ACCESSION NR: AT4033995

the feasibility of trans- and cis-configurations. Orig. art. has: 2 tables and numerous chemical formulas.

ASSOCIATION: Moskovskiy gosudarstvennyky universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 31Jul62	DATE ACQ: 30Apr64	ENCL: 00
SUB CODE: OC	NO REF SOV: 005	OTHER: 001

Card 2/2

L 13520-63 EWP(j)/EWT(m)/BDS ASD Pc-4 RM/MAY

ACCESSION NR: AP3001154 S/0190/63/005/006/0837/0841

AUTHOR: Terent'yev, A. P.; Rukhadze, Yu. G.; Mochalina, I. G.; Panova, G. V.

TITLE: Studies on high-molecular pyridine derivatives. 1. Polyamides on the basis of 2,6-lutidine

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 5, no. 6, 1963, 837-841

TOPIC TAGS: pyridine derivative, polyamide, 2,6-lutidine, interfacial polycondensation

ABSTRACT: To achieve the synthesis of desired polyamides a solution of the dichloride of pyridine-2,6-dicarboxylic acid in benzene was reacted by interfacial polycondensation with an alkaline or acid aqueous solution of a number of aliphatic and aromatic diamines. These were ethylenediamine, tetramethylenediamine, o-phenylenediamine, benzidine, o-tolidine, 4,4'-diaminodiphenylmethane, 4,4'-diaminobenzophenone and 4,4'-diaminodiphenylsulphone. The resulting polyamides were white or slightly colored substances, almost insoluble in organic solvents. The lengthening of the aliphatic chain lowered the melting point of the polyamides from 298-300C to 235-240C and slightly increased their solubility and viscosity. The presence of aromatic rings in the macromolecules rendered them harder and more thermoresistant

Card 1/2

L 13520-63

ACCESSION NR: AP3001154

and lowered their solubility. The obtained polyamides were outstanding in their resistance to concentrated hydrochloric acid, sodium hydroxide, bromine, and hydrogen peroxide. X-ray examination revealed their amorphous structure. Orig. art. has: 1 formula and 2 tables.

ASSOCIATION: Moskovskiy gosudarstvenny*y universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 20Nov61 DATE ACQ: 01Jul63 ENCL: 00

SUB CODE: OO NO REF SOV: 010 OTHER: 002

Card 2/2

L 13521-63 EWP(j)/EWT(m)/BDS ASD Pc-4 RM
ACCESSION NR: AP3001155 S/0190/63/005/006/0842/0845

62
61

AUTHOR: Terent'yev, A. P.; Rukhadze, Ye. G.; Panova, G. V.; Mochalina, I. G.

TITLE: Studies on high-molecular pyridine derivatives. 2. Polyamides and polythioamides on the basis of certain alkylpyridines

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 5, no. 6, 1963, 842-845

TOPIC TAGS: pyridine, polyamide, polythioamide, alkylpyridine, tautomerism

ABSTRACT: The present investigation is a continuation of the earlier work by the authors on polyamides on the basis of 2,6-lutidine. Since the objective was the synthesis of thioamides and polythioamides, this study also included alpha-picoline. These compounds were obtained by prolonged heating of the corresponding alkylpyridine and of diamines (benzidine, o-tolidine, and o-dianizidine) with an excess of sulfur at 160-200C. Where 2,6-lutidine constituted the base, it was necessary to react it with a double amount of diamine and a tenfold quantity of sulfur in order to obtain polythioamides, while at a 4:1:10 ratio only one methyl group of 2,6-lutidine entered into the reaction. These synthesized polythioamides are colored powdery substances, some of which show an amorphous structure on a Debyegram, while infrared spectra revealed the presence of a thioureide group. It is concluded that

Card 1/2

L 13521-63
ACCESSION NR: AP3001155

the thioamides and polythioamides may exist in two tautomeric forms. Orig. art. has: 4 formulas.

ASSOCIATION: Moskovskiy gosudarstvenny*y universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 20Nov61 DATE ACQ: 01Jul63 ENCL: 01

SUB CODE: OO NO REF SOV: 006 OTHER: 002

Card 2/2

ACCESSION NR: AP4042188 S/0190/64/006/007/1267/1271

AUTHOR: Terent'yev, A. P.; Mochalina, I. G.; Rukhadze, Ye. G.; Povolotskaya, Ye. M.

TITLE: Study in the series of polymeric chelates. X. Some physicochemical studies of polymeric chelates based on thio amide and poly(thio amide) derivatives of pyridine

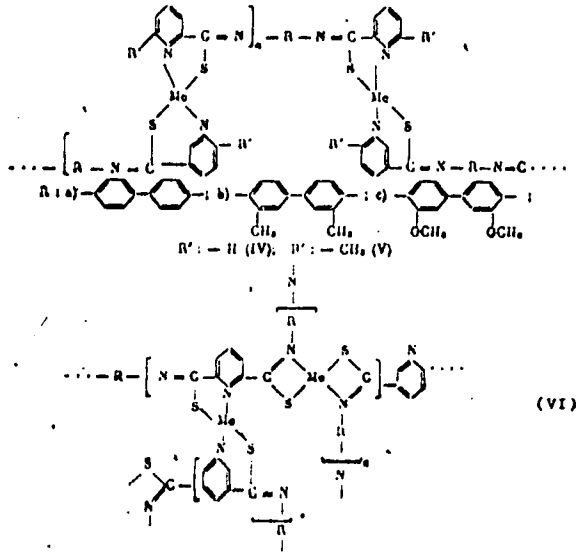
SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 7, 1964, 1267-1271

TOPIC TAGS: polymeric chelate, thiamide pyridine derivative, polythiamide pyridine derivative, Cu, Ni, Co, Zn, polymeric chelate property, chelate group structure

ABSTRACT: The properties of the following Cu-, Ni-, Co-, or Zn-containing polymeric chelates have been studied.

Card 1/4

ACCESSION NR: AP4042188



R' : — H (IV); R' : — CH_3 (V)

(VI)

Card 2/4

ACCESSION NR: AP4042188

The polymers are fine, colored amorphous powders which are soluble only with difficulty. They dissolve most readily in dimethylformamide, chloroform, and benzene; the best solubility is exhibited by polymers with metoxy groups in the backbone. The polymers are attacked by acids but are resistant to alkalis. They lose 5—15% of their weight on heating to 200C and 20—80% on heating to 400C. Comparative studies showed that polymers with a higher solubility have a lower chemical and thermal stability. The density of polymeric chelates varies from 1.27 to 1.60. They are dielectrics at room temperature; at 383K the highest electrical conductivity (10^{-10} to 10^{-11} ohm^{-1} cm^{-1}) is exhibited by Cu-containing polymers. Catalytic properties are inherent only in Cu-, Ni-, and Co-containing polymers. Their catalytic activity surpasses by two orders of magnitude that of inorganic Cu semiconductors. The nature of the band in the chelate group, as determined from x-ray absorption spectra, is =C-S-Me. Orig. art. has: 3 tables.

ASSOCIATION: Moskovskiy gosudarstvenny*y universitet im M. V. Lomonosova (Moscow State University)

ACCESSION NR: AP4042188

SUBMITTED: 02Aug63	ATD PRESS: 3073	ENCL: 00
SUB CODE: OC, GC	NO REF SOV: 006	OTHER: 002

Card 4/4

APPROVED FOR RELEASE: 06/14/2000 CIA-RDP86-00513R001134820011-0"

MOCHALINA, K.N.; FILIPPOV, A.N.

Bleaching color-woven zephyr with hydrogen peroxide. Obm. tekh.opyt [MLP] no.10:4-7 '56. (MIRA 11:11)
(Bleaching) (Hydrogen peroxide)

MOCHALINA, K.N., inzh.; KAL'CHENKO, V.Ye., inzh.

Using dyes to determine ripeness of cotton. Tekst. prom. 18 no. 7:50-51 Jl '58. (MIRA 11:7)
(Cotton--Testing)

MOCHALINA, L. Yu.

Use of "Betanol P" as dispersing agent in yarn dyeing with vat dyes. Leh. prom. no.4:21 O-D '64 (MIRA 18:1)

82041
S/062/60/000/02/04/012
B003/B066

5.3600

AUTHORS: Knunyants, I. L., Dyatkin, B. L., German, L. S., Mochalina, Ye. P.

TITLE: Reactions of Flucro-olefins. 12th Report. Interactions of Polyfluoro-chloro Butenes With Alcohols

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1960, No. 2, pp. 231 - 236

TEXT: The authors investigate the action of sodium methylate and ethylate on linear dimers of 1,2-difluoro-1,2-dichloro ethylene and trifluoro-chloro ethylene. The experiment is described in detail in the experimental part of the paper. The structure was clarified by means of infrared spectrography. The investigations revealed that the reaction of 1,2,3,4-tetrafluoro-1,3,4,4-tetrachloro butene-1 with the alcoholates mentioned yields 1,1,1-trialkoxy-2,3,4-trifluoro-4,4-dichloro butene-2. When treating the linear dimer of trifluoro-chloro ethylene with the alcoholates, 3-alkoxy-4-chloro-perfluoro butene-1 results. The linear dimer of trifluoro-chloro ethylene was identified to be a mixture of

Card 1/2

Reactions of Fluoro-olefins. 12th Report. Interactions of Polyfluoro-chloro Butenes With Alcohols

3,4-dichloro-perfluoro butene-1 and 1,4-dichloro-perfluoro butene-2 (with the latter being predominant). There are 17 references: 4 Soviet, 10 American, 1 Belgian, and 1 German.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental-organic Compounds of the Academy of Sciences USSR)

SUBMITTED: July 4, 1958 (initially)
July 31, 1959 (after revision)

Card 2/2

KNUNYANTS, I.L.; GERMAN, L.S.; DYATKIN, B.L.; MOCHALINA, Ye.P.

Condensation of 1,2-difluoro-1,2-dichloroethylene with formaldehyde. Zhur.VKHO 6 no.1:114 '61. (MIRA 14:3)

1. Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR.
(Ethylene) (Formaldehyde)

25481
S/020/61/139/001/013/018
B103/B226

15.8160

AUTHORS: Dyatkin, B. L., Mochalina, Ye. P., and Knunyants, I. L., Academician

TITLE: Condensation of formaldehyde with perfluoro olefines - tetrafluoro ethylene, hexafluoro propylene, and trifluoro chloroethylene

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 139, no. 1, 1961, 106-109

TEXT: The authors continued the investigation of chlorosulfonic acid as a catalyst of H. Prins' reaction (Ref. 1: Rec. trav. chim., 51, 469 (1932)) and endeavored to use this acid when extending the Prins reaction to perfluoro olefines: tetrafluoro ethylene, hexafluoro propylene, and trifluoro chloroethylene, in their interaction with formaldehyde. As is known, the Prins reaction belongs to the typical reactions of hydrocarbon olefines with electrophile reagents; especially, in this case, the condensation with formaldehyde in the presence of strong acids is meant. Such reactions are very difficult and, therefore, little investigated. The authors demonstrated by means of 1,2-difluoro-1,2-dichloro ethylene that

Card 1/5

Condensation of formaldehyde...

both chlorosulfonic and fluorosulfonic acid are in this case highly effective catalysts of the Prins reaction, while H_2SO_4 of various concentrations could not release this reaction (I. L. Knunyants et al. Ref. 5: Zhurn. Vsesoyuzn. khim. obshch. im. Mendeleyeva, 6, 114 (1961)). It has been proved that a mixture of tetrafluoro ethylene $CF_2 = CFCl$, paraformaldehyde, and chlorosulfonic acid, heated up to 100°C, is subject to a condensation according to the general scheme of the Prins reaction, and yields α,α-difluoro hydracrylic acid which is isolated as its ethyl ester. As the yield of this ester was 6 %, the authors were of the opinion that chlorosulfonic acid is much more active than H_2SO_4. The condensation of paraformaldehyde with hexafluoro propylene leads in the presence of chlorosulfonic acid at 130 - 150°C to a 41-% yield of α-fluoro-α-trifluoro methyl hydracrylic acid:

$$CF_2 = CFCF_3 + CH_2O + H_2O \longrightarrow \left[HOCF_2-\underset{\displaystyle CF_3}{\underset{|}{C}}FCH_2OH\right] \longrightarrow HOCH_2\underset{\displaystyle CF_3}{\underset{|}{C}}FCOOH$$

Card 2/5

Condensation of formaldehyde...

The formation of this acid is in accord with the polarization of the double bond in hexafluoro propylene $\overset{\delta+}{C}F_2 = \overset{\delta-}{C}F—CF_3$. The double bond in $CF_2 = CFCl$ is polarized such that a partly negative charge is present on the carbon atom of the CFCl group. This has been repeatedly confirmed by reactions of nucleophile additions to $CF_2 = CFCl$. In the final result only derivatives of fluoroacetic acid are produced. Thus, the condensation of formaldehyde with trifluoro chloroethylene could be expected to lead to α-fluoro-α-chloro hydracrylic acid: $HOCH_2^+ + \overset{\delta-}{C}FCl = \overset{\delta+}{C}F_2 \longrightarrow [HOCH_2CFClCF_2^+] \xrightarrow{H_2O} HOCH_2CFClCOOH$.

This acid has actually been isolated as its ethyl ester. The yield amounted to 19.8 % of the theoretical one. However, beside this yield, another 30.5 % of ethyl ester of α,α-difluoro hydracrylic acid have been produced. Its formation can be only explained as a result of the electrophile attack to the CF_2 group, i.e., to a negatively polarized carbon atom being more weak than is the case with the C atom in the CFCl group of trifluoro chloroethylene. I. L. Knunyants, V. V. Shokina and Li Chih-yüan (Ref. 9: DAN,

Card 3/5

Condensation of formaldehyde...

136, 611 (1961)) observed two types of orientation in the addition of iodine chloride to trifluoro chloroethylene:

$$CF_2= CFCl + ICl \longrightarrow CF_2I - CFCl_2 + CF_2Cl - CFClI.$$

It could not be found out whether this reaction is released by the ionic or by the radical mechanism. However, in the condensation with formaldehyde, an orientation being opposed to polarity appears in a pronounced ionic process, viz., that of the electrophile addition to the double bond. The authors try to explain this phenomenon by the competition of the polar and steric factors. The effective radius of F is 1.25 Å, that of Cl 1.58 Å. Thus, the orientation of reaction which corresponds to polarity meets a great steric hindrance. The steric and polar factors, however, agree as to their effect in the nucleophile addition to trifluoro chloroethylene. Due to this fact, orientation in these reactions has to be a rigorously unambiguous one. There are 9 references: 2 Soviet-bloc and 7 non-Soviet-bloc. The three references to English-language publications read as follows: M. S. Raasch. (Ref. 2: Am. pat. 2452791); D. D. Coffman et al. (Ref. 3: J. Org. Chem. 14, 747 (1949)); E. T. McBee et al. (Ref. 4: J. Am. Chem. Soc., 74, 444 (1952)).

Card 4/5

Condensation of formaldehyde...

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental-organic Compounds of the Academy of Sciences USSR)

SUBMITTED: March 23, 1961

Card 5/5

39794
S/062/62/000/008/014/016
B101/B180

11.771

AUTHORS: Knunyants, I. L., Dyatkin, B. L., and Mochalina, Ye. P.

TITLE: Anionotropic rearrangement in reactions of perfluorobutadiene

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 8, 1962, 1483-1484

TEXT: The addition of nucleophilic reagents (e.g. alcohol) to hexafluorobutadiene-1,3 in the presence of triethylamine was investigated at 80°C. As oxidation of the addition compound with permanganate gives trifluoroacetic acid, while hydrolysis with H_2SO_4 gives trifluoroacetone, it is assumed that the primary addition occurs in the 1,2 position, and that the presence of the triethylamine causes an allyl rearrangement: $CF_2=CF-CFHCF_2OR \rightarrow CF_3CF=CHCF_2OR$. This was proved in that the dialkylamides of α-hydroperfluorocrotonic acid (II) were obtained from the dialkylamides of α-hydroperfluorovinylacetic acid in the presence of triethylamine, as was the diethylamide of (II): b.p. 81-82°C/7 mm Hg; n_D^{20} 1.3983; d_4^{20} 1.2010. Oxidation of this product with $KMnO_4$ gave tri-

Card 1/2

fluoroacetic acid in quantitative yield, and its hydrolysis with H_2SO_4 gave trifluoroacetone. Since neither anhydrous HF nor triethylaminefluorohydrate cause a rearrangement of the dialkylamine of (I) into the corresponding compound of (II), the triethylamine is assumed to have a specific effect:

$$CF_2{=}CF\text{-}CFHCONR_2 + R_3N \longrightarrow CF_2{=}CF{=}CH(CONR)(\overset{\oplus}{N}R_3)\,F^{\ominus} \longrightarrow CF_3CF{=}CH\text{-}CONR_2 + R_3N.$$

The formation of a carben as an intermediate is also possible:

$$CF_2{=}CF\text{-}HCF\text{-}CONR_2 + R_3N \xrightarrow{-HF} CF_2{=}CF\text{-}\ddot{C}\text{-}CONR_2 \longrightarrow \overset{\oplus}{C}F_2\text{-}CF{=}\overset{\ominus}{C}\text{-}CONR \xrightarrow{HF} CF_3CF{=}CHCONR_2$$

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds of the Academy of Sciences USSR)

SUBMITTED: February 19, 1962

Card 2/2

KNUNYANTS, I.L.; DYATKIN, B.L.; GERMAN, L.S.; MOCHALINA, Ye.P.

Condensation of formaldehyde with trifluoroethylene. Izv.AN SSSR.Otd. khim.nauk no.9:1676-1677 S '62. (MIRA 15:10)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Formaldehyde) (Ethylene) (Chlorine compounds)

DYATKIN, B.L.; MOCHALINA, Ye.P.

Fluoroaliphatic diazo compounds. Report No.1: Some new reactions of trifluorodiazoethane. Izv. AN SSSR Ser. khim. no.7:1225-1229 Jl '64. (MIRA 17:8)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

MOCHALINA, Ye.P.; DYATKIN, B.L.

Synthesis of 2-diazoperfluoropropane (bistrifluoromethyldiazomethane. Izv. AN SSSR. Ser. khim. no.5:926-928 '65. (MIRA 18:5)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

DYATKIN, B.L.; MOCHALINA, Ye.P.

Fluoroaliphatic diazo compounds. Report No.2: α-Diazoperfluoro ketones. Izv. AN SSSR. Ser. khim. no.6:1035-1039 '65.
(MIRA 18:6)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

[redacted]

'65.

1. [redacted]

DYATKIN, B.L.; MOCHALINA, Ye.P.; KNUNYANTS, I.L.

Oxidation of hexafluoroacetone oxime in anhydrous hydrogen fluoride. Izv. AN SSSR. Ser. khim. no.9:1715-1716 '65. (MIRA 18:9)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

DYATKIN, B.L.; MOCHALINA, Ye.P.; LANTSEVA, I.T.; KNUNYANTS, I.L.

Hexafluoroisobutyric acid in the Borodin-Hunsdiecker reaction. Zhur.VKHO 10 no.4:469-470 '65.

(MIRA 18:11)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

KNUNYANTS, I.L.; DYATKIN, B.L.; MOCHALINA, Ye.P.; L[illegible], [illegible]

Hexafl[illegible] xylan [illegible] of some fl[illegible]rinated hydroxy[illegible] and oximes. Izv.[illegible] khim. no.1:179-180 '66. ([illegible])

[illegible] organicheskikh soyedin[illegible] [illegible]ted May [illegible], 1965.

L 31885-66 EWT(m)/EWP(j)/T WW/JW/JWD/RM

ACC NR: AP6012539 SOURCE CODE: UR/0062/66/000/003/0585/0585

AUTHOR: Dyatkin, B. L.; Mochalina, Ye. P.; Bekker, R. A.; Knunyants, I. L. 44 43 B

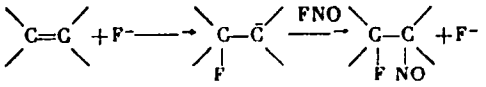
ORG: Institute of Elemental Organic Compounds, Academy of Sciences SSSR (Institut elementarnoorganicheskikh soyedineniy Akademii nauk SSSR)

TITLE: Mechanism of addition of nitrosyl fluoride to fluoroolefins

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 3, 1966, 585

TOPIC TAGS: organic synthesis, fluorine compound

ABSTRACT: The authors obtained experimental proof of the nucleophilic mechanism of addition of FNO to higher fluoroolefins. It was shown that alkali metal fluorides (especially in strongly ionizing media) are effective catalysts of this reaction



Perfluoroethylene reacts with FNO only at 120-150°C and the reaction of perfluoroethylene (15 g), FNO (5.5 g), CsF (2 g) and KF (4 g) produces 2-nitrosoperfluoropro-

Card 1/2 UDC: 541.124 + 546.16

L 31885-66

ACC NR: AP6012539

pane (14.3 g). Perfluorocyclobutene according to our observations does not react with FNO even during heating to 120°C; however, shaking of 8 g of perfluorocyclobutene, 4.5 g of FNO, 1 g CSF and 2 kg KF with 5 ml of tetramethylene sulfone at 35° for 3 hrs produces nitrosoperfluorocyclobutane with 70% yield.

SUB CODE: 07/ SUBM DATE: 30Dec65/ ORIG REF: 002/ OTH REF: 001

Card 2/2

ACC NR: AP7010719 SOURCE CODE: UR/0062/66/000/012/2247/2248

AUTHOR: Mochalina, Ye. P.; Dyatkin, B. L.; Knunyants, I. L.

ORG: Institute of heteroorganic compounds, Academy of Sciences USSR (Institut elementoorganicheskikh soyedinly AN SSSR)

TITLE: Fluorine-containing phosphazo-compounds

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 12, 1966, 2247-2248

TOPIC TAGS: organic nitrogen compound, organic phosphorus compound, fluorinated organic compound

SUB CODE: 07

ABSTRACT: It was found that fluorine-containing phosphazo-compounds may be prepared by reaction triphenylphosphine and triethylphosphite with tertiary perfluoronitrosoalkanes, in 75 and 68% yield, respectively. The reaction products were characterized. The first case of the formation of phosphazo compounds from perfluoronitrosoalkanes and derivatives of trivalent phosphorus was reported in 1965 at the laboratory of the authors. Orig. art. has: 2 formulas. [JPRS: 40,351]

Card 1/1 UDC: 547.221 + 661.718.1

MOCHALKIN, G. Ya.

CHEP[illegible], [illegible]. A.; MOCHALKIN, G. Ya. - [illegible] Agricultural Institute

"Fumigation of Wounds"

Veterinariya, 31, No. 7, July 1954, pp. [illegible]-59 ([illegible])

KURBATOV, L.N.; KABANOV, A.N.; SIGRIYANSKIY, V.V.; MASHCHENKO, V.Ye.; MOCHALKIN, N.N.; SHARIN, A.I.; SOROKO-NOVITSKIY, N.V.

Generation of coherent radiation in specimens of gallium arsenide following electronic excitation. Dokl. AN SSSR 165 no.2:303-304 N '65. (MIRA 18:11)

1. Submitted March 15, 1965.

L 10241-66 EWT(d)/FBD/EWT(l)/EEC(k)-2/EPF(n)-2/T/EWP(k)/EWA(m)-2/EWA(h) SCTB/IJP(c)
ACC NR: AP5028275 WG/WW/AT SOURCE CODE: UR/0020/65/165/002/0303/0304

AUTHOR: Kurbatov, L. N.; Kabanov, A. N.; Sigriyanskiy, V. V.; Mashchenko, V. Ye.; Mochalkin, N. N.; Sharin, A. I.; Soroko-Novitskiy, N. V.

ORG: none

TITLE: Generation of coherent radiation in GaAs samples excited by electrons

SOURCE: AN SSSR. Doklady, v. 165, no. 2, 1965, 303-304

TOPIC TAGS: laser, semiconductor laser, electron beam, gallium arsenide, crystal lattice, electron

ABSTRACT: Laser action at 77K and at room temperature is reported in both n- and p-type GaAs excited with a beam of electrons. The Fabry-Perot cavity was prepared by cleaving in the (110) plane. The resonator mirror surfaces were separated by a distance of 50—60 μ. An electron beam device supplied electrons with energies up to 60 kev. The repetition rate and the pulse duration were 50—200 pulses per second and 9×10^{-8} sec, respectively. The maximum beam current at a beam diameter of 60—70 μ was 17 mamp. The electron beam was normal to the polished surface of the sample. The light was emitted from the faces normal to the polished faces. The threshold current densities were different for different samples and varied between 70 and 150 amp/cm^2. Since the effective mass of the electron and the width of the forbidden gap in GaAs are larger than in InSb and InAs (two of the other semiconductor lasers) and the lifetime of the electrons is very short, population inversion in

Card 1/2 UDC: 537.311.33

L 10241-66

ACC NR: AP5028275

5

GaAs should occur at a temperature of the electron gas equal to the Debye temperature (θ_D = 410K) and not the lattice temperature. Therefore, in the range of lattice temperatures between 77—300K the threshold current should depend weakly on the temperature. The weak temperature dependence of the threshold current for laser action in GaAs was confirmed experimentally. Orig. art. has: 2 figures. [CS]

SUB CODE: 20 / SUBM DATE: 14Jan65/ ORIG REF: 003/ OTH REF: 004/ ATD PRESS: 4161

Card 2/2

KHARITONOV, G.A.; MOCHALKIN, L.S.

Basic advice for the establishment of shelterbelt plantations in Chelyabinsk Province. Trudy Inst. biol. UFAN SSSR no. 25:17-24 '61. (MIRA 15:6)
(Chelyabinsk Province--Windbreaks, shelterbelts, etc.)

L 18389-63 EDS
ACCESSION NR: AP3003731 S/0109/63/008/007/1279/1280

47

AUTHOR: Kuz'min, V. A.; Mochalkina, O. R.

TITLE: Method for reducing the cutoff time of p-n-p-n semiconductor devices

SOURCE: Radiotekhnika i elektronika, v. 8, no. 7, 1963, 1279-1280

TOPIC TAGS: p-n-p-n semiconductor device, D235 semiconductor device

ABSTRACT: Practical 4-layer semiconductor structures include one wide (100-200-micron) n-type base. The authors cut the switching time of the D235 device to one-fifth by reducing the lifetime of minority carriers in the wide base. The latter was alloyed with Au atoms. Other characteristics of the device were not impaired. Orig. art. has: 1 figure, 3 formulas, and 1 table.

ASSOCIATION: none
SUBMITTED: 28Dec62 DATE ACQ: 02Aug63 ENCL: 00
SUB CODE: GE NO REF SOV: 001 OTHER: 001

Card 1/1

ACCESSION NR: AT4040780 S/2657/64/000/011/0121/0129

AUTHOR: Mochalkina, O. R.

TITLE: Current of an open controllable diode in the switching mode

SOURCE: Poluprovodnikovy*ye prihory* i ikh primeneniye; sbornik statey, no. 11, 1964, 121-129

TOPIC TAGS: diode, controllable diode, diode current, switch, diode switch, semiconductor device, rectifier, diode power

ABSTRACT: The author considers the operation of the high-power controllable diode D238 in the switching mode. The maximum current of this diode in the open state is on the order of 10 amperes. The condition of thermal stability, an essential factor in limiting the power given off in a semiconductor device, is defined and explained. The author determines the maximum permissible power and current which may be liberated in the diode in the open condition. It is shown on the basis of a typical characteristic curve of a controllable diode that the current is an almost linear function of voltage over a rather large voltage range. Exactly as in the case of rectifier diodes, temperature instability in a controllable diode may occur in the event that the power dissipated by the diode increases as the junction temperatures rises. For a controllable diode operating

Card 1/3

ACCESSION NR: AT4040780

in the switching mode, instability involves the possibility of an avalanche-type current build-up in the reverse direction as the temperature increases. From this fact, there follows the possibility of an avalanche-like rise in the power given off in the reverse voltage. The power given off by the diode in the open state may be considered as independent of the junction temperature. In fact, this power will decrease somewhat in view of the drop in residual voltage as the temperature of the junction rises. This power cannot rise in an avalanche form, heats the diode only to a certain temperature and cannot lead to thermal instability and the failure of the diode, provided this temperature does not cause melting of the materials present in the device. There exists a critical power, dissipated in the reverse direction, after the attainment of which the diode will always be unstable regardless of the magnitude of the power dissipated in the open state. Critical power is thus determined only by the thermal factor of the device and by the temperature coefficient. In addition, the author shows that the maximum permissible mean current of the open state is a function of the cutoff angle. This function is related to a rise in the residual voltage in the diode as the amplitude of the current flowing through it increases. Formulas are given which determine the maximum permissible value of the mean current of the open diode for several typical cutoff angle

ACCESSION NR: AT4040780

values. The calculation given in the article permits an approximate estimate of the value of the open diode for several typical cutoff angle values. The calculation given in the article permits an approximate estimate of the value of the maximum permissible power of a high-power controllable diode, for specific heat emission, depending on the ambient temperature. Finally, the author demonstrates the considerable dependence of the maximum mean current of the open diode on the cutoff angle, which fixes the duration of time the diode is in the open state. It is important that this dependence be borne in mind when operating a controllable diode in various pulse systems. Orig. art. has: 6 figures and 7 formulas.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00

SUB CODE: EC NO REF SOV: 001 OTHER: 003

Card 3/3

ACCESSION NR: AP5017679 UR/0142/65/008/002/0165/0170
621.382.333.33

AUTHOR: Kuz'min, V. A.; Mochalkina, O. R.

TITLE: Effect of current on gain in p-n-p-n devices

SOURCE: IVUZ. Radiotekhnika, v. 8, no. 2, 1965, 165-170

TOPIC TAGS: pnpn diode, four region diode, thyristor

ABSTRACT: The results of an experimental and theoretical investigation of the four-region silicon diode are reported: (1) The maximum values of α and α correspond to emitter-current densities of 0.01 and 0.001 amp/cm², respectively; the effect of current on α found experimentally is in good agreement with the theory for a wide-base triode; for a narrow-base triode, this effect is determined by the emitter-junction shunting leakage; (2) By comparing $I\frac{d\alpha}{dI} \ll \alpha$ current region with the reverse currents, it has been established that the current derivative may be neglected in the estimation of the switching voltage if the current density in the turned-off p-n-p-n structure, in the near-breakdown region, exceeds 0.01 amp/cm²; with turn-off current densities of 0.001—0.01 amp/cm²,

Card 1/2

ACCESSION NR: AP5014879

the relation $\frac{\partial \alpha}{\partial I} \approx 0$, but $\left(\alpha + I \frac{\partial \alpha}{\partial I} = \alpha_{max}\right)$; hence, in this current range, the current derivative, too, has no effect on the junction voltage; (3) With the narrow-base-triode emitter junction shunted, the p-n-p-n-diode switching voltage is largely determined by the wide-base-triode current gain and the central-junction breakdown voltage. Orig. art. has: 5 figures and 13 formulas.

ASSOCIATION: none

SUBMITTED: 07Oct64 ENCL: 00 SUB CODE: EC

NO REF SOV: 000 OTHER: 003

Card 2/2

L 13292-66 EWT(m)/EWP(j) RM

ACC NR: AP6000325 (A) SOURCE CODE: UR/0286/65/000/021/0012/0012

INVENTOR: Volkova, L. I.; Zaitova, A. Ya.; Ioakimis, A. A.; Machal'nikova, T. P.; Nazarova, L. Yu.; Nazarov, V. I.; Pryakhina, M. S.; Petrov, V. N.; Rachkovskiy, E. E.; Savel'yev, A. P.; Syrova, A. A.; Tikhanovskaya, S. G.

ORG: none

32
B

TITLE: A method for producing normal butanol by synthesis from ethyl alcohol. Class 12, No. 175929 [announced by the Bashkir Scientific Research Institute for Petroleum Refining (Bashkirskiy nauchno-issledovatel'skiy institut po pererabotke nefti)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 21, 1965, 12

TOPIC TAGS: catalysis, butanol, ethyl alcohol

ABSTRACT: This Author's Certificate introduces: 1. A method for producing normal butanol by synthesis from ethyl alcohol on a catalyst. The process is done in a single stage by using a catalyst consisting of aluminum oxide, magnesium oxide, silicon oxide and a salt or oxide of an alkali metal. 2. A modification of this

Card 1/2

UDC: 66.097.3 : 547.264.07

L 13292-66

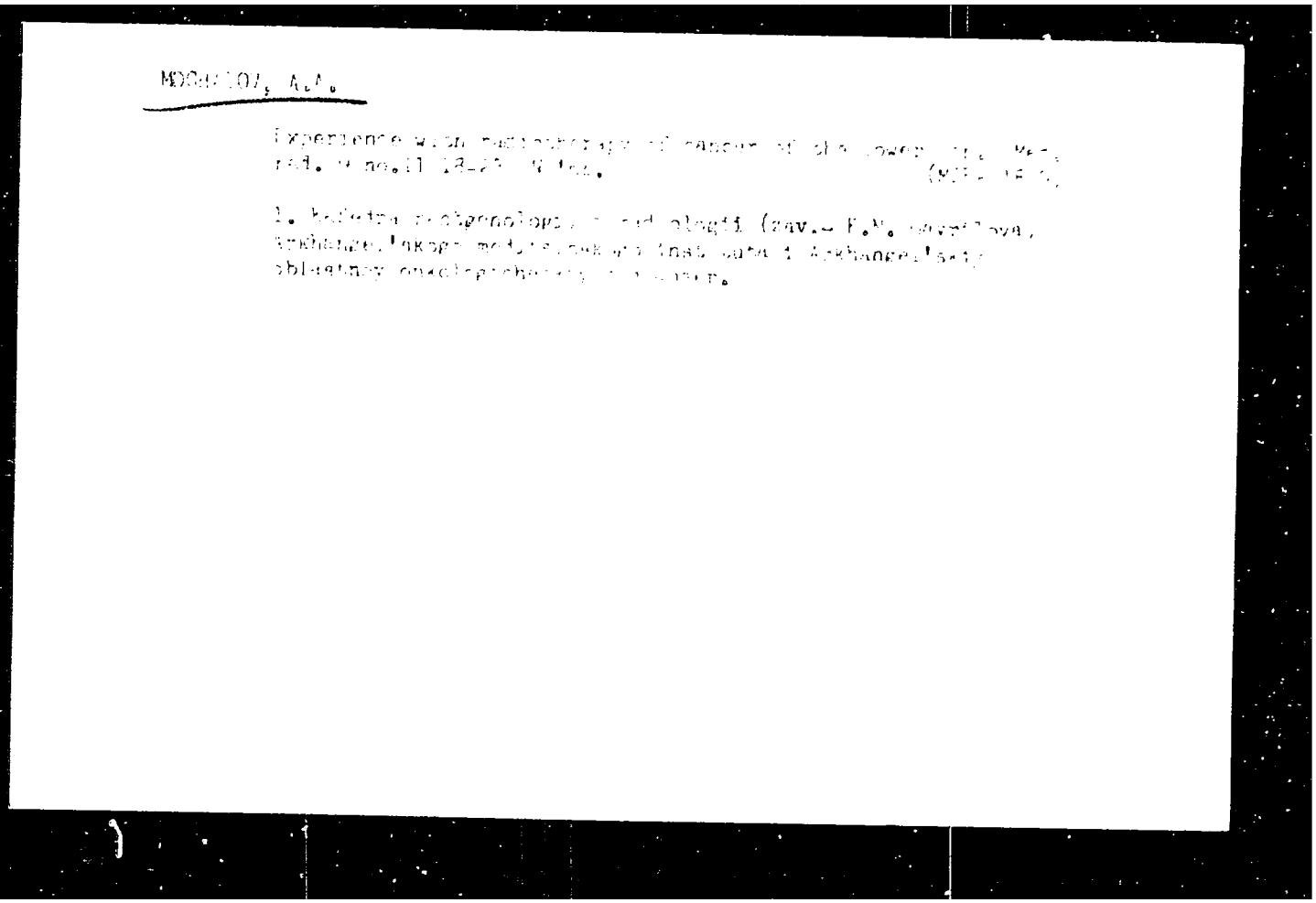
ACC NR: AP6000325 O

method in which the catalyst contains from 5 to 80 % aluminum oxide, from 95 to 10 % magnesium oxide, from 0 to 50 % silicon oxide and from 0 to 5 % of a salt or oxide of an alkali metal.

SUB CODE: 07/ SUBM DATE: 11Apr63/ ORIG REF: 000/ OTH REF: 000

jw

Card 2/2



KOCHALOV, A.

Equipment for making silicate wall blocks. Stroi.mat.izdel. i konstr. 1 no.9:16-19 S'55. (MLRA 9:1)

1. Glavnyy inzhener Krasnopresnenskogo kombinata stroitel'nykh materialov.

(Building blocks)

MOCHALOV, A.; SHINKAREV, S.

Two thousand kilograms of lime from one cubic-meter furnace.
Stroi. mat., izdel. i konstr. 2 no.8:21 Ag '56. (MLRA 9:10)

1. Glavnyy inzhener Krasnopresnenskogo kombinata (for Mochalov).
(Lime kilns)

MOCHALOV, A.; SHINKAREV, A.

Chromium magnesite bricks used for lining limekilns. Stroi.mat. 3 no.11:20-21 N '57. (MIRA 10:12)

1.Glavnyy inzhener Krasnopresnenskogo kombinata stroitel'nykh materialov (for Mochalov). 2.Nachal'nik tsekha Krasnopresnenkogo kimbinata stroitel'nyk materialov (for Shinkarev).
(Magnesite) (Firebrick) (Limekilns)

MOCHALOV, A.I.

VOLZHENSKIY, A.V., prof.; MOCHALOV, A.I., inzh.; BUROV, Yu.S., kand. tekhn.nauk; SILAYENKOV, Ye.S., inzh.

Autoclaved concrete made with metallurgical slag and ash binders. Bet. i zhel.-bet. no.8:322-325 Ag '57. (MIRA 10:10)

1.Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury (for Volzhenskiy)

(Concrete)

MOCHALOV, A.; SHAPOVAL, I.; TOMASHPOL'SKIY, L., tekhnolog.

Improving equipment for making lightweight blocks. Stroi. mat. 4 no.3:29-31 Mr '58. (MIRA 11:3)

1. Glavnyy inzhener Krasnopresnenskogo kombinata stroitel'nykh materialov (for Mochalov). 2. Nachal'nik tekhnicheskogo otdela Krasnopresnenskogo kombinata stroitel'nykh materialov (for Shapoval).
(Lightweight concrete)

MOCHALOV, A.I., inzh.

Experimental checking of the motion of kilned material in shaft furnaces. Stroi.mat. 6 no.4:38-39 Ap '60.
(MIRA 13:6)

(Kilns)

MOCHALOV, A.I., inzh.

Kilning fine lime in a shaft kiln. Stroi. mat. 10 no.1: 37-38 Ja '64. (MIRA 17:5)

LOMUNOV, K.F.; MOCHALOV, A.I.

Ways of preventing defects in the exposed surfaces of silica blocks. Strol. mat. 10 no.3:21-23 Mr '64. (MIRA 17:5)

BUROV, Yu.S., kand. tekhn. nauk; MOCHALOV, A.I., laureat Leninskoy premii; KORABLINOV, A.M., inzh.; PEREVOZOV, V.S., inzh.; SEMCHENKOVA, T.S., inzh.

Large products made of autoclaved concrete from carbonaceous sands. Stroi. mat. 10 no.6:38-40 Je '64. (MIRA 17:10)

1. Direktor Krasnopresnenskogo kombinata stroitel'nykh materialov (for Mochalov).

MOCHALOV, A.M.

Preparation of high-purity cadmium by the method of zone melting.
Trudy Alt. GMNII AN Kazakh. SSR 9:233-237 '60. (MIRA 14:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tsvetnykh metallov.
(Cadmium--Metallurgy)
(Zone metling)

MOCHALOV, A.S., inzh. ; YESIPOV, N.Ya.

Mechanical crusher for laboratory samples. Masl.-zhir. prom. 24 no.4:43-44 '58. (MIRA 11:5)

1.Millerovskiy maslоekstraktsionnyy zavod.
(Laboratories--Equipment and supplies)
(Crushing machinery)

SOV/137-58-10-20866

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 74 (USSR)

AUTHORS: Smirnov, V.S., Pavlov, N.N., Mochalov, A.Ya.

TITLE: Grooving for Steel Angles by the Equivalent-strip Method (Kalibrovka uglovoy stali po metodu sootvetstvennoy polosy)

PERIODICAL: Prokatnoye i trubnoye proizvodstvo (prilozheniye k zhurnalu "Stal' "), Metallurgizdat, 1958, pp 147-167

ABSTRACT: A communication is presented on the results of the development of the rolling of steel angles when the rolls are grooved by the method of an equivalent strip. A presentation is made of the overall course of the calculation of grooving for angle sections by this method. Prior to the calculation, the relationship of the spread-ratio correction coefficient to the axial ratio is determined, since a change in this relationship induces a change in the effect of the pass walls on the spread. The ratio of the index of spread to reduction for the rolling conditions on the given mill (a 470 mill at one of the Leningrad plants) is determined. It is found that the fluctuating value of the spread ratio correction coefficient renders impossible any further correction of pass dimensions if it is found that they do not properly

Card 1/2

SOV/137-58-10-20866

Grooving for Steel Angles by the Equivalent-strip Method

fill with metal. The pass-grooving calculation is adduced. Since 1952 grooving for several angle sections calculated by the method of the equivalent strip has been successfully employed at that plant. An investigation for the purpose of determining roll-separating pressure was conducted during the rolling of angle steel Nr 5 on the 470 mill, and the nature of the distribution of the pressure through the grooves was determined.

B.Ts.

1. Angle bars---Production 2. Rolling mills---Design 3. Rolling mills ---Operation

Card 2/2

MOCHALOV, P. D.

Cutting Machines

"Improvement of bearings for spindles of metal-cutting machines." Pokshipnik no. 6, 1952.

Monthly List of Russian Accessions, Library of Congress, October 1 52. UNCLASSIFIED.

KOCHAILOV, B.M.

Bronchography in a district hospital. Vest. rent. i rad. 33 no.6: 82 N-O '58. (MIRA 12:1)

1. Iz Serpukhovskoy bol'nitsy "Krasnyy tekstil'shchik" (glavnyy vrach Ya. G. Surkin) Moskovskoy oblasti.
(BRONCHI, radiography in district hosp. (Rus))

MOCHALOV, Boris Mikhaylovich

[Production and consumption in the period of the extensive building of communism] Proizvodstvo i potreblenie v period razvernutogo stroitel'stva kommunizma. Moskva, Znanie, 1960. 45 p. (MIRA 13:12)

(Russia--Economic conditions)

MOCHALOV, Boris Mikhaylovich; SUVOROVA, M.I., otv.red.; PAL'CHUM, I.F., red.; YERMAKOV, M.S., tekhn.red.

[Trade under socialism; a lecture on the course in the political economy of socialism] Torgovlia pri sotsializme; lektsiia po kursu politicheskoi ekonomii sotsializma. Otv.red. M.I.Suvorova. Moskva, Izd-vo Mosk.univ., 1961. 50 p.

(MIRA 14:4)

(Russia--Commerce)

MOCHALOV, Boris Mikhaylovich; PAL'CHUN, I.F., red.; YERMAKOV, M.S., tekhn. red.

[Commodity production, the law of value, and money under socialism; lecture on the economics of socialism] Tovarnoe proizvodstvo, zakon stoimosti i den'gi pri sotsializme; lektsiia po kursu politicheskoi ekonomii sotsializma. Moskva, Izd-vo Mosk. univ., 1961. 64 p. (MIRA 14:8)

(Economics)

MOCHALOV, B. V. Sep 52

USSR/Electricity - Measuring Instruments

"Review of P. N. Pigina, and N. N. Shumilovskiy's Book, 'Electric Meters'" E. L. Rymar', V. A. Kochan, V. A. Petrovskiy, B. V. Mochalov, Members of Chair of Automatic and Measuring Devices, L'vov Polytech Inst.

"Elektrichestvo" No 9, pp 95, 96

Favorable review of subject book on elec meters [watt-hour meters]. States that no Soviet books had been written on this subject since the works of P. N. Sedov, N. N. Shumilovskiy, and others published in 1933-1935

232T67

MOCHALOV, G. N.

PHASE I BOOK EXPLOITATION SOV/5015

Akademiya nauk SSSR. Institut mashinovedeniya

Issledovaniya v oblasti obrabotki metallov davleniyem (Investigations in the Field of Metal Pressworking) Moscow, Izd-vo AN SSSR, 1960. 66 p. Errata slip inserted. 4,200 copies printed.

Resp. Ed.: A.D.Tomlenov; Ed. Of Publishing House: G.Ye. Pevzner; Tech. Ed.: S.P. Golub'.

PURPOSE: This collection of articles is intended for engineers, designers, and scientific research workers engaged in the plastic working of metals.

COVERAGE: Articles of the collection deal with the following problems: tensile stresses in metal during forging and cross-rolling; deformation of a membrane in bulging by hydraulic pressure; intensification of plastic deformation in stamping contact area under the state of stress in helical cross-rolling on a three-roll mill; testing of sheet steel for biaxial tension by the method of bulging a membrane under hydraulic pressure; deformability of sheet steel; determination of the quality of industrial lubricants used in the cold stamping of sheet steel; determination of the quality of carbon sheet steel; and the temperature field of a blank in the hot stamping of steel plates. No personalities are mentioned. Each article contains conclusions based on investigations. References, predominantly Soviet, accompany most of the articles.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

Card 3/3

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(2)

S/129/60/000/011/011/016
E073/E535

AUTHORS: Mitrofanov, A.A., Candidate of Technical Sciences, Volkova, M.A., Letchford, N.I., Mochalov, G.N., Engineers

TITLE: Application of Converter Steel in the Automobile Industry

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1960, No.11, p.46.

TEXT: Data are given on industrial tests relating to the use of converter steel (0.17% C, 0.46% Mn, 0.032% S, 0.038% P) in the motor car industry. From 8 ton ingots of three commercial melts, strip was rolled which was used for producing rims of truck wheels. It was found that the chemical composition and the mechanical properties are the same as for open hearth steel. At the Gor'kiy Automobile Works 2900 such rims were produced and the performance of 1684 of them was closely observed. The number of rejects due to cracking along the weld seam during stretching of the rim was 0.87% for the experimental batch as compared to 0.71% for the batch made of open hearth steel of a similar composition. With these rims disc wheels were made which were fitted on 264 trucks.

Card 1/2

(1)

S/129/60/000/011/011/016
E073/E535

Application of Converter Steel in the Automobile Industry

So far, these trucks have run over 50 000 km. It is concluded from the results that the investigated converter steel is as good as open hearth steel, particularly for hot rolled and cold rolled sheets which are to be used for deep drawing. There is 1 table.

ASSOCIATIONS: TsNIIChM, GAZ and ZIL

Card 2/2

ARIYA, S.M.; YEROFEYEVA, M.S.; MOCHALOV, G.P.

Magnetic susceptibility of strontium subnitride. Zhur.ob.khim. 27 no.7:1740-1743 Jl '57. (MIRA 10:10)

1.Leningradskiy gosudarstvennyy universitet.
(Strontium nitride--Magnetic properties)

MOCHALOV, I.P.

Filtration characteristics of soils in the Golodnaya Steppe. Mat. po proizv. sil. Uzb. no.15:107-112 '60. (MIRA 14:8)

1. Moskovskiy institut inzhenerov vodnogo khozyaystva im.V.R. Vil'yamsa.
(Golodnaya Steppe—Soil percolation)

MOCHALOV, I. P.

Cand Tech Sci - (diss) "Features of the utilization of irrigated lands on forest soils." Moscow, 1961. 24 pp with illustrations; (Ministry of Agriculture USSR, All-Union Order of Lenin Academy of Agricultural Sciences imeni V. I. Lenin, All-Union Scientific Research Inst of Hydraulic Engineering and Land Reclamation imeni A. N. Kostyakov); 200 copies; price not given; (KL, 6-61 sup, 221)

MOCHALOV, I.P., inzh.

Settling deformations in irrigation canals. Gidr. i mel. 13 no.3:56-60 Mr '61. (MIRA 14:8)
(Irrigation canals and flumes)
(Loess)

MOCHALOV, I.P., inzh.

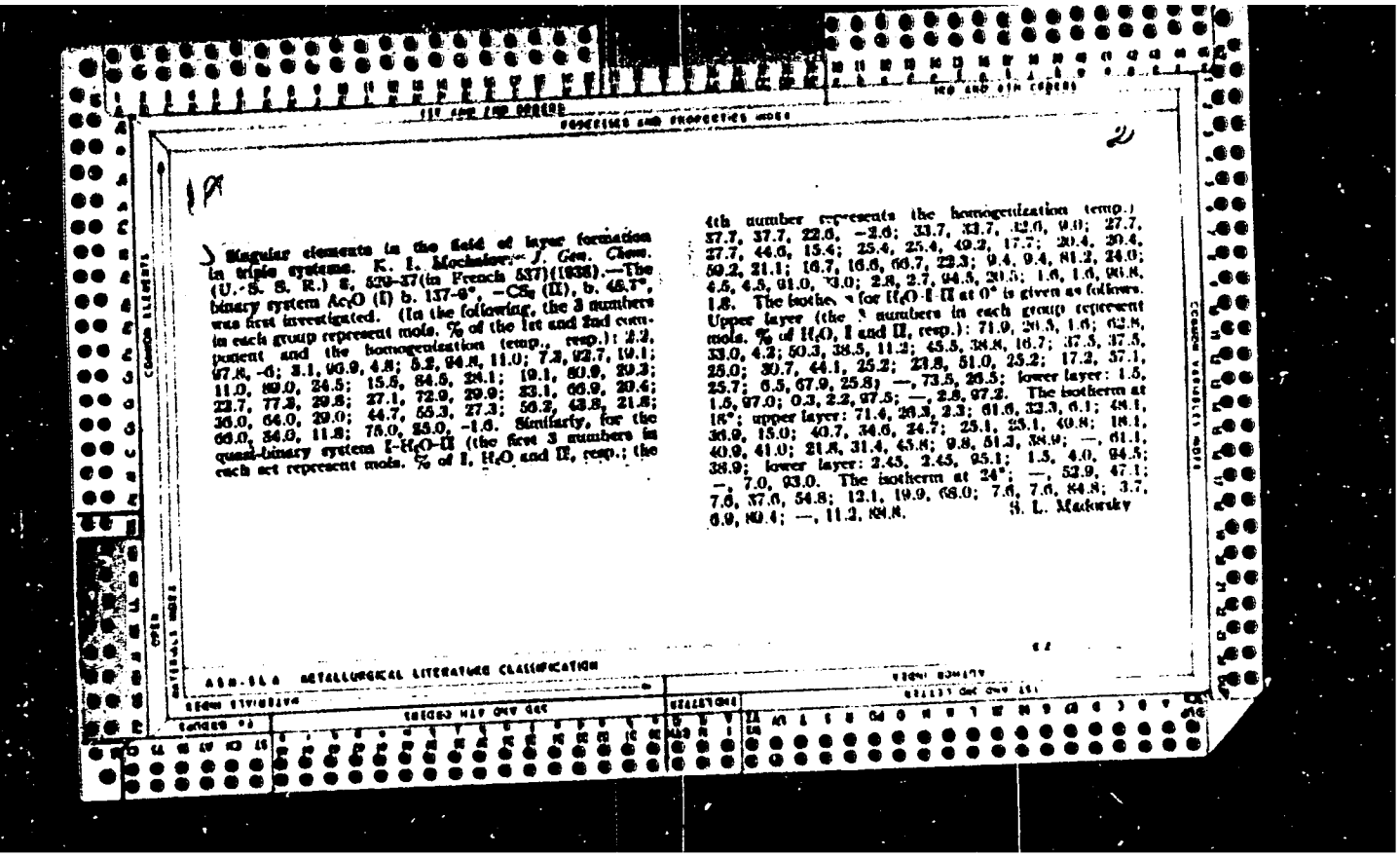
Seepage preventing facings and coverings in canals laid in loess-type soils [with summary in English]. Izv. TSKHA no.1:193-205 '62.
(MIRA 15:6)

(Irrigation canals and flumes) (Seepage) (Loess)

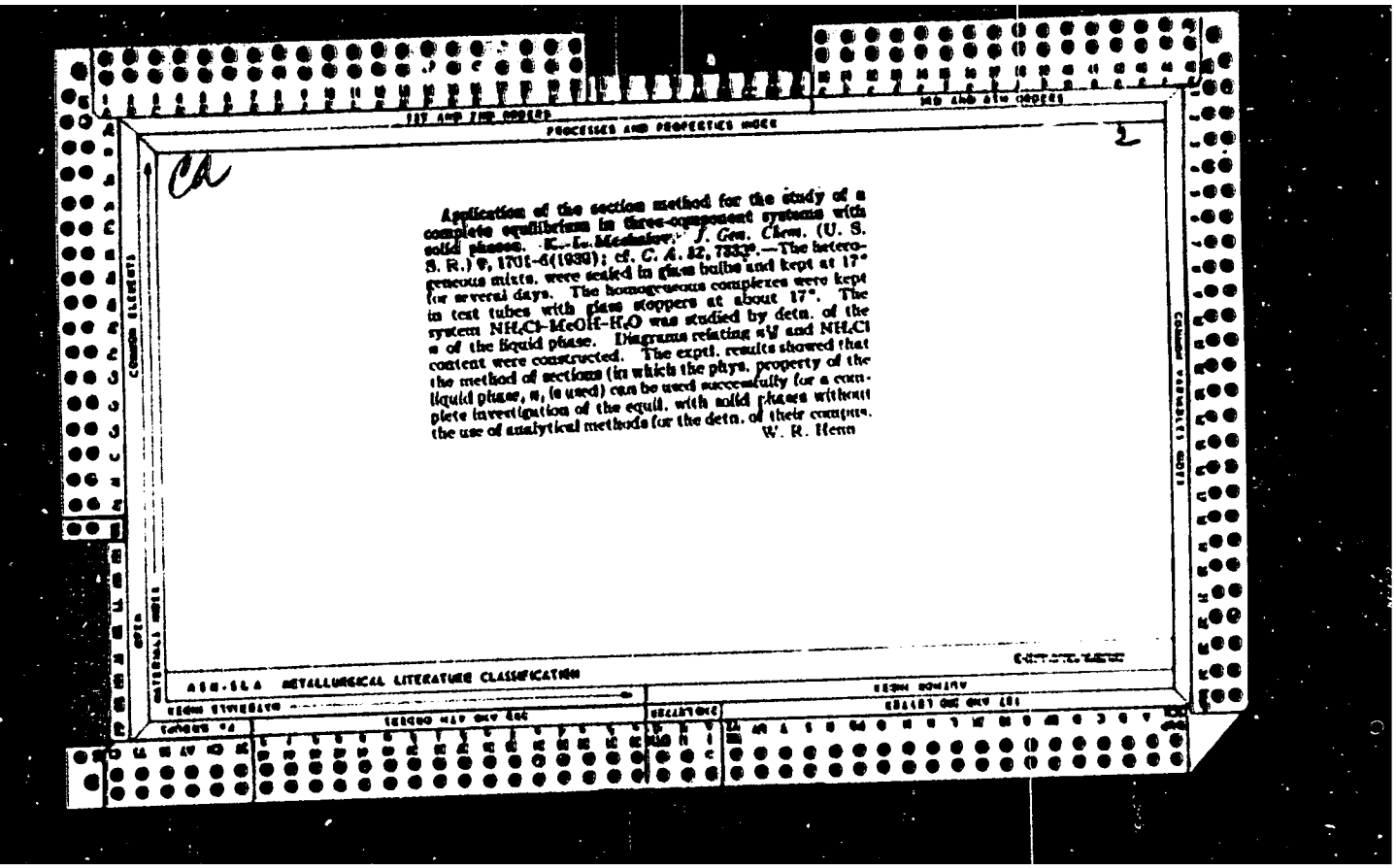
POSLAVSKIY, V.V., akademik; GIRSHKAN, S.A., kand.tekhn.nauk;
MOCHALOV, I.P., kand.tekhn.nauk

Investigating the seepage from canals. Gidr. i mel. 14 no.6:11-18 Je '62. (MIRA 15:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekhniki i melioratsii im. Kostyakova. 2. Akademiya nauk Uzbekskoy SSR (for Poslavskiy).
(Golodnaya Steppe—Irrigation canals and flumes)
(Seepage)



Binary elements in the field of layer formation in triple systems. K. I. Mochalov.—*J. Gen. Chem.* (U.S.S.R.) 8, 529–37(in French 537)(1938).—The binary system Ac_2O (I) b. 137–9°. $-CS_2$ (II), b. 46.3°, was first investigated. (In the following, the 3 numbers in each group represent mols. % of the 1st and 2nd component and the homogenization (temp., resp.): 2.2, 97.8, −6; 3.1, 96.9, 4.8; 5.2, 94.8, 11.0; 7.2, 92.7, 19.1; 11.0, 89.0, 24.5; 15.5, 84.5, 28.1; 19.1, 80.9, 29.3; 22.7, 77.3, 29.8; 27.1, 72.9, 29.9; 33.1, 66.9, 29.6; 36.0, 64.0, 29.0; 44.7, 55.3, 27.3; 56.2, 43.8, 21.8; 66.0, 34.0, 11.8; 75.0, 25.0, −1.6. Similarly, for the quasi-binary system I–H_2O–II (the first 3 numbers in each set represent mols. % of I, H_2O and II, resp.; the 4th number represents the homogenization temp.) 37.7, 37.7, 22.6, −2.6; 33.7, 33.7, 32.6, 9.0; 27.7, 27.7, 44.6, 15.4; 25.4, 25.4, 49.2, 17.7; 20.4, 20.4, 59.2, 21.1; 16.7, 16.6, 66.7, 22.3; 9.4, 9.4, 81.2, 24.0; 6.5, 6.5, 91.0, 23.0; 2.8, 2.7, 94.5, 20.5; 1.6, 1.6, 96.8, 1.8. The isothe[illegible] for H_2O–I–II at 0° is given as follows. Upper layer (the 3 numbers in each group represent mols. % of H_2O, I and II, resp.): 71.9, 20.5, 1.6; 62.8, 33.0, 4.2; 50.3, 38.5, 11.2; 45.5, 38.8, 16.7; 37.5, 37.5, 25.0; 30.7, 44.1, 25.2; 23.8, 51.0, 25.2; 17.2, 57.1, 25.7; 6.5, 67.9, 25.8); —, 73.5, 26.5; lower layer: 1.5, 1.5, 97.0; 0.3, 2.2, 97.5; —, 2.8, 97.2. The isotherm at 18°; upper layer: 71.4, 26.3, 2.3; 61.6, 33.3, 6.1; 48.1, 36.9, 15.0; 40.7, 34.6, 24.7; 25.1, 25.1, 49.8; 18.1, 40.9, 41.0; 21.8, 31.4, 45.8; 9.8, 51.3, 38.9; —, 61.1, 38.9; lower layer: 2.45, 2.45, 95.1; 1.5, 4.0, 94.5; —, 7.0, 93.0. The isotherm at 24°; —, 52.9, 47.1; 7.6, 37.6, 54.8; 12.1, 19.9, 68.0; 7.6, 7.6, 84.8; 3.7, 6.9, 89.4; —, 11.2, 88.8. S. L. Madorsky



PROCESSES AND PROPERTIES INDEX

CA

2

Application of the section method for the study of a complete equilibrium in three-component systems with solid phases. K. L. Meshalov. *J. Gen. Chem.* (U. S. S. R.) 9, 1701-6(1939); cf. *C. A.* 32, 7832⁹.—The heterogeneous mixts. were sealed in glass bulbs and kept at 17° for several days. The homogeneous complexes were kept in test tubes with glass stoppers at about 17°. The system NH_4Cl-MeOH-H_2O was studied by detn. of the s of the liquid phase. Diagrams relating s and NH_4Cl content were constructed. The expt. results showed that the method of sections (in which the phys. property of the liquid phase, s, is used) can be used successfully for a complete investigation of the equil. with solid phases without the use of analytical methods for the detn. of their compns.

W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

KOCHALOV, K. I.

"A supplement to the Sectioning Method (metoda secheniy) for the Study of the Full Equilibrium in Tri-member Systems having Solid Phases", Zhur. Obsch. Khim., 9, No. 18, 1939. Laboratory of Inorganic Chemistry, Perm' University. Rec'd 26 March 1939.

Report U-1614, 3 Jan 1952

S/153/60/003/003/016/036/XX
B016/B058

AUTHOR: Mochalov, K. I.

TITLE: Equilibrium of the Liquid Phases in the Three-component System Water - Sulfuric Acid - Ethylbenzylaniline

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya , 1960, Vol. 3 No. 3, pp. 434 - 438

TEXT: The author reports on the study of the reciprocal solubility in the ternary liquid system water - sulfuric acid - ethylbenzylaniline ($C_{15}H_{17}N$). The study was made to obtain better purification and higher yield of $C_{15}H_{17}N$. For this purpose, the author determined the limits of the range of separation into layers by means of the Alekseyev method (not explained in the text). Moreover, he determined the composition of the layers being in a state of equilibrium. All together the author investigated ten cross sections of the temperature-concentration prism with constant content of H_2SO_4 of 6, 10, 15, 20, 25, 30, 35, 40, 45,

Card 1/3

Equilibrium of the Liquid Phases in the Three-component System Water - Sulfuric Acid - Ethylbenzylaniline

S/1??/??/00?/???/???/036/XX
B016/B058

and 46.?%. From the results obtained, he determined a corresponding number of layer formation isothermal lines in the system. The numerical data, which characterize the compositions of the points of the binodal curves at 0.15, 30, 38, and 50°C are listed in Table 1 and represented in Fig.1. The composition of the equilibrium layers was determined at 15°C (Table 2). Fig. 2 shows the isothermal lines of the ternary system H_2O - H_2SO_4 - $C_{15}H_{17}N$. The author concludes from these data that two independent layer formation ranges exist in the system investigated. The one is closed and has an upper critical triple point of dissolution at 40 to 41°C. This point contains (in %): 45 H_2O 34 H_2SO_4, and 21 $C_{15}H_{17}N$. The second range joins the system H_2O $C_{15}H_{17}N$ and widens with increasing temperature without exceeding the line of the quasi binary cross section. The author further established that a reversal of the layers takes place near the horizontal connode (Fig.2) in the closed layer formation range. Finally he proved that this closed range develops in consequence of the restricted mutual solubility between the compound

Card 2/3

Equilibrium of the Liquid Phases in the Three-component System Water – Sulfuric Acid – Ethylbenzylaniline

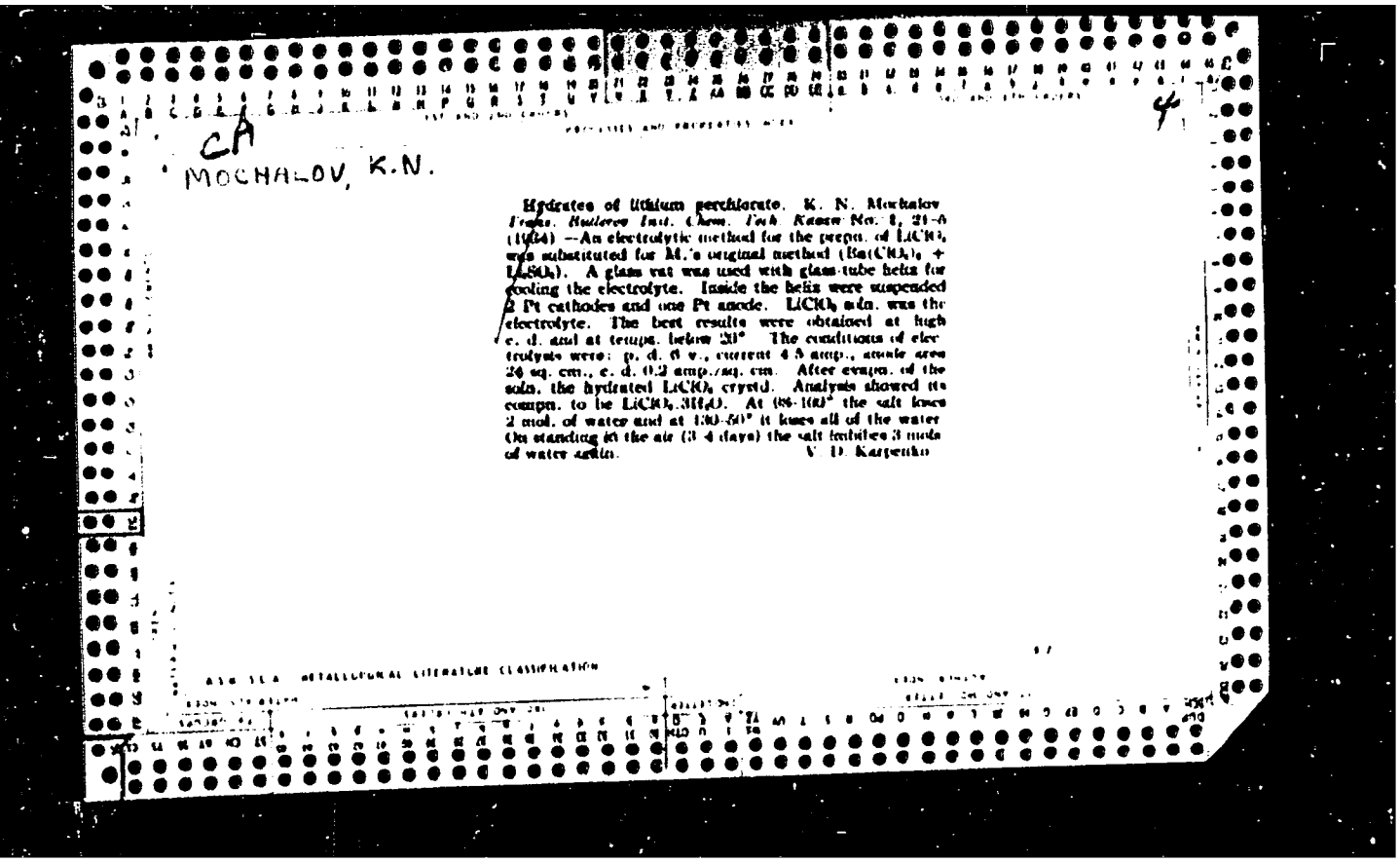
S/153/60/003/003/016/036/XX
B016/B058

$C_{15}H_{17}N \cdot H_2SO_4$ and the H_2SO_4 solutions with a maximum electrical conductivity. Conversely, $C_{15}H_{17}N \cdot H_2SO_4$ is unrestrictedly miscible with water and acts itself as a homogenizer for the layer formation in the binary system H_2O – $C_{15}H_{17}N$. The author mentions papers by V. F. Ustinov, Kachkintsev and P. A. Khlebnikov (Ref.4) and reports that the student Yu. L. Medvedev participated in the experimental work. There are 2 figures, 2 tables, and 5 Soviet references.

ASSOCIATION: Permskiy gosudarstvennyy universitet im. A. M. Gor'kogo; Kafedra neorganicheskoy khimii (Perm' State University imeni A. M. Gor'kiy; Chair of Inorganic Chemistry)

SUBMITTED: October 10, 1958

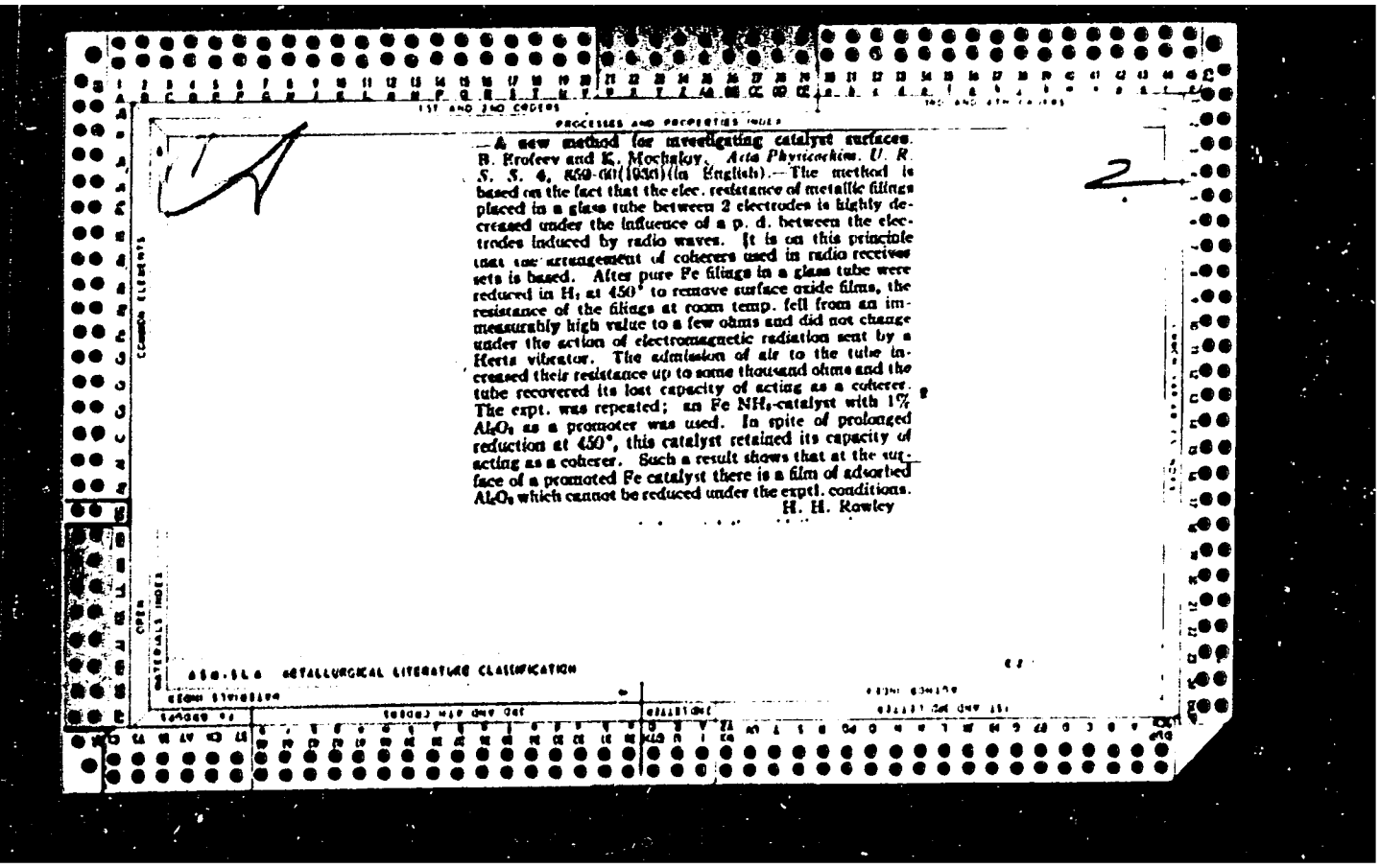
Card 3/3



CA

MOCHALOV, K.N.

Hydrates of lithium perchlorate. K. N. Mochalov *Trudy. Moskovsk. Inst. Chem. Tekh. Kazan* No. 1, 21-6 (1954).—An electrolytic method for the prepn. of $LiClO_4$ was substituted for M.'s original method ($Ba(ClO_4)_2$ + Li_2SO_4). A glass vat was used with glass-tube helix for cooling the electrolyte. Inside the helix were suspended 2 Pt cathodes and one Pt anode. $LiClO_4$ soln. was the electrolyte. The best results were obtained at high c. d. and at temps. below 20°. The conditions of electrolysis were: p. d. 6 v., current 4.5 amp., anode area 24 sq. cm., c. d. 0.2 amp./sq. cm. After evapn. of the soln. the hydrated $LiClO_4$ crystd. Analysis showed its compn. to be $LiClO_4.3H_2O$. At 98-100° the salt loses 2 mol. of water and at 150-60° it loses all of the water. On standing in the air (3-4 days) the salt imbibes 3 mols of water again. V. D. Karpenko



—A new method for investigating catalyst surfaces. B. Proteev and K. Mochalov. *Acta Physicochim. U. R. S. S.* 4, 859-60(1936)(in English).—The method is based on the fact that the elec. resistance of metallic filings placed in a glass tube between 2 electrodes is highly decreased under the influence of a p. d. between the electrodes induced by radio waves. It is on this principle that the arrangement of coherers used in radio receiving sets is based. After pure Fe filings in a glass tube were reduced in H_2 at 450° to remove surface oxide films, the resistance of the filings at room temp. fell from an immeasurably high value to a few ohms and did not change under the action of electromagnetic radiation sent by a Hertz vibrator. The admission of air to the tube increased their resistance up to some thousand ohms and the tube recovered its lost capacity of acting as a coherer. The expt. was repeated; an Fe NH_4-catalyst with 1% Al_2O_3 as a promoter was used. In spite of prolonged reduction at 450°, this catalyst retained its capacity of acting as a coherer. Such a result shows that at the surface of a promoted Fe catalyst there is a film of adsorbed Al_2O_3 which cannot be reduced under the exptl. conditions.

H. H. Rowley

MOCHALOV, K.N.

CA

4

The synthesis of nitric oxide in the torch discharge. K. N. Mochalov. *Compt. rend. acad. sci. U.R.S.S.* 18, 237-[illegible] (1938) (in English).—At ultra high frequency a discharge is obtained which is called the torch discharge. This discharge has the form of a narrow gas flame. This type of discharge, which gives better yields of NO, has a lower temp. than the arc. The yield was obtained by conversion of the NO to HNO_3 for analysis. The yield per unit of power consumed decreased with time of contact with the discharge, while the actual percentage of NO in the vessel increased. While pressure has no effect on the equil. point, the equil. in this reaction is reached more rapidly as the pressure is increased. The increase in yield is linear with the pressure. Kenneth H. Slagle

Electric air heater. M. Cerf de Mauny. *Bull. soc. chim.* [5], 5, 568-9 (1938).—An elec. heater consisting of a 170-w. resistance coil wound on a cylinder placed inside a large Pyrex tube was constructed for warming the air current used in drying lab. equipment. The lead wires are cemented into tube orifices by a paste of asbestos powder treated with a concd. soln. of Na silicate. To facilitate replacement of the resistance one end of the tube is closed by a ball-shaped part cemented to Pyrex with the same mixt. The heater is mounted on a universal support. It is safe, compact and adapted to drying vessels of any shape. A diagram is given. J. Hartmann

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

MOCHALOV, K.N.

6A

Synthesis of nitric oxide in a torch discharge. II. K. N. Mochalov. *Compt. rend. acad. sci. U. R. S. S.* 20, 297-301(1938)(in English); cf. C. A. 32, 4889. The law of mass action does not hold in this type of discharge. Electrodes of metals with low ionization potential give the higher yields. Yields were proportional to torch flame size. Gregg M. Evans

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

600

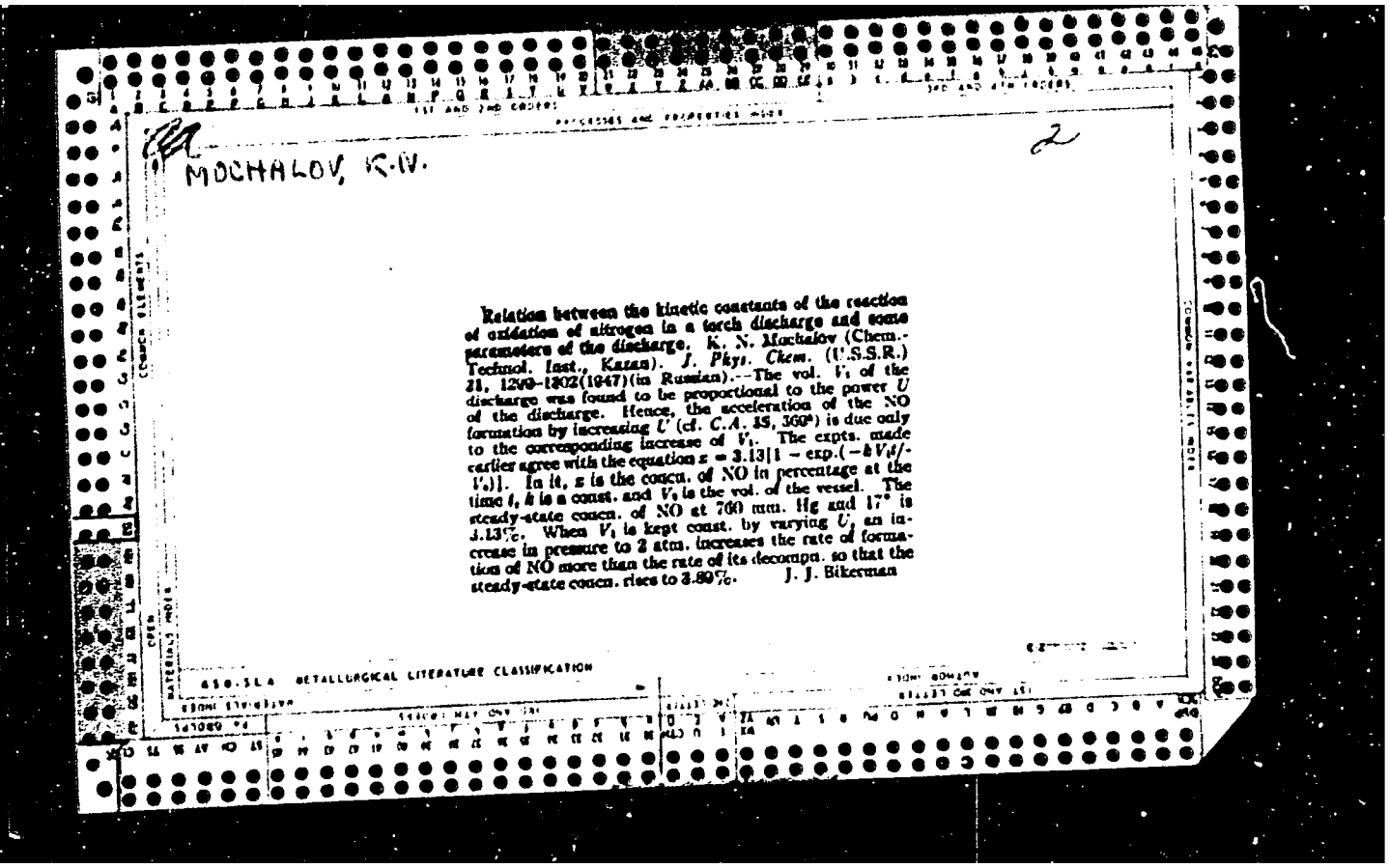
MOCHALOV4K8N8

1. MOCHALOV, K.N.

2. USSR (600)

"The Kinetics of the Oxidation of Nitrogen in a High-Frequency Jet Discharge," Zhur. Fiz. Khim, 13, No. 9, 1939. Kazan', State University imeni V.I. Lenin, Chemico-Technological Institute imeni S.M. Kirov. Received 5 April 1939.

Report U-1615, 3 Jan. 1952



MOCHALOV, K.N.

2

Relation between the kinetic constants of the reaction of oxidation of nitrogen in a torch discharge and some parameters of the discharge. K. N. Mochalov (Chem.-Technol. Inst., Kazan). *J. Phys. Chem.* (U.S.S.R.) 21, 1299–1302(1947)(in Russian).—The vol. V_1 of the discharge was found to be proportional to the power U of the discharge. Hence, the acceleration of the NO formation by increasing U (cf. *C.A.* 15, 360⁸) is due only to the corresponding increase of V_1. The expts. made earlier agree with the equation $z = 3.13[1 - \exp.(-kV_1t/V_0)]$. In it, z is the concn. of NO in percentage at the time t, k is a const. and V_0 is the vol. of the vessel. The steady-state concn. of NO at 760 mm. Hg and 17° is 3.13%. When V_1 is kept const. by varying U, an increase in pressure to 2 atm. increases the rate of formation of NO more than the rate of its decompn. so that the steady-state concn. rises to 3.89%. J. J. Bikerman

650.SLA METALLURGICAL LITERATURE CLASSIFICATION

MOCHALOV, K.N.; DMITRIYEV, V.A.

Cracking of methane in a high-frequency torch discharge. Trudy KKHTI no.13:41-46 '48. (MIRA 12:12)

1.Kazanskiy khimiko-tekhnologicheskiy instituta im. S.M. Kirova, kafedra neorganicheskoy khimii.
(Gas, Natural) (Cracking process)

MOCHALOV, K.N.

A

The spectrum of the torch discharge. K. N. Mochalov (Kazan Chem. Tech. Inst., U.S.S.R.). *Doklady Akad Nauk S.S.S.R.* 67, 241-4(1949); cf. *C.A.* 42, 5313d — A 1-kv., 40-megacycle torch discharge operating in O_2 at 760 mm. produced the Schumann-Runge (O_3) bands and several bands of the second neg. system of O_2^+. In air, the above bands, the ($^1\Sigma \rightarrow {}^1\Pi$) and ($^1\Pi \rightarrow {}^1\Sigma$) OH bands, and some ($^1\Sigma \rightarrow {}^1\Pi$) bands of NO were observed in the flame. Near the electrode, the ($^1\Pi_u \rightarrow \Pi_g$) bands of N_2, the ($^2\Sigma' \rightarrow {}^2\Sigma$) bands of N_2^+ and the above-mentioned NO bands and O bands, were observed. Both portions showed the NH band at 3360 A. and the NO_2 absorption band at 4480 A., as well as a continuous radiation from 3500 A. to the red end of the spectrum. A mixt. of CO_2 and small amts. of N_2 gave the Swan C_2 bands and the CN bands, but no CO_2 bands. Excitation was primarily thermal.

Cyrus Feldman

MOCHALOV, K.N.; DMITRIYEV, V.A.

Cracking of methane-hydrogen mixtures in a high-frequency torch discharge. Trudy KKHTI no.15:55-61 '50. [publ. '51] (MIRA 12:12)

(Gas, Natural) (Cracking process)

MOCHALOV, K. N.

May 50

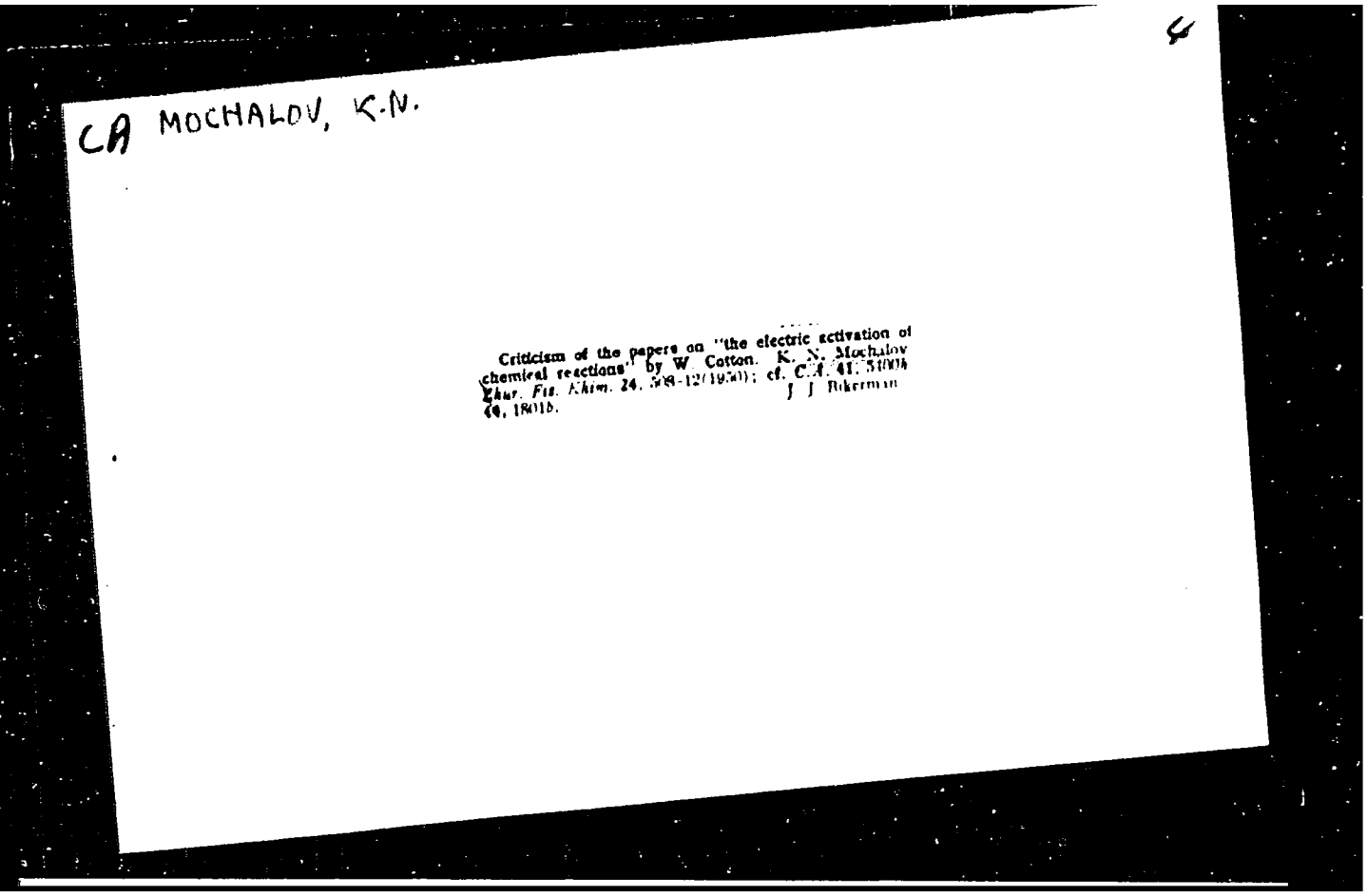
USSR/Physics - Flame
Spectral Lines

"Temperature of the 'Flame' Discharge," K. N. Mochalov, A. Ya. Nikiforov, A. S. Bogonostsev, Kazan Chem Technol Inst, 5 pp

"Zhur Eksper i Teoret Fiz" Vol XX, No 5

Measured temperature of external zone of "flame" discharge for frequency of 5.10^7/ cycles, for various atmospheric pressures, by method of rotation of Li, Na, Tl spectral lines. At external boundary of this zone, temperature equals 2,200°K and gradually increases toward axis of "flame." Submitted 10 Nov 49.

PA 160T96



CA MOCHALOV, K.N.

Criticism of the papers on "the electric activation of chemical reactions" by W. Cotton. K. N. Mochalov Zhur. Fiz. Khim. 24, 368-12(1950); cf. C.A. 41, 5100h 44, 1801b.

J. J. Bikerman

MOCHALOV, K. N. 11 Aug 53

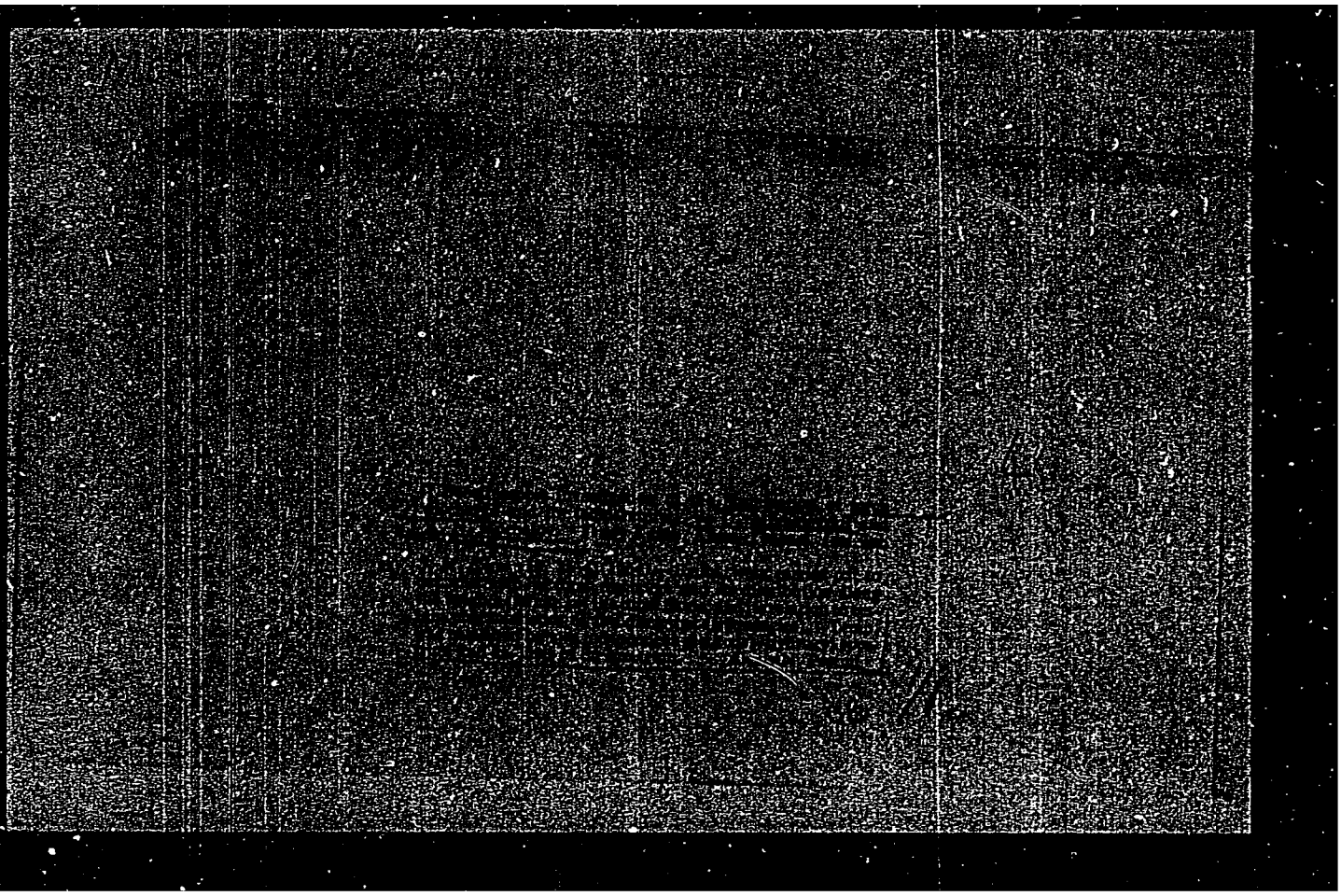
USSR/Physics - Gas Discharge

"Redistribution of Intensities of Spectral Lines of Elements During Discharge in Argon," K. N. Mochalov and Ye. L. Raff, Kazan Chemicotechnolog Inst im Kirov

DAN SSSR, Vol 91, No 5, pp 1067-1070

Studied spectra of metals and alloys excited in argon and compared them with spectra in air under identical conditions. Results showed that in argon spectral lines of Fe ions are enhanced while lines of neutral atoms are weakened. Such redistribution of intensities is also observed in spectra of many other metals. Presented by Acad A. N. Terenin 17 Jun 53.

266T104



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MOCHALOV, K.N.

USSR/ Physics - Spectral analysis

Card 1/1 Pub. 43 - 20/97

Authors : Mikhalevskiy, V. D., and Mochalov, K. N.

Title : Spectroscopic investigation of the luminosity of a flare discharge and its temperature

Periodical : Izv. AN SSSR. Ser. fiz. 18/2, 256-257, Mar-Apr 1954

Abstract : A flare discharge is the less known form of a high-frequency discharge originating on an electrode at a frequency of 10^6 - 10^8 cps and pressures ranging from a fraction of a mm to several atm. The problem in this report is to determine spectroscopically the temperature of such a discharge, its distribution according to the height of the flare and its dependence upon frequency. The temperature was measured by the intensity distribution of the spectral line and by the relative intensity of the Sn atom lines. It was revealed that the temperature of the flare discharge increases with the increase in frequency and the feeding current. One USSR reference (1950).

Institution : The S. M. Kirov Chemical Technological Institute, Kazan

Submitted : .....

Mochalov, K.N.

USSR

(Nonequilibrium character of the distribution of energy in electrical discharges and chemical reactions. K. N. Mochalov. *Doklady Akad. Nauk S.S.S.R.* 96, 553-6(1954).—The study of reactions in new forms of elec. discharges, high-frequency, showed their significantly great chem. effectiveness, obviously occurring in connection with definite "nonequil." processes in such elec. discharges. In order to predict the reaction mechanism in one or another form of elec. discharge it is necessary to show the distribution of energy in them. In the study of single-electrode high-frequency discharge at atm. pressure measurements of the temps. of different regions of the discharge were made by spectroscopic methods. The temp. of the gas (mol. temp.) was measured by the line intensities. Measurements were made at 3 frequency values of the discharge current: 31.5, 35.4, and 41.1 Mc. and for different parts of the flame through every 10 mm. along its height beginning from the electrode. It was found that in a range of 31.5-84.5 Mc. the flame temp. rose systematically on the whole by 10-20%. The electronic temp. was measured by the relative intensity of the at. lines of Sn. Sn (1%) was introduced into the electrode material. M. concluded with a qual. formulation of 1 of the laws governing chem. processes in discharges to the effect that the specification of the elec. activation is found to be in direct relation to the difference between the electronic and mol. temps. of the discharge and appear the sharper the higher the former and the lower the latter. G. S. M.

1

MOCHALOV, Konstantin Nikolayevich

MOCHALOV, Konstantin Nikolayevich (Kazan' Chemical-Technological Inst imeni Kirov), Academic degree of Doctor of Chemical Sciences, based on his defense, 13 April 1955, in the Council of the Inst of General and Inorganic Chemistry imeni Kurnakov, Acad Sci USSR, of his dissertation entitled: "Research in the field of chemical reactions in high-frequency electrical discharge." For the Academic Degree of Doctor of Sciences.

SO: Byulleten' Ministerstva Vysshego Obrazovaniya SSSR, List No. 6, 17 March 1956, Decision of Higher Certification Commission Concerning the Academic Titles and Degrees.

JPRS 512

24(7) PHASE I BOOK EXPLOITATION SOV/1700

Lvov. Universitet

Materialy X Vsesoyuznogo soveshchaniya po spektroskopii, 1956. t. II: Atomnaya spektroskopiya (Materials of the 10th All-Union Conference on Spectroscopy, 1956. Vol 2: Atomic Spectroscopy) [Lvov] Izd-vo L'vovskogo univ., 1958. 568 p. (Series: Its: Fizicheskiy sbornik, vyp.4(9)) 3,000 copies printed.

Additional Sponsoring Agency: Akademiya nauk SSSR. Komissiya po spektroskopii.

Editorial Board: G.S. Landsberg, Academician, (Resp. Ed.); B.S. Neporent, Doctor of Physical and Mathematical Sciences; I.L. Fabelinskiy, Doctor of Physical and Mathematical Sciences; V.A. Fabrikant, Doctor of Physical and Mathematical Sciences; V.G. Koritskiy, Candidate of Technical Sciences; S.M. Rayskiy, Candidate of Physical and Technical Sciences; L.K. Klimovskaya, Candidate of Physical and Mathematical Sciences; V.S. Miliyanchuk (Deceased), Doctor of Physical and Mathematical Sciences; A.Ye. Glauberman, Doctor of Physical and Mathematical Sciences; Ed.: S.L. Gazer; Tech. Ed.: T.V. Saranyuk.

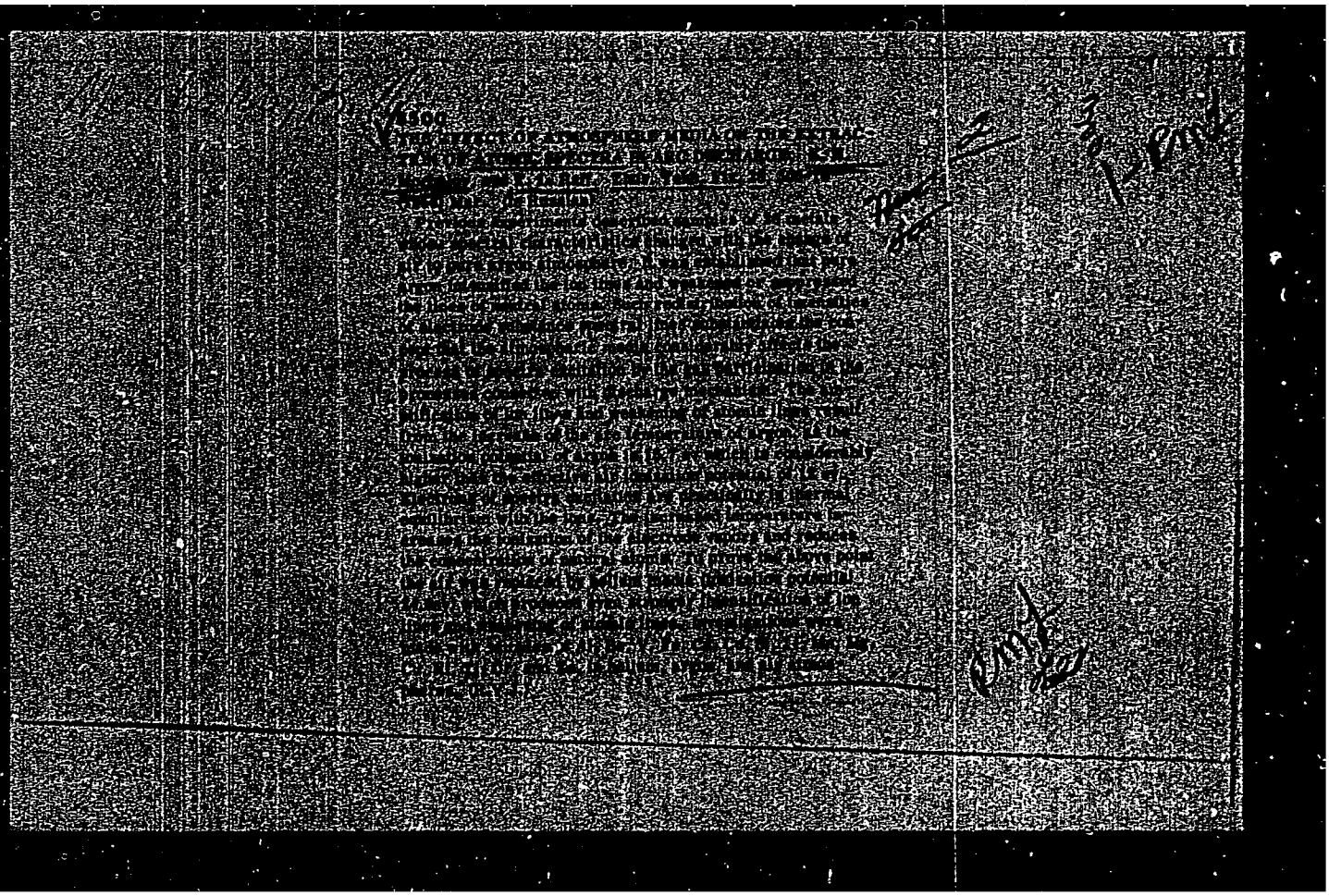
PURPOSE: This book is intended for scientists and researchers in the field of spectroscopy, as well as for technical personnel using spectrum analysis in various industries.

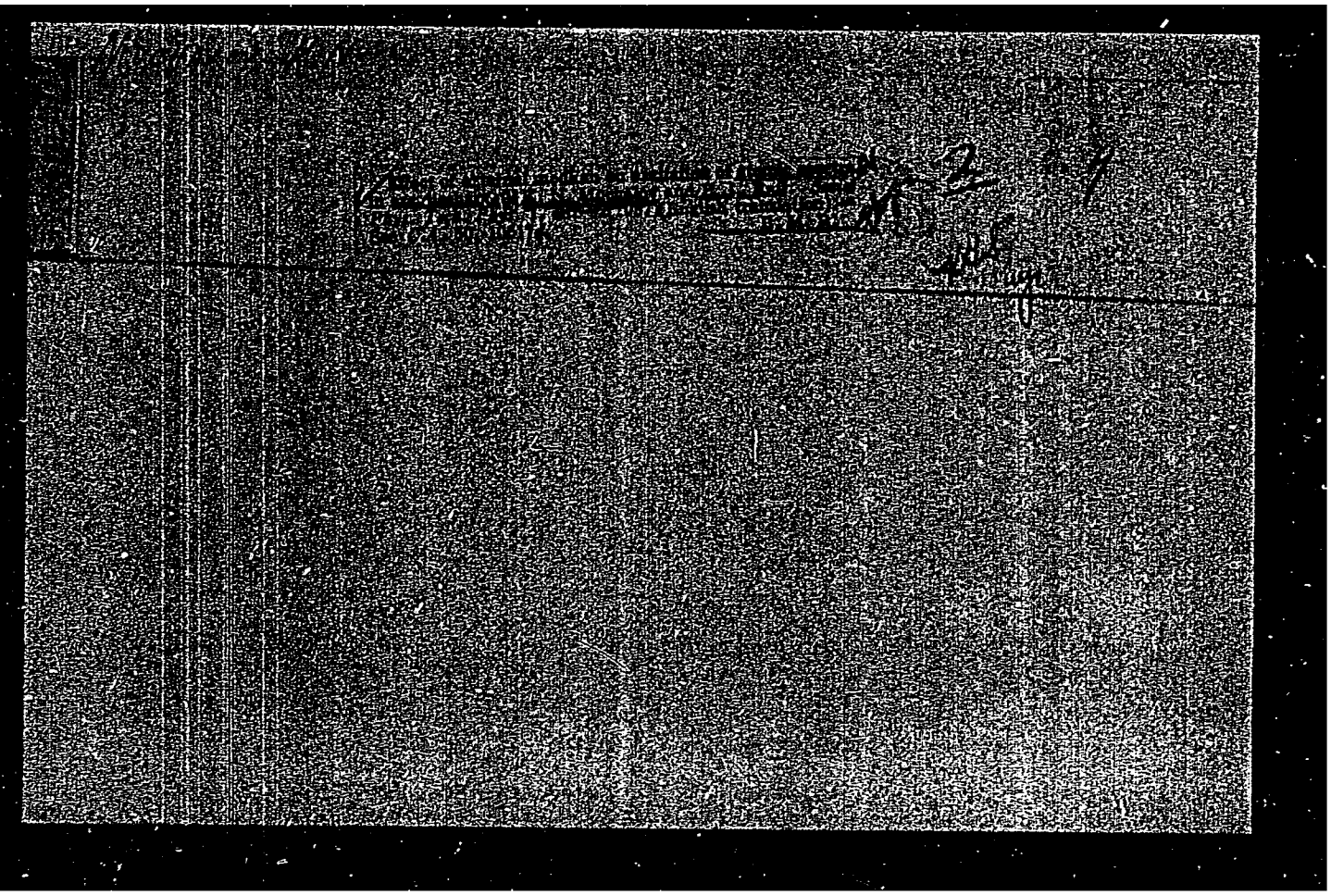
COVERAGE: This volume contains 177 scientific and technical studies of atomic spectrography presented at the 10th All-Union Conference on Spectroscopy in 1956. The studies were carried out by members of scientific and technical institutes and include extensive bibliographies of Soviet and other sources. The studies cover many phases of spectroscopy: spectra of rare earths, electromagnetic radiation, physicochemical methods for controlling uranium production, physics and technology of gas discharge, optics and spectroscopy, abnormal dispersion in metal vapors, spectroscopy and the combustion theory, spectrum analysis of ores and minerals, photographic methods for quantitative spectrum analysis of metals and alloys, spectral determination of the hydrogen content of metals by means of isotopes, tables, and atlases of spectral lines, spark spectrographic analysis, statistical study of variation in the parameters of calibration curves, determination of traces of metals, spectrum analysis in metallurgy, thermochemistry in metallurgy, and principles and practice of spectrochemical analysis.

Card 2/31

Materials of the 10th All-Union Conference (Cont.) SOV/1700

Card 19/31





BERG, L.A.; MOCHALOV, K.N.; KURENKOVA, P.A.; ANOSHINA, N.P.

Thermographic investigations of bromoplatinic acid. Izv.Kazan. fil.AN SSSR.Ser.khim.nauk no.4:127-132 '57. (MIRA 12:5)
(Bromoplatinic acid)
(Thermochemistry)