

CZECHOSLOVAKIA

PAVLIK, I; ZIZEK, V

Department of General and Inorganic Chemistry, Institute  
of Chemical Technology, Pardubice - (for both)

Prague, Collection of Czechoslovak Chemical Communications,  
No 5, May 1966, pp 1985-1991

"Acetylferricinium salts."

ZUB, G., kand. tekhn. nauk; PETRENKO, A.; ZINOV'YEV, V.; IVANOV, Yu.,  
kand. tekhn. nauk; KUDRYASHOV, N.; DUDOLALOV, Ye.

Information. Avt. transp. 43 no.2:54-60 F 165.

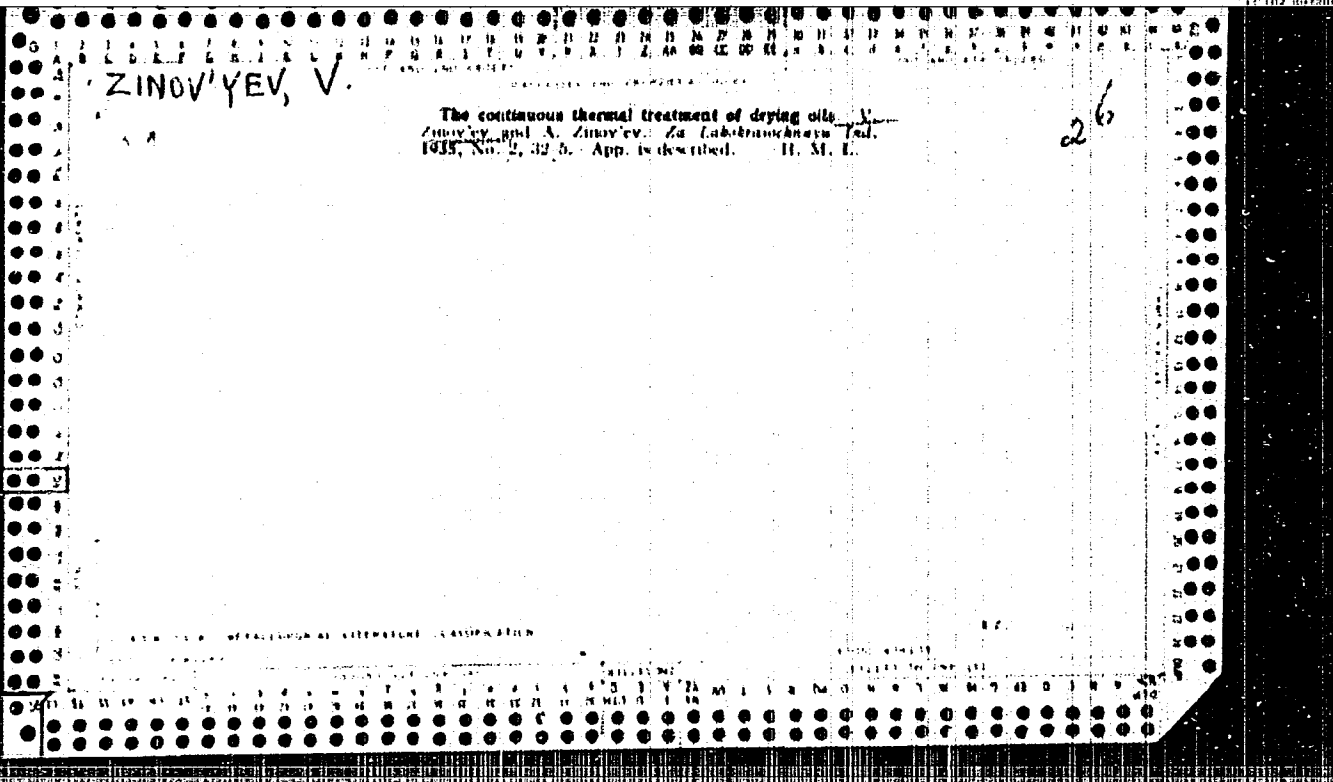
(MIRA 18:6)

1. Direktor Ukrainskogo dorozhno-transportnogo nauchno-issledovatel'skogo instituta (for Zub). 2. Nauchno-issledovatel'skiy institut avtomobil'nogo transporta (for Ivanov).

D'YACHENKO, M., inzh.; ZINOV'YEV, V., inzh.

Technical production base in case of an organization of the  
technical service on a self-financing basis. Avt. transp.  
42 no.8:19-20 Ag '64. (MIRA 17:10)

1. Donetskij proizvodstvennyy avtotrest "Glavdonbasstroy."



ZINOV'YEV, V. (Stalino)

Mobile carbonic acide equipment made at an automotive trasportation  
unit. Pozh.del 4 no.8:20 Ag '58. (MIRA 11:9)  
(Fire extinction--Chemical methods)

ZINOV'YEV, V. (Stalino)

Sand box. Pozh. delo 5 no.5:8 My '59.  
(Fire prevention)

(MIRA 12:6)

ZINOV'YEV, V.A.; KRAVTSOV, V.I.

Anodic solution of cadmium in sulfuric acid solutions containing  
cadmium sulfate. Vest. LGU 15:95-100 '60. (MIRA 13:2)  
(Cadmium) (Sulfuric acid) (Cadmium sulfate)

ZINOV'YEV, V.A.; SHEYNIN, A.B.; KHEYFETS, V.L.

Oscillographic study of the kinetics of electrode processes.  
Part 2: Cobalt electrode in cobalt sulfate solutions. Zhur. fiz.  
khim. 35 no.1:98-101. Ja'61. (MIRA 14:2)

1. Gosudarstvennyy institut nikel'voy, kobal'tovoy i olobyannoy  
promyshlennosti.

(Cobalt)



ZINOV'YEV, V.A., vrach.

Strain of ligaments and tendons. Zdorov'e 7 no. 4:31 Ap '61.

(MIRA 14:4)

(TENDONS—INJURIES AND RUPTURES) (LIGAMENTS)

ZHOV'YEV, V.

Silica calcite products. Gor. 1 shly. stroi. no. 1:32 Ja '57.  
(MLRA 10:4)

1. Glavnyy inzhener tresta Stavropol'kraystroy.  
(Stavropol Territory--Building materials)

ZINOV'YEV, V.

Reaction unit. Okhr.truda i sots.strakh. 5 no.11:34 N '62.  
N '62. (MIRA 15:12)

1. Nachal'nik proizvodstvenno-tekhnicheskogo otdela Donetskogo  
avtotresta, Donetsk.

(Metal cleaning)

KOROTEYEV, A.; RUBIN, A., flag-shturman; ZINOV'YEV, V., komandir  
podrazdeleniya

Forecast... for yesterday. Grazhd. av. 20 no. 3:10-11 Mr '63.  
(MIRA 16:4)

1. Zamestitel' nachal'nika Uzbekskogo upravleniya Grazhdanskogo  
vozdushnogo flota (for Koroteyev). 2. Uzbekskoye upravleniye  
Grazhdanskogo vozdushnogo flota (for Rubin).

(Meteorology in aeronautics)

ZINOV'YEV, V.A. (Mskva); REMIZOV, M.P. (Mskva)

Kinematic and dynamic investigation of an electric pulley with  
rotating stator and rotor. Mashinovedenie no.2029-34 '65.

(MIRA 18:8)

ARTOBOLEVSKII, I. I.; ZINOVYEV, V. A.; EDELSTEYN, B. V.

"Collected problems on Theory of Mechanisms and Machines," Ogiz, 1947, Moscow.

ZINOV<sup>Y</sup>EV, V. A.

M. V. Semenov. Uravnoveshivanie mekhanizmov aviatsionnykh motorov.  
(Sovetskaia kniga, 1948, no. 2, p. 64-66)

Review of the book by M. V. Semenov: "Balancing of aircraft engine mechanisms."

22495.567 1948

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of  
Congress, 1955.

ZINOV'EV, V. A.

25619 ZINOV'EV, V. A.

O spornykh utverzhdeniyakh dots. Komarova. [ Po povodu ego stat'i  
(( Nekotoryye voprosy metodiki prepodavaniya kursa )) (( Detali  
mashin )) v zhurn. (( Vestnik vyssh. shkoly )), 1948, No. 6, S  
Primech. RED. s. 21 ].  
Vestnik vyssh. shkoly, 1948, No. 6, s. 16-18.

SO: Letopis' Zhurnal Statey, No. 30, Moscow, 1948



ZINOV'EV, Viacheslav A.

Analytic methods of calculating horizontal mechanisms; Moskva, Gos. izd-vo tekhn.-teoret. lit-ry, 1949. 203 p. (50-17086)

TJ173.Z5

ZINOV'YEV, V. A.

33178. Proyektirovaniye Sharnirnogo Chetyrekhzvennika Po Zadannym Polozheniyam Krivoshipa I Koromysla. Trudy Seminara Po Teorii Mashin I Mekhanizmov ( Akad. Nauk SSSP, In-T Mashinovedeniya), T. VII, Vyp. 25, 1949, c. 69-84.--Bibliogr: 6 Nazv.

SO: Letopis' Zhurnal'nykh Statey , Vol. 45, Moskva 1949

ZINOV'EV, Viacheslav, A., ed.

A short engineering reference book. Moskva, Gos. izd-vo tekhniko-  
teoret. lit-ry, 1949-50. 2v. (50-27567)

TA151.Z5

ZINOV'YEV, V. A.

Kratkiy Tekhnicheskiy Spravochnik, Moscow, 1950

~~LVIX~~ Sum #148

PHASE I Treasure Island Bibliographic Report

BOOK

Call No.: AF 479132

00000110

Author: ZINOV'EV, V.A.

Full Title: KINEMATICAL ANALYSIS OF SPACE MECHANISMS

Transliterated Title: Kinematicheskiy analiz prostranstvennykh mekhanizmov

Publishing Data

Originating Agency: Academy of Sciences of the USSR, Institute of Mechanics

Series: Transactions of the Seminar on Theory of Machines and Mechanisms,  
1951, vol.XI, issue 42, pp. 52-99.

Publishing House: Publishing House of the Academy of Sciences of the USSR

Date: 1951

No. pp.: 47

No. of copies: 1,800

Editorial Staff:

Editor: Artobolevskiy, I.I., Member of the Academy of Sciences

Ed. in Chief: None

Tech. Ed.: None

Text Data:

Coverage: The work describes the method of kinematical analysis of space mechanisms, leading parts of which are composed of 5-, 4-, 3-, and 2-link groups. The proposed methods are applicable for problems based on the use of closed vector systems. Solutions of five practical problems are given as examples.

Purpose: The proposed methods can be used in the designing of simple space mechanisms.

Facilities: None

No. of Russian References: None.

Available: A.I.D., Library of Congress.

Mathematical Reviews  
Vol. 15 No. 1  
Jan. 1954  
Mechanics

*Sturmen  
Mach. Design  
Luzga*

✓ Zil'ber'ev, V. A. Kinematic analysis of spatial mechanisms. Akad. Nauk SSSR. Trudy/Sem. Teorii Mašin i Mechanizmov 10, no. 42, 52-99 (1951). (Russian)

The kinematical theory of machines and mechanisms is usually taught graphically. For precision, however, it is necessary to resort to analytical or numerical methods. This is difficult enough in the plane, but this work attempts to illustrate some of the possibilities in the analytical treatment of spatial mechanisms. The foundations of vector methods in three dimensions are derived. As an example, the relative positions of the links of a closed hinged chain of six links are shown to satisfy a set of twelve equations of which two are linear and the others are quadratic. A numerical example is solved by successive approximation by making use of the given lengths, twists and offsets of the links. Other examples involving, in addition to hinges, ball- and socket-joints and screw pairs are given.

M. Goldberg (Washington, D. C.)

ZINOV'EV, Viacheslav A. ed.

Short technical manual. Izd. 2., stereotipnoe. Moskva, Gos. izd-vo  
tekhniko-teoret. lit-ry, 1952- (53-18819)

TA151.252

ZINOV'EV, Viacheslav A.

Three dimensional mechanisms in lower pairs; kinematic analysis and synthesis. Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1952.  
431 p. (54-23393)

QA841.Z5



ZINOV'YEV, V.A.

Calculating the mass of flywheels with a momentum depending upon speed.  
Trudy Sem.teor.mash. 12 no.46:72-86 '52. (MLEA 6:6)  
(Flywheels)

ZINOV'YEV, V.A.

Calculation of flywheel moments according to I. I. Artyukovskii's  
method. Trudy Sem. teor. mash. 13 no. 51:27-32 '59. (MIRA 7:1)  
(Flywheels)

ARTOBOLEVSKIY, Ivan Ivanovich; ZINOV'YEV, Vyacheslav Andreyevich; EDEL'-  
SHTEYN, Boris Vital'yevich; LEVANTOVSKIY, V.I., redaktor; MURASHOVA,  
N.Ya., tekhnicheskii redaktor

[Problems in the theory of mechanisms and machines] Sbornik  
zadach po teorii mekhanizmov i mashin. Izd. 3-e, perer.  
Moskva, Gos.izd-vo tekhniko-teoret. lit-ry, 1955. 243 p.  
(Mechanical engineering) (MLRA 9:2)

FROM: I BOOK EXPLOSION  
SUBJECT: ...

Book, No. 20, pp. 79 (Translations of the Institutes of Mechanical Engineering, Academy of Sciences USSR. Selected on the theory of mechanics and mechanics, Vol. 20, No. 79) Moscow, 1960. 29 p. Kzeta slip inserted. 2,100 copies.

Editorial Board: S. I. Pechoukhov (Pres. Ed.), Scientific Supervisor of the V. A. Gorkovskiy Program, Professor, Doctor of Technical Sciences; V. A. Zolotarev, Professor, Doctor of Technical Sciences; M. M. Krasovskiy, Doctor of Technical Sciences; B. I. Lavrentyev, Professor, Doctor of Technical Sciences; I. P. Novitskiy, Candidate of Technical Sciences; I. P. Pechoukhov, Professor, Doctor of Technical Sciences; M. M. Krasovskiy, Doctor of Technical Sciences; M. I. Pechoukhov, Doctor of Technical Sciences; M. I. Pechoukhov, Doctor of Technical Sciences.

PREFACE: This book is intended for scientific research workers and engineers concerned with the theory and design of mechanisms.

CONTENTS: The collection contains articles dealing with theoretical problems of solutions, mechanisms. Included are discussions on the simplification of various of the Boltz and Chetaev's method of investigation of dynamic systems, the application of the method of averaging to the investigation of systems of gyroscopes, and an article describing and analyzing the motion of a pendulum with a rotating support. Personalities are mentioned: B. I. Lavrentyev, M. I. Pechoukhov, M. M. Krasovskiy, M. I. Pechoukhov, and I. P. Novitskiy. Bibliography: 10 items. Appendix: 1 item. Printed in Moscow, 1960. 29 p. Kzeta slip inserted. 2,100 copies.

The author gives analytical and analytical solutions of the problem of a rotating pendulum with a rotating support (Boltz's point) or three-point contact, with the pendulum's support. This article which has not been applied before in the synthesis of mechanisms.

Out of 4/4  
VZ/vm/ra  
12-18-60

ZINOV'YEV, V.A.; SVESHNIKOV, G.N.; SMITKO, I.K.; YAKOVLEV, K.P., red.;  
RYDNIK, V.I., red.; AKHILAMOV, S.H., tekhn.red.

[Short handbook on physics and mechanics] Kratkii fiziko-  
tekhnicheskii spravochnik. Moskva, Gos.izd-vo fiziko-matem.  
lit-ry. Vol.2. [General mechanics, strength of materials,  
theory of mechanisms and machines] Obshchaya mekhanika, sopro-  
tivlenie materialov, teoriya mekhanizmov i mashin. 1960. 411 p.  
(MIRA 13:12)

(Mechanics)

(Strength of materials)

(Machinery)

PHASE I BOOK EXPLOITATION

SOV/4953

Zinov'yev, Vyacheslav Andreyevich

Kurs teorii mekhanizmov i mashin (Course in the Theory of Mechanisms and Machines) Moscow, Fizmatgiz, 1960. 431 p. 50,000 copies printed.

Ed.: S. A. Meyngard; Tech. Ed.: K. F. Brudno.

PURPOSE: This textbook is intended for students specializing in machine building at schools of higher technical education.

COVERAGE: The book presents structural, kinematic, and dynamic analysis of mechanisms and gives fundamentals of designing mechanisms. Kinematic chains, frictional and toothed mechanisms, plane lower-pair mechanisms, plane cam mechanisms, crank-gear and other three-dimensional mechanisms, the motion of machinery units, and forces in mechanisms are studied. The theory of gear tooth action is given and the designing of frictional and toothed mechanisms, including belt drives and gear boxes, is discussed. Attention is given to the effect of electromagnetic processes taking place in electric motors and to

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ZINOV'YEV, V.A.

PHASE I BOOK EXPLOITATION

SOV/5734

Akademiya nauk SSSR. Institut mashinovedeniya. Seminar po teorii mashin i mekhanizmov.

Trudy, t. 21, vyp. 83-84 (Academy of Sciences of the USSR. Institute of Machine Science. Seminar on the Theory of Machines and Mechanisms. Transactions) v.21, nos. 83-84. Moscow, Izd-vo AN USSR, 1961. 161 p. Errata slip inserted. 2000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR.

Editorial Board: Resp. Ed.: I.I. Artobolevskiy, Academician, G.G. Baranov, Professor, Doctor of Technical Sciences; M.L. Bykhovskiy, Doctor of Technical Sciences; V.A. Gavrilenko, Professor, Doctor of Technical Sciences; V.A. Zinov'yev, Professor, Doctor of Technical Sciences; A.Ye. Kobrinskiy, Doctor of Technical Sciences; N.I. Levitskiy, Professor, Doctor of Technical Sciences; N.P. Rayevskiy, Doctor of Technical Sciences; L.N. Reshetov, Professor, Doctor of Technical Sciences; and M.A. Skuridin,

Card 1/6

Seminar on the Theory (Cont.)

SOV/5734

Professor, Doctor of Technical Sciences; Ed. of Publishing House: A.A. Demidenko; Tech. Ed.: S.G. Tikhomirova.

PURPOSE: This collection of articles is intended for scientific research workers and designers in the fields of machine and mechanism dynamics.

COVERAGE: The articles in No. 83 discuss the following: developments and achievements in the field of machine and experimental dynamics, including vibrations and vibratory impact; investigations in the theory of intermittent motions; differential equations for describing the joint motion of mechanical (disbalancing) vibrators; investigations into the dynamics and stability of periodic regimes of motion in vibratory-impact systems; an attempt to find an approximate periodic solution of a second-order non-linear differential equation; and results of the application of electronic analog computers in analyzing the operation of rolling mills. No. 84 includes articles on the following: an analytical

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Seminar on the Theory (Cont.)

SOV/5734

method for determining the positions of three-dimensional multiple-link mechanisms composed of three-dimensional kinematic groups with lower kinematic pairs; an analytical method for determining the parameters of the simplest hinged linkage with two degrees of freedom; a general method for investigating three-dimensional gearings; the effect of dry-friction dampers on vibrations in railway vehicles; and the utilization of Burmester's curves for determining the parameters of a multiple-link hinged linkage with a dwell. No personalities are mentioned. References accompany individual articles. There are 260 references: 212 Soviet, 31 English, 16 German, and 1 French.

TABLE OF CONTENTS:

No. 83

Foreword

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ZINOV'YEV, V.A.; SVESHNIKOV, G.N.; SNITKO, I.K.; YAKOVLEV, K.P.,  
red.; RYDNIK, V.I., red.; KOLESNIKOVA, A.P., tekhn. red.

[Concise physical and technological handbook]Kratkii fiziko-  
tekhnicheskii spravochnik. Moskva, Fizmatgiz. Vol.2.[General  
mechanics, strength of materials, theory of mechanisms and  
machinery]Obshchaia mekhanika, soprotivlenie materialov, teoriia  
mekhanizmov i mashin. 1962. 417 p. (MIRA 15:12)  
(Mechanics) (Strength of materials) (Mechanical engineering)

LEVITSKIY, N.I., doktor tekhn. nauk prof., otv. red.; BLAGONEAVOV, A.A., akademik, red.; BESSONOV, A.P., doktor tekhn. nauk, red.; DIMENTBERG, F.M., doktor tekhn. nauk, prof., red.; ZINOV'YEV, V.A., doktor tekhn. nauk, prof., red.; KOBRINSKIY, A.Ye., doktor tekhn. nauk, red.; CHERKUDINOV, S.A., doktor tekhn. nauk, red.

[Current problems in the theory of machines and mechanisms] Sovremennye problemy teorii mashin i mekhanizmov. Moskva, Nauka, 1965. 342 p. (MIRA 19:1)

1. Moscow. Gosudarstvennyy nauchno-issledovatel'skiy institut mashinovedeniya.

ARTOBOLVSKIY, Ivan Ivanovich; ZINOV'YEV, V.A., prof., red.

[Theory of mechanisms] Teoriia mekhanizmov. Moskva,  
Nauka, 1965. 776 p. (MIRA 18:11)

I. 6977-66 EAP(k)/EAT(d)/EAP(h)/EAP(u)/EAP(i)

SOURCE CODE: UR/0380/85/000/002/0029/0036

AUTHOR: Zinov'yev, V. A. (Moscow); Romisov, M. P. (Moscow)

ORD: none

114 55

114 55

44  
B

... electric motor with revolving primary

...

... electrical equipment part

Card 1/2

UDC: 621.374.01.681

$$\omega_r = \omega_s - \omega_s \lambda$$

where  $\omega_s$  is the velocity of the magnetic field,  $\omega_r$  is the velocity of the rotor, and  $\lambda$  is the slip. The ratio between rotor velocity and stator velocity is called the slip. This ratio can be expressed as  $\lambda = \frac{\omega_s - \omega_r}{\omega_s}$ . The slip is a measure of the relative speed between the rotor and the magnetic field.

$$\eta = \frac{P_{out}}{P_{in}} = \frac{P_{mech}}{P_{elec}}$$

The transmission efficiency is the ratio of the mechanical power output to the electrical power input. It is a measure of the losses in the system. The efficiency is affected by the rotor resistance, the rotor reactance, and the stator reactance. The efficiency is also affected by the slip. The efficiency is highest when the slip is small.

ZINOV'YEV, Vladimir Andreyevich

6/1963

1964

DECEASED

ZINOV'YEV, V.N.; ZYMALEV, G.S.; ISKRENKO, I.V.

Working thin deposits at the Il'ich mine. Gor. zhur. no.4:23-26  
Ap '65. (MIRA 18:5)

1. Trest Dzerzhinskruada, Krivoy Rog.



PECHATNIKOVA, Ye.A., doktor med.nauk; ZOLOTAREVSKIY, V.Ya., kand.med.nauk

Therapeutic importance of A.V.Vishnevskii's novocaine block in  
some forms of surgical pathology of the esophagus and stomach.  
Ez.med.zhur. 40 no.1:41-44 Ja-F '59. (MIRA 12:10)

1. Iz instituta khirurgii im. A.V.Vishnevskogo AMN SSSR (direktor -  
deystvitel'nyy chlen AMN SSSR, prof.A.A.Vishnevskiy).  
(ALIMENTARY CANAL--DISEASES) (LOCAL ANESTHESIA)

USTINOV, A.A., doktor biolog.nauk; ZINOV'YEV, V.G., nauchnyy sotrudnik

Diseases of clover caused by nematodes. Zashch. rast. ot  
vred. i bol. 5 no. 8:54-55 Ag '60. (MIRA 13:12)

1. Khar'kovskiy universitet (for Zinov'yev).  
(Clover---Diseases and pests) (Nematoda)

ZINOV'EV, V. G.

G-2

USSR/Zooparasitology - Parasitic Worms.

Abs Jour : Ref Zhur - Biol., No 6, 1958, 24319

Author : Zinov'ev, V.G.

Inst : -  
Title : Enzymatic Activity of Nematodes-- Plant Parasites.

Orig Pub : Zool. zh., 1957, 36, No 4, 617-620

Abstract : A study was conducted of the gallic nematode *Meloidogyne marioni*, potato stalk nematode *Ditylenchus destructor*, and onion stalk nematode *D. allii*. The stalk nematodes and pre-parasitic larvae raised from the eggs of the gallic nematode, taken from infected bulbs and onions, were placed in distilled water on cover glasses for a period of 1-2 days. To determine the number of nematodes, the contents of the glasses were centrifuged and filtered; the filtrate was tested for the presence and activity of enzymes. All three species of nematodes liberate amylase, invertase and a proteolytic enzyme. The strongest

Card

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USTINOV, A.A.; ZINOV'YEV, V.G.

Grain nematodes. Zashch. rast. ot vred. i bol. 6 no. 4:24-25  
Ap '61.

(MIRA 15:6)

(Grain--Diseases and pests)  
(Nematode diseases and plants)

ZINOV'YEV, V.G.

Enzymatic activity of nematodes parasitic on plants [with summary in English]. Zool. zhur. 36 no.4:617-620 Ap '57. (MLRA 10:6)

1. Nauchno-issledovatel'skiy institut biologii Khar'kovskogo gosudarstvennogo universiteta.  
(Nematoda) (Enzymes) (Plant diseases)

GOLOBOV, V.G., inzh.; ZINOV'YEV, V.I., inzh.; GRISHECHKIN, A.I., inzh.

Mining and ore dressing equipment of the Voronezh Plant. Gor.  
zhur. no.12:40-41 D '63. (MIRA 17:3)

1. Voronezhskiy zavod gornoobogatitel'nogo oborudovaniya.

ZINOV'YEV, V.I.

Determination of the composition of plagioclase based on the  
results of the chemical analysis of igneous rocks. Geol. i  
geofiz. no.12:140-144 '64. (MIRA 18:6)

1. Zapadno-Sibirskoye geologicheskoye upravleniye, Novokuanetsk.

ZINOV'YEV, V.I., inzh.; GOLOBOV, V.G., inzh.; GRISHECHKIN, A.I., inzh.

Machines manufactured by the Voronezh Ore-Dressing Equipment  
Factory. Gor. zhur. no.6:65-67 Je '62. (MIRA 15:11)

1. Voronezhskiy zavod gorno-obogatitel'nogo oborudovaniya.  
(Voronezh--Ore dressing--Equipment and supplies)



ZINOV'YEV, V. K.

137-58-3-6056

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 3, p 231 (USSR)

AUTHORS: Dobatkin, V. I., Zinov'yev, V. K.

TITLE: Inspection of the Structure of Breaks in Ingots Made of Alloys AK4 and AK4-1 (Kontrol' struktury izloma slitkov splavov AK4 i AK4-1)

PERIODICAL: V sb.: Metallurg. osnovy lit'ya legkikh splavov. Moscow, Oborongiz, 1957, pp 229-235

ABSTRACT: Fracture tests may be employed for the evaluation of any schistosity and detection of large crystals of intermetallic compounds in ingots produced by means of continuous casting. The present work is devoted to the selection of standard specimens to be employed in the evaluation of the structure of the break in ingots made of Al alloys AK4 and AK4-1. Specimens representative of every mark on the scale differed from each other by the presence and the amount of acicular intermetallic compounds and by the degree of crushing apparent in the structure of the break. No sharp difference in the content of alloying elements and controlled additives was revealed by chemical analysis of ingots representing various scale marks. Strength

Card 1/2

137-58-3-6056

Inspection of the Structure of Breaks in Ingots Made of Alloys AK4 and AK4-1

and plasticity of alloys increases with increasing grade values of the structure, whereas the  $\sigma_s$  changes relatively little. Differences in properties are considerably reduced after deformation of the ingot, and only in regions where major amount of intermetallic compounds have accumulated can a sharp reduction in properties be observed. It is shown that the quality of the raw material employed affects the size and number of primary crystals of intermetallic compounds in the ingots. The employment of lower grades of Al enhances the formation of intermetallic compounds. In order to evaluate the quality of an entire smelting, it is sufficient to subject two or three ingots of the total run to fracture tests. The method of evaluation of the structure of breaks proposed here permits a determination of the limits within which a smelting batch may be employed in the manufacture of critical components and has proved to be an effective inspection method.

E. K.

Card 2/2

§/2981/64/000/003/0105/0119

ACCESSION NR: AT4037652

AUTHOR: Rutman, M. M.; Savin, F. I.; Balakhontsev, G. A.;  
Cherepok, G. V.; Zinov'yev, V. K.

TITLE: Properties of V92 alloy ingots

SOURCE: Alyuminiyevy\*ye splavy\*, no. 3, 1964, Deformiruyemy\*ye  
splavy\* (Malleable alloys), 105-119

TOPIC TAGS: aluminum magnesium zinc alloy, V92 alloy, continuous  
alloy casting, alloy heat treatment, alloy property

ABSTRACT: A technique for production-scale melting and continuous  
casting of V92, an aluminum-base alloy (3.75% Mg, 2.75% Zn, 0.8% Mn,  
0.2% Ti) is described. Round (225--1100 mm in diameter) and flat  
(250 x 1400 mm) ingots were cast. The high Mg content of the alloy  
required addition of about 0.001% Be. No difficulties were encoun-  
tered in casting round ingots. The pouring rates used corresponded  
to the lower limit of those used for AMg6 alloy. For ingots less

...agation.

Card 1/2



RUTMAN, M.M.; SAVIN, F.I.; BALAKHONTSEV, G.A.; CHEREPOK, G.V.;  
ZINOV'YEV, V.K.

Properties of ingots from the B92 alloy. Alium. splavy no.3:  
105-119 '64. (MIRA 17:6)

ZINOV'YEV, V.K.

Accumulation of segregates in AMts alloy ingots, Alum.  
splay no.3 383-389 '64. (MIRA 17:6)

L 11374-67 EWT(1) SCTB DD/GD

ACC NR: AT6036499

SOURCE CODE: UR/0000/66/000/000/0066/0066

AUTHOR: Bizin, Yu. P.; Gorban', G. M.; Zinov'yev, V. M.; Pilipruk, Z. I.; Sidorov, K. K.; Solomin, G. I.; Shirs kaya, V. A.; Yablochkin, V. D.

33

ORG: none

TITLE: Changes in several physiological indices of the organism in a gas medium formed by polymer decomposition [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966]

2

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 66-68

TOPIC TAGS: toxicology, polymer degradation, central nervous system, liver, closed ecological system, air pollution

ABSTRACT: The combined effect on animal organisms of the chemical substances formed by the degradation of some 14 polymers at temperatures in excess of 40° C was studied in a 25-day experiment.

Analysis of air from the chamber containing 80 laboratory animals showed the following: acrylonitrile,  $2.8 \pm 1.7$  mg/m<sup>3</sup>; aldehydes,  $0.02 \pm 0.01$  mg/m<sup>3</sup>; ammonia,  $4.6 \pm 1.3$  mg/m<sup>3</sup>; acetone  $1.07 \pm 0.6$  mg/m<sup>3</sup>; dibutylphthalate,  $3.7 \pm 0.4$  mg/m<sup>3</sup>; sulphur dioxide,  $1.77 \pm 0.8$  mg/m<sup>3</sup>; carbon monoxide,

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ACC NR: AT6036499

19.1 ± 1.3 mg/m<sup>3</sup>; hydrocarbons, 600 ± 218 mg/m<sup>3</sup>; hydrogen chloride, 2.46 ± 1.2 mg/m<sup>3</sup>; epichlorhydrine, 0.33 ± 0.08 mg/m<sup>3</sup>; ethyl acetate, 1.61 ± 0.6 mg/m<sup>3</sup>; and ethylene glycol, 0.7 ± 0.4 mg/m<sup>3</sup>.

Carbon dioxide content varied up to a maximum of 1%, oxygen content was 21%, and the relative humidity varied from 60 to 80%.

Blood studies conducted on the animals included erythrocyte count, leukocyte count, reticulocyte count, and hemoglobin determinations, as well as duration of bleeding, rate of coagulation, prothrombin time, thrombocyte count, and blood viscosity. Ability to synthesize hippuric from benzoic acid was taken as an index of the functional state of the liver.

In addition, observations were made of behavior and general conditions of the animals, dynamics of weight changes, tolerance to physical stress, and oxygen requirement. Relative weights of internal organs were determined.

The experimental animals were observed preceding, during, and for 14 days after the experiment.

Prolonged continuous exposure of the animals to the chemical substances liberated by the polymers produced nonspecific functional shifts.

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ACC NR: AT6036499

CNS effects included subcortical irritation and weakening of cortical subordination function. This resulted in intersection of extensor and flexor motor chronaxy curves, lowered susceptibility to brain stem hexanol narcosis, and increased tolerance to physical stress.

Peripheral blood studies showed increased erythrocyte, hemoglobin, and thrombocyte counts.

These CNS and peripheral blood shifts were unstable and nonspecific, and should be regarded as an adaptation reaction of the organism to the presence of gases released by polymer materials. This interpretation is supported by full restoration of the altered functions and indices to the initial state within 14 days after the end of the experiment.

It is concluded that the investigated polymers can be used in space cabins so long as the gases they liberate are scrubbed from the cabin air before they attain the maximum permissible concentration for small closed compartments.  
[W.A. No. 22; ATD Report 66-116]

SUB CODE: 06 / SUBM DATE: 00May66

Card 3/3

ZINOV'YEV, Y.M.

Let's perfect the repair of car wheel pairs. *Elektr. tepl. tiaga*  
no.5:23-24 Ky '57. (MIRA 10:9)

1. Master kolesnogo tsakha depo Pererva Moskovsko-Kursko-Donbasskoy  
shelesnoy dorogi.

(Car wheels)

ZINOV'YEV, V.M., inah.

Competing in honor of the 22d Congress of the CPSU. Stroil.  
truboprov. 6 no.7:3 JI '61.

(MIRA 14:8)

1. Zavod stroydetaley, st. Palaglada, Stavropol'skiy kray.  
(Palaglada--Reinforced concrete)

ZINOV'YEV, V.M.; KOVRIGO, A.F., kand.tekhn.nauk

Breaking coal with deep boreholes in working a thin steep layer.  
Sbor. nauch. trud. Kaz GMI no.19:79-81 '60. (MIRA 15:3)  
(Kuznetsk Basin--Coal mines and mining) (Blasting)

ЗИНОВ'ЯЕВ, В. П.

10.2000 65689 SOV/136-99-10-6/18

AUTHORS:

Gatakin, I. S., Batyuk, A. G., Izob, V. P., Zinov'ev, V. P., Gorokhovatshaya, B. I., Seayeva, V. V., Zakharenko, V. P., Yefremov, V. G., Brevnenik, A. V. and Polyaksh, V. P.

TITLE:

Mastering the Process of Sulphatizing Lead Dusts

PERIODICAL:

Tsvetnyye metall, 1959, Nr 10, PP 35-42 (USSR)

ABSTRACT:

The method of sulphatizing poly-metallic ores and concentrates was first described in the Soviet Union by Professor A. Ye. Makovetsky in 1923. Since that time a great deal of investigational work has been done in this connection. One variant of this method, so-called Makovetsky-Gintsvet process, consisting of mixing the material with diluted (60%) sulphuric acid and treating the pulp in a cylindrical sulphatizer at 200° C, was put to test at a pilot plant (designed to treat 3 t of sulphide concentrates per day) at Ordzhonikidze. However, even after three years operation, no means have been found to overcome serious difficulties associated with the formation of crusts in the sulphatizer and with rapid corrosion of the equipment. The gas system, due to the action of hot gases containing sulphuric acid vapours, Work on this problem was resumed at VNIITsvetmet in 1955

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and, as a result, a modified method was developed which, by now, has also been tested on semi-industrial scale. The main difference between the new and the original method is the application of concentrated sulphuric acid which contains 60% sulphuric acid. The use of this acid that contains 60% sulphuric acid, owing to the fact that osmotic pressure in the dense pulp took place in the equipment used in the old process, is in the mixer. By adding sulphuric acid to the pulp, the difficulty was overcome of neutralizing the powder acid. This difficulty was overcome by adding sulphuric acid in a pan granulator mixed with concentrated sulphuric acid in a pan granulator. This is due to the exothermic nature of the reactions taking place during the neutralizing process, the neutralizing process during 200° C or even higher and this ensures rapid distillation of chlorine and fluorine and accelerates sulphatization of the pulp components. The subsequent heating of the granules to 250° C (necessary to distill off arsenic and to complete the sulphatizing reactions) is carried out in a reactor, using sulphatizing reactions is carried out in preliminary investigations fluidized bed principle (Ref 1). The laboratory plant in which dusts from various lead and copper smelting plants were treated. On the basis of the

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results of this work, the staff of the VNIITsvetmet, Lead-Tin Combine in cooperation with VNIITsvetmet, designed and constructed a large pilot plant capable of treating 10 t of lead-bearing dusts per day. The main components, i.e. the granulator shown diagrammatically in Fig 1 and the fluidized bed reactor illustrated in Fig 2, were constructed in the Combine workshops. The granulator, 4 m in diameter and 2.5 m high, is equipped with a fan 1500 mm dia. and 250 mm deep, the axis of which is inclined to the horizontal at an angle of 30 to 60° and which rotates at the moment of 8 to 14 rev/min. Gases evolved during the process are removed through an exhaust hood. The application of concentrated sulphuric acid made it possible to use mild steel as the constructional material of the granulator, the inlet and outlet pipes and the ventilating system. The reactor shell (Fig 2) is made of steel, lined inside with a single layer of a refractory brick, the active area of the hearth is 0.75 m<sup>2</sup>, the height of the fluidized bed, 105 cm, the diameter of the reactor being 3.5 m. The final product obtained in the fluidized bed reactor is discharged into a

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Mastering the process of Sulphatizing Lead Dusts

stainless steel tank, from which it is pumped into mechanical agitators, where the sulphate product is leached out. The following are the main operations carried out in the hydro-metallurgical section: leaching of the sulphate product, settling and washing the lead cake, precipitation of raw metals, removal of arsenic and lead from the solutions and extraction of cadmium. The lead dusts used in the experimental pilot plant contained (wt %): 87.1 Zn, 16.3 Zn, 2.5 Cd, 0.5 Cu, 1.0 Fe, 5.3 As, 0.1 Pb and 0.2 S. The consumption of concentrated sulphuric acid in acidulating this product varied between 55 and 62% of the theoretical, the dust which corresponded to 110% of the theoretical, the dust which acidified the solution being 100% of the theoretical. The quantity of the concentration less than 92% is used, the acid of the concentration less than 92% is used, the acidulating process is adversely affected, granules of low mechanical strengths are obtained, the quantity of distilled off chlorine, fluorine and arsenic is reduced (output of the granulator is reduced.) With the granulator inclined at 55° and operating at 6.3 rev/min, 10 to 15 t of the dust was treated per day, the obtained product contained 60% of the -5 fraction. The proportion of dust carried away by the exhaust gases was comparatively small and amounted to 1% only; the quantity of gases evolved during the process was also small, owing to the low chlorine, fluorine and arsenic contents in the dust; the Mg content in the gases varied between 80 and 9 wt/m<sup>3</sup>. The optimum temperature for sulphatizing the granules in the fluidized bed reactor was 332°C. The capacity of the reactor was 12 to 14 t/2 hr, the air consumption being 3000 m<sup>3</sup>/hr. The granules in the reactor for more than two hours; however, it is necessary that the time necessary for the completion of the sulphatizing process (for the removal of 50% of arsenic) is approximately 45 min; consequently, it can be assumed that the productivity of the reactor could be increased, whereby its specific air consumption would be reduced. The solutions (including those obtained during washing and filtering the lead cake) resultant from the water leach of the sulphate product, contained (g/l): 37.9 Zn, 6.5 Cd; the washed lead cake contained (wt %): 0.52 Zn, 0.16 Cd, 64.3 Pb;

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97% Zn and 95% Cd present in the dust was recovered in the solution; the recovery of Zn, Cd and Pb in the lead cake was 2.4, 4.8 and 98% respectively; the recovery of raw metals amounted to 7% to 95%; 80 to 90% arsenic as sulphate during the sulphatizing process. The dust was distilled off during both acidulating and sulphatizing processes. After describing the dust-collecting process and various controlling equipment, the authors state their conclusions. (1) Difficulties experienced in the application of the sulphatizing process on an industrial scale have been overcome by using concentrated sulphuric acid and by acidulating the pulp in a rotary pan granulator. (2) No signs of corrosion of the granulator, made of mild steel, have been observed during the test period; both the granulator and the fluidized bed reactor can be made of mild steel. (3) The process conditions have been satisfactorily defined. (4) The process as outlined in the present paper has been found to be very efficient regarding the degree of both the recovery of rare and non-ferrous metals present in the dust and the

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removal of the volatile components. (4) A necessary condition for ensuring efficient purification of the gases leaving the fluidized bed reactor is lowering the temperature of the gases to 25 to 30°C and the application of a wet electrostatic precipitator. To comply with the sanitary requirements, the dust must be collected in the actual gases; a supplementary cleaning operation in the wet electro-filter is necessary. (5) The application of the sulphatizing process for treating lead dust provides a convenient means of utilizing this complex material and can be recommended for adoption in all the lead plants in the Soviet Union. There are 2 figures, 1 table and 1 Soviet reference.

ASSOCIATIONS: VNIITsvetmet  
 Ust'-Kamenogorskakiy svintsovo-tsinkovyy kombinat  
 (Ust'-Kamenogorskakiy Lead-Zinc Combine)

ZINOV'YEV, V.P.

137-58-4-6542

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 31 (USSR)

AUTHORS: Petrov, I.K., Zinov'yev, V.P., Lerner, V.S.

TITLE: Automatic Adjustment of Certain Processes in Lead and Zinc Metallurgy (Avtomaticheskoye regulirovaniye nekotorykh protsessov v metallurgii svintsa i tsinka)

PERIODICAL: Sb. tr. Vses. n.-i. in-t tsvetn. met., 1956, Nr 1, pp 119-139

ABSTRACT: The following systems of automation of various technical processes and parameters, developed by the VNIITsvetMet, are described. In connection with the automatic control (AC) of the amount of air delivered to a shaft furnace, a direct relationship has been experimentally determined to exist between the rate of air flow and the productivity of the furnace, which is an object of fixed capacity. AC is employed to hold constant the amount of air blown into the oven. In AC of the rate of motion of the pallets of a sintering machine, the primary signal is the thermoelectromotive force of 4 differentially-connected (paired) thermocouples, determining the position of the temperature maximum of the outgoing gases, which should be

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137-58-4-6542

Automatic Adjustment of Certain Processes in Lead and Zinc Metallurgy

in the third chamber from the "fault". The AC employs an electronic potentiometer, a millivoltmeter with an electronic regulator, a time relay, and an actuating mechanism manipulating the rpm of the sintering machine drive. In AC of the maximum productivity of sintering machine exhausters, the constant quantity is the current of the exhauster motor, which is held at an assigned constant level. AC is performed by means of an electronic potentiometer with a three-position control, a time relay, and a driving mechanism actuating a choke in the exhauster intake. In connection with AC of the operation of the assembly governing the returns in a sintering plant, the problem of the assembly is delivery of cooled return agglomerate ("returns") at a temperature not higher than that desired. In AC of electrical settling furnaces for the products of lead shaft-furnace smelting, three regulators employing electronic potentiometers with 3-position control sustain a definite current intensity in the circuit of each of the three electrodes by raising or lowering them. The design of AC for the thermal regime of a rotary tubular furnace provides for AC of the temperatures at the top and bottom ends of the furnace and of the vacuum, but automatic control of charging is required for the proper functioning of the AC system.

M. L.

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1. Lead--Processes--Automation    2. Zinc--Processes--Automation



ZINOV'YEV, V. P., KAZACHKOVSKIY, O. D., KRAZNOYAROV, N. V., LEYPUNSKIYA, A. I.

MALIKH, V. A., NAZAROV, P. M., NIKOLAYEV, S. K., SHAVISSKIY, Y. Y.,  
UKRAINSTEV, F. I., FRANK, I. M., SHAPIRO, F. L., YAEVITSKIY, Y. S.,  
BLOKHINTSEV, D. I., BLOKHIN, G. B., PLYUMKINA, Y. A., BONDARENKO, I. I.,  
DERYAGIN, B. N., ZAIMOVSKIY, A. S.

"A Pulsed fast reactor."

report submitted for the IAEA seminar on the Physics of Fast and  
Intermediate Reactors, Vienna, 3-11 Aug 1961.

Acad Sci. USSR Moscow

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22873  
S/089/61/010/005/001/015  
B102/B214

AUTHORS: Blokhin, G. Ye., Blokhintsev, D. I., Blyumkina, Yu. A.,  
Bondarenko, I. I., Deryagin, B. N., Zaymovskiy, A. S.,  
Zinov'yev, V. P., Kasaohkovskiy, O. D., Kin Xhen Bon,  
Krasnoyarov, N. V., Leypunskiy, A. I., Malykh, V. A.,  
Nazarov, P. M., Nikolayev, S. K., Stavisskiy, V. Ya.,  
Ukrainitsev, F. I., Frank, I. M., Shapiro, F. L.,  
Yazvitskiy, Yu. S.

TITLE: A pulsed fast reactor

PERIODICAL: Atomnaya energiya, v. 10, no. 5, 1961, 437-446

TEXT: The present paper gives a description of the pulsed fast reactor of  
the Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute of  
Nuclear Research) which became critical in June, 1960. This reactor,  
called M5P (IBR) reactor, serves as pulsed fast neutron source (mean  
power  $\approx 1$  kw) for physical investigations, particularly for time-of-flight  
experiments. Its most distinguishing feature is the very small contribu-  
tion ( $\sim 10^{-4}$ ) of the delayed neutrons in its normal operation; it is about

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A pulsed fast reactor

one hundredth of that of the usual steady uranium reactor. The pulses appear because whenever the reactor becomes overcritical a burst of prompt neutrons results. The half width of these pulses is 36  $\mu$ sec. The frequency with which the pulses are repeated can be varied between 8 and 80 pulses/sec. Fig. 2 shows the construction of this reactor. The periodic change in the reactivity is brought about by the displacement of the two  $U^{235}$  blocks placed in two disks that can be rotated. The main block is pressed in the form of a disk, 1100 mm in diameter, and can be rotated with a peripheral velocity of 276 m/sec (at 6000 rpm) during which it passes through the core center. The reactivity change obtainable from the motion of the main block is 7.4 %, that obtainable from the motion of the auxiliary block is 0.4 %. The stationary part of the core consists of plutonium lumps in steel jackets. The reactor is started by a rough regulator, in this case a movable part of the reflector. It gives a reactivity change at the rate of  $13 \cdot 10^{-5} - 1.3 \cdot 10^{-5} \text{ sec}^{-1}$ . The manually operated rod is also a part of the reflector. Two plutonium rods in electromagnetic suspension serve as scram. They can be separated from the core with an acceleration of 20 g. Their separation causes a reactivity

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B102/B214

A pulsed fast reactor

decrease of 2-1.1 %; the rough regulator allows a reactivity change of 2.4 %, the manual regulator 0.1 %, and the automatic regulator 0.036 %. The reactor possesses also a reactivity booster for the production of one intensive pulse. The control and shield system is an automatically functioning electronic arrangement with  $BF_3$  counters and ionization

chambers. The whole reactor is placed in a room of size 10·10·7 m whose concrete walls allow complete protection from radiation. The most important experimental arrangement consists of a 1000 m long neutron conductor, a metal tube, 400 mm in diameter in the first part and 800 mm in the second part in which a pressure of 0.1 mm Hg is maintained. This conductor connects a chain of so-called "intermediate pavilions" (at distances of 70, 250, 500, 750, and 1000 m from the reactor) in which experiments can be carried out. There is also an additional neutron conductor of 100 m length. The reactor chamber is joined to an experimental chamber in which four neutron beams of up to 800 mm diameter are available. There is such an experimental chamber also above the reactor chamber. Various experiments were carried out with the reactor and they are described in the present paper. These are experiments with stand

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assemblies and slowly moving main block for the determination of the most important parameters of the reactor; experiments with a core assembly (unmoved), experiments with rotating (5000 rpm) main block and a Ra- $\alpha$ -Be source in the core for the investigation of the effect of the multiplication factor, etc. The most important results are represented graphically. For example, Fig. 8 shows the dependence of the half width  $\theta$  of a pulse on the reactivity; the dashed line holds for the quasistationary case, the

dot-dash line for the case of  $\theta = K(\tau/\alpha)^{1/3}v^{-2/3}$ , where  $v$  is the velocity of motion of the (rotating) main block; in the quasistationary case

$\theta = 2\sqrt{\epsilon_m/\alpha v^2}$ , where  $\epsilon_m$  is the reactivity at the maximal multiplication factor;  $\epsilon = \epsilon_m - \alpha x^2$ , where  $x$  is the displacement of the main block. The

reactor has been actually used for the measurement of the total, scattering, capture, and fission cross sections by the time-of-flight method. Further experiments will be carried out with a view to obtaining increase of power and decrease of the pulse duration. There are 15 figures and 3 references: 2 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: J. Orndorf, Nucl. Sci. and Engng, 2, No. 4, 450 (1957).

Card 4/14

ARTOBOLEVSKIY, Sergey Ivanovich, prof. [deceased]; YUDIN, V.A.,  
prof., retsenent; ZINOV'YEV, Vyach., prof., retsenent;  
GRIGOR'YEV, A. M., retsenent; KOZINISOV, B.F., red.

[Theory of mechanisms and machines] Teoriia mekhanizmov i  
mashin. Moskva, Vysshaya shkola, 1965. 367 p.  
(MIRA 18:9)

ZIKOV'YEV, Vyach.; BESSONOV, A.P.; EDEL'SHTEYN, B.V., kard.  
tekh. nauk, retsenzent; MEYNGARD, S.A., red.

[Fundamentals of the dynamics of machine units] Osnovy  
dinamiki mashinnykh agregatov. Moskva, Mashinostroenie,  
1964. 238 p. (MIRA 17:9)

ZINOV'YEV, V.P., master po remontu defektoskopov (stantsiya Vil'nyus,  
Litovskoy dorogi)

Improved electric transformer. Put' i put.khoz.5 no.2:23 F '61.  
(MIRA 14:3)

(Railroads—Electric equipment)



GORSHKOV, M.I.; ZINCH'YEV, V.R.; TOPLIN, A.I.; USHERENKO, Z.I.

Cutting surfaced veneer with planer saws. Der.pron. 5 no.8:3-4  
Ag '56. (MLBA 9:10)  
(Veneers and veneering) (Planing machines)

ZINOV'YEV, V.R.

GORSHKOV, M.I.; ZINOV'YEV, V.R.; TOPLIN, A.I.; USHERENKO, Z.I.

Cutting surfaced veneer with planer saws. Der.prem. 5 no.8:3-4  
Ag '56. (MERA 9:10)

(Veneers and veneering) (Planing machines)

AMERIK, B.K.; MAYDEBOR, L.K.; SVETOSAROVA, O.I.; MATAYEVA, B.V.;  
ROMANKOVA, I.K.; GOLOVENKO, A.M.; SAPOON, M.F.; ZHDANCOVA, V.V.  
LEVASHOVA, E.P.; KOZLOVA, A.S.; ZINOV'YEV, V.R.; KONINA, V.F.;  
MUTOVIN, Ya.G.

Refining sweet mazuts. Trudy GrozNII no. 15:49-58 '63.  
(MIRA 17:5)

STOLOV, A. I.; ZINOV'YEV, V.R.

Doubling the capacity of pressure vacuum apparatus. Neftianik 5  
no.10:15-16 0 '60. (MIRA 13:10)

1. Sotrudniki Groznenskogo nauchno-issledovatel'skogo neftyanogo  
instituta.

(Distillation apparatus)

ZINOV'YEV, V.S., inzhener.

Trailer village for mine builders. Shakht. stroi. no. 8:27-28 Ag '57.  
(Automobiles--Trailers) (Construction workers) (MLBA 10:9)

L 22450-66

INT(L)/INT(M)/INT(F)/T-2

WB/DJ

ACC NR: AP6002537

SOURCE CODE: UH/0286/65/000/023/0039/0039

AUTHORS: Zinov'yeV, V. S.; Ruzhenov, R. G.; Filipchuk, V. I.; Skkharev, A. P.

ORG: none

TITLE: Diaphragm compressor. Class 27, No. 176656

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 23, 1965, 39

TOPIC TAGS: diaphragm, compressor, gas compressor

ABSTRACT: This Author Certificate presents a diaphragm compressor. The compressor includes a case divided by a diaphragm into two chambers (one pneumatic and one hydraulic), containing a working piston with a crankshaft drive. To simplify construction and to increase reliability, the hydraulic chamber is equipped with a piston valve and a pressure relief valve and a compressor (see Fig. 1). The latter is placed in the upper part of the hydraulic chamber with the lower piston chamber.

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UDC: 621.512.6

L-22450-66

ACC NR: AF6002537

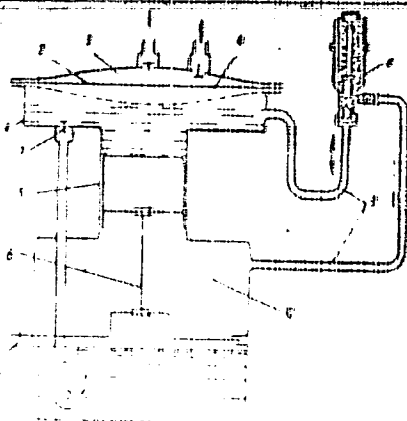


Fig. 1. 1 - case;  
2 - diaphragm; 3 - gas  
chamber; 4 - hydraulic  
chamber; 5 - piston;  
6 - crankshaft drive;  
7 - suction valve;  
8 - pressure compensator;  
9 - piping; 10 - lower  
piston chamber.

Orig. art. has: 1 figure.

SUB CODE: 13/ SUBM DATE: 18Nov64

Card 2/2 *SL*

S/148/60/000/006/012/016/XX  
A161/A030

AUTHORS: Medzhibozhskiy, M.Ya.; Zinov'yev, V.T.; Geyneman, A.V.  
TITLE: The Effect of Some Factors on the Carbon Burning Rate in the Open-Hearth Furnace Bath  
PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, 1960. No. 6, pp. 47 - 53

TEXT: Most authors consider that the oxidation of carbon in the open-hearth bath is limited by diffusion links, but some point out that it may also be limited by heterogeneous chemical reactions on the boundaries gas-slag, slag-metal and metal-bubbles. The question of in what region the process takes place, diffusion (limitation by diffusion links) or kinetic (chemical links) can be answered by determining the effect of the temperature on the speed of the process. With relatively slow chemical reactions the process rate will change with temperature in accordance with the Arrhenius equation

$$K = K_0 e^{-\frac{E}{RT}} \quad (1)$$

where K is the constant of the chemical reaction rate;  $K_0$  the so-called preexpo-

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The Effect of Some Factors on the Carbon Burning Rate in the Open-Hearth Furnace Bath

ponential factor; e the base of natural logarithms; E the activation energy, cal/mol; R the universal gas constant, 1.986 cal/mol °K; T the absolute temperature, °K. It follows that

$$E = \frac{4.575 \lg \frac{K_2}{K_1}}{\frac{1}{T_1} - \frac{1}{T_2}}, \quad (2)$$

K<sub>1</sub> and K<sub>2</sub> are constants of the chemical reaction speed at T<sub>1</sub> and T<sub>2</sub> temperatures. The process is in the kinetic region if the activation energy value is high (> 50,000 cal/mol), and in the diffusion region if it is relatively low (>30,000 cal/mol). The authors studied over 400 heats in 380 and 190-ton open-hearth furnaces firing mixed coke and generator gas; temperature was measured by means of a submerged platinum-rhodium-platinum thermocouple. Over 1,200 carbon oxidation rate values were determined (v<sub>C</sub>) at different temperatures (t<sub>н</sub>) and C content in metal. The relations shown were verified by mathematical statistical methods. The effect of the C content in metal, of the specific surface area of the slag-metal boundary, and the quantity of oxygen was also studied. The results are illustrat-

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## The Effect of Some Factors on the Carbon Burning Rate in the Open-Hearth Furnace Bath

ed by diagrams (Figs. 1, 2, 3). The low activation energy proves that the process is in the diffusion region. Low activation energy values in the steel decarbonization process had also been obtained in laboratory experiments by S.I. Filippov (Ref. 1) and in shop experiments by P. Vallet (Ref. 7, Iron and Steel, 1955, No. 11). Conclusions: 1) The carbon burning rate does not depend on the carbon content in metal if  $\% C > 0.3\%$ . 2) The effect of the temperature of the metal on the carbon burning rate is not strong at superheating above the liquidus point ( $> 20^\circ$ ) and corresponds with the apparent activation energy of the decarbonization process amounting to 15,000 - 22,000 cal/mol. This means that the process takes place in the diffusion range. 3) The decarbonization rate depends on the intensity of oxygen feed into the bath and is not limited by any of the heterogeneous reactions on the boundary's gas-slag, slag-metal and metal-bubbles. 4) At  $\% C < 0.3\%$ , the relation between  $v_C$  and  $\% C$  is caused not by the fact that the decarbonization process is in the kinetic region, but by other causes that had been pointed out in the works (Refs. 1, 8, 9, 10). 5) The indirect effect of  $\% C$  and  $t_M$  on  $v_C$  is very considerable with large additions of iron ore into the bath. The intensity of carbon burning through ore additions (which reduce the

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The Effect of Some Factors on the Carbon Burning Rate in the Open-Hearth Furnace Bath

bath temperature) is limited by the necessity to maintain the minimum superheating of metal. There are 3 figures and 12 references: 11 Soviet and 1 English.

ASSOCIATION: Sibirskiy metallurgicheskii institut (Siberian Metallurgical Institute)

SUBMITTED: October 27, 1959

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S/148/60/060/006/012/016/XX  
A161/A030

The Effect of Some Factors on the Carbon Burning Rate in the Open-Hearth Furnace Bath

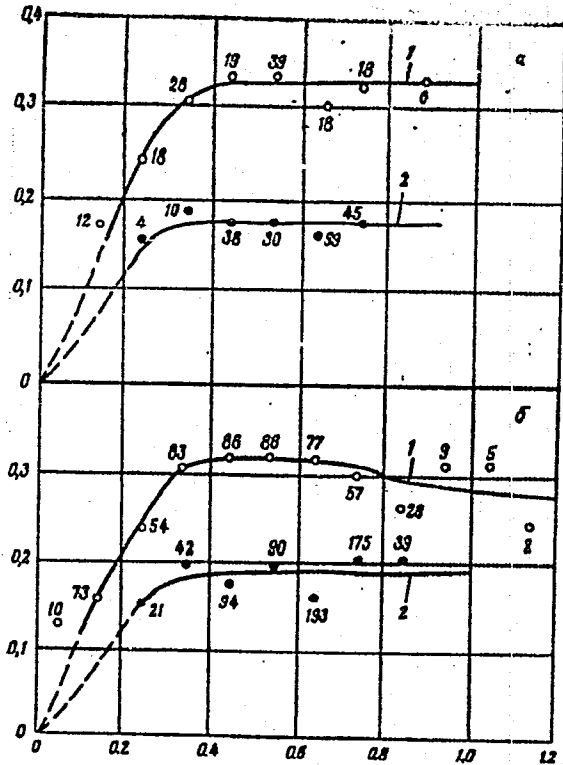


Figure 1: The effect of C content on the C burning rate during the pure boiling period. (The figures at the points indicate the number of heats). a - boiling without ore in the 1,570 - 1,620° range (in 190-ton furnace) and in 1,540 - 1,580° (380-ton furnace); b - by the data from all samples taken during pure boiling. 1 - 190-ton furnace; 2 - 380-ton furnace.

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A161/A030

The Effect of Some Factors on the Carbon Burning Rate in the Open-Hearth Furnace Bath

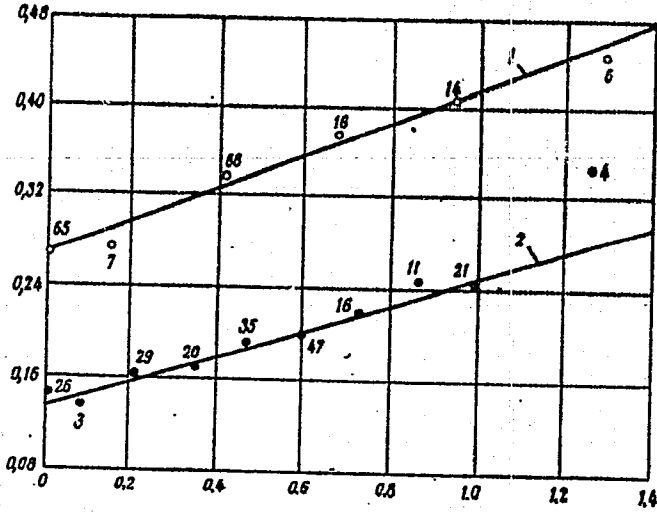


Figure 2: The effect of iron ore additions on the carbon burning rate at the beginning of the pure boiling time: 1 - 190-ton furnace; 2 - 380-ton furnace. (Ore consumption from 0.2 to 1.4 %/h).

Card 6/7

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A161/A030

The Effect of Some Factors on the Carbon Burning Rate in the Open-Hearth Furnace Bath

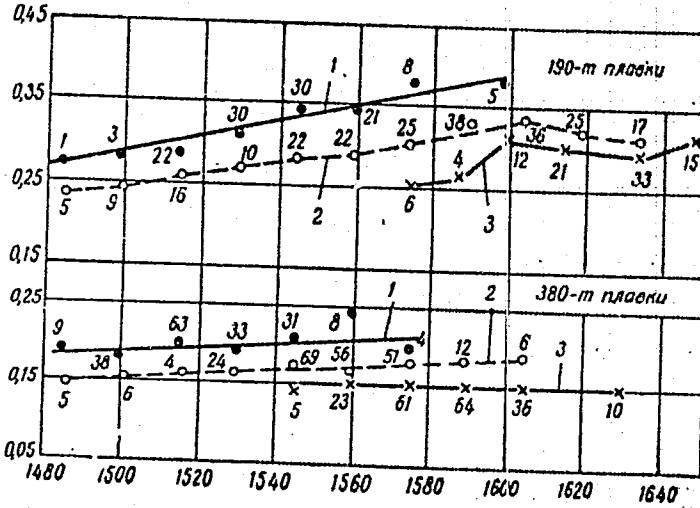


Figure 3: The effect of metal temperature on the carbon burning rate during the pure boiling time: 1 - the beginning of pure boiling time (ore consumption about 0.5%/h, or 0.17%, during the first 20 min); 2 - the beginning and the mid of the pure boiling time (without ore additions); 3 - the last 15 - 20 min of pure boiling.

Card 7/7

MEDZHIBOZHSKIY, M.Ya.; ZINOV'YEV, V.T.; GNYEMAN, A.V.

Effect of certain factors on the rapidity of carbon  
burning in the open-hearth bath. Izv.vys.ucheb.sav.;  
chern.met. no.6:47-53 '60. (MIRA 13:7)

1. Sibirskiy metallurgicheskiy institut.  
(Open-hearth process)

KOCHENOV, A.V.; ZINOV'YEV, V.V.

Distribution of rare earth elements in the phosphate remains of fishes from Maikop deposits. Geokhimiia no.8:714-725 '60.

(Fishes, Fossil)

(Phosphates)

(MIRA 14:1)

(Rare earth metals)



KOCHENOV, A.V.; ZINOV'YEV, V.V.; KOVALEVA, S.A.

Some characteristics of the process of uranium accumulation in  
peat bogs. Geokhimiia no.1:97-103 Ja '65.

(MIRA 1814)

ZINOV'YEV V.T.

Similarity criterion in the modeling of splash formation. Izv.vys.  
ucheb.zav.; Chern.mot. # no.6:60-63 '65.

(MIRA 18:9)

1. Sibirskiy metallurgicheskiy institut.

ZINOV'YEV, V.T.; ZARVIN, Ye.Ya.

Using a model to investigate splashing during the blowing of open-hearth furnaces by compressed air. Inv.vys.ucheb.zav. Chern.met. 8 no.8:41-43 '65. (MIRA 18:8)

1. Sibirskiy metallurgicheskiy institut.

ZINOV'YEV, V. V.

USSR/Mining

Jul/Aug 48

Coal  
Spectrum Analysis

Possible Application of Spectrum Analysis in Prob-  
lems of the Synonymy of Coal Seams, " V. V. Zinov'yev,  
Ukrainian Geol. Adm., 2 pp

" Iz Ak Nauk SSSR, Ser Fiz" Vol XII, No 4

Graphs obtained by spectrographic analysis of mineral  
salt using a DC voltaic arc showed composition of a  
number of samples taken from the same seam level was  
maintained fairly strictly according to level. Same  
held true for different samples from a seam. Thus,

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(Contd)

Jul/Aug 48

USSR/Mining

seam No 9, shaft A, was characterized by elements  
Si, Ti, Zr, Al, Ge, V, Cr, Mg, Ni, Ir, Pr, and  
others, while seam No 11, shaft A, had an increase  
of Si, Al, and Mg, plus appearance of Be and Yb  
lines and a considerable increase in the intensity  
of Y lines. Very little work has been done in  
this field, but experimental data gathered suggests  
that composition of coals and quantitative pro-  
portioning of elements is a constant factor for  
one coal seam and for blocks of rock mixed in it.

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200

PROCESSED AND PREPARED BY

the corrosion of modern valve steels at high temperatures in gaseous mediums. V. S. Zimov'ev and I. A. Levin. *Vestnik Metalloprof.* 16, No. 77, 78 (1936); *Chem. Zvest.* 1937, 1, 380; cf. *C. A.* 30, 5014, 5025. Studies of the resistance to heat and to corrosion by pure gasoline vapor and by mists, with ethyl gasoline are reported on Cr-Ni-Co, Cr-Ni-Si, Cr-Ni-W-Si and Cr-Ni-Mo-W steels. Structure and hardness were not essentially changed by holding the metal at 750-850° for 300 hrs. Inter-cryst. gaseous corrosion did not appear under these conditions. The most satisfactory steels on the basis of exper. reported were one contg. C 0.3-0.4, Si 2.3-2.9, Mn 0.4-0.7, S 0.03, P 0.03, Cr 16-20 and Ni 23-7% and another contg. C 0.25-0.33, Si 2.2-2.8, Mn 0.3-0.7, S 0.03, P 0.03, Cr 13-15 and Ni 7-9%. Addn. of ethyl gasoline to the mist. of vapors increased the corrosion 2-3 times.

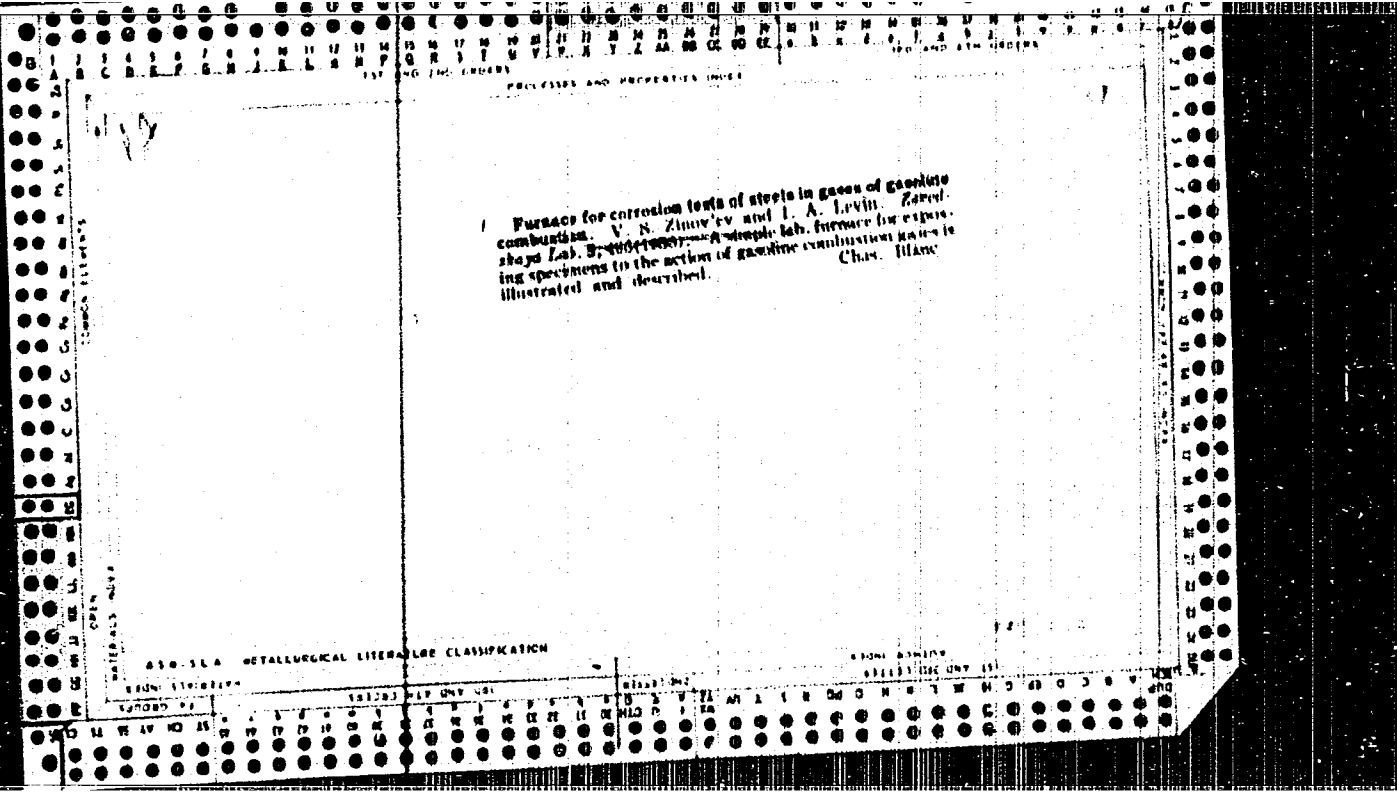
M. G. Moore

9

ASSN. S.I.A. METALLURGICAL LITERATURE CLASSIFICATION

FROM 117-02174

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



CA

21

Possible use of the spectral method for the identification of coal deposits. V. Y. Zinov'ev. *Izvest. Akad. Nauk S.S.S.R., Ser. Fiz.* 12, 475-6 (1948).—Preliminary report on geological classification of coal deposits on the basis of spectral analyses for Si, Ti, Al, Ge, V, Cr, Mg, Ni, Ir, Pr, etc. N. Thon

2001, POSSIBLE USE OF SPECTRAL METHOD FOR IDENTIFICATION OF COAL DEPOSITS. Zhurnal  
12 (Izvosh. Akad. Nauk S.S.S.R., Ser. Fiz. (Sov. Acad. Sci. (U.S.S.R.), Phys. Ser.)  
1953, vol. 12, 475-478; abstr. in Chem. abstr., 1950, vol. 44, 6685).

Preliminary report on geological classification of coal deposits on the basis  
of spectral analyses for Si, Ti, Al, Co, V, Cr, Mg, Ni, Fe, etc. CA

immediate source clipping



<p>F 369. POSSIBLE USE OF SPECTROSCOPIC METHOD FOR IDENTIFICATION OF COAL DEPOSITS. Kinover, V. (Invest. Akad. Nauk S.S.S.R., Ser. Fiz. (Bull. Acad. Sci. U.S.S.R., Phys. Ser.), 1948, vol. 12, 475-476; abstr. in chem. abstr., 1950, vol 44, 2695). Preliminary report on geological classification of coal deposits on the basis of spectral analyses for Si, Ti, Al, Ca, V, Cr, Mg, Ni, Ir, Pr, Etc.</p>		<p>GA</p>
<p>ASSOCIATION OF METALLURGICAL LITERATURE CLASSIFICATION</p>		
<p>RELATIONSHIP</p>		

ZINOV'YEV, V.Ya.

Possibilities for decreasing the number of warning signals.

Put' 1 put. khoz. no. 7:26-27 J1 '58.

(MIRA 11:7)

1. Glavnyy inzhener sluzhby puti, g. Ufa.  
(Railroads--Signaling)

ZINOV'YEV, V.Ye.; CHEKMAREV, V.A.; FAYER, S.F.; UCHAMEYSHVILI, Z.V.

From the experience in dyeing lavsan polyester fibers. Tekst.-  
prom. 22 no.9:8-11 S '62. (MIRA 15:9)

1. Glavnyy inzhener Klintsovskoy tonkosukonnoy fabriki imeni  
Komiterna (for Zinov'yev). 2. Zaveduyushchiy otdelochnym  
proizvodstvom Klintsovskoy tonkosukonnoy fabriki imeni  
Komiterna (for Chekmarev). 3. Nachal'nik krasil'nogo tsekha  
Klintsovskoy tonkosukonnoy fabriki imeni Komiterna (for  
Fayer).

(Dyes and dyeing--Textile fibers)

ZINOV'YEV, V.Ye.

Modernization of the electronic moisture gauge. Tekst.  
prom. 20 no. 12;49-50 D '60. (MIRA 13:12)

1. Nachal'nik tekhnologicheskogo byuro sukonnoy fabriki imeni  
Oktabr'skoy revolyutsii.  
(Moisture--Measurement)