

NIKITIN, Nikolay Nikiforovich; FETISOV, Antonin Ivanovich; PASEL'SKIY, S.V.,
redaktor; RYBIN, I.V., tekhnicheskiy redaktor

[Geometry; a textbook for classes 6-9 in the seven-year and secondary
schools] Geometriia; uchebnik dlia 6-9 klassov semiletnei i srednei
shkoly. Moskva, Gos. uchebno-pedagog. izd-vo Ministerstva prosvе-
shcheniia RSFSR. Pt.1. 1956. 198 p. (MLRA 9:7)
(Geometry)

NIKITIN, N.N. (Moskva); FETISOV, A.I. (Moskva)

New geometry textbook "Planimetry." Mat.v shkole no.3:6-8
My-Je '56. (MLBA 9:8)

(Geometry, Plane)

NIKITIN, N.N. (Moskva)

Mathematics teaching section at the Institute of Methodology of the
Academy of Pedagogical Sciences of the RSFSR. Mat. v shkole no.5:
88-89 S-0 '56. (MLRA 9:10)
(Mathematics--Study and teaching)

NIKITIN, Nikolay Nikiforovich; FETISOV, Antonia Ivanovich; PAZEL'SKIY, S.V.,
red.; KAPUSTINA, V.S., red.; SMIRNOVA, M.I., tekhn.red.

[Concise practical instructions to accompany the new textbook of
geometry (Part 1) by N.N.Nikitin and Fetisov; a manual for teachers]
Kratkie metodicheskie ukazaniia k novomu uchebniku geometrii
(chast' 1); posobie dlia uchitelei. Izd. 2-oe, perer. Moskva, Gos.
uchebno-pedagog. izd-vo M-va prosv. RSFSR, 1957. 72 p. (MIRA 11:4)
(Geometry--Study and teaching)

NIKITIN, N.N.

Review of candidate dissertations on methodology of teaching mathematics at the Institute of Teaching Methodology at the Academy of Pedagogical Sciences. Mat.v shkole no.1:89-90 Ja-F '57. (MLRA 10:2)

1. Zaveduyushchiy sektotom metodiki matematiki Instituta metodov obucheniya Akademii pedagogicheskikh nauk.
(Bibliography--Mathematics)

NIKITIN, N.N. (Moskva).

The section for methodology of teaching mathematics of the Institute of Methodology of the Academy of Pedagogic Sciences. Mat. v shkole no.3:94-95 My-Je '57. (MLRA 10:6)
(Mathematics--Study and teaching)

NIKITIN, Nikolay Nikiforovich; MASLOVA, Galina Gerasimovna

[Collection of problems in geometry] Sbornik zadach po geometrii. Moskva, Uchebno-pedagog.izd-vo. Vol.1. [Plane geometry for grades 6 and 7 of the secondary school] Planiometriia dlia 6 i 7 klassov srednei shkoly, 1958.

(MIRA 13:8)

(Geometry, Plane--Problems, exercises, etc.)

NIKITIN, Nikolay Nikiforovich

[Geometry; a textbook for the 6th grade] *Geometriia; uchebnik
dlia VI klassa. Izd. 5.* Moskva, Gos. uch. izd-vo pedagog. izd-vo,
1960. 111 p. (MIRA 15:12)

(Geometry, Plane)

NIKITIN, N.N. (Moskva)

Geometry textbook for the eight-year school. Mat. v shkole no.3:15-
22 My-Je '61. (MIRA 14:5)

(Geometry--Textbooks)

NIKITIN, N.N.

Various means of proving theorems; from school practice. Mat. v
shkole no.6:18-25 R-D '62. (AIRA 16:1)
(Geometry—Problems, exercises, etc.)

ATCYAN, K.M., kandyd. tekhn. nauk; GRIBIN, B.B., kandyd. tekhn. nauk;
KOROTKIY, Yu.I., kandyd. tekhn. nauk; KURBANOV, S.M.;
LITVIN, B.M.; MURAVYOV, A.A.

Power consumption for driving an electric motor with a constant speed
the traction and speed characteristics of the motor are determined.
Avt. prom. 31 no.3:3-3. 1968.

A. L'vovskiy. Confidential checky. In: *Tr. Vuzovskiykh nauchnykh i issledovaniy*
sbornik.

NIKITIN, M. P.

"Soldering cast iron parts with hard solder," *Avtoren. Delo*, No. 1, 1947.

"Russian school in the development of electric arc welding," *Ibid.*, No. 2, 1947.

NIKITIN, Yu.P.; NIKITIN, N.P.

Double layer capacitance and exchange currents at high temperatures. Trudy Ural. politekh. inst. no.93:56-63 '59.

(Aluminum--Electrometallurgy) (MIRA 15:3)

L 48961-65 EEO-2/EWT(d)/EED-2

ACCESSION NR: AP 6011909

UR/0103/65/026/004/0669/0675

16
15
B

AUTHOR: Nikitin, N. P. (Moscow)

TITLE: Tracing disruption in phase automatic frequency control circuits

SOURCE: Avtomatika i telemekhanika, v. 26, no. 4, 1965, 669-675

TOPIC TAGS: phase automatic frequency control, automatic control circuit, tracing disruption, Fokker-Plank equation

ABSTRACT: Numerous researchers have studied the influence of noise on phase automatic frequency control (PAFC) utilizing the mathematical apparatus of Markovian processes (see, e.g., K. B. Chelyshev, Avtomatika i telemekhanika, v. XXIV, no. 7, 1963). The present study used the Fokker-Plank equation to determine the probability of the perturbation of the synchronous tracing during a given time by noises in PAFC circuits containing an integrating filter. While A. Viterbi also utilized the Fokker-Plank equation (Tr. In-ta inzhenerov po elektrotekhnike i radioelektronike, no. 12, Dec. 1963), the present paper describes the solution of the tracing disruption problem for a second-order system. The computational methods and resulting formulas are applicable to the case of arbitrary characteristics of phase detectors. The results show that the tracing disruption in the PAFC circuits should be considered a passage of the representative point through the

Card 1/2

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ACCESSION NR: AP5011909

potential barrier. Such sharpening of the concept makes the disruption probability more precise even for the already discussed cases involving sinusoidal phase detector characteristics. Incidentally, the method used in the present paper was developed originally for the solution of the problem of Brownian particle passage through high potential barriers (H. A. Kramers, *Physica*, v. VII, no. 4, April 1940). Later, an analogous approach helped determine the tracing disruption probability in frequency-operated automatic frequency control systems. "The author thanks V. L. Lebedev for suggesting the problem and for his interest in the progress of the work." Orig. art. has: 34 formulas and 4 figures.

ASSOCIATION: None

SUBMITTED: 11May64

ENCL: 00

SUB CODE: IE, EC

NO REF SOV: 006

OTHER: 002

P
Card

2/2

L 13353-66 EWT(d)

ACC NR: AP6001938

SOURCE CODE: UR/0142/65/008/006/0696/0703

AUTHOR: Nikitin, N. P.

34
B

ORG: none

8,44

TITLE: Probability of signal locking by a phase-lock AFC frequency-search system

SOURCE: IVUZ. Radiotekhnika, v. 8, no. 6, 1965, 696-703

TOPIC TAGS: AFC, signal frequency, frequency locking

ABSTRACT: The operation of a phase-lock AFC system as a narrow-band tracking filter is theoretically analyzed; an active proportional-integrating filter is used as a low-pass filter (after the phase detector) in this AFC system. The time of frequency search is limited; hence, the search is assumed to be fast. With a high search speed, the signal locking may fail to materialize due to the low-pass filter inertia. The probability of signal locking by the above AFC system, under no-noise conditions, is determined; this permits determining maximum frequency-search speed (a formula is developed) which still ensures locking; under noise conditions, this speed will a-priori be lower. It is proven that with higher search speeds, the

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UDC: 621.396.668

L 13353-66

ACC NR: AP6001938

probability of locking falls off rather slowly; beyond a certain point, however, the probability drops abruptly, the latter effect being more pronounced for higher attenuations. It is also found that setting the attenuation $\xi > 1$ cannot result in a substantial increase of the locking probability under no-noise conditions. Orig. art. has: 5 figures and 20 formulas.

SUB CODE: 09 / SUBM DATE: 26Apr65 / ORIG REF: 003 / OTH REF: 003

Card 2/2

NIKITIN, N. P.

NIKITIN, N. P. Akademik K. I. Arsen'ev i ego rol' v razvitii ekonomicheskoi geografii v
Rossii. (Voprosy geografii, 1948, v. 10, p. 3-40) DLC: G23.V6

SO: LC, Soviet Geography, Part I, 1951, Uncl.

NIKITIN, N.P.

Regional geography in pre-reform Russia of the 19th century (Bibliographic survey). Vop.geog. 31:143-163 '53. (MIRA 7:6)
(Geography)

NIKIFIN, N. P.

ALAMPIYEV, P.M., kandidat geograficheskikh nauk, dotsent; GRIGOR'YEV, A.L., kandidat ekonomicheskikh nauk; ZHMUYDA, V.B., kandidat ekonomicheskikh nauk, dotsent; LOYTER, M.E., 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; GVELESYANI, G.G., dotsent; GALKIN, P.D., redaktor; ROBIONOVA, 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, Uzbekskaya, Kirgizskaya, Tadzhikskaya, Turkmenskaya. Moskva, Gos. uchebno-pedagog. izd-vo Ministerstva prosveshcheniya SSSR, 1954. 426 p. [Microfilm]

(Geography, Economic)

(MLBA 8:1)

NIKITIN, N. P.

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62.3
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EKOLOGICHESKAYA GEOGRAFIYA SSSR; ROSSIYSKAYA SOVETSKAYA FEDERATIVNAYA SOGIA-
LISTICHESKAYA RESPUBLIKA (SCIENTIFIC GEOGRAPHY OF THE U.S.S.R.; U.S.S.R.)
G. N. CHEKHAZHEV, N. P. NIKITIN 1) I. A. SHAYKHOVA. MOFVA, UCHPECH, 1996.
489 p. MAPS, TABLES. BIBLIOGRAPHICAL FOOTNOTES.

NIKITIN, N.P., prof.; LYALIKOV, N.I., dots.; KREYS, I.G., tekhn.red.;
SHEPETSVA, T.A., tekhn.red.

[Programs of pedagogical institutes; economic geography of the
U.S.S.R.] Programmy pedagogicheskikh institutov; ekonomicheskaya
geografiya SSSR. [Moskva] Uchpedgiz, 1957. 38 o. (MIRA 11:3)

1. Russia (1917- U.S.F.S.R.) Glavnoye upravleniye vysshikh i
srednikh pedagogicheskikh uchebnykh zavedenii.
(Geography, Economic--Study and teaching)

N. N. N. P.

NIKITIN, N.P.

Economic geographical studies by Decembrists. Vop. geog. no. 41:
242-264 '57. (MIRA 10:12)
(Geography, Economic) (Decembrists)

ANDREYEV, B.I., kand. ekonomicheskikh nauk, dots.; LYALIKOV, N.I., kand. geograficheskikh nauk, dots.; MIKILIN, M.P., prof.; NIKOL'SKIY, I.V., kand. geograficheskikh nauk, dots.; RAKITNIKOV, A.N., kand. geograficheskikh nauk, dots.; STEPANOV, P.N., doktor geograficheskikh nauk, prof.; TUTYKHIN, B.A., kand. geograficheskikh nauk, dots.; CHERDANTSEV, G.N., prof., red.; RODIONOVA, F.A., red.; TYUTYUNNIK, S.G., red. kart.; MAKHOVA, N.N., tekhn.red.

[Economic geography of the U.S.A.R.; general characteristics and the geography of branches of the Soviet national economy]
Ekonomicheskaya geografiya SSSR; obshchaya kharakteristika i geografiya otraslei narodnogo khoziaistva SSSR. Moskva, Gos. nauchno-pedagog. izd-vo M-va prosv. RSFSR, 1958. 275 p. (MIRA 17:12)
(Geography, Economic)

NIKITIN, N.P.

Economic regionalization in the studies of the Russian Geographical
Society and the Liberal Economic Society. Vop. geog. no.47:145-158
'59. (MIRA 13:1)

(Economic zoning) (Geographical societies)

NIKITIN, N.P., inzh.

Using assembly and welding equipment with pneumatic
clamps. Svar. proizv. no.5:33 My '64. (MIRA 18:11)

1. Kostromskoy zavod "Rabochiy metallist".

BARANSKIY, N.N., red. [deceased]; ALKITIN N.P., prof.;
POKSHISHEVSKIY, V.V., prof., red.; SAUSHEIN, Ya.T., prof.,
red.; RODIONOVA, F.A., red.

[Economic geography in the U.S.S.R.; history and modern
development] Ekonomicheskaya geografiya v SSSR; istoriya i
sovremennoe razvitiye. Moskva, Irosvessheniye, 1961, 662 p.
[MIRA 18-114]

GUTTSAYT, Z.I.; KRAVCHENKO, V.A.; NIKITIN, N.S.; PANICHEVA, A.G. Prini-
mali uchastiye: GOL'DSHTEYN, R.I.; PANERATOVA, O.M.; SAGAKSKAYA,
V.G. KORYAGIN, I.D., kand.ekonom.nauk, red.

[Petroleum industry of the capitalist countries of Western
Europe, the Near, Middle, and Far East, Canada, and Latin
America] Neftiansia promyshlennost' kapitalisticheskikh stran
Zapadnoi Evropy, Blizhnego i Srednego Vostoka, Dal'nego Vostoka,
Kandy i Latinskoi Ameriki; kratkii obzor statisticheskikh dannykh.
Pod red. I.D.Koriagina. Moskva, 1959. 302 p.

(MIRA 13:11)

1. Moscow. Gosudarstvennyy nauchno-issledovatel'skiy institut
nauchnoy i tekhnicheskoy informatsii.
(Petroleum industry)

BENDERSKIY, V.A.; NIKITIN, N.S. [deceased]; TATEVSKIY, V.M.

Regularities in the physicochemical properties of alkylcyclohexanes.
Zhur. fiz. khim. 36 no.1:63-71 Ja '62. (MIRA 16:8)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
(Cyclohexane)

21(3)

SOV/112-59-3-5344

Translation from: Referativnyy zhurnal. Elektrotekhika, 1959, Nr 3, p 150 (USSR)

AUTHOR: Nikitin, N. S., and Frolov, V. V.

TITLE: Improved Method for Personal Photomonitoring of Gamma Hazard (IFK-11)
(Usovershenstvovannyi metod individual'nogo fotokontrolya γ -vrednosti
/IFK-11/)

PERIODICAL: V sb.: Isted. v obl. dozimetrii ioniziruyushchikh izlucheniye. M.,
AN SSSR, 1957, Vol 28, Nr 9, pp 680-683

ABSTRACT: The existing method of monitoring gamma-radiation doses by
blackening of a photofilm has disadvantages due to the following factors:
(1) measurement results depend on the radiation energy; (2) sensitivity is low;
(3) measurement of the degree of blackening by a densitometer is subjective.
Steps to overcome the above disadvantages are considered. The photofilm is
most sensitive to soft gamma radiation. To compensate for this, filters are
used that comprise a layer of lead and a layer of aluminum. Lead ensures

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SOV/112-59-3-5344

Improved Method for Personal Photomonitoring of Gamma Hazard (IFK-11)

greater absorption of soft gamma radiation, while aluminum protects the emulsion against the secondary electrons knocked out of lead by gamma quanta. To increase the sensitivity, the compensating filters are used in combination with intensifying screens prepared from calcium tungstate. The optimum thickness of a lead filter with an intensifying screen is 1.5-1.6 mm; without the screen, 0.75-0.8 mm. The thickness of the aluminum layer is 0.5 mm. A compensation-type photometric scheme with selenium phototubes has been used for objective evaluation of blackening.

L.V.M.

Card 2/2

Сборник радиоактивных методов измерения: сборник статей (Collection of Radiochemical and Dosimetric Methods) Moscow, Medgiz, 1959. 459 p. Russian. 9,000 copies printed.

Eds. (Title Page): B.G. Ousev, U.Ya. Margulis, A.M. Masov, N.Ye. Tarasenko, P.M. Shchekoberg. Ed. (Inside Book): V.I. Babanov. Tech. Ed.: A.I. Babanova.

REMARKS: This collection of articles is intended for physicists, sanitation and public health doctors, chemists and other specialists working in radioactive dosimetry.

COVERAGE: This work discusses the following subjects: (1) principles of sanitation and dosimetric control in institutions where work is carried on with radioactive substances; (2) radio-chemical and chemical methods for determining certain radioactive substances in samples of air, water, soil and foodstuffs; (3) physical methods of measuring contamination of the air by radioactive gases and aerosols, and methods for determining the level of contamination of working surfaces, clothes and vehicles; (4) methods of individual dosimetric monitoring; (5) Absolute and relative methods of measuring the activity of solid and liquid radioactive sources. There are four appendices dealing with methods of calculating the total dosage from sources of ionizing radiation, units of activity, and doses from natural (background) radioactivity in the calcium of foodstuffs. Sanitary regulations observed during transportation, storage, and handling of radioactive substances are discussed, as well as the permissible level of ionizing radiation. The editors thank Yu.V. Sivintsev and B.P. Shirobov. References appear at the end of each chapter.

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AVAILABLE: Library of Congress	
Card 11/11	

TM/ham 6-2-50

NIKITIN, N.S. (Moskva, D-182 Zhivopisnaya ul., d.24, kv.22)

On the use of photographic film for individual dosimetric control of
the flow of beta particles. Vest.ront. 1 rad. 34 no.4:59-65 .7-Ag '59.
(MIR. 12:12)

(RADIOMETRY equipment & supply)

NIKIFIN, N.T.

Automatization of measurements during the grinding process. Avt. trakt.
prom. no.9:10a-b S '53. (MLBA 6:9)

(Grinding and polishing)

NIKITIN, N.T.

~~Automatization of measurements during the grinding process.~~ Avt.trakt.prom.
no.10:16a-b 0 '53. (MLBA 6:11)
(Grinding and polishing)

NIKITIN, N.T.

Automatic chuck for broaching machines. Avt.trakt.prom. no.11:30 B '53.
(MLRA 6:11)

1. Sibzavod.

(Chucks) (Broaching machines)

NIKITIN, N.T.; ZOLOTNITSKAYA, A.S.; SHUMTSOVA, L.T.; AKATOV, B.N.;
KOVSHINSKIY, V.V., kandidat tekhnicheskikh nauk, redaktor; DUGINA,
N.A., tekhnicheskiiy redaktor

[Rapid-action machine-tool accessories] Bvstrodeistvuiushchie
stanochnye prispособlenia. Moskva, Gos. nauchno-tekhn. izd-vo
mashinostroit. lit-ry, 1954. 18 p. (MLRA 8:7)
(Machine tools)

NIKITIN, N. T.

NIKITIN, N.T.; CHEPURNYKH, A.K.; POKHILOV, I.D.; LOSEKUTOV, V.V., kandidat
tekhnicheskikh nauk, redaktor; DUGINA, N.A., tekhnicheskiy redaktor.

[Automatic control of dimensions during grinding] Avtomaticheskii kontrol'
razmerov pri shlifovanii. Moskva, Gos. nauchno-tekhn. izd-vo Mashinostroit.
lit-ry, 1954. 23 p. (MIRA 8:1)

(Grinding and polishing)

NIKITIN, N. T.

USSR/Engineering - Machine Tools

Card 1/1

Authors : Nikitin, N. T.

Title : Production machining of straight-flank spline shafts

Periodical : Avt. Trakt. Prom. Ed. 1, 24-28, January 1954

Abstract : General information is presented on production machining of straight-flank spline shafts on milling machines type 5618A, A662B and 345A. Configurations and specifications of cutting bits, Government standards for spline shafts made of steels mark 45 and 18 KhGT, type of machinery for which the shafts are used, cutting speeds, and the table of tolerances are listed. Illustration; drawings; diagrams; tables.

Institution :

Submitted :

69

AUTHOR: Nikitin, N.T.

TITLE: Efficient Methods in Spline-Shaft Machining
(Proizvoditel'nyye metody obrabotki shlitsevykh
Valov)

PERIODICAL: Stanki I Instrument, 1957, No. 1, pp 21-23.

ABSTRACT: In the procedure recommended two spline grooves are simultaneously roughed out in each of the two shafts mounted side by side by means of form cutters. Carbide-tipped face cutters are used to finish the spline flanks. Their interspace is adjusted against Belleville springs. Five roughing methods are compared under different conditions, each followed by a finishing operation. The machining time and total piece-work time is given in each case. The highest

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TITLE: Efficient Methods in Spline-Shaft Machining
(Proizvoditel'nyye metody obrabotki shlitsevykh valov)

labor cost is associated with hobbing in either one or two cuts. The proposed method cuts machining time by 2 to 15 times. The use of carbide-tipped finishing cutters increases accuracy without requiring precision form cutters. The text includes 4 diagrams and 1 table.

PRESENTED BY:

SUBMITTED:

AVAILABLE: Library of Congress

Card 2/2

NIKITIN, N. T., Candidate Tech Sci (diss) -- "Investigation of certain technological factors in processing the splined, straight-sided profile of shafts". Omsk, 1959. 20 pp (Min Higher Educ USSR, Moscow Automotive Mech Inst), 110 copies (KL, No 24, 1959, 139)

NIKITIN, N. V.

PA 28^I21

USSR/Engineering
Asbestos
Construction Industry

Jan 1947

"Calculating the Durability of Asbestos Corrugated
Sheeting," N. V. Nikitin, Engr, Promstroyproekt, 2 pp

"Stroitel'naya Promyshlennost'" No 1

Formulas for calculating the durability of asbestos
sheeting considering the weight of snow the roof may
have to support as well as that of occasional human
beings. The formulas are based on theoretical and
experimental work of Promstroyproekt and VNIAsbest.

ES

28^I21

NIKITIN, N. V.

PA 10/49T61

USSR/Engineering
Structural Analysis
Mathematics, Applied

Jul/Aug 48

"Stability of Structures Built of a Nonuniform Material," N. V. Nikitin, Engg Mem, Soc of Constructors, 4 pp

"Vest Inzhener i Tekhnik" No 4

$R_{min} = n_0 \int Rn' \cdot dX$, where R = strength of a link, $n' \cdot dX$ = probability of this strength, n_0 = number of links in chain. Discusses above equation for breaking strength of a chain whose links are not of equal strength. Applies conclusions to concrete in tension and compression and stone pillars.

10/49T61

NIKITIN, N.V., inzhener, laureat Stalinskoy premii; SHISHKIN, R.G., inzhener.

Large panel KPP beamless slab construction for industrial buildings. Bnl.
stroit.tekh. 10 no.13:1-3 Ag '53. (MLBA 6:10)

1. Promstroyproyekt.

(Reinforced concrete construction)

SOV:24-57 4-4928

Translation from: Referativnyy zhurnal. Mekhanika 1957, Nr 4, p 142 (USSR)

AUTHOR: Nikitin, N. V.

TITLE: The Deformation of Reinforced Concrete (Deformatsiya zhelezobetona)

PERIODICAL: Tekhn. informatsiya. Miro strava predpriyatij metallurg. i khim. prom-sti SSSR, Moscow, 1954, pp 32-36

ABSTRACT: The paper makes critical comments with regard to the methods of determination of the deflections of reinforced concrete members suggested by V. I. Murashev ["Treshchinoustoychivost' zhestkost' i prochnost' zhelezobetona" (Crack Resistance, Rigidity and Strength of Reinforced Concrete), Moscow, 1950] and V. N. Gornov (Stroitel'stvo, 1952, Nr 7). The author of the paper under review suggests a new method for the solution of the same problem. Following are the basic assumptions of this method: The modulus of elasticity of the compressed zone of the concrete equals the modulus of elasticity of concrete prevailing with axial compression multiplied by a certain factor; the modulus of elasticity of the tensioned zone of the concrete must be reduced as compared with the modulus of elasticity for the

Card 1/2

The Deformation of Reinforced Concrete

SOV/124-57 4 4928

compressed zone by multiplying it by another factor. The paper fails to adduce any theoretical or experimental substantiations

V A Gastev

Card 2/2

NIKITIN, N.V., inzhener; PETROVA, T.G., arkhitektor; SHISHKIN, R.G.,
inzhener; MAKARYCHEV, V.V., kandidat tekhnicheskikh nauk;
MATSELSKIY, B.N., kandidat tekhnicheskikh nauk

Reinforced concrete ribbed panels for beamless floors of industrial buildings developed by the State Planning Institute of Industrial Construction and the Central Scientific Research Institute of Industrial Construction. Rats. i izobr. predl. v stroi. no.81:8-10 '54. (MIRA 8:6)

1. Promstroyproyekt (for Nikitin, Petrova, Shishkin) 2.
TSentral'nyy nauchno-issledovatel'skiy institut promyshlennykh sooruzhenii (for Makarychev, Matselinakiy).
(Floors, Concrete)

NIKITIN, N. V.

BORISHANSKIY, M.S., kandidat tekhnicheskikh nauk; GVOZDEV, A.A., professor,
doktor tekhnicheskikh nauk; MIZERNYUK, B.N., inzhener; NIKITIN, N.V.,
inzhener; SHERMAN, L.N., arkhitekto

Precast reinforced concrete beams developed by the State Planning
Institute of Industrial Construction and the Central Scientific
Research Institute of Industrial Construction. Rats. 1 izobr.
predl. v stroi. no.81:20-22 '54. (MLBA 8:6)
(Girders) (Precast concrete construction)

NIKITIN, N.V., inzhener.

Method of building up an optimum assortment of standard supporting
members for precast concrete construction. Bet. 1 zhel.-bet.no.7:
244-248 J1 '56. (MIRA 9:9)

(Precast concrete)

NIKITIN, M.V., inzhener; SHISHKIN, R.G., inzhener.

Prestressed reinforced concrete girders for arched roofs of industrial buildings. Stroil. prom. 34 no.9:19-23 S '56.

(MLRA 9:10)

(Prestressed concrete) (Roofing, Concrete)

1/15/77, IV 6

87-10-3/14

AUTHOR: Chichenkov, Yu.V.. Candidate of Mechanical Sciences.

TITLE: Testing of an Assembly Reinforced Concrete Segmental Frame With Prestressed Chord. (Ispytaniye sostavnoy shelzobetonnoy archednoy ferry s predvaritel'no napryazhennoy skel'nyakoy).

PERIODICAL: Beton i zhelezobeton, 1977, No.10. pp. 380 - 396. (USSR).

ABSTRACT: The above type of frame, span 27m, was designed by Eng. N. V. Likitin, V. G. Shishkin and P. Ya. Al'shteyn of the Promstroyekt to form a roof of a factory for electrolysis of aluminum. Testing was carried out in Kuznets'kitcheskoy base of the Leningradskiy Khimstroy. The frame consisted from concrete arch 400, with a total weight of 10.7 tons. 270 kg of steel are required of which 270 kg of high tensile steel. The strutting members, both horizontal and vertical, were reinforced by 18 mm diameter bars. The chord member was a rectangular section 200 x 200 mm in size, reinforced with six batches of high tensile steel, each comprising 12 wires of 5 mm diameter. The lashing plates were of steel St.3 which was welded to Rockwell 40. The frame is designed to take a superimposed load of 450 kg/m². The loss of prestressing due to free arching and the frame's own weight is approximately 1,000 kg/m². The tensioning

Part 1/3

97-10-3/14

Testing of an Assembled Reinforced Concrete Segmental Frame With
Prestressed Chord.

of the chord member was carried out on the tensioning machine type AH-14. The modulus of elasticity of the steel was approximately 2.02×10^6 kg/cm². Rapid hardening Portland cement of 500 kg/cm² (activity) was used. Tensioning was carried out by two jacks of 30-ton capacity. After that the channels were pressure-grouted with the same type of cement (cement/water ratio of 0.55) as used for the surrounding concrete. Fig.1 shows the construction of the assembly frame and Fig.2 the method of testing. Tests were carried out using various combinations of loading until destruction of the frame. The first cracks appeared under the load of 97.9 tons. The loss of pre-tensioning amounted to 1,530 kg/cm² when the loading reached 130 tons. The cracks were distributed evenly along the chord member. When the load was increased to 205 tons no further cracks appeared. Fig.4 illustrates diagram of relationship between the width of the crack and the magnitude of the load. Fig.5 gives a graph of the relationship between deformation of the frame and prolongation of the chord. Fig.6 shows deformation of the reinforcement of the top member and the

Card 2/3

97-10-3/14

Testing of an Assembled Reinforced Concrete Segmental Frame With Pre-stressed Chord.

various conditions of loading. Fig.7 shows deformation curves of the top member and the various types of loads. There are 7 Figures.

AVAILABLE: Library of Congress.

1. Roofs-Design

Card 3/3

AUTHOR: Nemirovskiy, Ya., M., Candidate of Technical Sciences, ^{SOV#7/58/2/7/16}
~~Nikitin, N.V.~~ Corresponding Member of the Academy of
Building and Architecture of USSR.

TITLE: The Coefficient Ψ for Calculation of Hardness of
Reinforced Concrete Elements. (O koeffitsiyente
dlya rascheta zhestkosti zhelezobetonnykh elementov).

PERIODICAL: Beton i Zhelezobeton, 1958 Nr 2, pp 66-69.

ABSTRACT: Calculation of the strength of the above-mentioned
problem uses coefficient Ψ according to the theory
of Professor V.I. Murashev, accepted by the standards
(NiTU 123-55). This coefficient is the function of
the concrete in the tension zone in between cracks,
i.e. changes of tensions in the reinforcement of the
concrete with load variation. A theoretical ex-
planation of the function of this coefficient and its
application is given in detail. Figure 1 illustrates
a curve of distribution of tensions and moments in re-
inforcement and concrete of the tensioned zone of the
reinforced concrete unit in between cracks. Figure 2
shows diagrams of various Ψ coefficients for bent

Card 1/2

SOV97/58/2/7/16

The Coefficient for Calculation of Hardness of Reinforced
Concrete Elements.

elements of a rectangular section with single re-
inforcement. Examples of calculations based on the
described theory and above mentioned formula are
given. Figure 3 illustrates "T" shape beam with slab
in the tension zone and Figure 4 the same with slab
in compressed zone. There are four figures and two
Soviet references.

1. Reinforced concrete--Mechanical properties
- 2 Structures--Theory

Card 2/2

NIKITIN, N.V. (Moskva)

Calculations for roofs made of arches converging in a common center.
Stroi. mekh. i rasch. scor. 4 no.3:14-19 '62. (MIRA 15:6)

(Moskva)

NIKITIN, N.V.

Performance of multistage magnetic amplifiers in case of
changes in supply voltage and temperature of surrounding
medium. Trudy inst.Kom.stand., ser 1 izm.prib. no.59:50-57
'62. (MIRA 16:1)

NIKITIN, N.V.

Multistage d.c. amplifiers with a combined use of magnetic amplifiers and transistors. Trudy inst.Kom.stand., ser 1 izm. prib. no.59:58-71 '62. (MIRA 16:1)
(Amplifiers (Electronics))

NIKITIN, N.V.

Transistorized low-voltage stabilizers. Trudy inst.Kom.stand.,
mer i izm.prib. no.59:72-77 '62. (MIRA 16:1)
(Voltage regulators)

ПАРАНЧ / М. НИКИТИН, Н. В. ЛЕВ

... в направлении разработки новых relay-систем
... и станций. (См. телем. 197152) ...
... МИР 111

... лаборатория сигналов и связи ...
... лаборатория ...
... лаборатория ...

NIKITIN, N.V.

Power supply of high-stability quartz oscillators. Izv. Vuzov. Ser. Fiz. Nauki.
50-52 Ja '64. MIRA, 1964.

NIKITIN, N.V. (Moskva)

Dynamic calculation of high towers. Stroim. mekh. i raschet. d.
no. 3:37-42 '64. (MIRA 18.0)

L 64303-65 EWT(1)/EWA(j)/EWA(b)-2 EW/JK

ACCESSION NR: AP5020213

UR/0170/65/009/001/0054/0060

542.182+532

AUTHOR: Dunskiy, V. F.; Nikitin, N. V.

TITLE: Spraying of a liquid with a rotating disk and the question of "secondary" atomization of drops

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 9, no. 1, 1965, 54-60

TOPIC TAGS: spray nozzle, droplet atomization, transfer oil, diesel oil

ABSTRACT: The tests were carried out in the following manner. A continuous stream of liquid from a spray needle was fed into the central cylindrical depression of a horizontal disk. The disk, made of Duraluminum, had a diameter of 7.0 cm. A horizontal sheet of paper was placed 9 cm below the plane of the disk. The axially oriented main drops of colored liquids (transformer oil, density 0.892 grams/cm³, viscosity 0.218 cm²/sec, surface tension 33.2 grams/sec², and diesel oil, density 0.832 grams/cm³, viscosity 0.0278 cm²/sec, surface tension 30.6 grams/sec²) form a regular ring on the paper. The method adopted makes it possible to determine the relative weight of the main drops and of the satellite drops, without any interruption of the settling out process. The tests

Card 1/2

30
29
B

1. 64,303-65

ACCESSION NR: AP5020213

were carried out at liquid flow rates of 0.03 and 0.10 cm³/sec and disk rotation rates of 4000-16,000 rev/min. The article proposes a new dimensionless number T, defined as the ratio of the characteristic time of motion of the drops with a high relative velocity to the characteristic time of disintegration of a drop under the given conditions. Experimental results indicate that the dimensionless number T plays an important role in the atomization of drops. It is likely that this dimensionless number will also throw light on other facts connected with the spraying of a liquid which have not yet been explained. Orig. art. has: 9 formulas 2 figures and 2 tables

ASSOCIATION: Institut fitopatologii, Moscow (Institute of Plant Pathology)

SUBMITTED: 09Nov64

ENCL: 00

SUB CODE: M

NR REF SOV: 007

OTHER: 009

121
Card 2/2

I 14/6-66 EWT(d)/ENE(v)/EWP(k)/EWP(h)/EWP(l)

ACCESSION NR: AP5022363

UR/0115/65/000/007/0061/0062
662.927

AUTHOR: Gladkov, V. D.; Nikitin, N. V.

TITLE: Thermoregulator

SOURCE: Izmeritel'naya tekhnika, no. 7, 1965, 61-62

TOPIC TAGS: ¹⁰temperature instrument, ¹⁴thermoelectric temperature gage, regulator, thermoelectric sensor

ABSTRACT: A thermoregulator ¹⁴ is described which has the following characteristics: sensitivity, 0.01 deg or better; high reliability by virtue of the solid-state components; accuracy of ± 0.01 deg in an ambient temperature range of $-30C$ to $+40C$ with a $\pm 10\%$ variation in bias voltage; temperature drift, < 0.01 deg per month; efficiency for a 50% duty cycle, $> 85\%$. The schematic of the regulator is shown in Fig. 1 of the Enclosure. It operates as follows: the balanced bridge formed by 1.6-kohm MMT-1 thermistors and wire-wound resistors is located at the input of a differential amplifier whose output signals are amplified and fed to a solid-state relay. The relay signals are amplified by a number of on-off common-emitter ampli-

Card 1/3

L 1146-66

ACCESSION NR: AP5022363

fier stages which are temperature stabilized by thermistors: The number of these stages depends on the output power desired. Orig. art. has: 1 figure. [BD]

ASSOCIATION: none

SUBMITTED: 00

ENCL: 01

SUB CODE: EC,TD

NO REF SOV: 004

OTHER: 004

ATD PRESS: 4097

Card 2/3

L 1116-66

ACCESSION NR: AP5022363

ENCLOSURE: 01

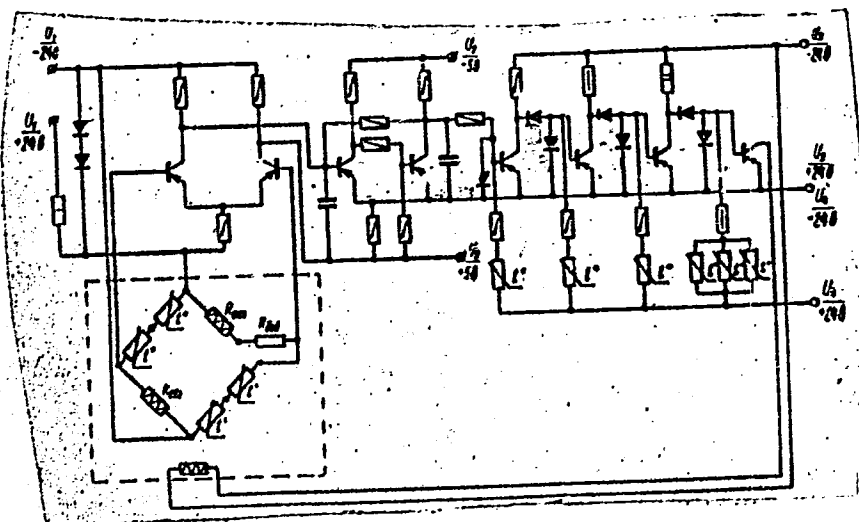


Fig. 1. Thermoregulator

Card 3/3

919

WINTON, N.W.

Designated as a member of the National Security Council Intelligence Directive No. 1 (NSCID-1) list of persons who are known to have information concerning the national defense.

L 42810-66 EWT(1)/EWP(m) CD

ACC NR: AT6028554

SOURCE CODE: UR/0000/66/000/000/0007/0043

AUTHOR: Nikitin, N. V.

ORG: none

TITLE: Investigation of diagonal diffuser cascades

SOURCE: Lopatochnyye mashiny i struynnye apparaty (Vane machinery and jet apparatus); sbornik statey, no. 1. Moscow, Izd-vo Mashinostroyeniye, 1966, 7-43

TOPIC TAGS: axial compressor, ~~axial compressor~~ cascade, ~~diagonal cascade~~, plane cascade, ~~diagonal diffuser cascade~~, compressor, ~~compressor cascade~~ *diffuser*

ABSTRACT: To investigate the possibility of using experimental data for plane diffuser cascades in calculating the characteristics of a diagonal diffuser, i.e., the cascade formed on a noncylindrical surface of revolution, experiments were conducted to check the relationships obtained for the flow in plane and diagonal cascades. The author reached the following conclusions: 1) The profiling of diagonal cascades can be carried out by conformal mapping of the plane containing the initial plane cascade with a given flow deflection angle on the curvilinear flow surface. The replacement of the curvilinear flow surface section by a circular cone surface permits the mapping to be done by using a simple function. 2) During the transition from a flow in a plane cascade to a flow in a diagonal cascade, the calculation of compressibility does not substantially affect the relationships which are

Card 1/2

UDC: 621.13.03:621.454:533.6.001.5

L 48910-66

ACC NR: AT6028554

valid for the case of an ideal incompressible fluid. For the described example, at a given flow of compressible fluid in a plane cascade, the velocities of a flow of compressible fluid in a diagonal cascade can be determined with an accuracy of 2—4%.

3) The form of meridian cross section of the annular channel of a diagonal cascade chiefly determines the value of the total pressure losses in them. The operation of diagonal cascades, tested in a constant area duct, can be characterized by the same values of total pressure losses and flow deflection angle as the initial plane cascades. The total pressure losses in diagonal cascades, tested in a duct of constant height, are several times greater than the corresponding value in plane cascades. Orig. art. has: 19 figures and 29 formulas. [AV]

SUB CODE: 21/ SUBM DATE: 06Apr66/ ORIG REF: 004 ATD PRESS 5067

Card 2/2 *add*

ACC NR: AT6020231

(N)

SOURCE CODE: U.S./2500/05/000/011/0016/0023

AUTHOR: Nikitin, N. V.

ORG: none

TITLE: Selection of temperature regulation system for thermostats with high stability quartz-crystal oscillators

SOURCE: USSR. Komitet standartov, mer i izmeritel'nykh priborov. Trudy institutov Komiteta, no. 77(137), 1965. Issledovaniya v oblasti izmereniya vremeni i chastoty (Research in the field of time and frequency measurement), 16-23

TOPIC TAGS: temperature regulation, thermostat, control circuit, error analysis, quartz crystal oscillator

ABSTRACT: Two types of temperature regulating systems with thermostats using high stability quartz-crystal generators are discussed. Both systems use bridge resistance pick-up, but one has separate measuring and heating circuits (I) and the other combines the two (II). A schematic of the circuitry is shown in Figure 1. For system I, the temperature differential is expressed by

$$dt = -\frac{2(1+n)}{aK_1l_1} \sqrt{\frac{A(T_0 - T'_0)}{R_n} \left(\frac{dl_0}{l_0} + \frac{dT'_0}{2(T_0 - T'_0)} \right)},$$

$$dt = B \left(\frac{dl_0}{l_0} + \frac{dT'_0}{2(T_0 - T'_0)} \right).$$

Card 1/2

UDC: 621.373.5:621.36

ACC NR: AT6C20231

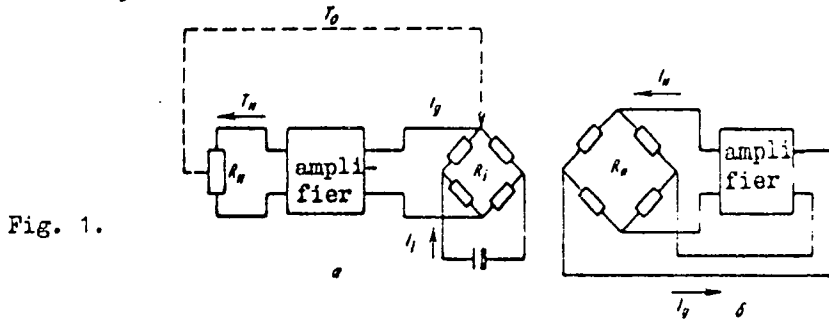


Fig. 1.

for the condition $I_0 = I_H$, where I_0 is the heater current under balanced bridge conditions and I_H is the heater current for an arbitrary surrounding temperature T_B^1 . The corresponding condition for case II is given by

$$dt = -\frac{2(1+m)}{aK_i} \left(\frac{dI_0}{I_0} + \frac{dT_B^1}{2(T_0 - T_B^1)} \right) = A \left(\frac{dI_0}{I_0} + \frac{dT_B^1}{2(T_0 - T_B^1)} \right).$$

Using these equations, a table is prepared listing the temperature changes for each system as a function of amplification factor, input current, internal current I_0 , and external temperature T_B^1 , with only one parameter varying at a time. On the basis of these calculations, the second system (where measurement and heating are combined) is recommended for general use. Orig. art. has: 17 equations, 2 figures, and 1 table.

SUB CODE: 320/ SUBM DATE: --Feb62/ ORIG REF: 002

Card 2/2

10000-07 (c)/EST(m) WIL
ACC NR: AT6020232 (N)

SOURCE CODE: UR/2589/65/000/077/0024/0032

AUTHOR: Nikitin, N. V.

ORG: none

TITLE: Constant current amplifiers for a system of thermally regulated high-stability quartz-crystal oscillator thermostats

SOURCE: USSR. Komitet standartov, mer i izmeritel'nykh priborov. Trudy institutov Komiteta, no. 77(137), 1965. Issledovaniya v oblasti izmereniya vremeni i chaototy (Research in the field of time and frequency measurement), 24-32

TOPIC TAGS: current amplifier, quartz crystal, thermostat, temperature control

ABSTRACT: Two types of constant current amplifiers are discussed. They both possess high zero-stability characteristics and can therefore be used in temperature regulators. The first is a photomultiplier system, and the second is a constant current amplifier with intermediate conversion of constant-to-variable current. For the latter, two types of modulators are considered: a semiconductor modulator and a magnetic modulator. Detailed circuit diagrams are given for each amplifier as well as output characteristics, evaluating one amplifier against the other. Analysis of these results shows that both amplifiers are suitable for thermal control, but the photomultiplier is of a higher quality and greater mechanical stability. In conclusion,

Card 1/2

UDC: 621.373.5:621.36

L 10237-67

ACC NR: AT6020232

the author expresses his gratitude to his senior foreman V. G. Belyakov and foreman K. I. Baranov for their active part in the work and for reviewing the amplifier circuits in this paper. Orig. art. has: 9 figures, 1 formula, and 1 table.

SUB CODE: 09/ SUBM DATE: --Jan62/ ORIG REF: 004

Card

2/2

NIKITIN, N.V., red.; NEKRASOV, K.S., red.; YASNYY, G.V., inzh.,
nauchn. red.; ZUBKOVA, M.S., red.

[Roofs for public buildings] Pokrytiya obshchestvennykh
zdaniy. Pod red. N.V.Nikitina i K.S.Nekrasova. Moskva,
Stroiizdat, 1964. 177 p. (MIRA 17:6)

1. Tsentral'nyy nauchno-issledovatel'skiy i proyektnyy in-
stitut tipovogo i eksperimental'nogo proyektirovaniya zre-
lishchnykh, sportivnykh i administrativnykh zdaniy i sooru-
zheniy.

ACC NR: AP7004154 (N) SOURCE CODE: UR/0375/67/000/001/0068/0069

AUTHOR: Nikitin, N. V. (Captain lieutenant)

ORG: none

TITLE: Device to determine target movement elements

SOURCE: Morskoy sbornik, no. 1, 1967, 68-69

TOPIC TAGS: ship, ~~navigation aid~~, target position indicator, naval tactic, tactical warfare, *RADAR STATION, RADAR TARGET DESIGNATOR*

ABSTRACT: A detailed description is given of a device to determine target movement elements which is used in "Neptune" radar stations on Soviet ships. This device leaves the radar officer to make all calculations and does not require any changes in the design of shipboard radar stations. Its accuracy depends on the experience of the radar operator. On the average, it is 5 to 7% as to course, and + 2 to 3 knots as to speed. The device described facilitates the performance of naval tactical tasks. Orig. art. has: 4 figures. [GC]

SUB CODE: 13, 15, 17/SUBM DATE: none/

Card 1/1

Nikitin, N. Ye.

AUTHOR: Nikitin, N. Ye.

94-4-10/25

TITLE: Cleaning of Pistons in a Shot-throwing Installation
(Ochistka porshney v drobemetnoy ustanovke)

PERIODICAL: Promyshlennaya Energetika, 1958, vol.13, No.4,
p. 20 (USSR).

ABSTRACT: This suggestion was awarded fifth premium in an All-Union competition for the economy of electric power. The inner surfaces of cast iron automobile pistons were formerly cleaned by 56 shot-blasting machines which took up a great deal of space, consumed a lot of compressed air and were very noisy. The author suggested and made up an original design of shot-throwing installation which consists of a sloping chute down which the pistons pass. Shot is thrown on to the pistons by a rotating wheel and at the bottom of the machine is separated from the pistons and raised by a belt to an overhead storage compartment. The power saving that resulted from the introduction of this machine is more than 1 200 000 kWh per annum. There is 1 figure.

AVAILABLE: Library of Congress
Card 1/1

PROSKURIN, N.V.; KUZ'MINA, N.K.; NIKOLIN, G.M.

Using the principle of labor consumption in the analysis of the
technical and economic indices of exploratory work. 1988.
i okh. nedr 30 no.12:32-35 D. 18.

1. Kazakhskiy nauchno-issledovatel'skiy institut imeni M. I. Goro-
syr'ya Ministerstva geologii i okhrany nedr Kazakhstoy SSh.

PROSKURIN, N.V.; KUZ'MINA, N K.; NIKITIN, O.M.

Effective drilling footage. Izv. vys. ucheb. zav.; geol. i razv.
7 no.4:137-140 Ap '64. (MIRA 18:3)

1. Kazakhakiy nauchno-issledovatel'skiy institut mineral'nogo
syr'ya.

NIKITIN, O.O. (Dnepropetrovs'k)

Selecting the number of pinion teeth of differential gear trains
on a kinematic basis [with summary in English]. Prykl. mekh. 3
no.1:51-65 '57. (MLRA 10:5)

1. Dnepropetrovs'kiy institut inzheneriv transportu.
(Gearing)

NIKITIN, O. T.

1230

ISOTOPIC ANALYSIS OF ALKALI ELEMENTS WITH THE AID OF SYNTHETIC ALUMINO SILICATE ION SOURCE.

O. M. Panchenkov, P. A. Akishin, N. N. Vasil'ev, O. T. Nikitin, and S. D. Mel'esov (Lomonosov Moscow State Univ.), *Zh. Fiz. Khim.* 39, 1360-6 (1965) June. (in Russian)

Descriptions are given for a new method of mass spectrometric analysis of Li, K, and Rb with the aid of synthetic aluminosilicate ion source. The possibility of employing the natural isotopic ratio of $^{40}\text{K}/^{39}\text{K}$ as secondary standard for calibrating the apparatus on analysis of other elements has been demonstrated. An attempt was made to determine the true isotope composition of Li in LiCl, calibrating the apparatus according to the K isotope ratio. The value for $^{7}\text{Li}/^{6}\text{Li}$ has been found to be 12.3 ± 5.1 . (tr-av-1)

5

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LSD*

Nikitin, P. A.
O.T.

14000

126

ISOTOPIC ANALYSIS OF Ca, Sr, AND Ba WITH THE AID OF ALUMINUM ION EMITTER, P. A. Nikitin, G. M.

Panchenkov, N. N. Vasil'ev, and O. T. Nikitin (Lomonosov Moscow State Univ.). Zhur. Fiz. Khim. 30, 1387-91(1956)

June. (in Russian)

A new method is given for the spectroscopic analysis of Ca, Sr, and Ba isotopes using a synthetic aluminosilicate ion exchanger as an ion emitter. It is activated by Zr oxychloride solution and saturated with the cation of the element under investigation. (tr-auth)

LFH

AKISHIN, P.A.; NIKITIN, O.T.; PANCHENKOV, G.M.

A new effective ion emitter for the isotopic analysis of lead.
Geokhimiia no.5:425-429 ' 57. (MIRA 12:3)

1. Chemical Faculty of the Moscow State University bearing the name
of Lomonosov.

(Lead--Analysis)

5.2400(A)

67921

SOV/20-129-5-31/64

AUTHORS:

Akishin, P. A., Nikitin, O. T., Gorokhov, L. N.

TITLE:

Determination of the Heat of Sublimation of Boron¹ by the
Masspectroscopic Method¹

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 5, pp 1075-1078
(USSR)

ABSTRACT:

The authors point to the literature data (Refs 1-5) on the sublimation heat of elementary boron which widely diverge. The value given by A. W. Searsy and C. E. Mayers (Ref 5) seems the most probable one, however, it needs further examination. The latter was made by the authors with the evaporation from an effusion chamber being combined with mass spectroscopic determination of the composition and with the determination of vapor pressure. The amorphous boron put at the disposal by A. F. Zhigach was transformed into crystalline boron by annealing in the vacuum at 2000-2100°K. The effusion chamber produced from tantalum or molybdenum was lined with pressed crystalline boron. The effusion chamber (Fig 1) was fitted into the vaporizer of an ion source of a mass spectrometer of type MS-3. Heating was made by electron bombardment, the chamber tempera-

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67921

SCV/20-129-5-31/64

Determination of the Heat of Sublimation of Boron by the Masspectroscopic Method

ture was determined by a pyrometer of type OPPIR-09 calibrated according to the pyrometer of type OP-48, on the basis of the luminescence of a blind channel drilled into the bottom of the chamber which emitted the radiation of an absolutely black body with sufficient accuracy. The apparatus will be described in the periodical "Pribory i tekhnika eksperimenta". The mass spectra of vaporous boron contained only the ions $(B^{10})^+$ and $(B^{11})^+$. B_2^+ -ions were not observed. The absolute vapor pressure was measured according to the method by M. G. Inghram et al. (Refs 10,11). First, Ag was evaporated from the effusion chamber, then the sensitivity to boron was calculated on the basis of the sensitivity of the apparatus to Ag observed. The heat of sublimation ΔH_o^0 of boron was determined by the equation $\Delta H_o^0 = (\Delta i^* - R \ln p_B)$. $\Delta i^* = \bar{i}_{gas}^* - \bar{i}_{solid}^*$ denotes the change of the reduced thermodynamic potential. The values \bar{i}_{gas}^* and \bar{i}_{solid}^* were put at the disposal by L. V. Gurvich. p_B denotes

Card 2/3

67921

SOV/20-129-5-31/64

Determination of the Heat of Sublimation of Bcron by the Masspectroscopic Method

the boron vapor pressure. Table 1 gives the results of an experiment, table 2 shows the total results from 7 experiments. Figure 2 shows the dependence of ΔH_0° on the logarithm of the parameter $\frac{S}{aK}$ of the chamber (a = area of the effusion opening, K = Klausung coefficient, S = evaporation surface). On the basis of the equation (3) mentioned in reference 14 the evaporation coefficient was calculated to be 0.2 - 0.3 in the temperature range 1600 - 2000°K. The value 131.6 ± 5 kcal/gram-atom is given as mean value for ΔH_0° from 7 experiments by taking into account the maximum possible experimental error. There are 2 figures, 2 tables, and 14 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

PRESENTED: July 16, 1959, by V. N. Kondrat'yev, Academician)

SUBMITTED: July 15, 1959
Card 3/3

87571
S/120/60/000/004/011/028
EO32/E414

5.5800 (1043, 1228, 1273)

AUTHORS: Akishin, P.A., Gorokhov, L.N., Nikitin, O.T. and
Khodeyev Yu.S.

TITLE: Application of a Mass-Produced Mass-Spectrometer to the
Study of Evaporation of High Melting Point Materials

PERIODICAL: Pribory i tekhnika eksperimenta 1960, No. 4 pp 98-102

TEXT: One of the most effective methods of determination of the
composition of vapours and their thermodynamic characteristics
(pressure, heats of sublimation and dissociation) is the
combination of the Knudsen effusion method and the mass-
spectrometric analysis of the effusing vapour. The mass produced
mass-spectrometers MC-3 (MS-3), MC-4 (MS-4) and MM-1305 (MI-1305)
were designed for the isotopic analysis but with certain
modifications and improvements they can also be used to study the
properties of vapours of high melting point materials. These
modifications include the provision of an ion source incorporating
the effusion chamber whose temperature can be varied during the
experiment, the provision of a device which prevents the molecular
beam from reaching the ionization chamber so that the intensity of
a mass-line under investigation can be compared with the background

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intensity, and the inclusion of a high-sensitivity ion current detector for use with substances whose vapour pressure under the experimental conditions which can be achieved with these spectrometers is relatively low. The present paper gives an account of these modifications as introduced in the MS 3 mass spectrometer. The effusion chamber employed is shown in Fig. 2 in which 1 is the effusion chamber, 2 is a heating spiral, 3 is a tantalum screen, 4 is a stainless steel screen, 5 is the body and 7 is a thermocouple. The dimensions of the effusion chamber are internal diameter 5 mm, length 5.5 mm, diameter of effusion aperture 0.1 mm (or greater). The distance from the effusion aperture to the centre of the ionization region is about 10 mm. No details are given of the ionization device except for a statement that the ion source is a modified form of the normal ion source used in the MS 3 mass spectrometer. In the case of temperatures between 1000 and 2000°C, the effusion chamber illustrated in Fig. 3 was employed. The actual effusion

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chamber 4 is surrounded by a series of tantalum radiation shields-
2 and the substance under investigation 6 is fitted into the
effusion chamber as shown. The dimensions of the effusion chamber
are as follows: internal diameter 3 mm, external diameter 5 mm,
length of cavity 6 mm, effusion aperture diameter 0.05 mm (or
greater). The temperature is measured pyrometrically to an
accuracy of $\pm 5^\circ$ in the range 900 to 1400°C. and $\pm 10^\circ$ in the
range 1400 to 2000°C. The low ion currents in the spectrometer
are measured by the method described by Shutze and Bernhard (Ref. 7)
and Kuznetsov (Ref. 8). Ions entering the entrance slit of the
detector are accelerated through a negative potential of 5 to 10 kV
and eject secondary electrons from a metal target. Secondary
electrons with energies between 5 and 10 keV give rise to
scintillations in a phosphor which are recorded by a photomultiplier.
The sensitivity threshold of the instrument is 2×10^{-17} amp. The
apparatus has been used in preliminary experiments to determine the
heat of sublimation of silver. This quantity was found to be

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65.0 ± 0.9 kcal/g.at in the temperature interval 1115 to 1233 K
The first effusion chamber has been used to study the vapour
composition and sublimation heats of sodium chloride (Ref.4)
lithium chloride and other inorganic compounds (Ref.10). The high
temperature effusion chamber has been used to measure the heats of
sublimation of high melting point materials, as described by the
present authors in Ref.10 and 11. There are 5 figures and
11 references. 8 Soviet and 3 non Soviet

ASSOCIATION. Khimicheskiy fakul'tet MGU
(Division of Chemistry Moscow State University)

SUBMITTED: June 15 1959

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E032/E414

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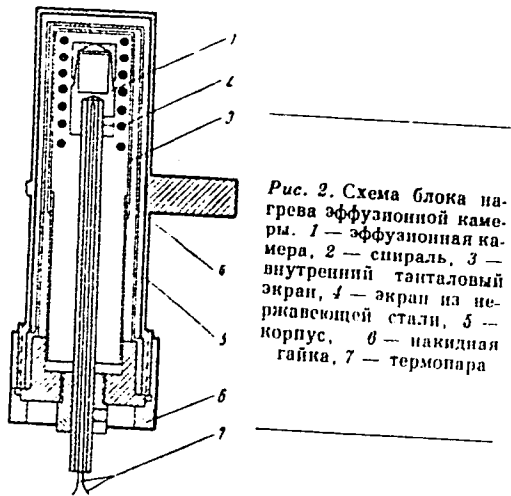


Рис. 2. Схема блока нагрева эффузионной камеры. 1 — эффузионная камера, 2 — спираль, 3 — внутренний танталовый экран, 4 — экран из нержавеющей стали, 5 — корпус, 6 — навидная гайка, 7 — термопара

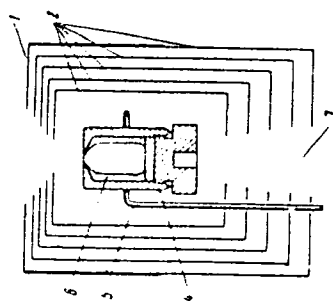


Рис. 3. Схема блока нагрева эффузионной камеры электронной бомбардировкой. 1 — крышка блока нагрева, 2 — сварные танталовые экраны, 3 — отверстие в дне экранов для ионизации, 4 — эффузионная камера, 5 — корпус, 6 — навидное место

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Fig. 2.

Fig. 3.

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AUTHORS: Nikitin, O. T., Gorokhov, L. N.

TITLE: Composition of Beryllium Vapor

PERIODICAL: Zhurnal neorganicheskoy khimii, 1961, Vol 6, No. 1,
pp. 224 - 225

TEXT: The state of evaporated beryllium was described in papers by V. M. Amonenko, L. N. Ryabchikov, G. F. Tikhinskiy, and V. A. Finkel' (Ref.6). The authors have now studied the composition of beryllium vapor by means of an MC-3 (MS-3) mass spectrometer. A table gives the results of mass-spectrometric investigations of beryllium vapor in the temperature range of from 1410 to 1620°K. Beryllium in vapor was found to be in an atomic form. There are 1 table and 13 references: 5 Soviet, 6 US, 1 British, and 1 German. /C

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: July 6, '960

Card 1/1

KUZNETSOVA, Ye.M.; ZAKURIN, N.V.; NIKITIN, O.T.

Isotopic effect during distribution of titanium compounds
between water and ether. Zhur.neorg.khim. 7 no.3:676-677
Mr '62. (MIRA 15:3)
(Titanium—Isotopes) (Titanium compounds)

PETROV, V.S.; NIKITIN, O.T.

Study of the stable carbon isotopes in kimberlites. Vest.Mosk.un.
Ser.4:Geol. 17 no.3:51-53 My-Je '62. (MIRA 15:0)

1. Kafedra kristallografii i kristallokhimii Moskovskogo
universiteta.

(Carbon--Isotopes) (Kimberlite)

KUZNETSOVA, Ye.M.; NIKITIN, O.T.

Isotopic effect in the distribution of titanium compounds between water and benzene. Zhur. fiz. khim. 36 no.9:2050-2052 S '62.

(MIRA 17:6)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

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S/020/62/145/006/013/015

3106/3144

52410

112221

AUTHORS: Nikitin, G.T., and Akishin, P. A.

TITLE: Determination of the vaporization heat of boron trioxide by mass spectrometry

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 145, no. 6, 1969, 1294-1295

TEXT: Data on the vaporization heat, ΔH_T , of boron trioxide differ considerably. This is partly due to incomplete removal of water vapor remaining $\Delta H_T(B_2O_3)$ during the measurements. To obtain exact values, the composition and absolute B_2O_3 vapor pressure were determined by mass spectrometry. For 1-5 hrs, the sample was kept at $1200^\circ C$ in vacuo, to remove traces of water. After the ion source had been put into the polydenum effusion chamber, B_2O_3 was dehydrated in the mass spectrometer at $\geq 1100^\circ C$ and boron trioxide vapors emerging from the effusion chamber through slits were ionized by electrons of 70 ev. B^+ , BO^+ , $B_2O_2^+$, and B_2O^+ ions with the relative intensities 2, 7, 7, and 100, respectively occurred.

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Determination of the vaporization ...

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in the mass spectrum of B_2O_3 vapors. The dependence of the $B_2O_3^+$ ionization current on the temperature of the effusion chamber was determined to calculate ΔH_T . The resulting data were evaluated by the method of least squares: $\Delta H_T(B_2O_3)$ was calculated from: $\log(I \cdot T) = f(1/T)$. To check the apparatus, silver was vaporized in the same effusion chamber. The absolute values of the B_2O_3 vapor pressure were calculated by W. A. Chupka's and M.G. Inghram's methods (J. Phys. Chem., 59, 100 (1955); J. Chem. Phys., 23, 216 (1955)). The temperature dependence of the B_2O_3 vapor pressure, as determined experimentally, is $\log P_{at} = (7.44 \pm 0.16) - 84500/4.576 T$. The value of 84.5 ± 0.5 kcal/mole determined between 1315 and 1529°K for $\Delta H_T(B_2O_3)$ is very reliable and can be used for thermodynamic calculations. There are 2 tables. The most important English-language references are: R. Speiser, S. Naiditch, E. L. Johnston, J. Am. Chem. Soc., 72, 2576 (1950); M. D. Scheer, J. Phys. Chem., 61, 1184 (1957); D. White, P. N. Schich et al., J. Phys. Chem., 65, 1404 (1961).

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NIKITIN, O.T.; PANCHENKOV, G.M.; GOROKHOV, L.N.

"Massenspektrometrische Isotopenanalyse an Titan"

Third Working Conference on Stable Isotopes 28 October to 2 November 1963, Leipzig.