LABUNETS, N.F.

Some data on the ecology of the fleas of suslike in the Armenian S.S.R. Trudy Nauch.-issl. protivochum. inst. Kav. i Zakav. no.5:119-126 '61.

Fauna of fleas in Daghestan. Ibid.:127-131

New forms of fleas from Mongolia. Ibid.:191-198

The flea Amphipsylla transcaucasia, a parasite of the murine hamster bailwardi Thomas. Ibid.:199-202

(MIRA 17:1)

TER-VARTANOV, V.N.; LABUNETS, N.F.; BOCHARNIKOV, O.N.; BABENYSHEV, V.P.

Notes on the abstracts of the report by A.A. Lavrovskii and IA. F. Shatas, "Analysis of the modern groupings of animals of the Sulak-Terek plain and the factors which caused the penetration of plaque epizooty in Daghestan." Trudy Nauch.-issl. protivochum. inst. Kav. i Zakav. no.5:301-304 '61. (MIRA 17:1)

LABUNETS, N.F.; KAFARSKAYA, D.G.

New fleas from Tajikistan. Zool. zhur. 40 no.9:1423-1427 S '61.
(MIRA 14:8)

1. Research Anti-Plague Institute of the Caucasus and Transcaucasia, Stavropol, and Tajik Anti-Plague Station, Stalinabad.
(Tajikistan--Fleas)

GUSEV, V.M.; BEDNYY, S.N.; GUSEVA, A.A.; LABUNETS, N.F.; BAKEYEV, N.N.

Ecological groups of birds of the Caucasus and their role in the life of ticks and fleas. Trudy Nauch.-issl. protivochum. inst. Kav. i Zakav. no.5:217-267 '61. (MIRA 17:1)

LABUNETS, N.N.

Orthopedic shoes in congenital club foot. Ortop.,travm.i protez. (MIRA 15:5)
no.4:27-32 '62.

1. Iz detskoy kliniki (zav. - doktor med.nauk L.Ye. Rukhman) Leningradskogo instituta protezirovaniya (dir. - dotsent M.V. Strukov). Adres avtora: Leningrad, prosp. Karla Marksa, d.9/12, Institut protezirovaniya.
(FOOT--ABNORMITIES AND DEFORMITIES)
(ORTHOPEDIC SHOES)

L 13648-66 EWP(e)/EWT(m)/T/EWP(t)/EWP(k)/EWP(b)/EWA(h)/EWA(c) JD/WW/HW/DJ/WH

ACC NR: AP6002392 SOURCE CODE: UR/0250/65/009/012/0817/0819

41 B

AUTHOR: Severdenko, V. P.; Labunov, V. A.

ORG: Belorussian Polytechnical Institute (Belorusskiy politekhnicheskiy institut)

TITLE: Effect of ultrasonic vibration on lubricant effectiveness in cold extrusion of metals

SOURCE: AN SSSR. Doklady, v. 9, no. 12, 1965, 817-819

TOPIC TAGS: ultrasonic vibration, metal extrusion, cold extrusion, extrusion lubricant, lubricant efficiency, efficiency improvement, ultrasound induced improvement

ABSTRACT: The effect of ultrasonic vibration on the effectiveness of lubricants used in cold extrusion of metals has been investigated. The UZG-10-M generator was used as the source of ultrasonic vibrations applied to lubricants. It was found that, on the average, ultrasound increases the effectiveness of all investigated lubricants 2—3 times. This beneficial effect of ultrasound is especially pronounced in lubricants containing surface-active substances such as oleic acid, wax, wax with additions of oleic acid, wax with additions of oleic acid and graphite, or wax with additions of zinc stearate and oleic acid. In these cases, the effectiveness of the lubricants was increased approximately 4—5 times. [ND]

SUB CODE: 11,13 SUBM DATE: 10Aug65/ ATD PRESS: 4186

Card 1/1 HW

EWP(k)/EWT(l)/EWT(m)/T/EWP(t)/ETI IJP(c) JH/JD/HW

ACC NR: AP6029650 SOURCE CODE: UR/0250/66/010/008/0558/0561

AUTHOR: Severdenko, V. P.; Labunov, V. A.

ORG: Belorussian Polytechnical Institute (Belorusskiy politechnicheskiy institut)

TITLE: New ultrasonic vibration systems for units processing metals under pressure with ultrasound application

SOURCE: AN BSSR. Doklady, v. 10, no. 8, 1966, 558-561

TOPIC TAGS: ultrasonic vibration, ~~ultrasonic vibration system, ultrasonic~~ metal deformation, ~~ultrasonic~~ metal working

ABSTRACT: Since the existing systems for plastic working of metals with simultaneous application of ultrasound do not produce satisfactory results because the standing wave exists only during the first deformation stages, two new modified systems were developed. In both new designs the ultrasonic system is acoustically isolated from the mass of the metal-forming unit. Therefore, both systems can be used with any deformation force. In cold extrusion of small aluminum billets with reductions of 36—84%, which required forces of 1700—7300 kg (without ultrasound), the old system produced no improvement, while the new systems reduced the pressure for extrusion with 36, 52, and 84% reduction from an initial 1700, 2400, and 7300 kg to 600—1000, 1200—1700, and 5300—6200 kg. The lower values of pressure were obtained with a system which was provided with two magnetostrictive transducers with metal placed

Card 1/2

L 05709-67

ACC NR: AP6029650

between them. In this system, each transducer with attached elements operates under the condition of a standing wave. [ND]

SUB CODE: 13/ SUBM DATE: 02Jun66/ ORIG REF: 007/ OTH REF: 001 / ATD PRES: 5069

Card 2/2

STROGANOV, A.I.; PETROV, A.K.; LABUNOVICH, O.A.; SVET, Ye.B., red.

[Raw materials for steelmaking] Syrye materialy v staleplavil'-nom proizvodstve. Cheliabinsk, IUzhno-Ural'skoe knizhnoe izd-vo, 1964. 77 p. (MIRA 18:5)

LABUNSKAYA, L.S.

Breezes on the shore of the Black Sea. Trudy UkrNIGMI no.23:49-55 '61. (MIRA 14:8)
(Black Sea region--Winds)

LABUNSKAYA, L.S.

On the shore of the Black Sea. Priroda 50 no.10:128 O '61.
(MIRA 14:9)

1. Gidrometeorologicheskaya observatoriya Chernogo i Azovskogo morey, Sevastopol'.
(Black Sea region--Autumn)

CHERNYSHEV, M.P.; ROZHKOV, L.P.; SHUL'GINA, Ye.F.; IGNATOVICH, A.F.; LABUNSKAYA, L.S.; FOMINA, T.V.; CHERNYAKOVA, A.P.; SHPAKOVA, L.N.; TARASOVA, M.K.; ANFILATOVA, A.I.; SLAVIN, L.B.; BARYSHEVSKAYA, G.I.; DERIGLAZOVA, N.V.; MATUSHEVSKIY, G.V.; AL'TMAN, E.N.; KROPACHEV, L.N.; CHEREDILOV, B.F.; POTAPOV, A.T.; DUDCHIK, M.K.; REGENTOVSKIY, V.S.; YERMAKOVA, L.F.; SEMENOVA, Ye.A.; KULIKOVSKIY, I.I.; KIRYUKHIN, V.G.; AKSENOV, A.A., red.; NEDOSHIVINA, T.G., red.; SERGEYEV, A.N., tekhn. red.; BRAYNINA, M.I., tekhn. red.

[Hydrometeorological handbook of the Sea of Azov] Gidrometeorologicheskii spravochnik Azovskogo moria. Pod red. A.A.Aksenova. Leningrad, Gidrometeoizdat, 1962. 855 p. (MIRA 16:7)

1. Gidrometeorologicheskaya observatoriya Chernogo i Azovskogo morey.

(Azov, Sea of--Hydrometeorology)

LABUNSKAYA, L.S.

Climatic characteristics of the northwestern coast of the Crimea. Sbor. rab. GMO CHAM no.2:65-87 '64.

(MIRA 18:2)

LABUNSKAYA, O. I. Cand Med Sci -- (diss) "Combined chemotherapy ~~in the treatment~~ of pulmonary-tuberculosis patients under ~~conditions of~~ clinic(al conditions) and dispensary (streptomycin-phthivazide)." Mos, 1957. 16 pp (Acad Med Sci USSR), 200 copies (KL, 5-58, 103)

LABUNSKAYA, O.I.

Functional state of the liver in tuberculosis during combined antibacterial therapy [with summary in French]. Probl.tub. 36 no.3:23-27 '58 (MIRA 11:5)

1. Iz kafedry tuberkuleza Dnepropetrovskogo meditsinskogo instituta.

(TUBERCULOSIS, PULMONARY, physiol.
liver, during combined antibact. ther. (Rus))
(LIVER, in various dis.
pulm. tuberc., eff. of combined antibact. ther. (Rus))

LABUNSKAYA, Yu.F. (Kiyev)

New statute on the assistant in the chemical analytical drugstore.
Apt. delo 10 no. 2:62-63 Mr-Ap '61. (MIRA 14:4)
(PHARMACY--LAWS AND LEGISLATION)

LABUNSKIY, I. M.

Agriculture

Afforestation on Don Valley watersheds; (Stalino), Stalinskoe obl. izd-vo, 1950.

Monthly List of Russian Accessions, Library of Congress, May 1952. UNCLASSIFIED.

LABUNSKIY, I.M.

Water, Underground

"Veliko-Anodol'ski" forest - humidifier of the steppe. Les i step' 4, No. 6, 1952.

9. Monthly List of Russian Accessions, Library of Congress, September 1952, Uncl.

LABUNSKIY, I.M., kandidat sel'skokhozyaystvennykh nauk.

New developments in the theory of drought resistance of plants. Priroda 42 no.9:85-87 S '53. (MLRA 6:8)

1. Lesoopytnaya stantsiya (Ol'ginka, Stalinskoy oblasti).
(Plants, effect of aridity on)

LABUNSKIY, I.M.

Main achievements of the Mariupol' Experimental Forest Improvement Station in sixty years (1893-1953). Trudy Inst. lesa 30:429-491 '56. (MLRA 10:4)

(Ukraine--Forestry research)

LABUNSKIY, I.M.

USSR / Forestry. Forest Management. K

Abs Jour: Ref Zhur-Biol., No 7, 1958, 29557.

Author : Labunskiy, I. M.
Inst : Ukrainian Scientific Research Institute for Forestry and Agricultural Forest Melioration.
Title : Rebuilding the Desiccated Ash Plantings on the Steppe.
(Rekonstruktsiya usykhayushchikh yasenevykh nasazhdeniy v stepi).

Orig Pub: Byul. nauchno-tekhn. inform. Ukr. n.-i. in-t lesn. kh-va i agrolesomelior., 1957, No 3-4, 16-18.

Abstract: No abstract.

Card 1/1 53

LABUNSKIY, I. P.

USSR/Chemistry - Alkylation 21 Sep 51

"Condensation of Ditertiary Glycols With Benzene," I. P. Labunskiy, I. P. Tsukervanik, Cen Asian State U

"Dok Ak Nauk SSSR" Vol LXXX, No 3, pp 369-372

The condensation of pinacol, 2, 4-dimethylpentanediol-2, 4 and 2, 5-dimethylhexanediol-2, 5 all resulted in cycloalkylation of benzene. Condensation with pinacol proceeds with difficulty. Beta and gamma ditertiary glycols condense (70 - 75% theoretical yield). Some unusual products were obtained.

210T28

Evaluation of paper appears in [redacted]-B-76836, 19 July 54

SOV/ 79-28-6-44/63

AUTHOR: Labunskiy, I. P.

TITLE: The Condensation of Diacetone Alcohol With Benzene (Kondensatsiya diatsetonovogo spirta s benzolom)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 6, pp. 1626-1628 (USSR)

ABSTRACT: During the last years I. P. Tsukervanik and his collaborators investigated systematically the condensations of the double-functional compounds of the aliphatic series (1,3-butylene-chlorohydrine and 1,3-butyleneglycol (Ref 1), 1,4-pentane-thiol (Ref 2), the double-tertiary glycols (Ref 3)) with aromatic compounds in order to obtain knowledge of the variable activity of various functional groups. Based on the theory of the mutual influence of atoms (Ref 4) the author found in the given cases a decrease of the influence of the functional groups according to their distance. As this fact is of theoretical importance the further investigations of such kind must lead to new ways of the preparative synthesis. The author decided to carry out the condensation of benzene with diacetone alcohol which has the alcohol group in the β-posi-

Card 1/3

tion with respect to the ketone group. In publications only the paper by Niderl (Niderl) on the condensation of this alcohol with pehnol in the presence of zinc chloride is known. Unexpectedly the condensation of diacetone alcohol with benzene in the presence of 2 gr mol $AlCl_3$ took mainly place according to the mentioned scheme, viz. under the formation of 2-phenyl-2-methylpentanone-4 (formula I) (yield 60,7 %) and of a crystalline product with the melting point at 127° (II). A separate heating test of the compound (I) with $AlCl_3$ supplied the same product with the melting point (II) and proved that the condensation process takes place only at the alcohol group. The ketcaryl (I) was obtained by some authors (Refs 6, 7) by the condensation of mesityl oxide with benzene in the presence of aluminum chloride. As the diacetone alcohol used by the author is much less expensive than mesityl oxide the described method for the synthesis of ketcaryl (I) is much more useful. It is assumed that, similar to the mesityl oxide, diacetone alcohol can also be condensed with other aromatic hydrocarbons having more mobile nuclear hydrogen atoms than benzene, and that then various aromatic ketones can be obtained. There are 9 references, 6 of which are Soviet.

Card 2/3

The Condensation of Diacetone Alcohol With Benzene SOV/79-28-6-44/63

ASSOCIATION: Sel'skokhozyaystvennyy institut, g. Belaya Tserkov'
(Belaya Tserkov', Agricultural Institute)

SUBMITTED: May 27, 1957

1. Alcohols--Synthesis

Card 3/3

LABUNSKIY, I.P.

Reaction of acetoacetic ester with benzene in the presence of $AlCl_3$. Zhur.ob.khim. 31 no.5:1580-1581 My '61. (MIRA 14:5)

1. Belotserkovskiy sel'skokhozyaystvennyy institut.
(Acetoacetic acid) (Benzene)

LA[illegible]IT, L.

Expanding vocational horizons. Prof.-tekh.obr. 20 no.11:8-9 N '63.
(MIRA 17:1)

1. Zamestitel' direktora po uchebno-proizvodstvennoy rabote Gorodskogo professional'no-tekhnicheskogo uchilishcha No.11 Moskvy.

LABUNSKIY, M.

Senior Engineer of the Fittings Department of the USSR Ministry of the Automobile and Tractor Industry.

"On Output of Household Electric Refrigerators" 1950

Current Digest of the Soviet Press, Vol. 11 No. 19, 1950, page 56 (In [redacted] Library)

LABUNSKIY, V.M., assistant.

On the study of isoantigens and isoimmune antibodies in blood transfusions in dogs. Sbor.trud.Khar'.vet.inst. 21:413-424 '52. (MLRA 9:12)

1. Kafedra obshchey i chastnoy khirurgii Khar'kovskogo veterinarnogo instituta i Ukrainskiy nauchno-issledovatel'skiy institut perelivaniya krovi, eksperimental'naya laboratoriya.
(Blood--Transfusion) (Dogs--Physiology)
(Antigens and antibodies)

LABUNSKIY, V.M.

Isoantigenic incompatibility of blood in dogs and its significance in experimental studies [with summary in English]. Probl.gemat. i perel. krovi 3 no.4:47-49 Jl*Ag'58 (MIRA 11:8)

1. Iz kafedry obschey i chastnoy khirurgii (zav. zaslyzhennyy deyatel' nauki USSR prof. V.A. German) Khar'kovskogo veterinarnogo instituta i eksperimental'noy laboratorii (zav. - prof. V.N. Krainskaya-Ignatova) Ukrainskogo nauchno-issledovatel'skogo instituta perelivaniya krovi i neotlozhnoy khirurgii (dir. Yu.M. Orlenko).

(BLOOD GROUPS,
iso-antigenic incompatibility in blood transfusion in dogs (Rus))
(BLOOD TRANSFUSION, experimental,
iso-antigenic incompatibility in dogs (Rus))

029317 IJP(c) JGS/WW/GD SOURCE CODE: UR/0000/66/000/000/0156/0166

AUTHOR: Labunstov, D. A.; Kol'chugin, B. A.; Golovin, V. S.; Zakharova, E. A.; Vladimirova, L. N.

ORG: none

TITLE: Investigation of the mechanism of the nucleate boiling of water using high speed moving picture photography

SOURCE: Moscow. Energeticheskiy institut. Teploobmen v elementakh energeticheskikh ustanovok (Heat exchange in power installation units). Moscow, Izd-vo Nauka, 1966, 156-166

TOPIC TAGS: nucleate boiling, high speed photography, heat transfer coefficient

ABSTRACT: The experiments were carried out on a Z-shaped silver plate. The specific heat loads in the experiments varied from 40×10^3 to 150×10^3 watts/m^2, and the pressure from 1 to 100 bars. The article describes the results of an investigation of the following characteristics of the boiling mechanism: the magnitudes of the bubble densities on the heating surfaces, the values of the breakaway diameters, the macroscopic boundary angles, and the average frequency and rate of growth of the bubbles on the boiling surface. The experimental apparatus consisted of a vertical cylindrical vessel with a removable cover and a condenser. The experimental section

Card 1/2

L 07559-67

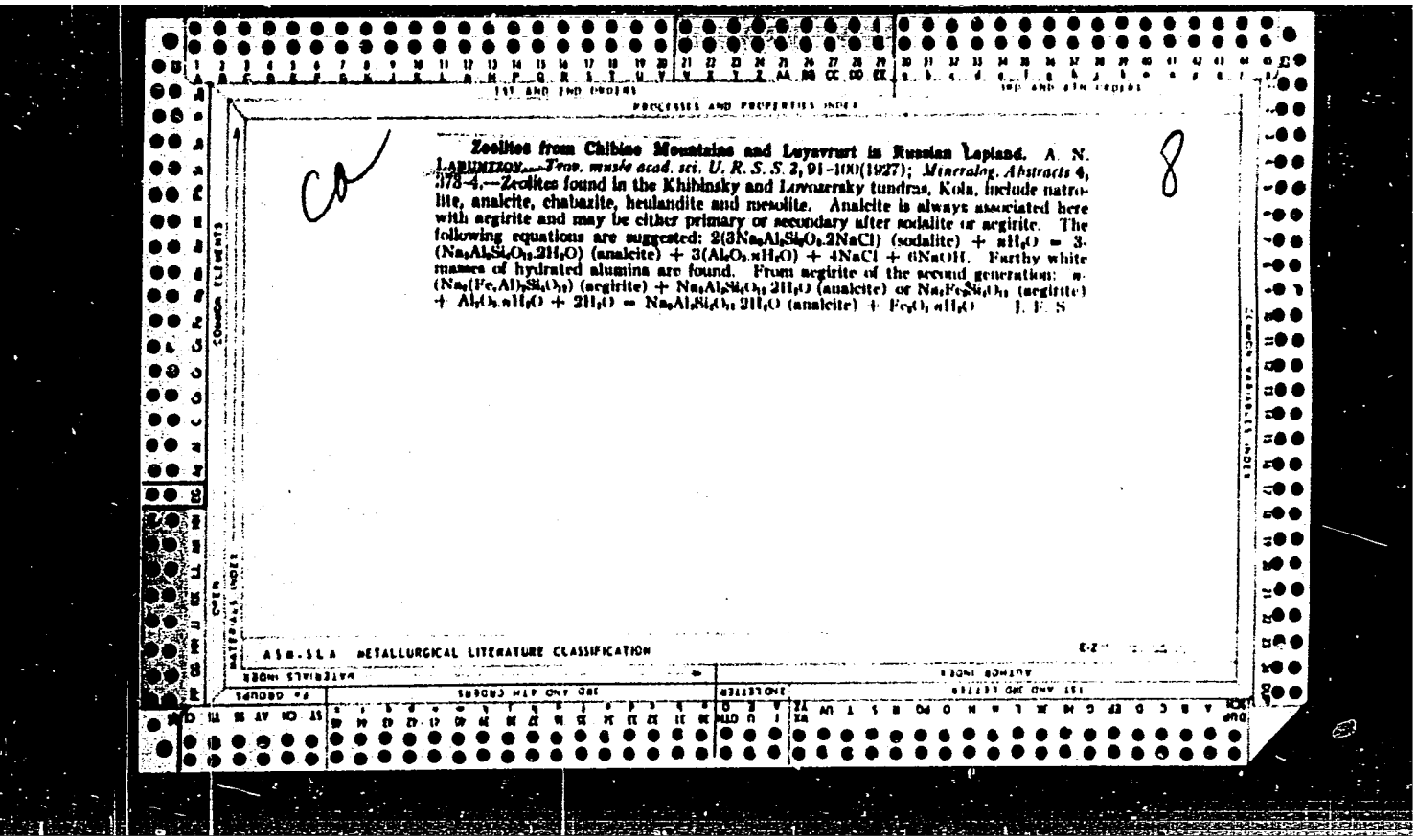
ACC NR: AT6029317

was a 99.99% silver plate bent at a right angle, having a thickness of 0.2 mm and a width of 2 mm, and placed on its wide edge. The load on the plate was created by a low voltage direct current. Before the experiments, the surface was given a special preparatory treatment, after which it had a cleanness of Class 8b, GOST 2789-51. The working fluid was distilled water with a salt content of 0.2-0.5 grams/m^3. Two series of experiments were made; one on freshly prepared surfaces and the other on surfaces which had been used. The experimental heat transfer data are shown in a table. The following conclusions were drawn: 1) the values of the heat transfer coefficients for surfaces which had been used were lower than those for freshly prepared surfaces; 2) there was observed a sharp decrease in the breakaway diameter with an increase in pressure; 3) the rate of growth of the bubbles slowed down sharply with an increase in pressure; 4) the average macroscopic boundary angles changed only slightly with an increase in pressure. Orig. art. has: 17 formulas, 11 figures and 1 table.

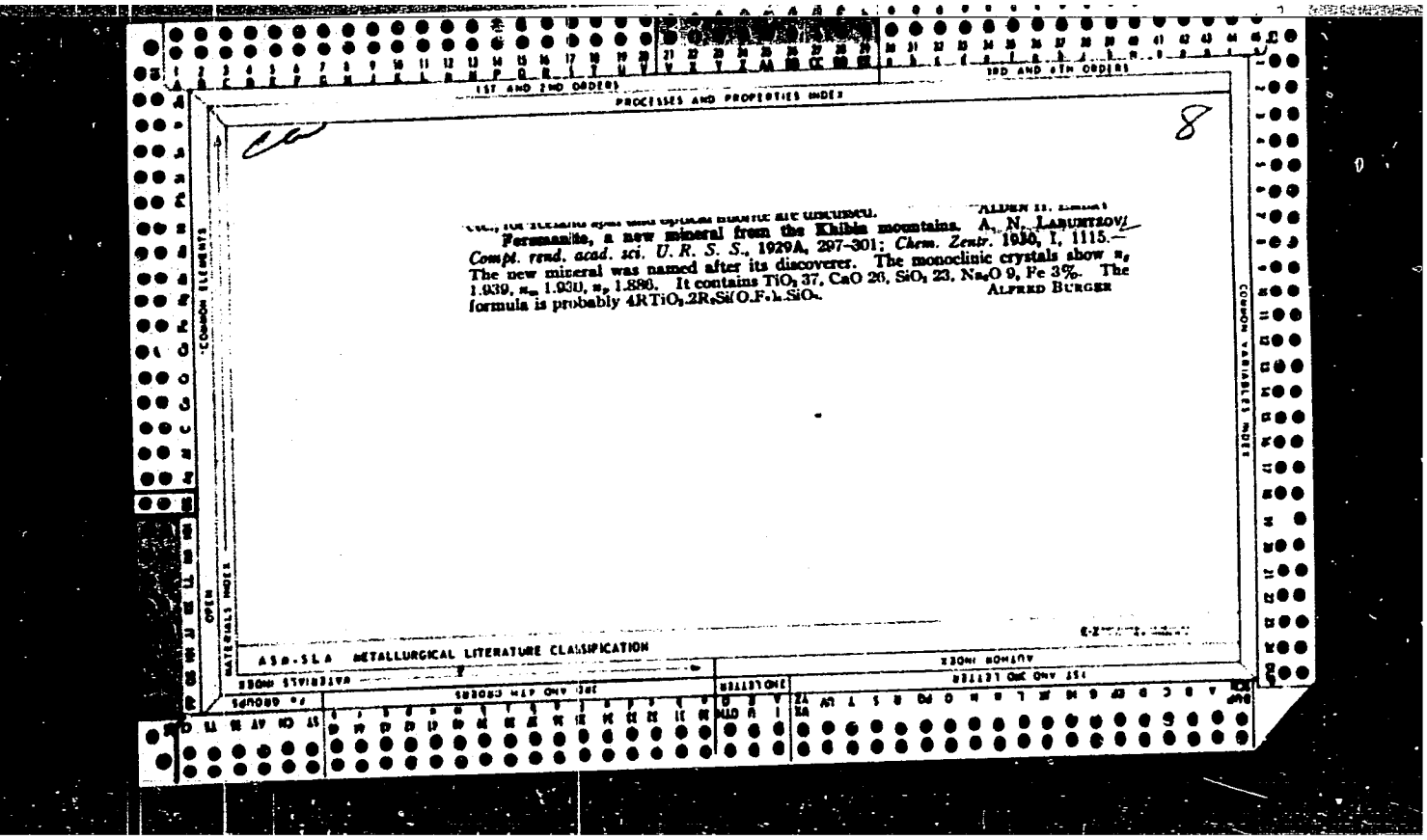
SUB CODE: 20/ SUBM DATE: 05Apr66/ ORIG REF: 010/ OTH REF: 013

14/

Card 2/2 nst



Zeolites from Chibine Mountains and Luyavrurt in Russian Lapland. A. N. LABUNTZOV.—*Trav. musée acad. sci. U. R. S. S.* 2, 91–100(1927); *Mineralog. Abstracts* 4, 378–4.—Zeolites found in the Khibinsky and Lavozersky tundras, Kola, include natrolite, analcite, chabazite, heulandite and mesolite. Analcite is always associated here with aegirite and may be either primary or secondary after sodalite or aegirite. The following equations are suggested: $2(3Na_2Al_2Si_2O_8.2NaCl)$ (sodalite) + nH_2O = $3(Na_2Al_2Si_4O_{12}.2H_2O)$ (analcite) + $3(Al_2O_3.nH_2O)$ + 4NaCl + 6NaOH. Earthy white masses of hydrated alumina are found. From aegirite of the second generation: $n(Na_2(Fe,Al)_2Si_4O_{12})$ (aegirite) + $Na_2Al_2Si_4O_{12}.2H_2O$ (analcite) or $Na_2Fe_2Si_4O_{12}$ (aegirite) + $Al_2O_3.nH_2O$ + $2H_2O$ = $Na_2Al_2Si_4O_{12}.2H_2O$ (analcite) + $Fe_2O_3.nH_2O$ J. F. S

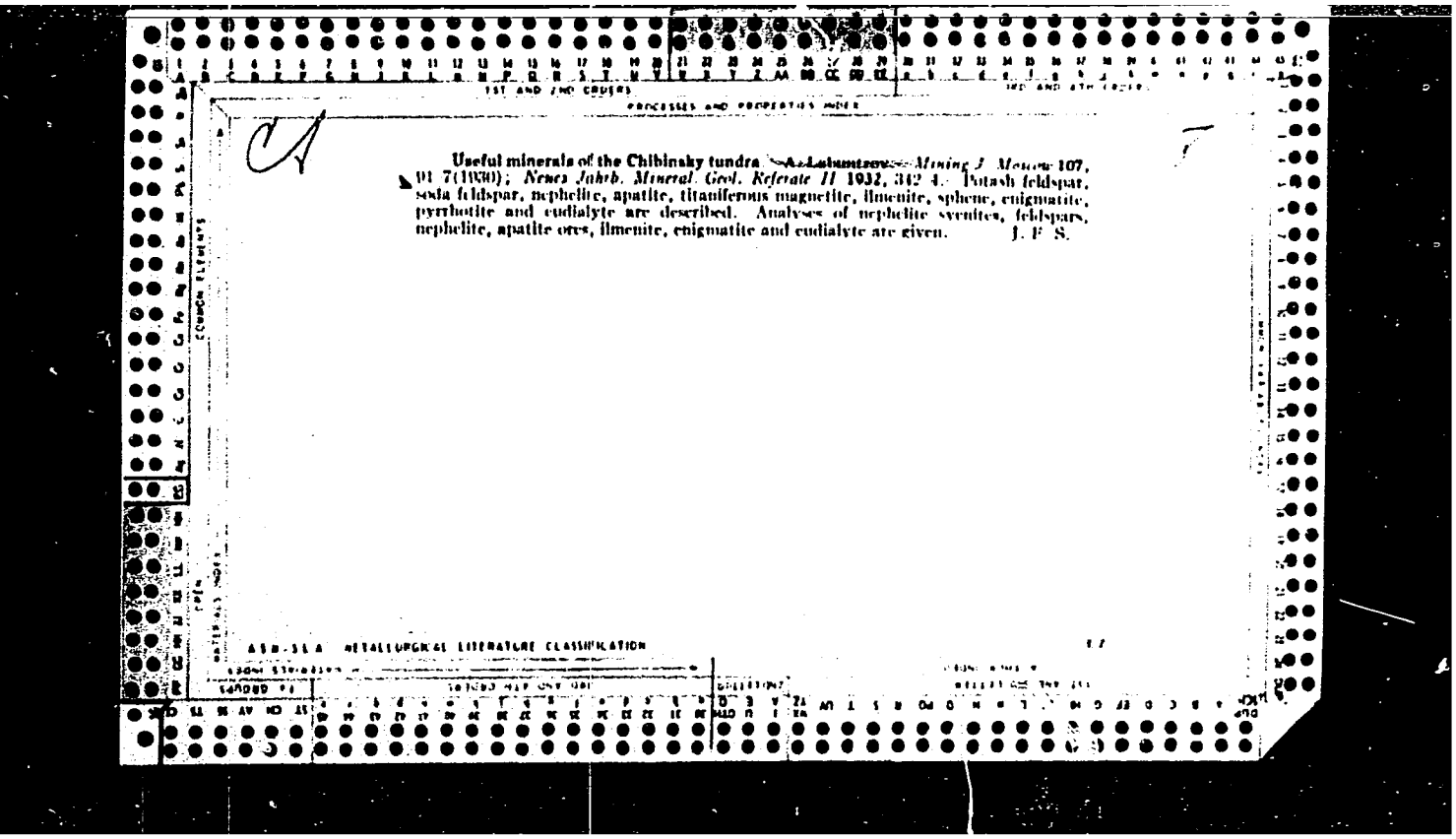


PROCESSES AND PROPERTIES INDEX

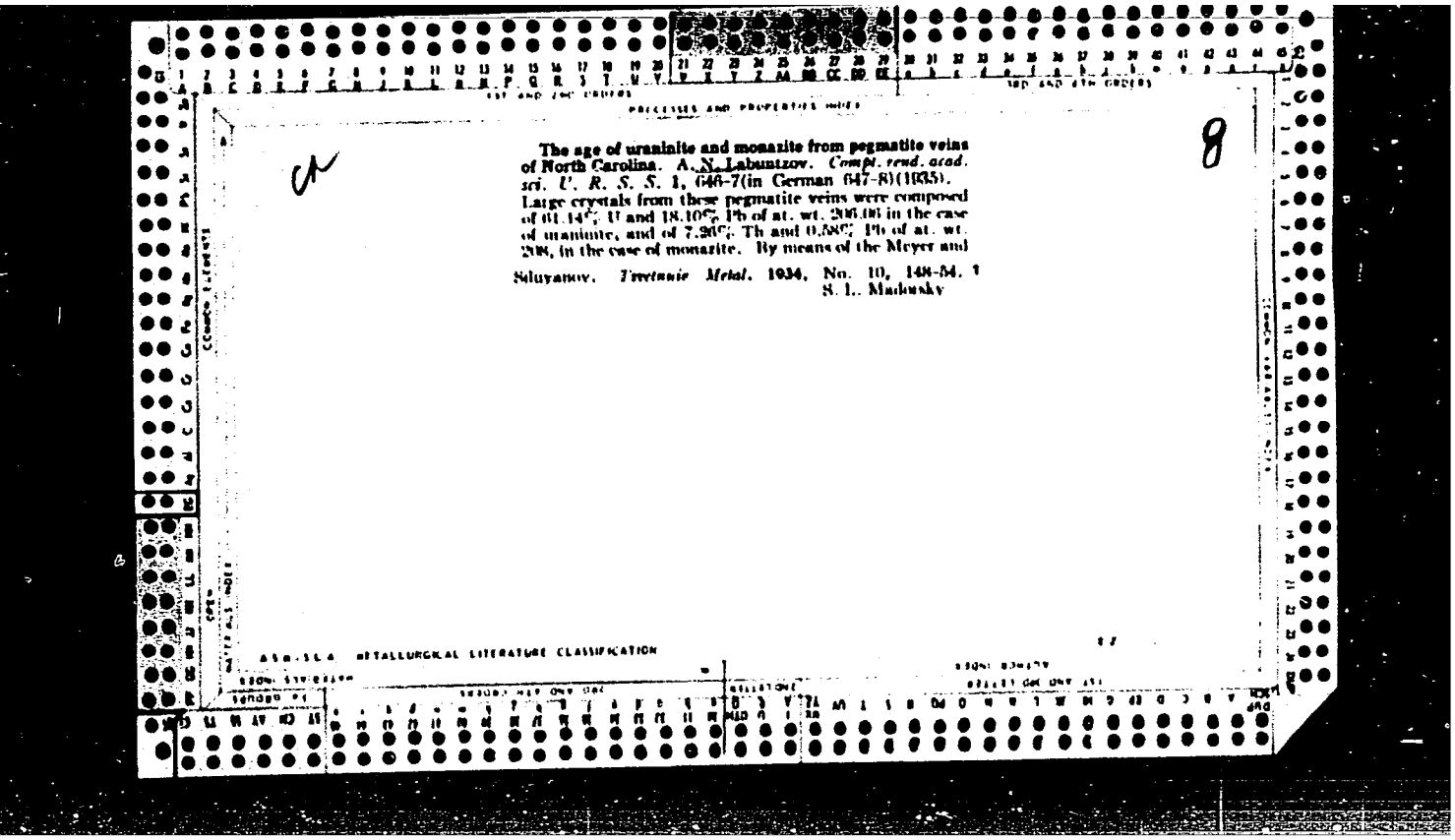
8

Permanite, a new mineral from the Khibin mountains. A. N. Labuntzov. *Compt. rend. acad. sci. U. R. S. S.*, 1929A, 297-301; *Chem. Zentr.* 1930, I, 1115.—The new mineral was named after its discoverer. The monoclinic crystals show n_g 1.939, n_m 1.930, n_p 1.880. It contains TiO_2 37, CaO 26, SiO_2 23, Na_2O 9, Fe 3%. The formula is probably $4RTiO_3.2R_2Si(O,F)_4.SiO_2$. ALFRED BURGER

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Useful minerals of the Chibinsky tundra. ~~A. Lebintsev~~ *Mining J. Moscow* 107, 91–7 (1930); *News Jahrb. Mineral. Geol. Referate II* 1932, 342–4. Potash feldspar, soda feldspar, nephelite, apatite, titaniferous magnetite, ilmenite, sphene, enigmatite, pyrrhotite and eudialyte are described. Analyses of nephelite syenites, feldspars, nephelite, apatite ores, ilmenite, enigmatite and eudialyte are given. J. F. S.



The age of uraninite and monazite from pegmatite veins of North Carolina. A. N. Labuntzov. *Compt. rend. acad. sci. U. R. S. S.* 1, 646-7(in German 647-8)(1935). Large crystals from these pegmatite veins were composed of 61.14% U and 18.10% Pb of at. wt. 206.08 in the case of uraninite, and of 7.26% Th and 0.58% Pb of at. wt. 208, in the case of monazite. By means of the Meyer and

Seluyanov. *Tsvetnie Metal.* 1934, No. 10, 148-54. 1
S. L. Madunsky

LABUNTSOV, Aleksandr Nikolaevich, 1884-

LABUNTSOV, Aleksandr Nikolaevich, Pegmatite of Northern Karelia and its minerals. Pod redaktsiei akad. A. E. Fersmana i prof. D. S. Beliankina. Moskva izd-vo Akademii nauk SSSR, 1939. 258 p. map. (Pegmatity SSSR. t. 2.)

LABUNTSOV, A.N.

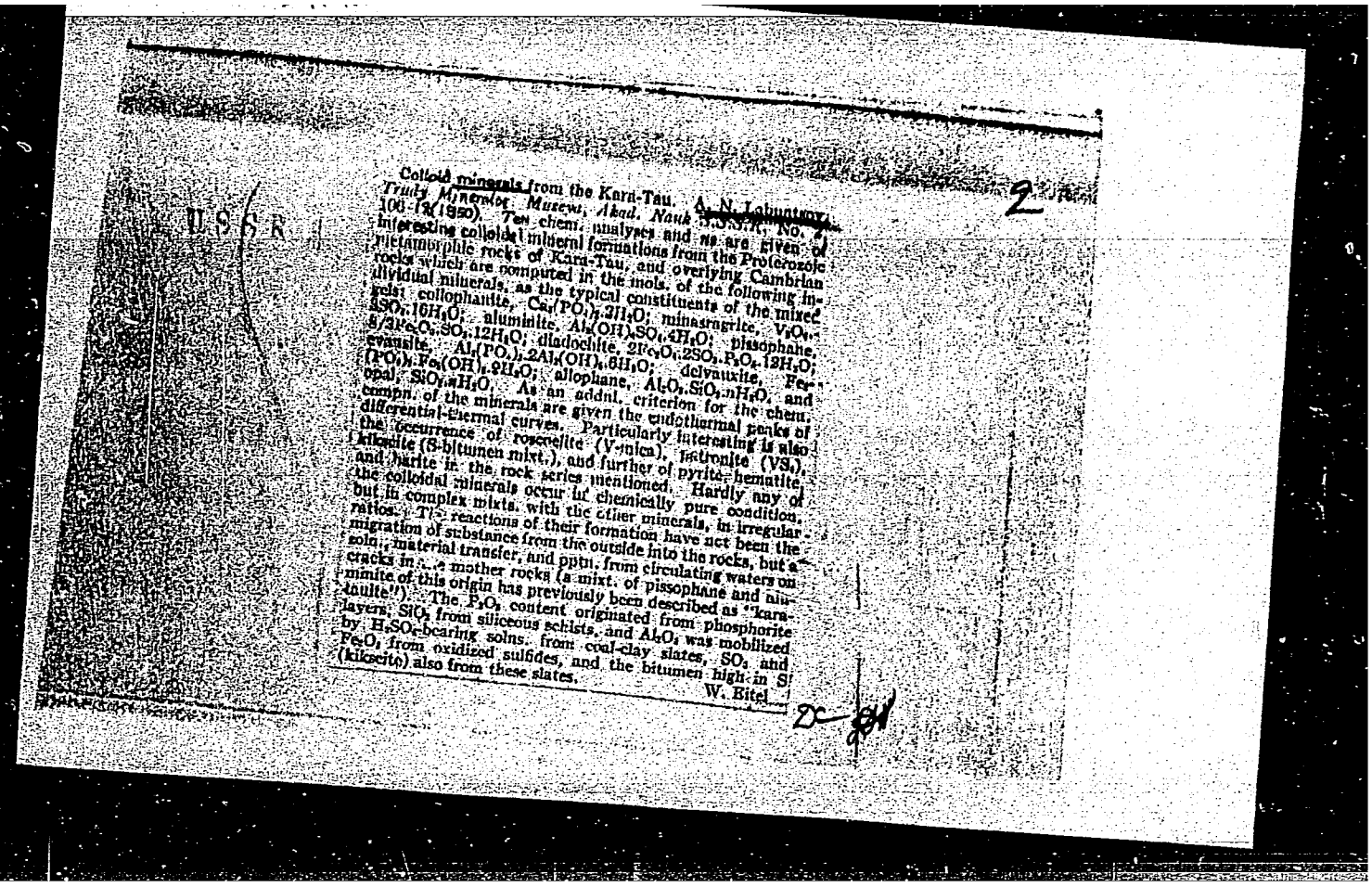
Crystallography of diamonds. Trudy Min.muz.no.1:87-92 '49.
(Diamonds) (MIRA 9:6)

LABUNTSOV, A.N.

Anatase with natrolite. Trudy Min.muz.no.1:110-111 '49.
(Anatase) (Natrolite) (MLRA 9:6)

LABUNTSOV, A.N.

Hewettite from Kirghizia. Trudy Min.muz.no.1:112-113 '49.
(Kirghizistan--Hewettite) (MLRA 9:6)



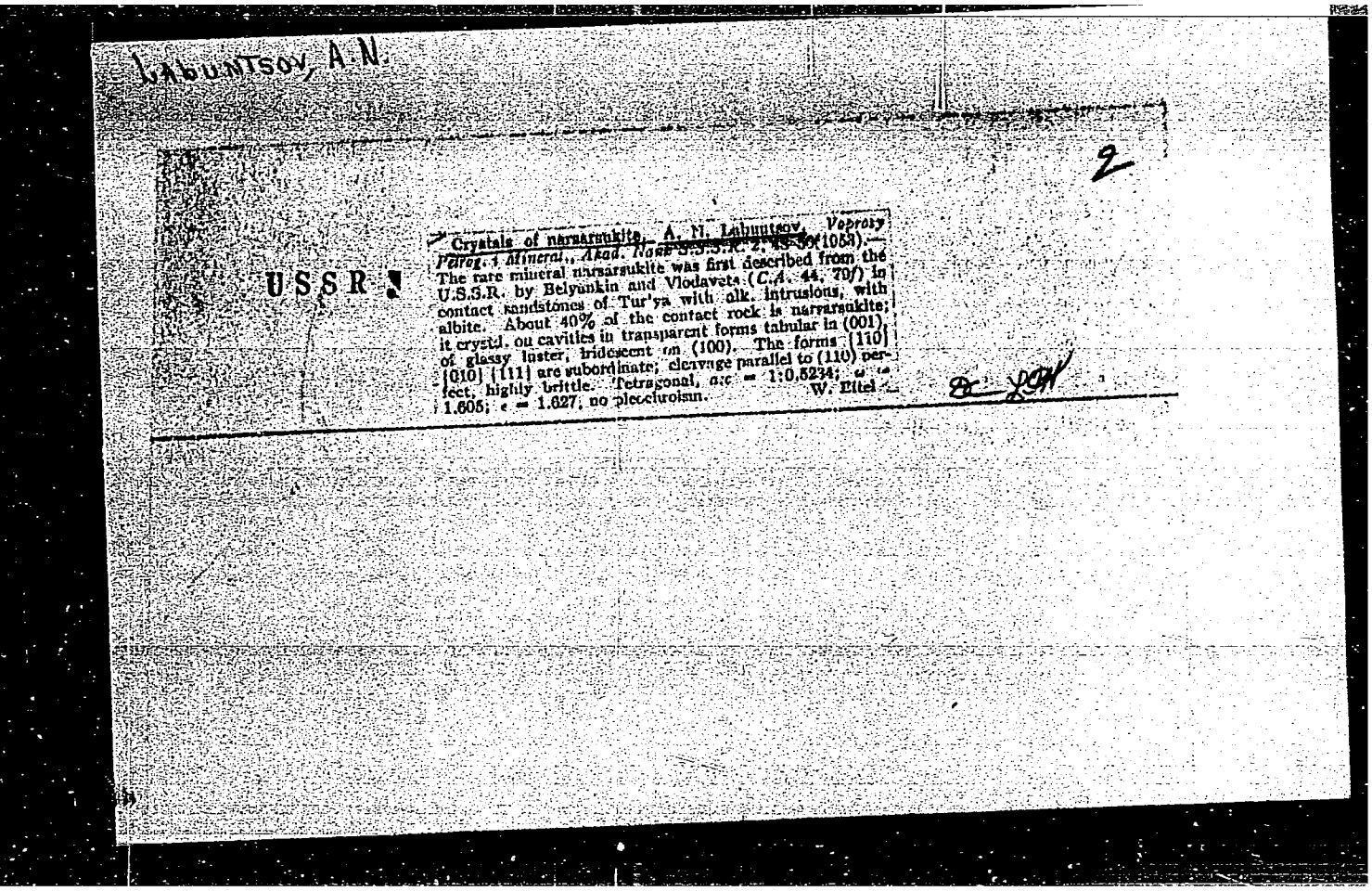
U.S.S.R.

Colloid minerals from the Kara-Tau. A. N. Labuntsov. *Trudy Mineralog. Muzeya Akad. Nauk S.S.S.R.*, No. 2, 100-13(1950). Two chem. analyses and ns are given of interesting colloidal mineral formations from the Proterozoic metamorphic rocks of Kara-Tau, and overlying Cambrian rocks which are computed in the mols. of the following individual minerals, as the typical constituents of the mixed gels: collophanite, $Ca_3(PO_4)_2.2H_2O$; minasragrite, $V_2O_4.SO_3.16H_2O$; aluminite, $Al_2(OH)_4SO_4.4H_2O$; phosphane, $8/3Fe_2O_3.SO_3.12H_2O$; dladochite, $2Fe_2O_3.2SO_3.P_2O_5.12H_2O$; evansite, $Al_3(PO_4)_2.2Al_2(OH)_6.6H_2O$; delvauxite, $Fe_2(PO_4)_2.Fe_2(OH)_6.2H_2O$; allophane, $Al_2O_3.SiO_2.nH_2O$, and opal, $SiO_2.nH_2O$. As an addnl. criterion for the chem. compn. of the minerals are given the endothermal peaks of differential-thermal curves. Particularly interesting is also the occurrence of roscoelite (V-mica), ivtonite (VS_2), kilsezite (S-bitumen mixt.), and further of pyrite-hematite and barite in the rock series mentioned. Hardly any of the colloidal minerals occur in chemically pure condition, but in complex mixts. with the other minerals, in irregular ratios. The reactions of their formation have not been the migration of substance from the outside into the rocks, but a soln., material transfer, and ppttn. from circulating waters on cracks in the mother rocks (a mixt. of pissophane and aluminite of this origin has previously been described as "karataulite"). The P_2O_5 content originated from phosphorite layers; SiO_2 from siliceous schists, and Al_2O_3 was mobilized by H_2SO_4-bearing solns. from coal-clay slates, SO_3 and Fe_2O_3 from oxidized sulfides, and the bitumen high in S (kilsezite) also from these slates.

W. Eitel

LABUNTSOV, A.N.

Crystals of danburite (a new discovery in the U.S.S.R.). Trudy Min.mus. no.4:141-143 '52. (MLRA 7:11)
(Danburite)



LABUNTSOV, A. N.

USSR

Crystals of narsarsukite. A. N. Labuntsov. *Voprosy Petrog. i Mineral., Akad. Nauk S.S.S.R.* 2, 45-50 (1953).—The rare mineral narsarsukite was first described from the U.S.S.R. by Belyankin and Vlodavets (*C.A.* 44, 70f) in contact sandstones of Tur'ya with alk. intrusions, with albite. About 40% of the contact rock is narsarsukite; it crystd. on cavities in transparent forms tabular in (001), of glassy luster, iridescent on (100). The forms {110} {010} {111} are subordinate; cleavage parallel to (110) perfect, highly brittle. Tetragonal, $a:c = 1:0.5234$; $\omega = 1.605$; $\epsilon = 1.627$; no pleochroism. W. Eitel

LABUNTSOV, A. N.

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
Mineralogical and
Geological Chemistry

X-ray data on florencite and kolvinite. V. A. Frank-Kamenetskii, A. I. Komkov, and V. V. Narilov (A. A. Zhdanov State Univ., Leningrad). *Zapiski Vsesoyuz. Mineralog. Obshchestva* (Mem. soc. russe minéral.) 82, 297–301(1953); cf. A. A. Kukharenko, *Ibid.* 80, 238 (1951); A. N. Labuntsov, *Trudy Mineralog. Muzeya, Akad. Nauk S.S.S.R.* 1950, No. 2, 135–6.—The identity of florencite with "kolvinite" is shown by extensive optical, goniometric, and x-ray measurements. The florencite described by Prior and Hussak (*Mineralog. Mag.* 12, 244 (1900)) is somewhat different, with lower ns, and d., and the same is true for stiepelmannite (cf. Ramdohr and Thilo, *C.A.* 34, 2292⁴). The minerals form an isomorphous series of rhombohedral symmetry. The unit cells of fluorencite and kolvinite: $a_0 = 6.960 \pm 0.005$ A.; $c_0 = 16.34 \pm 0.04$ A.; $c_0/a_0 = 2.35$; d. 3.67–3.70. For stiepelmannite: $a_0 = 6.75$ A.; $c_0 = 16.52$ A.; $c_0/a_0 = 2.46$; d. 3.695.
W. Eitel

9-2-54 JJP

LABUNTSOV, A. N.

USSR/Physical Chemistry - Crystals.

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3698 B-5

Author : A.N. Labuntsov.
Inst : Academy of Sciences of USSR, Mineralogical Museum.
Title : Realgar Crystals from Macedonia.

Orig Pub: Tr. Mineralog. muzeya. AN SSSR, 1957, vyp. 8, 159-161.

Abstract: The results of goniometrical study of 3 large and well-developed realgar crystals from Macedonia are given.

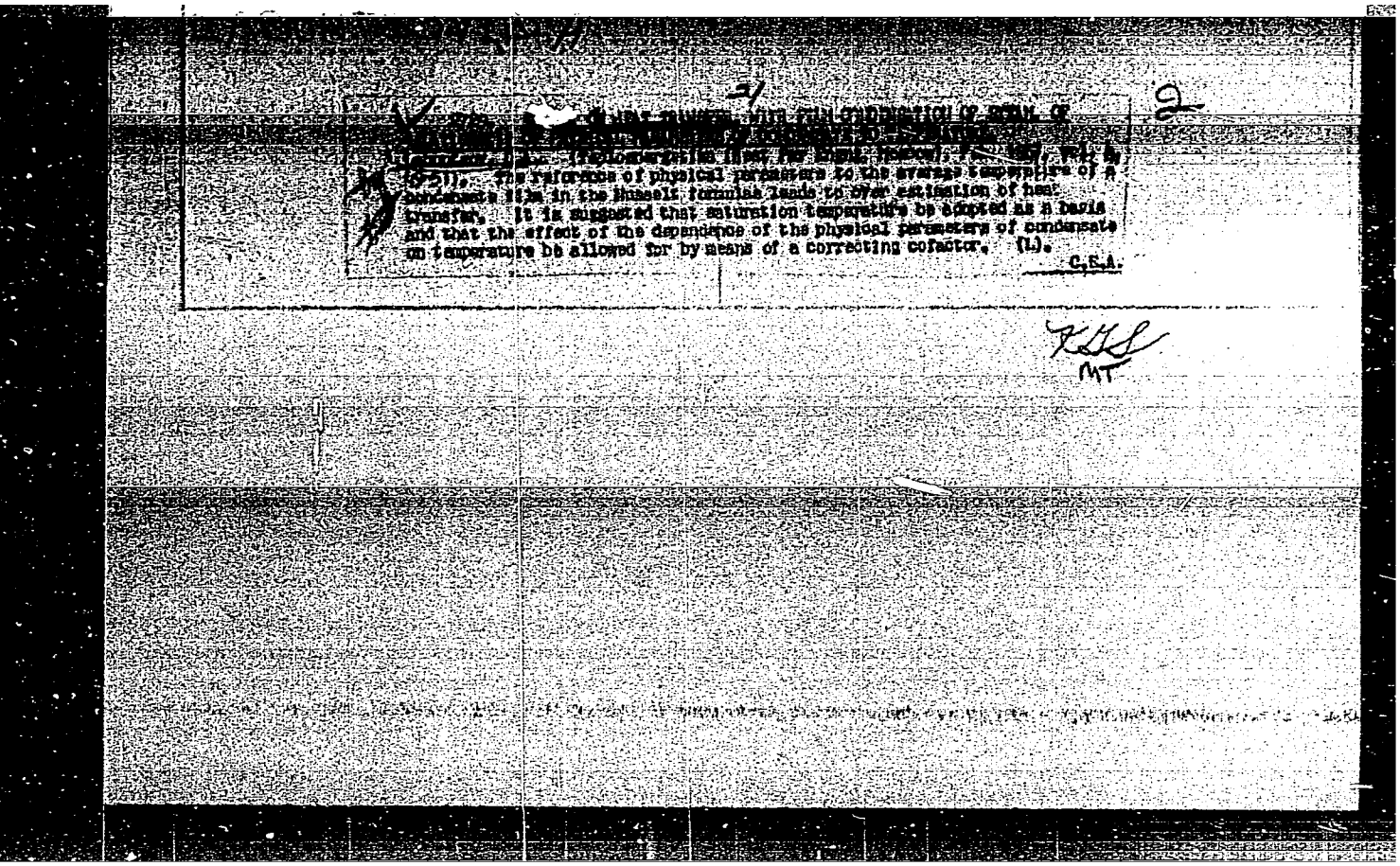
Card : 1/1

LABUNTSOV, A.N.

Russian catapleite crystals. Trudy Min. muz. no.8:161-164 '57.
(Catapleite) (MIRA 11:3)

LABUNTSOV, A.N.

Crystalographic characteristics of epididymite. Trudy Min. muz. no.8:164-167 '57. (MIRA 11:3)
(Epididymite)



(6251). The reference of physical parameters to the average temperature of a condensate film in the Nusselt formulae leads to over estimation of heat transfer. It is suggested that saturation temperature be adopted as a basis and that the effect of the dependence of the physical parameters of condensate on temperature be allowed for by means of a correcting cofactor. (1). C.E.A.

AUTHOR: Labuntsov, D. A., Candidate of Technical Sciences.

TITLE: Heat transfer during film-wise condensation of pure vapours on vertical surfaces and horizontal pipes. (Teplootdacha pri plenochnoy kondensatsii chistykh parov na vertikal'nykh poverkhnostyakh i gorizontal'nykh trubakh.) 96-7-18/25

PERIODICAL: "Teploenergetika"(Thermal Power), 1957, Vol.4, No.7, pp. 72 - 80 (U.S.S.R.)

ABSTRACT: The article first considers heat transfer during laminar flow of the condensate film. The critical value of Reynolds number 16 000 is taken as the boundary between laminar and turbulent flow of the condensate film. Formulae are given for heat transfer in laminar flow based on the work of Nusselt and others including the influence of the wave character of motion of the condensate film which is examined in appendix 1 of the article. The theoretical formula is compared with experimental data on the condensation of vapours of various liquids with laminar flow of the condensate. The comparison is made in dimensionless co-ordinates. The selection of these co-ordinates is discussed. The

Card 1/4

Heat transfer during film-wise condensation of pure vapours on vertical surfaces and horizontal pipes. (Cont.)

96-7-18/25

dimensionless formula is compared with experimental data obtained from a number of papers see Tables 1, 2 and 3. The results of the comparison are plotted on graphs, Fig. 1 relating to vertical pipes and Fig. 2 to horizontal pipes.

Heat transfer with turbulent flow of the condensate film is then considered. Various theoretical and experimental relationships for this case have been collected together in appendix 3 of the article. In some practical cases calculations by different methods give very different results. It is shown that some of the earlier work is not well founded. It was, therefore, decided to make a new theoretical investigation of heat transfer during turbulent flow of the condensate film taking account of new data on turbulent exchange close to the solid wall and on the axis of flow symmetry. For greater reliability the solution was obtained in two ways. The first variant of the solution uses a continuous curve of the distribution

Card 2/4

Heat transfer during film-wise condensation of pure vapours on vertical surfaces and horizontal pipes. (Cont.)

96-7-18/25

formulae given in the present work which are derived from physical concepts of the mechanism of the process and are confirmed by experimental data are to be recommended for calculations of heat transfer with film-wise condensation of pure vapours.
There are 4 figures, 4 tables and 35 references, of which 15 are Slavic.

ASSOCIATION: Moscow Power Institute (Moskovskiy Energeticheskiy Institut).

AVAILABLE:

Card 4/4

LABUNTSOV, D.A.

124-57-2-2030D

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 2, p 78 (USSR)

AUTHOR: Labuntsov, D.A.

TITLE: Heat Exchange of Pure Vapors During Film Condensation (Teplootdacha pri plenochnoy kondensatsii chistykh parov)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of Candidate of Technical Sciences, presented to the Mosk. energ. in-t (Moscow Power Institute), Moscow, 1956.

ASSOCIATION: Mosk. energ. in-t (Moscow Power Institute), Moscow

1. Vapors--Heat transfer

Card 1/1

LABUNTSOV, D.A., kandidat tekhnicheskikh nauk.

Effect of convective heat transfer and the forces of inertia on heat exchange during laminar flow of condensate film. Teploenergetika 3 no.12:47-50 D '56. (MLRA 9:12)

1. Moskovskiy energeticheskiy institut.
(Heat--Transmission) (Fluid dynamics)

Labuntsov, D.A.

CHIRKIN, Viktor Sergeyevich; POLZIKOV, A.S., kandidat tekhnicheskikh nauk, retsenzent; IABUNTSOV, D.A., kandidat tekhnicheskikh nauk, redaktor; VOSKRESENSKIY, N.N., redaktor izdatel'stva; MATVEYEVA, Ye.N., tekhnicheskiy redaktor

[Heat conductivity of industrial materials; a reference manual] Teploprovodnost' promyshlennykh materialov; spravochnoe posobie. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1957. 171 p. (MIRA 10:7)
(Heat--Conduction)

LABUNTSOV, D.A.

96-3-15/26

AUTHOR: Labuntsov, D.A. (Cand.Tech.Sci.)

TITLE: Some questions of the theory of heat exchange during laminar flow of liquids in tubes. (Nekotoryye voprosy teorii teploobmena pri laminarnom techenii zhidkosti v trubakh.)

PERIODICAL: Teploenergetika, 1958, . . No.3. pp.55-60 (USSR)

ABSTRACT: Analytical investigation of the process of heat exchange during steady laminar flow of liquid in a round tube, made on the assumption that the physical properties of the medium do not depend on the temperature, have led to some new results concerning two main questions. The first question relates to establishing the length of the section of thermal stabilisation of flow and to elucidating certain special features of heat transfer in this initial stage. The second question is concerned with studying the influence on heat exchange of heat transfer in a laminar flow by thermal conductivity in an axial direction. This problem was considered analytically for the cases of constant temperature and constant rate of heat flow. It will be clear that flow of heat by thermal conductivity in the same or opposite direction as the flow of liquid will greatly alter the position, Thus, the temperature field at some section of the liquid flow depends not only on the heat exchange conditions before this section is reached, but also on the conditions beyond it. Because of this complication, approximate methods of analysis cannot be used and an accurate solution of the problem must be sought. A number of questions are

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Some questions of the theory of heat exchange during laminar flow of liquids in tubes.

discussed that arise during investigation of the influence of thermal conductivity on heat transfer in a flow. Analysis shows that for constant temperature and constant heat flow rate, there exists a region of stable heat exchange and quantitative heat exchange relationships are obtained for this region. Problems of heat exchange on the section in which thermal stabilisation occurs are not studied in detail because despite their practical importance they depend very greatly on constructional variations in the preceding section so that the problem cannot be solved in the general form. The problems considered in the work are then systematised. Differential equations are given for heat exchange in laminar hydro-dynamic stable flow, with parabolic velocity distribution, with and without making allowance for axial thermal conductivity. The first problem is that of heat exchange without allowance for axial thermal conductivity with constant tube temperature. This problem was solved by Nusselt and it is not considered in the present work. The second problem deals with heat exchange without allowing for axial thermal conductivity with varying rates of heat flow to the liquid along the length of the pipe. The first part of the present work deals with the determination of the distance commencing with which the law of

 stable heat exchange is applicable. The third and fourth problems

Some questions of the theory of heat exchange during laminar flow of liquids in (tubes.

are extension of the first two problems to allow for thermal conductivity in the flow and the second part of the present article is devoted to these problems. Heat transfer in the initial section of the tube with constant rate of heat flow is then considered analytically. Graphs of the temperature field in the first section are plotted in Fig.3. and it is shown that the general expression Eq. (6), for the temperature field during laminary stable flow of liquid in a round pipe with constant rate of heat flow may be used to calculate the law of heat exchange at any section of the pipe and to determine the length of the section of thermal stabilisation. The influence of axial thermal conductivity on heat transfer at constant temperature is then considered analytically. An expression is derived which leads to a new conclusion that in making allowance for axial thermal conductivity the limiting value of Nusselt's number depends in this case on Pekle's criterion. A graph of this relationship is given on Fig.4. Analysis shows that increase in Nusselt's number with diminution in Pekle's criterion occurs because as Pe is reduced axial thermal conductivity alters the temperature curve in such a way that the temperature gradient at the walls increases more rapidly than the mean temperature of the liquid at the given section. The relative increase in heat transfer as compared with Nusselt's solution, is shown as Curve 3 on Fig.4. The

 influence of axial thermal conductivity on heat transfer with constant

rate of heat transfer is then considered. It is shown that in the region of stabilised heat exchange, when allowance is made for axial thermal conductivity, the heat transfer remains the same as when the absolute value of the temperature of the flow and the walls is higher by an amount C, an equation for which is given. It follows from this that if only the wall temperature is measured and the mean temperature of the liquid is calculated without making allowance for axial thermal conductivity the temperature drop that is found is too high by an amount C and the heat transfer is consequently too low. Nusselt's number determined in this way, diminishes sharply as Pekle's criterion is reduced as will be seen from Fig.5. It is concluded that the investigations of the influence of axial thermal conductivity along the flow on the temperature field and on heat transfer during laminar hydro-dynamically stable flow of liquid in a round tube makes it possible: to obtain a general expression for temperature fields in the liquid; to establish that for each of the problems considered there is a specific temperature distribution at a distance from the inlet to which correspond stable heat transfer relationships; to calculate heat transfer in the region of thermal stabilisation; and to analyse possible errors in the calculations of stabilised heat exchange that result from neglecting

region

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Some questions of the theory of heat exchange during laminar flow of liquids in tubes. 96-3-15/26

axial thermal conductivity. There are 5 figures.

ASSOCIATION: Moscow Power Institute. (Moskovskiy Energeticheskiy Institut)

AVAILABLE: Library of Congress.

Card 5/5

AUTHOR: Labuntsov, D.A. Cand.Tech.Sci. SOV/96-58-7-19/22

TITLE: Nomograms for calculating the temperature field of solid bodies cooled (or heated) in a medium at constant temperature. (Nomogrammy dlya rascheta temperaturnogo polya tverdykh tel, okhlazhdayemykh (nagrevayemykh) v srede s postoyannoy temperaturoy.)

PERIODICAL: Teploenergetika, 1958, No.7, pp. 87-89 (USSR)

ABSTRACT: Textbooks and Handbooks on heat-transfer give nomograms with which to calculate the temperature on axes of symmetry and on the surface of infinite planes and cylinders cooled (or heated) in a medium of constant temperature. The nomograms are derived from equations for a temperature field obtained analytically, the fundamental equations are given and the method of arriving at the usual equations is explained. Further simplifications of the dimensionless equations are offered and are used to construct nomograms for an infinite surface (Fig.1.) and a cylinder of infinite length (Fig.2.). There is a worked example of the use of the nomograms. There are 2 figures.

1. Solids - Temperature factors 2. Nomographs - Applications
3. Temperature - Mathematical analysis

Card 1/1

AUTHOR: Labuntsov, D. A. 20-118-6-19/43

TITLE: Heat Transfer in the Case of Laminar Fluid Motion in Pipes With Allowance for Axial Heat Conduction (Teplootdacha v trubakh pri laminarnom rezhime dvizheniya zhidkosti s uchetom aksial'noy teploprovodnosti)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 118, Nr 6, pp. 1118-1120 (USSR)

ABSTRACT: It is assumed here that the flow of the liquid is hydrodynamically stabilized, i.e. a parabolic distribution of the velocities is assumed here. Let the physical parameters of the liquid not depend on the temperature. Here two cases of boundary conditions are investigated: constant temperature of the tube wall t_c = const and the constant density of the heat flow on the wall q_0 = const. The analytic content of the problem investigated here consists in the solution of the differential equation

$$(1 - \varsigma^2)\frac{\partial \vartheta}{\partial z} - \frac{1}{Pe^2}\frac{\partial^2 \vartheta}{\partial z^2} = \frac{1}{\varsigma}\frac{\partial}{\partial \varsigma}\left(\varsigma \frac{\partial \vartheta}{\partial \varsigma}\right)$$

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under the conditions $\vartheta_{\varrho=1} = 0$ or $\left(\frac{\partial \vartheta}{\partial \varrho}\right)_{\varrho=1} = 0$. Here $\varrho = r/r_0$ denote the dimensionless radius of the tube, $z = (x/r_0(1/Pe)$ the reduced length of the tube, $Pe=2(wr_0/a)$ the criterion of Pekle. The condition $\vartheta_{\varrho=1} = 0$ corresponds to the problem with t_c = const. In this case applies $\vartheta = t - t_c$, whereby t^c denotes the wanted temperature of the liquid. The condition $(\partial\vartheta/\partial\varrho)_{\varrho=1} = 0$ corresponds to the problem q_c = const. The solution of the above-mentioned equation is written down in following form: $\vartheta = Cf(\varrho)\exp(-\mu z)$, whereby C and μ denote certain constants. The original differential equation then assumes the form

$$\left[\mu(1-\varrho^2) + (\mu/Pe)^2\right] f(\varrho) + (1/\varrho)\left[\varrho f'(\varrho)\right]' = 0,$$

whereby $f(1) = 0$ and $f'(1) = 0$ apply. The function $f(\varrho)$ is represented here in form of an infinite exponential series

$$f(\varrho) = \sum_{m=0}^{\infty} a_m \varrho^m$$

Card 2/4

and the coefficients a_m of the series are determined by com-

parison of the coefficients of equal powers of ϱ. The recurrence relations resulting from this are written down. Each problem corresponds to its special infinite increasing sequence of positive numbers μ_n, n = 1, 2, 3, ..., whereby each μ_n is a function of the number Pe. The dependence computed here for the problem t_c = const of μ_1 on Pe is illustrated in a table. Apparently to each value of Pe its own function $f_1(\varrho)$ is corresponding. $\mu_1 = 0$ and $f_1(\varrho) \equiv 1$ hold for the problem q_c = const. Thus the general solution for each of the problems investigated here runs as follows: $\vartheta = \sum_{n=1}^{\infty} C_n f_n(\varrho) \exp(-\mu_n z)$. In the case of t_c = const and also of q_c = const applies far from the input into the tube (in the case of greater z) the stabilized law of heat exchange, i.e. the criterion $Nu = 2\alpha r_o/\lambda$ does not depend on the length of the tube. In the case of the problem t_c = const the criterion Nu_t is within the range of the stabilized heat exchange a function of the number Pe which

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Heat Transfer in the Case of Laminar Fluid Motion in Pipes With Allowance for Axial Heat Conduction

is here illustrated by a table. In the case of the problem q_c = const the criterion Nu_q does not depend on Pe within the range of the stabilized heat exchange, having the constant value 4,36. There are 2 tables and 1 reference.

PRESENTED: September 21, 1957, by M. A. Mikheyev, Member, Academy of Sciences , USSR

SUBMITTED: September 16, 1957

VEYNIK, Al'bart Iozefovich; LABUNTSOV, D.A., red.; LARIONOV, G.Ye., tekhn.red.

[Approximate computation of heat conducting processes] Priblizhennyi raschet protsessov teploprovodnosti. Moskva, Gos.energ.izd-vo, 1959. 182 p. (MIRA 12:7)
(Heat--Conduction)

LABUNTSOV, D.A., kand. tekhn. nauk

Heat exchange in connection with bubble boiling of a liquid. (MIRA 13:3)
Teploenergetika 6 no.12:19-26 D '59.

1.Moskovskiy energeticheskiy institut.
(Thermodynamics)

LABUNTSOV, D. A.

S/170/60/003/008/001/014
B019/B054

AUTHOR: Labuntsov, D. A.

TITLE: The Heat Exchange in Vapor Condensation on a Vertical Surface Under Conditions of a Turbulent Flow-off of the Condensate Film

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 8, pp. 3-12

TEXT: The author derives an exact solution for the heat exchange in the turbulent part of the condensate film flowing off, and compares it with a large number of experimental values. He derives the solution on the basis of a semi-empirical theory taking into consideration some improvements and measurements, and obtains two variants of solutions. He derives equation (12) for calculating the Reynolds number of the liquid film, and indicates the values calculated by this equation in Table 1. Further, he derives equation (15) for calculating the quantity $(\alpha/\lambda).(\upsilon^2/g)^{1/3}$, where α is the local heat exchange coefficient. This

Card 1/2

LABUNTSOV, D.A., kand.tekhn.nauk

Generalized dependencies for heat emission during bubble boiling of liquids. Teploenergetika 7 no.5:76-81 My '60. (MIRA 13:8)

1. Moskovskiy energeticheskiy institut.
(Heat--Transmission) (Ebullition)

LABUNTSOV, D.A., kand.tekhn.nauk

Generalized relationships of critical thermal loads in case of boiling of the liquids under conditions of free motion. Teploenergetika 7 no.7:76-80 Jl '60. (MIRA 13:7)

1. Moskovskiy energeticheskiy institut.
(Heat--Transmission)

LABUNTSOV, D.A.

Heat exchange during the condensation of steam on a vertical surface under conditions of turbulent flow of a film condensate. Inzh.-fiz.zhur. no.8:3-12 Ag '60. (MIRA 13:8)

1. Politekhnicheskiy institut, g. Stalinabad.
(Heat--Transmission)
(Turbulence)
(Condensation)

LABUNTSOV, D.A.

Critical thermal loads in the boiling of supercooled water under nonstationary heat conditions [with summary in English]. Inzh.-fiz. zhur. 4 no.9:83-85 S '61. (MIRA 14:8)

1. Energeticheskiy institut im. G.M. Krzhizhanovskogo, g. Moskva.

(Thermodynamics)

LABUNTSOV, D.A., kand.tekhn.nauk

Concerning a new trend in the theory of critical boiling.
Teploenergetika 8 no.8:81-85 Ag '61. (MIRA 14:10)
(Boiling points)

LABUNTSOV, D.A.

Critical thermal load under a forced movement of water heated to the saturation temperature. Atom.energ. 10 no.5:523-525 My '61. (MIRA 14:5)

(Heat--Transmission) (Fluid dynamics)

S/281/63/000/001/002/004
E191/E135

AUTHOR: Labuntsov, D.A. (Moscow)

TITLE: An approximate theory of heat exchange in fully developed nucleate boiling

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Energetika i transport, no.1, 1963, 58-71

TEXT: The formation of bubbles on a heated surface is discussed. The appearance of vapor nuclei has its origin in fluctuation phenomena. The difference between the conditions of vapor formation inside a liquid and at a solid surface is due to the lower molecular bond at the interface. An energy barrier exists which must be overcome. It depends greatly on the value of the local wettability between the extremes of 0 and π (wetting angle). In the latter case the energy barrier is absent. The intermediate range is divided by a wetting angle of $\pi/2$. Above this value, there are additional geometric conditions for the likelihood of bubble formation and hence the superheating of the surface before nucleate boiling starts. These conditions explain

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the large possible superheating in a smooth glass vessel and the intense vapor formation over a metal surface covered with an oil film. The population of active boiling sites is evaluated. Elements of surface roughness become decisive factors. A distribution law for surface irregularities is assumed, by which the number is inversely proportional to the square of a linear dimension. This leads to a formula for the number of active sites. Under normal conditions over metal surfaces, the superheating at atmospheric pressure is about 5-7 °C and there is about one active site per cm^2. The number greatly increases with pressure. Some experimental verification exists for the approximate theory given. The growth mechanism of vapor bubbles on the heated surface during boiling is examined. For bubbles at the heating surface, it is assumed that the main influx of heat is that conducted through the base of the bubble. The consequences of this hypothesis are analysed to derive a relationship between the bubble growth rate and several variables including time, the thermal conductivity, and the degree of superheating. This relationship is compared with measurements by several investigators, showing reasonable agreement.

An approximate theory of heat ... S/281/63/000/001/002/004
E191/E135

The significance of measuring the product of the separation diameter of the bubble and the frequency of its formation is explained. The mechanism of heat transfer in fully developed nucleate boiling is discussed. Since both the number of active sites and the rate of growth of bubbles greatly depend on the local wettability and the nature of surface irregularities, a generally valid relation between the heat flow and the superheating does not exist. In spite of the intense pulsating motion of the liquid in nucleate boiling, a layer of liquid adjacent to the solid surface is nearly static and this film yields the greatest resistance to heat flow which is determined by molecular heat conduction. A characteristic boundary layer with a certain effective thickness is assumed. Since the layer is continually broken, its effective thickness is an average in time and space. An evaluation is given for this effective thickness. These concepts lead to a formula relating the heat flow to the superheating temperature. This formula is compared with measurements on the boiling of water, benzene, heptane, carbon tetrachloride, oxygen, and ammonia obtained by many investigators

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and shown to yield satisfactory agreement. The constants which enter into the derivation cover normal conditions of surfaces in metallic vessels. Close agreement is also shown with measurements of water and ethyl alcohol boiling in a wide range of pressures over horizontal stainless steel tubes. It is believed that the expression obtained is the first to have been directly derived. The similarity with generalized empirical relations is stated. The application to the boiling of liquid metals is discussed. There are 8 figures.

S/096/63/000/005/006/011
E194/E455

AUTHOR: Labuntsov, D.A.

TITLE: Calculation of heat transfer during filmwise boiling of liquid on vertical heating surfaces

PERIODICAL: Teploenergetika, no.5, 1963, 60-61

TEXT: Experimental determinations of heat transfer during filmwise boiling on the surface of vertical tubes has given values of heat-transfer coefficients much higher than predicted by Bromley's formula. Certain authors have supposed that this is because under these experimental conditions flow is turbulent and not laminar. However, the resulting relationships are cumbersome, are not in good agreement with experiment and appear to be unjustified. The hydrodynamic pattern under the stated conditions seem to correspond more closely to those observed during free convection of a single-phase fluid near vertical surfaces under turbulent conditions. If this is so, the normal equations governing such convection can readily be modified to the following form

$$\alpha = 0.25\lambda_m\left(\frac{g}{\nu a}\cdot\frac{\rho_1-\rho}{\rho}\right)_m^{1/3} \qquad (2)$$

Calculation of heat transfer ...

where λ, ν, a - coefficients of thermal conductivity, kinematic viscosity and temperature conductivity of steam, ρ_l and ρ - density of liquid and steam, g - acceleration of gravity. The index m denotes that the thermal physical properties relate to the mean temperature of steam in the film. A wide range of available experimental results is found to lie close to a line corresponding to the above expression. The expression may be used in engineering calculations and to assess heat transfer during steady-state film-wise boiling with vertical heating surfaces, provided that (by analogy with the process of free convection where $(GrPr)_m \geqslant 2 \times 10^7$) we have for the present case the tube length H given by

$$H \geqslant 2{,}5 \cdot 10^2 \left(\frac{\nu a}{g} \cdot \frac{\rho}{\rho_l - \rho} \right)_m^{1/3} \qquad (3)$$

These conditions have been fulfilled in all known tests.
There is 1 figure.

ASSOCIATION: ENIN

Card 2/2

45115

S/170/63/006/002/001/018
B102/B186

26.5400

AUTHORS: Golovin, V. S., Kol'chugin, B. A., Labuntsov, D. A.

TITLE: Experimental investigation of boiling heat transfer and of the critical thermal load for the boiling of mobile water

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 6, no. 2, 1963, 3 - 7

TEXT: With a view to extending and supplementing the available published data a study was made of boiling heat transfer and critical load when boiling distilled water in horizontal silver tubes of 150 mm length and 4 - 5 mm diameter over a pressure range of 10. - 2000 n/cm^2. The temperature was measured by an especially constructed platinum resistance thermometer whose error of measurement did not exceed 0.04°K. The use of this device in conjunction with silver tubes made it possible to measure the heat transfer coefficient $\alpha = q/(T_1 - \delta T_w - T_s)$ with an error of not more than 14%. δT_w is the temperature decrease at the wall, T_1 the temperature inside the tube, T_s the saturation temperature of the water and q the specific thermal load; q lay between $1 \cdot 10^5$ and $2 \cdot 10^6$ w/cm^2. The $\alpha(q)$

Card 1/2

L 13152-63 EWT(l)/EPF(n)-2/BDS AFFTC/ASD/SSD Pu-4
S/170/63/000/004/005/017

58
57

AUTHOR: Labuntsov, D. A.

TITLE: Vapor bubble growth mechanism on the heating surface during boiling

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PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 6, no. 4, 1963, 33-39

TEXT: The author offers a model explaining the mechanism of vapor bubble growth on a heating surface. An approximate dependence of a bubble's growth rate is derived. An analysis is adduced of experimental measurements of the growth rate of vapor bubbles during boiling. The test conditions for the proposed model are: 1) the zone of intensive evaporation was located near the base of the growing bubble; and 2) the heat being expended in evaporation is introduced to the elements of the bubble's surface directly from the heating surface by way of heat conductivity through the adjacent layers of liquid. The mechanism described is independent of the liquid's heat capacity and differs from the vapor bubble

Card 1/2

L 13152-63 S/170/63/000/004/005/017

growth mechanism originating within the superheated liquid. Two equations are derived describing bubble growth on the heating surface. There are 2 graphs and 1 table.

ASSOCIATION: Energeticheskiy institut imeni G. M. Krzhizhanovskogo, Moscow (Power Engineering Institute im. G. M. Krzhizhanovskogo)

SUBMITTED: July 11, 1962

Card 2/2

LABUNTSOV, D. A., kand. tekhn. nauk; ABDUSATTOROV, Z. S., inzh.

Experimental study of threshold boiling conditions with inertial overloads. Teploenergetika 10 no.3:70-74 Mr '63. (MIRA 16:4)

1. Energeticheskiy institut imeni G. M. Krzhizhanovskogo i Tadzhikskiy politekhnicheskiy institut.

(Boilers) (Heat—Transmission)

SKVORTSOV, Sergey Aleksandrovich; LABUNTSOV, D.A., red.

[Heat transmission] Teploperedacha. Moskva, Energiia, 1964. 110 p. (Biblioteka teplotekhnika, no.12) (MIRA 18:3)

ACCESSION NR: AP4042471 S/0294/64/002/003/0446/0453

AUTHORS: Labuntsov, D. A.; Kol'chugin, B. A.; Golovin, V. S.; Zakharova, E. A. Vladimirova, L. N.

TITLE: The study of bubble growth during boiling of saturated water under wide pressure range by means of high speed motion pictures

SOURCE: Teplofizika vy*sokikh temperatur, v. 2, no. 3, 1964, 446-453

TOPIC TAGS: vapor bubble, boiling water, motion picture, wetting angle, water saturation pressure, motion picture camera SKS IM

ABSTRACT: The growth of vapor bubbles from boiling water in a pressure range 1 to 100 bars and 40 to 150 kvolt/m^2 heat supply was studied by high-speed motion pictures. The light source was a SVDSh-1000 mercury lamp and the SKS-IM camera was a 1000-to-4000 frame/second instrument. Analysis of bubble growth rate shows a functional dependence between bubble radius R and time τ $R/\sqrt{a\tau} = \sqrt{2\beta N}$,

where β - numerical coefficient $\beta = 2\left(\cos\frac{\theta}{2}\right)\ln\frac{\Delta}{y_A}[(1+\cos\theta)^2(2-\cos\theta)]^{-1}$,

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GOLOVIN, V.S.; KOL'CHUGIN, B.A.; LABUNTSOV, D.A.

Heat transfer in the boiling of ethyl alcohol and benzene on the surfaces of various materials. Inzh. fiz. zhur. 7 no.6: 35-39 '64. (MIRA 17:12)

1. Energeticheskiy institut imeni G.M. Krzhizhanovskogo, Moskva.

L 41416-65 EWT(1)/EPA(s)-2/ EWT(m)/EPF(c)/EPF(n)-2/EWG(m)/EWA(d)/EPR/T/
EWP(t)/EPA(bb)-2/EWP(b) Pr-4/Ps-4/Pt-10/Peb/Pu-4 IJP(c) JD/WW/JG
ACCESSION NR: AP5010469 UR/0294/65/003/002/0276/0284
80
AUTHOR: Labuntsov, D. A.; Shevchuk, Ye. N.; Pazyuk, P. A. 78
B

TITLE: Limiting levels of heat transfer and boiling of liquid metals

SOURCE: Teplofizika vysokikh temperatur, v. 3, no. 2, 1965, 276-284

TOPIC TAGS: heat transfer, liquid metal, sodium, potassium, mercury, magnesium, liquid metal boiling, heat transfer agent

ABSTRACT: Two mathematical models describing the heat transfer and boiling of liquid metals under different surface conditions are analyzed. The first model is based on the similarity in the boiling of liquid metals and common liquids, when the vapor-phase formation centers originate on the heating surface. It is shown that the highest heat-transfer level in liquid metals corresponds to vapor-phase formation conditions identical for both liquid metals and liquids. As the pressure decreases, formation of the vapor-phase on the heating surface becomes difficult, and the vapor-phase formation centers are located in the volume—the type of boiling described by the second model. In this case the number of active vapor-for-

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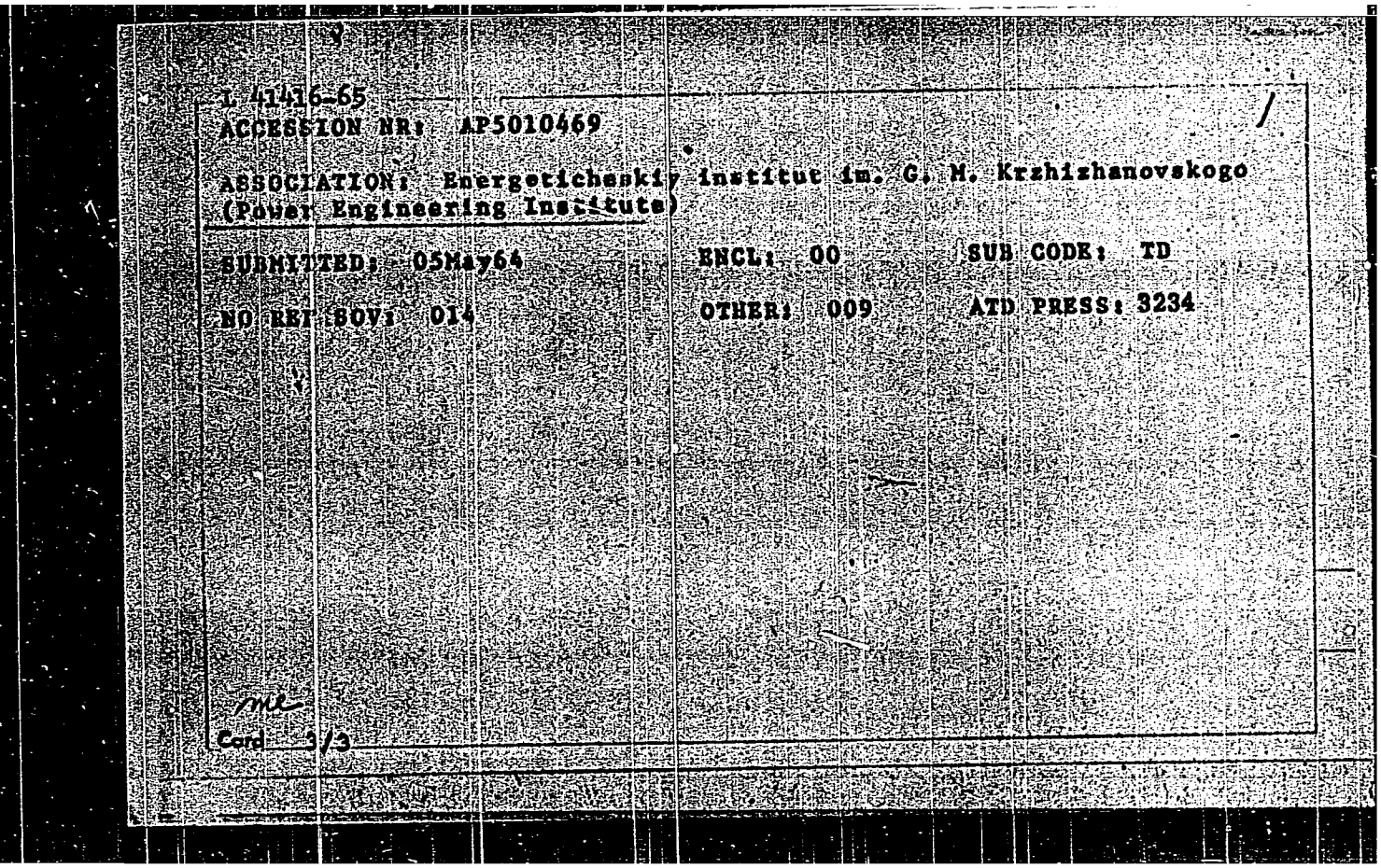
mation centers on the surface which is in contact with the liquid metal (not necessarily a heating surface) is limited only to the deep scratches, depressions, and protrusions on the metal surface. The second model permits the evaluation of the lower heat-transfer levels. The rate of growth of a vapor bubble calculated for Hg and Na by the proposed equation (based on Rayleigh's dynamic model) at pressures of 1.0 and 0.02 bar and a temperature difference $\Delta T = 50C$ compare favorably with previously published experimental data. The heat-transfer data for boiling Na-K alloy, Hg, Na, and Mg-Ti and Mg amalgams calculated by the proposed models is compared with graphs of previously published experimental data for the same liquid metal to confirm the proposed theory. The initial decrease in the heat transfer is determined by the properties of the heat-releasing surface. Heat transfer may be markedly improved by the addition of small amounts of surfactants. The boiling conditions and the heat transfer in liquid metals are sensitive to the surface microgeometry and physio-chemical conditions. The problem of the thermodynamic equilibrium on the liquid-vapor interface is discussed in an appendix. Orig. art. has: 5 figures and 20 formulas. [PS]



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ASSOCIATION: Energeticheskiy institut im. G. M. Krzhizhanovskogo (Power Engineering Institute)

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LABUNTSOV, D.A.

Heat transfer from a nonisothermal plate with a laminar boundary layer. Inzh.-fiz. zhur. 8 no.3:403-405 Mr '65.

(MIRA 18:5)

1. Energeticheskiy institut imeni Krzhizhanovskogo, Moskva.

LABUNTSOV, D.A., doktor tekhn. nauk; KOL'CHUGIN, B.A., inzh.; ZAKHAROVA, E.A., inzh.

Local vapor contents in the surface boiling of an underheated liquid in channels. Teploenergetika 12 no.4:73-76 Ap '65. (MIRA 18:5)

LABUNTSOV, D.A.

Calculating the coefficients of condensation. Inzh.-fiz. zhur. 8 no.6: 820-821 Je '65. (MIRA 18:7)

1. Energeticheskiy institut imeni Krzhizhanovskogo, Moskva.

ISACHENKO, Viktor Pavlovich; OSIPOVA, Varvara Aleksandrovna; SUKOMEL, Aleksandr Semenovich; LABUNTSOV, D.A., doktor tekhn. nauk

[Heat transfer] Teploperedacha. Moskva, Energiia, 1965. 423 p. (MIRA 18:8)

LABUNTSOV, D.A., doktor tekhn. nauk

Generalization on Nusselt's condensation theory for the conditions of a spatially-nonuniform field of temperatures of a heat-exchanging surface. Trudy MEI no.63:79-84 '65. (MIRA 18:12)

LABUNTSOV, V.A., kandidat tekhnicheskikh nauk

Self-oscillation of an ion frequency transformer in charging induction motors. Elektrichestvo no.6:46-52 Je '54. (MLRA 7:7)

1. Moskovskiy energeticheskiy institut im. Molotova.
(Electric motors, Induction)

SOV/112-57-6-13147

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1957, Nr 6, p 213 (USSR)

AUTHOR: Labuntsov, V. A.

TITLE: Electronic Circuit for Grid Control in Polyphase Autonomous Inverters and Ionic Frequency Converters (Elektronnyye skhemy setochnogo upravleniya mnogofaznykh avtonomnykh invertorov i ionnykh preobrazovateley chastoty)

PERIODICAL: Tr. Mosk. energ. in-ta, 1956, Nr 18, pp 387-402

ABSTRACT: Requirements of the circuits for grid control of polyphase autonomous inverters or ionic frequency converters are formulated: (1) a grid-control circuit should generate near-square pulses; (2) the pulse repetition frequency that determines the output frequency of an inverter or converter should lend itself to variations within the necessary range; (3) the pulse should have a sufficiently steep front and a duration slightly less than the duration of conduction of the inverter valves. The grid-control circuit based on utilization of an electron-tube ring scaler started by a pulse generator (the latter actually is an adjustable-frequency multivibrator) can be used for three-phase inverters and

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Electronic Circuit for Grid Control in Polyphase Autonomous Inverters and Ionic . . . .

converters. Pulses from cell outputs of the scaling ring are fed to the thyratron grids of the inverter via special intermediate power amplifiers. A grid-control circuit is also described that is based on a TG1-0.1/1.3 thyratron ring scaler. The circuit is intended for operation with a six-phase inverter. The third grid-control circuit including a six-cell ring scaler is based on glow-discharge tubes and includes cathode followers as buffer stages. Its advantages are: small size and high economy. Grid-control circuits including arc-discharge or glow-discharge tubes can control inverters with any number of phases and can keep the output frequency up to 300-500 cps. The above grid-control circuits have been tested in practice. Grid-control circuits can also be designed with ring scalers using transistors, or relay-duty magnetic amplifiers, or rectangular-hysteresis-loop components, or electron-beam switching tubes, or gas-discharge switching tubes. Any type of peak-pulse generator with adjustable frequency can serve as a pulser for such circuits. Ways are figured out for designing the grid-control circuits on the basis of

Electronic Circuit for Grid Control in Polyphase Autonomous Inverters and Ionic . . . .

three-phase electron oscillators with sinusoidal voltages or single-phase electron oscillators with phase-splitting RC-circuits; the sinusoidal output voltage of such oscillators or phase-splitting circuits can be converted into pulse voltage by conventional means. Bibliography: 16 items.

V.A.L.

LABUNTSOV, V. A.

105-8-10/20

AUTHOR LABUNTSOV, V.A., Cand.Techn.Sc., PLENKIN, Yu.N., Eng.

TITLE Ring Recounting Circuits Using Semiconductor Triodes. (Kol'tsevyye pereschetnyye skhemy na poluprovodnikovykh triodakh - Russian)

PERIODICAL Elektrichestvo, 1957, Nr 8, pp 48 - 53 (U.S.S.R.)

ABSTRACT Two systems are described here. Both can be carried out with a sufficiently high recounting coefficient (up to 1o and more), whereby greater speeds of calculation than in the thyratron can be obtained. Moreover they consume little energy and are of great durability. The point-semiconductor triodes with a static amplification coefficient according to the current flow $\alpha > 1$, with higher operating voltage and a considerable limiting frequency are better suitable for use in a pulsing circuit than flat-type triodes. Both circuits were worked out on the basis of telescopic impuse-storing devices with point-semiconductor triodes, as they are used in calculating-machines. On elaborating the system a method of calculation for the elements of the circuit was chosen and the influence of the circuit parameters on the position of the volt-ampere characteristics of trigger cells was investigated. In this example the determination of the maximum frequency recounting was not required. First a ring recounting circuit, consisting of elementary trigger cells, is investigated; then a circuit with a joint load resistance in the emitter-circuit. The first circuit worked with accuracy in the case of a starting impulse frequency up to 3oo kHz. Variations of the feed voltage in the col-

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Ring Recounting Circuits Using Semiconductor Triodes.

lector circuit from 45 to 8o V and a simultaneous modification of the displacement voltage in the emitting circuit from -2,5 to -4 V did not lead to a disturbance of operation. In the second circuit the principle of operation was tested up to a recounting coefficient of and including 1o. The circuit worked in a reliable manner in the case of a starting impulse frequency up to 3o kHz. Modification of the amplitude of the starting impulses from 1o to 4o V and of the width from 2 to 4o μsec did not influence theoperation of the circuit. The second circuit favorably distinguishes itself from the first one by a smaller number of parts.
(7 illustrations, 3 Slavic references.)

ASSOCIATION Moscow Institute of Power Engineering (Moskovskiy energeticheskiy institut).
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