

BELYANCHIKOV, V.N., redaktor; LYADEYEV, A.P., redaktor; BRODSKIY, V.A.,
redaktor; MATVHEYEVA, Ye.N., tekhnicheskiy redaktor

[Catalog of principal parts of the SE-3 excavator] Katalog osnov-
nykh detalei ekskavatora SE-3. Moskva, Gos. nauchno-tekhn. izd-vo
mashinostroit. lit-ry, 1955. 70 p. (MLRA 8:7)

1. Russia (1923- U.S.S.R.) Ministerstvo stroitel'nogo i dorozh-
nogo mashinostroyeniya.
(Excavating machinery)

BELYANCHIKOV, V.N., redaktor; LYADBYEV, A.P., redaktor; SAVKIN, T.I.,
redaktor; TIKHONOV, A.Ya., tekhnicheskiy redaktor

[Catalog of the principal parts of the MTN-251 excavator] Katalog
osnovnykh detalei ekskavatora MTN-251. Moskva, Gos. nauchno-tekhn.
izd-vo Mashinostroit. lit-ry, 1955. 106 p. (MIRA 8:7)

1. Russia (1923- U.S.S.R.) Ministerstvo stroitel'nogo i dorozh-
nogo mashinostroyeniya.
(Excavating machinery)

Bel/ANCO, KOD, N.

BRLYANCHIKOV, V.N., inzh., red.; KORABLEVA, R.M., inzh., red. izd-va;
~~BLATND, V.D., tekhn. red.~~

[Catalog of the T-62 engine parts] Katalog detalei dvigatelia T-62.
Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1957. 51 p.

1. Vsesoyuzna a tekhnicheskaya kontora "Soyuzstroy mekhzapchast"
Konstruktorskoye byuro.
(Gas and oil engines)

BELYANCHIKOV, V.N., inzh.; NOVIKOV, I.V., inzh.; GRACHEV, A.S.,
inzh.; BELKIN, V.A., inzh.; AKIL'YEV, S.A., inzh.

[Catalog and reference manual on the adaptability of hydraulic and pneumatic systems to excavating, construction, and road machinery] Katalog-spravochnik primeniamosti gidro- i pnevmosistem na ekskavatorakh, stroitel'nykh i dorozhnykh mashinakh. Moskva, Goslesbunizdat, 1963. 147 p. (MIRA 17:7)

1. Russia (1917- R.S.F.S.R.) Glavnoye upravleniye po snabzheniyu i sbytu produktsii tyazhelogo, traktornogo i stroitel'no-dorozhnogo oborudovaniya.

KANTSEL', Ya.O., inzh.; BELYANCHIKOV, V.N., inzh.; NOVIKOV, I.V., inzh.; ZAYTSEV, L.Ye., inzh.; AKIL'YEV, S.A., inzh.; BELKIN, V.A., inzh.; POCHKINA, L.A., inzh.; VASIL'YEV, O.A., inzh.; KUZ'MINYKH, A.A., red.izd-va; SHIBKOVA, R.Ye., tekhn. red.

[Service life of parts of excavating, construction and road machinery; a reference catalog] Sroki sluzhby detalei ekskavatorov, stroitel'nykh i dorozhnykh mashin; katalog-spravochnik. Izd.2., perer. i dop. Moskva, Goslesbumizdat. Pt.1. [Excavating machinery and hoisting equipment; cranes, loaders, winches, and elevators] Ekskavatory i pod'emno-transportnoe oborudovanie; krany, pogruzchiki, lebedki, elevatory. 1963. 342 p. (MIRA 17:3)

1. Russia (1917- R.S.F.S.R.) Glavnoye upravleniye po snabzheniyu i sbytu produktsii tyazhelogo, transportnogo i stroitel'no-dorozhnogo mashinostroyeniya. Tekhnicheskaya kontora "Stroityazhmashzapchast'." Konstruktorskoye byuro.

BELYANCHIKOV, V.N., inzh.; NOVIKOV, I.V., inzh.; ZAYTSEV, L.Ye.,
inzh.; AKIL'YEV, S.A., inzh.; BELKIN, V.A., inzh.;
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uchastiye: KOPEYKINA, O.P.; SMIRNOVA, A.N.; BELKINA, S.S.;
SHILINA, Ye.I.; LAGUNOV, Ye.N.; REZNIK, S.Z.; BRISMAN,
B.I.; KUZ'MINIKH, A.A.; SHIRKOVA, R.Ye.,
tekhn. red.

[Operational life of parts of excavating, construction,
and road machinery; a reference catalog] Sloki sluzhby de-
talei ekskavatorov, stroitel'nykh i dorozhnykh mashin;
katalog spravochnik. Izd. 2., perer. i dop. Moskva, Gos-
lesbumizdat. Pt. 2. [Road, construction machinery, and
machinery for manufacturing building materials] Dorozhnye,
stroitel'nye mashiny i mashiny dlia proizvodstva stroitel'-
nykh materialov. 1963. 306 p. (MIRA 17:4)

1. "Stroitiyazhmashzapchast'," Tekhnicheskaya kontora. Kon-
struktorskoye byuro.

PUCHKOV, N.G.; BOROVAYA, M.S.; ZELENSKAYA, R.G.; BELYANCHIKOVA, G.P.

Performance of winter motor oils from eastern sulfur-bearing
crudes. Khim.i tekhn.topl.i masel 4 no.2:10-18 F '59.

(MIRA 12:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke
nefti i gaza i polucheniya iskusstvennogo topliva.
(Lubrication and lubricants--Testing)

ACC NR:

AM5000489

Monograph

UR/

Belov, Konstantin Petrovich; Belyanchikova, Marianna Aleksandrovna; Levitin, Rudol'f Zinov'yevich; Nikitin, Sergey Aleksandrovich

Rare-earth ferromagnets and antiferromagnets (Redkozemel'nyye ferromagnetiki i antiferromagnetiki) Moscow, Izd-vo "Nauka", 1965, 319 p. illus., biblio. 4,000 copies printed.

Series note: Sovremennyye problemy fiziki

TOPIC TAGS: rare earth metal, ferromagnetic material, antiferromagnetic material, ferromagnetism, ferrite, antiferromagnetism

PURPOSE AND COVERAGE: Based on the published Soviet and foreign works of students and engineers, a survey is given of the present state of theoretical and experimental studies of ferromagnetism and antiferromagnetism of rare earth metals, alloys and compounds. Also shown are the results obtained by the author. This book is recommended for scientists working with magnetism and solid physics as well as for physicists, chemists, and engineers in research and application of magnetic materials. It can also be useful to aspirants and students in advanced courses of related specialties.

Card 1/2

UDC: 538.221

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AM6008489

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BELOV, Konstantin Petrovich; ~~BELYANCHIKOVA, Marianna Aleksandrovna;~~
LEVITIN, Rudol'f Zinov'yevich; ~~RIKITIN, Sergey Aleksandrovich;~~
GUSEV, A.A., red.

[Rare-earth ferromagnetics and antiferromagnetics] Redko
zemel'nye ferromagnetiki i antiferromagnetiki. Moskva, Nauka,
1965. 319 p. (MIRA 19:1)

VILKOVA, N.A., aspirantka; KOZLENKO, V.N., fitopatolog (Brazhnoye, Krasnoyarskogo kraya); GULYARENKO, F.N.; RAZVIAZKINA, G.M.; KAPKOVA, Ye.A.; BELYANCHIKOVA, Yu.V.; DZHUMABAYEV, P., aspirant; RASSADINA, Ye.G., aspirant; NIKITINA, M.D., mladshiy nauchnyy sotrudnik; LOGINOVA, K.M., kand.sel'skokhoz.nauk; YUZ'KO, S.L.; PETROVA, N.A.

Brief information. Zashch. rast. ot vred. i bol. 8 no.9:53-57
S '63. (MIRA 16:10)

1. Vsesoyuznyy institut zashchity rasteniy (for VilkoVA, Rassadina).
2. Zaveduyushchiy Lisetskim sortouchastkom, selo Krekhovtsy, Ivanovo-Frankovskoy oblasti (for Gulyarenko).
3. Laboratoriya mikologii Vsesoyuznogo instituta zashchity rasteniy (for Dzhumabayev).
4. Chitinskaya sel'skokhozyaystvennaya opytnaya stantsiya (for Nikitina).
5. Pushkinskaya baza Vsesoyuznogo instituta zashchity rasteniy (for Loginova).
6. Ul'yanovskaya sel'skokhozyaystvennaya opytnaya stantsiya, pochtovoye otdeleniye Isheyevka (for Petrova).

SUKHOV, K.S.; RAZVYAZKINA, G.M.; PRIDANTSEVA, Ye.A.; BELYANCHIKOVA, Yu.V.

Studying virus diseases of grain crops. Zashch.rast.ot vred.i
bol. 7 no.4:40 Ap '62. (MIRA 15:12)

(Krasnodar Territory—Grain—Diseases and pests)

(Krasnodar Territory—Virus diseases of plants)

BELYANESKIY, N.A.; LUNGERSGAUZEN G.B.

Tasks of geomorphological mapping and its place in a regional geological study of the U.S.S.R. Izv. AN SSSR, Ser. geog. no.5:96-104
S-0 '60. (MIRA 13:10)

(Relief maps)

BELYANICHEV, S.

Mechanization of ship painting. Rech.transp. 20 no.6:47 Je '61.
(MIRA 14:6)

1. Direktor Krasnoarmeyskogo sudoremontnogo zavoda.
(Ships--Painting) (Spray painting)

BELYANICHEV, S.

Economic problems should be in the center of attention of the industrial community. Rech.transp. 22 no.1:23-24 Ja '63.
(MIRA 16:2)

1. Direktor Krasnoarmeyskogo sudoremontnogo zavoda.
(Shipbuilding—Costs)

25(2) **PHASE I BOOK EXPLOITATION** 307/2095

Конференциальне по вопросам науки, конструкторские и изобретательские
 патенты и патенты на изобретения. Одесса, 1977

Масбет, конструкторские и изобретательские патенты, [с. 1]
 (Design, Construction and Analysis of Transmissions; Transactions of the Com-
 munist Academy of Sciences, Vol. 1) [Odessa] Odeskii politekh in-t, 1978. 199 p. 5,000
 copies printed.

Sponsoring Agencies: Nauchno-tekhnicheskoye obshchestvo mashinostroytel'noy
 promyshlennosti, Odeskoye obshchestvo pravleniye, and Odeskii politekhnich-
 eskiy institut.

Ed.: I. P. Kikiforov, Engineer; Tech. Ed.: A. R. Kondrasenko; Editorial Board:
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 nical Sciences (Mach. Eng.), P. S. Kat, Candidate of Technical Sciences, Ya. O.
 Kiselev, Candidate of Technical Sciences, V. K. Kiselev, Doctor of Tech-
 nical Sciences, V. P. Mal'tsev, Candidate of Technical Sciences, M. S. Polubinskiy,
 Candidate of Technical Sciences, and L. B. Krilko, Candidate of Technical
 Sciences.

Card 1/8

COVERAGE: This book is the first of three volumes dealing with the trans-
 actions of the conference. This first volume contains articles on the de-
 sign and construction of gears and transmissions. The second volume treats
 flexible transmissions and the third, theoretical and experimental analysis of
 transmissions. References follow several of the articles.

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ANDOZHSKIY, Vsevolod Dmitriyevich, dotsent, kand.tekhn.nauk; BELYANIN, Aleksandr Ivanovich, inzh.; VEYTS, Vladimir L'vovich, inzh.; GINZBURG, Yevgeniy Grigor'yevich, inzh.; YEFIMOVICH, Aleksey Illarionovich, inzh.; KRIVENKO, Igor' Semenovich, inzh.; SHANNIKOV, Vladimir Mikhaylovich, doktor tekhn.nauk; FRENKEL', Izrail' Nakhmanovich, kand.tekhn.nauk; GRUBIN, A.N., prof., doktor tekhn.nauk, retsenzent; KOLCHIN, N.I., prof., doktor tekhn.nauk, red.; GOLOVANOV, N.F., kand.tekhn.nauk, red.; SIMONOVSKIY, N.Z., red.isd-va; POL'SKAYA, R.G., tekhn.red.

[Gear and worm drives; some problems in theory, design, and manufacture] Zubchatye i cherviachnye peredachi; nekotorye voprosy teorii, rascheta i proizvodstva. Pod red. N.I.Kolchina. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 219 p.
(Gearing) (MIRA 12:6)

BELYANIN, A.I.

KUDRYAVTSEV, V.N., doktor tekhn.nauk; BELYANIN, A.I., inzhener.

Increasing the load-carrying ability of spur gears by means of correction with contact pole located in the area of simultaneous contact of two pairs of teeth. Vest.mash. 37 no.10:24-27 0 '57.

(MIRA 10:11)

(Gearing, Spur)

Belyanin, A. I.

BELIANIN, A.I., inzh.

Strength of working surfaces of gear teeth subjected to
varying loads, Vest.mash. 37 no.12:51-55 D '57. (MIRA 10:12)
(Gearing) (Mechanical wear)

25(1)

PHASE I BOOK EXPLOITATION

SOV/2928

Andozhskiy, Vsevolod Dmitriyevich, Aleksandr Ivanovich Belyanin,
Vladimir L'vovich Veyts, Yevgeniy Grigor'yevich Ginzburg,
Aleksey Illarionovich Yefimovich, Igor' Semenovich Krivenko,
Vladimir Mikhaylovich Shannikov, and Izrail' Nakhmanovich Frenkel'

Zubchatyye i chervyachnyye peredachi; nekotoryye voprosy teorii,
rascheta i proizvodstva (Spur Gear and Worm Gear Drives; Some
Problems in Theory, Design, and Manufacture) Moscow, Mashgiz,
1959. 219 p. Errata slip inserted. 9,000 copies printed.

Ed. (Title page): N. I. Kolchin, Doctor of Technical Sciences,
Professor; Reviewer: A. N. Grubin, Doctor of Technical Sciences,
Professor; Ed. (Inside book): N. F. Golovanov, Candidate of
Technical Sciences; Ed. of Publishing House: N. Z. Simonovskiy;
Tech. Ed.: R. G. Pol'skaya; Managing Ed. for Literature on the
Design and Operation of Machinery (Leningrad Division, Mashgiz):
F. I. Fetisov, Engineer.

Card 1/6

Spur Gear and Worm Gear Drives (Cont.)

SOV/2928

PURPOSE: This book is intended for technical personnel and scientific workers interested in the theory of gears and gear drives.

COVERAGE: This book deals with the calculation, design, and practical application of gears and gear drives. The first three chapters are devoted to new types of gears and gear drives and to the manufacture of gears with advanced geometry of engagement. The last four chapters describe theoretical and practical methods of gear calculation. A description is given of planetary gear drives with various types of engagement, with emphasis on the design of planetary reducing gear drives for use in electric motors. Recent achievements in the Soviet gear-cutting industry and theoretical work on gear design and calculations of stresses in gear trains are discussed. No personalities are mentioned. There are 97 references: 82 Soviet, 10 German, 4 English, and 1 French.

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Spur Gear and Worm Gear Drives (Cont.)

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Spur Gear and Worm Gear Drives (Cont.)

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26. Field of application of self-braking worm gear drives and performance features under variable operating conditions

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27. Braking of the kinematic chain with self-braking worm gear drive taking the rigidity of engagement into account

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28. Braking of self-braking gear systems with elastically engaged mass

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AVAILABLE: Library of Congress (TJ184.K54)

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GO/jmr
1-28-60

BELYANIN, B.V.; ERIKH, V.N. (g.Leningrad)

Textbook on industrial chemistry ("Technology of the principal
branches of industry. Part III: Chemical industries" by I.P.
Mukhlenov. Reviewed by B.V.Belianin, V.N.Erikh. Khim.v shkole
14 no.4:85 J1-Ag '59. (MIRA 12:11)
(Chemical industries)

BELIANIN, Boris Vladimirovich; ERIKH, Vladimir Nikolayevich;
DOBRYANSKIY, A.P.; prof., retsenzent; VENEDIKTOVA, Ye.K.,
prepodavatel', retsenzent; FROLOVA, V.K., retsenzent;
BRUSKIN, D.M., ved. red.; YASHCHURZHINSKAYA, A.B., tekhn.red.

[Industrial analysis of petroleum products and gas] Tekhnicheskii
analiz nefteproduktov i gaza. Leningrad, Gostoptekhizdat, 1962.
367 p. (MIRA 16:3)

1. Leningradskiy universitet (for Dobryanskiy). 2. Groznenskiy
neftyanoy tekhnikum (for Venediktova). 3. Zaveduyushchiy labo-
ratoriyey Moskovskogo neftepererabatyvayushchego zavoda (for
Frolova).

(Petroleum products--Analysis)
(Gas, Natural--Analysis)

BEL'YANIN, F.S.

Acute appendicitis in a normally located appendix, simulating appendicitis of the left side. Sov.med. 17 no.6:38-39 Je '53. (MLRA 6:6)

1. Timashevskaya bol'nitsa Kuybyshevskoy oblasti. (Appendicitis)

BELIANIN, N.M.

~~Indices of growth. Vest.sviazi 17 no.10:41-42 0 '57. (MIRA 10:11)~~

1. Ministr svyazi Litovskoy SSR.

(Lithuania--Telecommunication)

BELIANIN, N.M.

Development and improvement of the means of communication in the
Lithmanian S.S.R. Vest. svyazi 20 no.11;27-28 N '60. (MIRA 13:12)

1. Ministar svyazi Litovskoy SSR.
(Lithmania--Telecommunication)

BELYANIN, N. M.

15-1957-7-8957

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 7,
p 11 (USSR)

AUTHOR: Belyanin, N. M., Khalfin, L. L.

TITLE: Stratigraphic System for the Kuznetsk Basin, Adopted
by the Council, 1954 (General Characteristics)
(Stratigraficheskaya skhema Kuzbassa, prinyataya
soveshchaniyem 1954 g. (obshchaya kharakteristika)

PERIODICAL: V. sb.: Vopr. geol. Kuzbassa. 1. Moscow, Ugletekh-
izdat, 1956, pp 7-29

ABSTRACT: The Council adopted the following system (see table).
Subdivisions into subseries and formations were a-
dopted only for the Balakhonskiy and Kol'chuginskiy
series. The Kol'chuginskiy series was subdivided
into two subseries. The lower includes the former
Il'inskiy series, now a formation, and a new strati-
graphic subdivision, the Uskaskiy formation, to which
the lower part of the Yerunakovskiy series belonged.
It has been proposed to call the remaining part of

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15-1957-7-8957

Stratigraphic System for the Kuznetsk Basin, adopted by the Council, 1954 (Cont.)

the Yerunakovskiy series the Upper Kol'chuginskiy subseries, and this has been subdivided into two formations. In the northern part of the Kuznetsk basin the three lower formations of the Kolchuginskiy series are replaced by the Krasnoyarsk sandstone facies. The Ostrogskiy series, formerly belonging to the Upper Carboniferous, now belongs to the Lower Carboniferous (to the top of the Visean, the Namurian). The age of the Balakhonskiy series was not determined conclusively, and this series requires more precise definition. It was established that the conglomeratic series includes all three divisions of the Jurassic system. Cretaceous rocks, which occur in a number of places in the Kuznetsk basin, were not considered in the system adopted by the Council. The majority of the boundaries between individual subdivisions are biostratigraphic and are clearly verified by changes both in the lithology of the rocks and in the groups of fauna and flora. Detailed descriptions of the individual subdivisions and lists of guide fossils are presented.

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15-1957-7-8957

Stratigraphic System for the Kaznetsk Basin, adopted by the Council, 1954 (Cont.)

Age	Series	Subseries	Formation	Thickness, m
J ₁₋₃	Conglomeratic			700-900
b r e a k				
T ₁	Mal'tsevskiy		Upper Mal'tsevskiy	300-400
			Lower Mal'tsevskiy	280-300
p ₂ ^k	Kol'chuginskiy	Upper Kol'chuginskiy	Gramoteinskiy	1400
			Leninskiy	550-700
		Lower Kol'chuginskiy	Uskatskiy	
			Il'inskiy	600-900
			Krasnoyarsk facies	

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15-1957-7-8957

Stratigraphic System for the Kuznetsk Basin, adopted by the Council, 1954 (Cont.)

Age	Series	Subseries	Formation	Thickness, m
P_1^{ks}	Kuznetskiy		.	700-800
C_2-P_1	Balakhonskiy	Upper Balakhon- skiy	Usyat'skiy	100-170
			Kemerovski	150-200
			Ishanovski- Intermediate	160-1200
		Lower Balakhon- skiy	Alykayerskiy Mazurovskiy	200-600 300-550
C_1^3	Ostrogskiy			200-600
b r e a k				

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Stratigraphic System for the Kuznetsk Basin, adopted by the Council, 1954 (Cont.) 15-1957-7-8957

Age	Series	Subseries	Formation	Thickness, m
C ₁ ²	Viscan stage			
C ₁ ¹	Tournaisian stage			

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I. N. Krylov

BELIANIN, N.M.; SENDERZON, E.M.

Geological study of the Kuznetsk Basin during forty years of Soviet rule. Izv. vost. fil. AN SSSR no.10:27-38 '57. (MIRA 10:11)

1. Trast "Kuzbassuglegeologiya."
(Kuznetsk Basin--Geology)

BEL'YANIN, N. M. (Moscow)

"Turbulent Boundary Layer in Compressible Flow at Prandtl numbers, Pr.#1."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.

ACCESSION NR: AP4019081

S/0170/64/000/003/0082/0085

AUTHOR: Belyanin, N. M.

TITLE: Motion of gas with friction and heat transfer in a channel of uniform cross section

SOURCE: Inzhenerno-fizicheskiy zhurnal, no. 3, 1964, 82-85

TOPIC TAGS: subsonic gas flow, supersonic gas flow, heat transfer, heat exchange, gas dynamics

ABSTRACT: A method is proposed for calculating the flow of a perfectly compressible gas of constant heat capacity in a channel of uniform cross section, in the presence of friction and heat transfer for both laminar and turbulent flow conditions. The method is based on the combined solution of momentum and energy equations. It is shown that in the case of small subsonic velocities and a great temperature difference between gas and wall, the effect of cooling is greater than that of friction, and the flow is dragged. For high subsonic velocities or a small temperature difference between gas and wall, the effect of friction is more appreciable, and the flow is accelerated. In the case of

Card 1/2

ACCESSION NR: AP4019081

supersonic heated gas flow, the effect of friction prevails and the flow is decelerated. Orig. art. has 2 figures and 16 formulas.

ASSOCIATION: none

SUB CODE: PH, AI

SUBMITTED: 30Dec62

NO REF SOV: 004

OTHER: 000

DATE ACQ: 27Mar64

ENCL: 00

Card 2/2

490-65 EWT(1)/EPA(b)/EPF(d)/EPF(n)-2/EPH/T/EPA(bb)-2/FCS(k)/EWA(1)
-4/Pr-4/Ps-4/Pu-4 SSD/AEDC(a)/AFWL/BSO/ASD(f)/ASD(d) WW

ACCESSION NR: AP4044735

S/0207/64/000/004/0139/0142

AUTHOR: Belyanin, N. M. (Moscow)

TITLE: Experimental investigation of friction and heat exchange
during gas flow in a tube

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 4,
1964, 139-142

TOPIC TAGS: gas flow, heat exchange, friction coefficient, Stanton
number, Reynolds number, subsonic flow, subsonic gas flow, chromel
kopel thermocouple

ABSTRACT: An experimental investigation of friction coefficient and Stanton number for subsonic turbulent gas flow of high-temperature gas in a round tube was carried out for Reynolds numbers of $2 \cdot 10^3$ to $5 \cdot 10^3$. The main emphasis of the investigation was put on the study of the effect of the enthalpic factor on the friction coefficient and the Stanton number at subsonic flows. The cylindrical tube, in which the air was heated by an electric-arc heater, consisted of 14 heat-insulated, water-cooled sections. Openings were made in each section for

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L 8490-65

ACCESSION NR: AP4044735

the measuring of static pressure. Chromel-kopel thermocouples were fixed to each section for measuring the wall temperature. The tube was 1826.3 mm long and had an average diameter of 15.85 mm. The following parameters were measured during the experiment: current, arc voltage, air flow rate, flow and temperature of water in each section, static pressure, wall temperature, total pressure, and stagnation temperature at the exit of the tube. All measurements were made under steady static conditions. The obtained results appear to show that in approximate calculations the friction coefficient and Stanton number do not depend on the enthalpic factor for $3 < h_0/h_w < 20$, where h_0 =enthalpy at the axis of the tube and h_w =enthalpy at the wall of the tube. Orig. art. has: 7 figures and 7 formulas.

ASSOCIATION: none

SUBMITTED: 17Apr64

ATD PRESS: 3104

ENCL: 00

SUB CODE: ME, TD

NO REF SOV: 011

OTHER: 002

Card 2/2

BELIANIN, N.M. (Moskva)

Experimental study of friction and heat transfer in gas
flow along a tube. PMFT no.4:139-142 J1-Ag '64.

(MIRA 17:10)

BELIANIN, N.M.

Automation of the means of communication in the Lithuanian S.S.R.
Vest. svyazi 24 no.7:18-20 J1 '64. (MIRA 17:9)

1. Ministr svyazi Litovskoy SSR.

AUTHOR: Girshfel'd, V.Ya. (Cand.Tech.Sci.)
 Ostrovskiy, Ya. M. (Cand.Tech.Sci.)
 Delinskiy, S.Ya. (Cand.Tech.Sci.)
 Belyanin, P.A. (Engineer)

SOV/96-58-10-1/25

TITLE: The availability of reserve generating plant in thermal power stations.
 (O mobil'nosti vrashchayushchegosya rezerva na teplovykh elektrostantsiyakh)

PERIODICAL: Teploenergetika, 1958, No.10. pp. 3 - 7

ABSTRACT: With the advent of supply to Moscow from Kuybyshev, it became necessary to maintain adequate reserve plant in order to safeguard against transmission break-downs. The reserves are partly in thermal and partly in hydro-electric stations; the proportion of load picked up by the latter has varied from 32 to 60%. The rate of take-up of load at the main hydro-electric stations was as follows: from half to full load, 10 - 15 seconds, from no load to full load, 25 - 30 seconds. Therefore, sufficient reserve must be available in thermal stations to accept load instantly and so safeguard the frequency. Rates of load take-up at a steam-driven station are given in Table.1. for various types of boilers and rates of steaming. The pressure-drop in the boilers is related to the magnitude of the steam demand in Fig.1. Analysis of data for particular sets shows that in practice there are three types of load take-up, as shown in Fig.2: the load may fall to the initial value; it may fall part way; or it may remain constant.

Card 1/3

The availability of reserve generating plant in thermal power stations.

SOV/96-58-10-1/25

The load may drop again to its initial value after suddenly being taken up because of manual intervention to prevent overloading. The proportion of initial load take-up that was maintained in particular cases when both transmission lines failed is given in Table 2. The method of determining the pressure drop in a boiler when the load on the turbines is suddenly increased is then explained with reference to Fig.3; a formula is derived for the accumulator capacity of drum-type boilers. Calculations made for different types of boilers by means of this formula, gave the results seen in Table.3. The relationship between the boiler accumulator capacity and the product of water volume and rated pressure is plotted in Fig.4: the graph is linear. Special tests were made at power stations to determine the maximum permissible rates of load take-up. The results are given in Table.4. The main condition that limited the rate of load take-up in medium-pressure boilers was the rise of water level in the drum. Graphs of the rate of steady load take-up for 50 - and 100 - MW turbines operating with boilers type TP-230 are given in Fig.5. The method of construction is explained; worked examples of determination of rate of load pick-up are given with reference to Figs. 6 & 7.

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The availability of reserve generating plant in thermal power stations.

SOV/96-58-10-1/25

It is concluded that in a number of thermal stations when a fault occurs the load is not taken up quickly enough and not all the reserve generating capacity is immediately forthcoming.

There are 7 figures and 4 tables.

ASSOCIATION: Moscow Power Institute - Mosenergo (Moskovskiy Energeticheskiy Institut - Mosenergo)

Card 3/3

BEL'YANIN, P.A., inzh.; SHITSMAN, S.Ye., inzh.

Practices in the operation and the economic effectiveness of
peak water-heating boilers at thermal electric power plants.

Nov. tekhn. zhil.-kom. khoz.: Elek. i tepl. gor. no.5:78-85

'64.

(MIRA 18:2)

1. Moskovskoye rayonnoye upravleniye energeticheskogo khozyaystva.

L 24730-65 Det/FCS(f)

ACCESSION Nr: AP5004686

S/0104/64/000/009/0091/0092

AUTHOR: Belyanin, P. A. (Engineer)

TITLE: Utilisation and exploitation of peak water heating boilers at heat and electric power plants of Moscow City Power Central

SOURCE: Elektricheskiye stantsii, no. 9, 1964, 91-92

TOPIC TAGS: heating engineering, electric power plant, heating equipment

Abstract: The First Moscow Electric Power Plant held a seminar to discuss the exploitation of peak water boilers at the heat and electric power plants of Moscow City Power Central. There were 50 participants in all from various research and design organizations. The seminar was opened by S. Ye. Shitsman, who described experience with peak water boilers which have been used in Moscow since 1959. The advantages of petroleum residue heater boilers which will begin operation in the 1964/65 season were discussed.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: IE, EE

NO REF SOV: 000

OTHER: 000

JPRS

Card 1/1

ACC NR: AP6034780 (A,N) SOURCE CODE: UR/0065/66/000/009/0051/0052

AUTHOR: Belyanin, P. N.

ORG: none

TITLE: The effect of a centrifugal force field on the physicommechanical properties of AMG-10 oil

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 9, 1966, 51-52

TOPIC TAGS: centrifugal force, ^{physical chemistry property,} centrifugal force field, lubricating oil, aircraft lubricant, automotive oil, oil refining, oil/AMG-10 oil

ABSTRACT: In order to test the stability of viscosity and density of AMG-10 oil the latter was subjected to both continuous and short term (3--5 min) effects of a centrifugal force field. The separation factor was close to the exploitation value and with one exceeding 4 to 5 times the exploitation value. A detailed description is presented of the method for studying effect of a centrifugal field on AMG-10 oil designed for use in aircraft hydraulic systems. The tests led to the following conclusions. A centrifugal force field of ultra high intensity acting for five and

Card 1/2

UDC: 665.54

ACC NR: AP6034780

more minutes on AMG-10 oil has no appreciable effect on its viscosity and density. The effect of the centrifugal force field on other physico-chemical properties of the oil requires further testing. The stability of the basic properties of AMG-10 oil permit the use of a centrifugal force field with a separation factor of 25000—35000 for short-term refining of oil from solid particles. Special research are required to find a possibility for using continuous action centrifugal oil refiners. Orig. art. has: 1 figure. [GC]

SUB CODE: 11, 20/SUBM DATE: none/

Card 2/2

BELYANIN, Petr Nikolayevich, inzh.; CHERNENKO, Zhan Sergeyevich,
kand. tekhn. nauk; SUTUGIN, G.S., kand. tekhn. nauk,
retsenzent; BALASHOV, V.S., inzh., red.; GRIGORASH, K.I.,
red.

[Aircraft filters and cleaners for hydraulic systems] Aviatsion-
nye fil'try i ochistiteli gidravlicheskikh sistem. Moskva, Ma-
shinostroenie, 1964. 293 p. (MIRA 17:4)

BRILYANIN, S.

Improving the pilotage of a raft tug. Mor.1 rech. flot 13 no.2:13-15 Je '53.
(MIRA 6:8)
(Towing)

BEYANIN

USSR:

✓ 199. PRACTICAL EXPERIENCE OF FURNACES OF KV-5 BOILERS EQUIPPED WITH SCRAPER GRATES. IN B.S. PRAVIDA, Belyanin, G. (Morsk. Rezh. Flot (Sea Riv. Fleet, Moscow), Sept. 1954, 12-17). An illustrated description and an account of six months' working are given for a water-tube boiler with 160 sq. m of heating surface. The coal is crushed, elevated, fed by gravity to the grate and then spread by a bar which is pushed and pulled up and down the grate by a Vasil'ev device consisting of two sprocket-driven chains made so that they can only bend in one direction. The portion of each chain is that is outside the furnace runs up an inclined tube. (L).

BELVANIN, S., inzh.

Preparation of fuel oil for use in marine internal combustion engines.
Rech.transp. 20 no.4:62-63 Ap '61. (MIRA 14:5)
(United States—Gas and oil engines)

BELIANIN, S., inzh.

Complete automatization of marine power plants. Rech. transp. 20
no.8:26-28 Ag '61. (MIRA 14:10)
(Marine engines) (Automatic control)

BELIANIN, S.

Current problems in organizing technical shore service for ships.
Rech. transp. 24 no.4:29-30 '65. (MIRA 18:5)

1. Nachal'nik otдела tekhnicheskoy ekspluatatsii Glavnogo upravleniya perevozok i dvizheniya flota Ministerstva rechnogo flota.

BELIANIN, S.; GALASHOV, N.

Work practices of the crew of the steamship "Vaygach."
Rech. transp. 24 no.7:26-28 '65. (MIRA 18:8)

1. Nachal'nik otdela tekhnicheskoy ekspluatatsii Glavflota (for Belyanin). 2. Nachal'nik tekhnicheskogo otdela Volzhskogo ob'yedinennogo rechnogo parokhodstva (for Galashov).

BEL'YANIN, S. A.

5808. Opyt raboty peredovykh kochegarov. M. «Rechnoy transport» 1955. 52^s. s
graf. 22sm. (M-Vo rechnogo flota SSSR. Tekhn. upr. OTD. po delam izobretatel'stva
i ratsionalizatsii. Obmen opytom. l. 500 eks. B.ts -Sost. Ukazan na oborete
tit. l. (55-986) P. 621. 18l. 129 st

SO: Knizhnaya, Letopis, Vol. 1, 1955

~~BEIYANIN, Svyatoslav Aleksandrovich~~; LAKHANIN, V.V., retsenzent; STRUTS, V.G.,
retsenzent; SHIMKO, K.N., redaktor; DOBRONRAVOVA, S.M., redaktor
izdatel'stva; TSVETKOVA, S.V., tekhnicheskij redaktor.

[Mechanization of fuel consumption and water treatment on vessels
with tubular boilers] Mekhanizatsiya szhiganiya topliva i obrabotka
vody na sudakh s vodotrubnymi kottlami. Moskva, Izd-vo "Rechnoi
transport," 1957. 177 p. (MIRA 10:11)

(Boilers, Marine)

BELYANTIN, S.A., inzh., ALFKSANDROV, A.S., inzh., red.; MIRONOVICH, V.P. red.;
SALAZKOV, N.P., tekhn.red.:

[Rules for the service and maintenance of steam boilers] Pravila
obsluzhivaniia parovykh kotlov i ukhoda za nimi. Vvedeny v deistvie
prikazom MRF No.216 ot 1 oktiabria 1957 g. Moskva, Izd-vo "Rachnoi
transport," 1958. 57 p. (MIRA 11:9)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye sudovogo khozyaystva.
(Boilers)

BELIANIN, S.A., inzh.

Using cation water softeners. Rech. transp. 17 no.1:37-38 Ja '58.
(Feed-water purification) (MIRA 11:2)

BELIANIN, S.A., inzh.

Treating water with a magnetic current in order to prevent
incrustation on heat exchanger surfaces. Rech.transp. 18
no.1:54-55 Ja '59. (MIRA 12:2)
(Boilers, Marine--Incrustations) (Heat exchangers)

BELIANIN, S.A., inzh.

Effectiveness of existing methods and seeking new methods
of purification. Rech.transp. 18 no.9:27-28 S '59.

(MIRA 13:2)

(Water--Purification)

NOVAKOVSKIY, S.V.; BELIANIN, S.G.; MAR'INA, N.I.

Experimental study of the choice of color signals for color television. Radiotekhnika 17 no.8:43-52 Ag '62. (MIRA 15:7)

1. Deystvitel'nyye chleny Nauchno-tehnicheskogo obshchestva radiotekhniki i elektrosvyazi imeni Popova.
(Color television)

BELIANIN, V.

~~Urgent~~ problems in the improvement of industrial safety. Sov.profsoiuzy
4 no.8:20-23 Ag '56. (MIRA 9:10)

1.Sekretar' Leningradskogo oblastnogo soveta profsoyuzov.
(Leningrad--Industrial safety)

BELIYANIN, V.

Conference of club workers. Sov.profsoluzy 5 no.1:75-77 Ja '57.
(MLRA 10:2)

1. Sekretar' Leningradskogo soveta profsoyuzov.
(Leningrad Province--Trade unions) (Community centers)

BELIANIN, V.

Engineers and technicians of Lenin's city. NTO 2 no.4:10-12
Ap '60. (MIRA 13:6)

(Leningrad--Technological innovations)

BEL'YANIN, V. A.

BEL'YANIN, V. A. — "Investigation of Certain Properties of the Surface Layers of Structural Steel Following Electric-Spark Strengthening." Min Heavy Machine Building USSR. Central Sci Res Inst of Technology and Machine Building (TsNIITMash). Moscow, 1955. (Dissertation for the Degree of Candidate in Technical Sciences)

No 1

SO: Knizhnaya Letopis', 1956, pp 102-122, 124

BELYANIN, V. A.

2467* Effect of Tempering on the Hardness of a Surface Layer Hardened by the Electrospark Method. Vliyanie otpuska na tverdosť poverkhnostnogo sloia, uprochnennogo elek-troiskrovym sposobom. (Russian.) G. P. Ivanov, V. A. Be-lyanin and V. V. Borshov. Metallovedenie i obrabotka metallov, 1955, no. 4, Oct., p. 48-51.

Effect of electrode material (Cr, W, ferro-chromium) and tem-pering temperatures on properties of the hardened layer. Graphs, table, 5 ref.

DX (2)

BELYANIN, V.A.

KULIKOV, O.O., kandidat tekhnicheskikh nauk; BELYANIN, V.A., inzhener

Increasing roller hardness in tinning machines by rolling. [Trudy]
TSNIITMASH no.70:163-175 '55. (MLRA 8:11)

(Tinning--Equipment and supplies) (Metal spinning)

Effect of tempering on the hardness of a surface layer
hardened by electrosparking G. P. Ivannov, V. A. Bely-
ann, and V. V. Bogdanova. Metallurg. Obrabotka Materialov
1955 No. 4, 48-51 (Butcher Translation No. 273)

The electrosparking app. used 49 kV, was used at 2 power levels: P₁ 15% and P₂ 20% and at 10 and 19 amp. b. th at the specific time of 1 sec. and 1.5 sec. Specimens were plates of austenitic steel 45, Cr 15, Ni 10, Si 0.2%. Electrode materials were: pure W, Ti5K8 (WC 79, TiC 15, Co 6%), ferrochromium, ferrobaboron, pure W and Cr, and Cr nitride (N content of 4%). The microhardness was detd. by using a 50-g load, and except for the W electrode the hardness was greater for the P₂ power level. Ti5K8 and ferrobaboron produced the highest hardness values, 1200 and 1000 kg./sq. mm. resp. because of carbide formation. Specimens of each type of surface were tempered at 300, 500, 700, and 800° in a vacuum of 1 mm. of Hg for 2 hrs. In a plot of hardness vs. tempering temp. the data for both Ti5K8 and W showed an initial decrease, a plateau in the range 300-700°, and then a final decrease. The value at the plateau was about 850 for Ti5K8 and 800 kg./sq. mm. for W. The data for ferrochromium electrodes showed an initial decrease and then an increase to a max. hardness in the range 500-700°. For Cr this max. was 450, which was the initial value. For nitride it was 1200 compared to the initial value of 700. For ferrochromium it was 850, the initial value. The data for ferrobaboron showed a decrease to 650 kg./sq. mm. at 500° and then an increase back to the initial value at 700° and also at 800°. It was concluded that the electrosparking app. used, which had greater power, produced a layer that was more stable against heating. This stability was due to alloying; there was W 20 and N 0.15% max. in the layers hardened with Ti5K8 and Cr 50 and N 1% in layers hardened with ferrochromium. The use of Ti5K8, Cr, or ferrobaboron was recommended.

A. G. Guy.

SL

VMA

LFH

BELTANIN, V. A.

USSR/Solid State Physics - Mechanical Properties of Crystals and Polycrystalline Compounds, E-9

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 34889

Author: Ivanov, G. P., Belyanin, V. A., Borisova, V. V.

Institution: None

Title: Effect of Annealing on Hardness of Surface Layer Strengthened by the Electric-Spark Method

Original

Periodical: Metallovedeniye i obrabotka metallov, 1955, No 4, 48-51

Abstract: The annealing stability of reinforced layers, obtained on specimens made of 45 steel by electric-spark processing using the IE-2M apparatus was determined (Ivanov, G. P., Vest. Mashinostroyeniya, 1954, No 10). The electrodes used were: hard T15K6 alloy, ferrochrome, ferrobaboron, tungsten, chromium, and nitrided chromium (4% N). The microhardness of the reinforced layer was determined prior to annealing using metallographic sections and the PMT-3 instrument with a loading of 50 g. The layers having the highest microhardness were those obtained with

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USSR/Solid State Physics - Mechanical Properties of Crystals and Polycrystalline
Compounds, E-9

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 34889

Abstract: the T15K6-alloy electrodes (1,260 kg/sq mm and those of ferroboron (1,000 kg/sq mm). All specimen were broken up into groups and subjected to annealing at 300, 500, 700, and 800 degrees for 2 hours. Curves are given for the variation of the microhardness of the layers obtained with various electrodes vs the annealing temperature.

Card 2/2

BELYANIN, V.A.

AUTHOR: Belyanin, V.A., Engineer.

129-1-13/14

TITLE: Micro-structure of the Surface Layer of Steel After
Electro-spark Hardening (Mikrostruktura poverkhnostogo
sloya stali posle elektroiskrovogo uprochneniya)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, no.1,
pp. 55 - 57 (USSR)

ABSTRACT: B.P. Lazarenko [Ref.1] studied the micro-structure of electric spark-treated specimens by means of an electronic microscope and found that in such surface sections, the metal was strongly deformed. By electrolytic etching, L.Ya. Popilov [Ref.2] established that the thus hardened layer consisted of austenite and martensite. These authors do not give information on the micro-structure of the surface layer. The author of this paper attempted to find a reagent which would permit obtaining certain data on the structure of the hardened layer. Almost all the etching reagents used did not bring about etching of the white layer, whilst the basic metal was over-etched; a solution of 10 g $K_3Fe(CN)_6$ + 10 g KOH + 100 cm³ H₂O had the opposite result, namely, the white layer was over-etched, whilst the basic metal remained untouched; polishing after Card1/2 etching with this reagent enabled detection of the micro-

BEL'ANIN, V.A., kand.tekhn.nauk; GRIGOR'YEVA, M.N., inzh.

Fatigue strength of welded pipes. Trakt. i sel'khoz mash. 32 no.12:33
D '62. (MIRA 16:3)

1. Nauchno-issledovatel'skiy institut tekhnologii traktornogo i
sel'skokhozyaystvennogo mashinostroyeniya.
(Metals—Fatigue) (Pipe—Welding)

BEL'YANIN, V.A.

Improvement of thermal processing in tractor and agricultural
machine manufacture. Trakt. i sel'khoz mash. no.9:37-38 S :64.
(MIRA 17:11)

BEL'YANIN, V. B.

51-4-4/26

AUTHOR: Belyanin, V. B.

TITLE: Hyperfine Structure of Spectral Lines of Holmium.
(Sverkh-tonkaya struktura spektral'nykh liniy gol'miya.)

PERIODICAL: Optika i Spektroskopiya, 1957, Vol.III, Nr.4,
pp. 322-327. (USSR)

ABSTRACT: Holmium has the widest hyperfine structure of the rare-earth elements. This structure is related to properties of the electron cloud and therefore of considerable interest. Results of measurement of hyperfine structure of two intense lines of holmium and of the nuclear spin are given in Ref.1. The authors of Ref.1 conclude that splitting occurs in one term only and that the maximum total splitting of holmium lines is about 1 cm^{-1} . Gatterer and Junkes (Ref.2) report widths of many holmium lines in the region 2700-4350 Å. The latter results were obtained using instruments with insufficient dispersion and therefore cannot be regarded as reliable. The present author repeated the work on the hyperfine structure of holmium. As a source of light a water-cooled hollow-cathode discharge tube was used.

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51-4-4/26

Hyperfine Structure of Spectral Lines of Holmium.

10-15 mg of holmium oxide were placed inside the hollow-cathode. Argon, helium and mixtures of these two gases were used to fill the discharge tube at 1.5-2 mm Hg. A $\Delta\phi C$ -3 spectrograph with a diffraction grating (600 lines/mm and first-order dispersion of 4 Å/mm), crossed with a Fabry-Perot etalon was used to photograph the spectra. 2-4 and 6 mm separations were employed in the etalon. Fig.1 shows a photograph of 2 holmium lines. The spectrograms were studied using a $M3A$ -2 comparator. Distances between the hyperfine structure components and total hyperfine structure widths were measured. 70 spectral lines of holmium in the region 3400-6500 Å were studied. In 32 of them 8 components were clearly visible. The remaining lines were either incompletely or not at all resolved. In some of the lines the separations and intensities of the hyperfine components decrease towards longer wavelengths (these lines are denoted by r in Fig. 2 and Table 1). In the remaining lines the intervals and intensities decrease towards shorter wavelengths (these

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Hyperfine Structure of Spectral Lines of Holmium.

51-4-4/26

lines are denoted by v). Typical hyperfine structures of holmium are shown in Fig.2. Figs.3 and 4 show microphotograms of 5982.9 and 6234.17 Å lines. Fig.5 shows a spectrum of Pr obtained under the same conditions. Comparison of Figs. 2 and 5 shows that Ho and Pr hyperfine structures are similar (Refs. 3, 4). The observed hyperfine structure of Ho may be explained by the splitting of both levels between which the transition occurs. In this case the number of hyperfine structure components should exceed eight. However, the intensity of the diagonal components of the hyperfine transitions are greater than the intensities of the remaining components by one order of magnitude. The weak components do not appear in the author's photographs and only eight diagonal components were observed. In a recording of the hyperfine structure of Pr only six diagonal components were obtained. Table 1 gives the total widths of the hyperfine structure (Col.4) and the direction of decrease of intensity (Col.3). The wavelengths and intensities of lines in arcs (Col.1 and Col.2 respectively) were taken from Ref.2. The lines

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51-4-4/26

Hyperfine Structure of Spectral Lines of Holmium.

assigned by King (Ref.5) to neutral atoms and to ions are marked with I and II respectively. Table 2 gives the separations of the resolved hyperfine structure components of holmium lines. Schüller and Smidt's (Ref.1) results for 5982.9 and 6305.4 Å agree well with the present author's values. The total widths given in Table 1 differ considerably from those reported in Ref.2. The spectrograms obtained by the present author show only the most intense lines ("simple" spectrum) due to transition of one s-electron into p-state. It is concluded that the spectrum of HoII lies in the short wavelength-region while that of HoI lies in the long wavelength-region. The boundary between the two regions is at 4000-4200 Å. Mean widths of the lines of HoI (45 lines) and HoII (25 lines) are 0.81 and 1.54 cm⁻¹ respectively. These values apply only to the "simple" (intense) spectrum of Ho. Some weak lines in the long-wavelength-region belong to HoII, and in the short-wavelength-region there are some HoI lines; these are exceptions to the general rule stated above. It is concluded that the intense Ho lines are due to transitions

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51-4-4/26

Hyperfine Structure of Spectral Lines of Holmium.

to the ground state. From the fact that the resolved lines have 8 components it follows that the quantum numbers J of the intense Ho lines have values $J > I = 7/2$. It is shown in Refs.4, 8 that the v-lines of Pr are due to inversion of the hyperfine structure of the lower levels. Since the hyperfine structures of Ho and Pr are qualitatively similar, it is assumed that the v-lines in holmium are due to the same cause as in praseodymium. The author thanks F. A. Korolev for his constant interest, and G. K. Yeremin for supply of holmium oxide. There are 5 figures, 2 tables and 8 references, 1 of which is Slavic.

ASSOCIATION: Moscow State University, Physics Dept., Chair of Optics.
(Moskovskiy gosudarstvennyy universitet, Fizicheskiy Fakul'tet, Kafedra optiki.)

SUBMITTED: January 28, 1957.

AVAILABLE: Library of Congress.

Card 5/5

BELYANIN, V. B.: Master Phys-Math Sci (diss) -- "Investigation of the super-fine structure of spectral lines and the preliminary analysis of the holmium spectrum". Moscow, 1958. 10 pp (Moscow Order of Lenin and Order of Labor Red Banner State U im M. V. Lomonosov, Physics Faculty, Chair of Optics), 150 copies (KL, No 6, 1959, 123)

BELYANIN, V.B.

51-4-2-20/28

AUTHOR: Belyanin, V.B.

TITLE: Hyperfine Structure and Identification of Certain Lines of Praseodymium. (Sverkh-tonkaya struktura i identifikatsiya nekotorykh liniy prazodima.)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol.IV, Nr.2, pp.264-266 (USSR)

ABSTRACT: The author studied the hyperfine structure (h.f.s.) of certain Pr I and Pr II lines, and he made additional deductions about the Pr II spectrum by treatment of the results reported in Ref.1 and 5. A hollow-cathode discharge tube filled with argon was used as the source of light. Measurements were made using a diffraction spectrograph and a Fabry-Perot etalon with 4 to 20 mm separation. About 100 Pr lines were recorded in the 3900-4800 Å region. H.f.s. of Pr consists of six intense diagonal components with intensities and separations decreasing towards either red (6r) or violet (6v) ends of the spectrum. No non-diagonal (weak) components were recorded. Numerical results on h.f.s. of Pr II are given in Table 1, where the results of Refs. 1-2 for the same lines are also given for the sake of

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Hyperfine Structure and Identification of Certain Lines of
Praseodymium.

comparison. The majority of the lines with h.f.s. have two lower terms: 5I and 3I . The lines which end on the 5I_4 and $^3I_{5,6,7}$ levels belong to the 6r type and the lines which end on $^5I_{5,6,7,8}$ levels belong to the 6v type. A number of new Pr II lines (Table 2) was identified. The last two columns of Table 2 give the measured and calculated wave-numbers of the appropriate lines; good agreement between the calculated and measured values was obtained. Table 3 contains results of measurements of the diagonal components of h.f.s. of certain Pr I lines. For Pr I the number of the 6r lines is smaller than the number of 6v lines. This is because the 4I term in Pr I has normal hyperfine splitting and the majority of measured lines end on the $^4I_{9/2, 11/2, 13/2, 15/2}$ levels. The author thanks F.A. Korolev for his advice. There are 3 tables, and 6 references of which 4 are American, 1 Japanese and 1 German.

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Hyperfine Structure and Identification of Certain Lines of
Praseodymium. 51-4 -2-20/28

ASSOCIATION: Moscow State University.
(Moskovskiy gosudarstvennyy universitet.)

SUBMITTED: May 11, 1957.

1. Praseodymium-Structural analysis
2. Praseodymium-Spectrographic analysis

Card 3/3

SOV/51-5-3-2/21

AUTHOR: Belyanin, V.B.

TITLE: Multiplet Splitting of the Ground Term of the Holmium Atom
(Mul'tipletnoye rasshchepleniye osnovnogo termu atoma gol'miya)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol 5, Nr 3, pp 236-238 (USSR)

ABSTRACT: The author uses the experimental data of Refs 1, 2 on the spectrum and its hyperfine structure (h.f.s.) of Ho I and applies the constant difference method, in conjunction with a theoretical estimate of the ground term, to find the multiplet splitting of the ground term. In analogy with Pr, which has a complementary electronic structure, the r-type h.f.s. components of Ho I were investigated. Preliminary calculations showed that certain differences between the wave numbers of the h.f.s. components occurred twice or three times in the holmium spectrum. Nineteen such differences were selected with values close to the expected splitting of the ground term. They all lay in the range 4000-4200 \AA . 800 lines in the region 6000-3500 \AA were then checked to find how often the selected nineteen differences occurred between them. It was found that the 4094.16 cm^{-1} difference occurred 31 times.

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SOV/51-5-3-2/21

Multiplet Splitting of the Ground Term of the Holmium Atom

the 3782.80 cm^{-1} difference occurred 28 times and the 4663.64 cm^{-1} difference occurred 29 times. These differences were found to agree with the theoretical calculations within $\pm 5\%$ and they corresponded to the $4f$ term levels of Ho I. It is concluded that the ground term of Ho I $4f^{11} 6s^2 4f_{15/2, 13/2, 11/2, 9/2}$ has the values: 0, 4664, 8758 ($=4664 + 4094$) and 12541 ($=4664 + 4094 + 3783$) cm^{-1} . The author thanks N.B. Belyanina for her help in calculations. There are 1 figure and 5 references, 3 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet. Fizicheskiy fakul'tet
(Moscow State University, Department of Physics)

SUBMITTED: December 27, 1957

Card 2/2

1. Holmium--Spectrographic analysis
2. Atomic spectra--Analysis
3. Mathematics--Applications

AUTHOR: Belyanin, V.B.

SOV/51-5-3-20/21

TITLE: Magnetic Moment of Holmium (Magnitnyy moment gol'miya)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol 5, Nr 3, pp 340-341 (USSR)

ABSTRACT: New measurements of the hyperfine structure of Ho lines, made by the author himself (Ref 3), and certain deductions on the spectrum of Ho which can be made on comparison of the hyperfine structures of Ho and Pr make it possible to calculate the magnetic moment of Ho nucleus. The hyperfine structure of all the lines measured had eight components, i.e. the spin is $I = 7/2$, as given in Ref 1. Fermi--Segre--Goudsmit formula (Ref 4) was used to calculate the magnetic moment. Its value was found to be $3.7 \pm 20\%$ nuclear magnetons and its sign was positive.

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SOV/51-5-3-20/21

Magnetic Moment of Holmium

The value obtained agrees within experimental error with the value obtained from radiofrequency spectra. The author thanks V.I. Perel' and N.I. Kaliteyevskiy for discussion of his results. There are 9 references, 1 of which is Soviet.

ASSOCIATION: Moskovskiy universitet, fizicheskii fakul'tet (Moscow University, Physics Department)

SUBMITTED: March 24, 1958

Card 2/2 1. Holmium--Magnetic moments

S/190/63/005/004/018/020
B101/B220

AUTHORS: Tutorskiy, I. A., Markov, V. V., Fomina, L. P.,
Belyanin, V. B., Dogadkin, B. A.

TITLE: Cyclization of diene polymers. I. Investigation of the
cyclization of natural rubber dissolved in phenol

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 5, no. 4, 1963, 593-597

TEXT: Mixtures of 100 parts by weight non-plasticized natural rubber, 165 phenol and 7.50 P_2O_5 were heated at $180^{\circ}C$ and the changes of intrinsic viscosity and degree of unsaturation owing to cyclization of the rubber were studied along with the UV and IR spectra. Results: (1) The intrinsic viscosity decreases rapidly within the first 5 hr, but afterwards only slowly. (2) The rate at which rubber dissolves in phenol is much higher in the presence of P_2O_5 than in pure phenol. (3) The yield of acetic acid in the oxidation of rubber with chromic acid depends on the time of cyclization. It decreases very rapidly within the first 4 hr, but then remains constant. (4) The degree of unsaturation is after cyclization only about 25 % of the degree of unsaturation of the initial
Card 1/2

Cyclization of diene ...

S/190/63/005/004/018/020
B101/B220

rubber. (5) The 275 - 280 μ band with 278 μ maximum in the UV spectrum as well as the 690 and 740 cm^{-1} bands and the bands in the 1500 - 1600 cm^{-1} region in the IR spectrum prove that the cyclorubber contains bound phenol. There are 6 figures.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im.
M. V. Lomonosova (Moscow Institute of Fine Chemical
Technology imeni M. V. Lomonosov)

SUBMITTED: October 24, 1961

Card 2/2

BELIANIN, V.B.; UNKOVSKIY, B.V.; MOKHIR, I.A.

Stereochemistry of acetylenic synthesis. Part 2: Absorption spectra and space configuration of geometrical isomers of 1,3-dimethyl-4-acetyl-4-piperidol. Zhur. ob. khim. 33 no.8: 2534-2540 Ag. '63. (MIRA 16:11)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. Lomonosova.

UNKOVSKIY, B.V.; BELYANIN, V.B.; MOKHIR, I.A.; URINOVICH, Ye.M.

Stereochemistry of acetylenic synthesis. Part 3: Space configuration of geometrical isomers of 1,2,5-trimethyl-4-ethynyl-4-piperidol and their derivatives. Zhur. ob. khim. 33 no.8:2540-2548 Ag '63. (MIRA 16:11)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni M.V. Lomonosova.

KAPKIN, V.D.; RATOMSKAYA, M.A.; BELYANIN, V.B.; BASHKIROV, A.N.

Spectrophotometric determination of primary, secondary, and tertiary
higher aliphatic alcohols when present together. Zhur. anal. khim.
20 no.3:364-371 '65. (MIRA 18:5)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni
Lomonosova i Institut neftekhimicheskogo sinteza imeni Topchiyeva
AN SSSR, Moskva.

I 5213-66 FLT(e)/EPF(e)/EMP(j)/T/EMP(t) EWP(b)/EWA(h)/EWA(c) ID/N1/RM
ACC NR: AP5014807 SOURCE CODE: UR/0030/65/000/005/0101/0103

AUTHOR: Belyanin, V. B.

ORG: none

TITLE: Conference on spectroscopy

SOURCE: AN SSSR. Vestnik, no. 5, 1965, 101-103

TOPIC TAGS: optic conference, spectroscopy, polymer, atomic spectroscopy, molecular spectroscopy, spectrum analysis, light source, light emission

ABSTRACT: The 16th conference on spectroscopy, organized jointly by the Commission on Spectroscopy of the Department of General and Applied Physics, Academy of Sciences USSR, and Moscow University, took place from 28 January to 2 February 1965 in Moscow. Approximately 1700 specialists from some 100 localities in the Soviet Union participated. The general and sectional meetings heard 225 papers and a number of lectures.

The main purpose of the conference was to discuss the analytical applications of spectroscopy. The majority of the papers dealt with atomic spectroscopy, particularly with emission aspects. Reports on the use of laser-type light sources for spectral analysis elicited the greatest

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ACC NR: AP5014807

response from the participants. The methodology of the analysis of alloys and silicates was given wide coverage. A number of reports dealt with plasma light sources and the hollow cathode discharge phenomena. Another group of papers covered the widely used atomic-absorption and flame-photometric methods. A number of suggestions for improvements in experimental arrangements were made.

A relatively large number of reports discussed conventional light sources (spark, arc), especially from the standpoint of the interrelationship between electrode materials, plasma composition, and discharge parameters, and the possibilities for the utilization of these relations. Problems of the sensitivity and accuracy of spectral analysis were given considerable attention in view of the growing demand for purity in materials, especially in connection with the analysis of minute admixtures in semiconductors, ferrites, etc. The determination of gaseous (oxygen, nitrogen) admixtures in metals and alloys and the analysis of isotopes by various methods were also considered.

Two papers discussed the use of spectral analysis of lubricants as a means for determining the condition of machinery. The application of

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ACC NR: AP5014807

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spectral analysis in geology was considered in several meetings. A separate meeting was devoted to vacuum ultraviolet techniques. A double-beam spectrophotometer for the 100—250 mm range, a vacuum spectrograph based on the VE-139 monochromatic illuminator, and a pulse short-wave source were described.

The majority of papers on molecular spectroscopy dealt with the infrared spectra of various polymers. Several reports described investigations of important biological compounds such as amino acids, vitamins, etc. The structure and spectra of celluloses and raw rubber, processes of vulcanization, and the effects of aggressive media were given considerable attention. Other reports dealt with the analysis of crystals by means of line spectra, infrared spectra at helium temperatures, reflection spectra, and investigations of crude oil fractions by molecular spectra. The reviewer points to the "continuing shortage" of works on the applications of microwave spectroscopy in analytical investigations. [FSB: v. 1, no. 12]

SUB CODE: OP / SUBM DATE: none

OC
Card 3/3

ACC NR: AP6025388

SOURCE CODE: UR/0366/66/002/007/1148/1155

Unkovakiy, B.V.;

AUTHOR: Bolyanin, V. B.; Urinovich, Yo. M.; Malina, Yu. F.

ORG: Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov (Moskovskiy institut tonkoy khimicheskoy tekhnologii)

TITLE: Stereochemistry of cyanohydrin synthesis. Part 1: Conformational study of stereoisomeric 1,2-dimethyl-, 1,3-dimethyl- and 1,2,5-trimethyl-4-carbomethoxy-4-piperidinols

SOURCE: Zhurnal organicheskoy khimii, v. 2, no. 7, 1148-1155

TOPIC TAGS: stereochemistry, IR spectrum, piperidinol

ABSTRACT: IR absorption spectra were used to study the conformations of stereoisomeric 1,2-dimethyl-, 1,3-dimethyl- and 1,2,5-trimethyl-4-carbomethoxy-4-piperidinols. The study confirmed the spatial configurations ascribed to these compounds on the basis of their configurative relationship to the geometric isomers 1,2-dimethyl-, 1,3-dimethyl- and 1,2,5-trimethyl-4-acetyl-4-piperidinols. The spatial conformations of the compounds in solutions and the characteristics of IR spectra were correlated with the diverse character of interactions of their functional groups depending upon their spatial orientation. The correlation established between the IR spectra and the conformations of the functional groups can be used for determining the spatial structure of other analogous compounds. Orig. art. has; 1 figure.

Card 1/2

UDC: 547.823+541.634+543.422

ACC NR: AP6025388

SUB CODE: 07/ SUBM DATE: 03Apr65/ ORIG REF: 006/ OTH REF: 008

Card 2/2

KOCHETYGOV, N.I., kand.med.nauk; BEL'YANIN, V.L.

Significance of rapid cooling of tissues in burns. Sov. med. 28
no.7:112-114 J1 '64. (MIRA 18:8)

1. Khirurgicheskaya klinika (nachal'nik - prof. T.Ya.Ar'yev)
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