

USSR / Human and Animal Physiology. Carbohydrate Metabolism. T

Abs Jour : Ref Zhur - Biol., No 15, No. 69822

Author : Gvarishvili, R. I.

Inst : Academy of Sciences Georgian SSR, Institute of Clinical and Experimental Cardiology

Title : The Content of Lactic Acid, Glycogen, and Its Fractions in the Heart in Experimental Avitaminosis E.

Orig Pub : Tr. In-ta klinich. i eksper, kardiol. AN GruzSSR, 1956 (1957), Vol 4, 387-391

Abstract : Ten rabbits weighing 600-800 gm were kept on artificial rations devoid of vitamin E. Control animals (10) received normal rations. With the appearance of avitaminosis E, the animals were sacrificed, the hearts removed, frozen, and subjected to determinations of the content of lactic acid and of total and protein-bound glycogen. In avitaminosis E it was discovered that the

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000617720005-3"

Ref Zhur Biol., No 15, 1958, No. 69822  
content of glycogen in the ventricle was lowered at the expense of its free fraction, while the content of lactic acid was approximately double that in the hearts of the control animals. -- L. A. Kashchevskaya

Card 2/2

PUTUNIN, F.K., podpolkovnik meditsinskoy sluzhby. GVASALIYA, Sh.K.

Some psychological problems in aviation. Voen.-med.zhur. no.9:  
8-9 S '51. (MLRA 9:9)

(SPYCHOLOGY, APPLIES) (AIR PILOTS)

USSR/Diseases of Farm Animals - Diseases Caused by  
Bacteria and Fungi.

R-2

Abs Jour : Ref Zhur - Biol., No 4, 1958, 16928

Author : Gvatua, I.N.

Inst : Odessa Agricultural Institute.

Title : On the Treatment of Parenchymatous Mastitis in Cows on the  
First Day of Sickness.

Orig Pub : Tr. Odessk. s.-kh. in-ta, 1955, 7, 159-162

Abstract : It is reported that a good therapeutic effect may be ob-  
tained in parenchymatous mastitis by the use of the exu-  
date milked out from the affected quarter of the udder,  
if the treatment is started on the first day of the onset  
of disease. The exudate is injected subcutaneously into  
the region of the fore udder in a dose of 10-20 ml. --  
L.S. Kirichenko.

Card 1/1

- 10 -

GVAY, Ivan Isidorovich, laureat Stalinskikh premiy, kandidat tekhnicheskikh nauk; OSHCHEPKOV, P.K., otvetstvennyy redaktor; SHAPOVALOV, I.K., redaktor izdatel'stva; PAVLOVSKIY, A.A., tekhnicheskiy redaktor

[K. E. Tsiolkovskii on the conservation of energy]. K. E. Tsiolkovskii o krugovorote energii. Moskva, Izd-vo Akad.nauk SSSR, 1957. 77 p.  
(Force and energy) (MLRA 10:10)  
(Tsiolkovskii, Konstantin Eduardovich, 1857-1935)

PHASE I BOOK EXPLOITATION

SOV/4056

Gvay, Ivan Isidorovich, Twice Stalin Prize Winner, Candidate of Technical Sciences

O maloizvestnoy gipoteze Tsiolkovskogo (A Little-Known Hypothesis of Tsiolkovskiy)  
[Kaluga] Kaluzhskoye knizhnoye izd-vo 1959. 246 p. 20,000 copies printed.

Ed.: I. Yershova; Tech. Ed.: B. Galitskiy.

**PURPOSE:** This book is addressed to the general reader interested in theories on the reclamation of energy dispersed in nature and the contributions of K.E. Tsiolkovskiy.

**COVERAGE:** A considerable part of K.E. Tsiolkovskiy's studies on the energy cycle, i.e., the possibility of utilizing energy dispersed in nature has not been published to date. The author proposes to supply this lack by calling the attention of the public to Tsiolkovskiy's little-known hypothesis and to those scientific considerations which testify to the "timeliness and fruitfulness of his hypothesis concerning the energy cycle in nature". No personalities are mentioned. There are 315 references: 311 Soviet, and 4 English.

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A Little-Known Hypothesis of Tsiolkovskiy

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A Little-Known Hypothesis of Tsiolkovskiy	SOV/4056	
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AVAILABLE: Library of Congress

Card 3/3

TM/rn/mas  
8-2-60

GVAT, I.I.

K.E. Tsiolkovskii on the reversibility of phenomena. Vop. ist. est.  
i tekhn. no.6:39-45 '59. (MIRA 12:6)  
(Tsiolkovskii, Konstantin Eduardovich, 1857-1935)  
(Force and energy)



SOV/124-58-5-5917

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 5, p 139 (USSR)

AUTHOR: Gvay, P.I. [Hvay, P.I.]

TITLE: Influence Lines for the Determination of Critical Loads on Compressed Beams (Linii vliyaniya dlya opredeleniya kriticheskikh sil szhatykh sterzhney) in Ukrainian)

PERIODICAL: Zb. nauk. prats'. Dnipropetr. inzh.-budiv. in-t, 1957, Nr 3, pp 102-110

ABSTRACT: An approximate determination of the critical values is given for concentrated and distributed compression loads on beams of constant cross section (hinge-supported at both ends as well as hinge-supported at one end and clamped at the other) with the aid of tabulated influence lines of the bending coefficients of the beam at different points along its axis. A number of examples is examined presenting solutions (not on the safe side) with errors of from 1.6 to 5.8%. These sample problems are solved exactly.

N.K. Snitko

Card 1/1

1. Beams--Load distribution 2. Beams--Mechanical properties 3. Approximate computation

ADAMOVICH, L.D., inzh.; GVAY, P.I., olv.red.

[Geometry of screw surfaces] K voprosu geometrii vintovykh poverkhnostei.  
Dnepropetrovsk, 1958. 22 p. (Dnepropetrovsk. Inzhenerno-  
stroitel'nyi institut. Nauchnoe soobshchenie, no.35). (MIRA 16:8)  
(Screws, Theory of)

GAGARIN, P.A.; GVAY, P.I., dots. otvetstvennyy za vypusk

[Analyzing and designing precast foundation beams for walls of industrial buildings] Raschet i proektirovanie sbornnykh fundamentnykh balok pod steny promyshlennykh zdaniy. Dnepropetrovsk, 1959. 31 p. (Dneproptrovsk. Inzhenerno-stroitel'nyi institut. Nauchnoe soobshchenie, no.54). (MIRA 13:12)

1. Zamestitel' direktora po nauchnoy chasti Dnepropetrovskogo inzhenerno-stroitel'nogo instituta (for Gvay).  
(Girders) (Foundations)

TAMUROV, N.G.; GVAY, P.I., dots., otvetstvennyy za vypusk

[Some problems in the bending of rectangular three-layer orthotropic plates with a filler] Nekotorye zadachi isgiba priamougol'nykh trekhsloinykh ortotropnykh plastin s zapolnitelem. Dnepropetrovsk, 1959, 17 p. (Dnepropetrovsk, Inzhenerno-stroitel'nyi institut. Nauchnoe soobshchenie, no.50). (MIRA 14:4)

1. Zamestitel' direktora po nauchnoy chasti Dnepropetrovskogo inzhenerno-stroitel'nogo instituta (for Gvay).  
(Elastic plates and shells)

IONOV, Yu.K., kand.tekhn.nauk; GVAY, P.I., otv. za vypusk

[Design and wear resistance of pins of a sectional pull chain]  
O raschete i iznose pal'tsev tiagovoi razbornoi tsepi. Dnepro-  
petrovsk, 1959. 17 p. (Dnepropetrovsk. Inzhenerno-stroitel'nyi  
institut. Nauchnoe soobshchenie, no.52). (MIRA 14:6)

1. Zamestitel' direktora Dnepropetrovskogo inzhenerno-stroitel'nogo  
instituta (for Gvay).

(Chains)

PREOBRAZHENSKAYA, K.G., assistant; GVAY, P.I., otv. za vypusk

[Mechanics of permeable bodies] K voprosu mekhaniki pronitsaemykh  
tel. 1960. 13 p. (Dnepropetrovsk. Inzhenerno-stroitel'nyi institut.  
Nauchnoe soobshchenie, no.57). (MIRA 16:8)

1. Zamestitel' direktora Dnepropetrovskogo Inzhenerno-stroitel'nogo  
instituta po nauchnoy rabote (for Gvay).  
(Permeability)

FLORINSKIY, F.V., prof.; VOLOSHINA, L.P., dots.; LYAKHOVITSKIY, S.I., kand.  
tekhn.nauk; SHIROCHENKO, Ye.V., dots. [deceased]; ARCHAKOVA, L.A.,  
inzh.; GVAI, T.B., inzh.; MURZINA, Z.I., inzh.

Results of research on screen vibrating in the horizontal horizontal  
plane. Izv.vys.ucheb.zav.; gor.zhur. no.2:167-170 '60.

(MIRA 14:5)

1. Dnepropetrovskiy gornyy institut.  
(Screens (Mining))

TER-OGANESOV, Ya.G.; GVAYTA, T.I.; ROSHCIN, Yu.V.; ZUBOVA, V.I.

Method and equipment used in foreign countries in aerogeophysical prospecting for uranium deposits. Atom. energ. Supplement no.6:146-160  
1957. (MIRA 11:7)

(Aeronautics in surveying) (Prospecting--Geophysical methods)  
(Uranium ores)



(Voyan, I. I.)

AUTHORS: Ter-Oganesov, Ya. G., Gyayta, T. I., Roshchin, Yu. V. 89-1-21/29

TITLE: The Applications of Aeroradiometric Methods for the Detection of Workable Minerals (Primeneniye aeroradiometricheskikh metodov dlya poiskov razlichnykh poleznykh iskopayemykh )

PERIODICAL: Atomnaya Energiya, 1958, Vol. 4, Nr 1, pp. 102-102 (USSR)

ABSTRACT: With a few words the authors deal with the contents and the conclusions to be drawn from the following publications:  
Aviation Week, 64, 2, p.74  
Canad. Chem.Process, 37, 13, p. 66  
Mines Mag., 46, 7, p. 31 (Kellog)  
World Petrol, 23, 5, p. 109 (Lundberg)  
Mining J., 234, p. 708 (1954)  
Eng. and Mining J., 1954, Nr 7. p. 266  
Photogram. Eng., 20, Nr 4, (1954)  
There are 7 non-Slavic references.

AVAILABLE: Library of Congress

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S/172/60/013/003-4/001/002  
B002/B067

AUTHORS: Gvayta, T. I., Ter-Oganesov, Ya. G. (Moscow)

TITLE: Prospecting For Rare and Disperse Elements With Radioactive Methods *A*

PERIODICAL: Izvestiya Akademii nauk Armyanskoy SSR. Geologicheskkiye i geograficheskkiye nauki, 1960, Vol. 13, No. 3-4, pp. 57-63

TEXT: The present paper gives a general survey of the possibilities of prospecting for non-radioactive rare and disperse elements by radiometric methods. Many of these deposits also contain a certain amount of uranium and thorium which cause gamma anomalies in the deposits. Sometimes uranium and thorium minerals are paragenetically associated with the mineralization of rare and disperse elements, such as with beryllium and columbite - tantalite in pegmatites, with beryllium and wolframite in greisenizations; sometimes the uranium and thorium minerals themselves such as pyrochlore, lovtshorrite, fergusonite, monazite, xenotime, etc. are carriers of the rare elements. Besides, uranium and thorium may occur as isomorphous

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Prospecting For Rare and Disperse Elements  
With Radioactive Methods

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constituents in the gangue and in the accessories like in apatite, sphene, zircon, fluorite, and others. The magmatogenous deposits were divided according to the type of mineralization and the radiometric properties:

a) Premagmatic type: mineralization consists in finely distributed loparite, lovtshorrite, dysanalyte or knopite. Thorite, lovtshorrite etc. are radioactive minerals. The anomaly occurs locally and isometrically.

b) Post-magmatic type: The mineralization is related to late displacement processes, especially to albitization. The mineralized material consists of zircon (as cyrtolite and malacon) pyrochlore, polycrase or fergusonite, columbite. The radiometrical anomaly clearly follows the zone of albitization.

c) Third type: post-magmatic deposits which are connected with ultra-basic alkali rocks. Carbonatites are mineralized; pyrochlore and hatchettolite as well as carbonates and fluocarbonates of the rare earths are found. The following radioactive minerals are found: thorianite, monazite, and zircon. The anomaly decreases in the direction from the center to the periphery of the intrusion. Granite pegmatites show only local accumulations of uranium and thorium minerals. Pneumatolytic-hydrothermal deposits could be observed by the enrichment of uranium and thorium. Some

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Prospecting For Rare and Disperse Elements  
With Radioactive Methods

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B002/B067

general remarks are made on the radiometric determination. Finally, it is said that the following deposits have already been determined by means of radiometric methods: diamond, bauxite, phosphorite, titanium, copper-bearing sandstones, black shate, and others. There are 7 references: 6 Soviet.

SUBMITTED: April 15, 1960

Card 3/3



GVAZAVA, Anton Isayevich

[Treatment of deep forms of pyoderma by means of a bacteriophage  
type] Materialy k terapii glubokikh form piodermitov prosochennym  
bakteriofagom. Tbilisi, Gruzmedgiz, 1957. 47 p. (MIRA 12:3)  
(BACTERIOPHAGE) (SKIN--DISEASES)

GVAZAVA, A.I., Cand Med Sci -- (diss' "Data for the  
~~treatment~~  
~~therapy~~ of the deep forms of pyodermitis  
with <sup>dead</sup> bacterionage." Tbilisi, 1958, 13 pp  
(Tbilisi State Med Inst) 200 copies (KL, 23-58, 111)

- 125 -

L 44517-66 EWT(d) IJP(c)  
ACC NR: AP6010420

SOURCE CODE: UR/0020/66/167/002/0274/0277

27  
26

AUTHOR: Gvazava, D. K.

ORG: Novosibirsk State University (Novosibirskiy gosudarstvennyy universitet);  
Institute of Mathematics, Siberian Department, AN SSSR (Institut matematiki  
Sibirskogo otdeleniya AN SSSR)

B

TITLE: Toward the theory of <sup>16</sup>boundary-value problems for the equations  
 $y^m u_{xx} + u_{yy} = k(x, y) e^u$  in general

SOURCE: AN SSSR. Doklady, v. 167, no. 2, 1966, 274-277

TOPIC TAGS: differential equation, boundary problem, elliptic equation, linear  
differential equation, *BOUNDARY VALUE PROBLEM, EXISTENCE, CONTINUOUS  
FUNCTION*

ABSTRACT: Aspects of the overall boundary problem of the type

$$Eu(x, y) = y^m u_{xx} + u_{yy} = k(x, y) e^{u(x, y)}, \quad (1)$$

are considered, where m is a positive number and k(x,y) is nonnegative everywhere in a domain D, and the function has continuous first derivatives in  $\bar{D}$ . The domain D is a singly-connected domain of the half-plane  $y > 0$ , bounded by a section AB of the x-axis and a continuous curve  $\sigma$ . Denoting F(s) as a continuous function of the curved abscissa s, given on the boundary  $\Gamma = \sigma + AB$  of D, the theorem is stated: There exists in D a unique, twice continuously differentiable solution of the equation (1),

UDC: 517.93

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ACC NR: AP6010420

which is continuous in the closed region  $\bar{D}$  and which satisfies the condition

$$u(x, y)|_{\Gamma} = F(s). \quad (2)$$

Proof of the existence condition is as developed by L. Lichtenstein (Vorlesungen über einige Klassen nichtlinearer Integralgleichungen und Integro-differentialgleichungen, Berlin, 1931). A second theorem is stated: There exists a unique twice continuously differentiable (in  $D$ ) solution of the equation (1) which satisfies the conditions

$$u(x, y)|_{\sigma} = \varphi(s), \quad (3)$$

$$\partial u(x, y) / \partial y|_{y=0} = v(x). \quad (4)$$

where  $\varphi(s)$  is a continuous function given on  $\sigma$ , and  $v(x)$  is also a continuous function in the interval  $0 < x < 1$ . The author thanks A. V. Bitsadze, corresponding member AN SSSR, who directed attention to the problem and supervised the work. This paper was presented by Academician M. A. Lavrent'yev on 17 June 1965. Orig. art. has: 15 equations.

SUB CODE: 12/ SUBM DATE: 15Jun65/ ORIG REF: 001/ OTH REF: 005

Card 2/2 blg



S/124/63/000/003/018/065  
D234/D308

AUTHORS: Gvazava, G. N., Kandelaki, N. A., Kublashvili, A. N.,  
Kund-Okrushvili, G. N.

TITLE: Application of electronic analog computers to some problems of nonlinear mechanics occurring in the calculation of nonsteady motion in the head system of a hydro-electric station

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 3, 1963, 68, abstract 3B404 (Izv. Tbilissk. n.-i. in-ta sooruzh. i gidroenerg., 1962, v. 14, (48), 55-63)

TEXT: The authors give methods of calculating the vibrations of masses in the head system of a hydro-electric station by means of a modeling analog computer *MPT-11* (MPT-11). Vibrations in prismatic and damping (with resistance) equalizing reservoirs are calculated for any load variations, both positive and negative. The methods make it possible to take into account idle running of the hydrogenerator. Theoretical and experimental data are compared

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Application of electronic ...

5/124/63/000/003/018/065  
D234/D308

(from Mingechaurskaya, Ladzhanurskaya and Arzninskaya stations and from one Italian station). Specific examples of the solution of problems are given. 14 references. [Abstracter's note: Complete translation.]

Card 2/2

GVAZAVA, I. S., KVIRIKADZE, V. V. and MAGAKYAN, G. O.

"Study of Parenteral Administration of Blomycin and Ekmolin in the Laboratory and in the Clinic" a report prepared at Sukhumi Medico-Biological Station, AMS USSR, 1954.

So: Review of Eastern Medical Sciences, Munich, No. 2, 1956.

GVAZAVA, I. S. and LAPIN, B. A.

"Analysis of the Death of the Monkey Ufa" a report prepared at Sukhumi Medico-Biological Station, AMS USSR, 1954.

So: Review of Eastern Medical Sciences, Munich, No. 2, 1956.

GVAZAVA, I. S., VADOVA, A. V. and YAKOVLEVA, L. A.

"Analysis of the Death of the Monkey Yukka" a report prepared at Sukhumi Medico-Biological Station, AMS USSR, 1954.

So: Review of Eastern Medical Sciences, Munich, Nol 2, 1956.

GVAZAVA, I.S.; MOGAKYAN, G.O. (Cand. of Med. Sci.)

"Results of Parenteral Administration, of Biomylin in Combination With  
Ecmolin Experimentally and in Clinical Practice,"

p. 380 Ministry of Health USSR Proceedings of the Second All-Union Conference on  
Antibiotics, 31 May - 9 June 1957. p. 405, Moscow, Medgiz, 1957.

GYAZAVA I

DZHIKIDZE, E.K.; GYAZAVA, I.S.; KOVTARADZE, K.N.

Comparative study of various methods for treating experimental  
Shonne dysentery in monkeys [with summary in English]. Antibiotiki  
2 no.6:20-27 N-D '57. (MIRA 11:2)

1. MedikoObiologicheskaya stantsiya AMN SSSR (Sukhumi)  
(DYSENTERY, BACILLARY, experimental,  
antibiotics, comparison in monkeys (Rus))  
(ANTIBIOTICS, effects,  
on exper. bacillary dysentery in monkeys (Rus))

GVAZAVA, I. S.  
GEKKER, V. D.  
AKSENOVA, A. S.

"The Use of New Antibiotics for the Treatment of Dysentery"  
p 131

in book publ. by Inst. Experimental Pathology and Therapy, Acad. Medical  
Sci. USSR, Problems of Infectious Pathology in Monkey Experiments, Editor,  
B. A. Lapin (Cand. Medical Sci.) Sukhumi, 1958.



GVAZAVA, I. S.

"Clinical Peculiarities of Dysentery of Monkeys"

in book publ. by Inst. Experimental Pathology and Therapy, Acad. Medical Sci.  
USSR, Problems of Infectious Pathology in Monkey Experiments, Editor, b. A.  
Lapin (Cand. Medical Sci.) Sukhumi, 1958.

GVAZAVA, I. S.  
DZHIKIDZE, E. K.  
KAVTARADZE, K. N.

"Experimentation of Chiminal Therapy of the Dysenteric Zonnye" p. 135

in book publ. by Inst. Experimental Pathology and Therapy, Acad. Medical  
Sci. USSR, Problems of Infectious Pathology in Monkey Experiments, Editor,  
B. A. Lapin (Cand. Medical Sci.) Sukhumi, 1958.

GVAZAVA, I. S., Cand Med Sci -- (diss) "Clinical aspects, diagnostics, and antibioticotherapy of bacterial dysentery in monkeys." Suchumi, 1959. 16 pp; (Ministry of Public Health USSR, Central Inst for Advanced Training of Physicians); 200 copies; price not given; bibliography at end of text (13 entries); (KL, 23-60, 127)

GVAZAVA, I.S.

Intramuscular method of administering tetracyclines in the treatment of dysentery in monkeys. Antibiotiki 4 no.3: 98-100 My-Je '59. (MIRA 12:9)

1. Institut eksperimental'noy patologii i terapii AMN SSSR, Sukhumi.

(DYSENTERY, BACILLARY, exper.  
eff. of tetracycline, intramusc. admin. in  
monkeys (Rus))

(TETRACYCLINE, eff.  
on exper. dysentery, intramusc. admin. in  
monkeys (Rus))

GVAZAVA, I.S.; MAGAKYAN, G.O.; RAVICH, I.V.; AKSENOVA, A.S.

Experimental polymyxin M therapy of bacillary dysentery  
in monkeys. Antibiotiki 7 no.4:327-331 Ap '62. (MIRA 15:3)

1. Klinicheskoye otdeleniye Instituta eksperimental'noy  
patologii i terapii AMN SSSR, Sukhumi, i kafedra mikrobiologii  
(zav. - chlen-korrespondent AMN SSSR prof. Z.V. Yermol'yeva)  
TSentral'nogo instituta usovershenstvovaniya vrachey.  
(DYSENTERY) (POLYMYXIN)

GVAZAVA, K.A.

Electric locomotive engineer Taras Samsonovich Kikava. Blok.1 tepl.  
tiaga 3 no.5:15 My '59. (MIRA 12:9)

1. Nachal'nik depo Sukhumi.  
(Electric locomotive engineers) (Kikava, Taras Samsonovich)

ГВАЗИДИ, К. В.

715. Бурчуладзе Тенгиз Ваа-  
 димович. Асимптотическое  
 решение функциональных уравнений по-  
 стояющего вида. Издательство совещан-  
 ственного университета в Тбилиси. 1941.  
 107 с. (Пр. ТГУ, т. 46, 1953, т. 54, 1954.  
 Заг. 1948, 244.)

716. Веква Иван Игнатович.  
 Распространение функций коллинейно го-  
 моморфных отображений. 1955. 157 с.  
 Заг. 1957, 3. 6.

717. Габдулаев Николай Алекс-  
 андрович. Привнесение комплексности к го-  
 моморфизмам чисел. Труды семинара по  
 линейной алгебре. Казань, 1953. 60 с.  
 (Казанский пед. институт. Пр. Казанский,  
 т. 14, Сообщ. АН СССР, т. 15, № 10.  
 Заг. 1953, 26.12.)

718. Габдулаев Николай Алекс-  
 андрович. О некоторых свойствах гомомор-  
 физмов для двойных рядов. 1957. 60 с.  
 Заг. 1957, 14.9.

719. Гергелия Тенгиз Георгие-  
 вич. О граничных значениях линейных  
 форм и о сингулярных интегралах  
 в области. 1954. 111 с.  
 Заг. 1954, 27.11.

720. Горгуладзе Алексей Яковле-  
 вич. Об одном оригинальном методе по-  
 строения граничных значений в теории  
 эллипсности. 1937.  
 Заг. 1937, 9. 10.

721. Гулаев Шота Игнатович.  
 О теореме типа Абеля. Сургути. 1945.  
 26 с. (Сузугский пед. институт).  
 Заг. 1956, 17.4.

722. Магларадзе Леван Геор-  
 гиевич. Некоторые основные граничные  
 значения для математической функции для  
 функций с угловыми точками. 1939. 58 с.  
 Заг. 1939, 23.6.

723. Мейлаверидзе Яков Ге-  
 оргиевич. О прикладных решениях  
 дифференциального уравнения гипербо-  
 лического типа с переменными коэффици-  
 ентами в случае двух независимых пере-  
 мных. (Пр. Тбл. матем. инстит., т. 6  
 1938).  
 Заг. 1938, 17.5.

724. Харваев Давид Фомич.  
 Некоторые вопросы теории алгебраиче-  
 ских дифференциальных уравнений. 1942.  
 59 с.  
 Заг. 1942, 26.2.

725. Хвалев Александр Рубе-  
 нович. Об одном классе интегральных  
 уравнений Фредholm'a III-го рода. Б.  
 № 1, с. 53 с.  
 Заг. 1949, 25.6.

731. Чиджоев Мамедов Исма-  
 ильевич. Основные граничные значения  
 для функций, удовлетворяющих уравнению  
 Лапласа в области с угловыми точками  
 и для монотонностей с угловыми точками.  
 1954. 75 с.  
 Заг. 1954, 29.6.

634

Dissertation for degree of  
Candidate Mathematical Sciences

Def. at  
Tbilisi State U.

GVAZAVA, Sh. T., Cand of Agric Sci -- (diss) "Growth and development of young orange trees in relation to soil preparation." Tbilisi, 1957, 24 pp (Georgian Agricultural Institute), 100 copies (KL, 32-57, 94)



QVATAVN Sh. T.

USSR / Cultivated Plants. Subtropical and Tropical M-8  
Plants.

Abs Jour: Ref Zhur-Biol., 1958, No 16, 73189.

Author : Qvazava, Sh. T.  
Inst : All-Union Scientific-Research Institute of Tea and  
Subtropical Crops.  
Title : Growth, Development and Fruit Bearing of Young  
Orange Trees Depending on Methods of Soil Maintain-  
ence Between the Rows.

Orig Pub: Byul. Vses. n.-i. in-ta chaya i subtrop. kul'tur,  
1957, No 1, 116-143.

Abstract: At the All-Union Scientific-Research Institute of  
Tea and Subtropical Crops, different variants were  
studied of soil maintenance between the rows in  
young orange orchards on red soil: 1) control -  
Black fallow up to August, then annual soilcovers

Card 1/3

GVAZAVA, Sh.T., aspirant

Effect of the methods of treating soil in the interrows on the growth, development, and fruiting of young orange trees.  
Biol. VNIICHISK no.1:116-143 :57. (MIRA 15:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut chaya i subtropicheskikh kul'tur.  
(Georgia--Orange) (Mulching)

DARAGOLAYA, M.K., prof.; GVALAVA, Sh.T., kand. sel'skokhoz. nauk

Isk na restore eroded soils. Zemledelie 27 no.6:24-25 Je '65.  
(MIRA 18:9)

I. Vsesoyuznyy nauchno-issledovatel'skiy institut chaya i  
subtropicheskikh kul'tur.

GVAZAVA, Ye.R. podpolkovnik meditsinskoy sluzhby

Socialist competition in the military hospital. Voen. - med.  
zhur. 1:10-12 '63. (MIRA 17:8)



L 26192-66

ACC NR: AT6015127

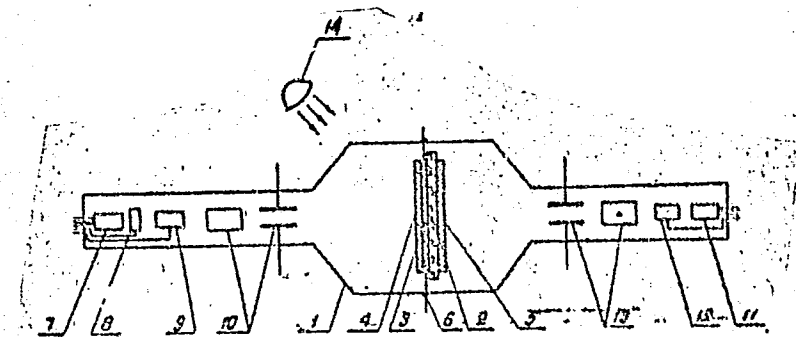


Fig. 1. Electron-optical memory system

12 and applied to photocathode 5 to read the stored information. Deflecting plate 12 serves as an address system. The screen is illuminated by pulsed light source 14. The model used 10LM2G, 11LM2G, and 16LM1G dark-trace tubes for storage. An LI-17 image orthicon was used for reading. Tests established that the S/N ratio of retrieved information is increased if beam electron density and the accelerating potential of the dark-trace tube are high. The S/N ratio of output signal may be raised 10—15% by using a light filter ( $\lambda = 5620 \text{ \AA}$ , bandwidth = 100  $\text{\AA}$ ). It was established that  $5 \times 10^5$  bits may be stored in 10LM2G or 11LM2G tubes with a working area of  $5.1 \times 10^3 \text{ mm}^2$ , and  $7.5 \times 10^5$  bits in 16LM1G tubes. Read time is of the order of a few microseconds and is considerably less than write and erase time. The system

Card 2/3

L 25192-56

ACC NR: AT6015127

is suitable for read-only memory but it requires a complex address system. Orig. art. has: 4 figures. [BD]

SUB CODE: 09/ SUBM DATE: 29Sep65/ ORIG REF: 002/ OTH REF: 001/ ATD PRESS: 4251

Card 3/3 *aria*

GVELESIANI, A.A.; YELIGULASHVILI, R.S., red.

[Principal stages in the development of Soviet commerce in Georgia]  
Osnovnye etapy razvitiia sovetskoi trgovli v Gruzii. Tbilisi,  
Izd-vo M-va trgovli Gruzinskoi SSR, 1958. 231 p. (MIRA 13:8)  
(Georgia--Commerce)



GUELESIANI, P.Zh.Y.

P.5

PHASE I BOOK EXPLOITATION SOV/3462

Akademiya nauk Gruzinskoy SSR. Institut prikladnoy khimii i elektro-khimii

Gidroelektrometallurgiya khroma; sbornik rabot (Hydroelectrometallurgy of Chromium; Collection of Works), Tbilisi, 1959. 261 p. 1,000 copies printed.

Ed.: N.T. Gofman; Ed. of Publishing House: L.N. Sarkisyan; Tech. Ed.: A.R. Todua.

PURPOSE: This book is intended for metallurgists.

COVERAGE: This collection of papers deals with the problem of obtaining high-purity chromium and the problem of producing pure raw materials from which the metal itself is obtained. The investigations reported in this volume were conducted between 1947 and 1957 at the Institut prikladnoy khimii i elektrokhemii AN Gruzinskoy SSR (Institute of Applied Chemistry and Electrochemistry, Academy of Sciences Gruzinskaya SSR). The most detailed studies in the collection are those dealing with the electrolysis of sulfate solutions and with methods of obtaining raw materials for the process. It is

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APPROVED FOR RELEASE: 09/17/2001

CIA-RDP86-00513R000617720005-3"

Hydroelectrometallurgy of Chromium (Cont.)

SOV/3462

claimed that more than a decade of investigation, testing of flowsheets and electrolytic-tank designs, utilization of Soviet and non-Soviet data, and reverification of published results obtained at the pilot plant of the U.S. Bureau of Mines have led to the development of a definite, and to some extent original, method of obtaining high-purity chromium. Choice of a simple, economical flowsheet required the study of methods for obtaining and purifying compounds of trivalent chromium. The most acceptable method, technologically, has proven to be a two-stage refining of ferrochrome. It is described in the Introduction by R.I. Agladze. Compounds of hexavalent chromium are obtained in the first stage by direct electrochemical dissolution of carbon-containing ferrochrome; in the second stage, electrolysis of the chromium salts, reduced to the trivalent state, is carried out. The method is considered significant in view of the possibility it affords of using not only standard ferrochrome, but also ferrochrome with a high content of impurities and a low chromium content. This feature makes it feasible to use low-grade chrome ores. Studies are made of the anodic dissolution of ferrochrome in sulfate, carbonate, alkaline, ammoniacal, and chromate solutions. The following methods of reducing hexavalent chromium

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Hydroelectrometallurgy of Chromium (Cont.)

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AVAILABLE: Library of Congress (TN 799 .C5A4)

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VK/jb  
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GVELESIANI, Dzh.F.

APPROVED FOR RELEASE: 09/17/2001      CIA-RDP86-00513R000617720005-3"

Role of ammonium sulfate in the hydrometallurgy of chromium. Soob.  
AN Gruz. SSR 24 no.6:691-696 Je '60. (MIRA 13:9)

1. AN GruzSSR, Institut prikladnoy khimii i elektrokhemii, Tbilisi.  
Predstavleno akademikom R.I. Agladze.  
(Chromium--Electrometallurgy) (Ammonium sulfate)

GVELESIANI, DZH. F., CAND TECH SCI, <sup>Production</sup> DERIVATION OF  
ELECTROLYTIC CHROME FROM FERROCHROME. <sup>of the</sup> TBILISI, 1960.  
(STATE COM. <sup>of</sup> HIGHER AND SEC SPEC ED, <sup>of the</sup> COUNCIL OF MINISTERS  
GEORGIAN SSR. ORDER OF LABOR RED BANNER GEORGIA <sup>me</sup> POLYTECH  
INST IM V. I. LENIN). (KL, 2-61, 207).

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GVELESIANI, Dzh.F

Formation of trivalent chromium in the process of anodic  
solution of ferrochromium. Trudy Inst.prikl.khim.i elektro-  
khim.AN Gruz.SSR 3:105-110 '62. (MIRA 16:1)  
(Chromium alloys) (Chromium—Electrometallurgy)

AGLADZE, R.I.; IONATAMISHVILI, T.V.; GVELESIANI, D.F.

Electrowinning of chromium from mother liquors after the  
crystallization of chromium alums. Trudy Inst. prikl. khim. i  
elektrokhim. AN Gruz. SSR 2:101-107 '61. (MIRA 16:8)

(Chromium compounds)

S/279/63/000/001/007/023  
E021/E452

AUTHORS: Rubesh, L.L., Gyalasiani, Dzh.F., Agladze, R.I.,  
Akimenko, V.B. (Tbilisi)

TITLE: The anodic dissolution of ferrochrome

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye  
tekhnicheskikh nauk. Metallurgiya i gornoye delo.  
no.1, 1963, 100-104

TEXT: The influence of the iron, carbon (0 to 7%) and silicon (0 to 2.8%) contents on the anodic dissolution of chromium was investigated. The starting materials were electrolytic chromium, Armco iron, active carbon and metallic silicon. Cylindrical anodes were cast from a high frequency induction furnace into metallic moulds 50 to 60 mm long x 30 mm diameter. Electrolysis was carried out with anodic and cathodic current densities of 10 and 7 A/dm<sup>2</sup> respectively, electrolyte concentration 50 g/litre (NH<sub>4</sub>)<sub>2</sub>Cr<sub>2</sub>O<sub>7</sub> (20 g/litre Cr<sup>6+</sup>), pH 6 to 6.5 and temperature 60 ± 1°C. The iron and chromium hydroxide precipitates were dissolved by adding concentrated sulphuric acid, and Cr<sup>6+</sup>, Cr<sup>3+</sup> and Fe<sup>3+</sup> were determined. With increase in iron  
Card 1/2

content the proportion of current used decreased whilst that for Fe<sup>3+</sup> increased. The ratio of Cr<sup>3+</sup> to Cr<sup>6+</sup> remained constant. The overall current efficiency with iron content of up to 35 to 40% was 100%; further increase in iron content reduced the overall efficiency below 100%, due to evolution of oxygen and increased anode passivation. A sharp increase in current used to form Cr<sup>3+</sup> and a decrease in that forming Cr<sup>6+</sup> with increase in carbon content. The total current used to form Cr<sup>6+</sup>, Cr<sup>3+</sup> and Fe<sup>3+</sup> fell with increase in anode carbon content, and CO<sub>2</sub> and CO were shown to be present in the anode gases. The effects of Si on anodic dissolution were similar to those of carbon but less marked. There are 3 figures.

SUBMITTED: August 4, 1962



GVELESIANI, G.G. (Tbilisi); NADIRADZE, A.A. (Tbilisi)

Aluminothermy of ytterbium oxide. Izv. AN SSSR. Mat. i gor. delo no.5:  
57-65 S-O '64. (MIRA 1881)

GVELESIANI, G.

Aleksandr Nikolaevich Dzhavakhishvili, 1875- ; his 90th  
birthday. Izv. AN SSSR. Ser. geog. no.6:139-141 N-D '65.  
(MIRA 18:11)

GVELESIYANI, G. G. (Georgiy Grigoryevich)

ALAMPIYEV, P.M., kandidat geograficheskikh nauk, dotsent; GRIGOR'YEV, A.L., kandidat ekonomicheskikh nauk; ZHMUYDA, V.B., kandidat ekonomicheskikh nauk, dotsent; LOYTER, M.N., kandidat tekhnicheskikh nauk; LYALIKOV, N.I., kandidat geograficheskikh nauk, dotsent; NIKITIN, N.P., professor; TUTYKHIN, B.A., kandidat geograficheskikh nauk, dotsent; CHERDANTSEV, Gleb Nikanorovich, doktor ekonomicheskikh nauk, professor; DZHAVAKHISHVILI, A.A., professor; GVELESIYANI, G.G., dotsent; GALKIN, P.D., redaktor; RODIONOVA, F.A., redaktor; SAKHAROVA, N.V., tekhnicheskiy redaktor.

[Economic geography of the U.S.S.R.; Soviet Socialist republics; Ukrainian, Moldavian, White Russian, Lithuanian, Latvian, Estonian, Karelo-Finnish, Georgian, Azerbaijan, Armenian, Kazakh, Uzbek, Kirghiz, Tajik, turkmen] Ekonomicheskaya geografiya SSSR; Sovetskie sotsialisticheskie Respubliki: Ukrainskaya, Moldavskaya, Belorusskaya, Litovskaya, Latviiskaya, Estonskaya, Karelo-Finskaya, Gruzinskaya, Azerbaidzhanskaya, Armianskaya, Kazakhskaya, Uzbekskaia, Kirgizskaya, Tadzhikskaya, Turkmenskaya. Moskva, Gos. uchebno-pedagog. izd-vo Ministerstva prosveshcheniya RSFSR, 1954. 426 p. [Microfilm]  
(Geography, Economic) (MLRA 8:1)

TAVADZE, F.N., *otv. red.*; AGLADZE, R.I., *red.*; ARCHVADZE, Sh.R., *red.*;  
YACHNADZE, N.D., *red.*; GVEKSIANI, G.G., *red.*; GUDZEDZHIANI, B.I., *red.*;  
DZHANELIDZE, A.I., *red.*; DZOTSENIDZE, G.S., *red.*; DURMISHIDZE,  
S.V., *red.*; KETSKHOVELI, N.N., *red.*; MIKELADZE, I.S., *red.*;  
RUBINSHTEYN, M.M., *red.*; TVALCHRELIDZE, A.A., *red.*, [deceased];  
TSITSISHVILI, G.V., *red.*; SHENGBELIYA, P.G., *red.*; FEODOT'YEV,  
K.M., *red. izd-va.*; GUSEVA, A.P., *tekhn. red.*

[Natural resources of the Georgian S.S.R.] Prirodnye resursy  
Gruzinskoi SSR. Moskva. Vol. 1. [Metalliferous minerals] Metallicheskie  
poleznye iskopaemye. 1958. 230 p. (MIRA 11:11)

1. Akademiya nauk Gruzinskoy SSR, Tiflis. Sovet po izucheniyu  
proizvoditel'nykh sil. 2. Chlen-korrespondent AN Gruz. SSR (for Tavadze).  
(Georgia--Ore deposits)

GVELESIANI, G.G.; MIDELADZE, I.S., red.; BOKUCHAVA, T.P., red. izd-va;  
BOKERIYA, E.B., tekhn. red.

[Principles of the socialist distribution of production] Ob  
osnovakh sotsialisticheskogo razmeshcheniia proizvodstva.  
Tbilisi, Izd-vo Akad. nauk Gruzinskoi SSR, 1961. 135 p.  
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GVELESIANI, G.G.

Characteristics of the establishment of economic regions in a mountain country as exemplified by the Georgian S.S.R. Soob. AN Gruz. SSR 27 no.6:679-686 D '61. (MIRA 15:2)

1. Institut geografii im. Vakhushti AN Gruzinskoy SSR, Tbilisi. Predstavleno akademikom A.N.Dzhavakhiashvili. (Georgia--Economic zoning)

GVELESIANI, Georgiy Grigor'yevich

[Sunny Georgia] Soniachna Gruzia. Kyiv, Derzh. vyd-  
vo polit. lit-ry, 1962. 107 p. (MIRA 18:1)

GVELESIANI, G.G.; BEZARASHVILI, Sh.M.; MGALOBLISHVILI, N.F.

Aluminothermic reduction of europium oxide. Soob. AN Gruz. SSR 35  
no.2:379-386 Ag '64. (MIRA 17:12)

I. Institut metallurgii AN Gruzinskoy SSR, Tbilisi. Submitted July 2,  
1964.



GVELESIANI, G.G.

Conference on the problem of developing the natural resources of  
Transcaucasia. Izv. AN SSSR. Ser. geog. no.2:165-166 Apr '65.  
(MIRA 18:4)

THE BOUND, G.S.; BYKAROVII", Ch.N.

Neutronium and carbon neutron production of europium oxide.  
Sov. AN Gaz. SSR 39 no.3:668-674 S 165. (MIRA 38:10)

L. Gerasimsky Institut metallurgii. Submitted February 16,  
1968.

L 15956-66 EWT(m)/EMP(t) IJP(c) ID/JW/JG

ACC NR: AP6002652

SOURCE CODE: UR/0251/65/040/002/0407/0412

48  
46  
B

AUTHOR: Nadiradze, A. A.; Gvelesiani, G. G.

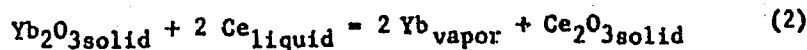
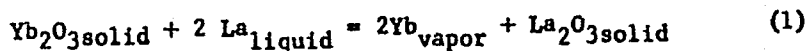
ORG: Georgian Institute of Metallurgy (Gruzinskiy institut metallurgii)

TITLE: Thermodynamics of the thermal reduction of ytterbium oxide by means of lanthanum and cerium

SOURCE: AN GruzSSR. Soobshcheniya, v. 40, no. 2, 1965, 407-412

TOPIC TAGS: chemical reduction, ytterbium compound, thermodynamics, cerium, lanthanum, rare earth metal, vapor pressure

ABSTRACT: The processes of the reduction follow the reactions



The equilibrium of these reactions is essentially determined by finding the vapor

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ACC NR: AP6002652

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pressure of Yb metal above the reaction mixtures on the assumption that the activities of the condensed phases participating in the reaction equal unity and that  $p_{\text{equil}}$  for Ce and La is zero.  $P_{\text{equil}}$  for reactions (1) and (2) was determined by the boiling method (cf. Gvelesiani, G. G., et al. Trudy Gruzinskogo in-ta metallurgii, vol. XIV, 1965). Briquetted charge (molar ratio La(Ce)/Yb<sub>2</sub>O<sub>3</sub> = 2.5) was heated at 850-1150°C and the evaporation rate of Yb was measured 6-8 times at various temperatures; whereupon a curve of the rate of weight loss of the residue was plotted. On this basis it was established that, within the investigated range of temperatures, the experimentally determined values of the Gibbs function for the thermal reduction of Yb<sub>2</sub>O<sub>3</sub> by means of La and Ce differ in both cases from their theoretically calculated counterparts. A possible explanation for this discrepancy is that at present the values of many of the thermochemical quantities necessary for the calculations have not yet been established for most rare-earth metals and their compounds. Orig. art. has: 3 tables, 15 formulas, 2 figures <sup>55, 21</sup>

SUB CODE: 07, 20/      SUBM DATE: 15Apr65/      ORIG REF: 008/      OTH REF: 006

bvk

Card 2/2

SOURCE CODE: UR/0251/66/041/003/0657/0664

53  
52  
B

ACC NR: AP6021712

AUTHOR: Gvelesiani, G. G.; Bagdavadze, D. I.

ORG: Georgian Institute of Metallurgy (Gruzinskiy institut metallurgii)

TITLE: Thermal reduction of samarium oxides by lanthanum

SOURCE: AN GruzSSR. Scobshcheniya, v. 41, no. 3, 1966, 657-664

TOPIC TAGS: samarium compound, lanthanum, powder metallurgy, chemical kinetics

ABSTRACT: A method for the thermal reduction of samarium oxide powder by lanthanum in a vacuum is described. Briquets (15 x 3 x 3 mm) were pressed from powder mixtures of B-Sm<sub>2</sub>O<sub>3</sub> and La of 99.5% purity and reduced in vacuo by heating to 1200°C. The equilibrium partial pressure of Sm vapor and the isobaric-isothermal potential were given as functions of temperature by the following equations:

$$\lg P_{MM} = 8.21 - \frac{11250}{T} \quad (1225-1473^{\circ}\text{K})$$

and 
$$\Delta Z^{\circ} = 102940 - 48.77T \quad (1225-1473^{\circ}\text{K}).$$

The evaporation of Sm limited the speed of the process in the early stages, while diffusion of the reactants through the solid reactant product La<sub>2</sub>O<sub>3</sub> limited the speed in

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ACC NR: AP6021712

the latter stages. By examining the Sm yield as a function of the molar ratio La/  
/Sm<sub>2</sub>O<sub>3</sub>, the optimum charge was determined to be La/Sm<sub>2</sub>O<sub>3</sub> = 2.75, for which the Sm  
yield was between 93 and 66% at 1200°C. The following optimum process conditions  
are: temperature--1200°C, reduction time--1 hr, briquetting pressure--2500 kg/cm<sup>2</sup>,  
size of Sm<sub>2</sub>O<sub>3</sub> and Ln powders--1 + 0.5 mm and vacuum pressure--10<sup>-3</sup> mm Hg. Wettabi-  
lity of the oxide particles by Ln was considered best at 1200°C. The overall reduc-  
tion equation was given as Sm<sub>2</sub>O<sub>3</sub>(solid) + 2La(liquid) + 2Sm(gas) + La<sub>2</sub>O<sub>3</sub>(solid). Orig.  
art. has: 8 figures, 1 table, 7 equations.

SUB CODE: 07,11/

SUBM DATE: 05Jul65/

ORIG REF: 003/

OTH REF: 003

Cont. 2/2/5

L 45454-66 EWT(m)/EWP(e)/EWP(t)/ETI LJP(c) JD/JW/JG/AT/AT  
 ACC NR: AR6026772 SOURCE CODE: UR/0081/66/000/008/B074/B074

AUTHOR: Tsagareyshvili, D. Sh.; Gvelesiani, G. G. 27 27 27 27  
 60  
 B

TITLE: Heat contents and heat capacities of europium, thulium and ytterbium oxides  
 at high temperatures 16

SOURCE: Ref. zh. Khimiya, Part I, Abs. 8B571

REF SOURCE: Tr. Gruz. in-t metallurgii, v. 14, 1965, 187-198

TOPIC TAGS: enthalpy, heat capacity, europium compound, thulium compound, yttrium  
 compound, CALORIMETRY

ABSTRACT: A detailed description of a mixing calorimeter with a platinum ampoule,  
 calibrated with  $\alpha\text{-Al}_2\text{O}_3$  and checked with  $\text{ZrO}_2$ , is given. For the substances studied,  
 equations were obtained (cal/mole and cal/deg mole) for  $\text{Eu}_2\text{O}_3$  (cubic)  $H_T - H_{298.1} =$   
 $32.70T + 1.76 \times 10^{-3}T^2 + 3.92 \times 10^5T^{-1} - 11219$ ; (298 - 1371°K,  $\pm 0.5\%$ ); for  $\text{Eu}_2\text{O}_3$   
 (monocl.)  $C_p = 29.08 + 6.62 \times 10^{-3}T$  (1381 - 1589°K  $\pm 0.3\%$ ); for  $\text{Tm}_2\text{O}_3$ ,  $H_T - H_{298.1} =$   
 $30.58T + 1.16 \times 10^{-3}T^2 + 4.07 \times 10^5T^{-1} - 10584$  (298 - 1606°K  $\pm 0.6\%$ ); for  $\text{Yb}_2\text{O}_3$   $H_T$   
 $- H_{298.1} = 29.48T + 1.25 \times 10^{-3}T^2 + 1.92 \times 10^5T^{-1} - 9543$  (298 - 1587°K  $\pm 0.3$ ).  
 S. Nikol'skiy. [Translation of abstract]

SUB CODE: 07

LS

Card 1/1

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Gvelesiani, G. G. -- "Investigation of the Process of Aluminum Heat Reduction of Oxides of Strontium and Barium." Cand Tech Sci, Moscow Inst of Nonferrous Metals and Gold, Moscow 1953. (Referativnyy Zhurnal--Kimiya, No 1, Jan 54)

So: SUM 168, 22 July 1954



GVELESIANI, G.G.; KONYSHKOVA, T.Ye.; CHIZHIKOV, D.M.

Kinetics of the carbon monoxide reduction of copper oxide.  
Izv. AN SSSR. Otdel. tekhn. nauk no. 8:140-144 Ag '55. (MLRA 9:1)

(Copper oxide) (Carbon monoxide) (Reduction, Chemical)

GVELESTANI, G. G.

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~~Vacuum Installation for Studying the Kinetics of Reduction and Oxidation Processes. D. N. Chichikov and G. G. Gvelestani. (Zavodskaya Laboratoriya, 1938, 22, (4), 490-495) in Russian]. An apparatus has been developed in which high-temperature oxidation or reduction processes are followed by continuously weighing the sample. Constant temperature and pressure are maintained automatically.~~

S. K.  
HCT

137-1958-3-4876

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 3, p 60 (USSR)

AUTHORS: Gvelesiani, G.G., Chizhikov, D.M., Konyskova, T. Ye.

TITLE: The Effect of Temperature on the Kinetics of the Reduction of Cupric Oxide by Carbon Monoxide (Vliyaniye temperatury na kinetiku vosstanovleniya okisi medi okis'yu ugleroda)

PERIODICAL: Tr. In-ta metallurgii AN SSSR, 1957, Nr 2, pp 47-53

ABSTRACT: Results are described of experiments carried out in order to determine the effect of temperature on the kinetics of the reduction of CuO by CO. The experiments were performed in a vacuum system equipped with automatic pressure regulation of the continuously circulating reducing agent (CO) and capable of recording the progress of the reduction reaction by means of continuous weighings performed on electromagnetic scales. CuO was subjected to reduction under the following conditions: CO pressure: 50, 100, 300, and 450 mm Hg; temperature: 150°, 175°, 200°, 225°, 300°, 400°, 500°, 600°, 700°, and 800°. A temperature increase up to 300°, at a constant pressure of the reducing agent, increases the speed of the reduction reaction of CuO; any further increase in temperature has virtually no

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137-1958-3-4876

The Effect of Temperature on the Kinetics of the Reduction (cont.)

effect on the speed of the reaction. X-ray analysis of partially reduced CuO shows that the reaction progresses in stages and is accompanied by the formation of  $\text{Cu}_2\text{O}$ .

A. P.

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SOV/24-58-8-4/37

AUTHORS: Gyelesiani, G. G., Konyshkova, T. Ye, Tsvetkov, Yu.V. and Chizhikov, D. M. (Moscow)

TITLE: On the Theory of Reduction of Oxides of Heavy Non-Ferrous Metals and their Mixtures with Carbon Monoxide (K teorii vosstanovleniya okislov tyazhelykh tsvetnykh metallov i ikh smesey okis'yu ugleroda)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 8, pp 19-25 (USSR)

ABSTRACT: The author deals with certain problems of the kinetics and the mechanism of reduction of oxides of copper, lead and zinc and of mixtures of these oxides with carbon monoxide. The kinetics of reduction of these oxides were investigated under conditions in which these oxides were in the solid state and the reduced metals were in the solid (Cu), the liquid (Pb) and the gaseous (Zn) states. The adsorption-catalytic theory of G. N. Chufarov (Ref.7), which is based on investigations of the kinetics of reduction of oxides of iron and of some other oxides under such conditions that the product of reduction is obtained in the solid phase, is the most satisfactory from the point of view of explaining up-to-date conceptions of the

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SOV/24-58-8-4/37

On the Theory of Reduction of Oxides of Heavy Non-Ferrous Metals  
and their Mixtures with Carbon Monoxide

mechanism of reduction of oxides with gases. The influence of the aggregate state of a product on the development of the process of reduction with the progress of time has not been considered by Chufarov. Since lead, zinc and copper accompany each other in metallurgical processes, it is of considerable importance to establish the kinetics governing their simultaneous reduction. At present for studying the kinetics of reduction processes the most widely used method is that of determining the reaction speed from the decrease of the pressure of the reducing gas during the reduction process. However, this method has the drawback that it does not give information on the real change of the progress of the process with time since the pressure of the reducing gas changes continuously during the reduction process. The error is particularly pronounced at relatively low pressures when the quantity of the reducing gas is inadequate even for the complete reduction of a specimen of the studied oxide or compound. The experimental technique (see Ref.1) used by the authors of this paper enabled eliminating these drawbacks. The

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On the Theory of Reduction of Oxides of Heavy Non-Ferrous Metals and their Mixtures with Carbon Monoxide

kinetics of reduction were studied whilst maintaining a constant pressure of the reducing gas by utilising the automatic recording of the loss in weight of the specimen. In the first part of the paper the authors discuss the results of separate reduction of the oxides of copper, lead and zinc with carbon monoxide, graphed in Figs.1-7. In the second part the reduction of mixtures of oxides of copper, zinc and lead by means of carbon monoxide, graphed in Figs.8 and 9, are discussed. The authors summarise their results thus: the speed of reduction of CuO at temperatures up to 200°C is characterised by the autocatalytic progress of the kinetic curve; reduction of oxides of lead and zinc begins with the maximum speed in the temperature range 450 to 800°C for PbO and 700 to 1000°C for ZnO. The speed of reduction of CuO and PbO increases with increasing CO pressure in the pressure range 25-100 mm Hg col. for CuO and 50-300 mm Hg col. for PbO. The dependence of the reaction speed on the pressure complies with the isotherm adsorption type equation  $v = k_0 p^n$ , where  $n < 1$ ; for zinc oxide no such relation has been detected. Depending on the

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On the Theory of Reduction of Oxides of Heavy Non-Ferrous Metals  
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activity of the oxides being reduced, this relation was observed also in other temperature ranges and pressures. In the system CuO-PbO, CuO-ZnO and PbO-ZnO no chemical compounds were detected; the thermograph analysis of these systems has revealed the presence of a eutectic, with a fusion point of 688°C, in the system CuO-PbO for a molar ratio CuO/PbO = 1:1. In the case of reducing CuO-PbO mixtures, the CuO increases somewhat the speed of reduction of the PbO and this may be due to a local over-heating of its particles; above 700°C the reducing reaction is braked owing to formation of a liquid phase. In the system PbO-ZnO a braking of the reduction of the ZnO is observed in the temperature range 600 to 700°C due to intensive reduction of the PbO and an increase in the CO<sub>2</sub> concentration resulting therefrom which influences the adsorption properties and also the thermodynamics of reduction. Presence of slight quantities of CuO in CuO-ZnO mixtures, up to the molar ratio CuO/ZnO = 0.5:1, has practically no

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SOV/24-58-8-4/37  
On the Theory of Reduction of Oxides of Heavy Non-Ferrous Metals  
and their Mixtures with Carbon Monoxide

influence on the speed of reduction of zinc oxide.  
There are 9 figures and 8 references, 7 of which are  
Soviet, 1 German.

SUBMITTED: October 8, 1957

1. Metal oxides--Reduction    2. Gases--Chemical effects    3. Carbon  
monoxide--Metallurgical effects

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SOV/180-59-1-9/29

AUTHORS: Gvelesiani, G.G., Konyshkova, T.Ye. and Chizhikov, D.M.  
(Tbilisi and Moscow)

TITLE: Kinetics and Mechanism of the Reduction of Zinc Ferrites  
with Carbon Monoxide (Kinetika i mekhanizm vosstanovleniya  
ferrita tsinka skis'yu ugleroda)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye tekhnicheskikh  
nauk, Metallurgiya i toplivo, 1959, Nr 1, pp 50-54 (USSR)

ABSTRACT: The authors describe their studies of the kinetics of the  
reaction of zinc ferrite (27.1% Zn and 46.8% Fe) free  
from uncombined oxides with carbon monoxide at 800-1000°C  
and 10-450 mm Hg. These conditions secured the complete  
removal of gaseous reduction products: the percentage  
reductions of the zinc and iron of the ferrite were found  
from the total loss in weight of the charge, the amount  
of deposited carbon and the amount of zinc oxide  
remaining in the charge. It was found that on increasing  
the temperature from 800 to 1000°C the rate of reduction  
of the ferrite increases, the increase being greatest at  
the lowest (10 mm Hg) pressure. Fig 1 shows percentage  
reduction as functions of time (min) for 1000, 900 and  
800°C at 10 mm Hg (curves 1, 2 and 3 respectively) and at  
450 mm Hg (curves 1', 2' and 3' respectively).

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SOV/180-59-1-9/29

Kinetics and Mechanism of the Reduction of Zinc Ferrites with Carbon Monoxide

Fig 2 shows the curves for pressures of 450, 250, 50 and 10 mm Hg at 800°C (curves 1, 2, 3 and 4 respectively) and at 1000°C (curves 1', 2', 3' and 4' respectively). Increase in pressure beyond 250 mm Hg produced little effect on reduction rates except in the early stages (where the effect of pressure was always most pronounced). Results were also obtained for the reduction of zinc in the ferrite (Fig 3) and for zinc and iron in the ferrite (Figs 4,5). Figs 6 and 7 show reduction curves for zinc ferrite, for a mechanical mixture of the oxides in stoichiometric proportions and also for zinc oxide reduction in ferrite in a mechanical mixture and in the free state. The results obtained from the reduction experiments and from X-ray phase analysis of zinc-ferrite reduction products (Table) show that the first stage is the decomposition with reduction of the ferrite into zinc oxide and magnetite; after this the process can continue with the reduction of either component predominating, depending on the gas temperature and pressure. The observed sequence of reduction rates of free zinc oxide

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SOV/180.59-1-9/29

Kinetics and Mechanism of the Reduction of Zinc Ferrites with Carbon Monoxide

and zinc in mechanical mixtures and in ferrites is consistent, the authors consider, with the reduction-hindering effect of the carbon dioxide produced in the reduction of iron oxide.

Card 3/3 There are 7 figures, 1 table and 12 references, 6 of which are Soviet, 3 German, 2 English and 1 French.

SUBMITTED: June 7, 1958.

GVELESIANI, G.G.

General features of the economic geography of upper Imeretiya.  
Trudy Inst. geog. AN Gruz. SSR 11:3-41 '59. (MIRA 16:11)

S/137/62/000/003/007/191  
A006/A101

AUTHORS: Chizhikov, D. M., Gvelesiani, G. G., Konyshkova, T. Ye.

TITLE: Reduction kinetics of zinc, copper and lead ferrites with carbon monoxide

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 15, abstract 3A79  
(V sb. "Fiz.-khim. osnovy proiz-va stali" Moscow, AN SSSR, 1961, 185-186)

TEXT: The substances were prepared synthetically by reaction in the solid phase. The completeness of ferrite formation was controlled by chemical and X-ray analyses. During the reduction of mechanical mixtures of Zn, Cu and Pb oxides with Fe oxide, the regularities which are characteristic of pure oxides, were maintained only until a definite temperature limit. A comparison of kinetic data on the reduction of Zn, Cu and Pb ferrites with data on the reduction of structurally free oxides, has shown that the binding of ZnO and CuO into ferrites inhibits their reduction, but that of PbO accelerates it. Probable variants of the mechanism of Zn and Cu ferrite reduction, are proposed.

T. Kolesnikova

[Abstracter's note: Complete translation]

Card 1/1

GVELESIANI, G.G.

Investigating the reduction of strontium oxide by aluminum silicide.  
Trudy Inst.met. AN Gruz. SSR 12:103-105 '62. (MIRA 15:12)  
(Strontium oxide) (Aluminum silicide)

QVELESIANI, G.; NEIDZE, V.

General economic and geographical features of the Adzhar  
A.S.S.R. Trudy Inst. geog. AN Gruz. SSR 19:3-24 '62.  
(MIRA 16:1)

(Adzharistan—Economic geography)



GVELBSIANI, G.G.; IGALOBELISHVILI, N.P.

Thermodynamic analysis of the reduction of barium oxide by a silicon-aluminum alloy. Trudy Inst. met. AN Gruz. SSR vol. 13: 141-150 '62.

Thermodynamic analysis of the aluminosilicothermic reduction of a mixture of magnesium oxides and calcium. Ibid.:151-157

Investigating the aluminosilicothermic reduction of Abano deposit dolomite. Ibid.:159-168 (MIRA 17:9)

L 15303-65 EWT(m)/EPR/EWP(t)/EWP(b) Ps-4 JD/JW/JG  
ACCESSION NR: AP4047870 S/0279/64/000/005/0057/0069

AUTHOR: Gvelesiani, G. G. (Tiflis); Nadiradze, A. A. (Tiflis)

TITLE: Aluminothermic reduction of ytterbium oxide

SOURCE: AN SSSR. Izvestiya. Metallurgiya i gornoye delo, no. 5, 1964, 57-65

TOPIC TAGS: ytterbium oxide, reduction, aluminothermic reduction, optimum condition

ABSTRACT: A study has been made of the thermodynamics, kinetics, and mechanism of the aluminothermic reduction of 99.5%-pure  $Yb_2O_3$  with 99.51% Al. Results of the experiments showed that the equilibrium pressure (P) of Yb vapor in the aluminothermic reduction of  $Yb_2O_3$  is described (with an accuracy of  $\pm 3\%$ ) by the equation

$$P = 8.953 - \frac{12,666.7}{T} (1254-1473K),$$

Equations have also been composed for the temperature dependence of  
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L 15303-65

ACCESSION NR: AP4047870

the change of isobaric potential for the reactions of the aluminothermic reduction of  $\text{Yb}_2\text{O}_3$  and for oxidation of molten Yb. The data obtained on the equilibrium pressure of Yb vapor indicated the feasibility of aluminothermic reduction of  $\text{Yb}_2\text{O}_3$  in a vacuum at temperatures above 1100C. The optimum conditions for the process comprise a charge composition with the Al/ $\text{Yb}_2\text{O}_3$  molar ratio of 3, a temperature of 1200C, a compacting pressure of 5000—7500 kg/cm<sup>2</sup>, a powder grain size from 0.25 + 0.1 to 1 + 0.5 mm, and a vacuum of 0.01—0.001 mm Hg in the system. Aluminothermic reduction of  $\text{Yb}_2\text{O}_3$  proceeds with the formation of two intermediate products: an  $\text{Al}_x\text{Yb}_y$  alloy and ytterbium monoaluminate  $\text{YbAlO}_3$ . In the initial stage of the process, the reduction rate is determined by the speed of Yb vaporization from the alloy. Then, with the accumulation of an intermediate solid "slag," the reaction becomes diffusional. Ytterbium reduced under optimal conditions contains up to 0.11% Al and traces of Ca. Professor V. A. Pazukhin, Doctor of Technical Sciences, is thanked for his interest in the work. Orig. art. has: 5 figures and 9 formulas.

ASSOCIATION: none

Card 2/3

L 15303-65

ACCESSION NR: AP4047870

SUBMITTED: 00

ENCL: 00

SUB CODE: MM, IC

NO REF SOV: 009

OTHER: 005

ATD PRESS: 3139

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ACCESSION NR: AP4045204

S/0251/64/035/002/0379/0386

AUTHOR: Gvelesiani, G.G., Bezarshvili, Sh. M., Mgaloblishvili, N.P.

TITLE: Aluminothermal reduction of europium oxide

SOURCE: AN GruzSSR. Soobshcheniya, v. 35, no. 2, 1964, 379-386

TOPIC TAGS: europium, europium oxide, europium oxide reduction, aluminothermal reduction, europium refining

ABSTRACT: This work is a continuation of earlier studies by the authors on aluminothermal reduction. The most promising method of obtaining pure europium is by the vacuum metallothermal reduction of the oxide. In the case of the reduction of  $\text{Eu}_2\text{O}_3$  by aluminum, the equilibrium condition is determined solely by the europium vapor pressure since that of aluminum is negligible. This pressure was measured in high-temperature vacuum equipment for the high-temperature form of the oxide and an empirical equation was derived for the pressure and thermodynamic potential of the reaction. The kinetics of the reaction were studied for high- and low- temperature forms of the oxide, gas being evolved more rapidly from the former than from the latter, especially at 1100C. Graphs show europium output under various conditions of temperature for the aluminothermal

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ACCESSION NR: AP4045204

reduction process and Ginstling's equation is used to represent the results for the kinetic indices. The mechanism of the reduction process is discussed in terms of wetting, activation centers, crystal structure and grain size. Unlike the case of ytterbium, no intermediate aluminate is formed, and the metal obtained at 1150C contained 0.31% aluminum. "The authors thank Prof. V. A. Pazukhin for his attention and interest." Orig. art. has: 8 figures and 6 equations.

ASSOCIATION: Institut metallurgii, Akademiya nauk gruzinskoy SSR, Tiflis  
(Metallurgical Institute, Georgian SSR Academy of Sciences)

SUBMITTED: 02Jul64

ENCL: 00

SUB CODE: MM

NO REF SOV: 006

OTHER: 002

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L 36693-65 EMB(j)/EMT(m)/EPT(c)/EPR/EPF(t)/EWP(b) Pr-4/Pa-4 IJP(c) 30/31/80

ACCESSION NR: AP5005005

S/0078/85/010/002/0319/0321

AUTHOR: Tsagareyshvili, D. Sh. ; Gvelesiani, G. G.

36  
34  
8

TITLE: Enthalpy and heat capacity of the oxides of certain rare earth metals

B

21

27

SOURCE: Zhurnal neorganicheskoy khimii, v. 10, no. 2, 1985, 319-321

TOPIC TAGS: enthalpy, heat capacity, europium oxide, ytterbium oxide, thalium oxide, rare earth oxide

ABSTRACT: The high temperature (298.1-1600K) enthalpy of the C- and B- forms of  $\text{Eu}_2\text{O}_3$ , of  $\text{Tm}_2\text{O}_3$  and  $\text{Yb}_2\text{O}_3$  was investigated. Experimental data for the enthalpy ( $H_T - H_{298.1}$ ) and the coefficients a, b, c and d for the equations:

$$H_T - H_{298.1} = aT + bT^2 + cT^{-1} + d \text{ and}$$

$$C_p(\text{heat capacity at constant pressure}) = 2 + 2bT - cT^{-2}$$

were tabulated for these compounds. The temperature interval studied for the low temperature cubic C-form of  $\text{Eu}_2\text{O}_3$  was 298.1-1371.4K, and for the monoclinic high temperature B-form--1380.9-1589.3K. The average deviation between

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L 36693-65

ACCESSION NR: AP5005005

2

calculated and experimental data within the temperature intervals studied was within +0.6%. Orig. art. has: 3 tables and 4 equations

ASSOCIATION: Gruzinskiy institut metallurgii (Gruzinsk Institute of Metallurgy)  
Gosudarstvennogo komiteta po chernoy i tsvetnoy metallurgii pri gosplane SSSR  
(State Committee for Ferrous and Non-ferrous Metallurgy affiliated with the  
State Planning Commission)

SUBMITTED: 14Apr64

ENCL: 00

SUB CODE: TD, IC

NR REF SOV: 006

OTHER: 006

Card 2/2



L 33328-85 EWG(j)/EWT(m)/EPF(c)/EPF(n)-2/EPR/EWP(t)/EWP(b) Pr-4/Ps-4/Pu-4  
IJP(c) JD/mh/3  
ACCESSION NR: AP5005561 S/0251/65/037/001/0121/0126

AUTHORS: Gvelesiani, G. G.; Bezarashvili, Sh. M.; Nadiradze, A. A.

TITLE: Zirconothermic reduction of europium pentoxide 27

SOURCE: AN GruzSSR. Soobshcheniya, v. 37, no. 1, 1965, 121-126

TOPIC TAGS: thermal dissociation, europium compound, zirconium, reduction 27 18

ABSTRACT: Results from an experimental study of zirconothermic reduction of  $\text{Eu}_2\text{O}_3$  under vacuum are presented. Apparatus described by G. G. Gvelesiani, N. P. Mgaloblishvili, and A. A. Nadiradze (Vysokotemperaturnyye ustanovki dlya issledovaniya vakuumtermicheskikh vosstanovleniy. Trudy Gruzinskogo instituta metallurgii, v. XIV, 1965) was used. Experiments were conducted on briquettes weighing 1.5-2 g and made of mixed powders of C,  $\text{Eu}_2\text{O}_3$ , and Zr. The yield of Zr increased at 1000-1300C (with the increase of the molar ratio of  $\text{Zr}/\text{Eu}_2\text{O}_3$  to 3.75), and then remained constant. The reaction was explosive at the start and slowed down after a few minutes. Raising the temperature increased the rate of reaction at its early stages (see Fig. 1 on the Enclosure). Experimental data were processed mathematically by the method of P. P. Budnikov and A. M. Ginstling

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L 33328-65

ACCESSION NR: AP5005561

(Reaktsii v smesyakh tverdykh veshchestv. Gosstroyizdat, M., 1961) and are presented graphically. It was found that increasing the pressure during the formation of briquettes decreased the yield of Eu and the rate of reaction, while reducing the particle size of Zr from  $1+0.5$  to  $0.25+0.1$  mm had the opposite effect. Lowering the particle size of  $\text{Eu}_2\text{O}_3$  from 2 to 0.05 mm increased the percent yield of Eu from 13 to 85. The reaction was found to involve the solid phases of the ingredients without forming any intermediate products. The optimal pressure was  $10^{-2}$  mm Hg. The process is inhibited by vaporization of Eu and by diffusional retardation. Orig. art. has: 4 figures and 2 tables.

ASSOCIATION: Gruzinskiy institut metallurgii, Tbilisi (Georgian Institute of Metallurgy)

SUBMITTED: 26Oct64

ENCL: 01

SUB CODE: GC

NO REF SOV: 003

OTHER: 000

Card 2/3

L 33328-65

ACCESSION NR: AP5005561

ENCLOSURE: 01

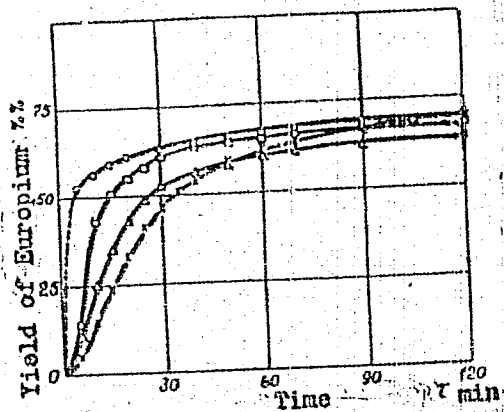


Fig. 1. The influence of temperature and time on the yield of europium: x- 1000C; Δ - 1050C; □ - 1100C; ○ - 1200C

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TSAGARETSHVILI, D.S.H.; GVEBESIANI, G.G.

Rapid method of calculating the high-temperature heat capacities  
of solid inorganic compounds. Soob. AN Gruz. SSR no.3:581-586  
Nr 165. (MIRA 18:5)

I. Gruzinsky Institut metallurgii, Tbilisi. Submitted December 14,  
1964.