

BARANOV, A.S.; KARSANOV, B.Kh.

Effectiveness of sugar-beet seed production without transplanting
beet seedlings. Sakh.prom. 35 no.7:59-61 JI '61. (MIRA 14:7)

1. Korenovskoye opytnoye khozyaystvo Vsesoyuznogo nauchno-issle-
dovatel'skogo instituta sakharnoy svekly. 2. Kubanskiy
sel'skokhozyaystvennyy institut (for Karsanov).
(Sugar beets)

МАТВИЙ, А. П.

Performance experience of the District refresher courses for Military Medical Service Officers. Voenno-meditsinskiy zhurnal, No 1, p 63, 1959.

BAKALOV, A. I.

Performance experience of the District refresher courses for military medical Service Officers. Voenno-meditsinskiy zhurnal, No 1, p 63, 1959.

... ..

Performance experience of the District Refresher course for military and naval
Service Officers. *Voyenno-meditsinskiy zhurnal*, No 1, p 63, 1960.

BARANOV, A. T.

Aluminum sulfonaphthenate frother for cellular concrete
A. T. Baranov. *Izvestiya Vsesoyuznogo Nauchno-Issledovatskogo Instituta Stroytel'stva i Arkhitektury* 1953, 43-53; *Refer. Zhur., Khim.* 1955, No. 16033.
A foam prepd. from an aq. soln. of Na naphthosulfonic acids to which were added $Al_2(SO_4)_3$ and NaOH used in the prepn. of cellular concrete gave body which did not settle out, was of uniform structure, and had small, closed pores. Small addns. of Al sulfonaphthenate frother favorably affected the rate of setting of concrete and its strength. Cellular concrete, thus prepd., compares favorably with cellular concrete made with gum and rosin. M. Hovh.

BARANOV, A. T.

Baranov, A. T. --- "Cellular Concrete on an Alumosulfonaphthonic Foaming Agent." Cand. Tech Sci, Central Sci Res Inst of Industrial Structures (TsNIPS), Moscow 1953. (Referativnyy Zhurnal--Khimiya, No 1, Jan 54)

So; SUM 168, 22 July 1954

BARANOV, Anatoliy Timofeyevich; NEKRASOV, K.D., nauchnyy redaktor; GURVICH,
H.A., redaktor; LYUDKOVSKAYA, H.I., tekhnicheskiy redaktor

[Foam concrete and foam silicates] Penobeton i penosilikat. Moskva,
Gos. izd-vo lit-ry po stroit. materialam, 1956. 79 p. (MLRA 10:1)
(Lightweight concrete) (Silicates)

ROZENFEL'D, L.M.; BARANOV, A.T.

Alumosulfonaphthene compound as a frothing agent for cellular
concretes. Rats. i izobr. predl. v stroi. no.137:24 '56.
(Concrete) (Naphthenes) (MLRA 9:9)

KUDRYASHEV, I.I.; BARANOV, A.T.; ROZENFEL'D, L.M.; BORDYUG, D.Ya.;
LEVIN, M.V.; KALNINA, N.A.; KAN, F.A.; VAS'YANOV, D.P.,
red.; KUZNETSOV, A.I., tekhn. red.

[Technical specifications for manufacturing articles from cellular concrete, foamed fly ash concrete, breeze foamed fly ash silicate, and foamed clinker concrete] Tekhnicheskie usloviia na izgotovlenie izdelii iz avtoklavnykh iacheistykh betonov - penozolobetona, penozolosilikata i penoshlakobetona; proekt. Moskva, T'Sentr. biuro tekhn. informatsii, 1959. 62 p.
(MIRA 15:2)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut novykh stroitel'nykh materialov, otdelki i oborudovaniya zdaniy.
2. Nauchno-issledovatel'skiy institut novykh stroitel'nykh materialov Akademii stroitel'stva i arkhitektury SSSR (for Kudryashev).
3. Nauchno-issledovatel'skiy institut betona i zhelezobetona (for Baranov, Rozenfel'd).
4. Nauchno-issledovatel'skiy institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu Akademii stroitel'stva i arkhitektury SSSR (for Bordyug, D.Ya.).
5. Nauchno-issledovatel'skiy institut promyshlennykh zdaniy i sooruzheniy (for Levin).
6. Zapadno-Sibirskiy filial Akademii stroitel'stva i arkhitektury SSSR (for Kalnina).
7. Ural'skiy filial Akademii stroitel'stva i arkhitektury SSSR (for Kan).

(Lightweight concrete)

.BARANOV, Anatoliy Timofeyevich, kand.tekhn.nauk; BUZHEVICH, Grigoriy
Abramovich, kand.tekhn.nauk; MIRONOV, S.A., prof., red.;
GLEZAROVA, I.L., red.izd-va; EL'KINA, E.M., tekhn.red.

[Fly ash concrete; cellular and dense] Zolobeton; iacheisty
i plotnyi. Pod red. S.A.Mironova. Moskva, Gos.izd-vo lit-ry
po stroit., arkhit. i stroit.materialam, 1960. 222 p.
(MIRA 14:3)

1. Chlen-korrespondent Akademii stroitel'stva i arkhitektury
SSSR (for Mironov).
(Concrete)

BARANOV, A.T., kand.tekhn.nauk; BAKHTIYAROV, K.I., inzh.

Investigating cellular concretes by acaoustical methods. Bet. 1
zhel.-bet. no.10;458-462 0 '60. (MIRA 13:10)
(Lightweight concrete--Testing)
(Ultrasonic waves--Industrial applications)

PHASE I BOOK EXPLOITATION

SOV/5347

Baranov, Anatoliy Timofeyevich, and Grigoriy Abramovich Buzhevich,
Candidates of Technical Sciences

Zolobeton; yacheisty i plotnyy (Cinder Concrete, Porous and Solid)
Moscow, Gosstroyizdat, 1960. 222 p. 5,500 copies printed.

Ed. (Title page): S. A. Mironov, Corresponding Member, Academy of
Construction and Architecture USSR, Professor; Ed. of Publish-
ing House: I. L. Glezarova; Tech. Ed.: E. M. El'kina.

PURPOSE: This book is intended for technical and economic personnel
in construction and related industries.

COVERAGE: The authors generalize the experience gained in the
manufacture and applications of various kind of porous and solid
cinder concretes as well as the results of the investigations they
carried out at the NIIZhB ASiA SSSR (Scientific Research Institute
of Concrete and Reinforced Concrete of the Academy of Construction
and Architecture USSR). The properties of porous and solid cinder

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Cinder Concrete, Porous and Solid

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concrete and of cinders obtained from fuel at electric power stations are discussed in detail. Requirements for materials used in production of cinder concretes are given. The manufacture of large porous cinder concrete structures with and without autoclave treatment is described. Attention is given to the planning and designing of cinder-concrete plants and to their technical and economic indices. The authors thank the personnel of the Laboratory for Porous and Lightweight Concretes and Accelerated Hardening of Concrete of NIIZhB ASiA SSSR. Ch. I was written jointly; A. T. Baranov wrote Chs. II and III; and G. A. Buzhevich, Chs. IV, V, and VI. No personalities are mentioned. There are 81 references: 71 Soviet, 9 English, and 1 Hungarian.

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Ch. I. Materials used in Manufacturing Porous and Solid Cinder Concretes	5
1. [Various kinds of] cinders	5
Classification of cinders	5
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BARANOV, A.T., kand.tekhn.nauk; BAKHTIYAROV, K.I., inzh.

Comparative characteristics of cellular materials. Stroi.
mat. 7 no.7:28-30 J1 '61. (MIRA 14:7)
(Building materials) (Lightweight concrete)

3/081/51,000/003/017/090
B149/B102

AUTHORS: Baranov, A. P., Bukhtiyarov, K. I.

TITLE: The relative characteristics of cellular materials

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 3, 1961, 493. Abstract
Bk567 (Stroit. materialy, no. 7, 1961, 20-30)

TEXT: The characteristics offered represent the absolute volumes of basic components - gas, free water, chemically bound water and dry mix, referred to 1 kg of dry mix. Using the relative characteristics, formulas were developed for calculations of porosity of material, calculations of volume weights of basic components of cellular mixes and calculations of the use of a porosity-forming agent. Examples of calculations are given, in which the suggested formulas are used. Abstracter's note: Complete translation.

Card 1/1

BARANOV, A.T.

FRENKEL, I.M., kand. tekhn. nauk; MIRONOV, S.A., doktor tekhn. nauk, prof.; BARANOV, A.T., kand. tekhn. nauk; BUZHEVICH, G.A., kand. tekhn. nauk; MIKHAYLOV, K.V., kand. tekhn. nauk; MULIN, N.M., kand. tekhn. nauk; KHAYDUKOV, G.K., kand. tekhn. nauk; KORNEV, N.A., kand. tekhn.nauk; TESLER, P.A., kand. tekhn. nauk; BERDICHEVSKIY, G.I., kand. tekhn. nauk; VASIL'YEV, A.P., kand. tekhn. nauk; LYUDKOVSKIY, I.G., kand. tekhn. nauk; SVETOV, A.A., kand. tekhn. nauk; CHINENKOV, Yu.V., kand. tekhn. nauk; BELOBROVYY, K., inzh.; KLEVTSOV, V.A., inzh.; DOBROMYSLOV, N.S., arkh.; DESOV, A.Ye., doktor tekhn. nauk, prof.; LITVER, S.L., kand. tekhn. nauk; PISHCHIK, M.A., inzh.; SKLYAR, B L., inzh.; POPOV, A.P., kand. tekhn. nauk; NEKRASOV, K.D., doktor tekhn. nauk, prof.; MILOVANOV, A.F., kand. tekhn. nauk; TAL', K.E., kand. tekhn. nauk; KALATUKOV, B.A., kand. tekhn. nauk; KARTASHOV, K.N., red.; MAKARICHEV, V.V., kand. tekhn. nauk, red.; YAKUSHEV, A.A., inzh., nauchnyy red.; BEGA, B.A., red. izd-va; NAUMOVA, G.D., tekhn. red.

[Reinforced concrete products; present state and prospects for development] Zhelezobetonnye konstruksii; sostoianie i perspektivy razvitiia. Pod obshchei red. K.N.Kartashova i V.V.Makaricheva. Moskva, Gosstroizdat, 1962. 279 p.

(MIRA 15:8)

(Continued on next card)

FRENKEL', I.M.---(continued) Card 2.

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut betona i zhelezobetona, Perovo. 2. Chlen-korrespondent Akademii stroitel'stva i arkhitektury SSSR (for Kartashov). 3. Chlen-korrespondent Akademii stroitel'stva i arkhitektury SSSR (for Mironov). 4. Gosudarstvennyy institut tipovogo proyektirovaniya i tekhnicheskikh issledovaniy (for Berdichevskiy, Vasil'yev, Lyudkovskiy, Svetov, Chinenkov, Belobrovyy, Klevtsov, Dobromyslov). 4. Vsesoyuznyy gosudarstvennyy projektno-konstruktorskiy institut (for Desov, Litver, Pishchik).

(Precast concrete)

BARANOV, A.T., kand.tekhn.nauk; BAKHTIYAROV, K.I., inzh.; BOBROV, O.D.,
inzh.

The strength and durability of cellular concretes. Bet.i zhel.-
bet. 8 no.9:397-402 S '62. (MIRA 15:12)
(Lightweight concrete)

BARANOV, A.T., kand. tekhn. nauk; BAKHTIYAROV, K.I., inzh.

Influence of basic technological factors on the properties
of cellular concrete. Trudy NIIZHB no.32:228-241 '63.
(MIRA 17:1)

MIRONOV, S.A.; BARANOV, A.T.; BOBROV, O.D.

Theoretical requirements of the technology of production of heat-insulating gas concretes. Inzh.-fiz. zhur. 7 no.1:117-121 Ja'64.

(MIRA 17:2)

1. Institut betona i zhelezobetona, Moskva.

BARANOV, A.T., polkovnik meditsinskoy sluzhby

Improvement of the military physician. Voen.-med. zhur.
no.8:19-21 '62. (MIRA 16:9)
(MEDICINE, MILITARY—STUDY AND TEACHING)

- **AUTHORS:** Baranov, A. V., Liberzon, E. A.,
Starobinskaya, R. Kh. SOV/156-58-4-46/49
- TITLE:** Partial Pressure of the Nitrogen Oxides in the System
 $\text{HNO}_3\text{-H}_2\text{SO}_4\text{-HNO}_2\text{-H}_2\text{O}$ (Partsiial'noye davleniye okislov azota
nad sistemoy $\text{HNO}_3\text{-H}_2\text{SO}_4\text{-HNO}_2\text{-H}_2\text{O}$)
- PERIODICAL:** Nauchnyye doklady vysshoy shkoly. Khimiya i khimicheskaya
tekhnologiya, 1956, Nr 4, pp 789-793 (USSR)
- ABSTRACT:** The partial pressure of nitrogen oxides in the system
 $\text{HNO}_3\text{-H}_2\text{SO}_4\text{-HNO}_2\text{-H}_2\text{O}$ in dependence on the composition of
the liquid phase and temperature was investigated. The
investigations were carried out according to the dynamic and
static methods. With rising temperature the partial pressure
of the nitrogen oxides increases. The dependence of the
partial pressure of nitrogen oxides on the content of nitric
acid in the mixture is expressed by the following equation:
- $$P_{\text{total}} = A_3 C^a_{\text{HNO}_3}$$
 The dependence of the partial pressure on

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Partial Pressure of the Nitrogen Oxides
in the System $\text{HNO}_3\text{-H}_2\text{SO}_4\text{-HNO}_2\text{-H}_2\text{O}$

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the concentration of sulfuric acid is calculated according to the following equation:

$P_{\text{total}} = A_4 C^{-12}$
 H_2SO_4 . The concentration of sulfuric acid exerts considerable influence upon the partial pressure of nitrogen oxides; it was investigated at 20, 30, 40, 50, 60 and 70° C. The family of curves is given as follows:

$P_{\text{total}} = A_5 C^{-9}$
 H_2SO_4 . The results prove that the absorption of nitrogen oxides from nitrous gases is complete at a temperature of 30-40° C and a sulfuric acid concentration of 70%. A possibility of obtaining concentrated nitric acid from nitrous gases was described. There are 4 figures and 1 Soviet reference.

ASSOCIATION: Kafedra tekhnologii neorganicheskikh veshchestv
Dnepropetrovskogo khimiko-tekhnologicheskogo instituta
(Chair of Technology of Inorganic Substances at the

Card 2/3

Partial Pressure of the Nitrogen Oxides
in the System $\text{HNO}_3\text{-H}_2\text{SO}_4\text{-HNOSO}_4\text{-H}_2\text{O}$

SOV/156-58-4-46/49

(Dnepropetrovsk Institute of Chemical Technology)

SUBMITTED: May 23, 1958

Card 3/3

BARANOV, A. V.

"Economy of Metal in the Malleable Cast Iron Foundry of the Stalin Auto Works," Lit. proiz., No.5, 1952

2106 Baranov, A. V.

Mekhanizatsiya Protsessa V Tochogo LIT' Ya Potochno--Massovom Proizvodstve.
M., 1954. 16 s. s Ill. 25 sm. (Akad. Nauk SSSP In-T Texn.-Ekon Informatsnn.
Pernodnch. Informatsiya. Tema No 1) 1.500 EKZ. B. Ts. - Na Obl. AVt. Ne
Ukazan
(54-56470)

621.74.04

BARANOV, A.V.; IVANOV, V.N.; OSOKIN, N.M.

Mechanizing casting processes according to cast patterns.

Lit. proizv. no.6:9-15 Je '55.

(Die casting)

(MIRA 8:8)

IVANOV, V.N.; BARANOV, A.V.

The technological properties of parts made by means of
precision casting. Avt. i trakt. prom. no. 2:34-39 F
'56. (MLRA 9:6)

(Precision casting)

BARANOV, A.V.; OKHRAMOVICH, A.Ye.; FASHCHENKO, P.A.

Adsorption of nitrogen oxides by activated carbon. Trudy IKhFI
no.6:53-65 '58. (MIRA 13:11)
(Carbon, Activated) (Nitrogen oxide)

BARANOV, A.V.

Physicochemical principles of the formation of nitric acid.

Report No.4: Density of spraying. Trudy IKHTI no.6:82-89

158.

(MIRA 13:11)

(Nitric acid)

BARANOV, A.V.

Physicochemical principles of the preparation of nitric acid.
Report No.5: Effect of the concentration of nitrogen oxides.
Trudy DKHTI no.6:90-98 '58. (MIRA 13:11)
(Nitric acid) (Nitrogen oxides)

BARANOV, A.V.; KRECHINOVA, T.A.

Comparative evaluation of the methods of processing nitrogen
oxides into nitric acid. Report No.1: Kinetics of absorption
by bubbling. Trudy IKHTI no.6:99-109 '58. (MIRA 13:11)
(Nitric acid) (Nitrogen oxides) (Absorption)

PHASE I BOOK EXPLOITATION

SOV/5976

Shklennik, Ya. I., A. V. Baranov, V. N. Ivanov, S. A. Kazennov, B. S. Kurchman,
N. N. Lyashchenko, R. A. Marulidi, G. K. Militsin, V. A. Ozerov, A. I.
Sitnichenko, M. Ya. Telis, and M. L. Khenkin

Lit'ye po vyplavlyayemykh modelyam (Investment Casting) [Leningrad] Mashgiz
[1961] 455 p. (Series: Inzhenernyye monografii po liteynomu proizvodstvu)
Errata slip inserted. 8000 copies printed.

Eds. (Title page): Ya. I. Shklennik and V. A. Ozerova; Reviewers: N. D. Titov,
Candidate of Technical Sciences, and A. I. Klauzen, Engineer; Ed.: Yu. L. Markiz,
Engineer; Tech. Eds.: A. Ya. Tikhonov, Z. I. Chernova and V. D. El'kind; Man-
aging Ed. for Literature on Hot-Working of Metals: S. Ya. Golovin, Engineer.

PURPOSE: This book is intended for engineering and technical personnel in the
metalworking industry and for scientific research workers. It may also be used
by students specializing in foundry work.

COVERAGE: The book reviews the most important problems in investment casting.
Among the topics considered are the following: mechanical properties of castings;

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Investment Casting

SOV/5976

the manufacture of castings; precision surface quality; materials and methods of making patterns and molds; the melting of metals and alloys; pouring, cleaning, heat treatment, and inspection of castings; economic aspects in the production of castings; organization of production; and modern concepts relating to processes taking place in the manufacture of investment castings. No personalities are mentioned. There are 180 references, mostly Soviet.

TABLE OF CONTENTS:

Introduction	5
Ch. I. Designing Cast Parts	
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Mechanical properties of cast metal	16
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18 8300

22696
S/128/61/000/003/006/008
A054/A127

AUTHORS: Ivanov, V. N., and Baranov, A. V.

TITLE: Scale formation and decarburization of investment castings

PERIODICAL: Liteynoye proizvodstvo, no. 3, 1961, 19 - 21

TEXT: One of the advantages of investment casting is the high accuracy and smooth surface of the products. Another feature of this method is that the metal is poured in a glowing mold and cooled down slowly. During this cooling, the surface of the casting oxidizes and the metal is decarburized. The surface layer formed during this process, consists of pure ferrite and has only a small carbon content affecting the mechanical properties of the casting: the tendency to form cracks during hardening, increases, the resistance against contact loads and the lower aging limit decreases. The tests carried out at the Avtozavod im. I. A. Likhacheva (Autofactory im. I. A. Likhachev), based on the studies of O. V. Stupishina, (Liteynoye proizvodstvo, 1959, no. 5) revealed that the main cause of oxidation and decarburization of the metal is the reaction between the metal-components and ambient gases, i. e. air. In the lower part of the mold the

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Scale formation and decarburization of...

castings are oxidized and decarburized to a smaller extent, than in the upper part, where air can enter more freely. The oxidation of the metal results in scale formation (containing various iron oxides). The diffusion of oxygen from the air slows down and the metal temperature decreases at the same rate as the increase in scale formation. The scale layer can become twice as thick as the oxidized metal. Simultaneously with oxidation, i. e. scale formation the decarburization of the metal takes place, which is a reversed diffusion involving decarburizing gases and ferrous carbide. Decarburization depends on the temperature of the mold and the metal and on the carbon content of the latter, (Table 1). In order to reduce oxidation and decarburization in investment castings, mainly three methods are recommended: 1) establishing a neutral or a slightly reducing atmosphere around the metal during pouring and cooling; 2) lowering the temperature during pouring and the temperature of the mold; 3) accelerated cooling of castings. 1) The suitable atmosphere in the mold can be obtained by introducing spent or fresh carburizing agents into the dry filling; they usually contain carbon-sodium or pulverous coal and saw dust. However, it is very difficult to find the most suitable carburizing agents. In literature several kinds of

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Scale formation and decarburization of...

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carburizing agents are recommended, in quantities of 3 - 15%. In spite of these difficulties, the creation of a protective atmosphere in the mold by introducing a carburizing agent so far seems the most efficient measure against oxidation and decarburization of the casting. When carborundum or boron oxide molds are used for casting, no decarburized layer can be observed, as these materials themselves develop an atmosphere similar to that produced by the carburizers. 2) The reduction of temperature during pouring is only possible when the metal is sufficiently over-heated. However, in investment casting the decrease in temperature would affect the casting process. Therefore, lowering of the temperature of the mold is only a measure to reduce but not to eliminate oxidation and decarburization of the metal. It may be effectively applied in casting of thick-walled products. 3) The effect of rapid cooling on oxidation and decarburization processes was studied by removing the castings from the molds after 10, 20, 60 minutes and 24 hours after pouring. After the castings were shaken out they dropped from 1 m onto a metal plate. The tabulated results show that decarburization cannot be entirely eliminated. After heat treatment in furnaces with a protective atmosphere, the scale layer has to be removed by machining. Both the thickness of the decarburized layer and the scale layer can be re-

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Scale formation and decarburization of ...

duced by sharply increasing the cooling rate in water. This is only possible if tests show that the process has no adverse effect on crack formation and warping. The microstructure of water-cooled castings after hardening must be improved by annealing or normalizing. There are 5 figures, 2 tables and 3 Soviet-bloc references. ✓

Table 1:

Temperature of the mold, °C	Thickness of casting, mm	Total thickness of decarburized layer on both sides, mm	C-content in the metal chip obtained when boring the casting, %
900	3.0	0.35	0.41
20	3.0	0.15	0.43

Card 4/5

BARANOV, A.V.; KANDIDOV, V.P.; ORDANOVICH, A.Ye.

Electronic modeling of transverse vibrations of rods in the presence of axial forces. Vest. Mosk. un. Ser. 3: Fiz., astron. 16 no.3:43-51 My-Je '61. MIRA 14:7)

1. Kafedra obshchey fiziki dlya mekhmata Moskovskogo gosudarstvennogo universiteta.

(Elastic rods and wires--Vibration)
(Oscillations--Electromechanical analogies)

L 02309-67 EWT(i)

ACC NR: AR6016564

SOURCE CODE: UR/0196/65/000/012/0007/0001

AUTHOR: Baranov, A. V.

TITLE: Investigation of pulse prebreakdown currents in solid dielectrics

SOURCE: Ref. zh. Elektrotehnika i energetika, Abs. 12B42

REF SOURCE: Sb. Probov dielektrikov i poluprovodnikov. M.-L., Energiya, 1968, 127-130

TOPIC TAGS: dielectric breakdown, electronic measurement, space charge, electric current, field emission

ABSTRACT: Prebreakdown currents are measured in KBr crystals ($E=10$ v/cm, thickness of the specimens 3-4 and 10 μ). The measurements were made at identical voltage pulses with a front of 0.5 μ sec. A description is given of the methods used for preparation of the specimens and for measuring pulse currents of the order of 10^{-6} - 10^{-8} a. The amplitude of the current pulses decreases with an increase in the number of voltage pulses, which is explained by the formation of a negative space charge in the cathode region. Prebreakdown currents reach 10^{-4} - 10^{-6} a/cm² when the current density in the specimen reaches 325 ma/cm². The amplitude of the current increases with dielectric thickness due to impact ionization by electrons. The

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UDC: 621.315.61

L 02309-67

ACC NR:

AR6016564

source of initial electrons is field emission. 3 illustrations, bibliography of 8 titles. A. Vorob'yev. [Translation of abstract]

SUB CODE: 09

Card

2/2

tdh

BAIKOV, A.V.; KUREV, V.G.; CHEYTSOVA, I.I.

Solution-vapor equilibrium in the system nitric acid - water -
cadmium nitrate. Zhur. prikl. khim. 37 no.6:1363-1365 Je 1974.
(MIRA 18:3)

1. Sibirskiy tekhnologicheskii institut.

BARANOV, A.V.

Elements of the theory of systems with distributed connections.
Vest. Mosk. un. Ser. 3: Fiz., astron. 20 no.5:28-37 S-0 '65.

(MIRA 18:11)

1. Kafedra obshchey fiziki dlya mekhaniko-matematicheskogo
fakul'teta Moskovskogo universiteta. Submitted April 21,
1964.

L 8562-66 EWT(1)/EWT(m)/EWP(b)/EWP(t) IJP(c) GG/JD

ACCESSION NR: AP5021187

UR/0139/65/000/004/0179/0181.

AUTHOR: ^{44, 55} Baranov, A. V.; ^{44, 55} Vorob'yev, G. A.

TITLE: Investigation of pulsed currents in KCl and KBr crystals in prebreakdown fields

SOURCE: IVUZ. Fizika, no. 4, 1965, 179-181

TOPIC TAGS: potassium chloride, potassium bromide, dielectric breakdown, ionic crystal, space charge, electron recombination

ABSTRACT: Prebreakdown currents in thin ionic crystals are investigated. A setup for the measurement of pulsed currents in solid dielectrics was used. Single pulses of rectangular form were used with a rise time of 5×10^{-7} sec and amplitudes up to 3 kv. The capacitive currents were cancelled out and the active current passing through the dielectric was measured with a broadband (USH-10) amplifier and a dual beam oscillograph (OK-17M).^{21, 44, 55} KCl and KBr single crystals 5--10 μ thick were investigated. The currents were varied in fields of 10^6 -- 3×10^8 v/cm. It was observed that the current pulses passing through the KCl and KBr crystals have a front which is less steep and has a faster fall-off than the pulses of the applied voltage. The change in the current during the action of the pulse is re-

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ACCESSION NR: AP5021187

lated to the formation of a positive space charge in the cathode region and to the recombination of electrons injected from the cathode into the dielectric with excess positive charges. Orig. art. has: 3 figures. 3

ASSOCIATION: Tomskiy politekhnicheskiy institut imeni S. M. Kirova (Tomsk Poly-technic Institute) 44, 55

SUBMITTED: 13Mar64

ENCL: 00

SUB CODE: SS, EE

NR REF SOV: 008

OTHER: 000

Card 2/2

L 6333-66 EWT(1)/EPA(s)-2 IJP(c) GG

ACCESSION NR: AP5019875

UR/0181/65/007/008/2523/2524

AUTHOR: ^{44, 55} Baranov, A. V.; ^{44, 55} Nekrasova, I. G.; ^{44, 55} Dimova, N. I.

TITLE: Concerning the investigation of pulsed breakdown of solid dielectrics ⁶⁶

SOURCE: Fizika tverdogo tela, v. 7, no. 8, 1965, 2523-2524

TOPIC TAGS: ^{21, 44, 55} dielectric breakdown, field emission, electric insulator, dielectric strength, electric field, potassium chloride

ABSTRACT: The purpose of the investigation was to check on the theoretical prediction that, owing to the multi-streamer mechanism of breakdown, a thin dielectric (thinner than 20 μ) breaks down essentially because of processes occurring on the cathode and its breakdown depends essentially on the field emission current from the cathode. Furthermore, the experimentally observed increase in electric strength with decreasing thickness makes it possible to obtain strong electric fields in thin dielectrics without breakdown, and by the same token, obtain large field emission and impact-ionization currents. The latter was experimentally confirmed by the author elsewhere (Probay dielektrikov i poluprovodnikov. Sb. dokl. IV Mezhbuz. konf. po proboyu, str. 129. Izd. "Energiya," 1964). To check on this assumption, the authors investigated the dependence of the current amplitude and

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0902 0024

L 6333-66
ACCESSION NR: AP5019875

dielectric strength on the time of application of the voltage, using samples cut from a single KCl crystal by a procedure described by G. Vorobeychikov et al. (PTE v. 5, 198, 1961). Breakdown was produced by a single-pulse voltage with different rise times. The duration of the voltage was recorded with an oscilloscope. The results show that the current density preceding the breakdown decreases monotonically with increasing voltage time, and the dielectric strength increases with the voltage time and has a maximum near 1 μ sec and then decreases. This behavior is attributed to the formation of negative space charge. Orig. art. has: 2 figures.

ASSOCIATION: Tomskiy politekhnicheskoy institut im. S. M. Kirova (Tomsk Polytechnic Institute)

SUBMITTED: 11Mar65

ENCL: 00

SUB CODE: SS, EC ^{44, 55}

NR REF SOV: 011

OTHER: 000

nw
Card 2/2

BARANOV, A.V.; VOZROB'YEV, G.A.

Study of autoelectronic emission currents and shock ionization
of alkali halide crystals. Radiotekh. i elektron. 10 no.11:
2072-2074 N '65. (MIRA 18:11)

BARANOV, A.V.

Elements of the theory of coupled systems. Vest. Mosk.un. Ser.
3: Fiz., astron. 20 no.4:25-35 J1-Ag '65.

(MIRA 18:12)

1. Kafedra obshchey fiziki dlya mekhaniko-matematicheskogo
fakul'teta Moskovskogo gosudarstvennogo universiteta. Submitted
April 21, 1964.

L 33288-66 (12) (12)(e) 06

ACC NR: APPROVED

SOURCE CODE: UR/0058/65/000/011/105/10551

AUTHOR: Baranov, A. V.

TITLE: Investigation of pulsed pre-breakdown currents in solid dielectrics

SOURCE: Ref. Zh. SSSR, Abs. 11E439

REF SOURCE: Sb. Trobey dielektrikov i poluprovodnikov. M.-L., Energiya, 1964, 127-130

TOPIC TAGS: dielectric breakdown, dielectric strength, space charge

ABSTRACT: Investigations were made with single voltage pulses to avoid formation of space charge that would limit the current through the dielectric. A circuit is developed, which makes it possible to measure currents of $\sim 10^{-6}$ - 10^{-8} a (RZhFiz, 1961, 3E171). KBr crystals were investigated in fields $(1 - 4) \times 10^6$ v/cm, at room temperature for dielectrics 3 - 4 and 10 μ thick. An increase in field intensity from 1.2×10^6 to 1.7×10^6 v/cm increased the current density by one order of magnitude for dielectrics 10 μ thick. [Translation of abstract]

SUB CODE: 20

Card 1/1

L 45561-66 INT(m)/EXT(t)/ETI IJP(c) JD/WJ/JW

ACC NR: AP6025464

SOURCE CODE: UR/0080/66/039/007/1642/1644

AUTHOR: Baranov, A. V.; Karev, V. G. 35ORG: Siberian Institute of Technology (Sibirskiy tekhnologicheskii institut) 15TITLE: Concentrating nitric acid by means of an aqueous solution of zinc nitrate

SOURCE: Zhurnal prikladnoy khimii, v. 39, no. 7, 1966, 1642-1644

TOPIC TAGS: nitric acid, zinc compound, phase diagram, magnesium compound, *solution concentration*

ABSTRACT: Phase diagrams of the $\text{HNO}_3\text{-H}_2\text{O-Zn(NO}_3)_2$ and $\text{HNO}_3\text{-H}_2\text{O-Mg(NO}_3)_2$ were studied at 760 mm Hg in an attempt to develop a new method of concentrating nitric acid. It was found that the 73% zinc nitrate solution begins to crystallize at 112°C while the 83% magnesium nitrate solution crystallizes at 54°C. The 73% zinc nitrate solution is about five times less viscose than the 83% magnesium nitrate solution. Therefore, the 73% zinc nitrate solution was found to be more suitable as a concentrating agent for nitric acid than the 83% magnesium nitrate solution, despite the fact that for an equivalent nitrate concentration the $\text{Mg(NO}_3)_2$ solution has greater dehydrating power. It was found that by mixing 55% nitric acid with 83-91% zinc nitrate solution in a 6:1 ratio, a mixture is generated which, upon distillation, is capable of yielding 96-98% nitric acid. The method based on zinc nitrate solution is recommended for use on a commercial scale. Orig. art. has: 2 figures.

SUB CODE: 07/

SUBM DATE: 19Nov64/

ORIG REF: 005/

OTH REF: 003

Card 1/1 fv

UDC: 661.56

S/271/63/000/002/030/030
A060/A126

AUTHORS: Baranov, A. V., Kandidov, V. P., Ordanovich, A. Ye.

TITLE: Investigation of the elastic oscillations of an aircraft using an electronic simulator

PERIODICAL: Referativnyy zhurnal, Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, no. 2, 1963, 75, abstract 2B401 (Dokl. 4-y Mezhvuz. konferentsii po primeneniyu fiz. i matem. modelirovaniya v razlichn. otraslyakh tekhn. Sb. 3. Moscow, 1962, 141 - 151)

TEXT: The main difficulty in calculating the oscillations of a complex aircraft structure consists in the fact that it possesses an infinite number of degrees of freedom and may only be conventionally and approximately reduced to a system with a finite number of degrees of freedom. The use of simulation meets with technical difficulties associated with an increase in the quantity of equipment. However, to a certain degree simulation is more expedient as compared to the complexity of numerical computations. The article considers the simulation of characteristic elastic oscillations of an aircraft. The problem is re-

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Investigation of the elastic oscillations of an...

S/271/63/000/002/030/030
A060/A126

duced to the analysis of a system with 33 degrees of freedom. Three stages are distinguished in the process of calculating the oscillations: 1) the selection of the scheme of analysis; 2) the setting up of the equation for the selected model; 3) the solution of the equations obtained. An expanded block diagram for the electronic simulator corresponding to the obtained system of equations is shown. The total number of amplifiers used in the simulator is 107; 36 of them are integrators. The simulator is a special-purpose model and is designed for finding the steady-state solutions of linear differential equations. The simulator operates in the audio-frequency range. This has made it possible to effectively reduce the drift and to increase the work of the operator as a result of increasing the time scale by a factor of more than 10. Investigation of oscillations on the simulator was carried out by the resonance method. Here the assumption was used that frequency and form of characteristic oscillations at resonance differ little from frequency and form of characteristic oscillations. The resonance method has made it possible to apply the method of eliminating degenerate motion of the entire system as a whole in the investigation of oscillations of the free aircraft. The model of the aircraft is fixed with the aid of a resonance system tuned to the frequency of the external force. In that case,

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Investigation of the elastic oscillations of an...

S/271/63/000/002/030/030
A060/A126

when the quality of the "suspender" system is sufficiently high, the interaction between the "suspender" and the model at the given frequency is practically absent and the behaviour of the model corresponds to the free aircraft. At other frequencies the "suspender" acts sufficiently strong, in particular, completely eliminating degenerate motions. The system is characterized by the fact that the force of interaction between the suspension system and the aircraft can be continuously monitored in the electronic simulator by an oscillograph. The latter makes it possible to attain a minimum interaction between the investigated system and the system of "suspension at a given frequency". The effectiveness of applying electronic simulators for the analysis of oscillations of complex aircraft structures is noted. The simulation method is particularly valuable at the design stage when the important thing is not so much the precise values of the frequencies and forms of the oscillations (the simulator precision is 2.5%), as the functional dependence of frequencies and forms upon those structural parameters which can be varied. There are 2 figures and 9 references.

Z. G.

[Abstracter's note: Complete translation]

Card 3/3

S/271/63/000/002/028/030
A060/A126

AUTHORS: Baranov, A. V., Kandidov, V. P., Ordanovich, A. Ye.

TITLE: Use of electronic simulation in investigating transverse oscillations of a rod with axial loads

PERIODICAL: Referativnyy zhurnal, Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, no. 2, 1963, 68, abstract 2B361 (Dokl. 4-y Mezhvuz. konferentsii po primeneniyu fiz. i matem. modelirovaniya v razlichn. otraslyakh tekhn. Sb. 3, Moscow, 1962, 153 - 161)

TEXT: It is pointed out that the study of transverse oscillations is required in the investigation of dynamic strength of such structures as towers, masts, helicopter blades, and turbine blades under the action of centrifugal forces, rockets moving under acceleration. Using an electronic simulator model, the transverse oscillations of a rocket moving under acceleration with a rigid accelerator in the tail were widely investigated. In the simulation of such problems the actual system in accordance with its oscillation properties is replaced by some discrete system with a finite number of degrees of freedom. The

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S/271/63/000/002/028/030
AC60/A126

system of equations describing the motion of the discrete system is solved on the electronic simulator. The body of a contemporary rocket having considerable extension was replaced by a system of levers, springs and concentrated masses. The accelerator was considered as an absolutely rigid body with mass M_y and moment of inertia I_y . It was assumed that the force of the accelerator does not vary its direction under oscillation of the rocket and acts always strictly in the direction of flight. A separate cell $n + \frac{1}{2}$ of the discrete system is considered. Taking into account the actions of the neglected forces to the right and left of the cells and also the rise of moments as result of deformation of the springs, one constructs a system of equations of small oscillations for the $n + \frac{1}{2}$ -th element. By the use of geometrical relationships one simplifies the system of original equations. By combining in pairs the equations holding for all the $n = 1, \dots, N$, where N is the number of cells, one writes the equation of motion of the mass m_n . At the rocket tail the boundary conditions will be the equations of motion of the rigid accelerator. From the equations obtained one sets up the structural diagram of the electronic simulator. The simulator consists of seven cells. It is indicated that electronic simulation of a rocket re-

Card 2/3

Use of electronic simulation in...

S/271/63/000/002/028/030
A060/A126

presenting an oscillating system "freely floating in space" is associated with certain difficulties. The absence of connections with fixed points makes it possible to displace itself and rotate without deformations. In the simulator motions arising from noise take the operational amplifiers outside their operational range and thus disturb their normal operation. To eliminate this, a special "fixing" was elaborated (at the mass center of the system). Equations are cited which have the form of a component of the acting force, for example, equations for elimination of progressive motion; it is indicated that in the simulator set-up the forces for the various motions were formed separately by means of ordinary summers. Operating experience with the simulator has shown that it is sufficient to specify the forces at a few points of the system. In the work use was made of a special-purpose simulator set-up. Its special feature is the raising of the working range up to audio-frequencies. As test problems the simulator was used to investigate the oscillations of a hinge-attached and cantilever-attached homogeneous rod with axial loads. There are 3 figures.

Z. G.

[Abstracter's note: Complete translation]

Card 3/3

BARANOV, A.V.; KAREV, V.G.

Liquid - vapor equilibrium in the system nitric acid -
water - zinc nitrate. Zhur. prikl. khim. 36 no.10:2302-
2305 0 '63. (MIRA 17:1)

1. Sibirskiy tekhnologicheskii institut.

BARANOV, A.V., VOROB'YEV, G.A.

Pulse-type currents in KCl and KBr crystals in pre-breakdown fields. Izv. vys. ucheb. zav., fiz. B no.4:173-181 '66.

(MIPO 18-12)

1. Tomskiy politekhnicheskoy institut imeni S.M. Kirova,
Submitted March 13, 1966.

ACCESSION NR: AP4045715

S/0208/64/004/005/0920/0926

AUTHOR: Baranov, A. V. (Moscow)

TITLE: New method for solving differential equations of generalized Sturm-Liouville type

SOURCE: Zhurnal vyshisitel'noy matematiki i matematicheskoy fiziki, v. 4, no. 5, 1964, 920-926

TOPIC TAGS: numerical solution, differential equation, numerical analysis

ABSTRACT: The author constructs a sequence of upper and lower bounds for the solution of an equation of the type

$$f_n(x) \frac{d}{dx} f_{n-1}(x) \frac{d}{dx} \dots f_1(x) \frac{dy}{dx} - y(x) = f(x) \quad (1)$$

when certain inequalities can be satisfied. He establishes these inequalities under certain circumstances relating to the sign-constancy of the functions f_j . He treats the homogeneous case in detail and studies

$$y' + \lambda x^\alpha y = 0 \quad (2)$$

as an example. "The author expresses his gratitude to S. P. Stralkov and V. P. Card 1/2

ACCESSION NR: AP4045715

Kandidov for their help in working on this article." Orig. art. has: 45 formulas.

ASSOCIATION: none

SUBMITTED: 28Nov62

ENCL: 00

SUB CODE: MA

NO REF SOV: 002

OTHER: 000

Card 2/2

L 19420-65 EWT(m)/EPF(n)-2/EWP(t)/EWP(b) Pu-1 IJP(c) JD/JG

ACCESSION NR: AR4048179

S/0081/64/000/009/L007/L007

SOURCE: Ref. zh. Khimiya, Abs. 9L48

AUTHOR: Baranov, A. V., Liberzon, E. A., Timoshenko, N. Ye., Khmelinia, T. P.

TITLE: The concentration of dilute nitric acid in the presence of calcium nitrate

CITED SOURCE: Tr. Sibirsk. tekhnol. in-ta, sb. 36, 1963, 45-49

TOPIC TAGS: nitric acid production, nitric acid concentration, calcium nitrate, azeotropic mixture

TRANSLATION: The authors studied the concentration of HNO_3 in the vapors above mixtures of $\text{HNO}_3 + \text{H}_2\text{O} + \text{Ca}(\text{NO}_3)_2$ and found that concentrated HNO_3 is obtained in the presence of $\text{Ca}(\text{NO}_3)_2$. Diagrams for determining the concentration of HNO_3 in the vapors and the boiling point of mixtures of $\text{HNO}_3 + \text{H}_2\text{O} + \text{Ca}(\text{NO}_3)_2$ in relation to their composition were constructed. These showed that this system has an azeotropic point near 68.4%, so that the spent solution will contain approximately 70% $\text{Ca}(\text{NO}_3)_2$. Authors' summary

Cord 1/2

I 19420-65

ACCESSION NR: AR4048179

SUB CODE: IC

ENCL: 00

Card 2/2

BARANOV, A.V.; KAREV, V.G.; ALIPOVA, Ye.P.

Vapor-liquid equilibrium in the system consisting of the aqueous solutions of nitric acid and a mixture of magnesium and zinc nitrates. Zhur. VKHO 9 no. 2:233 '64. (MIRA 17:9)

1. Sibirskiy tekhnologicheskii institut.

BARANOV, A.V. (Moskva)

New method for solving differential equation of the type

$$f_n(x) \frac{d}{dx} f_{n-1}(x) \frac{d}{dx} \dots f_1(x) \frac{dy}{dx} = y(x) \pm f(x).$$

Zhur. vych. mat. i mat. fiz. 4 no.5:920-926 S-O '64.

(MIRA 17:12)

VAVILOV, Mikhail Aleksandrovich; BARANOV, A.Ya., red.; BODANOVA,
A.P., tekhn. red.

[Manual for the dump truck driver] Pamiatka shoferu avtomobilia-samosvala. Izd.2., ispr. Moskva, Avtotransizdat, 1963. 58 p. (MIRA 16:8)
(Dump trucks)

KULIKOV, Aleksandr Aleksandrovich, kand. tekhn. nauk; BANNIKOV, S.P.,
prof., red.; BARANOV, A.Ya., red.; GALAKTIONOVA, Ye.N.,
tekhn. red.

[Laboratory work on the electrical equipment of automobiles
and tractors] Laboratornye raboty po elektrooborudovaniyu
avtomobilei i traktorov. Pod red. S.P.Bannikova. Moskva,
Avtotransizdat, 1963. 68 p. (MIRA 16:8)

(Automobiles--Electric equipment)

(Tractors--Electric equipment)

TUPITSYN, Petr Sergeevich, kand. tekhn. nauk; BARANOV, A.Ya., red.;
GALAKTIONOVA, Ye.N., tekhn. red.

[Checking the technical condition of the cylinder-piston group and valves of motor-vehicle engines without dismantling] Kontrol' tekhnicheskogo sostoiania tsilindroporshnevoi gruppy i klapanov avtomobil'nykh dvigatelei bez razborki. Moskva, Avtotransizdat, 1963. 25 p.

(MIRA 16:9)

(Motor vehicles--Engines)

BOCHKOV, Viktor Maksimovich; BARANOV, A.Ya., red.; GALAKTIONOVA,
Ye.N., tekhn. red.

[Maintenance of fuel systems of the IamZ-236 and IamZ-238
engines] Tekhnicheskoe obsluzhivanie toplivnoi apparatury
dvigatelei IamZ-236 i IamZ-238. Moskva, Avtotransizdat,
1963. 36 p. (MIRA 17:3)

FOMIN, A.V., kand. tekhn. nauk; MANUSADZHYANTS, O.I., inzh.;
SHESTUKHIN, V.I., inzh.; SHCHERBAKOV, N.N., inzh.;
BARANOV, A.Ya., red.; BODANOVA, A.P., tekhn. red.

[Operational characteristics of motor vehicle diesel
engines] Ekspluatatsionnye kachestva avtomobil'nykh dizel'-
nykh dvigatelei. Moskva, Avtotransizdat. No.2. 1963. 42 p.
(MIRA 17:1)

ZUBAREV, Aleksey Afanas'yevich; BARANOV, A.Ya., red.; GALAKTICNOVA,
Ye.N., tekhn. red.

[Manual for storage battery maintenance personnel] Pamiatka
akkumulatorshchiku. Moskva, Avtoransizdat, 1963. 42 p.
(MIRA 16:6)

(Storage batteries--Safety measures)

GERCNIMUS, Boris L'vovich; SOROKINA, Kapitolina Mikhaylovna;
BARANOV, A.Ya., red.; BODANOVA, A.P., tekhn. red.

[Use of electronic digital computers in planning automobile
freight transportation] Primenenie elektronnykh vychislitel'-
nykh mashin dlia planirovaniia avtomobil'nykh perevozok. Mo-
skva, Avtotransizdat, 1963. 55 p. (MIRA 16:6)
(Electronic digital computers)
(Transportation, Automotive)

BRONSHTEYN, Yakov Isaakovich; BARANOV, A.Ya., red.; BODANOVA, A.P.,
tekhn. red.

[Safety precautions in driving a motor vehicle; handbook
for the driver] Obespechenie bezopasnosti pri vozhdanii
avtomobilia; posobie dlia shofera. Moskva, Avtotransiz-
dat, 1963. 67 p. (MIRA 17:2)

CHEKRYGIN, Ivan Gavrilovich; BARANOV, A.Ya., red.; GALAKTIONOVA,
Ye.N., tekhn. red.

[Safety measures in the maintenance and repair of motor
vehicles] Tekhnika bezopasnosti pri tekhnicheskome obslu-
zhivani i remonte avtomobilei. Izd.5, ispr. Moskva,
Avtotransizdat, 1963. 71 p. (MIRA 16:10)
(Motor vehicles---Maintenance and repair)

TUPITSYN, Petr Sergeyevich, kand. tekhn. nauk; BARANOV, A.Ya.,
red.

[Checking technical conditions of the cylinder-piston group
and valves of motor-vehicle engines without dismantling] Kon-
trol' tekhnicheskogo sostoianiia tsilindro-porshnevoi grupy i
klapanov avtomobil'nykh dvigatelei bez razborki. Moskva, Av-
totransizdat, 1963. 25 p. (MIRA 17:4)

KOGAN, Eduard Izrailevich; BARANOV, A.Ya., red.; GALANTICHOVA,
Ye.N., tekhn. red.

[Handbook for a forge-shop worker] Pamiatka kuznetsu-
ressorshchiku. Moskva, Avtotransizdat, 1963. 37 p.
(MIRA 17:1)

(Forging)

ZHELIKHOVSKAYA, Amaliya Isaakovna, inzh.; KOLYASINSKIY, Zigmund
Stanislavovich, inzh.; BARANOV, A.Ya., red.; GALAKTIONOVA,
Ye.N., tekhn. red.

[Efficient organization of motor vehicle repair work] Ra-
tsional'naya organizatsiya avtoremontnogo proizvodstva. Mo-
skva, Transport, 1964. 25 p. (MIRA 17:4)

VLASKO, Yuriy Mikhaylovich; BARANOV, A.Ya., red.

[Tractor trains for hauling large building products]
Avtopoeezda dlia perevozki krupnorazmernykh stroitel'-
nykh izdelii. Moskva, Transport, 1964. 55 p.
(MIRA 17 9)

KOROTKOV, Viktor Ivanovich; GILMANOV, A.Ya., red.

[Organization of loading and unloading operations in auto-
native transportation; from work practice of the Moscow
City Industrial Loading Administration] - organizatsiya pe-
gruzocherazvazheniya i razgruzki avtomobilnogo transporta;
iz opyta raboty upravleniya "Transportnyi tsentr" Moskvy.
Transport, no. 4. 80 p. (MIRA 1979)

... ..

Organization of operations in
automotive transportation; practice of the City
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BARANOV, A.Ya., red.

[Specifications for the overhauling of the GAZ-51A
and GAZ-93A motor vehicles] Tekhnicheskie uslovia
na kapital'nyi remont avtomobilei GAZ-51A i GAZ-93A.
Moskva, Transport, 1964. 542 p. (MIRA 18:1)

Moscow (1917- R.S.F.S.R.) Ministerstvo avtomobil'-
nogo transporta i shosseynykh dorog. Tekhnicheskoye
upravleniye.

BATISHCHEV, Ivan Ivanovich; SUBBOTIN, Aleksandr Sergeyevich,
kand. ekon. nauk, st. inzh.; BARANOV, A. Ye., 1964.

[Bases for the mechanization of loading and unloading
operations in automotive transportation] Bazy mekhanizatsii
pogruzochno-razgruzochnykh rabot na avtomobil'nom
transporte. Moskva, Transport, 1964. 114 p.

(SPPA 14102)

SHESTUKHIN, Vasilii Ivanovich; SHCHERBAKOV, Nikolay Nikolayevich;
BARANOV, A.Ya., red.

[Operation of the IAMZ engines] Eksploataciia dvigatelei
IAMZ. Moskva, Transport, 1964. 72 p. (MIRA 18:3)

DUBININ, Vladimir Mikheylovich; BARANOV, A.Ya., red.

[Organization of the tire shop in an automotive transportation unit; work practice of the Sverdlovsk Automotive Transportation Unit no.1211] Organizatsia shinnogo tsekha v avtokhoziaistve; iz opyta raboty Sverdlovskoi avtokolonny No.1211. Moskva, Transport, 1965. 90 p. (MIRA 18:3)

I 48957-65 EWT(d)/EWP(v)/T/EWP(h)/EWP(k)/EWP(l) Pf-4 IJP(c)

ACCESSION NR: AP5011903

GR/0103/65/026/004/0615/0620

18
17
8

AUTHOR: Baranov, A. Yu. (Leningrad); Khomenyuk, V. V. (Leningrad)

TITLE: The solution of the linear problem of minimizing the quadratic functional in Hilbert space

16

SOURCE: Avtomatika i telemekhanika, v. 26, no. 4, 1965, 615-620

TOPIC TAGS: quadratic functional minimum, Hilbert space functional, optimum control, linear minimizing problem

ABSTRACT: Let $H_1, H_2,$ and H_3 be real Hilbert spaces, A and B - distributive operators (V. I. Smirnov, Kurs vysshey matematiki, v. 5, Fizmatgiz, 1959), with regions of definition $D(A) \subset H_1$ and $D(B) \subset H_2$, respectively. B is a bounded operator while $Ax \in H_3$ and $Bu \in H_3$ if $x \in D(A), u \in D(B),$ and $f \in H_3; \|f\| < \infty.$ The authors study the equation

$$Ax = Bu + f, \tag{1}$$

in H_3 , where x is the sought element in $D(A)$, and control u is an arbitrary element of the convex closed set $U \subset D(B)$. Equation (1) is assumed to have a unique solution for arbitrary control $u \in U$, i.e., there exists and inverse bounded

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ACCESSION NR: AP5011903

operator A^{-1} defined within the region $D(A^{-1}) \subset H_3$ such that for an arbitrary $u \in U$

$$Bu + f \in D(A^{-1}), \quad (2)$$

and at the same time $\|A^{-1}(Bu + f)\|^2 \leq 1^2$. The problem solved in the paper consists of the calculation of an optimum $u_{opt} \in U$ which conveys the smallest possible value to the functional

$$J(u) = \|x(u)\|^2 = \|A^{-1}(Bu + f)\|^2 \quad (3)$$

where $x(u)$ is the solution of (1) with $u \in U$, and $\|x\|$ is the norm of the element x of H_1 . The quadratic functional was minimized by successive approximations representing a generalization of the V. F. Dem'yanov approach (PMM, v. XXVII, no. 3, 1963). The convergence of the functional towards its optimum value is proved and the authors apply the method to a specific example of analysis and design of a system of automatic control. Orig. art. has: 44 formulas.

ASSOCIATION: None

SUBMITTED: 15May64

ENCL: 00

SUB CODE: IE, MA

NO REF SOV: 002

OTHER: 000

Card 2/2

L 16113-66 EEC(k)-2/EWP(k)/EWT(d)/EWP(h)/EWP(l)/EWP(v) BC

ACC NR: AF5025115

SOURCE CODE: UR/0208/65/005/005/0894/0902

AUTHOR: Baranov, A. Yu. (Leningrad); Kazarinov, Yu. F. (Leningrad); Khomenyuk, V. V. (Leningrad)

ORG: none

TITLE: Gradient methods for solving problems of terminal guidance in linear systems of automatic control

60
59
B

SOURCE: Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki, v. 5, no, 5. 1965, 894-902

TOFIC TAGS: linear automatic control system, terminal guidance, vector function, ordinary differential equation, function theory

ABSTRACT: The authors consider the problem of minimizing the strongly convex functional of the terminal stage of an object whose motion is described by a linear system of ordinary differential equations:

$$\frac{dX(t)}{dt} = A(t)X(t) + \sum_{j=1}^r B_j(t)u_j(t) + f(t)$$

with initial conditions $X(0) = X^0$, where X , B_j ($j = 1, \dots, r$), f are n -dimensional vectors with respective coordinates x_1, \dots, x_n ; b_{1j}, \dots, b_{nj} ; f_1, \dots, f_n , and

Card 1/2

UDC: 518:51:62-50

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L 16113-66

ACC NR: AP5025115

$A = (a_{ik})$ is an n by n matrix. It is assumed that $b_{ij}(t)$, $f_i(t)$ and $a_{ik}(t)$ are real-valued and continuous for $t \in (0, T)$ where $T > 0$ is the given period of guidance. The authors determine the r -dimensional vector-function $u(t) = (u_1(t), \dots, u_r(t))$ satisfying the condition $|u_j(t)| \leq 1$, ($j = 1, \dots, r$), $t \in [0, T]$ which minimizes the functional $g(X(T, u))$. In the latter $g(X)$ is a real-valued, twice continuously differentiable and strongly convex function such as

$$\sum_{i,h=1}^n \frac{\partial^2 g(X)}{\partial x_i \partial x_h} z_i z_h \geq m \sum_{i=1}^n z_i^2,$$

where $m > 0$ is a constant and $X(t, u)$ is the solution of the system under consideration corresponding to the solution u . The use of the gradient method for the solution of the problem is also studied. The authors thank V. I. Zubov for advice. Orig. art. has: 1 figure and 37 formulas.

SUB CODE: 12,13/ SUBM DATE: 15Oct64/ ORIG REF: 004

net
Card 2/2

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Useful book. ("Guide to the study of navigation regulations" by M.A. Sutyurin. Reviewed by B. Baranov, Sychev, L. Pushkarev).
Rech.transp. 19 no.5:56 My '60. (MIRA 13:7)

1. Gor'kovskoye rechnoye uchilishche (for Baranov). 2. Kapitan dizel'-elektrokhoda "Fridrikh Engel's" (for Sychev). 3. Kapitan teplokhoda "Admiral Ushakov" (for Pushkarev).
(Inland navigation)
(Sutyurin, M.A.)

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Krym; putevoditel'. [Crimea, a guide-book]. Moskva, Fizkul'tura i turizm, 1935. 302 p. illus., maps (part fold.)

"Literatura": p. 300-301.

Contains information on all major forms of transportation. DLC: DK511.C7B3

SO: Soviet Transportation and Communications, A Bibliography, Library of Congress, Reference Department, Washington, 1952, Unclassified.

BARANOV, B.; KOGAN, I.

Reference: [unreadable]

Pay rates for hourly workers. Sots.trud. no.9:76-78 S '56.

(MLRA 9:12)

(Airplane industry) (Wages)

BARANOV, B., kand. tekhn. nauk

Along the streets of Karachi. Za rul. 17 no.6:30-31 Je 59.
(MIRA 12:10)

(Karachi---Description)

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Closer to production. Avt. transp. 41 no.3:50-51 Mr '63.
(MIRA 16:4)

1. Novocherkasskiy avtodorozhnyy tekhnikum.

(Novocherkassk—Automobile drivers—Education and
training)

25(5)

PHASE I BOOK EXPLOITATION

SOV/1274

Baranov, Boris Aleksandrovich; Zolotov, Vsevolod Nikolayevich
(Deceased); Khizin, Rafail Iosifovich; Shapiro, Isay Iosifovich;
Shaskol'skiy, Boris Vladimirovich; Shakhnazarov, Musheg
Mosesovich

Tekhnicheskoye normirovaniye na mashinostroitel'nom zavode
(Technical Standards for Machine-building Plants) Moscow,
Oborongiz, 1958. 576 p. 7,000 copies printed.

Reviewer: Kremenetskiy, N.L., Engineer; Ed. (Title page):
Shakhnazarova, M.M.; Ed. (Inside book): Tishin, S.D.,
Candidate of Technical Sciences, Docent; Ed. of Publishing
House: Rodzevich, S.S.; Tech. Ed.: Rozhin, V.P.; Managing
Ed.: Sokolov, A.I., Engineer.

PURPOSE: This book is a theoretical and practical manual for
engineers and technicians engaged in setting technical stand-
ards in aircraft manufacturing establishments and working
in scientific research and planning institutes.

Card 1/14

BARANOV, B.A. [deceased]; KHISIN, R.I.; SHAPIRO, I.I.; SHAKHNAZAROV,
M.M.; VOLKOV, A.V., kand. tekhn. nauk, retsenzent;
YAKOVLEVA, V.I., red.

[Establishment of technical norms at a machinery plant]
Tekhnicheskoe normirovanie na mashinostroitel'nom zavode.
[By] B.A. Baranov i dr. Moskva, Mashinostroenie, 1964.
610 p. (MIRA 17:12)

L 08354-67 EWT(m)/EWP(w)/EWP(t)/ETI IJP(c) JD

ACC NR: AR6028126

SOURCE CODE: UR/0058/66/000/005/A069/A069

AUTHOR: Goryunova, N. A.; Baranov, B. V.; Grigor'yeva, V. S.; Kradinova, L. V.; Kryukova, I. V.; Prochukhan, V. D. 42

TITLE: Production and investigation of GaP-GaAs and GaAs-InAs solid solutions 27 27 27

SOURCE: Ref. zh. Fizika, Abs. 5A557

REF. SOURCE: Sb. Simpozium. Protsessy sinteza i rosta kristallov i plenok poluprovodnik. materialov, 1965. Tezisy dokl. Novosibirsk, 1965, 1-8

TOPIC TAGS: solid solution, gallium compound, indium compound, single crystal growing crystal impurity 13

ABSTRACT: The possibility is investigated of obtaining single crystals of homogeneous solid solutions in a wide range of concentrations. The crystals were grown by the gas-transport method in a closed volume. The authors elucidate the influence of such factors as the zone temperature, the temperature difference between zones, and the chemical nature of the carrier, and its concentration on the evolution of the gas-transport reactions and on the habit and dimension of the crystals are clarified. Optimal conditions are established for obtaining single crystals of the required habit. Questions involved in the doping of crystals during gas-transport reactions are studied. A. Potnikov. [Translation of Abstract]

SUB CODE: 20
Card 1/1 nst

BAKINOV, B. G.

"The change in production of steroid hormones--estrogens, androgens, 17-corticosteroids in women during the aging process and their significance in pathogenesis and treatment of some diseases developing during this period--menopausal disorders, arteriosclerosis, and osteoporosis"

report submitted to the All-Russian Conference of Internists, Leningrad, USSR 26-29 June 1960

So: Terapevticheskiy Arkhiv (Therapeutic Archives), Vol. XXXII, No. 11
Moscow, Nov. 1960, pages 93-95

BARANOV, B.I.

STARIK, I.Ye., otvetstvennyy redaktor; SHCHERBAKOV, D.I., akademik, redaktor; VINOGRADOV, A.P., akademik, redaktor; BARANOV, B.I., professor, redaktor; GERLING, E.K., professor, redaktor; LEVIN, B.Yu., kandidat fiziko-matematicheskikh nauk, redaktor; KRYLOV, A.Ya., redaktor; PEKARSKAYA, T.B., kandidat geologo-mineralogicheskikh nauk; MYASNIKOV, I.A., redaktor; POLYAKOVA, T.V., tekhnicheskii redaktor.

[Transactions of the first session of the Commission on Determining the Absolute Age of Geologic Formations] Trudy pervoi sessii komissii po opredeleniiu absolutnogo vozrasta geologicheskikh formatsii; 12-15 aprelia 1952 g. Moskva, Izd-vo Akademii nauk SSSR, 1954. 231 p.(MLR 8:1)

1. Chlen-korrespondent Akademii nauk SSSR (for Starik). 2. Akademiya nauk SSSR. Otdeleniye geologo-geograficheskikh nauk.
(Earth--Age)

BARANOV, B.K.; GORLEYEV, R.I.

Semiconductor rectifiers for the experimental models of the
N62 electric locomotive. Sbor. nauch. trud. EINII 2:60-71 '62.
(MIRA 16:8)

(Electric locomotives)
(Electric current rectifiers)

BARANOV, B.K.; RUTSHTEYN, A.M.

Electric circuits of single-phase d.c. locomotive motors with
independent excitation. Sbor. nauch. trud. EINII 2:106-115 '62.
(MIRA 16:8)

(Electric railway motors)