ACCESSION NR: AP4039842 S/0148/63/000/006/0075/0082

AUTHOR: Anastovnikov, A. N.; Lomov, A. L.

TITLE: Study of thermodynamic properties of the double system Cu-Sb by the electromotive force method

SOURCE: IVUZ. Tsvetnaya metallurgiya, no. 6, 1963, 75-82

TOPIC TAGS: Cu-Sb alloy, thermodynamic property of Cu-Sb, binary alloy thermodynamic property, P-20V-1 potentiometer, M25 galvanometer

ABSTRACT: Cu-Sb alloy system was studied in the temperature interval [illegible] region 0.9013-0.0465 atomic parts of Cu. The emf of the concentration chains

$$Cu_{II} \mid CuCl, KCl - [illegible] (N_{Cu}) - Sb(N_{Sb}) \mid Cu_{I}$$

[illegible] plotted in respect [illegible] temperature. The graphs were used to determine the emf values (by interpo[illegible] the temperatures 1115, 1140, 1165, 1190 and 1215K. These emf values we[illegible] used to calculate the logarithms of

Card 1/3

ACCESSION NR: AP4009642

copp... activity from equation

$$\lg a_{Cu} = -\frac{2\cdot 3}{4.575\,T}\varepsilon,$$

...re ε - emf. The liquid state of overcooled copper at experimental tempera... ...taken to be standard, and the partial excess thermodynamical values (Δ... ...Cu and Sb were calculated for various values of Cu concentration at ... ...established that: 1) this system had considerable negative deviatio... ...Raoult law; 2) the formation of the Cu-Sb solutions was accompanied by ...ea... ...was -1385 cal/g atom at 1215K and N_{Cu} = 0.75); ...positive excess entropies of mixing were characteristic of Cu-... ...solutions; this was explained by the large difference between the atom volume... the components. The experimental procedure followed in this work involved the use of the PPTV-1 potentiometer and the M25 galvanometer. Temperature was measured ... Pt-PtRh thermocouple. Orig. art. has: 5 tables, 3 figures, and 2 formulas.

ASSOCIATION: Moskovskiy institut stali i splavov, Kafedra fizicheskikh issledovaniy protsesov proizvodstva poluprovodnikovykh materialov i chistykh

Card 2/3

LOMOV, A.L.; KRESTOVNIKO, A.N.

Thermodynamic properties of the ternary metallic system bismuth-copper-antimony. Dokl. AN SSSR 156 no.6:1389-1390 Je '64. (MIRA 17:8)

1. Predstavleno akademikom A.A. Bochvarom.

L 24785-65 EWT(m)/EWP(b)/EWP(t) IJP(c) JD/JW
ACCESSION NR: AP4049600 S/0076/64/038/011/2569/2574

23
22
B

AUTHOR: Lomov, A. L. (Moscow); Krestovnikov, A. N. (Moscow)

TITLE: Investigation of the thermodynamic properties of binary bismuth-antimony metallic systems by the method of electromotive forces 21 27

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 11, 1964, 2569-2574

TOPIC TAGS: binary alloy, bismuth antimony system, electromotive force method, alloy, thermodynamic property 18

ABSTRACT: The thermodynamic properties of the bismuth-antimony system in the liquid phase have been investigated by the method of electromotive forces. The emfs of the concentration cells of the type

$$-Bi(l)\,|\,BiCl_3,\ KCl\text{-}NaCl\,|\,[Bi(N_{Bi})\text{-}Sb(N_{Sb})]\,(l)^{+}$$

were measured at temperatures in the 1115-1215 K range. Ten electrode melts with the concentration of from 0.0679 to 0.9021 were studied. Both negative and positive deviations from Raoult's law were found, as well as negative-positive

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L 24785-65
ACCESSION NR: AP4049600

heating effects and excessive mixture entropies. For the explanation of the deviations of S from ideal values, the work by G. Scatchard (Trans. Faraday Soc. 33, 160 (1937) is applied. Orig. art. has: 4 figures and 12 equations.

ASSOCIATION: Institut stali i splavov (Institute of Steel and Alloys)

SUBMITTED: 15Apr63 ENCL: 00

SUB CODE: MM, TD NO REF SOV: 009 OTHER: 013

Card 2/2

LOMOV, A.L.; KRESTOVNIKOV, A.N.

Study of the thermodynamic properties of the ternary system bismuth - copper - antimony along the cross-section Ni_3Sb_2 : Ni_3Sb = 3:1 by the electromotive force method. Zhur.fiz.khim. 38 no.11:2658-2662 N '64. (MIRA 18:2)

1. Moskovskiy institut stali i splavov.

L 34527-65 EWT(1)/EPA(s)-2/EWT(m)/EPF(n)-2/EWG(m)/EPA(bb)-2/EWP(t)/EWP(b) Pt-10/
Pu-4 IJP(c) JD/WW/JW/JG

ACCESSION NR: AP5003123 S/0080/65/038/001/0188/0192

AUTHOR: Lomov, A. L.; Krestovnikov, A. N.

TITLE: Investigation of thermodynamic properties of the ternary metallic system Bi-Cu-Sb at the section $N_{Bi}:N_{Sb}$ = 1:1 by the e. m. f. method

SOURCE: Zhurnal prikladnoy khimii, v. 38, no. 1, 1965, 188-192

TOPIC TAGS: bismuth copper antimony system, thermodynamic property, mixing entropy, mixing heat

ABSTRACT: The thermodynamic characteristics of ternary liquid metal alloys of the Bi-Cu-Sb system in which the $N_{Bi}:N_{Sb}$ ratio was maintained unchanged at 1:1 were studied at 1215K by the e. m. f. method. These systems were characterized by negative deviation from Raoult's law, i. e., when $0<N_{Cu}<1$, the activity of Cu was less than ideal, by positive excess entropy of mixing, by positive heat of mixing when $0<N_{Cu}<0.46$, ($\Delta H_{mix} = 0$ when $N_{Cu} = 0.46$), and by negative heat of mixing when $N_{Cu}>0.46$. The positive excess entropy of mixing in these was ex-

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L 34527-65

ACCESSION NR: AP5003123

plained as associated with the large difference in atomic volume of the component metal pairs Bi-Cu and Cu-Sb. Orig. art. has: 4 equations, 5 figures, and 2 tables.

ASSOCIATION: None

SUBMITTED: 17May63 ENCL: 00 SUB CODE: GC

NR REF SOV: 002 OTHER: 001

Card 2/2

LOMOV, A.M., inzhener.

Air cooling of agglomeration fines. TSvet.met. 28 no.1:49-54 Ja-F '55. (MIRA 10:10)
(Ore dressing) (Lead--Metallurgy)

LOMOV, A.M.

Design of furnaces and roasting facilities for zinc concentrates in boilings. TSvet.met. 29 no.5:40-49 My '56. (MLRA 9:8)

1. Kavgiprotsvetmet.
(Zinc metallurgy) (Metallurgical furnaces)

LOMOV, A.M.

Nonferrous metallurgy of Uzbekistan during the 45 years of Soviet government. TSvet. met. 35 no.11:7-9 N '62. (MIRA 15:11)
(Uzbekistan--Nonferrous metal industries)

TSOGOYEV, Nikolay Aleksandrovich; LOMOV, Aleksandr Mikhaylovich; KONDRATOV, N.M., red.; MURAKAYEVA, A.K.; UMANSKIY, P.A., tekhn.red.

[Nonferrous metallurgy in Uzbekistan] TSvetnaia metallurgiia Uzbekistana. Tashkent, Gos.izd-vo Uzbekskoi SSR, 1959. 23 p. (MIRA 14:3)

(Uzbekistan--Nonferrous metals)

LOMOV, A.M.

Developing the production of mineral fertilizers. TSvet. met. 36 no.4:65-68 Ap '63. (MIRA 16:4)

(Fertilizer industry)

GRINSHPUN, L.G., inzh.; LOMOV, A.P., inzh.

Safety devices used in wedging hemp ropes on reels. Bezop. truda v prom. 2 no.1:32-33 Ja '58. (MIRA 11:1)
(Oil well drilling)

LOKOV, A.V.

Some data on the geological affinity of geophysical [illegible]
in the Terek-Kuma depression. Izv. vys. ucheb. zav.; neft' i gaz
8 no.4:3-5 '65. (MIRA 18:3

1. Groznenskiy neftyanoy institut.

Lomouri, N.I.

The physiological and biochemical differences of renin from the pressor substance of ischemic kidney. O. A. Stepun and N. I. Lomouri. *Trudy Inst. Klin. i Eksptl. Kardiolog., Akad. Nauk Gruzin. S.S.R.* 2, 441-52(1953); *Referat. Zhur., Khim.* 1954, No. 44758.—A sample of the cortex of the ischemic kidney was incubated at 37° in an acetate buffer, pH 3.8, for 24 hrs., then ground with 5 vols. of abs. alc., and let stand at room temp. for addnl. 24 hrs. The ppt. formed was then isolated, washed with alc. and ether, dried, and pulverized. Before use the powder obtained was extd. by a physiol. soln., centrifuged, and the centrifugate obtained was then injected into the test animals. The animals so treated showed higher blood hypertension and the effect continued much longer than in the case of the animals receiving renin. Differing from renin the pressor substance of the ischemic kidney does not give hypertension on treatment with hypertensinogen. The substance obtained consists of 2 fractions, each one is not active by itself. It is concluded that the pressor substance of the ischemic kidney is not renin.

R. Wiesbicki

110

ACC NR: AM6034594 Monograph UR/

Lomov, Boris Fedorovich

Man and technology; outline of engineering psychology (Chelovek i tekhnika; ocherki inzhenernoy psikhologii) Moscow, Izd-vo"Sovetskoye radio", 1966. 463 p. illus., biblio., indices. 20,300 copies printed.

TOPIC TAGS: human engineering, man machine system, man machine communication, PSYCHOLOGY, CYBERNETICS

PURPOSE: This book, one of the first in the USSR on problems of engineering psychology, is intended for specialists in automatic devices and radar, psychologists, and students of universities and technical institutions. It presents a systematic review of the basic problems of engineering psychology (human engineering) and accumulated experimental data, and formulates problems and tasks for further investigation. Various aspects of the central theoretical problem -- man-machine interaction in conditions of automated production -- are discussed. Detailed descriptions of human psychophysiological characteristics are given. Data on reaction speed of the operator to sound, light, and other stimuli, human capacity to receive, digest, and store information, and operator reliability are considered. Psychic processes and the structure of work activity are characterized. Principles for developing signal and control devices for the coordination of machine peculiarities and human psychic activity are discussed. Attention is focused on the problem of human reception and treatment of information as the basis of activity in control and regulation systems.

Card 1/2 UDC: 62-50.23

ACC NR: AM6034594

TABLE OF CONTENTS:

SUB CODE: 05,06/ SUBM DATE: 14Jul66/ ORIG REF: 335/ OTH REF: 169

Card 2/2

LOMOV, B.F.

Experimental study of bimanual tactual perception. Uch.zap.Len. un. no.185:113-123 '54. (MLRA 8:10)
(Touch)

LOKOV, B.F.

Conference dedicated to the 100th anniversary of V.M. Bekhterev's birth. Vop. psikhol. 3 no.2:160-163 Mr-Ap '57. (MLRA 10:6)
(Bekhterev, Vladimir Mikhailovich, 1857-1927)

LOMOV, B.F.

Regional conference of the Leningrad branch of the Society of Psychologists. Vop. psikhol. 4 no.4:181-136 Jl-Ag '58. (MIRA 11:11)
(Psychology--Societies)

LOMOV, Boris Fedorovich; ANAN'YEV, B.G., prof., red.; GUS'KOV, G.G., red.; TARASOVA, V.V., tekhn.red.

[Formation of graphic knowledge and skills in students] Formirovanie graficheskikh znanii i navykov u uchashchikhsia. Pod red.B.G.Anan'eva. Moskva, Izd-vo Akad.pedagog.nauk RSFSR, 1959. 268 p. (MIRA 13:7)

(Drawing--Instruction)

LOMOV, B.F.

Conference on the problem of space perception and space representations. Vop.psikhol. 5 no.6:182-186 N-D '59. (MIRA 13:4)

(Space perception)

ZINCHENKO, V.P., LOMOV, B.F.

Functions of the movements of the hand and eye in the process of perception [with summary in English]. Vop psikhol. 6 no.1:29-41 Ja-F '60. (MIRA 13:6)

1. Institut psikhologii APN RSFSR (for Zinchenko).
2. Leningradskiy institut pedagogiki APN RSFSR i kafedra psikhologii Leningradskogo gosudarstvenogo universiteta.
(Perception) (Eye--Movements) (Hand)

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S/029/60/000/009/004/008
B013/B060

17.2920

AUTHOR: Lomov, B., Head of Laboratory

TITLE: Industrial Psychology

PERIODICAL: Tekhnika molodezhi, 1960, No. 9, pp. 14-15

TEXT: This article is in reply to a letter by V. Prozorov of Leningrad, who asked for information about machine control. An operator's responsibility is becoming increasingly greater with progressing mechanization and automation. The precision and rapidity of his reactions depend on numerous psychological factors that have to be taken into account in machine designing, if a dependable control of production processes is to be secured. A new scientific branch, the so-called industrial psychology, has been developed in recent years, and is concerned with studies of machines from the point of view of an adaptation of their design to particular aspects of human behavior. It does not, however, restrict itself to an analysis of human activity as one of the factors in control systems. Psychological problems arise in all production processes which are in some way related to perception, comprehension, thinking, movements,

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and general activity of man. Industrial psychology is further concerned with problems of the evolution of sensitivity, its training, and other psychological factors. Engineers and psychologists are jointly developing special instruments and devices intended for human training. Another problem that must be jointly solved by engineers and psychologists is the creation of technical devices to simulate certain features of human thinking. "Sensitive devices" now available are not yet accomplished to the point of creating their own sensations. Simulating mechanisms have as yet been little developed. It is assumed, however, that a thorough study will eventually provide for ways of endowing automatic devices with the ability to simulate sensations and perceptions. Drawings attached to the article are by I. Kaledina. There are 4 figures.

ASSOCIATION: Laboratoriya industrial'noy psikhologii Leningradskogo universiteta (Laboratory of Industrial Psychology of Leningrad University)

LOMOV, B.F.

"Problems of metal development" by A.N.Leont'ev. Reviewed by B.F. Lomov. Vop.psikhol. 6 no.3:162-169 My-Je '60. (MIRA 14:5)

1. Leningradskiy universitet.
(Intellect) (Leont'ev, A.N.)

LOMOV, B.F.

Industrial psychology laboratory at Leningrad State University.
Vop.psikhol. 6 no.3:199 My-Je '60. (MIRA 14:5)
(Psychology, Industrial)

ANAN'YEV, B.G., red.; LOMOV, B.F., red.; SURKOV, Ye.N., red.;
KISELEVA, L.I., tekhn. red.

[Problems of perception of space and time] Problemy vospriiatiia prostranstva i vremeni; Materialy. Pod red. B.G.Anan'yeva i B.F. Lomova. Leningrad, Leningr. otd-nie ob-va psikhologov, 1961. 211 p (MIRA 15:6)

1. Nauchnoye soveshchaniye po problemam vospriyatiya prostranstva i vremeni. 2d, Leningrad, 1961. 2. Kafedra psikhologii Leningradskogo universiteta (for Anan'yev). 3. Laboratoriya industrial'noy psikhologii Leningradskogo gosudarstvennogo universiteta im. A.A.Zhdanova (for Lomov).
(Space perception) (Time perception)

LOMOV, B.F. (Leningrad)

16th International Psychological Congress. Vop.psikhol. 7 no.1:171-180 Ja-F '61. (MIRA 14:3)

(Psychology--Congresses)

ANAN'YEV, B.G., otv. red.; LOMOV, B.F., otv. red.; LAMAGINA, G.K., red.; ZHUKOVA, Ye.G., tekhn. red.

[Problems of general and industrial psychology]Problemy obshchei i industrial'noi psikhologii. Leningrad, Izd-vo Leningra. univ., 1963. 154 p. (MIRA 16:5)

1. Leningrad. Universitet.
(Psychology, Physiological) (Psychology, Industrial)

LOMOV, Boris Fedorovich; SHERBAKOVA, G.A., red.; ZHUKOVA, Ye.G., tekhn. red.

[Man and tehcnology; essays on engineering psychology] Chelovek i tekhnika;ocherki inzhenernoi psikhologii. Leningrad, Izd-vo Leningr. univ., 1963. 264 p. (MIRA 16:5)
(Human engineering)

LEONT'YEV, A.N.; LOMOV, B.F.

Man and technology. Vop. psikhol. 9 no.5:29-37 S-O'63.
(MIRA 17:2)

1. Moskovskiy gosudarstvennyy universitet (for Leont'yev).
2. Leningradskiy gosudarstvennyy universitet (for Lomov).

LOMOV, B. F.

"On the relationship of differentiation, identification, recognition and speed of the receiving of information."

report submitted for Symp on Psychological Problems of Cybernetics, E. Berlin, 3-5 Sep 64.

LOMOV, B. F.

"Ob optimal'nom kodirovanii informatsii, peredavayemoy cheloveku-operatoru."

report submitted for 15th Intl Cong, Intl Assn of Applied Psychology, Ljubljana, Yugoslavia, 2-8 Aug 1964.

Leningradskiy universitet.

LOMOV, B.F.; LEVIYEVA, S.N.

Study of the human operator's activities in tracking. Vop. psikhol. 11 no.1:165-175 Ja-F '65. (MIRA 18:[illegible])

1. Laboratoriya inzhenernoy psikhologii Leningradskogo gosudarstvennogo universiteta.

LOMOV, F. O.

29104-Razvitii Rafinadnoy Promyshlennosti Sakhar Prom-st', 1949, No. 8, S. 11-15

SO: Letopis' Zhurnal'nykh Statey, Vol. 39, Moskva, 1949

LOMOV, F. G., ZIL'BERMAN, T. I., VINOGRADOV, N. V.

Sugar - Transportation

Practical sugar transportation. Sakh. prom., 26, no. 1, 1952.

Monthly List of Russian Accessions, Library of Congress, April 1952. Unclassified.

LOMOV, F. O.

Beets and Beet Sugar - Volga Valley.

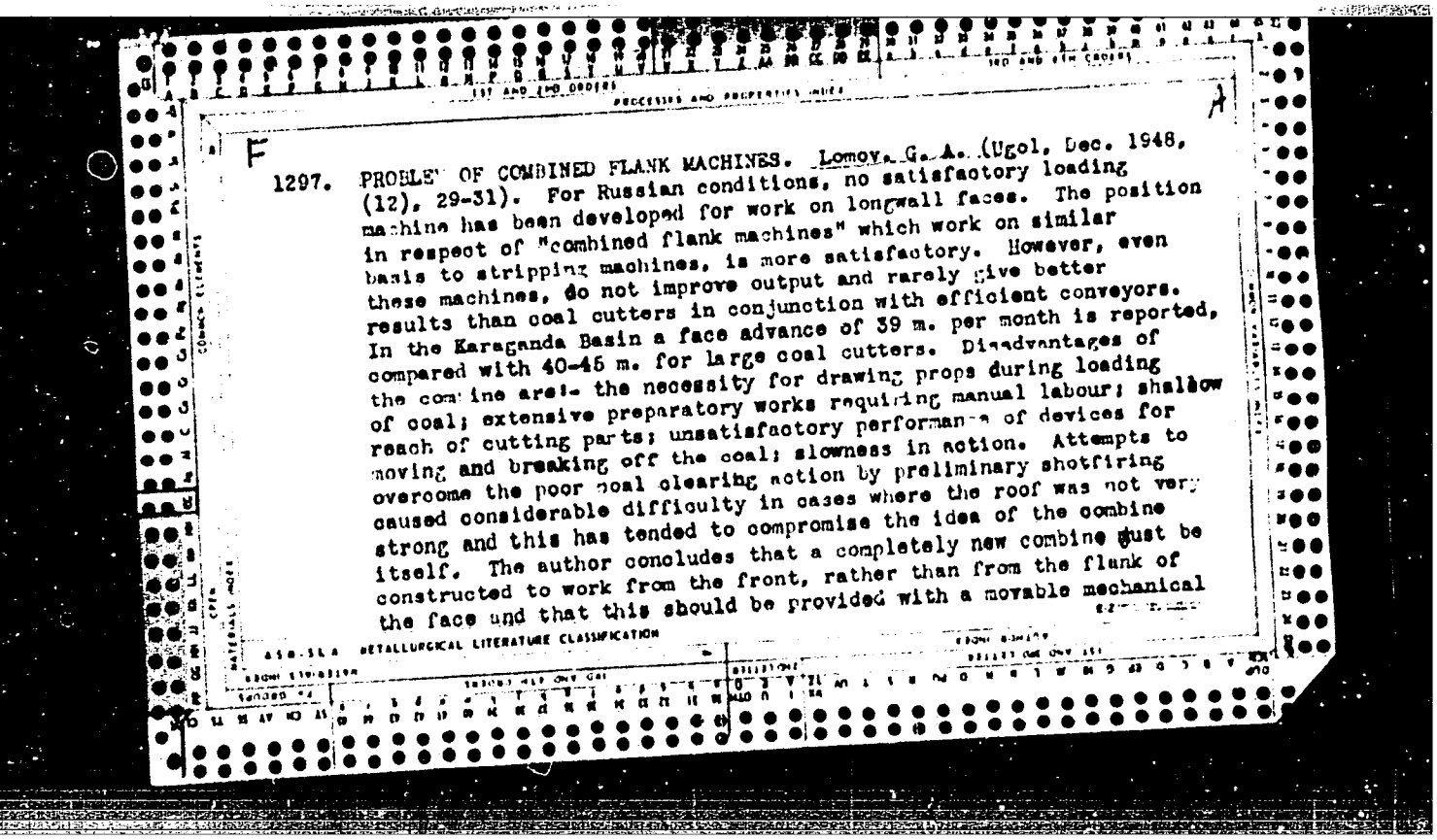
Sugar Industry in the Volga area. Sakh. prom. 26 No. 2, 1952.

Monthly List of Russian Accessions, Library of Congress, June 1952. Unclassified.

LOMOV G. A.

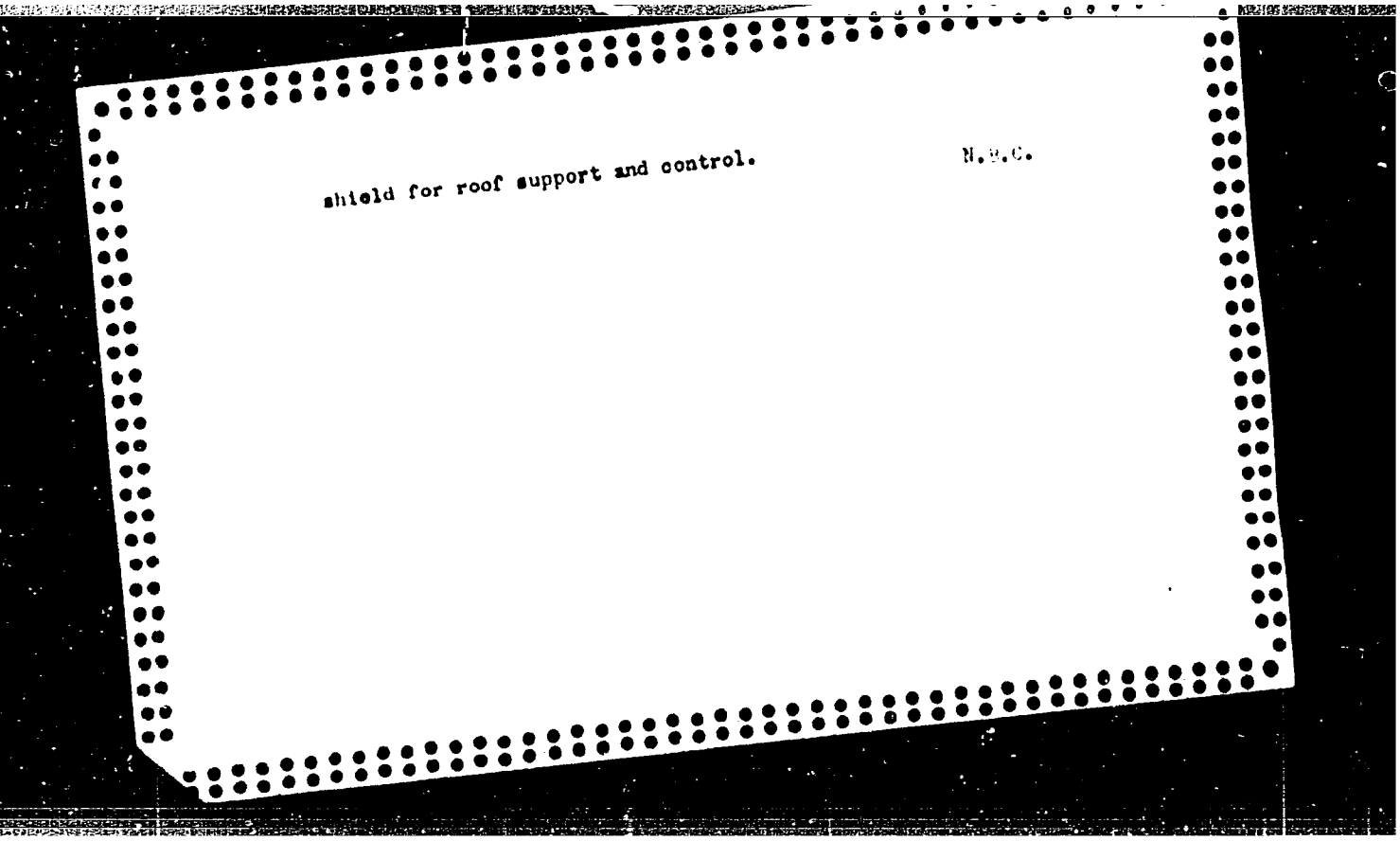
Prokhodka Shakht S Predvaritel' Nym Tamponazhem S Poverkhnosti, Goryuchiye Slantsy, 1933, No. 1, 29.

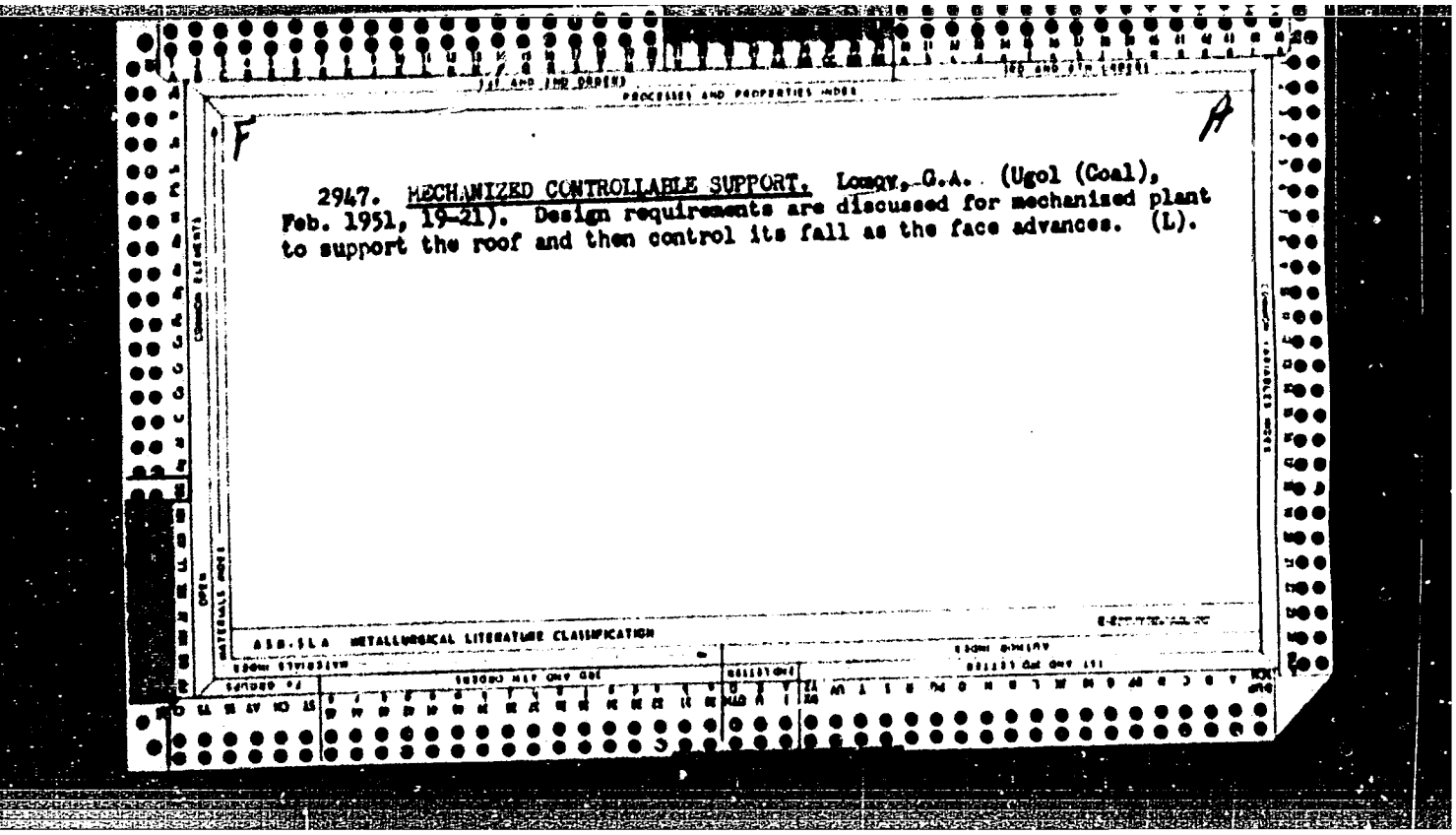
SO: Goryuchiye Slantsy #1934-35 TN. 871 G74



F

1297. PROBLEM OF COMBINED FLANK MACHINES. Lomov, G. A. (Ugol, Dec. 1948, (12), 29-31). For Russian conditions, no satisfactory loading machine has been developed for work on longwall faces. The position in respect of "combined flank machines" which work on similar basis to stripping machines, is more satisfactory. However, even these machines, do not improve output and rarely give better results than coal cutters in conjunction with efficient conveyors. In the Karaganda Basin a face advance of 39 m. per month is reported, compared with 40-45 m. for large coal cutters. Disadvantages of the combine are:- the necessity for drawing props during loading of coal; extensive preparatory works requiring manual labour; shallow reach of cutting parts; unsatisfactory performance of devices for moving and breaking off the coal; slowness in action. Attempts to overcome the poor coal clearing action by preliminary shotfiring caused considerable difficulty in cases where the roof was not very strong and this has tended to compromise the idea of the combine itself. The author concludes that a completely new combine must be constructed to work from the front, rather than from the flank of the face and that this should be provided with a movable mechanical





F

A

2947. MECHANIZED CONTROLLABLE SUPPORT. Longw., C.A. (Ugol (Coal), Feb. 1951, 19-21). Design requirements are discussed for mechanized plant to support the roof and then control its fall as the face advances. (L).

LOMOV, G.A.

USSR.

✓1954. TASKS OF MINING SCIENCE IN THE FIELD OF COMPLEX MECHANIZATION OF COAL MINING. Lomov, G.A. (Ugol (Coal), Oct, 1954, 6-8). The possibility of introducing "assembly-line" methods in coal production is discussed. Particular emphasis is laid on the use of remote-controlled winning machinery operated from central points underground and on "dispatcher" service (transmission of information from and to a central point). (L).

LOMOV, G.A., doktor tekhnicheskikh nauk.

Overall mechanization of frontal coal-cutting operations. Mekh. trud.rab.8 no.1:16 Ja-F '54. (MLRA 7:2)
(Coal-mining machinery)

LOMOV, G.A., doktor tekhnicheskikh nauk.

Improving the methods of preparing and mining slanting seams in the Donets Basin. Ugol' 29 no.2:13-18 F '54. (MLRA 7:1)
(Donets Basin--Coal mines and mining)
(Coal mines and mining--Donets Basin)

LOMOV, G.A., doktor tekhnicheskikh nauk.

Opening up and developing for steping thin, sloping, gas-bearing seams in the Donets Basin. Ugol' 31 no.1:9-12 Ja '56.(MLRA 9:4)
(Donets Basin--Coal mines and mining)(Mine ventilation)

LOMOV, G.A., zaslushennyy deyatel' nauki i tekhniki.

Coal mining and mechanizing systems used in flat seams. Ugol' 32 no.1:26-30 Ja '57. (MLRA 10:2)
(Coal mining machinery)

LOMOV, G.A., doktor tekhn.nauk

Efficient method of mining thick steeply pitching Kuznetsk Basin seams with filling of worked out areas. Ugol' 33 no.12:13-15 D '58. (MIRA 11:12)

(Kuznetsk Basin--Coal mines and mining)
(Mine filling)

OVEZMURADOV, S.O.; LOMOV, G.G.

Experimental forage crop plantations in Kunya-Urgench District.
Izv. AN Turk. SSR. Ser. biol. nauk no.2:71-78 '61. (MIRA 14:7)

1. Institut botaniki AN Turkmenskoy SSR.
(KUNYA-URGENCH DISTRICT—FORAGE PLANTS)

KOSILOV, S.A.; LOMOV, I.A.; MOYKIN, Yu.V.

Criteria of perfection of motor dynamic stereotype. Zhur. vys. nerv. deiat. 5 no.5:653-659 S-O '55. (MLRA 9:1)

1. Institut gigiyeny truda i profzabolevaniy AMN SSSR.
(WORK,
criteria of perfection of motor dynamic stereotype.)

LOMOV, I.Ya., polkovnik; BELIKOV, M.A., polkovnik, red.; MEDNIKOVA, A.N., tekhn.red.

[Some questions on party organizing activities in the Soviet Army and Navy] Nekotorye voprosy partiino-organizatsionnoi raboty v Sovetskoi Armii i Flote. Izd.3., ispr. i dop. Moskva, Voen.izd-vo M-va oborony SSSR, 1959. 94 p. (MIRA 12:10)
(Communist Party of the Soviet Union--Party work)
(Russia--Armed forces)

LOMOV, I.A.

Heat production following the action of potassium chlorides on the sartorius of a frog. Biofizika 10 no.3:528-530 '65. (MIRA 18:11)

1. Biologo-pochvennyy fakul'tet Moskovskogo gosudarstvennogo universiteta imeni Lomonosova. Submitted April 4, 1964.

L 32596-66 EWT(m)/EWP(v)/T/EWP(t)/EWP(k)/EWP(h)/EWP(b)/EWP(l)/EWA(c) JD/HM
ACC NR: AP5018695 SOURCE CODE: UR/0125/65/000/007/0011/0014

AUTHOR: Bratkova, O. N. (Doctor of technical sciences); Lomov, I. A. (Engineer)

ORG: MVTU imeni Baumana

TITLE: Power circuit calculation for a low amperage arc power source

SOURCE: Avtomaticheskaya svarka, no. 7, 1965, 11-14

TOPIC TAGS: transistorized circuit, electric power source, arc welding

ABSTRACT: The basic parameters of a low amperage power circuit for argon arc welding with nonconsumable electrodes are calculated and the use of transistors as welding voltage regulators is discussed. Transistors may be connected (1) to the bridge rectifier or (2) to the rectifier circuit. Despite a slight power loss due to feedback resistance in the emitter circuits, the bridge rectifier hookup is favored over the rectifier circuit hookup. Transistorized voltage regulators in low amperage arc welding have the advantage of holding voltage constant despite fluctuations in the length of the arc (at 0.3-1.5 mm arc length, voltage fluctuation did not exceed 3-4%) and make for a much lighter, more compact power source. Orig. art. has: 4 figures, 7 formulas.
SUB CODE: 13/ SUBM DATE: 06Aug64/ ORIG REF: 004/ OTH REF: 000

UDC: 621.791.03 : 621.382.3

Card 1/1

LOMOV, I. Ye.

Nekrasovskiy, Ya. E. and Lomov, I. ye. - "On the height of the work level in the mining of steeply-dipping layers (suitable to the central region of Donbass)," Izvestiya Dnepropetr. gornogo in-ta, Vol. XIX, 1948, p. 85-105

SO: U-3600, 10 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 6, 1949).

AUTHOR: Lomov, I.Ye., Engineer SOV-118-58-7-9/20

TITLE: A New Mechanism for the Drilling of Deep Bore Holes in Coal Mining (Novyy mekhanism dlya bureniya glubokikh skvazhin po uglyu)

PERIODICAL: Mekhanizatsiya trudoyëmkikh i tyazhëlykh rabot, 1958, Nr 7, pp 23-25 (USSR)

ABSTRACT: In 1957 at the coal mine "Yunyy Kommunar" of the Ordzhonikidzeugol' Trust, A.I. Komarov, V.A. Seleznev and L.Ya. Sazonov invented a mechanism for the drilling of bore holes in any wanted direction. By joint effort of coal mine workshops, one model of the drilling machine was built, which was named BA-1. The technical novelty of the new mechanism is that the boring machine and the feeding mechanism are enclosed in one case and are fed with compressed air through one hose. The mechanism of the BA-1 can be taken apart and consists of two parts, one of which contains a complex air distributing valve box and the pneumatic motor. The second part plays a subsidiary role and is used to move the boring machine inside the bore. The following technical details of the BA-1 are presented: total weight - 25 kg, length - 940 mm, length of the core bit - 250 mm, bearing surface of one connecting piece - 300 cm^2,

Card 1/2

A New Mechanism for the Drilling of Deep Bore Holes in Coal Mining

bearing pressure on one connecting piece - 1,050 kg, diameter of the body - 100 mm, diameter of the bore - 150 mm, motor capacity - 3 hp, air pressure - 3,5 atm., air expenditure - 3 cu m per minute, boring speed - 0.33 m per minute, weight of the starting device - 10 kg, boring depth - from 10 to 15 m. The trial of the new automatic boring machine proved its excellent efficiency. The article describes in detail the working capabilities of the boring machine. There are 3 photographs, 1 schematic drawing, and 1 table.

1. Coal mining--USSR 2. Equipment--Development

Card 2/2

LOMOV, I.Ye., dotsent; TARARYKO, P.M.; LESNYKH, V.A., gornyy inzh.

Examples and problems on organization and planning. Ugol' Ukr. 7 no.11:55-56 N '63. (MIRA 17:4)

ALTAYEV, Boris Yakovlevich; LOMOV, Konstantin Fedorovich; KUTUZOV, V.I., red.; STUDENETSKAYA, V.A., tekhn.red.

[New developments in the Canadian labor movement] Novoe v rabochem dvizhenii Kanady. Moskva, Izd-vo VTsSPS, Profizdat, 1960. 102 p. (MIRA 13:5)

(Canada--Communist Party) (Canada--Trade unions)

LOMOV, N., general-polkovnik, prof.

Influence of Soviet military doctrine on the development of military art. Komm. Vooruzh. Sil. 46 no. 21:15-24 N '65
(MIRA 19:1)

ACC NR: AP6013413 (A) SOURCE CODE: UR/0317/66/000/009/0029/0033

AUTHOR: Lomov, N. (Professor, Colonel general)

ORG: none

TITLE: Science and military technology

SOURCE: Tekhnika i vooruzheniye, no. 9, 1965, 29-33

TOPIC TAGS: military operation, military engineering, missile technology, missile detection

ABSTRACT: The importance of pure and applied science to a modern military effort is discussed. Since war is to be considered a social phenomenon, all the changes that have occurred within the society — including the advancement of the scientific and technological infrastructure — will inevitably be reflected in a nation's capacity to wage war effectively. The intimate interrelation between the needs and requirements of modern military power and the entire scientific community is discussed, as are certain of the more significant latter-day developments in the area of military scientific hardware. Electronics is discussed as it relates to rocketry and missiles. Information on military applications of semiconductors,

Card 1/2

ACC NR: AP6013413

superconductive and ferromagnetic materials is given, and also of recent metallurgical advances in terms of their relation to aircraft, submarines, tanks, rockets, and conventional ordnance. A brief review of foreign (predominantly US) thinking on conventional anti-aircraft and ballistic detection systems is presented, and Soviet aero-space doctrine is summarily sketched. The rapid movement of modern combat situations is a major area of scientific concern.

SUB CODE: 15/ SUBM DATE: none/ ORIG REF: 002

Card 2/2

LOMOV, Nikolay Andreyevich, general-polkovnik, prof.; DAVYDOVA, Yu.F., red.; ATROSHCHENKO, L.Ye., tekhn.red.

[Soviet military doctrine] Sovetskaia voennaia doktrina. Moskva, Izd-vo "Znanie," 1963. 20 p. (Novoe v zhizni, nauke, tekhnike. I Seriia: Istoriia, no. 11) (MIRA 16:6)
(Military policy)

LOMOV, N. I.

USSR/General Questions. A

Abs Jour: Ref Zhur-Khimiya, No. 7, 1957, 21827

Author : Lomov, N. I.
Inst : None
Title : Ya. I. Mikhaylenko's Viewpoint of Nature of Solvents.

Orig Pub: Uch. Zap. Tomskogo in. - ta, 1955, No. 26, 181-186

Abstract: Ya. I. Mikhaylenko-physical chemist, professor of Mendeleyev's chemical-technological institute in Moscow.

Card 1/1

LOMOV, N.I.

Scientific work on chemistry in Tomsk institutions of higher learning . Trudy TGU 145:5-10 '57. (MIRA 12:3)

1.Kafedra organicheskoy i fizicheskoy khimii Tomskogo meditsinskogo instituta imeni V.M. Molotova.
(Tomsk--Chemistry)

1. LOMOV, S., Eng.; MAYZEL', Kh.

2. USSR (600)

4. Pipe, Steel

7. Tubes of sheet steel for electric installations. Zhil.-kom.khoz. 2, No. 11, 1952.

9. Monthly List of Russian Accessions, Library of Congress, _____ 1953, Uncl.

S/020/63/148/003/005/037
B112/B186

11,1570

AUTHOR: Lomov, S. A.

TITLE: Power series boundary layer in problems involving a small parameter

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 148, no. 3, 1963, 516-519

TEXT: It is shown that the problem

$$L_\varepsilon y = (\varepsilon + x)y^{(n)} + a_{n-1}(x)y^{(n-1)} + a_{n-2}(x)y^{(n-2)} + \ldots + a_0(x)y = h(x) \quad (1)$$

$$y_\varepsilon(0) = y_\varepsilon'(0) = \ldots = y_\varepsilon^{(n-1)}(0) = 0 \quad (1')$$

can be solved in the form

$$y_\varepsilon = \varepsilon, n+m-1(x) + z_\varepsilon(x),$$

where $L_\varepsilon y_\varepsilon$) + $O(\varepsilon^{m+1})$, $y^{(i)}_{\varepsilon,\ldots+m}$ ( ) ε^{n+m}),

Card 1/2

Power series boundary layer in ... S/020/63/148/003/005/037
B112/B186

(i = 0,1,... , n-1), and the residual term z_ε(x ... first n-1 derivatives have the order of magnitude $O(\varepsilon^{m+1})$.

ASSOCIATION: ...skiy energeticheskiy institut
(Moscow Power Engineering Institute)

PRESENTED: July 6, 1962, by I. G. Petrovskiy, Academic

SUBMITTED: July 4, 1962

Card 2/2

LOMOV, S.A.

Asymptotic behavior of solutions to ordinary second-order differential equations containing a small parameter and degenerating on the boundary of the region. Trudy MEI no.42:99-144 '62. (MIRA 16:7)

(Differential equations)

LOMOV, S.A. (Moskva)

Generalization of Fuch's theorem for [illegible]nalytic case.
Mat. sbor. 65 no.4:498-511 D '64. (MIRA 18:3)

L 03015-67 EWT(d) IJP(c)
ACC NR: AP6028200 SOURCE CODE: UR/0038/66/030/003/0525/0572

AUTHOR: Lomov, S. A.

36
33
B

ORG: none

TITLE: The power boundary layer in problems with singular perturbation

SOURCE: AN SSSR. Izvestiya. Seriya matematicheskaya, v. 30, no. 3, 1966, 525-572

TOPIC TAGS: perturbation theory, boundary value problem, asymptotic stability, boundary layer, Cauchy problem

ABSTRACT: Asymptotics are constructed for solutions of boundary value and initial value problems for ordinary differential equations with a small parameter. Functions of a power boundary layer are used to make the construction. The asymptotic behavior of the equation

$$\sum_{r=1}^{k}(\varepsilon+x)^r a_{n-k+r}(x)\,y_\varepsilon^{(n-k+r)}+\sum_{j=0}^{n-k}a_j(x)\,y_\varepsilon^{(j)}=h(x)$$

is studied for small positive values of the parameter ε, and the asymptotic solution is constructed. Examples of boundary value problems for partial differential equations are presented in cases when the power boundary layer arises in their solution. Seva-

UDC: 517.9

Card 1/2

L 03015-67

ACC NR: AP6028200

ral existence theorems are proved for limiting equations, and a theorem is proved on the solvability of the boundary value problem for sufficiently small values of ϵ, which is shown to be a consequence of the solvability of the limiting boundary value problem. The author acknowledges the valuable advice and constant attention to this work shown by M. I. Vishik and Yu. I. Grosberg. Orig. art. has: 307 formulas.

SUB CODE: 12/ SUBM DATE: 30Dec64/ ORIG REF: 015/ OTH REF: 004

Card 2/2 egh

YUGOSLAVIA

LOMOV, V.F.; University of Leningrad (Leningradskiy Universitet,) Leningrad, USSR.

"Optimal Coding of Information for Human Input."

Zagreb, Arhiv za Higijenu Rada i Toksikologiju, Vol 16, No 2, 1965; pp 129-135.

Abstract [Russian article]: Review of author's and associates' studies regarding signal detection thresholds, interpretation, identification, type of signal, frequency, background or channel noise, signal variation and some interrelationships of these variables. Number of possible and most frequent variations, optimal code design as factor thereof. Table, 2 graphs, diagram; ms rec 3 Nov 64.

LOMOV, V.F.

Boring holes in large parts. Sakh.prom. 29 no.1:32 '55. (MIRA 8:4)

1. Belovodskiy sakharnyy zavod.
(Sugar industry—Equipment and supplies)

LOMOV, V. F.

"The Labour and the Touch"

Paper presented at the 14th International Congress of Applied Psychology, Copenhagen, Denmark, 13-19 Aug. 1961.

Country : USSR K
Category: Forestry. Forest Management.

Abs Jour: RZhBiol., No 11, 1958, No 46742

Author : Ushatin, P.N.; Lonov, V.M.
Inst : -
Title : Cutting Methods of Principal Produce in the Fir Forests of Northern Caucasus.

Orig Pub: Lesn. kh-vo, 1957, No 12, 8-12

Abstract: No abstract.

Card : 1/1

VOROB'YEV, V., inzh.; LOMOV, Yu., inzh.

Carbamide glue resins. Prom.Arm. 5 no.2:51-54 F '62.
(MIRA 15:2)
(Armenia--Adhesives)
(Urea)

LOMOV, Yu.G.

Case of sequestration of an erupted incomplete odontoma. Stomatologiia 42 no.4:89 Jl-Ag'63 (MIRA 17:4)

1. Iz Moskovskogo gorodskogo chelyustno-litsevogo gospitalya (glavnyy vrach - dotsent A.A. Kovner).

5(

SOV/21-59-5-8/25

AUTHORS: Ovcharenko, F.D., Corresponding Member of the AS UkrSSR, Blokh, G.A., Gudovich, N.V., Lomov, Yu.I.

TITLE: Pyrophyllite, a New Dielectric Filler for Cable Rubber

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1959, Nr 5, pp 489-493 (USSR)

ABSTRACT: The authors made a study of the physico-chemical properties of Ukrainian pyrophyllite of the Zbrankov deposits, Zhitomir region, with the purpose of applying it in cable rubbers as a dielectric filler, instead of chalk and talc (imported from the Urals). The Zbrankov pyrophyllite was found to consist in its basic mass of 85% of highly disperse pyrophyllite mineral, about 15% quartz with traces of talc. The structural formulas of pyrophyllite and talc are as follows: pyrophyllite - $Al_2[Si_4O_{10}](OH)_2$; talc- $3MgO \cdot 4SiO_2 \cdot H_2O$. The optical constants of pyrophyllite are Ng= 1.600 - 1.594; Np = 1.552-1.555;

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Pyrophyllite, a New Dielectric Filler for Cable Rubber

Ng-Np = 0.048-0.039; of talc Ng = 1.575-1.590; Np = 1.538-1.545; Ng-Np = 0.037-0.045. Chemical compositions of pyrophyllite and talcs from the Urals are shown in table 1. Mixtures of pyrophyllite were substituted for talc and chalk, as shown in table 3, subjected to pressed vulcanization at 143° ± 2° for 10-60 minutes. The analysis of the results of testings showed in table 4 indicates that the physical and mechanical properties of the rubber remained unchanged both before and after ageing (24 hours -long, at 70°, in the air) and did not differ from serially-produced insulation rubber. Hence, pyrophyllite is a new effective dielectric filler for cable rubber. It is the most hydrophobic of all agrillaceous minerals, its heat of moistening is close to zero, the value of water sorption at P/Ps = 1 is 0.2 nmol/g, the dielectric constant is 7.7, angle of dielectric losses 9-12', pH = 6.5. Thermal treatment and grinding may intensify the heat of moistening, value of water absorption and

Pyrophyllite, a New Dielectric Filler for Cable Rubber

dielectric constant. There are 4 tables, 1 microphoto, 1 graph and 4 Soviet references.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN UkrSSR i Dnepropetrovskiy khimiko-tekhnologicheskiy institut (Institute of General and Inorganic Chemistry of the AS UkrSSR, and the Dnepropetrovsk Chemico-Technological Institute)

SUBMITTED: February 18, 1958

LOMOV, Yu.M.

Experimental infection of Dermacentor marginatus nymphs with Leptospira pomona. Med. paraz. i paraz. bol. 34 no.1:115 Ja-F '65. (MIRA 18:8)

1. Institut epidemiologii, mikrobiologii i gigiyeny i kafedra epidemiolcgii Meditsinskogo instituta, Rostov-na-Donu.

L 22744-66 EWT(m)/EWP(1) IJP(c) RM
ACC NR: AP6006353 (A) SOURCE CODE: UR/0413/66/000/002/0093/0093

AUTHOR: Kamenskiy, I. V.; Lapitskiy, V. A.; Ukhinov, V. A.; Lomov, Yu.M.; Itinskiy, V. I.

ORG: none

TITLE: Modification of rubber. Class 39, No. 178093

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1966, 93

TOPIC TAGS: rubber, furan resin, thermomechanical property, chemical resistant material

ABSTRACT: This Author Certificate describes a method for modifying rubber by combining it with resins. To raise both the thermal and chemical resistance of the final product, the use of a resin of the furan series containing an ionic-type catalyst is suggested. The reaction mixture is subjected to thermal treatment at 80--200C. Organic sulfonic acids, metal chlorides and mineral acids are proposed for use as catalysts.

[LD]

SUB CODE: 11/ SUBM DATE: 23Jan63

Card 1/1 UDC: 678.046.7:547.724.1

CZECHOSLOVAKIA

HASKOVEC, L.; RYSANEK, K.; LOKOVA, E.; Psychiatric Clinic, Prague. [Original version not given].

"Metabolites of Biogenic Amines in Endogenous Depression in the Course of Imipramine Therapy."

Prague, Activitas Nervosa Superior, Vol 8, No 4, Nov 66, pp 444 - 445

Abstract: A study of metabolites of biogenic amines in excretions of 7 patients was made. The chief metabolites of noradrenalin and serotonin were vanilylmandelic acid, 5-hydroxyindoleacetic acid, and creatinine. During imipramine therapy the excretion of vanilylmandelic acid was reduced from the beginning of the treatment, while the excretion of the 5-hydroxyindoleacetic acid dropped only after 11 days of treatment. 2 Figures, no references. Submitted at the 8th Annual Psychopharmacological Meeting at Jesenik, 18 - 22 Jan 66. Article is in English.

1/1

L 36341-65 EWG(j)/EWA(k)/FBD/EWT(l)/EPA(s)-2/EWT(m)/EEC(k)-2/EEC(t)/T/EWP(t) EEC(b)-2/EWP(k)/EWP(b)/EWA(m)-2/EWA(h)/EWA(c) Pn-4/Po-4/Pf-4/Pt-10/Peb/Pi-4
ACCESSION NR: AP5008474 Pl-4 TJP(c) WG/JD/JG S/0070/65/010/002/0255/0256

AUTHOR: Filimonov, A. A.; Lomova, L. G.; Suvorov, V. S.; Pakhomov, V. I.; Sonin, A. S.

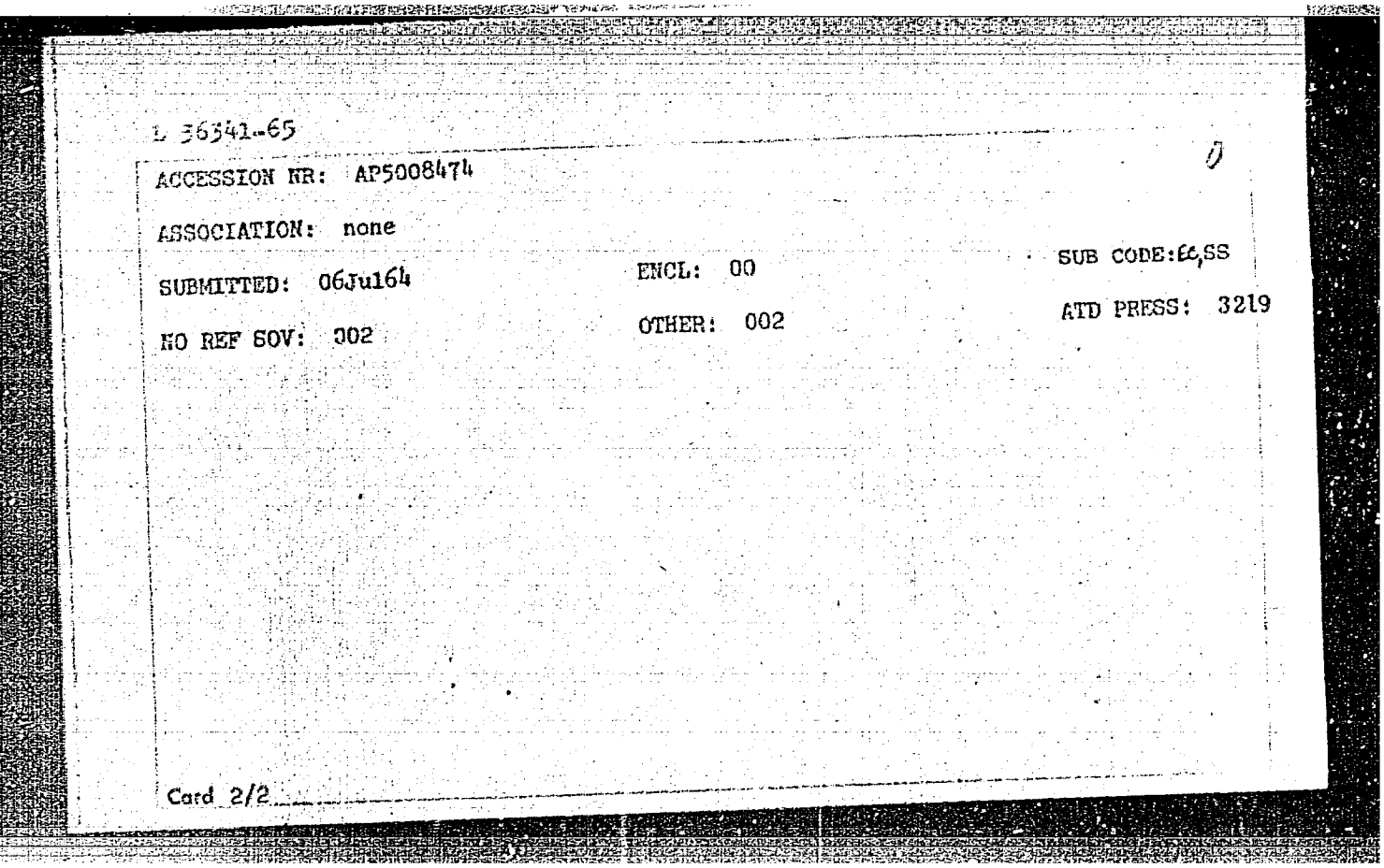
TITLE: Second harmonic generation in potassium iodate monocrystals

SOURCE: Kristallografiya, v. 10, no. 2, 1965, 255-256

TOPIC TAGS: laser, ruby laser, nonlinear optics, harmonic generation, second harmonic, potassium iodate, nonlinear effect, optical harmonic

ABSTRACT: A second harmonic generation in crystals of potassium iodate illuminated by a ruby laser emission (λ = 6943 Å) is reported. Maximum generation was in the [102], [120], and [012] directions and was of the same order of magnitude as that observed in ADP crystals in the direction of matching indices. The determination of the direction of matching indices in KIO_3 crystals was difficult because of low crystal symmetry and the difficulty of measuring refraction indexes. The minimal refraction indexes for the D_{Na} line with laser emission propagation in the [100], [010] and [011] directions were 1.7281, 1.7274, and 1.7278, respectively. The KIO_3 crystals exhibited high birefringence. It was determined from absorption spectra that the crystals were transparent between 0.4 and 6.2 μ. [CS]

Card 1/2



L 36341-65

ACCESSION NR: AP5008474

ASSOCIATION: none

SUBMITTED: 06Jul64 ENCL: 00 SUB CODE: EC,SS

NO REF SOV: 002 OTHER: 002 ATD PRESS: 3219

Card 2/2

L 57571-65 EWT(l)/EPA(s)-2/EWT(m)/EEC(t)/T/EWP(t)/EWP(b)/EWA(c) Pt-7/Pl-4
LIP(c) JD/GG
ACCESSION NR: AP5016130 UR/0048/65/029/006/0965/0968

AUTHOR: Sonin, A.S.; Lomova, L.G.

TITLE: Changes in the optical properties of ferroelectric single crystals incident to phase transitions /Report, 4th All-Union Conf. on Ferroelectricity held in Rostov-on-the-Don 12-18 Sept 1964/

SOURCE: AN SSSR. Izvestiya.Ser.fizicheskaya,v.29, no.6, 1965, 965-968

TOPIC TAGS: ferroelectric crystal, double refraction, phase transition, polarization, deformation

ABSTRACT: The authors discuss theoretically the change in the birefringence of a ferroelectric crystal at the transition from the paraelectric to the ferroelectric phase. The double refraction is assumed to arise from the linear and quadratic electro-optical effect and the spontaneous polarization, and from the electro-elastic effect and the spontaneous deformation. The birefringence is proportional to the spontaneous polarization unless the crystal is centrally symmetric in the paraelectric phase. In the case of central symmetry the birefrin-

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L 57571-65
ACCESSION NR: AP5016130

2

gence is proportional to the square of the spontaneous polarization. The theoretical conclusions are illustrated (and confirmed) by experimental data of B.Zwicker and P.Scherrer (Helv.phys.acta 17,346,1944) on KH_2PO_4, and by experimental data of W.Merz (Phys.Rev.76,1221,1949) on $BaTiO_3$. "In conclusion, we express our gratitude to I.S.Zheludev and L.A.Shuvalov for discussing the results of the work." Orig.art. has: 7 formulas and 2 figures.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: SS,OP

NR REF SOV: 002 OTHER: 004

Card 2/2

LOMOVA, L.G.; SONIN, A.S.

Changes in the optical indicatrix of triglycine sulfate single crystals in phase transitions. Kristalografiia 10 no.2:251-252 Mr-Ap '65. (MIRA 18:7)

L 4267-66 EWT(1)/T IJP(c) GO

ACC NR: AP5024554 UR/0070/65/010/005/0701/0707
548.0:537.228

57
45
B

AUTHOR: Perfilova, V. E.; Sonin, A.S.; Lomova, L. G.

TITLE: Change in the optical properties of crystals upon application of electric fields

SOURCE: Kristallografiya, v. 10, no. 5, 1965, 701-707

TOPIC TAGS: Kerr effect, crystal optic property, crystal structure

ABSTRACT: The paper gives an analytical treatment of changes in the optical indicatrixes of crystals, arising under the influence of an external electric field as a result of the Kerr effect. All the results are tabulated. The basic regularities in the change of the optical indicatrix are discussed. In crystals of the rhombic, hexagonal (classes 6/mmm, 6 mm, $\bar{6}2$, and 62) and cubic system when the field acts along the three principal directions, of the tetragonal and trigonal system in the <001> and <0001> directions, and of classes 4/mmm, 422, $\bar{4}2$ m, and 4 mm (field directed along <100> and <001>), the indicatrixes are only deformed, without changing positions. The action of the field along <001> and <0001> in crystals of the tetragonal, hexagonal, and trigonal system does not decrease the symmetry of the indicatrixes, and the crystal remains uniaxial. The symmetry of the indicatrix always decreases in crystals of the cubic system. In crystals of the tetragonal system (classes 4/mmm, 422, 4mm, and $\bar{4}2$ m), the symmetry decreases when the field is applied along <100>. The tables presented in the article should be useful for studies of the Kerr effect. "In conclusion, we thank I. S.

Card 1/2

L 4267-66

ACC NR: AP5024554

12

Zheludev, 44,55 L. A. Shuvalov, 44,55 A. P. Lyubimov, 44,55 and I. S. Roz for a discussion of the results."
Orig. art. has: 1 table. 44,55

ASSOCIATION: None

SUBMITTED: 14Oct64 ENCL: 00 SUB CODE: SS, OP

NO REF SOV: 002 OTHER: 001

Card 2/2 DP

TALIYEV, V.N.; LOMOVA, L.M.

Air vents for metallurgical plants. Sbor.trud.NIIOT no.1:135-143 '58. (MIRA 12:1)
(Metallurgical plants--Heating and ventilation) (Skylights)

SIMAKOVA, T.L.; LOMOVA, M.A.

Studying the microflora of oil fields in Second Baku. Trudy VNIGRI no.117:213-221 '58. (MIRA 12:4)
(Second Baku--Petroleum--Bacteriology)

MAZING, L.A., kand.tekhn.nauk; GURICHEVA, Z.G., nauchnyy sotrudnik; YEVILEVICH, M.A., nauchnyy sotrudnik; LOMOVA, M.A., nauchnyy sotrudnik; KOVALEVA, A.A., nauchnyy sotrudnik

Methods of sewage purification. Bum.prom. 37 no.9:7-10 S '62. (MIRA 15:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tsellyulozno-bumazhnoy promyshlennosti.
(Sewage--Purification)

LOMOVA, M.A.

Concentration of proteinous and protein-free SH-groups in the tissues of rats and rhesus monkeys during the development of radiation injury. (MIRA 14:11)
Radiobiologiia 1 no.5:701-704 '61.
(MERCAPTO GROUP) (GAMMA RAYS--PHYSIOLOGICAL EFFECT)

ZHURAVLEV, A.I.; LOMOVA, M.A.; BENEVOLENSKIY, V.N.

Toxicity of irradiated and oxidized fats. Med. rad. 6 no.2:46-51 '61. (MIRA 14:3)

(FATS—TOXICOLOGY) (RADIATION)

ACCESSION NR: AT4042653 S/0000/63/000/000/0056/0060

AUTHOR: Baranov, V. I.; Gyurdzhian, A. A.; Lomova, M. A.; Radkevich, L. A.; Tutochkina, L. T.; Fedorova, T. A.; Furayeva, L. P.; Khn°chev, S. S.; Artem'yeva, N. S.

TITLE: The effect of gravity on the development of organisms

SOURCE: Konferentsiya po aviatsionnoy i kosmicheskoy meditsine, 1963. Aviatsionnaya i kosmicheskaya meditsina (Aviation and space medicine); materialy° konferentsii. Moscow, 1963, 56-60

TOPIC TAGS: gravity, centrifuge, organism development, physiological function, rat, chronic centrifugation, blood composition, urine composition, Coriolis acceleration

ABSTRACT: In this investigation, Baranov and his co-workers designed a centrifuge for small animals with an arm radius of 135 cm which could be regulated to produce artificial gravitational fields of from 4 to 5 g. The centrifuge was arranged in such a way that the arms and cages at the end of the arms would simultaneously rotate around their axes producing Coriolis accelerations. A single control panel

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ACCESSION NR: AT4042653

regulated the photography and illumination of cage interiors, automatic feeding of the animals, and the revolving rate of the centrifuge. It was possible to record five separate physiological functions from some specially prepared animals. Experiments were conducted on white rats, commencing on the first day after birth and continuing for 25 days. Litters consisting of 200 animals were divided into experimental and control groups. All animals were born at approximately the same time. Experimental animals were subjected to accelerations ranging from 1.5 to 3 g for periods of from 4 to 6 hours, 6 days per week. The weighing of all animals took place every three days as did biochemical assays of the blood and urine, tests of vestibular activity, and the determination of the time of sexual maturity in female animals. At the termination of the experiment, a comparative test of the response of both experimental and control animals to brief accelerations of 5, 10 and 20 g was conducted. After 20--25 days, the body weight of chronically centrifuged animals was 60--80% that of the controls. The composition of erythrocytes (89.6%), leukocytes (93.4%), and hemoglobin (99.1%) in the blood of experimental animals with respect to control animals reflected a slightly anemic condition. While blood albumin in experimental animals was somewhat lower than in the controls, serum mucoid composition was higher, indicating a change of dystrophic character. Urine assays of experimental animals showed that the levels of Diche-positive substance (48%), nitrogen (62%), creatine (31%),

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ACCESSION NR: AT4042653

and creatinine (60%) were lower than in the control animals. Finally, the estral cycle of experimental females was significantly altered, though one female gave normal birth to young. In the second investigation, control animals exposed to brief accelerations of 5 g showed noticeable increases in the level of non-esterified fatty acids, decreases in serum mucoid composition, and increases in the albumin-globulin ration. However, at 20 g there was an increase in serum mucoid composition and a decrease in the albumin-globulin ration. Biochemical variations in experimental animals subjected to the same accelerations were insignificant. The authors conclude that gravity plays a complex role in the physiological processes of the developing organism but that the true mechanism of this role is far from being understood.

ASSOCIATION: none

SUBMITTED: 27Sep63 ENCL: 00 SUB CODE: LS

NO REF SOV: 000 OTHER: 000

Card 3/3

LOMOVA, M.A.

Effect of γ-irradiation on the activity of tributyrinase of the liver and epididymal fatty tissue in rats. Radiobiologiia 3 no.2:174-176 '63 (MIRA 17:1)