrosion studies not only at home, but also in India, Ghana, and Cuba. Ye. Zavadskiy reported on the corrosion behavior of metals during a Gdynia-Port Said-Calcutta sea voyage. Another group of reports dealt with the means for preservation of metals in prolonged storage and transportation. V. Treshi described a microwax-base conservation agent, developed in Czechoslovakia, to which zinc, barium and calcium soaps of naphthenic acids are added as inhibitors. As a result of the interaction between metallic soaps and the metal being protected, a thin protective wax film, strongly adhering to the metal, is formed on the surface of parts to be protected. K. Bauman (GDR) described the deposition of ²¹titanium coatings from melts. Z. Sovikova (Czechoslovakia) spoke on the chemical deposition of nickel and ⁹⁵nickel-molybdenum alloys from a bath of a new composition on an organic-compound base. L. Vrobel' and I. Tikhyy (Czechoslovakia) discussed the effect of ultrasound on the formation of electrolytic ¹⁹⁷gold precipitates. The report by Ya. Klichka (Czechoslovakia) contained data on a new parkerizing compound which produces dense, passivating, protective layers. This ammonium molybdate-base compound was named Sinfat II. A. Khvatal (Czechoslovakia) described the technology for depositing epoxide coatings in the solid condition (powder) which, in his opinion, is better than coatings from liquid resins. A number of reports dealt with new methods whose development is intensely pursued by Czechoslovakian scientists and engineers. Wide use is being made at present of an elipsometric optical method (L. Vlasakov) in the study of

Card 2/3

L 28880-66

ACC NR: AP6016039

the kinetics of growth of thin films on metals. M. Prazhak described a method of determining the corrosion rate by measurements of polarization resistance. V. Troyan spoke on the development of a device for measuring the thickness of coatings by means of eddy currents. [MS]

SUB CODE: 11/ SUBM DATE: none/ ATD PRESS: 5005

Card 3/3

BORT, M.M., kand.tekhn.nauk; BYALOTSKIY, L.A., inzh.; VASIL'YEV, G.V., inzh.;
VOSHCHANOV, K.P., inzh.; GAPCHENKO, M.N., kand.tekhn.nauk; GORPEHYUK,
N.A., kand.tekhn.nauk; GREBEL'NIK, P.G., kand.tekhn.nauk; DYATLOV,
V.I., kand.tekhn.nauk; TROCHUN, I.P., kand.tekhn.nauk; KHRENOV, K.K.,
akademik; SOROKA, M.S., red.

[Electric welder's handbook] Spravochnik elektrosvarshchika. Izd.3.,
perer. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1961.
748 p. (MIRA 14:6)

1. AN USSR (for Khrenov).
(Electric welding)

BYALOTSKIY, L.A.

BORT, M.M., kandidat tekhnicheskikh nauk; BYALOTSKIY, L.A., assistant;
VASIL'YEV, G.V., assistent; GAPCHENKO, M.N., kandidat tekhnicheskikh
nauk; GREBEL'NIK, P.G., kandidat tekhnicheskikh nauk, otvetstvennyy
redaktor; TROCHUN, I.P., kandidat tekhnicheskikh nauk; SERDYUK, V.K.,
vedushchiy redaktor; inzhener; RUDENSKIY, Ya.V., tekhnicheskiy re-
daktor.

[Electric welder's reference book] Spravochnik elektrosvarshchika.
Izd. 2-e, perer. Kiev, Gos. nauchno-tekhn. izd-vo mashinostroit.
lit-ry, 1954. 515 p. [Microfilm] (MLRA 8:1)
(Electric welding)

PHASE I BOOK EXPLOITATION SOV/5730

Bort, M. M., Candidate of Technical Sciences, L. A. Byalotskiy, Engineer, G. V. Vasil'yev, Engineer, K. P. Voshchanov, Engineer, M. N. Gapchenko, Candidate of Technical Sciences, N. A. Gorpenyuk, Candidate of Technical Sciences, P. G. Grebel'nik, Candidate of Technical Sciences, V. I. Dyatlov, Candidate of Technical Sciences, I. P. Trochun, Candidate of Technical Sciences, and K. K. Khrenov, Academician, Academy of Sciences UkrSSR.

Spravochnik elektrosvarshchika (Electric Weldor's Handbook) 3rd ed., rev. Moscow, Mashgiz, 1961. 748 p. 75,000 copies printed.

Resp. Ed.: P. G. Grebel'nik, Candidate of Technical Sciences;
Ed.: M. S. Soroka; Chief Ed. (Southern Dept. Mashgiz): V. K. Serdyuk, Engineer.

PURPOSE : This handbook is intended for weldors. It may also be useful to foremen, designers, and process engineers.

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Electric Weldor's Handbook

SOV/5730

COVERAGE: The book deals with processes and techniques of manual, semiautomatic, and automatic arc welding and with the surfacing of ferrous and nonferrous metals. Electroslag and gas-shielded electric welding are also discussed. Detailed characteristics of electrodes are given, and the compositions of fluxes are considered. Attention is given to the metals used in the industry, the weldability of these metals, and welding equipment, devices, and tools. Stresses and distortions occurring in welding and the possibilities of their elimination are analyzed. Weld-inspection methods are described. The appendixes contain conventional weld-specification symbols and the codes for qualification tests of electric and gas weldors. No personalities are mentioned. There are no references.

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Card ~~4/13~~

BYALOV, O. S. (Academician)

"Crossing Eastern Dzungarya," Dokl. AN SSSR, 85, No.3, 1952.

BYALOV, S. S.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1418
AUTHOR BYALOV, S.S.
TITLE The Dependence between the Strain and the Deformation of Frozen
Ground in Consideration of Time.
PERIODICAL Dokl. Akad. Nauk, 108, fasc. 6, 1049-1052 (1956)
Issued: 9 / 1956 reviewed: 10 / 1956

The following investigations were undertaken for the purpose of studying this dependence: Shearing along wooden rods frozen in the ground, embossing of frozen die in frozen ground, expansion and compression. Experiments were carried out in various types of ground (from clay to light sand) at constant negative temperatures; they extended over short as well as over very long periods (of up to one year). Denotations refer to the most important state of strain, shearing, but the rules found apply, apart from other parameters in the equation, also to other of the most simple states of strain (expansion and compression). The deformation of the frozen ground at any moment is composed of an elastic deformation γ_{el} and a remanent deformation γ_{rem} . The former satisfies HOOK'S theorem and the latter can be described by an exponential dependence. Because of the toughness of the frozen ground both types of deformation develop according to time (creeping). Therefore, also the dependence between strain and total deformation is a function of the duration t of the stress (in the case of step-wise stress) or of the velocity of growth of this stress (in the case of continuous stress).
The results obtained from testing frozen ground with respect to shearing along

Dokl.Akad.Nauk, 108, fasc.6,1049-1052 (1956) CARD 2 / 2

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the lateral surface of wooden rods frozen into the ground are illustrated by means of a diagram. On this occasion the stress brought to bear on the rods was increased by equal steps. The dependence between strain and total deformation

may be described by the formula $\gamma = \gamma_{el} + \gamma_{rem} = (\tau/G(t) + [\tau/A'(t)]^{1/\alpha'})$. Here

the elasticity modulus G and modulus A of the remanent deformation depend on the duration Δt of the stress (or on the stress velocity $v = \Delta \tau / \Delta t$).

Thus, the dependence between the strain and the deformation of frozen grounds is represented by a family of curves the parameter of which is the time or the stress velocity. In the case of a short duration Δt of stress, the curve has a large angle of inclination and is nearly a straight line. In the case of increasing Δt the $\gamma - \tau$ -curves (γ - total deformation, τ - stress) become flatter as a result of the development of plastic deformation. The limit of the plastic flow depends upon the duration of stress (or on stress velocity), and the occurrence of plastic flow is due to the fact that deformation attains a certain limiting value which is independent of time.

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BYALOVA, V.V.

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N.Ya., redaktor; ROZENBERG, L.D., doktor tekhnicheskikh nauk,
redaktor; TARTAKOVSKIY, B.D., kandidat tekhnicheskikh nauk.
GUROV, K.P., redaktor; GRAKOVA, Ya.D., tekhnicheskiy redaktor.

[Scientific literature on acoustics during the years 1945-1949]
Nauchnaia literatura po akustike za 1945-1949 gg. Moskva, 1955.
276 p. (MLRA 8:12)

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pondent AN SSSR (for Brekhovskikh)
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BATUYEV, M.I., doktor khim. nauk; BARYSHANSKAYA, F.S., kand. fiziko-
matem. nauk; STERIN, Kh.Ye., kand. fiziko-matem. nauk; ARANOVICH, P.M.,
kand. khim. nauk; BYALOVA, V.V., mlad. nauchnyy sotr.; ROTKOVA, S.V.,
mlad. nauchnyy sotr.; RABINOVICH, N.Ya., mlad. nauchnyy sotr.; BERK-
GAUT, V.G., red. izd-va; GOLUB', S.P., tekhn. red.

[Scattering of light and infrared spectroscopy; bibliographic index
for 1928-1940] Rasseianie sveta i infrakrasnaia spektroskopii;
bibliograficheskii ukazatel' 1928-1940. Moskva, Izd-vo Akad. nauk
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spetsial'nykh bibliotek.
(Light--Scattering--Bibliography) (Spectrum, Infrared--Bibliography)

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Achievements of collective farms in Kraanogorsk District. Semledolie
5 no.0:59-63 S '57. (MLRA 15:?)

1. Direktor Kraanogorskoy Mashinno-traktornoy stantsii (for
Vyslovskiy).
(Kraanogorsk District (Moscow Province)--Field crops)

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POMANSKIY, Boris Aleksandrovich [deceased]; FRIDMAN, Naum Yakovlevich; ALEKSAKHINA, Tat'yana Yur'yevna; TRIFONOVA, Natal'ya Vasil'yevna; BYAL'SKIY, A.L., red.; KVELCH, N.Ye., red.; BONDAREV, M.S., tekhn.red.

[Producing design on cloth; a manual for artists and masters]
Tekhnologiya rospisi tkanei; posobie dlia khudozhnikov i masterov.
Pod obshchi red. A.L.Bial'skogo. Moskva, Vses.koop.izd-vo, 1957.
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(Textile design)

BYAL'S'KIY, A.L. [B ial's'kyi, A.L.]

New dyes for the textile and knit goods industry. Leh.prom. no.3:
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issledovatel'skogo instituta organicheskikh poluproduktov i kra-
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