CHIKALOV, P.M.

Importance of young sheets for obtaining high petal yields of oil-bearing rose. Agrobiologiia no.3:130-133 My-Je '56. (MLRA 9:9)

1.Voznesenskaya zonal'naya, opytno-selektsionnaya stantsiya Vsesoyuznogo nauchno-issledovatel'skogo instituta maslichnykh i efiromaslichnykh kul'tur, Krasnodarskiy kray.
(Roses)

CHIKALOV, P.M.

Controlling weeds in the plantations of oil-bearing roses. Masl.-zhir.prom. 24 no.5:28-30 '58. (MIRA 12:1)

1. Voznesenskaya zonal'naya opytnaya stantsiya Vsesoyuznogo nauchno-issledovatel'skogo instituta maslichnykh i efiromaslichnykh kul'tur.
(Roses) (Weed control)

N

COUNTRY : USSR
CATEGORY : Weeds and Weed Control

ABS. JOUR. : RZhBiol., No.23 1958, No. 104942

AUTHOR : Chikalov, P. N.
INST. :
TITLE : Control of Weeds on Plantations of Ethereal Oil Roses.

ORIG. PUB. : Maslob.-zhir. prom-st', 1958, No. 5, 28-30

ABSTRACT : No abstract.

Card: 1/1

3

CHIKALOV, P. M., Cand Agr Sci -- (diss) "Agrobiological bases for coriander cultivation." Voronezh, 1960. 16 pp; (Ministry of Agriculture RSFSR, Voronezh Agricultural Inst); 150 copies; price not given; (KL, 50-60, 135)

CHIKALOV, P.M., kand.sel'skokhoz.nauk

Optimum ripening time and methods of harvesting of coriander. Masl.-zhir.prom. 28 no.2:26-29 F '62. (MIRA 15:5)

1. Voznesenskaya opytnaya stantsiya Vsesoyuznogo nauchno-issledovatel'skogo instituta maslichnykh i efiromaslichnykh kul'tur. (Coriander)

CHIKALOVA, Ye.A.

Effect of soaking seeds in vitamin solutions before planting on the accumulation of ascorbic acid. Vitaminy no.4:206-208 '59. (MIRA 12:9)

1. Pedagogicheskiy institut, Ivanovo.
(PLANTS, EFFECT OF VITAMINS ON) (SEEDS) (ASCORBIC ACID)

BUYANOVSKIY, D.S.; CHIKALOVA, Ye.A.

Biosynthesis of ascorbic acid in fruits in response to the infliction of wounds. Bot.zhur. 44 no.9:1324-1328 S '59. (MIRA 13:2)

1. Ivanovskiy gosudarstvennyy pedagogicheskiy institut.
(Ascorbic acid) (Apple)

CHIKALOVA, Ye. A.

Ascorbigon accumulation in plants. Fiziol.rast. 6 no.6:724-725 N-D '59. (MIRA 13:4)
1. Ivanovo Pedagogical Institute.
(Ascorbic acid)

BUYANOVSKIY, D.S.; CHIKALOVA, Ye.A.

Biosynthesis of ascorbic acid in the fruits growing on trees. Bot. zhur. 47 no.1:121-123 Ja '62. (MIRA 15:2)

1. Ivanovskiy gosudarstvennyy pedagogicheskiy institut.
(Apple) (Ascorbic acid)

CHIKAN, J.

CHIKAN, J.
Development of the technology of manufacturing concrete on the basis of literary publications appearing in 1954. p. 190

Vol. 7, No. 5, May, 1955 Budapest, Hungary EPITOANYAG

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 5
No. 3, March, 1956

MUSIL, J.; DATLOV, J.; CHIKAN, S.;

Ferrite waveguide insulator for the 0,8 cm wave length. El tech cas 15 no.7:432-434 '64.

5(4) SOV/78-4-4-31/44

AUTHORS: Palkin, A. P., Chikanov, N. D.

TITLE: On the Problem of the Interaction of Niobium Pentachloride With the Chlorides of Potassium and Sodium in Molten State (K voprosu o vzaimodeystvii pyatikhloristogo niobiya s khloristymi kaliyem i natriyem v rasplavlennom sostoyanii)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 4, pp 898-901 (USSR)

ABSTRACT: The authors investigated the systems $NbCl_5$-KCl and $NbCl_5$-NaCl by a visual and differential thermographic method. Niobium pentachloride of a purity of 99.86% was synthesized by chlorination of metallic niobium. Niobium pentachloride was freed from niobium oxychlorides by sublimation in a dry stream of chlorine at 170-190°. Niobium pentachloride attains the melting point at 206°. The system $NbCl_5$-KCl was investigated and the phase diagram is given in figure 1. The thermal analysis of the system indicates that niobium pentachloride enters reaction with potassium chloride at 286° with the formation of the congruently melting compound $KNbCl_6$, which

Card 1/3

On the Problem of the Interaction of Niobium Pentachloride With the Chlorides of Potassium and Sodium in Molten State

attains its melting point at 396°. The authors stated polymorphous transformations of this compound at 334° and 186°. Layers are formed within the range 0.1-42.5 mole % KCl. A thermal effect is shown by the thermograms within the range 0.1-50 mole % KCl at 220°. The system $NbCl_5$-NaCl, which was investigated by I. S. Morozov and B. G. Korshunov (Ref 2), was checked and completed. In addition, the liquidus within the range 0-50 mole % NaCl as well as the range of layer formation at 7.5-31.5 mole % NaCl were determined. Figures 2, 3 and 4 show the thermograms of the mixtures of 50 mole % $NbCl_5$ and 50 mole % KCl. The phase diagram of the system $NbCl_5$-NaCl is given in figure 6. The results of thermal analyses of the systems $NbCl_5$-KCl and $NbCl_5$-NaCl are listed in two tables. There are 6 figures, 2 tables, and 5 references, 4 of which are Soviet.

SOV/78-4-4-31/44

On the Problem of the Interaction of Niobium Pentachloride With the Chlorides of Potassium and Sodium in Molten State

ASSOCIATION: Voronezhskiy gosudarstvennyy universitet (Voronezh State University)

SUBMITTED: January 13, 1958

Card 3/3

S/078/62/007/006/011/024
B106/B180

AUTHORS: Palkin, A. P., Chikanov, N. D.

TITLE: Reaction of niobium pentachloride with sodium- and potassium chlorides

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 6, 1962, 1370-1376

TEXT: The reaction of $NbCl_5$ with NaCl and KCl was studied by thermal analysis during their crystallization from the melt. For some compositions the electrical conductivity was determined at different temperatures. The phase diagram of the system $NbCl_5$-NaCl-KCl was constructed from the results. The polymorphous high-temperature modifications of the congruent compound $KNbCl_6$ and the incongruent compound $NaNbCl_6$ form a continuous series of solid solutions; their polymorphous modifications, whose transition points are 318 and 247°C respectively, crystallize in a eutectoid system (eutectoid at 190° and 50% $NbCl_5$, 22% KCl, 28% NaCl). At 390°C, $KNbCl_6$ forms a eutectic with

Reaction of niobium pentachloride ...

NaCl, composition 2% NaCl, 49% $NbCl_5$, 49% KCl. Passing from the binary system $NbCl_5$-NaCl to the section NaCl-$KNbCl_6$ and further to the system $KNbCl_6$-KCl, the peritectic process is replaced by a eutectic one, the temperature dropping from 444 to 366°C. A monotectic demixing comes next to the binary systems $NbCl_5$-NaCl and $NbCl_5$-KCl. It covers a considerable part of the corner contained by the sides $NbCl_5$-$KNbCl_6$ and $NbCl_5$-$NaNbCl_6$. $NbCl_5$, $KNbCl_6$, and $NaNbCl_6$ form a eutectic which is close to the axis of the composition $NbCl_5$, and whose melting point is practically the same as the crystallization temperature of pure $NbCl_5$. A large part of the liquidus surface of the system $NbCl_5$-NaCl-KCl consists of the fields of primary crystallization of the components: NaCl, solid solution NaCl-KCl, solid solution α-$KNbCl_6$-α-$NaNbCl_6$. The mixtures adjoining the vertex $NbCl_5$ are low-melting, those adjoining the vertices

Reaction of niobium pentachloride ...

NaCl and KCl are high-melting. The transition temperature corresponding to the polymorphous low-temperature modification of $KNbCl_6$ decreases in the ternary mixtures from 160 to 120°C. In the common crystallization of $KNbCl_6$, KCl and NaCl a small region is probably formed which is a solid solution on $KNbCl_6$ basis. The polymorphous transformations $\beta \rightarrow \alpha$-$NaNbCl_6$ and $\gamma \rightarrow \beta$-$KNbCl_6$ are accompanied by a considerable increase in electrical conductivity and by pronounced thermal effects. In the system $NbCl_5$-KCl it is assumed that the incongruent compound $2KCl \cdot 3NbCl_5$ is formed. It exists between 210-160°C at a KCl content up to 50%. There are 1 figure and 1 table.

ASSOCIATION: Voronezhskiy gosudarstvennyy universitet
(Voronezh State University)

SUBMITTED: June 9, 1961

Card 3/3

S/078/62/007/010/004/008
B144/B186

AUTHORS: Palkin, A. P., Chikanov, N. D.

TITLE: Interaction of tantalum pentachloride with sodium and potassium chlorides

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 10, 1962, 2388-2393

TEXT: The phase diagram of the $TaCl_5$-NaCl-KCl system was plotted. It justifies the following conclusions: 1) At 388°C $KTaCl_6$ and NaCl form an eutectic (composition: 1.8% NaCl, 49.1% $TaCl_5$, 49.1% KCl). 2) $KTaCl_6$ and $NaTaCl_6$ form a complete series of solid solutions. Their polymorphic modifications with decomposition temperatures of 312 and 223°C form a limited series of solid solutions. The composition and temperature corresponding to the eutectoid point are: 50% $TaCl_5$, 20% KCl, 30% NaCl; 180°C. 3) A temperature drop from 484 through 388 to 370°C is observed owing to a transition from the peritectic process in the $TaCl_5$-NaCl system

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to eutectic processes in the $KTaCl_6$-NaCl and $KTaCl_6$-KCl systems. Transition takes place at 484°C with 48% NaCl. Monotectic demixings are observed in the $TaCl_5$-NaCl system up to 30% NaCl (404°C) and in the $TaCl_5$-KCl system up to 40% KCl (316°C). They blend without discontinuity. 5) The eutectic formed by $TaCl_5$, $KTaCl_6$, and $NaTaCl_6$ follows closely the mole-% axis of $TaCl_5$. Its temperature coincides with the crystallization temperature of pure $TaCl_5$. 6) The liquidus surface of the $TaCl_5$-NaCl-KCl system consists mainly of crystallization regions of the solid solution NaCl-KCl, of NaCl, and of the solid solution α-$KTaCl_6$ - α-$NaTaCl_6$. The melts at the NaCl and KCl corners are high-melting, those close to the $TaCl_5$ corner are low-melting. 7) The temperature 185°C corresponding to the polymorphic decomposition $\gamma \rightarrow \beta$-$KTaCl_6$ drops to 161°C for the ternary systems $TaCl_5$-$KTaCl_6$-NaCl; this is explained by the existence of a small region of γ-$KTaCl_6$-$NaTaCl_6$ solid solutions. 8) The electrical conductivity of

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308810011-9"

$TaCl_5$-NaCl-KCl melts is determined by tho polymorphic decompositions $\beta \rightarrow \alpha$-$NaTaCl_6$ and $\gamma \rightarrow \beta$-$KTaCl_6$. There are 2 figures and 2 tables.

ASSOCIATION: Voronezhskiy gosudarstvennyy universitet (Voronezh State University)

SUBMITTED: January 12,, 1962

Card 3/3

S/078/62/007/010/005/008
B144/B186

AUTHORS: Palkin, A. P., Chikanov, N. D.

TITLE: Interaction between niobium and tantalum pentachlorides and sodium and potassium chlorides

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 10, 1962, 2394-2399

TEXT: Melting point diagrams were plotted for the systems: (1) $NbCl_5$-$TaCl_5$-NaCl; (2) $NbCl_5$-$TaCl_5$-KCl. (1) The polymorphous modifications (α,β) of the incongruently melting compounds $NaTaCl_6$ and $NaNbCl_6$ form a complete series of solid solutions without extremes. The peritectic decomposition follows the scheme: melt + NaCl $\rightleftharpoons$ solid α-$NaTaCl_6$ - α-$NaNbCl_6$ solution. Transition is continuous from the $TaCl_5$-NaCl system at 48 % NaCl to the NbCl-NaCl system at 44 % NaCl with a temperature drop from 484 to 444°C. The liquidus surface corresponding to the NaCl crystallization ascends steeply from the interface curve. Decomposition between the solid solutions α-$NaNbCl_6$ - α-$NaTaCl_6$ $\rightleftharpoons$ β-$NaNbCl_6$ - β-$NaTaCl_6$ is accompanied by an

Card 1/3

Interaction between niobium and ...

intense change in temperature. Demixing was observed up to 30 % NaCl, irrespective of the $NbCl_5$:$TaCl_5$ ratio. The liquidus surface comprises crystallization ranges of NaCl and of solid α-$NaNbCl_6$ - α-$NaTaCl_6$ solution, and a small range of solid $NbCl_5$-$TaCl_5$ solution. (2) The congruently melting compounds α-$KTaCl_6$ and α-$KNbCl_6$ and their β-modifications form a complete series of solid solutions without extremes, with a temperature drop from 410 to 396°C. The low-temperature γ-modifications form a complete series of solid solutions with a weak minimum. The temperatures on transition from systems with less than 50 % KCl to the systems with more than 50 % KCl suggest a small range of solid $KNbCl_6$-KCl solutions. The liquidus surface ascends steeply from the eutectic line that corresponds to crystallization of the solid α-$KTaCl_6$ - α-$KNbCl_6$ solution with KCl. This surface includes ranges of KCl and solid solution $KTaCl_6$-$KNbCl_6$, with a small range of the solid solution $TaCl_5$-$NbCl_5$. Demixing is independent of the $TaCl_5$:$NbCl_5$ ratio up to 40 % KCl. It is true, for both cases, that

Interaction between niobium and ...

the melts near the monochloride vertex are high-melting, and those near the pentachloride vertices are low-melting. The line of crystallization of the solid β-solutions with the solid pentachloride solutions lies near the mole% axis of the pentachloride. There are 2 figures and 2 tables.

SUBMITTED: January 12, 1962

Card 3/3

PALKIN, A.P.; CHIKANOV, N.D.

Interaction of tantalum pentachloride with sodium and potassium chlorides. Zhur.neorg.khim. 7 no.10:2388-2393 O '62. (MIRA 15:10)

1. Voronezhskiy gosudarstvennyy universitet.
(Tantalum chloride) (Alkali metal chlorides)

PALKIN, A.P.; CHIKANOV, N.D.

Interaction of niobium and tantalum pentachlorides with sodium and potassium chlorides. Zhur.neorg.khim. 7 no.10: 2394-2399 O '62. (MIRA 15:10)
(Niobium chloride) (Tantalum chloride) (Alkali metal chlorides)

CHIKANOV, N.D.; PALKIN, A.P.; BIZYAYEVA, M.K.

Thermal study of the systems $TaCl_3$ - KCl - $AlCl_3$ and $NbCl_5$ - KCl - $AlCl_3$. Izv. vys. ucheb. zav.; khim. i khim. tekh. 6 no.3:355-360 '63. (MIRA 16:8)

1. Voronezhskiy gosudarstvennyy universitet, kafedra neorganicheskoy khimii.

(Systems (Chemistry)) (Thermal analysis)

CHIKANOV, N.D.; PALKIN, A.P.; BIZYAYEVA, M.K.

Thermal study of the systems Na, K || $AlCl_4$, Ta (Nb) Cl_6.
Zhur. neorg. khim. 8 no.8:1938-1944 Ag '63. (MIRA 16:8)

1. Kafedra neorganicheskoy khimii Voronezhskogo gosudarstvennogo universiteta.
(Systems (Chemistry)) (Thermal analysis)

ACCESSION NR: AP4043770 S/0080/64/037/008/1830/1834

AUTHOR: Chikanov, N. D.; Palkin, A. P.

TITLE: Thermal study of the systems $TaCl_5$-$MgCl_2$-KCl and $NbCl_5$-$MgCl_2$-KCl

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 8, 1964, 1830-1834

TOPIC TAGS: Kurnakov pyrometer, liquidus, primary crystallization field, four-phase equilibrium, tantalum

ABSTRACT: The authors conducted a study of the fusibility diagrams of the systems. The cooling and heating curves were recorded on a Kurnakov pyrometer. In addition, visual observations were also conducted. Methods of preparing the initial substances as well as the execution of the experiment were described by the authors in previous papers (AhNKh, 7, 1370(1962); AhlKh, 7, 2388(1962)). Based on data from a differential-thermographic analysis the authors constructed fusibility diagrams of the systems $TaCl_5$-$MgCl_2$-KCl and $NbCl_5$-$MgCl_2$-KCl, and have proven that the surface of the liquidus of these systems consist of large fields of primary crystallization of KCl, $MgCl_2$, $KMgCl_3$ and small fields of $KTaCl_6$($KNbCl_6$), $TaCl_5$($NbCl_5$). The authors

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ACCESSION NR: AP4043770

concluded that the elasticity of the $TaCl_5$ vapor over the fusion of the mixtures KCl, $KMgCl_3$ and $KTaCl_6$ (up to 500°C) is insignificant. This very important circumstance makes it possible to use these mixtures for obtaining tantalum electrolitically. Orig. art. has: 2 figures and 2 tables.

ASSOCIATION: none

SUBMITTED: 02Nov62 ENCL: 00

SUB CODE: IC, MT NO REF SOV: 004 OTHER: 000

Card 2/2

CHIKANOV, N.D.; PALKIN, A.P. [deceased]

System $TaCl_5$ - $NbCl_5$ - NaCl - KCl. Zhur. neorg. khim. 10 no.5:1259-1262 My '65. (MIRA 18:6)

1. Voronezhskiy gosudarstvennyy universitet, kafedra neorganicheskoy khimii.

Chikanov, V.R.

AUTHOR: Chikanov, V.R. 117-2-8/29

TITLE: Modernization of Foundry Equipment (Modernizatsiya oborudovaniya v liteynom tsekhe)

PERIODICAL: Mashinostroitel', 1958, # 2, pp 18 - 20 (USSR)

ABSTRACT: The article describes and illustrates modernized, earth-mixer runners at the foundry of the Moscow Grinding Machine Plant (Moskovskiy zavod shlifoval'nykh stankov). Regular repair is difficult, since the foundry works 24 hours daily. In the old design, the vertical as well as the horizontal drive shafts were mounted on journal bearings. Sand getting into these bearings caused rapid wear and down-time. It also happened that the rollers got off the axles.

The modernization consisted in replacing the journal bearings by ball bearings.

The band conveyer drives were modernized in the same way. There are 5 drawings.

ASSOCIATION: Moscow Grinding Machine Plant (Moskovskiy zavod shlifoval'nykh stankov)

AVAILABLE: Library of Congress

Card 1/1

CHIKANTSEVA, N.V.

Organization of the blood service in Sverdlovsk Province. Akt.vop. perel.krovi no.7:37-40 '59. (MIRA 13:1)

1. Sverdlovskaya stantsiya perelivaniya krovi.
(SVERDLOVSK PROVINCE--BLOOD--TRANSFUSION)

SAKHAROV, M.I., doktor med.nauk; CHIKANTSEVA, N.V.

Late results of treating leg ulcers with sterilized blood serum. Vest.khir. no.4:52-54 '61. (MIRA 14:4)

1. Iz kliniki obshchey khirurgii (zav. - doktor med.nauk M.I. Sakharov) Sverdlovskogo meditsinskogo instituta i Sverdlovskoy stantsii perelivaniya krovi.

(VARIX) (SERUM THERAPY)

CHIKARA, M.

PHASE I BOOK EXPLOITATION SOV/5975

International Institute of Welding

XII kongress Mezhdunarodnogo instituta svarki, 29 iyunya - 5 iyulya 1959 v g. Opatii (Twelfth Annual Assembly of the International Institute of Welding, Opatija, June 29 - July 5, 1959) Moscow, Mashgiz, 1961. 359 p. 3000 copies printed.

Sponsoring Agency: Natsional'nyy komitet SSSR po svarke.

Ed. (Title page): G. A. Maslov, Docent; Translated from English, French, and Serbo-Croatian by N. S. Aborenkova, K. N. Belyayev, E. P. Bogacheva, L. A. Borisova, K. V. Zvegintseva, V. S. Minavichev, and M. M. Shelechnik; Managing Ed. for Literature on the Hot-Working of Metals: S. Ya. Golovin, Engineer.

PURPOSE: This collection of articles is intended for welding specialists and the technical personnel of various production and repair shops.

Card 1/

Twelfth Annual Assembly (Cont.) SOV/5975

COVERAGE: The collection contains abridged reports presented and discussed at the Twelfth Annual Assembly of the International Institute of Welding. Reports deal with problems of welding and related processes used in repair work, repair techniques, and the problems arising in connection with the nature of the base and filler materials. Examples of repairing various parts are given, and the organization of repair operations in workshops and under field conditions is discussed. Economic aspects of welding and related processes as used in repair work are analyzed. No personalities are mentioned. There are no references.

TABLE OF CONTENTS: [Only Soviet and Soviet-bloc reports are given here]

LOGVINENKO, A.A.; SHMELING, V.V.; CHIKARENKO, A.A.

Visual photometric observations of the Echo-1 satellite. Biul. sta.opt.nabl.isk.sput.Zem. no.27:15-28 '62. (MIRA 15:12)

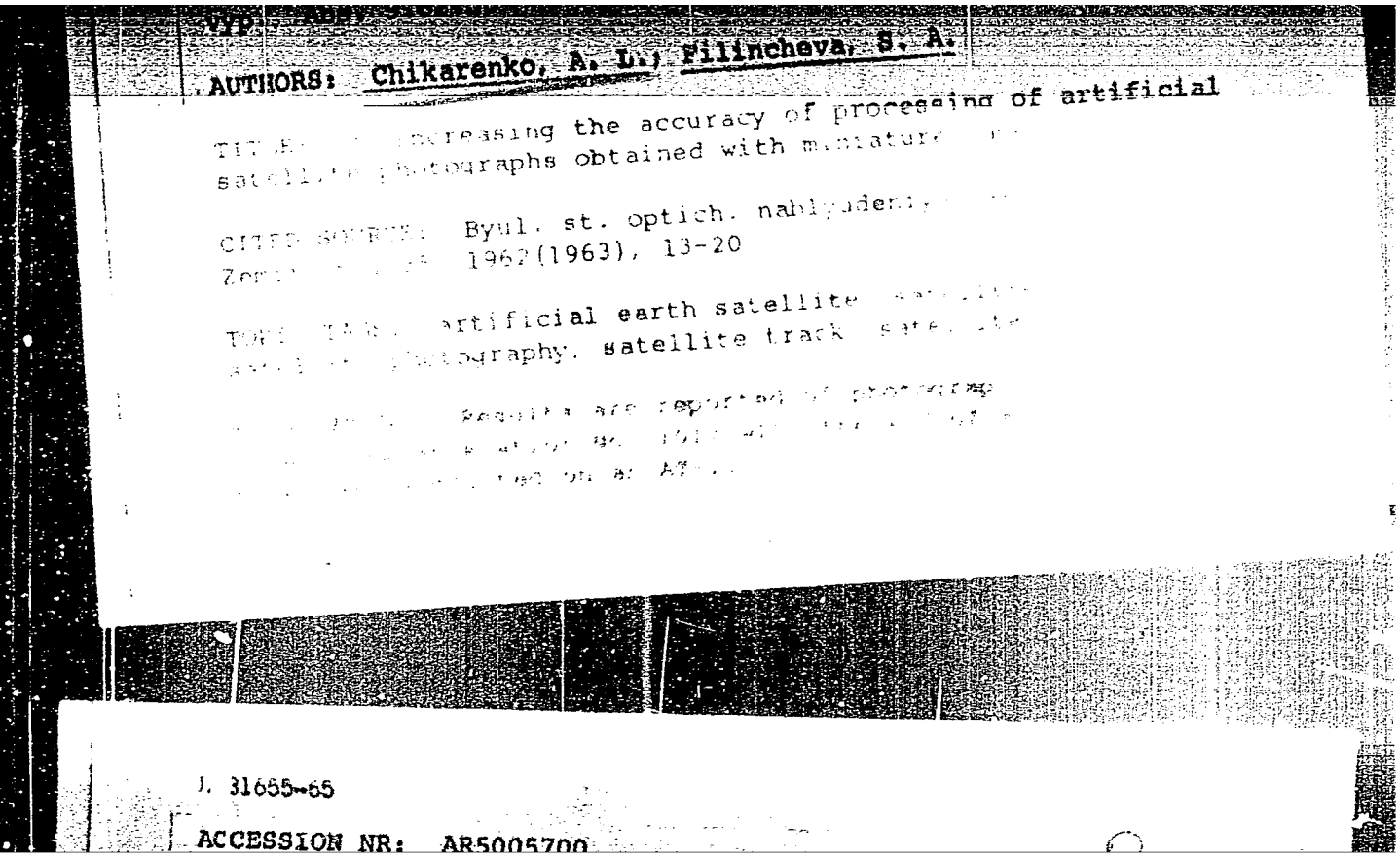
1. Nachal'nik Rizhskoy stantsii nablyudeniya iskusstvennykh sputnikov Zemli No.040 (for Shmeling). 2. Dnepropetrovskaya stantsiya nablyudeniya iskusstvennykh sputnikov Zemli (for Chikarenko).

(Artificial satellites—Tracking)

BOGUDLOV, A.M.; NOSENKO, Yu.L.; CHIKARENKO, A.L.

Observations of three fireballs in Dnepropetrovsk. Astron.tsir. no.221:11-12 Ap '61. (MIRA 14:11)

1. Dnepropetrovskaya vizual'no-opticheskaya stantsiya. (Meteors)



AUTHORS: Chikarenko, A. L.; Filincheva, S. A.

TITLE: Increasing the accuracy of processing of artificial satellite photographs obtained with miniature

CITED SOURCE: Byul. st. optich. nablyudeniy Zemli 1962(1963), 13-20

TOPIC TAGS: artificial earth satellite photography, satellite track

ABSTRACT: Results are reported of processing

J. 31655-65

ACCESSION NR: AR5005700

L 31655-65

ACCESSION NR: AR5005700

satellite position, for tracks with good quality in the near-equatorial region, is 0.2 second in α and 0.1' in δ. Results [illegible] asserted of photographic observations of the satellites [illegible] α_1, 1962 ν_2, and 1962 υ_2, carried out in 1961 [illegible] [illegible]

SUB CODE: SR, SS ENCL: 00

Card 1/2

BARANENKO, V.A.; DEMIDOVA, N.Ye.; CHIKARENKO, A.L.

Observations of lunar occultations of stars in Dnepropetrovsk. Biul. Inst.teor.astron. 9 no.8:581-582 '64.
(MIRA 17:12)

1. Dnepropetrovskiy universitet.

BARANENKO, V.A.; DEMIDOVA, N.Ye.; CHIKARENKO, A.L.

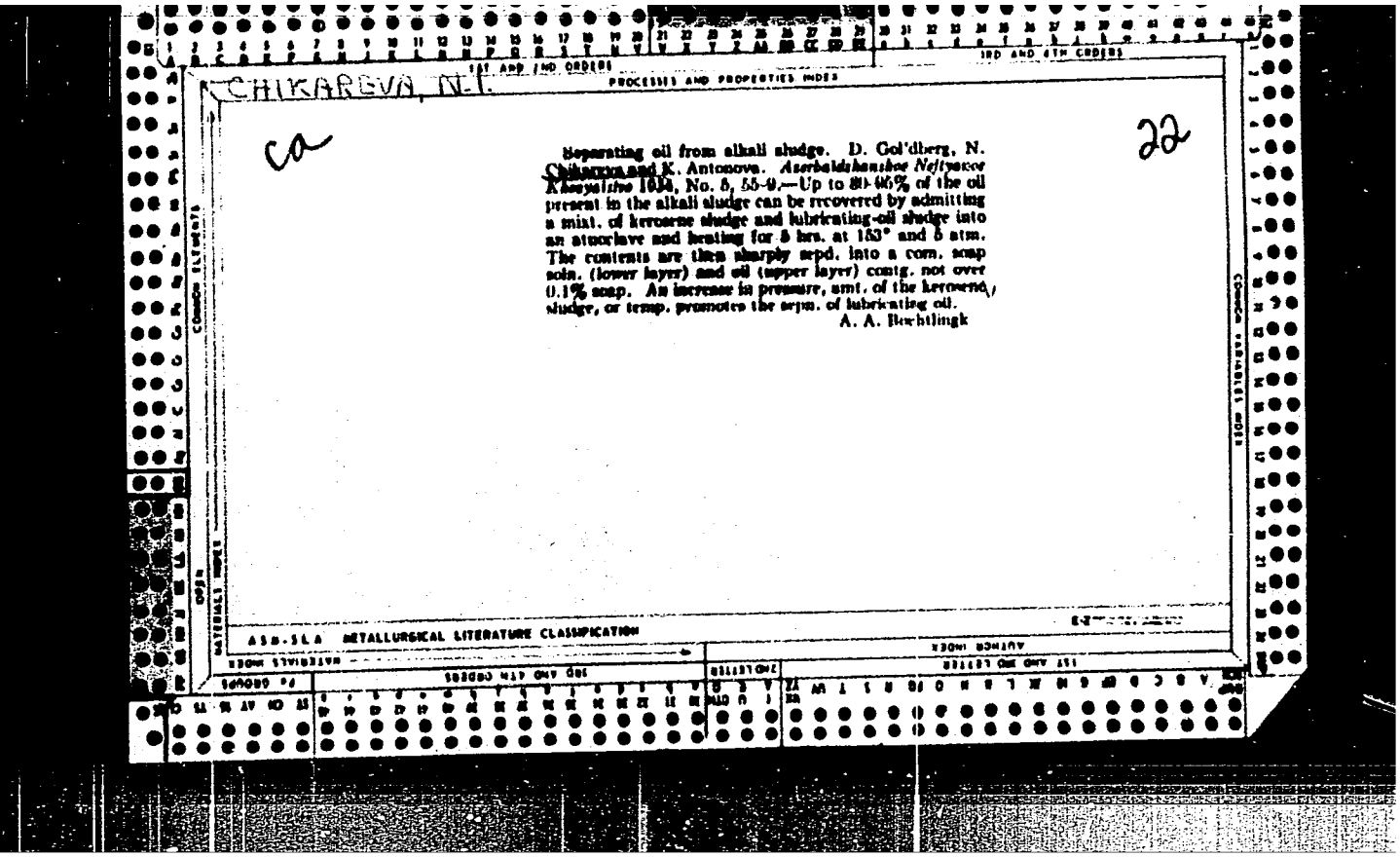
Observations of lunar occulations of Uranus and stars in Dnepropetrovsk. Astron.tsir. no.231:27-28 N '62. (MIRA 16:4)

1. Dnepropetrovskiy gosudarstvennyy universitet.
(Occulations)

CHIKAREV, I., slesar'

What do we expect from the Congress of the All-Union Society of Inventors and Innovators. Sov. profsoiuzy 7 no.17:10-12 S '59. (MIRA 12:11)

1.Moskovskiy zavod rezhushchikh instrumentov imeni M.I. Kalinina "Frezer".
(Moscow--Technical innovations--Congresses)



CHIKAREVA, N.I.

ca

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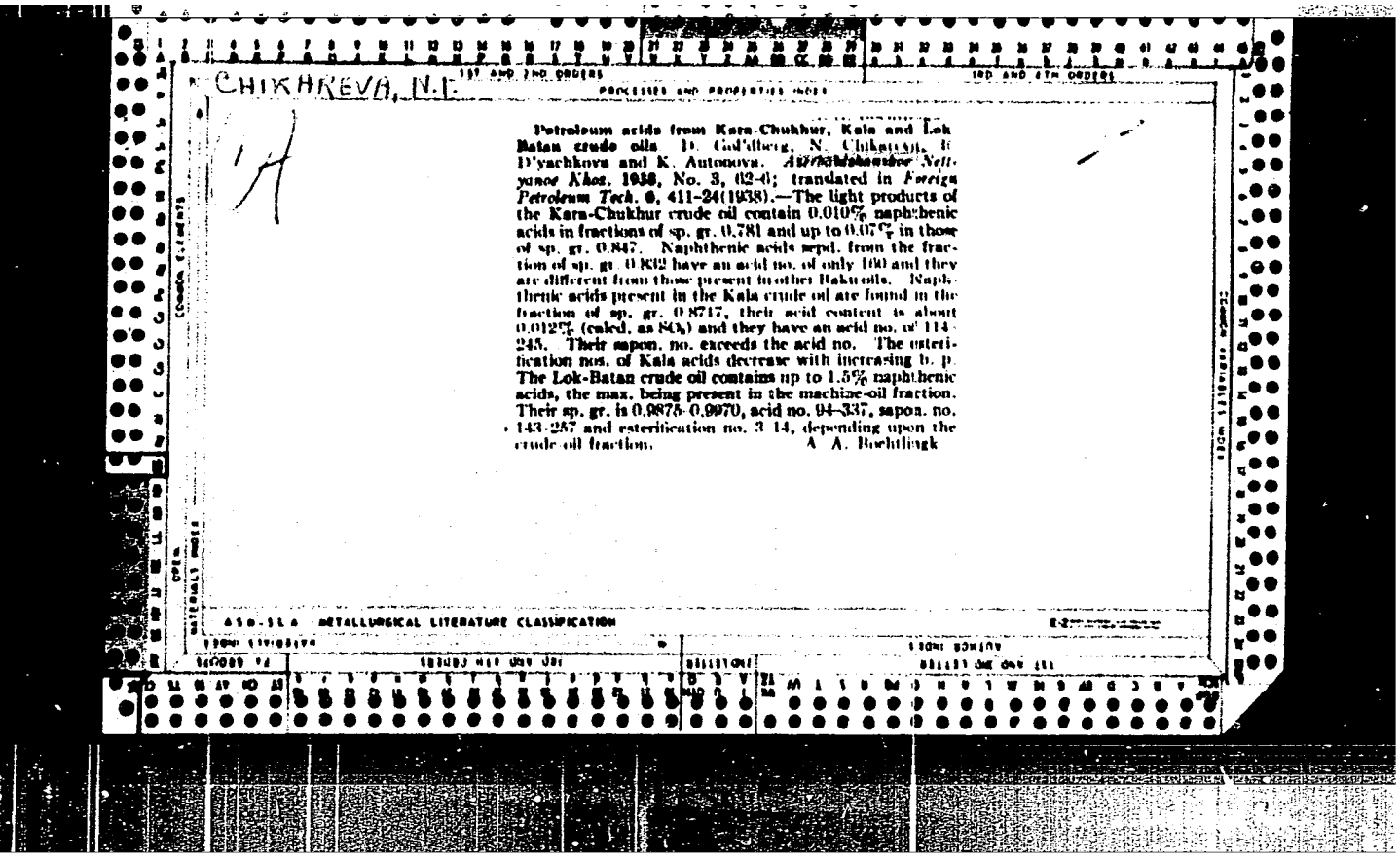
PROCESSES AND PROPERTIES INDEX

Separating oil from alkali sludge. D. Gol'dberg, N. Chikareva and K. Antonova. *Azerbaidzhanskoe Neftyanoe Khozyaistvo* 1934, No. 8, 55-9.—Up to 80-86% of the oil present in the alkali sludge can be recovered by admitting a mixt. of kerosene sludge and lubricating-oil sludge into an autoclave and heating for 5 hrs. at 153° and 5 atm. The contents are then sharply sepd. into a com. soap soln. (lower layer) and oil (upper layer) contg. not over 0.1% soap. An increase in pressure, amt. of the kerosene sludge, or temp. promotes the sepn. of lubricating oil.

A. A. Berhtlingk

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



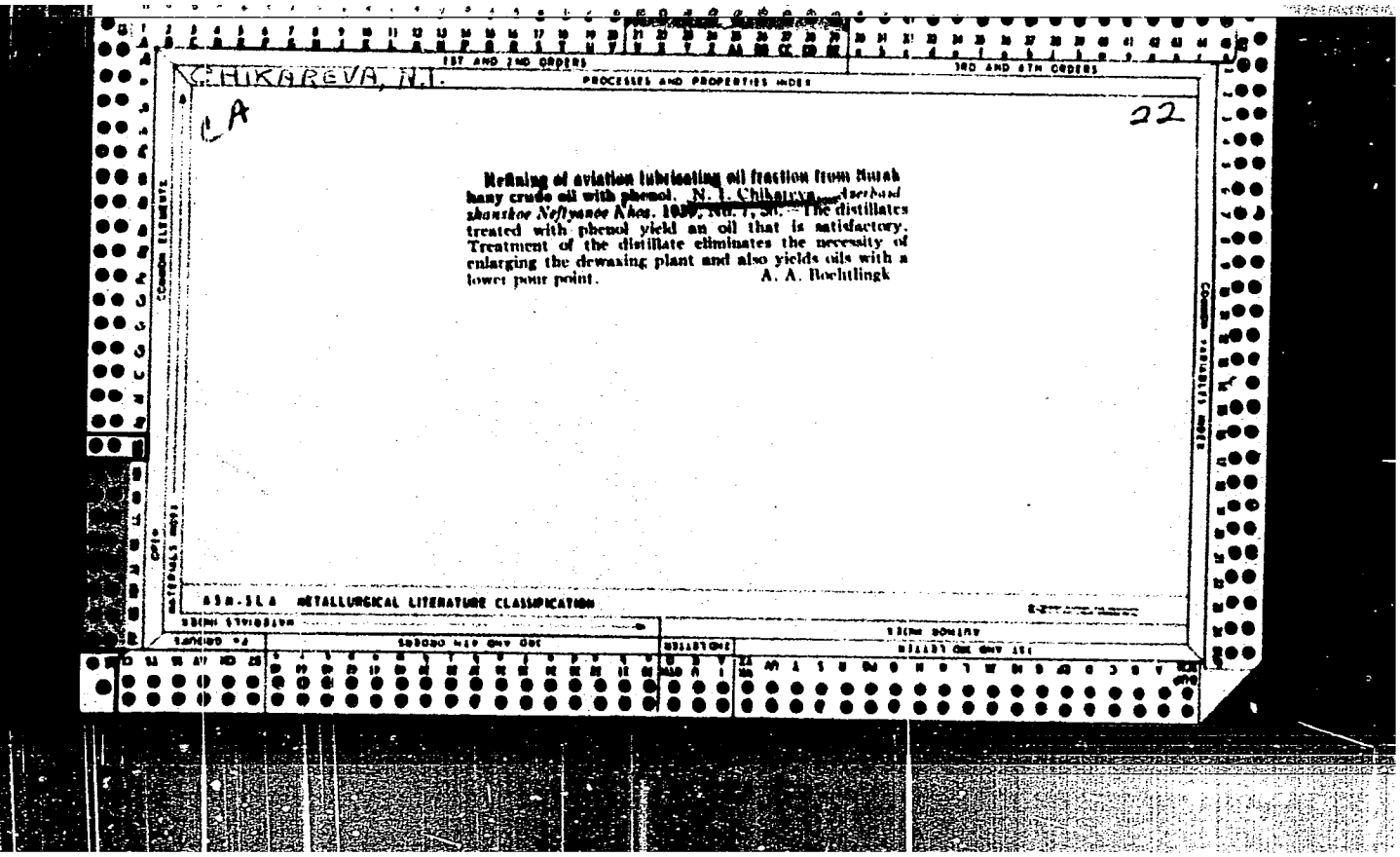
CHIKHAREVA, N.F.

14

Petroleum acids from Kara-Chukhur, Kala and Lok Batan crude oils. D. Gol'dberg, N. Chikhareva, E. D'yachkova and K. Antonova. *Azerbaidzhanskoe Neftyanoe Khoz.* 1938, No. 3, 62-4; translated in *Foreign Petroleum Tech.* 6, 411-24(1938).—The light products of the Kara-Chukhur crude oil contain 0.010% naphthenic acids in fractions of sp. gr. 0.781 and up to 0.07% in those of sp. gr. 0.847. Naphthenic acids sepd. from the fraction of sp. gr. 0.832 have an acid no. of only 100 and they are different from those present in other Baku oils. Naphthenic acids present in the Kala crude oil are found in the fraction of sp. gr. 0.8717, their acid content is about 0.012% (calcd. as SO_3) and they have an acid no. of 114-245. Their sapon. no. exceeds the acid no. The esterification nos. of Kala acids decrease with increasing b. p. The Lok-Batan crude oil contains up to 1.5% naphthenic acids, the max. being present in the machine-oil fraction. Their sp. gr. is 0.9875-0.9970, acid no. 94-337, sapon. no. 143-257 and esterification no. 3-14, depending upon the crude oil fraction.

A. A. Bochtlingk

A50-51A METALLURGICAL LITERATURE CLASSIFICATION



CHIKAREVA, N.I.

PROCESSES AND PROPERTIES INDEX

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

A

22

Refining of aviation lubricating oil fraction from Surakhany crude oil with phenol. N. I. Chikareva, *Izvestiya Akademii Nauk Azerbaidzhanskoi SSR, Seriya Fiziko-Matematicheskikh i Khimicheskikh Nauk* [*Izvestiya Akademii Nauk Azerbaidzhanskoi SSR, Neftyanoe Khoz.*, 1958, No. 1, 39]. — The distillates treated with phenol yield an oil that is satisfactory. Treatment of the distillate eliminates the necessity of enlarging the dewaxing plant and also yields oils with a lower pour point. A. A. Rochtlingk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

KULIYEV, A.M.; KULIYEV, R.Sh.; DREYZINA, M.M.; ANTONOVA, K.I.; KITUSHINA, Ye.N.; CHIKAREVA, N.I.; ALIYEV, M.I.

Investigating Neftyanyye Kamni crude with regard to its suitability for producing distillate lubricating oils. Sbor.trud.AzNII NP no.2:106-130 Ag '58. (MIRA 12:6)
(Neftyanyye Kamni region--Petroleum--Analysis)
(Lubrication and lubricants)

KULIYEV, A.M.; KULIYEV, R.Sh.; DRUYZINA, M.M.; ANTONOVA, K.I.; KITUSHINA, Ye.N; CHIKAREVA, N.I.; ALIYEV, M.I.

Producing residual oils from Neftyanyye Kamni crude. Sbor.trud. AzNII NP no.2:131-144 Ag '58. (MIRA 12:6)
(Neftyanyye Kamni region--Petroleum)
(Petroleum--Refining)

CHIKAREVA, N.I.

15.6200

61632 SOV/81-59-14-51087

Translation from: Referativnyy zhurnal, Khimiya, 1959, Nr 14, p 457 (USSR)

AUTHORS: Kuliyev A.M., Eyvazlo R.Sh., Deryina M.M., Mekhtiyev M.Z., Guseynov, T.I., Chikareva, N.I., Samedova, R.A., Kerimkozha, I.I.

TITLE: The Effect of the Conditions of Acidic Purification on the Filterability of Contacted Oil in the Preparation of Aircraft Oil MK-22

PERIODICAL: Tr. Azerb. n.-i. in-t po pererabotke nefti, 1958, Nr 3, pp 181 - 193 (Azerbaydzhan summary)

ABSTRACT: The effect of the temperature of acidic purification and settling, the duration of storing of the acidic oil, the concentration of H_2SO_4 and the method of its preparation, the consumption of acid and the addition of coagulator on the filterability of contacted oil has been studied. The contacting of a concentrate of Surakhany choice petroleum with VI 100 - + 4.2°C, the coking capacity 2.5%, was carried out in a laboratory contacting device with a charge of 750 g oil and 2% (based on the acidic oil) oleum at a final contacting temperature of 350°C. The filtering was carried out on a Büchner's funnel at 170 - 180°C in a vacuum of 50 - 60 mm Hg; the time for the filtration of 500 ml filter discharge was

Card 1/2

taken as filterability index. It has been shown that the filterability of the contacted oil can deteriorate in the case of an oleum content in the used acid, a rise of the temperature above 70°C, and long storing of the acidic oil (2 days); the coagulator was a commercial contact agent and 4% H_2SO_4, although it permitted one to improve the filterability by 2-3 times, in the periods of bad filterability of the oil it does not restore the normal conditions of filtration. There are five references.

O. Margolina

Card 2/2

CHIKAREVA, N.I.

S/081/61/000/023/048/061
B138/B101

AUTHORS: Dzhuvarly, Ch. M., Kuliyev, R. Sh., Mukharskaya, L. A., Droynin, M. M., Chikareva, N. I.

TITLE: Investigation of the possibility of producing transformer oil by adsorption refining

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 23, 1961, 450, abstract 23M88 (Azerb. neft. kh-vo, no. 3, 1961, 35 - 38)

TEXT: The oils were refined by means of adsorbants, using the method developed in the VNII NP. It consists in the continuous contacting of the descending layer of the adsorbant (aluminosilicate catalyst of fractional composition 0.25 - 0.5 mm) with the ascending flow of the transformer distillate diluted with a solvent (gasoline from Surakhany selected petroleum containing 5% aromatic hydrocarbons). Analysis, according to ГОСТ 982-56 (GOST 982-56), of the adsorption-refined and also of the acid-alkaline refined oils from Baku Buzovny, Neft'yanyye Kamni, Balakhany oil and Surakhany selected crudes, showed that adsorption refining (adsorbent/crude ratio = 1:1.5) gives greater stability than

Card 1/2

S/081/61/000/025/048/061
B138/B101

Investigation of the possibility...

the acid-alkaline method and makes possible the production of high grade oils from tarry crudes. Adsorption-refined oils have very good electrical properties: low tanδ value and high electric strength. The replacement of the old acid-alkaline by the new adsorption method of refining transformer oils will mean that a greater supply of crude is available, the operating properties of the oils will be improved and the service period in the transformers will be extended. [Abstracter's note: Complete translation.]

Card 2/2

KULIYEV, R.Sh.; SAMEDOVA, F.I.; MUSAYEV, G.T.; CHIKAREVA, N.I.; KRYLOV, L.P.

Effect of some factors of adsorption refining on the quality of transformer oil from petroleum of the Neftianye Kamni Field. Azerb.khim.zhur. no.6:61-66 '61. (MIRA 15:5)
(Insulating oils) (Petroleum--Refining)

DZHUVARLY, Ch.M.; KULIYEV, R.Sh.; MUKHARSKAYA, L.A.; DREYZIN, M.M.; CHIKAREVA, N.I.

Studying the possibility of producing insulating oils by adsorption refining. Azerb. neft. khoz. 40 no. 3:35-38 Mr '61. (MIRA 14:5)
(Insulating oils)

KULIYEV, R.Sh.; SAMEDOVA, G.I.; MUSAYEV, G.T.; CHIKAREVA, N.I.; KRYLOV, L.P.

Obtaining transformer oils from the Siazan' petroleum by adsorption refining. Azerb.neft.khoz. 40 no.12:44-45 D '61. (MIRA 15:8)

(Siazan' region—Insulating oils) (Adsorption)

KULIYEV, R.Sh.; DREYZIN, M.M.; KEVORKOVA, I.S.; CHIKAREVA, N.I.

Redistillation process in the production of oils. Khim. i tekh.topl.i masel 7 no.3:23-26 Mr '62. (MIRA 15:2)

1. Institut neftekhimicheskikh protsessov AN AzerSSR.
(Lubrication and lubricants)
(Petroleum--Refining)

34617
S/065/62/000/003/003/004
E075/E135

11.9100

AUTHORS: Kuliyev, R.Sh., Dreyzin, M.M., Kevorkova, I.S., and Chikareva, N.I.

TITLE: About the process of second distillation in the production of oils

PERIODICAL: Khimiya i tekhnologiya topliv i masel, no.3, 1962, 23-26

TEXT: The authors give comparative data on the preparation of turbine oils of Л (L) and Т (T) quality (ГОСТ 32-53) (GOST 32-53) with and without the application of the process of second distillation. The oils were obtained by the second distillation of the oil distillate boiling in the range 420-480 °C and constituting 10.7% of the crude (Volgograd crude). The distillate was subjected to furfural extraction (150, 220 and 300% furfural) dewaxing at -30 °C and 5% clay treatment. To reach L and T quality levels at least 220% furfural treatment and additions of antioxidants were necessary. The oils were also prepared from suitable distillate fractions without the second distillation. It was shown that the quality of turbine

Card 1/2

About the process of second ... S/065/62/000/003/003/004
E075/E135

oil T obtained by solvent extraction with 100% furfural corresponds to all GOST requirements. It had satisfactory oxidation stability, even without oxidation inhibitors, and was better than the analogous oil produced by the second distillation and 220% solvent extraction. Moreover, the yield of the oil produced without the second distillation was higher than that for the latter oil. The authors found also that there is no rational justification for the process of second distillation in the production of turbine oils from the oil fraction of Balakhany crude.
There are 3 tables.

ASSOCIATION: INKhP AN Azerb.SSR (INKhP AS Azerb. SSR)

Card 2/2

CHIKAREVA, N.I.

1

S/065/62/000/004/002/004
E075/E136

AUTHORS: Kuliyev, R.Sh., Dreyzin, M.M., Musayev, G.T., Chikareva, N.I., and Krylov, L.P.

TITLE: Production of electrical oils from Baku crudes by the method of adsorptional refining

PERIODICAL: Khimiya i tekhnologiya topliv i masel, no.4, 1962, 15-21

TEXT: The authors describe a method for the production of transformer oils by the method of adsorptional refining. The experiments with a continuous adsorptional refining were carried out in a laboratory apparatus designed by VNII NP. Granulated alumino-silicate catalyst was used as the adsorbent and a benzine fraction (b.pt. 100-150 °C) containing 4.8% aromatic hydrocarbons, used as a solvent. Transformer oil distillates were diluted with 1.2 parts by weight of the solvent. Using this method it was shown that the yield of the refined product was 90-92% in place of 80-82% for an acid-alkaline refining process. The transformer oils after the adsorptional refining are more stable than the acid refined oils. The distillates

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Production of electrical oils ... S/065/62/000/004/002/004
E075/E136

from the highly asphaltic Neftyanyye Kamni crude yielded high quality transformer oils after the adsorptional refining. Thus the method permits the utilization of a wider range of crudes for the production of electrical oils. It was found that the refining capacity of the alumino silicates can be modified by the temperature of the process and the addition of benzene (15%) to the solvent. It was shown that transformer oils with low pour points can be obtained by adding a pour point depressant (0.05-0.1%) (depressant AzNII) to the distillate prior to its adsorptional refining treatment.
There are 6 tables.

ASSOCIATION: INKhP AN Azerb. SSR
(INKhP AS Azerb. SSR)

Card 2/2

KULIYEV, R.Sh.; SAMEDOVA, F.I.; CHIKAREVA, N.I.; KRYLOV, L.P.

Production of residual diesel oil by adsorption refining.
Khim.i tekh.topl.i masel 7 no.8:27-32 Ag '62. (MIRA 15:8)

1. Institut neftekhimicheskikh protsessov AN Azerbaydzhanskoy SSR.
(Diesel fuels)

S/081/63/000/003/020/036
B144/B186

AUTHORS: Kuliyev, R. Sh., Samedova, F. I., Chikareva, N. I., Musayev, G. T., Krylov, L. P.

TITLE: Production of residual diesel engine oil from Neftyanyye Kamni crude oil by adsorption refining

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 3, 1963, 509, abstract 3P200 (Azerb. neft. kh-vo, no. 7, 1962, 34-37)

TEXT: A process has been worked out for obtaining a residual diesel engine oil with high anticorrosive and antioxydant properties from Neftyanyye Kamni petroleum by adsorption refining; it is shown to be possible to obtain such an oil by two alternative methods, with outputs in relation to the crude oil of 33.7 and 27.8%, respectively; a) by refining deasphalted mazout; b) by refining a compound consisting of deasphalted tar and motor oil-10 distillate. It is shown that the oil obtained by direct refining of deasphalted mazout somewhat surpasses in its physicochemical properties and stability the oil produced on the tar basis; moreover, considerably less adsorbent (200% ground alumosilicate catalyst instead of 300% in relation to the crude) is needed

Card 1/2

Production of residual diesel engine ... S/081/63/000/003/020/036
B144/B186

for refining deasphalted mazout. The possibility is established of reducing the pour point of the diesel engine oil by adding a depressor (e. g., AZNII depressor in a quantity of 0.5%) to the crude before adsorption refining. A qualitative comparison of the oils obtained by various refining methods has shown that the oil refined by adsorption considerably surpasses the solvent-refined oil as to color, corrosiveness, and cokability. The oil obtained by solvent-contact treatment has, however, better viscosity and temperature properties than the adsorption-refined oil, which is due to the high content of aromatic hydrocarbons with a negative viscosity index in the oils obtained by adsorption refining. [Abstracter's note: Complete translation.]

Card 2/2

KULIYEV, R.Sh.; SAMEDOVA, F.I.; CHIKAREVA, N.I.; MUSAYEV, G.T.; KRYLOV, L.P.

Obtaining residual diesel oil from petroleum of the Neftyanyye Kamni field by adsorption refining. Azerb.neft.khoz. 41 no.7: 34-37 Jl '62. (MIRA 16:2)

(Diesel fuels) (Adsorption)

KULIYEV, R.Sh.; SAMEDOVA, F.I.; MUSAYEV, G.T.; ANTONOVA, K.I.; CHIKAREVA, N.T.

Obtaining transformer oil from distillates of Surakhani selected crude oil and Karachukhur and Siazan petroleums. Neft. i neftekhim. no.4:8-11'63 (MIRA 17:7)

1. Institut neftekhimicheskikh protsessov, Baku.

KULIYEV, R.Sh.; SHAKHNOVICH, M.I.; SAMEDOVA, F.I.; MUSAYEV, G.T.; CHIKAREVA, N.I.; Prinimali uchastiye: ALIYEVA, A.; ALIYEVA, V.; KATKOVA, O.; BESSONOVA, Ye.; KURILINA, A.

Improving the quality of transformer oil from Buzovna crude oil. Khim. i tekh. topl. i masel 8 no.10:16-22 O '63. (MIRA 16:11)

1. Institut neftekhimicheskikh protsessov AN AzerSSR.

CHIKAROV, I.A.

Temple cutters for the ATK-100 loom. Tekst.prom. 20 no.3:68-69 Mr '60. (MIRA 14:5)

1. Master remontno-montazhnogo otdela fabriki "Rabochiy". (Looms)

SOV/137-57-1-449

Translation from: Referativnyy zhurnal. Metallurgiya, 1957, Nr 1, p 59 (USSR)

AUTHORS: Chikashua, D. S., Metreveli, A. M.

TITLE: Search for a Rational Composition of the Charge of Raw Materials for the Aluminum-reduction Smelting of Manganese (Izyskaniye ratsional'nogo sostava shikhty dlya vyplavki metallicheskogo margantsa alyumotermicheskim metodom)

PERIODICAL: Tr. In-ta metalla i gornogo dela. AN GruzSSR, 1956, pp 47-55

ABSTRACT: The optimum proportion of constituents for aluminum-reduction of Mn is as follows (by weight): Roasted Mn peroxide 1, granular Al 0.32, slaked lime 0.015, and CaF_2 0.023. To improve the quality of the Mn produced and to increase its recovery it is expedient to screen out the 1.25-mm undersize fraction, which is the most contaminated with Fe and SiO_2 and which constitutes ~5.8% of the total peroxide. When the process is carried out in V. A. Meladze type cast-iron smelting furnaces better results are achieved than in the conventional smelting furnaces lined with magnesite brick.

B. Z.

Card 1/1

CHIKASHUA, D.S.

133-7-11/28

AUTHOR: Chikashua, D.S., Metreveli, A.I. and Voytenko, O.I.

TITLE: Granulation of Manganese Slags (Granulyatsiya peredel'nykh margantsevykh shlakov)

PERIODICAL: Stal', 1957, No.7, pp. 611 - 615 (USSR)

ABSTRACT: Granulation of manganese slags obtained from the production of manganese alloys (with and without fluxes) in order to obtain products suitable for further smelting was investigated on a laboratory and pilot plant scale. The chemical composition and physical properties of crushed slags are given in Table 1. The process consisted of pouring a stream of slag into an inclined, rotating water-cooled drum with the simultaneous blowing into the slag stream of water and air. Similar experiments were carried out using coke breeze, manganese ore, limestone slacked lime and manganese slurries instead of water and air. Agglomerates with required properties (size and strength) can be produced. The properties of agglomerates produced are given in Table 2. The diagram of the installation used for the agglomeration is shown in Fig.1 and photographs of agglomerates produced in Figs. 2 and 3. Using the above method with a suitable choice of solid additions (fine fractions of the agglomerate can be used as such additions) the preparation of manganese slags for further treatment is considerably simplified and

Cardl/2

agglomerates of required composition can be obtained. The above method can be also used for granulation of metallic alloys as well as ferro-chromium slags and slags of non-ferrous metals. There are 2 tables, 3 figures and 5 Slavic references.

ASSOCIATION: Zestafoni Ferro-alloy Works (Zestafonskiy Zavod Ferrosplavov)

AVAILABLE: Library of Congress.

Card 2/2

MIKELADZE, G.Sh.; NADIRADZE, Ye.M.; BEZARASHVILI, Sh.M.; DGEBUADZE, G.A.; TSKHVEDIANI, R.N.; CHIKASHUA, D.S.; METREVELI, A.I.

Making ferrosilicon in a closed electric furnace. Stal' 21 no.5: 419-422 My '61. (MIRA 14:5)

1. Institut metallurgii AN GSSR i Zestafonskiy zavod ferrosplavov.
(Ferrosilicon—Electrometallurgy)

CHIKASHUA, D.S.

Partial refining of silicomanganese from silicon by means of various oxidizing agents with use of the physical heat of melts. Trudy Inst. met. AN Gruz. SSR 11:57-68 '61.
(MIRA 14:10)

(Manganese—Silicon alloys)
(Silicon)

MIKELADZE, G.Sh., kand.tekhn.nauk; NADIRADZE, Ye.M., kand.tekhn.nauk; GOGORISHVILI, B.P., inzh.; TSKHVEDIANI, S.N., inzh.; CHIKASHUA, D.S., inzh.; METREVELI, A.I., inzh.

Making ferrochromium in closed, electric ore reducing furnaces. Biul. TSIICHM no.1:18-23 '61. (MIRA 14:9)
(Iron-chromium alloys--Electrometallurgy)

REZNICHENKO, V.A.; TKACHENKO, V.A.; MIKELADZE, G.Sh.; KARYAZIN, I.A.; KOZLOV, V.M.; NADIRADZE, Ye.M.; SOLOV'YEV, V.I.; GOGORISHVILI, B.P.; Prinimali uchastiye: PKHAKADZE, Sh.S.; METREVELI, A.I.; CHIKASHUA, D.S.; KHROMOVA, N.V.; KAVETSKIY, G.D.; TSKHVEDIANI, R.N.; ARABIDZE, T.V.

Making titanium slag in an electric closed reduction furnace. Titan i ego splavy no.8:28-40 '62. (MIRA 16:1)
(Titanium--Electrometallurgy)

CHIKASHUA, D.S.; VOYTENKO, O.I.

Effect of temperature on the degree of purification of manganese sulfate solutions from nickel. Stal' 22 no.9:814 S '62. (MIRA 15:11)

1. Zestafonskiy ferrosplavnyy zavod.
(Manganese--Electrometallurgy)
(Metals, Effect of temperature on)

CHIKASHUA, D.S.

Investigating the process of obtaining medium-carbon ferromanganese. Stal' 23 no.9:811-815 S '63. (MIRA 16:10)

1. Zestafonskiy zavod ferrosplavov.

CHIKASHUA, D.S.; VOYTENKO, O.I.

Obtaining manganese sulfate solutions from lean ores and waste from manganese alloy production. Stal' 24 no.8:716-717 Ag '64. (MIRA 17:9)

1. Zestafonskiy zavod ferrosplavov.

CHIKASHUA, N.V.

Dispersion of nitrogen fixing bacteria indifferent soils and rhizosphere of some plants [in Georgian with summary in Russian]. Trudy Tbil. GU no.62:243-264 '57. (MIRA 11:8)

1.Tbilisskiy gosudarstvennyy universitet imeni Stalina, kafedra anatomii i fiziologii rasteniy.
(Azotobacter) (Rhizosphere microbiology)

CHIKATOVICH, V.P. [Chykatovych, V.P.]

We exchange experiences. Farmatsev. zhur. 16 no.6:69-70 '61.
(MIRA 15:5)

1. Zaveduyushchiy aptekoy No.7 g. Zdolbunovo, Rovenskoy oblasti.
(UKRAINE--DRUGSTORES)

CHUKEL', I.

New technological methods of investigating the fluidity of metal and the formation of shrinkage cavities. Lit. proizv. no.1: 27-32 Ja '59. (MIRA 12:1)
(Foundry machinery and supplies) (Liquid metals--Testing)

CHIKEL', I.

PHASE I BOOK EXPLOITATION SOV/4344

Soveshchaniye po teorii liteynykh protsessov, 4th

Kristallizatsiya metallov; trudy soveshchaniya (Crystallization of Metals; Transactions of the Fourth Conference on the Theory of Casting Processes) Moscow, Izd-vo AN SSSR, 1960. 325 p. 3,200 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Komissiya po tekhnologii mashinostroyeniya.

Resp. Ed.: B. B. Gulyayev, Doctor of Technical Sciences, Professor; Ed. of Publishing House: V. S. Rzheznikov; Tech. Ed.: S. G. Tikhomirova.

PURPOSE: This book is intended for metallurgists and scientific workers. It may also be useful to technical personnel at foundries.

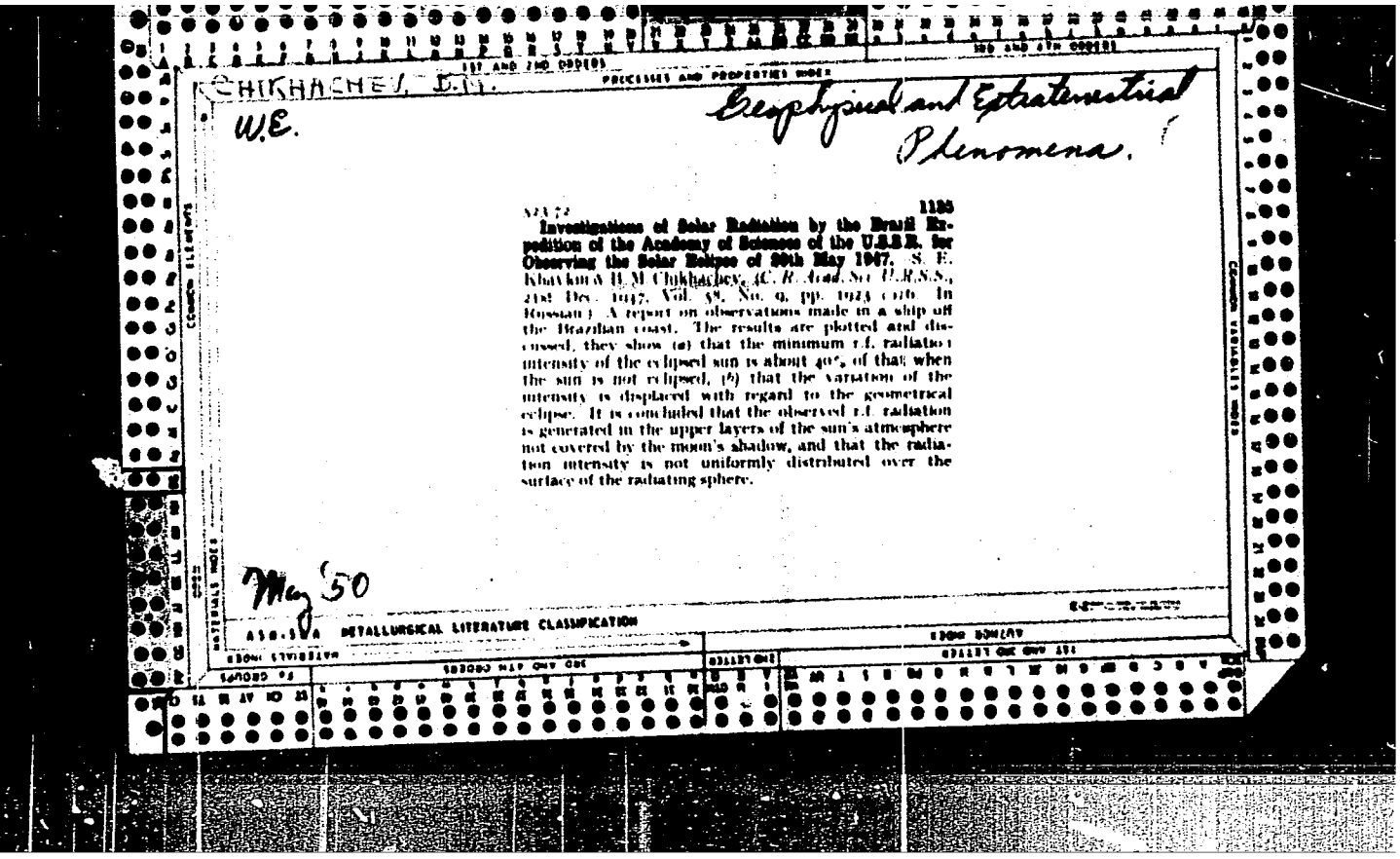
COVERAGE: The book contains the transactions of the Fourth Conference (1958) on the Theory of Casting Processes. [The previous 3 conferences dealt with hydrodynamics of molten metals (1955), solidification of metals (1956), and shrinkage processes in castings (1957)]. General problems in the crystallization of metals, including the crystallization of constructional steels, alloy steels with special properties, cast iron, and of nonferrous alloys, are discussed. Recognition is given to D. K. Chernov and N. T. Gudtsov and their students, B. B. Gulyayev and A. G. Spasskiy, for their contributions to the understanding of the basic problems involved in the theory of crystallization of ferrous and nonferrous metals and alloys. Academician A. V. Shubnikov is also mentioned in connection with his work on the planning of research on crystal formation. References accompany several of the articles.

CHIKEL', I.

Wear and consumption of chill molds in iron alloy casting. Lit. proizv. no.2:26-33 F '63. (MIRA 16:3)
(Iron founding—Equipment and supplies)

CHIKERNIKOV, A. B. and VOLKOV, B. I. (Moscow)

"Magnetic Properties of Alloys Over the Curie Temperature," paper presented at the International Conference on Physics of Magnetic Phenomena, Sverdlovsk, USSR, 23-31 May 1956.



CHIKHACHEV, B.N.

W.E.

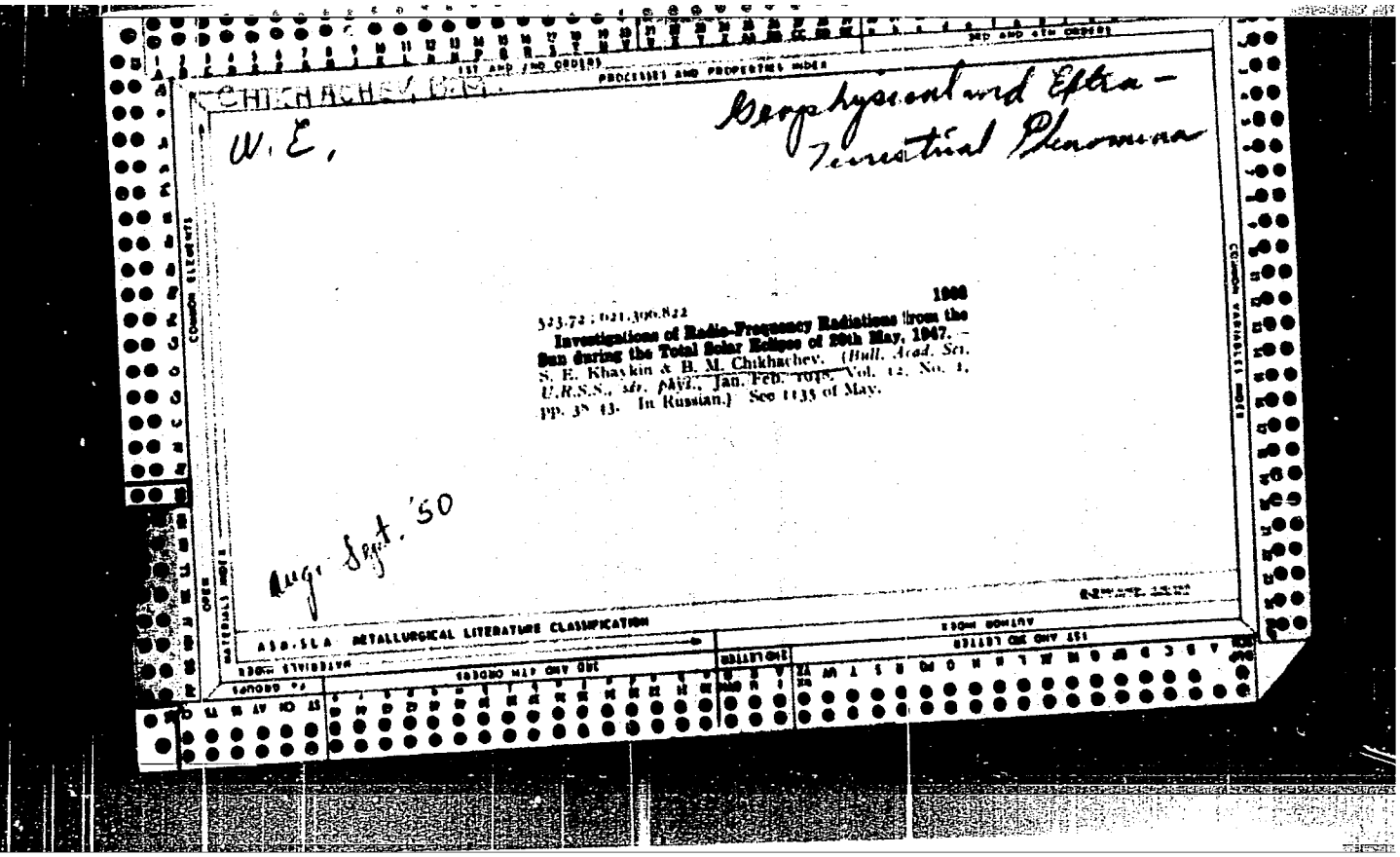
Geophysical and Extraterrestrial Phenomena.

N/A 72 1135

Investigations of Solar Radiation by the Brazil Expedition of the Academy of Sciences of the U.S.S.R. for Observing the Solar Eclipse of 20th May 1947. S. E. Khaikin & B. N. Chikhachev. *C. R. Acad. Sci. U.R.S.S.*, 21st Dec. 1947, Vol. 58, No. 9, pp. 1923–1926. (In Russian.) A report on observations made in a ship off the Brazilian coast. The results are plotted and discussed, they show (a) that the minimum r.f. radiation intensity of the eclipsed sun is about 40% of that when the sun is not eclipsed, (b) that the variation of the intensity is displaced with regard to the geometrical eclipse. It is concluded that the observed r.f. radiation is generated in the upper layers of the sun's atmosphere not covered by the moon's shadow, and that the radiation intensity is not uniformly distributed over the surface of the radiating sphere.

May 50

A1a.1a METALLURGICAL LITERATURE CLASSIFICATION



CHIKHACHEV, B.M.

Category : USSR/Radiophysics - Application of radiophysical methods I-12

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1988

Author : Chikhachev, B.M.
Title : On Radio Waves from Sunspots

Orig Pub : Tr. 5-go soveshchaniya po vopr. kosmogonii. 1955, M., AN SSSR, 1956, 245-269, diskus. 269-272

Abstract : The coordinates of local sources of radio waves on the sun were determined. The observations were carried out with the aid of a marine interferometer at 1.5 and 2 m. The coordinates were determined with an accuracy to several angular minutes, and two coordinates were determined whenever it was possible to make the observations on the east and on the west of the sun. The average distances of the radio-wave region from the center of the sun turned out to be approximately 1.4 R. for both wavelengths. According to theoretical estimates, the height of the radio-wave layer for these wavelengths should be less than 1.1 R. in the case of thermal radiation. The sources of radio waves observed were compared with visible formations on the sun's surface. During 3 months (from 1 Oct. 1949 through 1 Jan. 1950) ten groups of radio-wave sunspots were observed, and detailed information is given about these groups. The radio-wave radiating groups (approximately 8% of the total number of various groups of sunspots) had magnetic fields of high intensities ($H \geqslant 2200$

Card : 1/2

oersted), but during the time of observations there were 28 groups of sunspots on the sun with H>2200 oersted which produced no noticeable radio radiation. Measurements of the "depth of modulation" of the interference records, made with an accuracy of ±20%, made it possible to determine the effective angular dimensions of the sources. The average dimensions of the radio-radiation regions at 1.5 and 2 meters were 6.33' and 7.90' respectively, while the dimensions of the corresponding visible groups of sunspots did not exceed 2'. It was noted that the radio waves from local sources, in addition to containing a constant or a slowly-varying component, contain also a component of small flashes, lasting approximately several seconds, with equals of the same order between splashes. These flashes also produced an interference pattern, in which the position of the maxima coincided with the position of the maxima of the fundamental interference record. This indicates that the constant component and the flashes come from the same local source. In addition, the dimensions of the radiating region were determined from the depth of modulation of the flashes, and turned out to be quite close to those obtained by measuring the constant component.

In the discussion, V.A. Baranul'ko reported on his data on the recording of radio waves from the sun. Bibliography, 10 titles.

CHIKHACHEV, B.M.

Category : USSR/Radiophysics - Application of radiophysical methods I-12

Abs Jour : Ref Zhur - Fizika, No 1, 1957 No 2008

Author : Chikhachev, B.M., Sorochenko, R.L.
Title : Apparatus for the Observation of the 21-cm Hydrogen Radio-Wave Spectral Line

Orig Pub : Tr. 5-go soveshchaniya po vopr. kosmogonii. 1955, M., AN SSSR, 1956, 546-549, diskus. 550-553

Abstract : The apparatus is based on the principle of the frequency radiometer with double frequency conversion. A balanced method is used, in which two narrow-band filters separated in frequency and two second heterodynes alternately switched at a modulation frequency of 360 cycles, are connected to the output of the second i-f stage. In this case, oscillations from one of two fixed portions of the spectrum under investigations are alternately passed through each filter. The difference in the intensity of the noise at the output of the filters is separated by a balanced detector. The a-c component at the modulation frequency appears at the output of the balanced detector only in that case, when the spectral densities of the noise in the fixed portions differ from each other. The search for the line is effected by varying the frequency of the first heterodyne. The frequencies of the first and second heterodynes and the narrow-band filters are crystal-stabilized. The accuracy of the measurement of the line frequency is 1.5 kc. The sensitivity

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Category : USSR/Radiophysics - Application of radiophysical methods I-12

Abs Jour : Ref Zhur - Fizika, No 1, 1957 No 2008

of the apparatus is 2° relative to the antenna temperature. The antenna is a parabolic dish measuring 18 x 8 meters. In the discussions of the paper, R.L. Sorochenko made a brief report of an attempt to observe the spectral line of the CH molecule. The result was negative. This was already reported by Ya. I. Khanin.

Card : 2/2

GINZBURG, V.L., redaktor; LEVKIN, G.A., kandidat fiz.-mat. nauk, redaktor; CHIKHACHEV, B.M., kandidat fiz.-mat. nauk, redaktor; SHKLOVSKIY, doktor fiz.-mat. nauk; FRADKIN, M.I., redaktor; MAKUNI, Ye. V., tekhnicheskiy redaktor.

[Proceedings of the Fifth Conference on Problems of Cosmogony; radioastronomy] Trudy piatogo soveshchaniia po voprosam kosmogonii; radioastronomiia. Moskva, 1956, Izd. Akademii nauk SSSR. 567 p. (MLRA 9:5)

1.Soveshchaniye po voprosam kosmogonii. 5th, Moscow 1955.2.Chlen-korrespondent AN SSSR (for Ginzburg).
(Radio astronomy)

CHIKHACHEV, B. M., VITKEVICH, V. V.

"Some Radioastronomical Stations in Foreign countries"
Astronomicheskiy Zhurnal, Vol XXXIII, No. 1, 1956, pp 120-126

Translation M-3,053,056, 4 Jan 57

B. M. CHIKHACHEV and VITKEVICH, V. V.

"Observation of Solar Radio Emissions in the Meter Wave Band During the Total Solar Eclipse of February 25, 1952"

(Total Eclipse of the Sun, February 25, 1952 and June 30, 1954, Transactions of the Expedition to Observe Solar Eclipses) Moscow, Izd-vo AN SSSR, 1956. 357 p.

KARLOV, N. V., CHIKHACHEV, B. M. (FIAN, Moscow)

"The Sensitivity of Radiometers in the Quantum Range."

report presented at the All-Union Conference on Statistical Radio Physics, Gor'kiy, 13-18 October 1958. (Izv. vyssh uchev zaved-Radiotekh., vol. 2, No. 1, pp 121-127) COMPLETE card under SIFOROV, V. I.)

SOV/109-3-11-12/13

AUTHOR: Chikhachev, B.M.

TITLE: Insertion of a Quantum-mechanical Amplifier in an Ultra-high Frequency Line (Vklyucheniye kvantovo-mekhanicheskogo usilitelya v trakt UVCh)

PERIODICAL: Radiotekhnika i Elektronika, 1958, Vol 3, Nr 11, p 1406 (USSR)

ABSTRACT: It is pointed out that if the gain K of the quantum-mechanical amplifier is sufficiently high, the amplifier can be inserted into an ultra-high frequency system without employing a ferrite gyrator. By employing the amplifier in this manner, the noise power appearing at the input of the amplifier from the receiver of the system will be low in view of a very "loose" coupling between them. On the other hand, since the effective noise of the amplifier is comparatively small, the effective noise temperature of the whole system will be only slightly higher than that of the amplifier itself.

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SOV/109-3-11-12/13

Insertion of a Quantum-mechanical Amplifier in an Ultra-high Frequency Line

There are 5 references, 3 of which are English and 2 Soviet.

ASSOCIATION: Fizicheskiy institut im. P.N. Lebedeva AN SSSR (Institute of Physics imeni P.N. Lebedev of the Ac.Sc.USSR)

SUBMITTED: February 15, 1958

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SOV/109-4-6-19/27

AUTHORS: Karlov, N.V. and Chikhachev, B.M.

TITLE: Sensitivity of a Low-noise Radiometer (in the Quantum Region) (O chuvstvitel'nosti radiometra s malym urovnem sobstvennykh shumov (v kvantovoy oblasti))

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 6, pp 1047 - 1051 (USSR)

ABSTRACT: The intensity of the noise spectrum of a resistance maintained at a temperature T is given by :

$$g(\omega) = \frac{\hbar\omega}{2} + \frac{\hbar\omega}{\exp\frac{\hbar\omega}{kT} - 1} = \frac{\hbar\omega}{2} \operatorname{cth} \frac{\hbar\omega}{2kT} \qquad (2)$$

where $\hbar$ is the Planck constant and
k is the Boltzman constant.

This formula is more complicated than the standard Nyquist equation but it is essential at low temperatures and at high frequencies. From Eq (2), it is seen that

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the quantum effects become important when $\hbar\omega \approx kT$. The problem consists of determining the lowest "perceptible" change in the equivalent temperature of the input noise of a compensation-type radiometer. It is assumed that the input noise is given by Eq (2) and that the amplifier of the radiometer has a power transfer function $A(\omega)$. The noise spectrum at the output amplifier is therefore given by Eq (6). If the amplifier is followed by a square detector, the DC component of the output current is defined by Eq (7). If the bandwidth of the radiometer $\Delta\omega$ is a small fraction of the central frequency ω_o, the output current can be expressed by Eq (8). The average square fluctuation of the noise at the output of the detector is given by Eq (11) or, finally, by Eq (12), where $\Delta\Omega = \pi/2RC$. The symbols R and C represent the resistance and the capacitance of the detector output. The minimum discernible equivalent noise temperature δT can be evaluated from Eq (13). The solution of that is in the form:

Sensitivity of a Low-noise Radiometer (in the Quantum Region)

$$\delta T = \frac{\hbar\omega_o}{k} \frac{1}{\ln\left[1 + \frac{2}{(1+q)\,\mathrm{cth}\,\frac{\hbar\omega_o}{kT} - 1}\right]} - T \qquad (15).$$

This expression differs substantially from the well-known (F.V. Bunkin, N.V. Karlov - Ref 1) equation:

$$\delta T = qT \qquad (16).$$

Thus, it is found that at $\hbar\omega_o \simeq kT$, the sensitivity obtained by Eq (15) is only 20% of that evaluated by Eq (16). The dependence of the sensitivities evaluated from Eqs (15) and (16) on $\hbar\omega_o/kT$ for various values of q is illustrated in Figure 1. The graphs of Figure 2 illustrate the sensitivity δT as a function

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of the noise temperature T . The authors make acknowledgment to F.V. Bunkin for the discussion of the problems considered in this work.
There are 2 figures and 4 references, of which 2 are English and 2 Soviet.

ASSOCIATION: Fizicheskiy institut im. P.N. Lebedeva AN SSSR
(Physics Institute imeni P.N. Lebedev of the Ac.Sc., USSR)

SUBMITTED: February 5, 1958

SOV/109-4-6-20/27

AUTHORS: Karlov, N.V. and Chikhachev, B.M.

TITLE: Sensitivity of a Radiotelescope at Low Input-noise Levels (O chuvstvitel'nosti radioteleskopa pri malykh urovnyakh vkhodnykh shumov)

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 6, pp 1052 - 1056 (USSR)

ABSTRACT: The formulae obtained by the authors in the preceding paper (pp 1047-1051) of this journal permit the determination of the sensitivity of a radiometer in terms of the effective temperature of the antenna and the relating of this quantity to the sensitivity pertaining to the brightness temperature of a celestial object. It is therefore possible to determine the sensitivity of a radiotelescope at small input-noise levels. A radiotelescope is subject to the antenna noise and the noise of its amplifier. The noise spectrum at the input is expressed by:

$$g(\omega,T) + g(\omega,0) = g(\omega,T_B) + g(\omega,T_a) \qquad (1)$$

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where: $g(\omega)$ is given by the accurate Nyquist formula, and T_B and T_a represent the effective temperatures of the internal noise of the radiotelescope and the antenna, respectively.

An increase in the antenna temperature δT_a results in an increase δT of the input temperature; these quantities are related by Eq (2). Eqs (1) and (2) can be written as Eqs (3). From these it is possible to determine the minimum perceptible δT_a if the sensitivity δT is known. The latter is given by Eq (4) (see the preceding paper). The minimum δT_a is therefore given by:

$$\delta T_a = \frac{\hbar\omega}{k} \frac{1}{\ln\left[1 + \frac{2}{q \operatorname{cth} \hbar\omega/2kT_B + (q+1)\operatorname{cth} \hbar\omega/2kT_a - (q+1)}\right]} - T_a \quad (5).$$

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