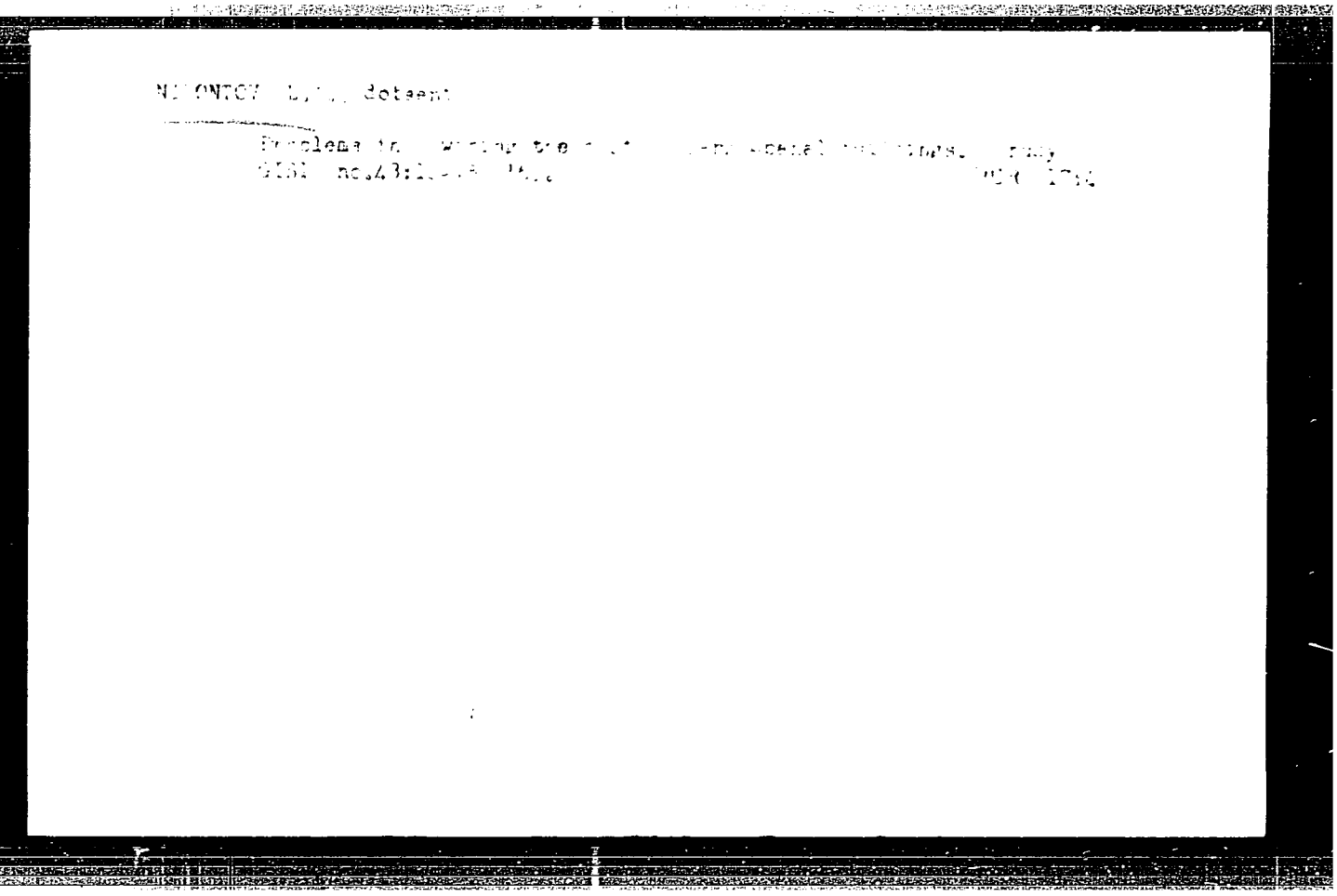
BAKULEV, A.N., akad.; BLOKHIN, N.N.; BOGUSH, L.K.; VELIKORETSKIY, A.N., prof.; VOZNESENSKIY, V.P., prof., zasl. deyatel' nauki [deceased]; GULYAYEV, A.V., prof.; DANILOV, I.V., prof.; DUBOV, M.D., doktor med. nauk; KAZANSKIY, V.I., prof.; LIMBERG, A.A.; LINBERG, B.E., zasl. deyatel' nauki, prof.; MEDVEDEV, I.A., dots.; MESHALKIN, Ye.N., prof.; MIRONOVICH, N.I., doktor med. nauk; NIKOLAYEV, O.V., prof.; NIFONTOV, B.V., doktor med. nauk; PETROVSKIY, B.V.; PRIOROV, N.N.[deceased]; RIKHTER, G.A., prof.; ROVNOV, A.S., prof.; RUFANOV, I.G.; STRUCHKOV, V.I.; SHRAYBER, M.I., doktor med. nauk; GORELIK, S.L., dots., red.; YELANSKIY, N.N., red.; SALISHCHEV, V.E., zasl. deyatel' nauki, prof.[deceased]; RYBUSHKIN, I.N., red.; BUL'DYAYEV, N.A., tekhn. red.

[Surgeon's reference book in two volumes] Sprawochnik khirurga v dwukh tomakh. Pod obshchei red. A.N.Velikoretskogo i dr. Moskva, Medgiz. Vol.1. 1961. 564 p. (MIRA 14:12)

1. Deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR (for Blokhin, Petrovskiy, Priorov, Rufanov, Limberg). 2. Chlen-korrespondent Akademii meditsinskikh nauk SSSR (for Bogush, Struchkov, Yelanskiy).
(SURGERY)



NIFONTOV, M.A., SHAMSUTDINOVA, F.K., KRASIL'NIKOV, D.D., and YEFIMOV, N.N.

"Size Spectrum of Extensive Air Showers at Sea-Level,"

report presented at the Intl. Conference on Cosmic Rays and Earth Storms, Kyoto, Japan, 4-15 Sept 1961.

NIFONTOV, M.A., SHAMSUTDINOVA, F.K., KRYSIL'NIKOV, D.D., and YEFIMOV, N.N.,

"Atmospheric Effects on the Frequency of Extensive Air Showers of Various Sizes,"

report presented at the Intl. Conference on Cosmic Rays and Earth Storms, kyoto, Japan, 4-15 Sept 1961.

KRASIL'NIKOV, D.D.; YFIMOV, N.N.; NIFONTOV, M.A.; ORLOV, V.A.

Relation between the intensity of the ionization burst and the shower intensity in high-pressure chambers. Trudy IAFAN SSSR. Ser. fiz. no.4:15-18 '62. (MIRA 15:12)
(Ionization) (Cosmic rays)

KRASIL'NIKOV, D.D.; YEFIMOV, N.N.; NIFONTOV, M.A.; SHAMSUTDINOVA, F.K.

Relation between the width ratio and the mean intensity of extensive air showers. Trudy IAFAN SSSR. Ser. fiz. no.4:19-21 '62. (MIRA 15:12)

(Cosmic rays)

S/048/62/026/006/018/020
B125/B102

AUTHORS: Krasil'nikov, D. D., Yefimov, N. N., Nifontov, M. A., and Shamsutdinova, F. K.

TITLE: Continuation of the investigation into the intensity spectrum and into the atmospheric effects due to extensive atmospheric showers near sea level

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 6, 1962, 823-830

TEXT: Some results established since 1960 concerning the intensity spectrum and the atmospheric frequency effects due to extensive atmospheric showers of various intensities are reviewed. The function $\varphi(r)$ of the shower particle distribution not dependent on the intensity is assumed to be

$\varphi(r) = 1.84\cdot10^{-3}r^{-1}$ for $r<10$ m, $\varphi(r) = 2.21\cdot10^{-3}r^{-1}\exp(-r/55)$ for $10<r<100$ m, and $\varphi(r) = 0.57\ r^{-2.6}$ for $r>100$ m. The spectrum of vertical intensity at sea level $K(N)dN\sim N^{-\kappa-1}dN$, $\kappa = 1.4$ with a particle number

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Continuation of the investigation ...

$N < 2 \cdot 10^{15}$ and $\varkappa = 1.7$ for $N > 2 \cdot 10^{5}$, is expressed in exponential form on the basis of earlier results and further experimental comparison. This spectrum agrees satisfactorily with the experimental results for ranges between 3.8 and 80 m and with the areas $\sigma = 1.0$, 0.5 and 0.17 m^2 covered by the counter groups. It practically proves that $\varphi(r)$ is independent of the shower intensity. The frequency of the extensive atmospheric showers selected according to the method of the n-fold coincidence is represented as

$$C(n, \sigma) = \int_0^\infty K(N) W[N, n, \sigma, \varphi(r, R)]\, dN,$$

$$W[N, n, \sigma, \varphi(r, R)] = \iint_{(S)} W[N, n', \sigma, \varphi(r, R)]\, dS$$

The observed variations $\delta C(n,\sigma)$ can be caused by the changes $\delta K(N)$ as well as by distortions of the distribution function $\delta\varphi(r,R)$. $\varphi(R)$ is approximated by an exponential function

$$\varphi(r, R) \approx \begin{cases} b_1 r^{-1} e^{-\frac{r}{R}} & (r \leqslant 100 \text{ м}), \\ b_2 r^{-3.6} & (r > 100 \text{ м}); \end{cases}$$

If corrections for the geometrical effects are considered, the following

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Continuation of the investigation ...

is obtained for the barometric coefficient by variation of $C(n,\delta)$ with respect to the parameter R of the function $\gamma(r,R)$ with constant $K(N)$:

$$\beta_T = -\frac{2(\varkappa-1)-\alpha}{T}\Big|_{h=\text{const}},$$

The geometrical temperature effect is given by:

$$\alpha_h(n,\sigma)_{\text{эксп}} = \frac{\delta C(n,\sigma) - \alpha_r(n,\sigma)\cdot\delta H}{\delta h}\,\frac{100}{C(n,\sigma)}.$$

The observed increase in the barometric coefficient with increasing absorption coefficient of the shower particles cannot be explained by an increase of $\varkappa$ with constant absorption coefficient. The present results point to a change of the character of the variations to which extensive atmospheric showers are subject within a range from 10^{14} to 10^{15} ev, due to either the increasing presence of heavy nuclei among the primary particles with $E_0 \gtrsim 10^{15}$ ev or to a change in the composition of secondary particles. There are 4 figures and 1 table.

Card 3/4

Continuation of the investigation ...

ASSOCIATION: Yakutskiy filial Sibirskogo otdeleniya Akademii nauk SSSR, Laboratoriya fizicheskikh problem (Yakutsk Branch of the Siberian Department of the Academy of Sciences USSR, Laboratory of Physical Problems)

25808
S/048/61/025/005/022/024
B117/B201

9.2300 (1164, 1160,)

AUTHOR: Nifontov, N. G.

TITLE: Production of monocrystalline films

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 25, no. 5, 1961, 651

TEXT: The present investigation was the subject of a lecture delivered at a symposium on thin ferromagnetic films (Krasnoyarsk, July 4 to 7, 1960). Films of a monocrystalline structure were produced by sputtering suitable metals onto an appropriate backing in high vacuum (Ref. 1: Pinsker Z. G., Difraktsiya elektronov, IX, Izd. AN SSSR, 1949; Ref. 2: Pashley D. W., Phil. Mag., 4, 316 (1959)). It was possible in this way to obtain oriented silver or copper layers, on rocksalt cut without any difficulty. An oriented silver layer served in its turn as a backing for a parallel-oriented monocrystalline copper layer (lattice constants: NaCl - a = 5.64 Å; Ag - a = 4.08 Å; Cu - a = 3.62 Å). A more difficult task is that of obtaining oriented germanium films, since the backings must be heated up to temperatures as high as 500°C during sputtering. The stratum

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already starts evaporating at this temperature. For this reason, a backing made of calcium fluoride F_2Ca was chosen. It is similar to germanium as to crystalline structure and lattice constant (Ge - a = 5.66 Å; F_2Ca - a = 5.46 Å), but, in addition, withstands higher temperatures. The experiments were conducted in a special chamber of an electron diffraction camera (Ref. 4: Marucchi J., Nifontoff N., Compt. rend., 249, 435 (1959)). This chamber, equipped for sputtering and for a continuous observation of this process was mounted inside the housing of the system. It was equipped with a heated backing holder and an ion source (10 kv). With the aid of the latter it was possible to keep the specimen surface well cleaned, and the depositing layer could be detached by the whole thickness. The experimental conditions were recorded by an automatic 6-channel potentiometer. The system described made it possible to obtain parallel-oriented germanium layers several microns thick on a fluoride cut ((111) plane). These layers furnished very accurate diffraction patterns. Unfortunately, points were additionally observed on these diffraction patterns, that pointed to twinning in the film (Ref. 2). Further experiments are to serve the purpose of finding conditions under which twinning can be avoided during

Production of monocrystalline films

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the sputtering operation. [Abstracter's note: Essentially complete translation.] There are 4 references: 1 Soviet-bloc and 3 non-Soviet-bloc.

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25809

S/048/61/025/005/023/024
B117/B201

24.2130 (1158, 1160, 1137)

AUTHOR: Nifontov, N. G.

TITLE: Some electrical properties of very thin metal films

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 25, no. 5, 1961, 652-654

TEXT: The present investigation was the subject of a lecture delivered at a symposium on thin ferromagnetic films (Krasnoyarsk, July 4 to 7, 1960). The author studied the electrical properties of very thin gold, silver, copper, and germanium films. The films were sputtered to chemically pure amorphous quartz backings with polished surfaces. The device made it possible to sputter an electrode pair with a spacing of 0.01 mm and to apply a thin test film to this surface without changing the vacuum ($5 \cdot 10^{-6}$ om Hg) around the specimen. The crucible containing the metal was preheated under a closed special screen. As soon as the resistance of the film attained the pre-determined value sputtering was terminated by closing the screen. This resistance is checked on the screen of a double-ray oscilloscope. After stabilization of the film resistance, deviations

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from Ohm's law were measured by gradually increasing and decreasing the d-c voltage at the foil. Measurements were made by means of a special bridge circuit. Simultaneously, electric low-frequency fluctuations (noises) were measured in these films between 500 and 10,000 cycles/sec. Silver films were studied the most thoroughly (Ref. 5: Uny C., Nifontoff N., Compt. rend., 246, 906 (1958)). The films were not always stable at the beginning and their resistance rapidly increased in many cases (type III - very thin films). Experience has shown, however, that if a small amount of silver is sputtered prior to the application of the film, the finished film is very stable (Type II - thin films. The effective thickness of silver is about 100 Å). The curve 6 in Fig. 1 shows the aging of such a film as well as the change of resistance. Curve 8 shows detailed results from one of the series of measurements where the deviations from Ohm's law were measured. It can be seen that during the first cycle, at the first strong increase of voltage, a certain irreversible change of resistance occurs. In the same series of measurement further phenomena, however, were reversible. This is also shown in Fig. 2 where the voltage-current characteristics are given for the same series of measurements (R_s - surface resistivity of the films). All reversible characteristics which

Some electrical properties of very...

were obtained in different series of measurement on one and the same film are similar. Gold films obtained by normal sputtering (Ref. 6: Uny C., Compt. Rend., 248, 1655-(1959)) are extremely unstable and their resistance rapidly increases. Films to which gold had been previously sputtered are more stable. With previous sputtering of silver they are as stable as the silver films. Copper films are stable also without previous treatment. Their resistance slowly increases with time. The deviations from Ohm's law are lower at the same voltages, and no irreversible processes can be observed. In germanium films these properties are even more distinct (Ref. 7: Uny C., Compt. rend., 249, 645 (1959)). It was found that a close relationship exists between the change of the electric low-frequency noises and the change of resistance. Reversible as well as irreversible characteristics were ascertained for noises. The strongest noises were observed in gold, weaker ones in silver, and poorly measurable ones in copper and germanium. The great importance of the previously applied atomic layer and the chemical activity of the metal investigated seems to confirm the hypothesis on the effect of the conducting layer on conductivity established by the author. On the other hand, the possibility of producing stable thin-layered nonlinear resistors should be emphasized.

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Some electrical properties of very...

There are 4 figures and 7 references: 1 Soviet-bloc and 6 non-Soviet-bloc.

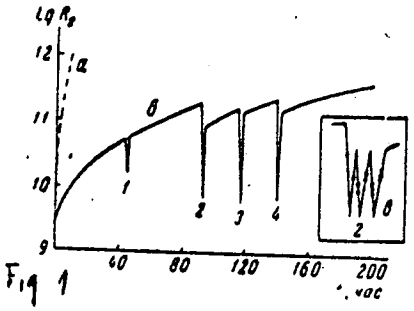

Fig 1

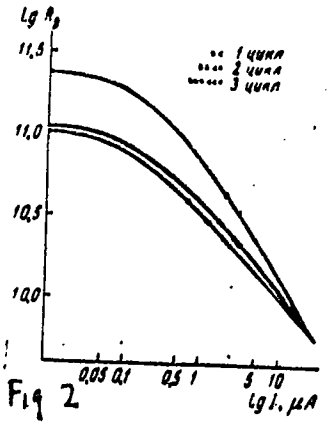

Fig 2

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L 55112-65 EWT(m)/EWP(t)/EWP(b) IJP(c) JD

ACCESSION NR: AP5014884 UR/0142/65/008/002/0213/0221 13
621.382 B

AUTHOR: Kuznetskiy, V. V.; Nifontov, N. G.; Rodionov, Yu. P.; Rudnev, V. V.

TITLE: Investigation of a surface varactor having a metal-titanium-dioxide-silicon structure

SOURCE: IVUZ. Radiotekhnika, v. 8, no. 2, 1965, 213-221

TOPIC TAGS: varactor, metal titanium dioxide silicon varactor

ABSTRACT: The principle of operation of a surface varactor is examined. The following parameters of surface varactors with a titanium dioxide dielectric are measured: capacitance vs frequency (10^5—10^6 cps) at zero bias; capacitance vs bias voltage (−4+5 v) at 10^3, 10^4, 10^5, 10^6 cps; loss resistance vs bias voltage (−3+1 v) at 10^4—10^6 cps. Q-factor vs frequency and vs bias voltage curves were estimated from the above measured data. It is found that: 1) The capacitance-range factor

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ACCESSION NR: AP5014884

reaches high values of about 15 or 20, and in some specimens, over 100. 2) The varactor capacitance decreases with the increasing frequency, but starting from 10^6 cps, the capacitance remains practically constant. 3) The loss resistance is nonlinear and frequency dependent. 4) The Q-factor is very low (2—9) within the actual capacitance-variation range. Orig. art. has: 10 figures. [03]

ASSOCIATION: none

SUBMITTED: 07Oct64 ENCL: 00 SUB CODE: EC

NO REF SOV: 003 OTHER: 010 ATD PRESS: 4024

Card 2/2

L 15550-66 EWT(1)

ACC NR: AP6002082 SOURCE CODE: UR/0139/65/000/006/0061/0066

AUTHORS: Petrov, B. K.; Nifontov, N. G. 39 B

ORG: Voronezh State University (Voronezhskiy gosuniversitet)

TITLE: On the influence of fast states on the capacitance of a structure consisting of a semiconductor, a dielectric film, and a metal

SOURCE: IVUZ. Fizika no. 6, 1965, 61-66

TOPIC TAGS: continous spectrum, varactor diode, semiconductor band structure, variable capacitor

ABSTRACT: The authors analyze the influence of fast states with arbitrary energy spectrum, both discrete and quasicontinuous, on the capacitance of a varactor, assuming that the conductivity of the dielectric layer is infinitesimally small and that the leakage through the dielectric can be neglected. It is also assumed that the period of the oscillations is much longer than the relaxation time of the fast states, so that the latter can enter in equilibrium with the

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L 15559-66

ACC NR: AP6002082 O

space-charge region even at low frequencies. Earlier investigations of this subject were confined to frequencies in which the fast states were inactive, or to fast states with discrete spectra alone. A theoretical expression is obtained for the relations between the capacitance of such a structure and the curvature of the bands on the surface of the semiconductor for low frequencies. The effects of the slow states is also considered. Methods of experimentally verifying the results must include simultaneous measurements of the capacitance and of the field effect on structures of this type. Such a method is claimed to yield unambiguous results. By way of an example, a structure consisting of Si-SiO_2-metal, with the silicon being of the p-type and having a resistivity 100 ohm-cm, and the insulating film having a thickness of 200 Å and a dielectric constant 3.84. Comparison of the results with calculations in which the fast states are not taken into account shows that the fast states give rise to a capacitance peak, which can be used to calculate the number of discrete levels of fast states, their energy positions, and their concentration. Orig. art. has: 16 formulas and 2 figures

SUB CODE: 09/ SUBM DATE: 08Jan64/ ORIG REF: 001/ OTH REF: 007

Card 0 1/2

KONSTANTINOV, V.I.; SUTOVSKIY, S.M.; Prinimali uchastiye: MARTIROSOV, Zh.G.; RUVINOV, E.S.; GULIYEV, A.M.; KITUSHINA, I.A.; NIFONTOV, P.R.; CHUDAKOV, V.A.

Automatic measurement of chlorine concentration in anodic gas. TSvet. met. 36 no.5:45-51 My '63. (MIRA 16:10)

1. Nauchno-issledovatel'skiy i proyektnyy institut "Neftekhimavtomat" (for Martirosov, Ruvinov, Guliyev, Kitushina).

NIFONTOV, Roman Vladimirovich; YERMAKOV, N.P., redaktor; GODOVIKOVA, L.A., redaktor; GUROVA, O.A., tekhnicheskiy redaktor.

[Principles of prospecting, surveying and calculating deposits of piezooptic minerals; manual of methods] Osnovy poiskov, razvedki i podscheta zapasov p'ezoopticheskikh mineralov; metodicheskoe rukovodstvo. Sost.R.V.Nifontov. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po geologii i okhrane nedr. 1955. 93 p. (MLRA 8:11)

(Prospecting)

GOTMAN, Ya.D.; NIFONTOV, R.V. [deceased]

Formation processes of sedimentary uranium deposits and prospecting criteria. Geol. rud. mestorozh. 6 no.3:69-81 My-Je '64 (MIRA 18:1)

NIFONTOV, S. N. (Vet.)

"The significance of intrauterine invasion in the epizootiology of toxocarosis of dogs."

SO: Veterinariya 26 (10), 1949, p. 32

VOSHCHANOV, K.P., inzh.; NIFONTOV, T.Ye., inzh.; GUZOV, S.G., kand. tekhn. nauk

Consultations on readers' letters. Svar. proizv. no.1:47-48 Ja '64. (MIRA 17:1)

1. TSentral'nyye eksperimental'nyye svarochnyye masterskiye Vsesoyuznogo nauchno-issledovatel'skogo instituta avtogennoy obrabotki metallov (for Voshchanov). 2. Leningradskiy metallicheskiy zavod im. XXII s"yezda Kommunisticheskoy partii Sovetskogo Soyuza (for Nifontov). 3. Vsesoyuznyy nauchno-issledovatel'skiy institut avtogennoy obrabotki metallov (for Guzov).

NIFONTCV, T.Ye., inzh.

Machine for cleaning and winding the wire. Svar. proiz.
no.9:37 S '64. [illegible]

1. Leningradskiy metallicheskiy zavod im. XXII s"yezda
Kommunisticheskoy partii Sovetskogo Soyuza.

NIFONTOV, V.A.

NIFONTOV, V.A.

Conference on rationalization and invention. Tekst. prom. 14 no.5:4 My '54. (MLRA 7:6)
(Textile industry)

NIFONTOV, V.A.

Efficiency experts of the Kostroma flax industries. Tekst.prom. 15 no.7:32-34 Jl'55. (MLRA 8:10)

1. Predsedatel' komissii po massovomu rabochemu izobretatel'stvu kostromskoy pryadil'no-tkatskoy fabriki "Znamya truda" (Kostroma--Flax)

NIFONTOV, V.A.

For improvement in machine-shop operations. Tekst.prom.15 no.9: 28-30 S '55. (MLRA 8:11)

1. Konstruktor otdela glavnogo mekhanika fabriki "Znamya truda"
(Machine-shop practice)

NIFONTOV, V.A.

Improvement in technical information. Tekst.prom. 16 no.9:67-69 S '56. (MLRA 9:12)

1. Konstruktor Kostromskoy pryadil'no-tkatskoy fabriki "Znamya truda."
(Textile industry)

NIFONTOV, V.A.

Catalog of interchangeable parts for cotton spinning equipment. Reviewed by V.A. Nifontov. Tekst.prom. 16 no.12:63-65 D '56. (MIRA 10:1)

1. Konstruktor kostromskoy pryadil'no-tkatskoy fabriki "Znamya truda." (Spinning machinery) (Cotton machinery)

NIFONTOV, V.A.

"Health week" in factories. Tekst.prom. 18 no.10:73 O '58.
(MIRA 11:11)
(Kostroma Province--Textile workers--Diseases and hygiene)

NIFONTOV, V.A.

Artistic designs made by Kostroma Province textile workers. Tekst. prom. 19 no.4:92 Ap '59. (MIRA 12:6)
(Kostroma Province--Textile industry)

NIFONTOV, V.A., starshiy nauchnyy sotrudnik

Mechanism of the self-winding of a narrow ribbon on ribbon looms. Tekst.prom. 20 no.5:62-64 My '60.
(MIRA 13:8)

1. Nauchno-issledovatel'skaya laboratoriya Kostromskogo tekstil'nogo instituta.
(Looms) (Ribbons)

KLANTOV, V.A., starshiy nauchnyy sotrudnik

Practices of the Kostroma Textile Institute. Tekst. prom. 21 no.10:25 O '61. (MIRA 14:10)

1. Nauchno-issledovatel'skaya laboratoriya Kostromskogo tekstil'nogo instituta.
(Kostroma—Textile research)

NIFONTOV, V.A., starshiy nauchnyy sotrudnik

Encounter of designers with textile representatives. Tekst. prom. 21 no.12: 16 D '61. (MIRA 15:2)

1. Kostromskiy tekstil'nyy institut.
(Textile industry)
(Clothing industry)

L 05642-67 EWT(m) IJP(c)

ACC NR: AP6021620 (N) SOURCE CODE: UR/0089/66/020/003/0206/0210

AUTHOR: Budker, G. I.; Kiselev, A. V.; Kon'kov, N. G.; Naumov, A. A.; Nifontov, V. I.; Ostreyko, G. N.; Panasyuk, V. S.; Petrov, V. V.; Yudin, L. I.; Yasnov, G. I.

ORG: none

TITLE: Starting of the B-3M synchrotron, used as an injector for a positron-electron storage ring

SOURCE: Atomnaya energiya, v. 20, no. 3, 1966, 206-210

TOPIC TAGS: synchrotron, ~~particle~~ linear accelerator, storage ring, cyclotron magnet/ VEPP-2 storage ring, B-3M synchrotron, ILU linear accelerator

ABSTRACT: The article describes an adjustment of a synchrotron with external single-turn injector and single-turn emission of electrons and with a specially constructed electromagnet. This pulsed synchrotron is designed to serve as an injector for the VEPP-2 storage ring for colliding positron and electron beams, designed and described by one of the authors (G. I. Budker, et al., in Trudy Mezhdunarodnoy konferentsii po uskoritelyam, Dubna, 1963 [Transactions of International Conference on Accelerators, Dubna, 1963], Atomizdat, 1964, p. 1065, and elsewhere). The article describes the synchrotron itself (Fig. 1), the magnet, two variants of capture into synchronism, and various test procedures. The injector for the B-3M synchrotron was an ILU pulsed linear accelerator. The injected electrons had energy 1 - 1.5 Mev (pulse duration ~7 nsec) and were accelerated to 50 Mev. The B-3M synchrotron makes it possible to

Card 1/2 UDC: 621.384.612.12

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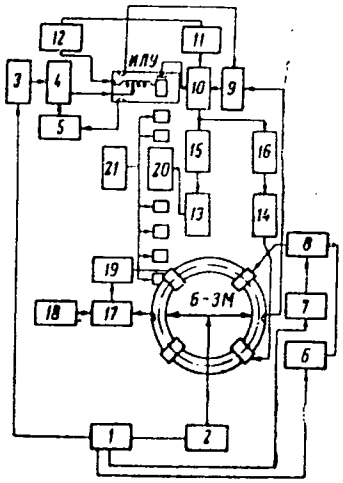
ACC NR: AP6021620

Fig. 1. Block diagram of the apparatus of the B-3M synchrotron. 1 - Starting-pulse block, 2 - electromagnet excitation, 3 - hf generator modulator, 4 - injector hf generator, 5 - phase shifter, 6,7 - modulators, 8 - amplifier, 9 - computer, 10 - phase fixing block, 11 - delay line, 12 - electron gun pulse generator, 13 - electron shutter pulse generator, 14 - inflector pulse generator, 15,16 - delay line, 17 - voltage comparison, 18 - reference voltage, 19 - deflector pulse generator, 20 - electronic shutter, 21 - channel electron supply block.



operate the VEPP-2 storage ring at energies 100 - 130 Mev and an electron current ~100 mA, at an approximate repetition frequency 1 cps. The ILU injector was recently replaced by one with higher injection energy (2.5 - 3 Mev) and longer injection pulse (15 nsec). This increased the number of electrons in the storage ring by approximately a factor of 10. Orig. art. has: 10 figures.

SUB CODE: 20/ SUBM DATE: 22Nov65/ ORIG REF: 006

Card 2/2

NIFONTOV, YU. L.

(8)

S/120/62/000/004/002/047
E032/E514

AUTHORS: Strel'tsov, N.S., Fedotov, G.M., Rozhdestvenskiy, B.V., Gustov, G.K., Gamulina, V.Ya., Nifontov, Yu.L., Indyukov, N.N., Bezgachev, Ye.A. and Kuryshev, V.S.

TITLE: The construction of the electromagnet for the 7 GeV proton synchrotron

PERIODICAL: Pribory i tekhnika eksperimenta, no.4, 1962, 15-19

TEXT: A description is given (including sectional drawings) of the electromagnet. The electromagnet incorporates four types of magnetic sections, namely: 1) bending sections for radial focusing (total number 42), 2) bending sections for radial defocusing (total number 53), 3) bending sections for radial defocusing, located at points of beam extraction (total number 3), and 4) quadrupole lenses with zero field on the orbit (total number 14). The magnetic circuits of all the sections are assembled from insulated steel sheets (the chemical composition of the steel is similar to 3312 (E2) steel). The hyperbolic pole faces were made on a special milling machine and have a curvature of 2780 cm in the horizontal plane. The system used to retain the

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steel sheets in position was such that the deformation of the hyperbolic face was ±(0.1-0.15)mm after two days and ±0.03 mm after two months. The design of the neutral pole faces of the bending magnets was such that their deformation and the electrodynamic stresses did not exceed 0.05 mm. The main winding consists of 48 turns connected in series and arranged in ten sections. The winding is made of rectangular copper piping which was manufactured by the Leningrad factory "Krasnyy Vyborzhets". In addition to the main winding, there are three compensating coils which are used to correct the magnetic field. Water cooling is used and the insulation is sufficient to withstand 2 kV. The extracting magnets, which are used to extract the beam into the experimental area, consist of a main coil (8 turns; copper piping) and two compensating coils (8 turns each; copper piping). Finally, the quadrupole lenses carry an 18 turn main winding and an 18 turn auxiliary winding, both in the form of copper piping. In order to facilitate the positioning of all the electromagnets, each of them carried special markers which were used to relate their position to the appropriate points

on the basic geodesic grid. Special mechanisms were used to adjust the magnets. They can be adjusted by ±2 cm in the vertical plane to an accuracy of 0.001 cm and by ±0.5 cm in the radial direction to an accuracy of 0.002 cm. The former adjustment is made with the aid of special wedges and the latter by a screw-driven mechanism. The azimuthal adjustment is made by simple wedge devices and can be achieved to an accuracy of ±0.05 cm. There are 6 figures.

ASSOCIATIONS: Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury GKAE (Scientific Research Institute of Electrophysical Apparatus GKAE) and Institut teoreticheskoy i eksperimental'noy fiziki GKAE (Institute of Theoretical and Experimental Physics GKAE)

SUBMITTED: April 6, 1962

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001136910016-3"

S/799/62/000/002/005/011

AUTHOR: Nifontov, Yu. V.

TITLE: Selection of the parameters of a ferrite transistor unit.

SOURCE: Akademiya nauk SSSR. Institut elektronnykh upravlyayushchikh mashin. Tsifrovaya tekhnika i vychislitel'nyye ustroystva. no. 2. 1962, 75-87.

TEXT: The paper sets forth an engineering method for the calculation of ferrite transistor units (FTU) which, because of the nonlinearity of the characteristics of the transistors and the non-singlevalued dependence of their induction on the voltages in the ferrite cores, is somewhat complex. The new method, despite its use of a number of assumptions, yields FTU parameters that determined the conditions required for an increase in speed and improved noise resistance in such equipments. The FTU consist of a ferrite core with a rectangular hysteresis loop (RHL) and a transistor with a grounded emitter. The $+B_r$ state of magnetization of the core signifies "1", the $-B_r$ state is "0". The core has 4 (or another number of) windings, 2 of which serve for the recording and reading of the information (W_o, W_1), one for the transistor control (W_b), and one for the positive feedback (W_{fb}). The pulse duration is reduced and the noise resistance increased by applying a positive shift $+U_{sh}$

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at the base of the triode, and a resistance R_e can be included in the emitter circuit. The principle of operation of the unit is described. The energy relationships within the FTU are clarified by means of the energy-balance equation from which follows an equation for the energy expended in the magnetic polarity reversal (MPR) of the cores. The latter is then analyzed to find the optimal value of the collector current. The result is an equation relating the collector current, the time of the MPR, and the duration of the pulse front with the energy that can be expended on the MPR of the core. The resulting equation is then simplified, since the calculations are ordinarily made relative to the MPR of the units for "0" or for "1" only. The duration of the MPR of the cores is obtained by the simultaneous solution of 2 equations for τ, namely, the energy equation just obtained, and an equation that relates the energy with its parameters and the time of MPR. The relationship used for the determination of the optimal collector current and corresponding MPR time is then used to determine the suitable number of windings. Analytical criteria for the determination of the pulse-delay time and the noise resistance of the unit are provided. A complete numerical example is worked out in an appendix. The method proposed does not afford a universal formula for the calculation of the parameters of FTUs. The procedure, essentially, presupposes that the basic parameters are prescribed and the types of cores and transistors are given, whereupon the calculation determines the winding data and provides the means for a verification of whether the unit

satisfies the requirement. However, inasmuch as the initial data are not entirely arbitrary, the process of finding the optimal configuration is reasonably brief. The method is effective in avoiding a great number of tests for the selection of the number of coil windings and helps to accelerate the operation and increase the load capacity and noise resistance of the units. Experimental verification of units designed by this method provide a good agreement between calculated and measured data. There are 7 figures, 1 table, and 2 Russian-language Soviet references.

Thanks are expressed to N. N. Lenov for his guidance, and the participation of V. S. Soskov and S. F. Danilov in the experiments is acknowledged.

L 57809-65 EEC-4/EEC(k)-2/EWT(d)/EEC(t)/ Pg-4/Pl-4/Pn-4/Pt-7 WS-4
ACCESSION NR: AP5015349 UR/0286/65/000/009/0095/0095
681:142

AUTHOR: Lenov, N. N.; Davydovskiy, A. K.; Korolev, N. A.; Nifontov, Yu. V. 52 B

TITLE: Device for communicating with controlled objects. Class 42, No. 170766

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 9, 1965, 95

TOPIC TAGS: digital computer, component interrogation element, command element, storage matrix, matrix

ABSTRACT: The proposed device is intended for transmission of command and interrogation signals by digital control computers. The memory-cell matrix design includes a double system of buses for selecting two (switching and interrogation) storage cores of any cell through direct and inverse addresses. The switching core is coupled through a shaper to the controlled object. The shaper is in turn connected to a release circuit servicing the entire matrix. The interrogation core is con-

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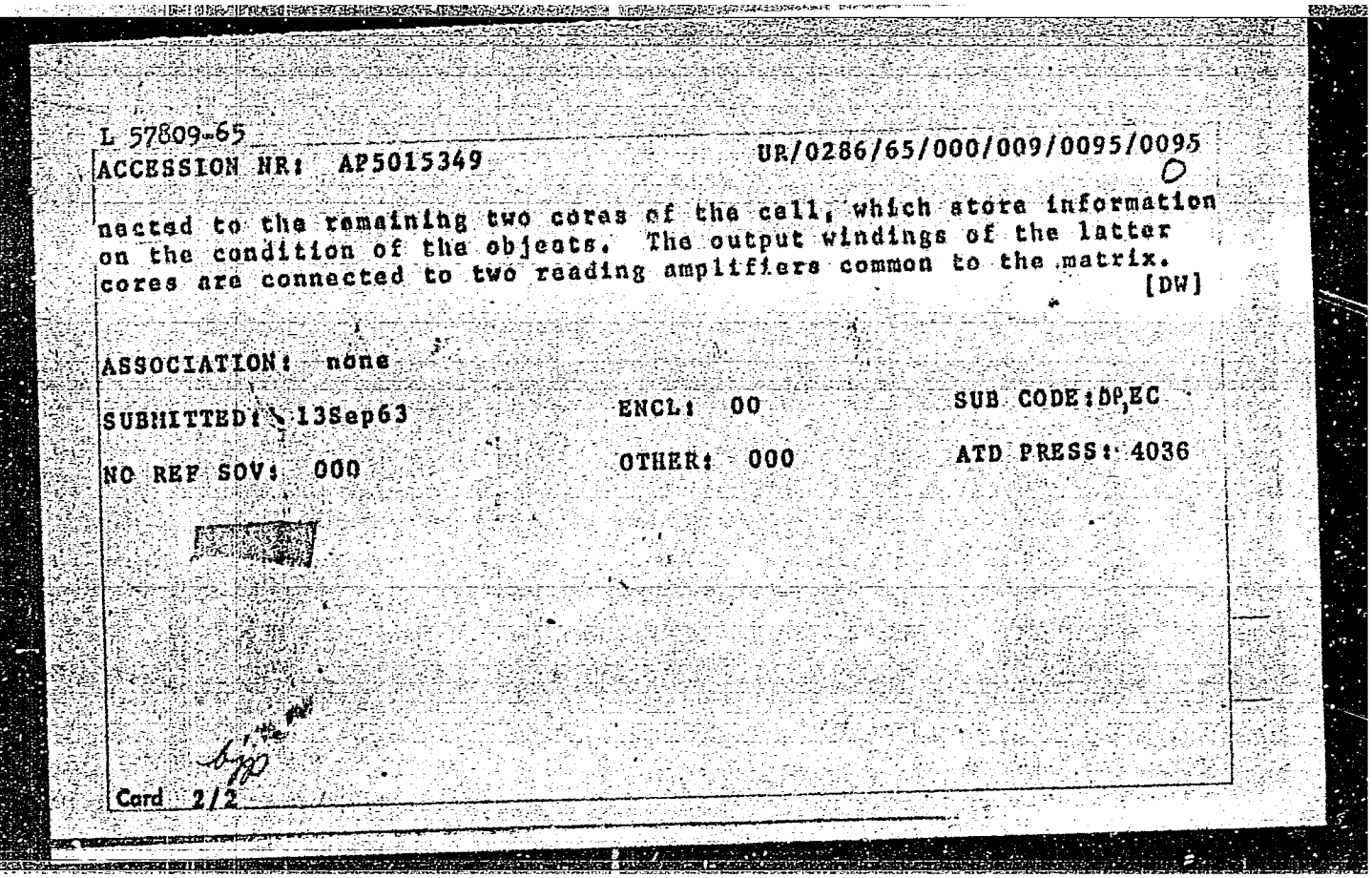

L 57809-65

ACCESSION NR: AP5015349 UR/0286/65/000/009/0095/0095

nected to the remaining two cores of the cell, which store information on the condition of the objects. The output windings of the latter cores are connected to two reading amplifiers common to the matrix. [DW]

ASSOCIATION: none

SUBMITTED: 13Sep63 ENCL: 00 SUB CODE: DP, EC

NO REF SOV: 000 OTHER: 000 ATD PRESS: 4036

Card 2/2

L 21980-66 EWP(k)/EWT(d)/EWP(h)/T/EWP(l)/EWP(v) IJP(c) GG/BB

ACC NR: AP6007868 SOURCE CODE: UR/0103/66/000/002/0082/0092

AUTHOR: Davydovskiy, A. K. (Moscow); Korolev, N. A. (Moscow); Lenov, N. N. (Moscow); Mifontov, Yu. V. (Moscow)

ORG: none

TITLE: A coupler from a digital computer to controlled plants

SOURCE: Avtomatika i telemekhanika, no. 2, 1966, 82-92

TOPIC TAGS: digital computer, computer control system, control system equipment, coupling circuit

ABSTRACT: The main function of a coupler of a control computer is to distribute and issue the control commands of the "switch" type ("switch on," "switch off") to controlled plants according to the address selected by the control computer. The coupler must also receive information on the state of each controlled plant (switched on or off). The present article describes a coupler for which the present authors obtained a patent (Ustroystvo svyazi s upravlyayemymi ob"yektami. Avtorskoye svidetel'stvo No. 170766 s prioritetom ot 13. IX. 1963. Byull. izobret., no. 9, 1965). The coupler assures reliability in the control of the plant by means of the control computer, prevents the possibility of issuing

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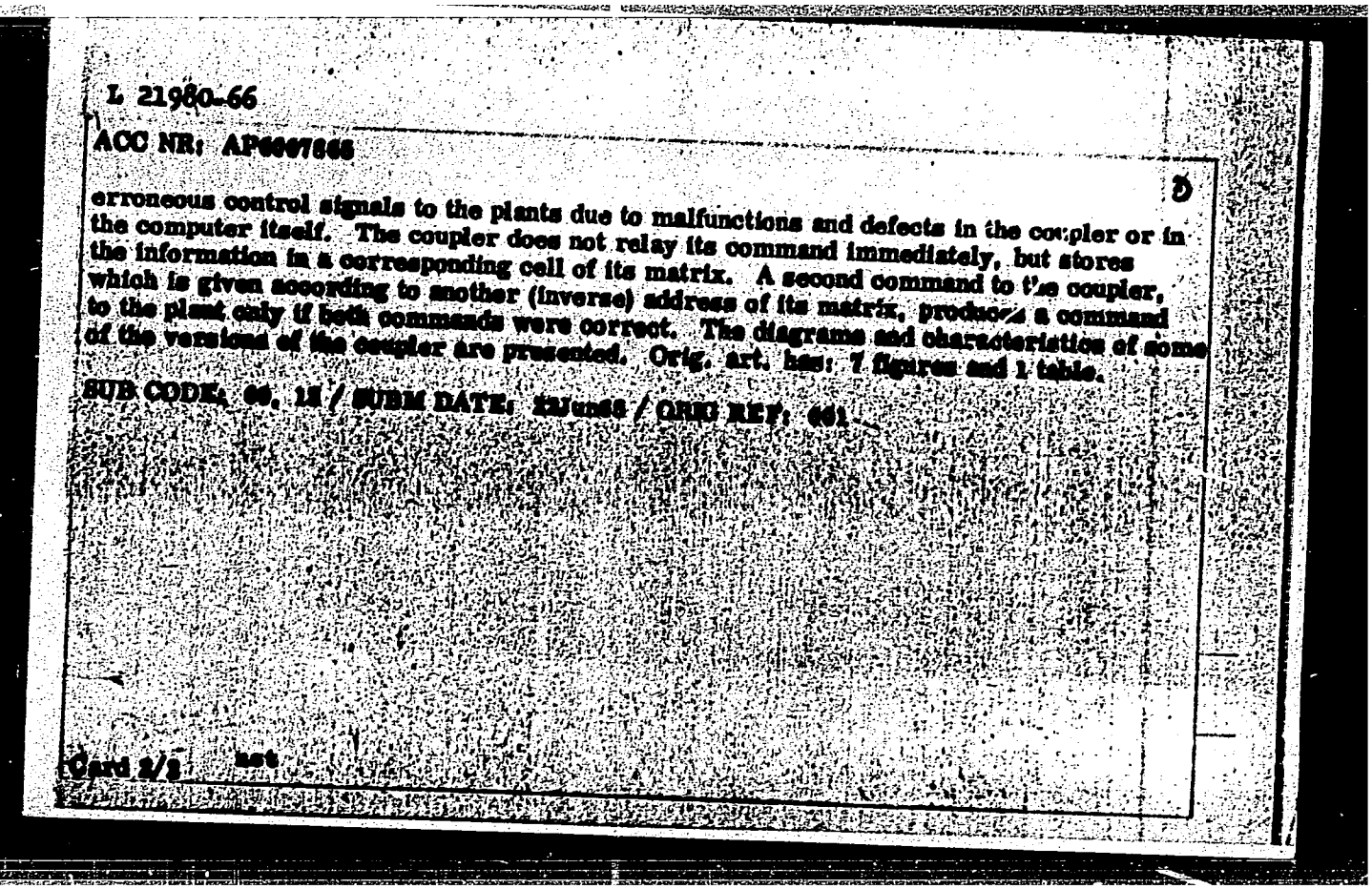

L 21980-66

ACC NR: AP6007866

erroneous control signals to the plants due to malfunctions and defects in the coupler or in the computer itself. The coupler does not relay its command immediately, but stores the information in a corresponding cell of its matrix. A second command to the coupler, which is given according to another (inverse) address of its matrix, produces a command to the plant only if both commands were correct. The diagrams and characteristics of some of the versions of the coupler are presented. Orig. art. has: 7 figures and 1 table.

SUB CODE: 09, 12 / SUBM DATE: 24Jun65 / ORIG REF: 001

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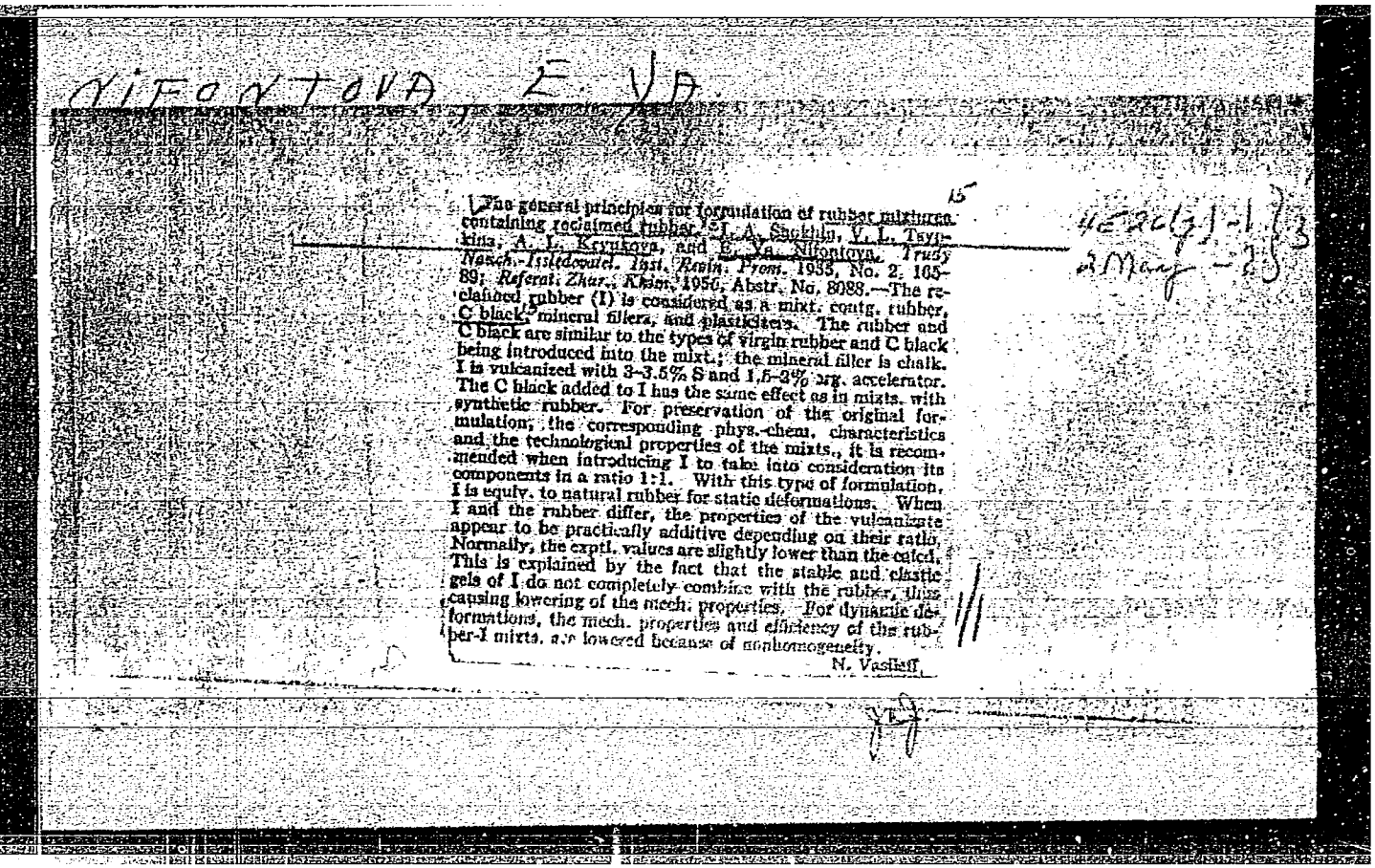


NIFONTOVA, Z. VA.

15

The general principles for formulation of rubber mixtures containing reclaimed rubber. I. A. Shukhin, V. L. Tsygankina, A. L. Kryukova, and Z. Ya. Nifontova. *Trudy Nauch.-Issledovatel. Inst. Rezin. Prom.* 1955, No. 2, 165–89; *Referat. Zhur., Khim.* 1956, Abstr. No. 8088.—The reclaimed rubber (I) is considered as a mixt. contg. rubber, C black, mineral fillers, and plasticizers. The rubber and C black are similar to the types of virgin rubber and C black being introduced into the mixt.; the mineral filler is chalk. I is vulcanized with 3–3.5% S and 1.5–2% org. accelerator. The C black added to I has the same effect as in mixts. with synthetic rubber. For preservation of the original formulation, the corresponding phys.-chem. characteristics and the technological properties of the mixts., it is recommended when introducing I to take into consideration its components in a ratio 1:1. With this type of formulation, I is equiv. to natural rubber for static deformations. When I and the rubber differ, the properties of the vulcanizate appear to be practically additive depending on their ratio. Normally, the exptl. values are slightly lower than the calcd. This is explained by the fact that the stable and elastic gels of I do not completely combine with the rubber, thus causing lowering of the mech. properties. For dynamic deformations, the mech. properties and efficiency of the rubber-I mixts. are lowered because of nonhomogeneity.

N. Vasiliff

NIFONTOVA, M.V. (Moskva)

Spectral determination of small quantities of titanium in dust. Gig. truda i prof. zab. 4 no.1:51-53 Ja '60. (MIRA 15:3)

1. Institut sanitarii i gigiyeny imeni F.F. Erismana, Moskva).
(SPECTRUM ANALYSIS)
(TITANIUM--SPECTRA)
(DUST)

ROSHCHIN, I.V.; NIFONTOVA, M.V.; PROKHOROV, Yu.D.; BAGNOVA,M.D.; KUBLANOVA, P.S.; ILYASOVA, S.V.; BULYCHEV, G.V.

Hygienic characteristics of the dust factor, and health of workers engaged in cleaning boilers of electric stations. Uch.zap.Mosk. nauch.-issl.inst.san.i gig. no.8:64-70'61. (MIRA 16:7)
(LUNGS—DUST DISEASES) (BOILERS)

NIFONTOVA, M.V.

Determination of potassium and sodium in blood and in water by means of flame photometry. Lab. delo 7 no.5:8-12 My '61. (MIRA 14:5)

1. Moskovskiy nauchno-issledovatel'skiy institut sanitarii i gigiyeny imeni F.F.Erismana.
(PHOTOMETRY) (POTASSIUM IN THE BODY)
(SODIUM METABOLISM) (WATER--ANALYSIS)

NIFONTOVA, M.V.; TERNOVSKAYA, L.N.

Spectographic method for determining the amount of lead in the blood. Lab. delo 7 no.12:13-17 D '61. (MIRA 14:11)

1. Moskovskiy nauchno-issledovatel'skiy institut sanitarii i gigiyeny imeni F.F.Erismana.
(BLOOD--ANALYSIS AND CHEMISTRY) (LEAD IN THE BODY)
(SPECTRUM ANALYSIS)

NIFONTOVA, M.V.

Spectrographic method of determining magnesium in the blood. Lab. delo 8 no.2:27-30 F '62. (MIRA 15:2)

1. Moskovskiy nauchno-issledovatel'skiy institut sanitarii i gigiyeny imeni F.F.Erismana.
(MAGNESIUM IN THE BODY) (SPECTROPHOTOMETRY)
(BLOOD--ANALYSIS AND CHEMISTRY)

Petrolatums from Surakhanui crude oil. A. S. VELIKOVSKII AND S. S. NIFONTOVA. *Neftyanoe Khozyaistvo* 17, 71-8(1929).

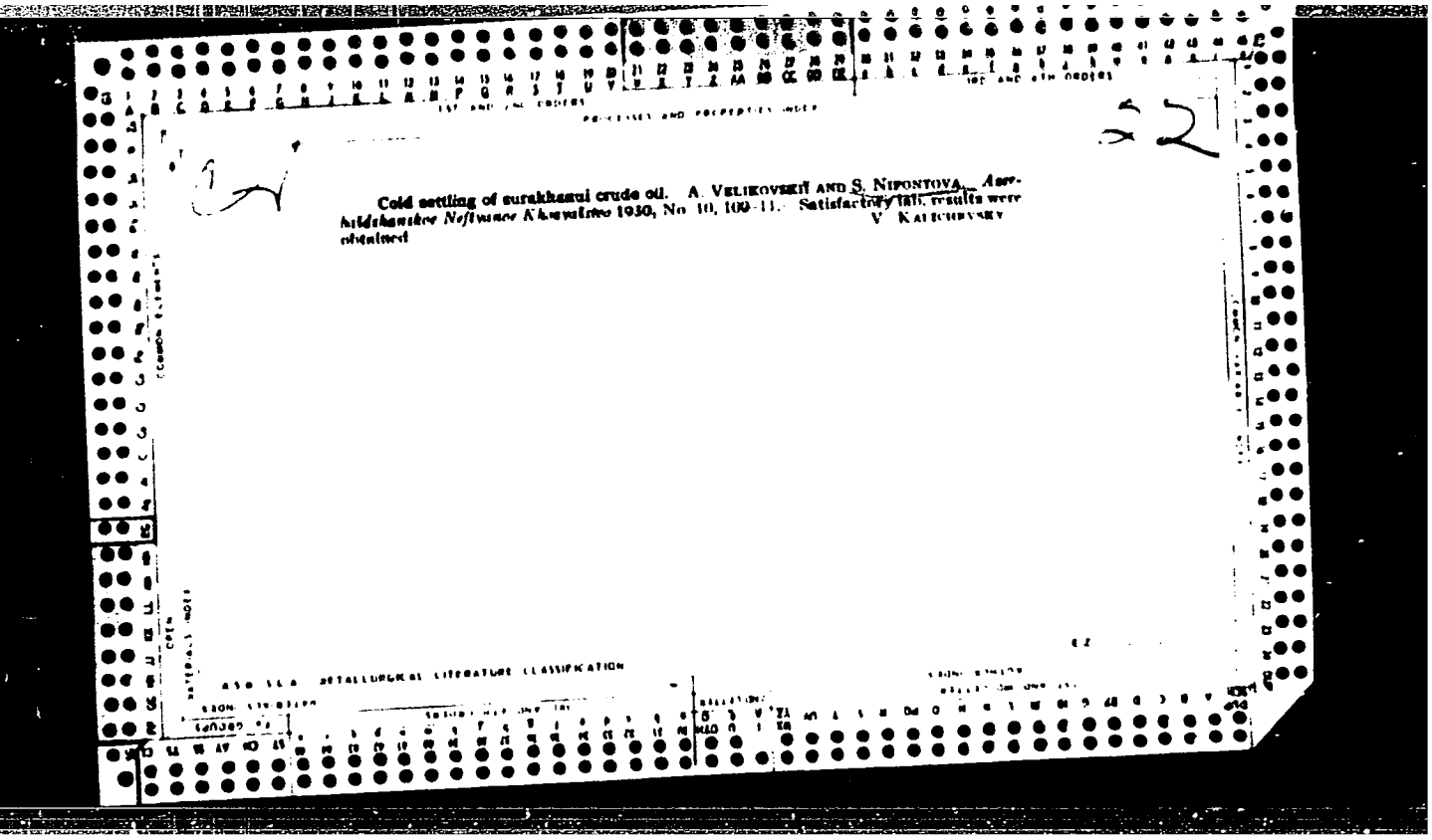
	Sp. gr.	Stammer color	E₅₀	Pensky Martens flash.	Ubbelohde drop test	Free acids mg. KOH	Paraffin, %
S. O. Co. "Snow White"	0.828	181	4.08	215	46.2	0.0100	44.3
Baku White Medicinal		221	0.5	4	40.0	0.2010	21.0
Sinclair "Extra Lily Amber"	0.828	3.0	2.72	183	41.4	0.0104	.
Azneft Baku Yellow		14.0	7.8		39.0	0.1915	20.1

	M. p. of paraffin	Ash, %	Consistency after remelting	Consistency after 3 days	Color of H_2SO_4 after contact with vaseline
S. O. Co. "Snow White"	54.5	0.0004	65	75	dark brown
Baku White Medicinal	50.0	0.0030	25	0	slightly brown
Sinclair "Extra Lily Amber"		0.0040	150	165	black
Azneft Baku Yellow	50.0	0.000	10	3	light brown

The inferiority of Russian petrolatums is due to the want of a fuller's earth treatment and to their high oil content. Paraffins of high melting point improve the properties of petrolatum.

A. A. BOEHTLINGK

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Cold settling of surakhanui crude oil. A. VELIKOVSKII AND S. NIPONTOVA. *Azerbaidzhanskoe Neftyanoe Khozyaistvo* 1930, No 10, 109–11. Satisfactory fals. results were obtained

V KALICHEVSKY

1ST AND 2ND ORDERS

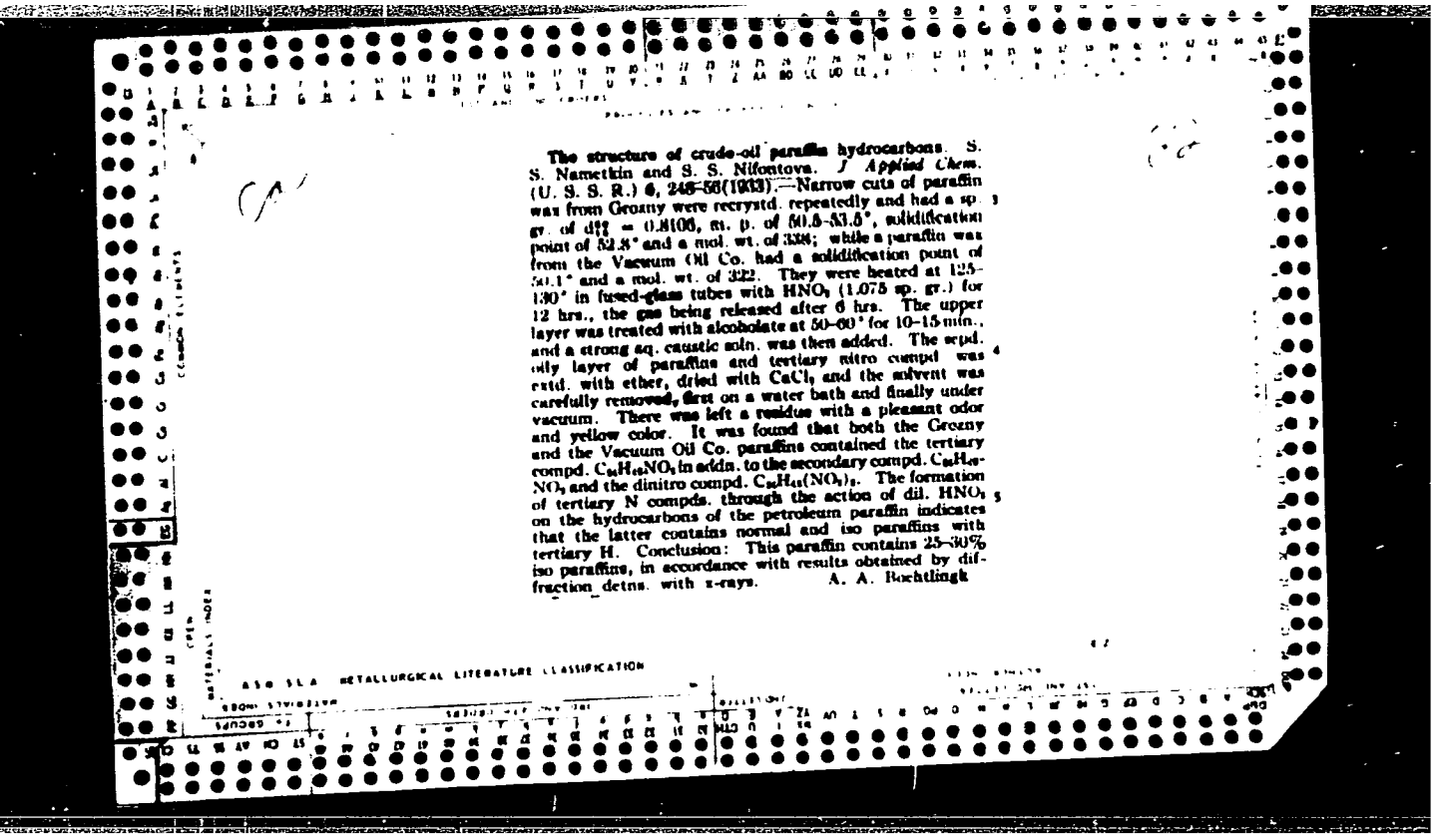
PROCESSES AND PROPERTIES INDEX

22

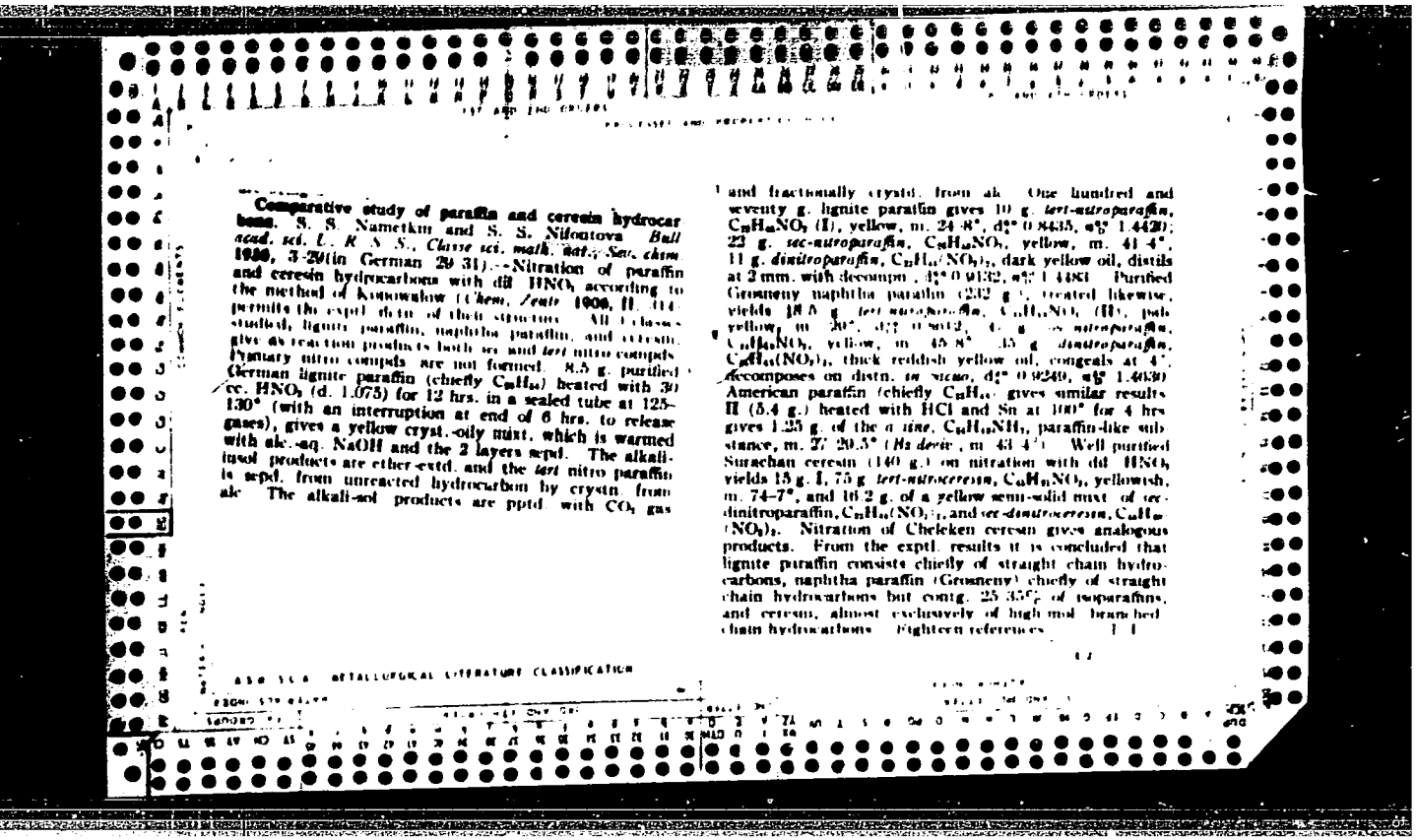
CA

Investigating Sakhalin crude oil. S. S. Nametkin and S. S. Nifontova. Neft. Khozyaistvo 10, 421-2(1930). A sample of crude oil from the river Chakrii had a sp. gr. of 0.943, E_{50} of 4.35, Pensky Martens flash 98°, cold test -15°, and excise resins 57. An Engler distn. yielded 4% below 250°, 13.8% up to 275°, 20% up to 300°, residue 68.0% and loss 3%. This is an asphalt base crude oil without any gasoline fraction and with a very small amt. of kerosene. A vacuum distn. of the residue yielded about 20% of lubricating oil distillate of -5° cold test. The crude oil from Lvangri had a sp. gr. of 0.951, E_{50} of 3.6, P. M. flash 104°, cold test -19° and excise resins 19%. An Engler distn. produced 1% below 250°, 12.8% below 275°, 27.5% below 300°, 70.0% residue and 2.5% loss. A vacuum distn. of the residue yielded about 18% of a lubricating oil distillate of +3.5° cold test, with a probably small content of paraffin. Both crude oils were weathered, and the samples supplied were insufficient to make a complete investigation. A. A. Boehtlingk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

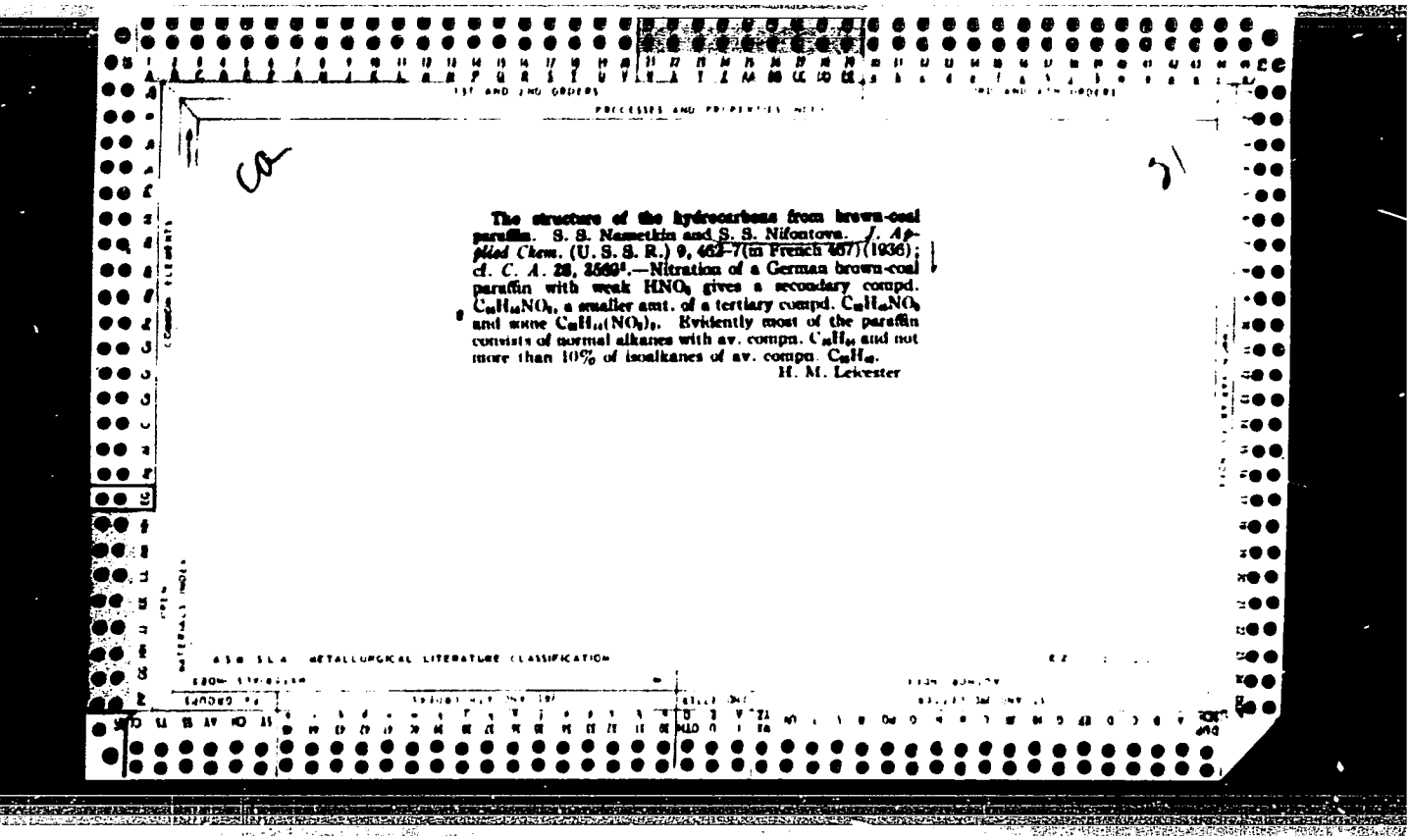


The structure of crude-oil paraffin hydrocarbons. S. S. Namettkin and S. S. Nifontova. *J Applied Chem. (U. S. S. R.)* **6**, 248–56(1933).—Narrow cuts of paraffin was from Grozny were recrystd. repeatedly and had a sp. gr. of d_4^{20} = 0.8106, m. p. of 50.5–51.5°, solidification point of 52.8° and a mol. wt. of 338; while a paraffin was from the Vacuum Oil Co. had a solidification point of 50.1° and a mol. wt. of 322. They were heated at 125–130° in fused-glass tubes with HNO_3 (1.075 sp. gr.) for 12 hrs., the gas being released after 6 hrs. The upper layer was treated with alcoholate at 50–60° for 10–15 min., and a strong aq. caustic soln. was then added. The separated oily layer of paraffins and tertiary nitro compd was extd. with ether, dried with $CaCl_2$ and the solvent was carefully removed, first on a water bath and finally under vacuum. There was left a residue with a pleasant odor and yellow color. It was found that both the Grozny and the Vacuum Oil Co. paraffins contained the tertiary compd. $C_{30}H_{61}NO_2$ in addn. to the secondary compd. $C_{30}H_{61}NO_2$ and the dinitro compd. $C_{30}H_{60}(NO_2)_2$. The formation of tertiary N compds. through the action of dil. HNO_3 on the hydrocarbons of the petroleum paraffin indicates that the latter contains normal and iso paraffins with tertiary H. Conclusion: This paraffin contains 25–30% iso paraffins, in accordance with results obtained by diffraction detns. with x-rays. A. A. Rochtlingk



Comparative study of paraffin and ceresin hydrocarbons. S. S. Nametkin and S. S. Nifontova *Bull. acad. sci. U. R. S. S., Classe sci. math. nat.; Sér. chim* **1936**, 3-29(in German 29-31).—Nitration of paraffin and ceresin hydrocarbons with dil HNO_3 according to the method of Konowalow (*Chem. Zentr.* **1906**, II, 114) permits the exptl. detn. of their structure. All 3 classes studied, lignite paraffin, naphtha paraffin, and ceresin, give as reaction products both *sec* and *tert* nitro compds. Tertiary nitro compds. are not formed. 8.5 g. purified German lignite paraffin (chiefly $C_{25}H_{52}$) heated with 30 cc. HNO_3 (d. 1.075) for 12 hrs. in a sealed tube at 125–130° (with an interruption at end of 6 hrs. to release gases), gives a yellow cryst.-oily mixt. which is warmed with alc.-aq. NaOH and the 2 layers sepd. The alkali-insol. products are ether-extd. and the *tert* nitro paraffin is sepd. from unreacted hydrocarbon by crystn. from alc. The alkali-sol. products are ppted. with CO_2 gas and fractionally crystd. from alc. One hundred and seventy g. lignite paraffin gives 10 g. *tert-nitroparaffin*, $C_{25}H_{51}NO_2$ (I), yellow, m. 24.8°, d_4^{20} 0.8435, n_D^{20} 1.4420; 23 g. *sec-nitroparaffin*, $C_{25}H_{51}NO_2$, yellow, m. 41.4°, 11 g. *dinitroparaffin*, $C_{25}H_{50}(NO_2)_2$, dark yellow oil, distils at 2 mm. with decompn., d_4^{20} 0.9132, n_D^{20} 1.4481. Purified Grozny naphtha paraffin (232 g.), treated likewise, yields 18.5 g. *tert-nitroparaffin*, $C_{21}H_{43}NO_2$ (II), pale yellow, m. 30°, d_4^{20} 0.8612, 6 g. *sec-nitroparaffin*, $C_{21}H_{43}NO_2$, yellow, m. 45.8°, 15 g. *dinitroparaffin*, $C_{21}H_{42}(NO_2)_2$, thick reddish yellow oil, congeals at 4°, decomposes on distn. *in vacuo*, d_4^{20} 0.9240, n_D^{20} 1.4630. American paraffin (chiefly $C_{25}H_{52}$) gives similar results. II (5.4 g.) heated with HCl and Sn at 100° for 4 hrs. gives 1.25 g. of the *α-iso*, $C_{21}H_{43}NH_2$, paraffin-like substance, m. 27°, 20.5° (*Hofmann*, m. 43.4°). Well purified Surachan ceresin (140 g.) on nitration with dil. HNO_3 yields 15 g. I, 7.5 g. *tert-nitroceresin*, $C_nH_{2n+1}NO_2$, yellowish, m. 74–7°, and 16.2 g. of a yellow semi-solid mixt. of *sec*-dinitroparaffin, $C_nH_{2n}(NO_2)_2$, and *sec-dinitroceresin*, $C_nH_{2n-1}(NO_2)_3$. Nitration of Cheleken ceresin gives analogous products. From the exptl. results it is concluded that lignite paraffin consists chiefly of straight chain hydrocarbons, naphtha paraffin (Grozny) chiefly of straight chain hydrocarbons but contg. 25-35% of isoparaffins, and ceresin, almost exclusively of high mol. branched chain hydrocarbons. Eighteen references. I. I.

A 1936 VI A METALLURGICAL LITERATURE CLASSIFICATION

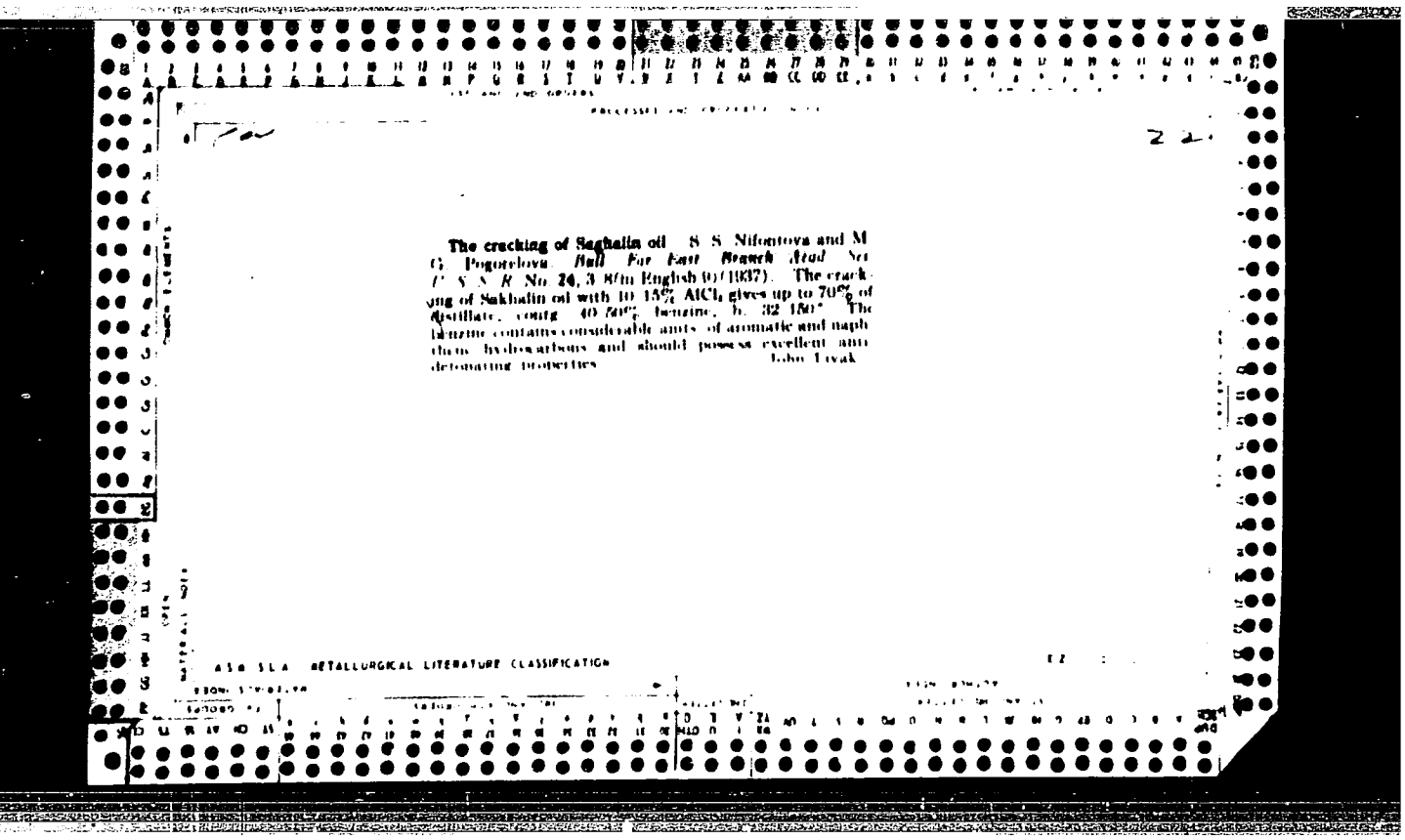


The structure of the hydrocarbons from brown-coal paraffin. S. S. Nametkin and S. S. Nifontova. *J. Applied Chem.* (U. S. S. R.) 9, 462–7 (in French 467) (1936); cf. *C. A.* 28, 3569[4].—Nitration of a German brown-coal paraffin with weak HNO_3 gives a secondary compd. $C_{20}H_{42}NO_3$, a smaller amt. of a tertiary compd. $C_{20}H_{40}NO_3$ and some $C_{20}H_{42}(NO_3)_2$. Evidently most of the paraffin consists of normal alkanes with av. compn. $C_{20}H_{42}$ and not more than 10% of isoalkanes of av. compn. $C_{20}H_{40}$.

H. M. Leicester

The structure of ceresin hydrocarbons S. S. Nametkin and S. S. Nifontova. *J. Applied Chem.* (U. S. S. R.) 9, [illegible] (1936) German [illegible]; cf. C. A. 28, [illegible]. Surakhansk ceresin was repeatedly recrystd. and had a d_{20}^{20} 0.788, solidification point 87.7° and mol. wt. 625.5, calcd. for C[illegible]H[illegible], 632.7. Ceresin nitrated by the method previously described gave 53% tertiary nitroceresin, C[illegible]H[illegible]NO_2, m. 74.7° (capillary tube), 10.7% tertiary nitroparaffin, C[illegible]H[illegible]NO_2, m. 25.8°, and a mixt. of secondary dinitroceresin, C[illegible]H[illegible]$(NO_2)_2$, and dinitroparaffin, C[illegible]H[illegible]$(NO_2)_2$. It follows that Surakhansk ceresin is a mixt. of isoparaffins, consisting chiefly of C[illegible]H[illegible] and some C[illegible]H[illegible]. Chas. Blanc

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



The cracking of Sachalin oil S S Nifontova and M G Pogorelova *Bull Far East Branch Acad Sci U S S R* No 24, 3 86 (in English) (1937) The cracking of Sakhalin oil with 10 15% $AlCl_3$ gives up to 70% of distillate, contg 40 50% benzine, b 32 150° The benzine contains considerable amts of aromatic and naphthenic hydrocarbons and should possess excellent antidetonating properties John Livak

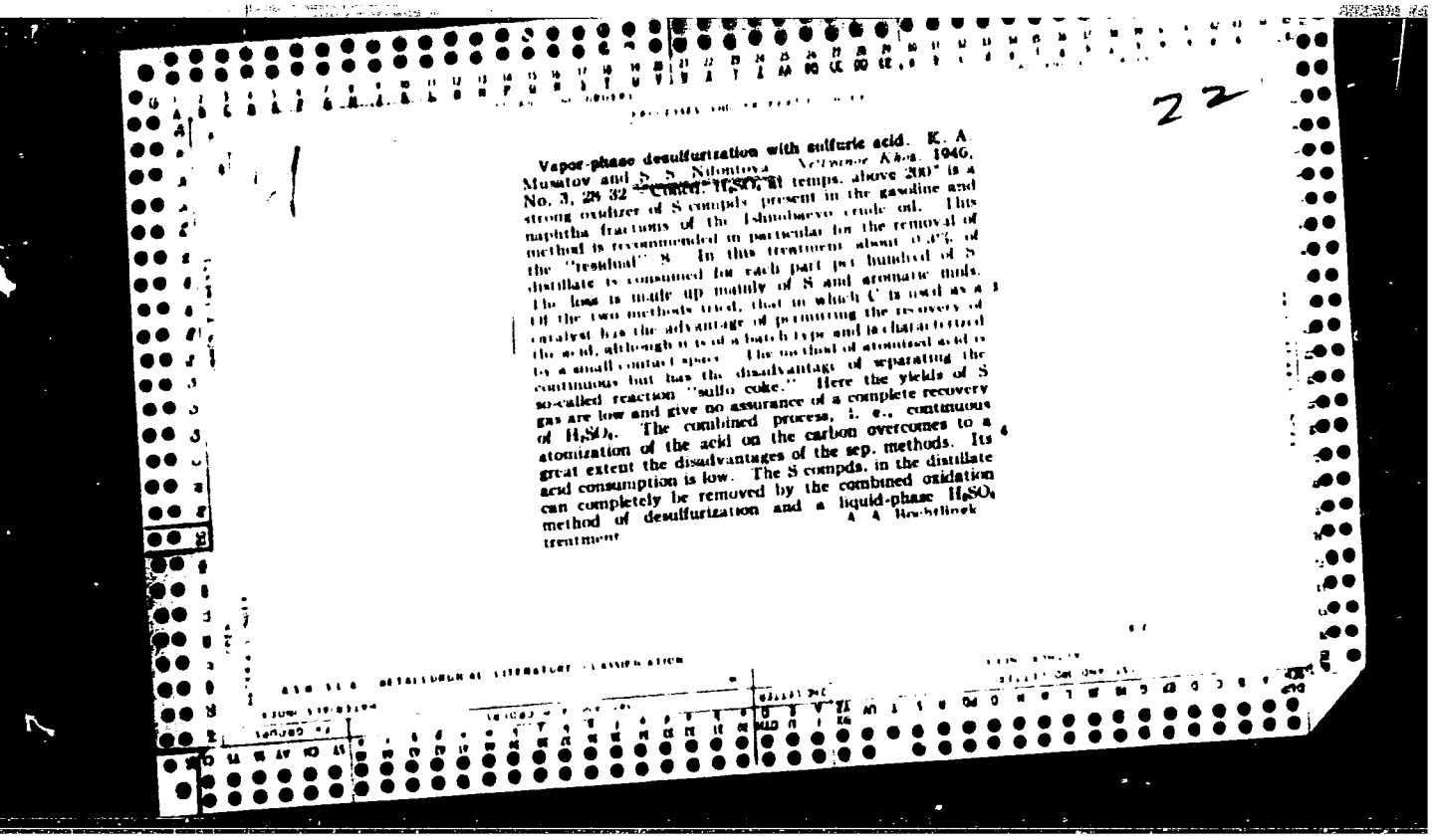
A 5 8 S L A METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

An investigation of the chemical composition of cracked gasoline from the Khabarovsk plant. S. S. Nifontova, O. N. Ras and Kh. I. Magulina. *Bull. Far-East Branch Acad. Sci. U. S. S. R.* No. 20, 43 (in English 52) (1936). A complete analysis is given of 2 samples of cracked gasoline. They are characterized by a low content of paraffin hydrocarbons, high content of pentamethylene hydrocarbons and a high proportion of cyclic compds. among the unsatd. hydrocarbons. Seventeen references.

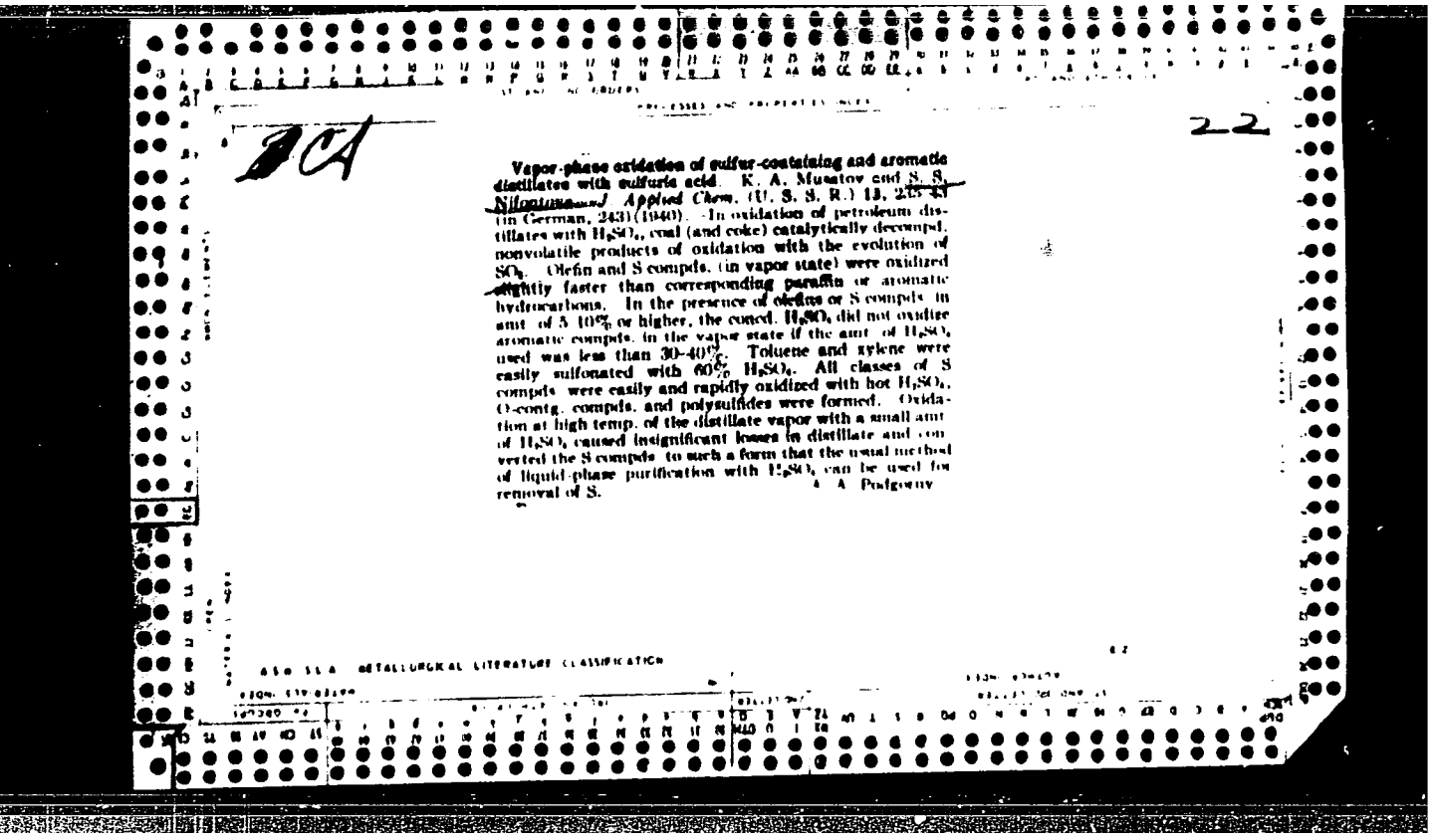
S. L. M.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Vapor-phase desulfurization with sulfuric acid. K. A. Mustov and S. S. Nifontova. Neftyanoe Khoz. 1946, No. 3, 28-32. Cracked naphthas, 81 temps. above 200° is a strong oxidizer of S compds. present in the gasoline and naphtha fractions of the Ishimbayevo crude oil. This method is recommended in particular for the removal of the "residual" S. In this treatment about 0.2% of distillate is consumed for each part per hundred of S. The loss is made up mainly of S and aromatic hydrs. Of the two methods tried, that in which C is used as a catalyst has the advantage of permitting the recovery of the acid, although it is of a batch type and is characterized by a small contact space. The method of atomized acid is continuous but has the disadvantage of separating the so-called reaction "sulfo coke." Here the yields of S gas are low and give no assurance of a complete recovery of H_2SO_4. The combined process, i. e., continuous atomization of the acid on the carbon overcomes to a great extent the disadvantages of the sep. methods. Its acid consumption is low. The S compds. in the distillate can completely be removed by the combined oxidation method of desulfurization and a liquid-phase H_2SO_4 treatment.

A. A. Boshelinok



CA

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Vapor-phase oxidation of sulfur-containing and aromatic distillates with sulfuric acid. K. A. Mustafov and S. S. Nifontova. *Applied Chem.* (U. S. S. R.) 13, 235-43 (in German, 243)(1940). —In oxidation of petroleum distillates with H_2SO_4, coal (and coke) catalytically decompd. nonvolatile products of oxidation with the evolution of SO_2. Olefin and S compds. (in vapor state) were oxidized slightly faster than corresponding paraffin or aromatic hydrocarbons. In the presence of olefins or S compds in amt. of 5-10% or higher, the concd. H_2SO_4 did not oxidize aromatic compds. in the vapor state if the amt. of H_2SO_4 used was less than 30-40%. Toluene and xylene were easily sulfonated with 60% H_2SO_4. All classes of S compds were easily and rapidly oxidized with hot H_2SO_4. O-contg. compds. and polysulfides were formed. Oxidation at high temp. of the distillate vapor with a small amt. of H_2SO_4 caused insignificant losses in distillate and converted the S compds. to such a form that the usual method of liquid-phase purification with H_2SO_4 can be used for removal of S.

A. A. Podgorny

CA

PROCESSES AND PROPERTIES INDEX

Refining of petroleum gases in conjunction with reclaiming acid from acid sludge. K. A. Musatov and S. S. Nikitova. *Bull. acad. sci. U. R. S. S., Classe sci. tech.* 1947, 579, 29-31. Granulated charcoal, 1-3 mm. diam., in contact with half its wt. of concd. H_2SO_4, decomp. at 210°, 24% of the acid within 30 min.; raising the temp. to 230° for 30 min. and then to 270° resulted in an approx. uniform rate of decompn. totaling 70% in 90 min. Reuse of the C requires a temp. of up to 300° for 180 min. for complete decompn. of H_2SO_4. Dil. acid reacts slowly up to 275°. Asbestos or silica gel do not affect the velocity of the process, but substances capable of oxidation (coke, S, neutral portion of acid sludge b. above 300°) act similarly to charcoal. Black acid extd. with H_2O from acid sludge gave a gas with 78% SO_2, the gas from H_2SO_4 contained 80-100% SO_2 + SO_3, the rest being CO_2, CO, N, O, not more than 6% hydrocarbons and no olefins. Oxidation of H_2S on charcoal moistened with concd. H_2SO_4 occurs at 175° and yields finely dispersed S. On asbestos H_2S and H_2SO_4 require over 100° higher temps. of decompn. than on charcoal. A mixt. of 3.7% H_2S with C_3H_6 or C_4H_{10} was freed of H_2S with 60% H_2SO_4 at 200°, producing a gas with 1.5% SO_2, but one contg. 60% C_4H_8, 25% butadiene and 15% H_2S lost 35% of its hydrocarbon portion together with H_2S; a mixt. of 80% C_1-C_4 alkanes, 12% C_4H_8 and 8% H_2S was freed of H_2S without loss of the hydrocarbons by reacting it with SO_2 from decompn. of H_2SO_4. It is claimed that removal of H_2S and dienes from olefins is possible by varying the temp. Advantages of this method of prepn. of SO_2 and conversion of H_2S are discussed. J. G. Tolpin

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

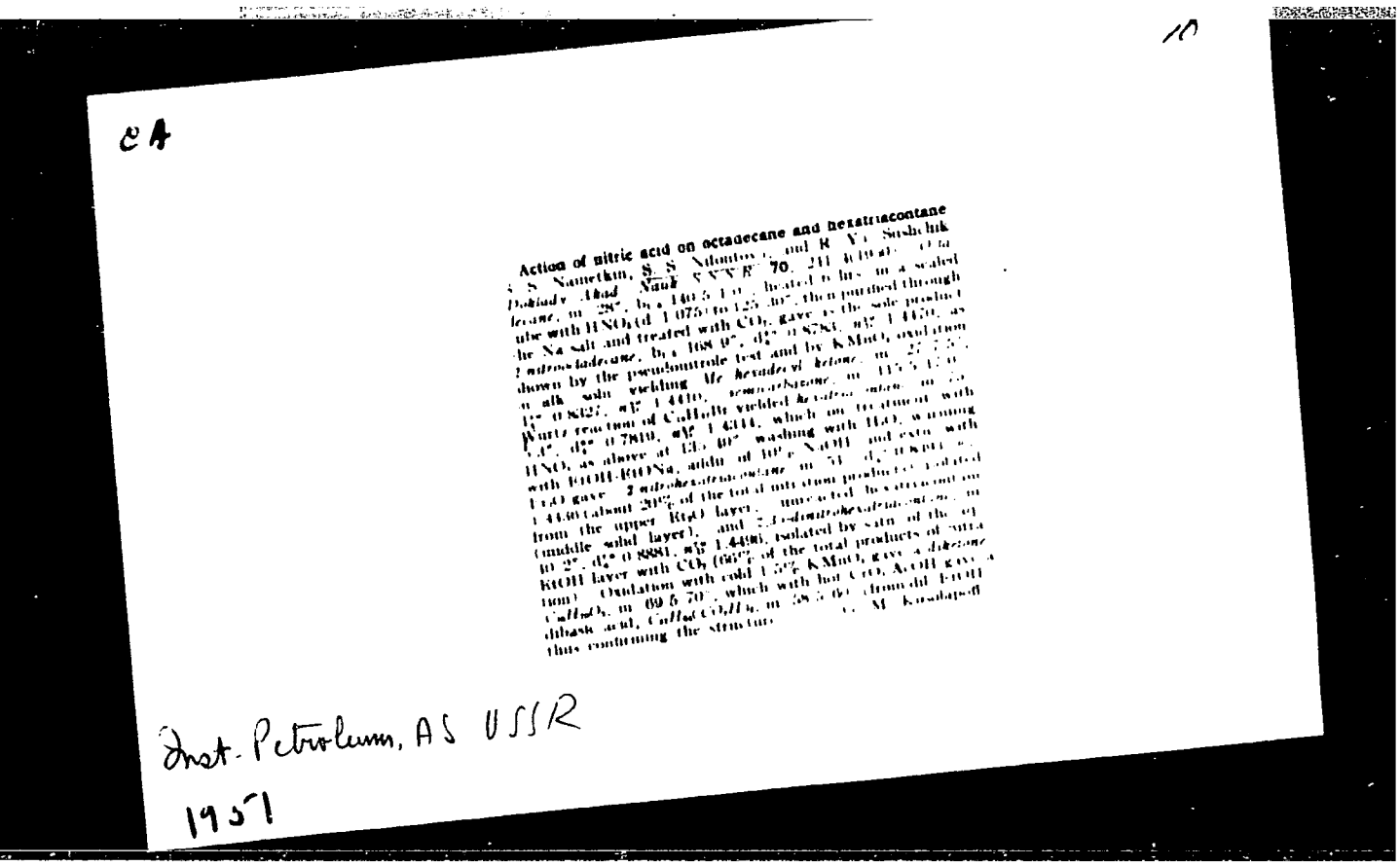
NIFONTOVA, S. S.

Chemical Abst.
Vol. 48
Apr. 10, 1954
Petroleum, Lubricants, and Asphalt

(4)

Structure of hydrocarbons of ceresin. Fergana ozokerite. S. S. Nametkin, N. C. Amerkhanova, and S. S. Nifontova. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1949, No. 1, 137-44(1949).—Ozokerite from the Fergana Valley (Central Asia) was purified, and four 5-degree fractions were obtained from benzene soln. Detn. of phys. consts. indicated that ceresin, regardless of source, had a higher sp. gr., mol. wt., coeff. of refraction, and viscosity than paraffins of similar m.p. Nitration of fraction contg. 63% of ceresin and m. 60° yielded nitro compds. of tertiary nature, also a small amt. of dinitro compds. and a N-contg. substance, the nature of which was not definitely established.
B. Z. Kamiek

7-16-54



10

C4

Action of nitric acid on octadecane and hexatriacontane

Inst. Petroleum, AS USSR

1951

NIFONTOVA, S.S.

Action of nitric acid on long chain hydrocarbons. S. S.
Nametkin, S. S. Nifontova, and R. Ya. Sushchik. *Trudy*
Inst. Nefti, Akad. Nauk S.S.S.R. 2, 3-9(1952); cf. *C.A.* 45,
5568e.—*n*-Octadecane (I) treated with HNO_3 (d. 1.075) at
125-30° for 6 hrs. in a sealed tube yielded only β-nitro-
octadecane (II), $b_{4.5}$ 168-9°, d_{20} 0.8783, n_D^{20} 1.4470, while
hexatriacontane (III), needles, m. 75-6.3° (from alc.), d_{80}
0.7810, n_D^{80} 1.4344, in a similar manner at 135-40° yielded
chiefly β,β'-dinitrohexatriacontane (IV), light yellow, m.
40-2°, d_{70} 0.8331, n_D^{70} 1.4496, and a smaller amt. of β-nitro-
hexatriacontane (V), m. 54° (from alc.), d_{70} 0.8103, n_D^{70} 1.4436.
Positions of NO_2 groups in II, IV, and V were all shown to be
secondary by pseudonitrole reactions. The structure of II
was proved further by oxidation with alk. permanganate to
Me hexadecyl ketone, m. 27-7.5°, d_{20} 0.8327, n_D^{20} 1.4410;
semicarbazone, m. 115.5-17°. The structure of IV was proved
by alk. permanganate conversion to β,β'-hexatriacontane-
dione (VI), m. 69.5-70°, which with CrO_3-HOAc oxidation
yielded the dibasic acid, $C_{31}H_{62}(COOH)_2$, m. 58.5-60° (aq.
MeOH). I was prepd. by action of Zn dust in alc. on *n*-
octadecyl bromide (VII) while III was prepd. from VII
through a Wurtz reaction. It was concluded on this and
earlier work that for conditions used, *n*-hydrocarbons of 18 C
or less yield only a mono β-substituted compd. There is a
crit. length already reached at C_{36} hydrocarbons where the
predominant product becomes the β,β'-disubstituted
compd. John A. Krynitsky

NIFONTOVA, S.S.

USSR/Chemistry - Petroleum 1 Jul 52

"Hydrocarbons of the Decalin Series in Dossorsk Petroleum," S. S. Nifontova, R. Ya. Sushchik, A. A. Suchkova

"Dok Ak Nauk SSSR" Vol LXXXV, No 1, pp 115, 116

Both Zelinskiy's catalytic dehydrogenation method and the picrate method were used in the investigation of kerosene from Dossorsk petroleum. Ten-deg fractions were sepd and analyzed. Presented by Acad A. V. Topchiyev 3 May 52.

224T17

NIFONTOVA, S. S.

USSR/Chemical Technology. Chemical Products and Their Application--Treatment of natural gases and petroleum. Motor Fuels. Lubricants. I-14

Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 9274

Author : Topchiev, A. V., Nifontova, S. S., Suchkova, A. A., and Sushchik, ... Ya.

Inst : Petroleum Institute of The Academy of Sciences USSR

Title : Decalin and Its Homologs in Some Soviet Crudes

Orig Pub: Tr. In-ta nefti AN SSSR, 1956, Vol 8, 21-29

Abstract: Kerosenes from Dossor, Akhabin, Nebit-Dag, and Romashkin crudes were subjected to fractional distillation followed by dearomatization by treatment with 99% H_2SO_4 or adsorption on silica gel. The dearomatized fractions were subjected to exhaustive dehydrogenation over a Pt-Fe catalyst. The aromatic hydrocarbons produced during hydrogenation and distillation are extracted with picric acid from the catalyzate or from the aromatics desorbed from

Card 1/2

USSR/Chemical Technology. Chemical Products and Their Application--Treatment of natural gases and petroleum. Motor fuels. Lubricants. I-14

Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 9274

Abstract: the silica gel. The picrates and the aromatic hydrocarbons separated from them were analyzed. It has been established that decalin and its methylated homologs are present in Ekhabin, Nebit-Dag, Romashkin kerosenes. No decalin was found in Dossor kerosene; however, the latter was found to contain methylated homologs of decalin.

Card 2/2

L 36186-65 EPF(c)/EWT(j)/EWT(m) Pc-4/Pr-4 RM

ACCESSION NR: AP5010564 UR/0204/64/004/005/0793/0797

AUTHOR: Musayev, I. A.; Sanin, P. I.; Suchkova, A. A.; Nifontova, S. S.; Sushchik, R. Ya.

TITLE: Determination of normal paraffins in middle petroleum fractions by a method of gas-liquid chromatography

SOURCE: Neftekhimiya, v. 4, no. 5, 1964, 793-797

TOPIC TAGS: petroleum, paraffin wax, chromatographic analysis, hydrocarbon

Abstract: The chromatographic separation and determination of normal paraffins of the middle fractions (175-350°) of Romashkin petroleum were studied. Conditions were found for determining normal paraffins by gas-liquid chromatography on stationary liquid phases: polyphenylmethylsiloxane fluid PPMS-4 and cable oil. It was found to be more convenient to conduct the chromatographic separation at different temperatures, depending on thermolecular weight or on the boiling point of the hydrocarbons: for hydrocarbons up to C_{16} at 225°, and for hydrocarbons above C_{16} at 275°. The quantitative content of each hydrocarbon in the mixture was determined according to the chromatograms by two methods, which gave identical results: from the ratio of the areas of all the peaks and according to an internal standard (n-tridecane for one

Card 1/2

L 36486-65

ACCESSION NR: AP5010564

mixture, n-nonadecane for the other). The quantitative content of the individual paraffins, from decane to heneicosane in the 175-350° cut of Romashkin crude was established. Orig. art. has 6 graphs and 3 tables.

ASSOCIATION: Institut neftekhimicheskogo sinteza im. A. V. Topchiyeva AN SSSR (Institute of Petrochemical Synthesis, AN SSSR)

SUBMITTED: 13Jan64 ENCL: 00 SUB CODE: FP, GC

NO REF SOV: 001 OTHER: 004 JPRS

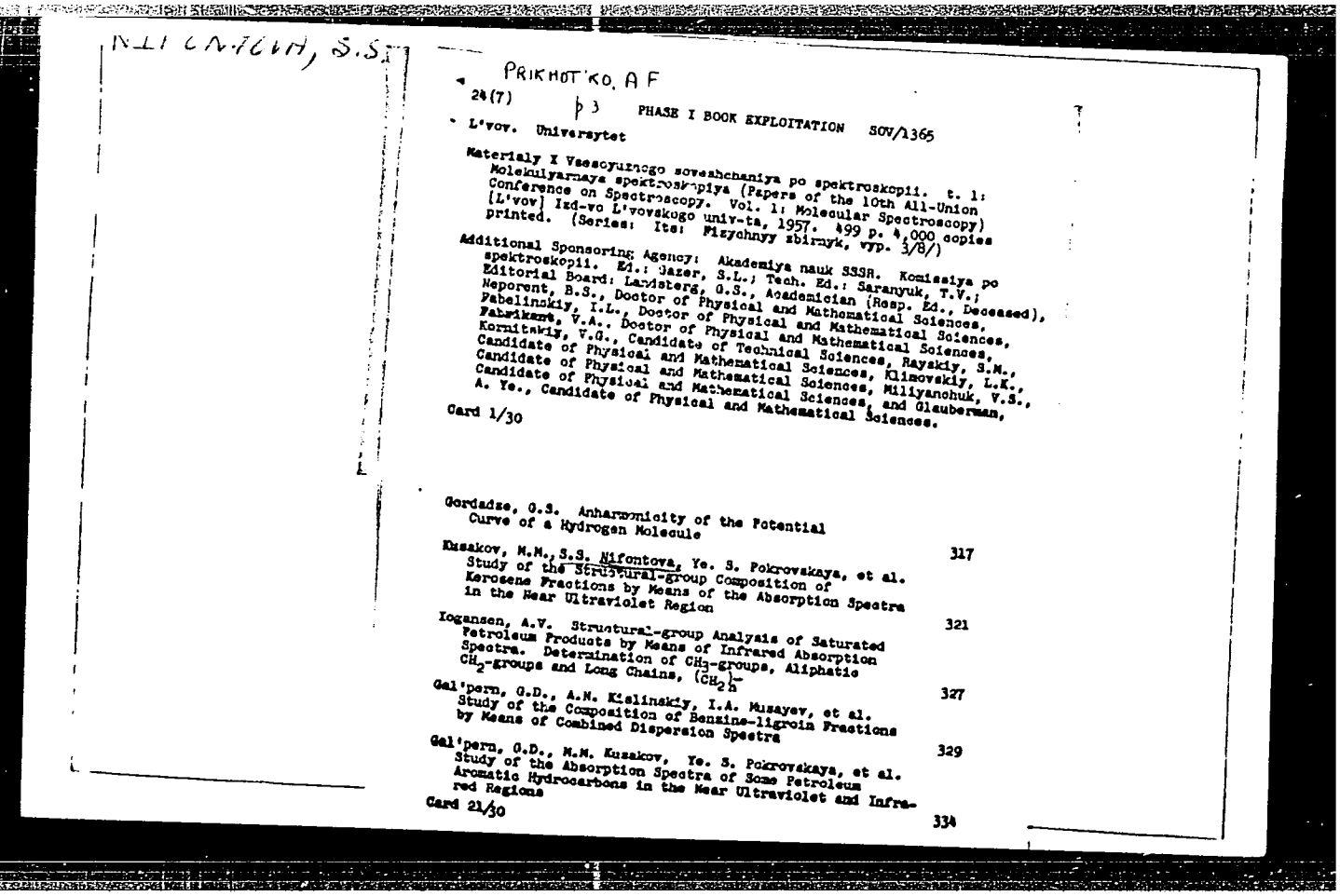
Card 2/2

NIFONTOVA, S.S.

TOPCHIYEV, A.V., akademik; NIFONTOVA, S.S.; SUSHCHIK, R.Ya.; SUCHKOVA, A.A.

Normal paraffins isolated from Romashkin petroleum. Dokl.AN SSSR 111 no.5:1045-1047 D '56. (MLRA 10:2)

1. Institut nefti Akademii nauk SSSR.
(Petroleum products) (Paraffins)



NIKITCHIN, S.S.

PRIKHOT'KO, A.F.

24(7) P3 PHASE I BOOK EXPLOITATION SOV/1365

L'vov. Universytet

Materialy I Vsesoyuznogo soveshchaniya po spektroskopii. t. 1: Molekulyarnaya spektroskopiya (Papers of the 10th All-Union Conference on Spectroscopy. Vol. 1: Molecular Spectroscopy) [L'vov] Izd-vo L'vovskogo univ-ta, 1957. 499 p. 4,000 copies printed. (Series: Its: Fizychnyy zbirnyk, vyp. 3/8/)

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po spektroskopii. Ed.: Jazer, S.L.; Tech. Ed.: Saranyuk, T.V.; Editorial Board: Landsberg, G.S., Academician (Resp. Ed., Deceased), Neporent, B.S., Doctor of Physical and Mathematical Sciences, Fabelinskiy, I.L., Doctor of Physical and Mathematical Sciences, Fabrikant, V.A., Doctor of Physical and Mathematical Sciences, Kornitskiy, V.G., Candidate of Technical Sciences, Rayskiy, S.M., Candidate of Physical and Mathematical Sciences, Klimovskiy, L.K., Candidate of Physical and Mathematical Sciences, Milyanchuk, V.S., Candidate of Physical and Mathematical Sciences, and Glauberman, A. Ye., Candidate of Physical and Mathematical Sciences.

Card 1/30

Card 21/30

KUSAKOV, M.M.; NIFONTOVA, S.S.; POKROVSKAYA, Ye.S.; ROZENBERG, L.M.; TOPCHIYEV, A.V.; SHISHKINA, M.V.

Absorption spectrum study in the near ultraviolet region of the structure and group composition of the kerosene fraction. Fiz. sbor. no.3:321-326 '57. (MIRA 11:8)

1. Institut nefti AN SSSR.
(Kerosene--Spectra)

NIFONTOVA S. S.

TOPCHIYEV, A.V.; KUSAKOV, M.M.; NIFONTOVA, S.S.; SUCHKOVA, A.A.; SHISHKINA, M.V.

Investigating condensed aromatic hydrocarbons from the kerosene fraction of Romashkino oil. Khim. i tekh. topl. i masel no.9:1-7 S '57. (MIRA 10:11)

1. Institut nefti AN SSSR.
(Chkalov Province--Petroleum) (Hydrocarbons--Analysis)

38688
S/510/60/014/000/001/006
D244/D307

AUTHORS: Topchiyev, A.V., Nifontova, S.S., Musayev, I.A., Sanin, P. I., Suchkova, A.A., Sushchik, R.Ya., and Qhekalova, N.N.

TITLE: Method of isolating aromatic hydrocarbons from medium (kerosene)fractions of petroleum

SOURCE: Akademiya nauk SSSR. Institut nefti. Trudy, v. 14, 1960, Khimiya nefti, 12 - 57

TEXT: Results are given of the separation of crude Romashinsk petroleum into distillation fractions, separation of aromatic hydrocarbons from the 175 - 300°C fractions, separation of the aromatic fractions into structural types and a study of group-structural composition of the monocyclic aromatic hydrocarbons. The crude material was from the Aktashsk area, Mikhaylovsk level, (depth 1583 - 1585 m). Properties of the crude oil were as follows: d_4^{20} 0.8612, flash point 35°C, viscosity 7.13 cs at 50°C, and 2.84 cs at 100°C, wax content - 4.9 % melting point of wax 50°C, content of silica gel resins - 9.86 %, asphaltene content 2.9 %, elemental composition C 84.85 %, H

Card 1/3

12.85 %, N 0.53 %, O 0.26 % and S 1.83 %. It was shown that narrow fractions of aromatic hydrocarbons can be separated by silica gel chromatography from a broad aromatic fraction from the 175 - 300° cut. Individual hydrocarbons were oxidized with a 30 % solution of H_2O_2 at 75 - 80°C. It was shown that the hydrocarbon components are not oxidized under these conditions. However the aromatic fractions having n_D^{20} from 1.4950 to 1.55 underwent desulphurization. It was possible to use home produced Al_2O_3 to separate quantitatively synthetic binary mixtures of monocyclic and bicyclic hydrocarbons. The napthene aromatic hydrocarbons of the type: cyclopentyltoluene, tetralin and indane mixed with tertiary iso-butyl-o-xylol were not well separated under the conditions used. The optimum conditions for the A_2O_3 separation of the aromatic fractions into monocyclic and bicyclic hydrocarbons were: Oil charge 30 g, column height 2 m, (composed of three parts) the diameter decreasing from 53 mm at the top to 20 mm at the bottom. Iso-octane, benzene and iso-propyl alcohol were used as eluents. The hydrocarbon compositon of the 175 - 300°C

cut of the Romashinsk crude oil was as follows: Monocyclic aromatics hydrocarbons 13.11 %, bicyclic aromatic hydrocarbons 3.01 %, mixed aromatics 0.7 %, hexamethylene hydrocarbons 6.4 %, pentamethylene hydrocarbons 11.5 %, normal paraffins 17.5 %, iso-paraffins 41.2 % and organic compounds of S 6.58 %. Examination of the uv spectra of the narrow fractions obtained from the broad aromatic fractions having n_D^{20} = 1.49 - 1.50 and 1.50 - 1.51 established that they consist mainly of tetrasubstituted alkylaromatic hydrocarbons. There are 16 figures and 5 tables.

Card 3/3

S/020/60/134/006/020/031
B016/B067

AUTHORS: Topchiyev, A. V., Academician, Nifontova, S. S., Musayev, I. A., Sanin, P. I., Suchkova, A. A., Sushchik, R. Ya., and Chekaleva, N. N.

TITLE: Methods of Isolating Aromatic Hydrocarbons From Medium (Kerosene) Petroleum Fractions

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 134, No. 6, pp. 1378-1380

TEXT: The authors give the results of an investigation of the hydrocarbon composition of the petroleum fractions in which the aromatic hydrocarbons were chromatographically separated by using two adsorbents. A petroleum sample from the Romashki oil-field was studied. The benzine fractions boiling out at 175°C and the asphalt-resin substances were removed. The thus treated petroleum was fractionated in a vacuum apparatus and the corresponding fractions were separated. A characteristics of the fraction 175 - 300°C is described. Among the different methods employed for investigating the chemical composition the chromatographic

Card 1/3

Methods of Isolating Aromatic Hydrocarbons From Medium (Kerosene) Petroleum Fractions

S/020/60/134/006/020/031
B016/B067

isolation and separation of the aromatic hydrocarbons were dealt with in detail. The authors obtained good results by 2-step chromatography: first, all aromatic hydrocarbons are isolated and separated; the isolated substances are then separated according to their types. Isolation took place from the fraction by displacement chromatography on silica gel. Ethanol was used as displacing agent. Silica gel of type АСМ (ASM) was treated by I. A. Musayev and E. Kh. Iskhanova prior to its use (Ref. 8). Seven fractions of aromatic hydrocarbons with the refractive indices of 1.49 to 1.55 were isolated. The sulfur-containing compounds were removed by oxidation with 25% H_2O_2 solution in glacial acetic acid at 80°. The sulfoxides formed were then chromatographically separated on silica gel АСК (ASK). The further sharp separation of the thus purified mixture of mono- and bicyclic aromatic hydrocarbons was carried out chromatographically with aluminum oxide of type ГУ-МХП (GU-MKhP) of the Dneprodzerzhinskiy zavod (Dneprodzerzhinsk Plant) as adsorbent. For this purpose a 2 m high column was used. Successive isooctane, benzene, and isopropyl alcohol were used as desorbents. Under these conditions the monocyclic hydrocarbons can be quantitatively separated from the bicyclic ones. Table 1

Card 2/3

Methods of Isolating Aromatic Hydrocarbons From Medium (Kerosene) Petroleum Fractions

S/020/60/134/006/020/031
B016/B067

gives the results of the separation of tert.-isobutyl-ortho-xylene from butyl naphthalene and of tert.-isobutyl-ortho-xylene from diphenyl. This indicates that the chromatographic separation on silica gel produces much poorer results since in this case a high amount of intermediate fractions are formed. Among the above described conditions the total amount of monocyclic hydrocarbons (referred to the aromatic part) was 77.93%, that is 13.11% of the fraction 175-300°C, whereas the figures for the bicyclic were 17.91 and 3.01%, respectively. In conclusion the authors mention further components of the fraction described and their total percentual composition. There are 1 table and 8 references: 4 Soviet 1 US, 1 French, and 2 German.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR (Institute of Petrochemical Synthesis of the Academy of Sciences, USSR)

SUBMITTED: July 21, 1960

Card 3/3

NIFONTOVA, S S.

7

MUSAYEV, I.A., ROSENBERG, L.M., NIFONTOVA, S.S., GALPERN, G.D., MECHITAYLO, N.A., TERENTYEVA, YE.N., KUSAKOV, M.M., SANIN, P.I.

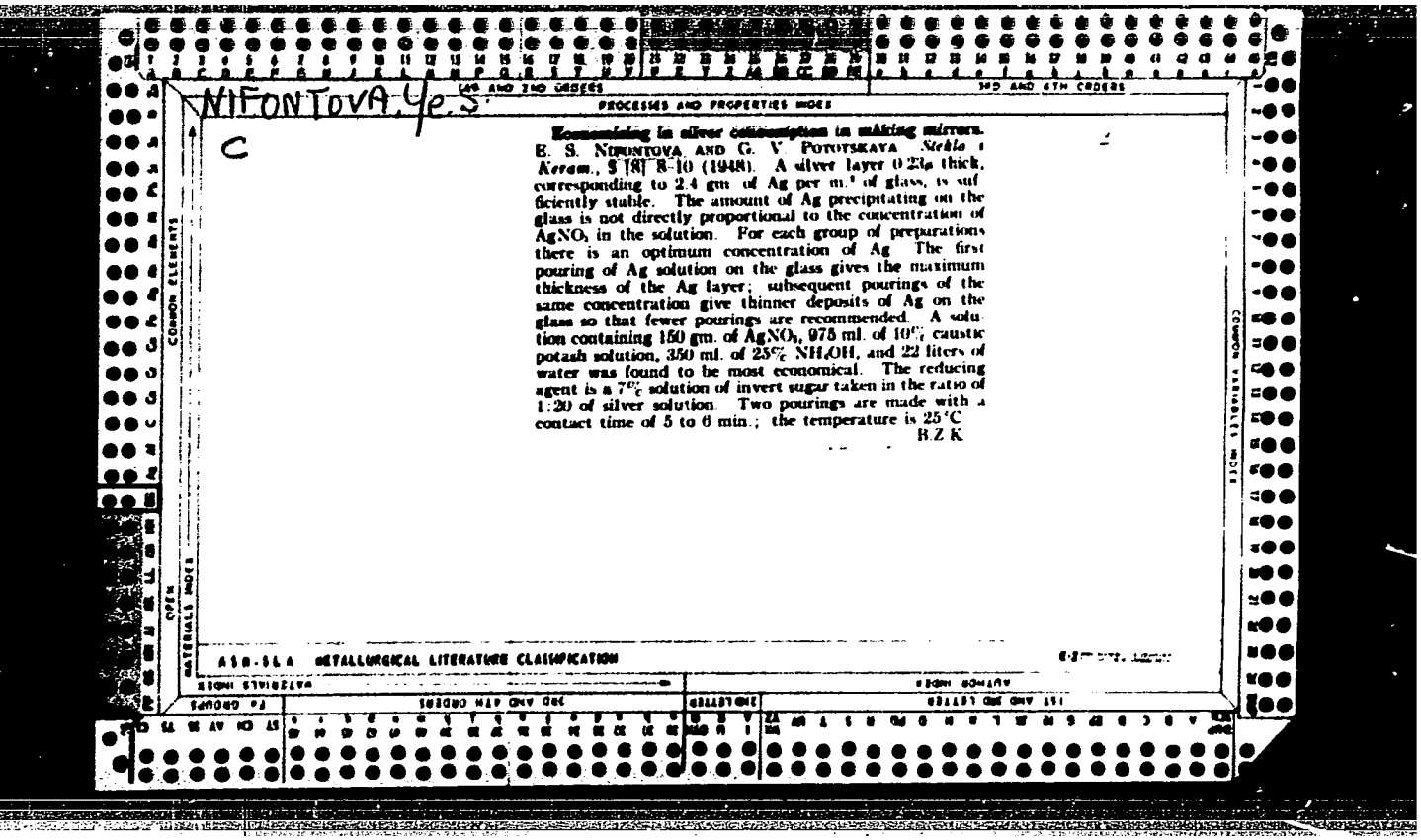
Investigating chemical composition of middle fractions of a sulphurous crude oil in the USSR

Report to be sumitted for the Sixth World Petroleum Congress, Frankfurt, 16-26 June 63

MUSAYEV, I.A.; SANIN, P.I.; SUSHKOVA, A.A.; NIFONTOVA, O.S.; SUSHCHIK, R.Ya.

Determining paraffins of normal structure in motor petroleum fractions by gas-liquid chromatography. Neftekhimiia i neftepererabotka 3:9 '61.
(MIRA 18:1)

1. Institut neftekhimicheskogo sinteza imeni A.V.Topchiyeva AN SSSR.



NIFONTOVA, Ye. S.

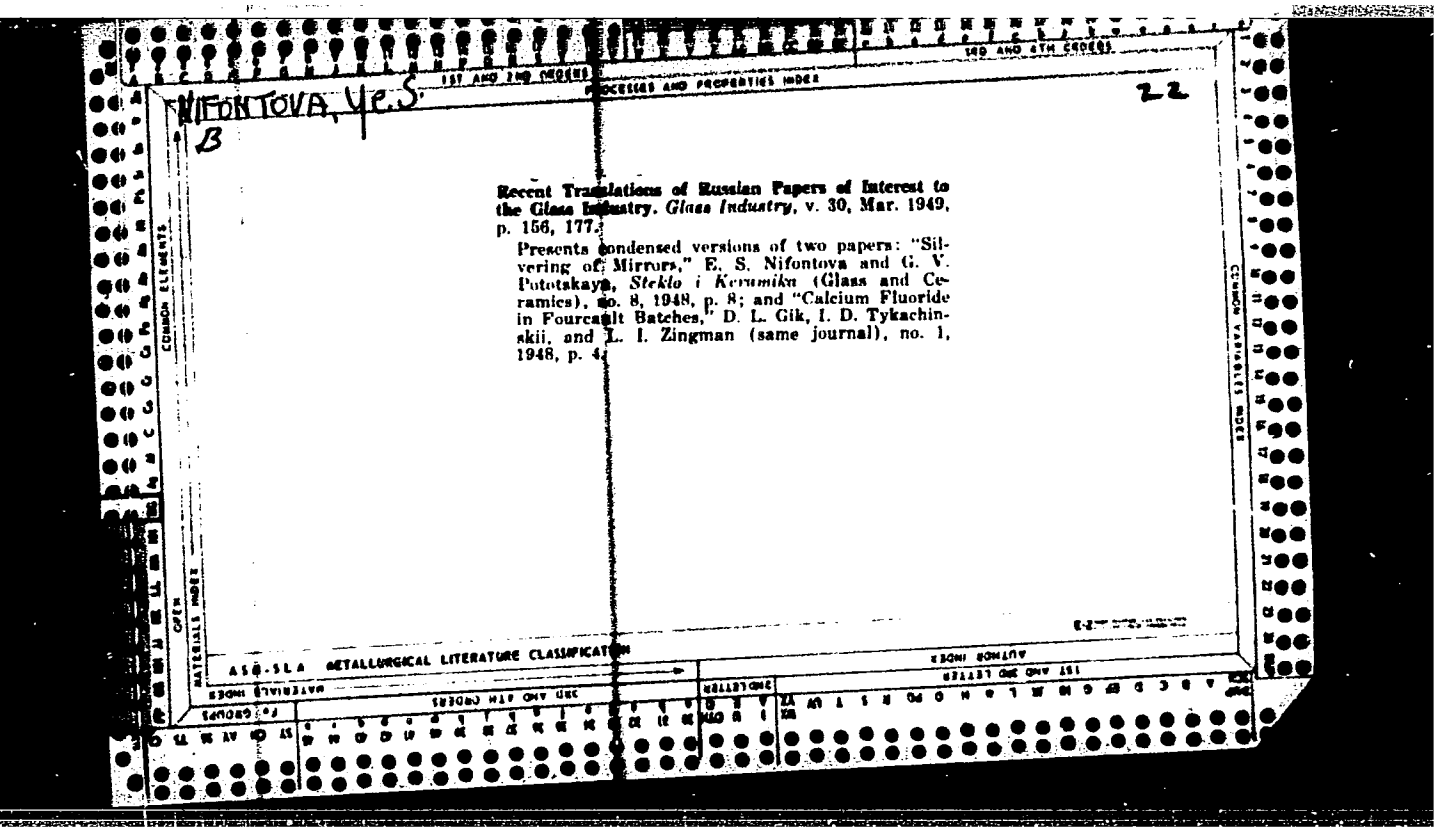
C

PROCESSES AND PROPERTIES INDEX

Economizing in silver consumption in making mirrors. E. S. NIFONTOVA AND G. V. POTOTSKAYA. *Steklo i Keram.*, 5 [8] 8-10 (1948). A silver layer 0.2μ thick, corresponding to 2.4 gm. of Ag per m.^{2} of glass, is sufficiently stable. The amount of Ag precipitating on the glass is not directly proportional to the concentration of $AgNO_3$ in the solution. For each group of preparations there is an optimum concentration of Ag. The first pouring of Ag solution on the glass gives the maximum thickness of the Ag layer; subsequent pourings of the same concentration give thinner deposits of Ag on the glass so that fewer pourings are recommended. A solution containing 150 gm. of $AgNO_3$, 975 ml. of 10% caustic potash solution, 350 ml. of 25% NH_4OH, and 22 liters of water was found to be most economical. The reducing agent is a 7% solution of invert sugar taken in the ratio of 1:20 of silver solution. Two pourings are made with a contact time of 5 to 6 min.; the temperature is 25°C.

B.Z.K.

A 50-66 A METALLURGICAL LITERATURE CLASSIFICATION



NIFONTOVA, Ye.S.
B
22

Recent Translations of Russian Papers of Interest to the Glass Industry. *Glass Industry*, v. 30, Mar. 1949, p. 156, 177.

Presents condensed versions of two papers: "Silvering of Mirrors," E. S. Nifontova and G. V. Pototskaya, *Steklo i Keramika* (Glass and Ceramics), no. 8, 1948, p. 8; and "Calcium Fluoride in Fourcault Batches," D. L. Gik, I. D. Tykachinskii, and L. I. Zingman (same journal), no. 1, 1948, p. 4.

PESELEV, V.S.; NIFONTOVA, Ye.S.

Use of synthetic polymers in the manufacture of polishers. Stek. i ker. 15 no.4:5-7 Ap '58. (MIRA 11:5)
(Grinding and polishing) (Polymers and polymerization)

NIGAM, A. N.

548.7

4899. COLOUR CENTERS AND X RAY SPECTRA OF POTASSIUM HALIDE CRYSTALS. A. N. Nigam. Z. Phys., Vol. 142, No. 3, 1955, (195-?).

Possible correlations of the energy levels arising due to colour centres in a potassium halide crystal with the X-ray absorption fine structure of the potassium ion are discussed. Influence of the inner ionization on the activation energy of the ions and on the potential surrounding them has been estimated using approximate equations. A.

NIGAM, H.N.

On generalized Laplace transform of two variables. Acta mat Hung 14 no.3/4:331-342 '63.

1. Department of Mathematics and Astronomy, Lucknow University, Lucknow, India. Presented by Bela Szokefalvi-Nag .

SULTANOV, M.B.; NIGAMATOV, N.N.; YEGOROVA, T.A.

Effect of vincanine and strychnine on tissue respiration.
Uzb. biol. zhur. 7 no.6:54-57 '63.

1. Institut khimii rastitel'nykh veshchestv

ANISIMOV, B.V., doktor tekhn. nauk, prof. (Moskva); KURGANOV, V.D., kand. tekhn. nauk (Moskva); KHOMYAKOV, K.S., inzh. (Moskva); VERETENNIKOV, Yu.N., inzh. (Moskva); NIGAY, A.A., inzh. (Moskva)

Digital display device using a typotron. Elektrichestvo no.8: 52-56 Ag '63. (MIRA 16:10)

L 11226-67 EWT(d)/EWP(l) LJP(c) GG/BB/GD

ACC NR: AT6022375 SOURCE CODE: UR/0000/66/000/000/0037/0040

37

AUTHOR: Kartashov, D. N.; Nigay, A. A.; Petrov, V. Ya.

ORG: none

16

TITLE: Certain problems of the recognition of acoustic signals

SOURCE: Vsesoyuznaya nauchnaya sessiya, posvyashchennaya Dnyu radio. 22d, 1966. Sektsiya kibernetiki. Doklady. Moscow, 1966, 37-40

TOPIC TAGS: digital electronic computer, acoustic signal, harmonic analysis, pattern recognition / Minsk-2 digital electronic computer

ABSTRACT: The article deals with the possibilities of constructing a device recognizing various acoustic signals whose characteristics display certain stationary parameters. The authors experimented with a specially built converter of acoustic signals to digital data, whose upper limit of conversion frequency was 20 kilo-cps. This converter operated on the principle of pulse-time coding and it assured the automatic insertion of digital data onto the magnetic tape of a Minsk-2 digital electronic computer, with every one-minute interval of recording being represented in the computer's memory by 1,200,000 ordinates recorded in

Card 1/2

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ACC NR: AT6022375

5-unit binary code. The internal structure of the acoustic signals was analyzed according to the results of general harmonic analysis, involving the computation of a series of ordinates of the acoustic spectrum, correlation function and spectral density. If the value of each of N ordinates of this kind is regarded as a projection of a N-variate vector, then each specific acoustic signal may be referred as a pattern (thus converting it to a problem of pattern recognition) to a specific point in N-variate space of patterns. Then the space may be divided into two classes, S_I and S_{II} and the separation function for any point in the space may be computed as the difference between its distances to the regions of each of these two classes. It is concluded that linear methods of space-mapping may be employed with sufficient effectiveness for a number of comparatively simple problems of this kind. Orig. art. has: 1 figures.

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Card 2/2

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1. Glavnyy khirurg Alma-Atinskogo oblzdravotdela.
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