PODMOSTKOVA, V.A.; PETROVA, E.B.

Determination of oxytetracycline in feeds. Trudy Len.khim.-farm. inst. no.15:273-275 '62. (MIRA 15:11)
(OXYTETRACYCLINE) (FEEDS--ANALYSIS)

PETROVA, E.B.; PODMOSTKOVA, V.A.; YAKIMOV, P.A.

Study of the conditions for replacing carbohydrate media with starch and potatoes in penicillin production without lowering the antibiotic yield. Antibiotiki 6 no.6:492-496 Je '61. (MIRA 15:1)

1. Kafedra tekhnologii antibiotikov Leningradskogo khimiko-farmatsevticheskogo instituta.
(PENICILLIN)

PETROVA, E.F.; SHVARTSMAN, L.A.

Determination of the thermodynamic activity of carbon in chromium alloyed iron using radioactive C^{14}. Zhur. fiz. khim. 38 no.3:765-766 Mr '64. (MIRA 17:7)

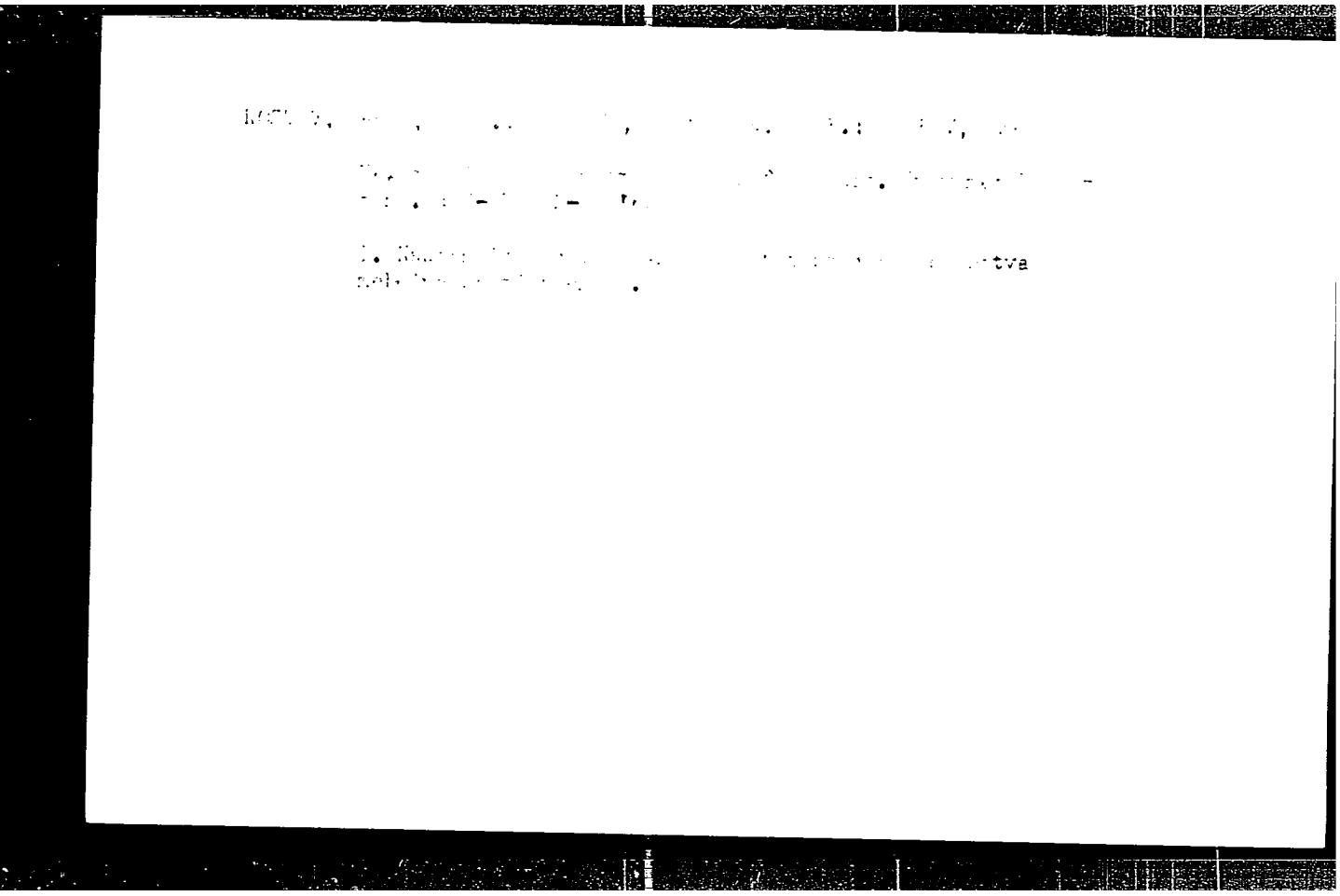
1. Institut metallovedeniya i fiziki metallov TSentral'nogo nauchno-issledovatel'skogo instituta chernoy metallurgii imeni I.P. Bardina.

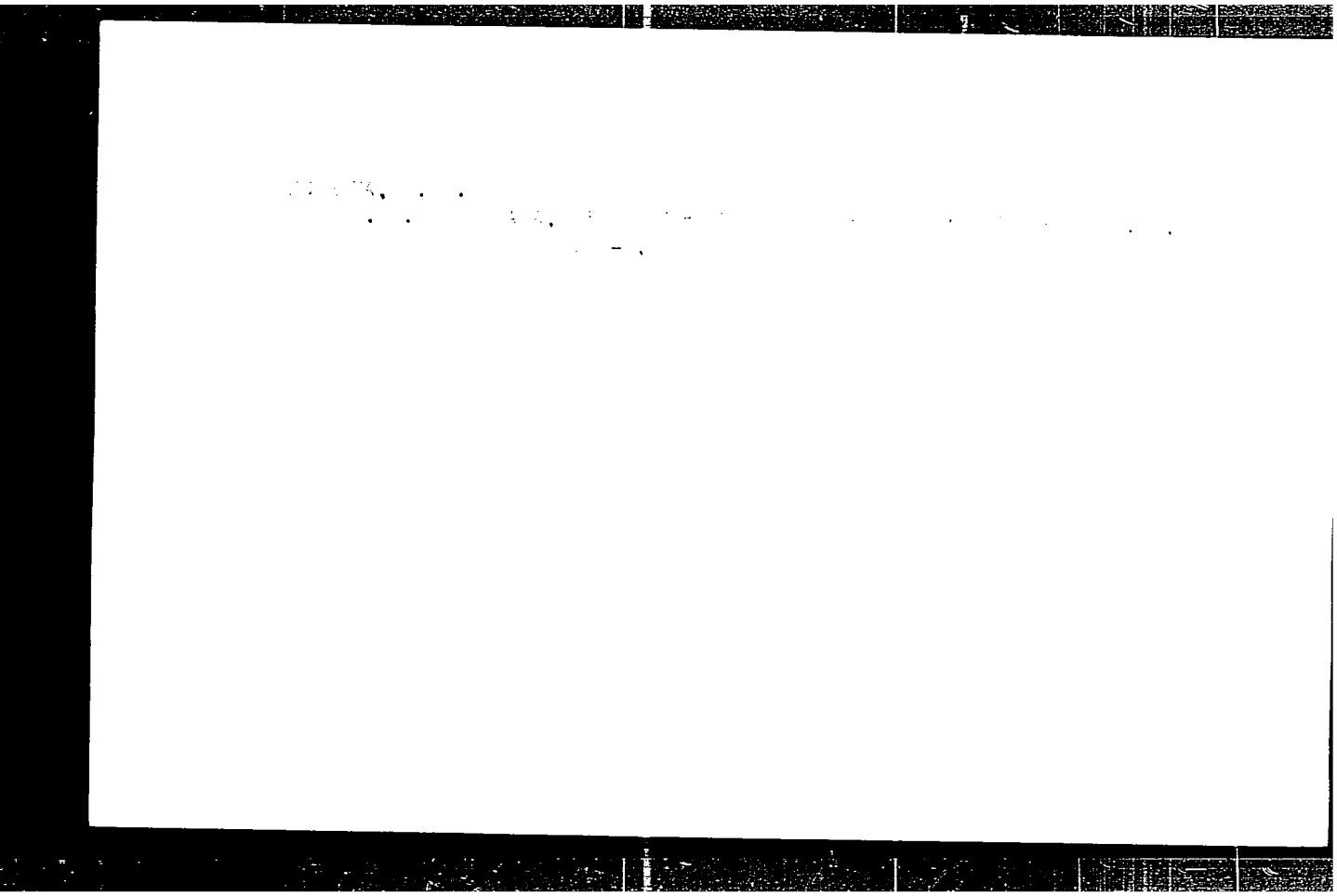
PETROVA, E.F., LAPSHINA, M.I., SHVARTSMAN, L.A.

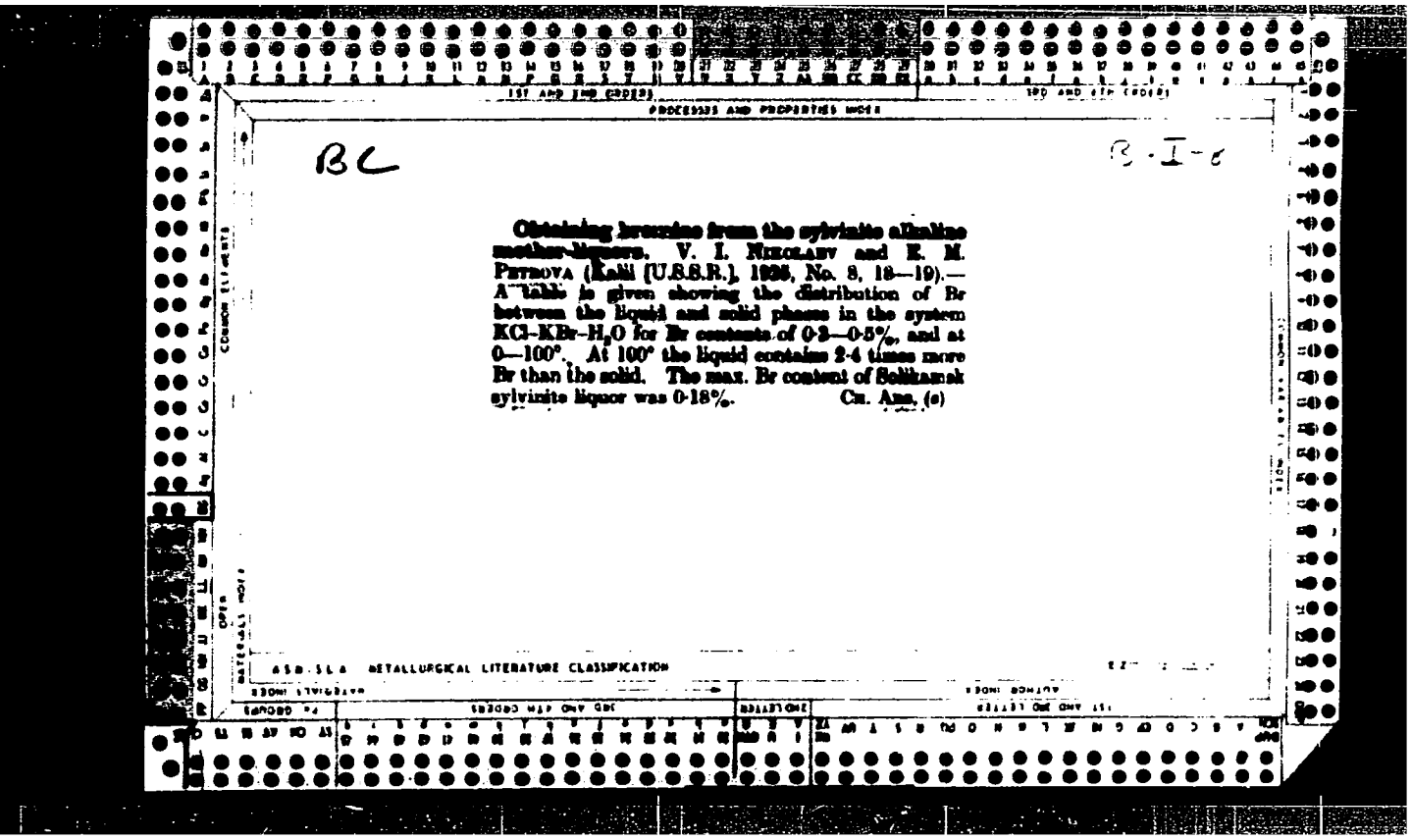
"Influence of Alloying Elements on Activity of Carbon in Alpha-Iron," lecture given at the Fourth Conference on Steelmaking, I.A. Baikov Institute of Metallurgy, Moscow, July 1 - 5, 1957.

PETROVA, Ek., inzh., KOSTOV, S., arkh.

Exhibition of the Hungarian Applied Art. Derev. mebel' 6 no.5:47-48 S-O '63.



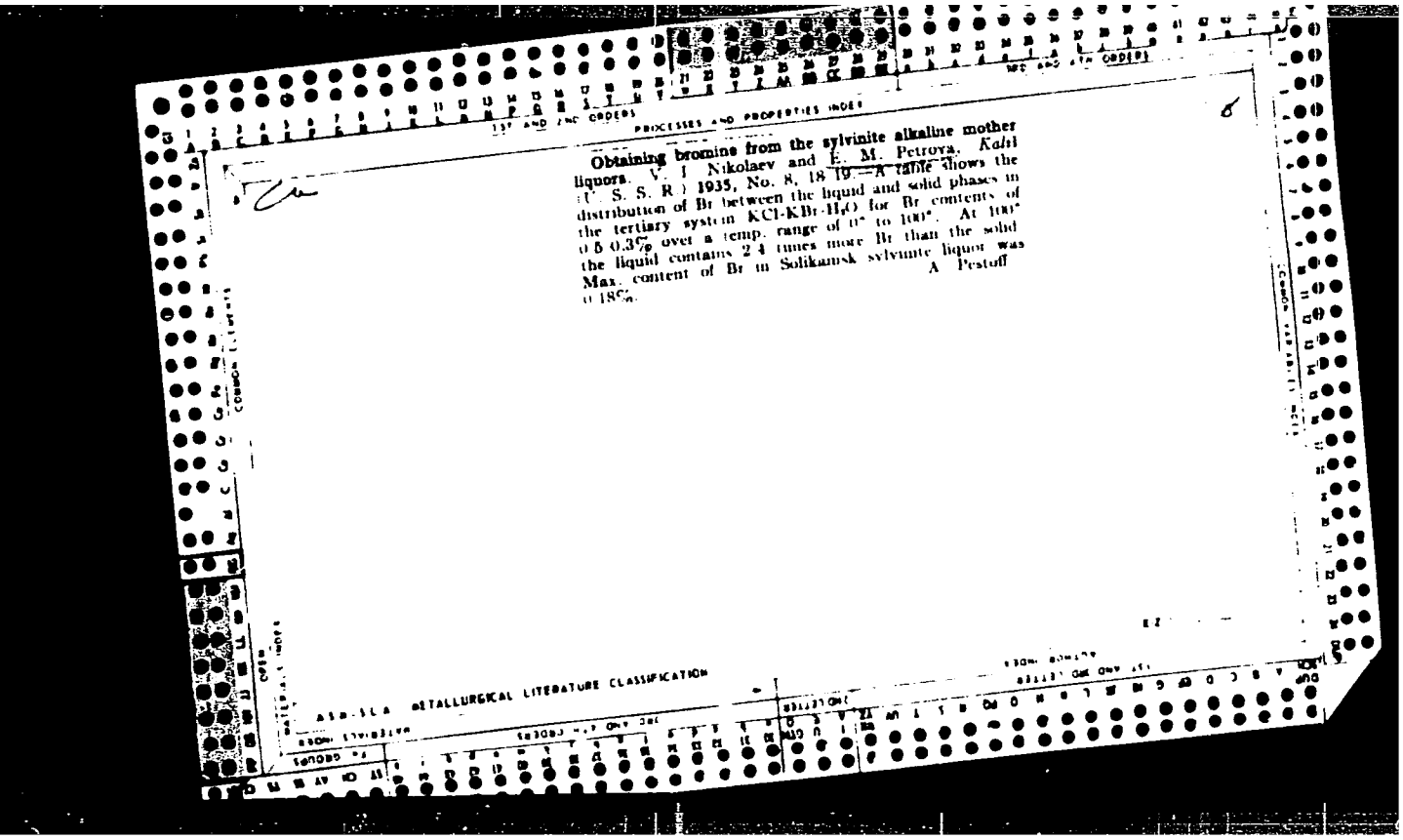




BC

B-I-6

Obtaining bromides from the sylvinite alkaline mother-liquors. V. I. Nikolaev and E. M. Petrova (Kalii [U.S.S.R.], 1936, No. 8, 18—19).—A table is given showing the distribution of Br between the liquid and solid phases in the system KCl-KBr-H_2O for Br contents of 0·2—0·5%, and at 0—100°. At 100° the liquid contains 2·4 times more Br than the solid. The max. Br content of Solikamsk sylvinite liquor was 0·18%. Cu. Abs. (e)



PROCESSES AND PROPERTIES INDEX

Obtaining bromine from the sylvinite alkaline mother liquors. V. I. Nikolaev and E. M. Petrova. *Kalii* (U. S. S. R.) 1935, No. 8, 18-19.—A table shows the distribution of Br between the liquid and solid phases in the tertiary system KCl-KBr-H_2O for Br contents of 0.5-0.3% over a temp. range of 0° to 100°. At 100° the liquid contains 2.4 times more Br than the solid Max. content of Br in Solikamsk sylvinite liquor was 0.18%. A. Pestoff

METALLURGICAL LITERATURE CLASSIFICATION

L 26569-66

ACC NR: AP6017351 SOURCE CODE: UR/0311/65/000/009/0016/0019

AUTHOR: Lukin, N. I. (Engineer); Petrova, E. B. (Engineer)

ORG: none

TITLE: Photoelectric color comparator

SOURCE: Svetotekhnika, no. 9, 1965, 16-19

TOPIC TAGS: colorimetry, optic transmission

ABSTRACT: The comparator represents a development of the state optical institute, made by M. M. GUREVICH and L. N. MEYER.

The basic features of the comparator are:

1. The error in measuring small differences in chromaticity does not exceed 0.005.
2. The apparatus permits measurements to be made of the chromaticity of transparent and opaque solid samples, and cells attached to the apparatus also permit measurements to be made of the chromaticity of liquids and powdered materials.
3. The spectral composition of the radiation source corresponds to the standard colorimetric sources A and C.
4. The error of the measuring unit of the apparatus in the middle part of the light transmission scale is not more than 1%

Card 1/2

absolute, the measuring unit being a mechanical measuring diaphragm with variable opening.

5. The sensitivity of the apparatus is quite high, and permits measurements to be made both on bright samples and on samples having a reflection coefficient of 3-5%.

6. The chromaticity is determined from the apparatus readings by means of nomograms, so that the apparatus may be used for comparatively large scale laboratory and factory measurements.

The construction of the color comparator in the described version was developed by construction engineers V. V. Zharova and V. I. Chapni, the electric schematic of the apparatus by engineer B. P. Bessalov. Orig. art. has: 4 figures and 9 formulas. [JPRS]

SUB CODE: 20 / SUBM DATE: none / ORIG REF: 003

LUKIN, N.I., inzh.; PETROVA, E.S., inzh.

Selenium photocells with corrected spectral sensitivity.
Svetotekhnika 9 no.10:32 O '63. (MIRA 16:11)

SHAPRANOV, I.A.; SHABLINSKIY, V.B.; PETROVA, E.V.

Automatic equipment for the introduction of magnesium into liquid cast iron. Lit. proizv. no.6:22-24 Je '61. (MIRA 14:6)
(Foundries—Equipment and supplies)
(Iron foundings)

PETROVA, E.V

PHASE I BOOK EXPLOITATION SOV/4542

Soveshchaniye po teorii liteynykh protsessov, 4th

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

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

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

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

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

PETROVA, E. N.

8842. Diagnostic significance of a cytological method of investigating the vaginal contents with nonfunctional ovaries. E. N. Petrova, B. I. Zelenov, and V. K. Bylionok *Labor. Delo*, 1955, 4. *Referat. Zh. Biol.*, 1956, Abstr. No. 82330.—With an inserted vaginal mirror, by means of a pipette the contents from the post. vault of the vagina are sucked up and smeared in a thin layer over the glass. Either fixed prep. or fresh material stained with Methylene Blue are studied. It is impossible to make use of the cytological method of investigating the vaginal contents in the presence of pathological discharges, or with different vaginal procedures. Characteristics of three types of desquamated cells of the vagina are given and the existence of four cellular reactions of the vaginal epithelium to the functional condition of the ovaries is pointed out. (Russian) — J. P. Harding

PETROV, V. V.

"Methods of preparation of [illegible] acrylic acid and [illegible]"
S. I. Sergievskaya, K. V. Levshina, and [illegible]

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii), 1956, Vol. [illegible], No. [illegible].

PETROVA, E. N.

Sergievskaya, S. I., and Petrova, E. N.- "Naphthalene Anesthetics. VII. Monoalkylaminoalkyl Esters of Some Naphthalenecarboxylic Acids" (p. 329)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 19[illegible], Vol. 22, No. 2

[illegible], I. L.

"(N-alkyl-N-hydroxyethyl)-amides of 4 (5)-Nitro-1-naphthoic acids." by S. I. Sergievskaya, and I. L. Petrova (p. 2174)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii), 1951, Volume 21, no. 12

[illegible], [illegible]

"The Isomerization of [illegible] under the [illegible] XII. [illegible] Conditions of the [illegible]," [illegible] Follak, N. P. [illegible]rova, and [illegible] Petrova. [illegible]

[illegible]: Journal of [illegible] Chemistry [illegible]

[illegible], T. [illegible]

"The Isomerisation of [illegible] [illegible] XI-I. The Isomerization of [illegible]. by [illegible] T [illegible] va-[illegible], and E. [illegible] [illegible]trova. (p. [illegible])

S: Journal of Gener. Chemistry [illegible]

Petrova, E.S.

Distr: IE4j

Prolovite, a new hydrated calcium borate. E. S. Petrova. *Zapiski Vsesoyuz. Mineral. Obshchestva* 86, 622-6 (1957). The Tur'ya District (N. Ural) (cf. Kantor, *C.A.* 48, 4179c) is remarkable because of the occurrence of new B_2O_3-conts. rock-forming minerals. The author (*Trudy Geologorazv. Inst. Fernokhim. Syr'ya* 2, 218(1955)) previously described as one of these "calciborite," CaB_2O_4, which occurs together with the new mineral Irolovite in the contact-metasomatic Cu deposits of Novo-Prolovsk, in Middle-Devonian limestones. The paragenesis of both new borates with calcite, magnetite, and garnet is typical, in thin veinlets and irregular concretions. Prolovite always replaces calciborite, which in its turn replaces calcite. Prolovite is white-grayish, with dull luster, translucent in thin fragments, brittle, hardness 3.5, d. 2.14, insol. in H_2O, easily sol. in warm acids. Cathodoluminescence is violet, in distinction from calciborite which shows bright-green luminescence. Calciborite forms radial cryst. aggregates; Irolovite is dense. Prolovite is biaxial, with $2V = +76°$; $\gamma = 1.586$; $\alpha = 1.572$. Chem. analysis B_2O_3 54.20; CaO 28.70; MgO 0.72; SiO_2 0.57; Fe_2O_3 0.10; H_2O 32.96; SO_3 1.78 (gypsum is an intimate contamination); sum 99.03%. The thermogram shows an endothermal dehydration effect at 190° and the fusion point at about 950°. Formula: $CaO \cdot B_2O_3 \cdot 3\frac{1}{2}H_2O$. Spectral analysis shows as contamination Al, in 0.1% amts. Fe; As, Zn, Sr; in 0.01% amts. Ti, Nb, Cu, F, V, Yb, ... W. Eitel

Organic Chemistry 15

CA

Anesthetic substances of the naphthalene series. VII Monoalkylaminoalkyl esters of some naphthalenecarboxylic acids. S. I. Sergievskaya and E. N. Petrova (S. Ordzhonikidze Chem. Pharm. Inst., Moscow). Zhur. Obshchei Khim. (J. Gen. Chem.) 22, 828–33(1952); cf. *C.A.* 45, 2458*f*; 46, 2003*h*.—Heating 3.25 g. 4,1-$O_2NC_{10}H_5COCl$ 24 hrs. at 55° with 1.5 g. $PrNHCH_2CH_2OH$ in $CHCl_3$ satd. with HCl gave *2-propylaminoethyl 4-nitro-1-naphthoate-HCl* m. 173–4° (from EtOH); reduction over Raney Ni in MeOH gave the *4-amino analog*, m. 208–8.5° (from EtOH). Similarly were obtained the following *2-alkylaminoethyl 4-nitro-1-naphthoate-HCl salts* and the *4-amino analogs* (m.ps. in brackets): *iso-Pr*, m. 175–6° [200.5–1.0° (from EtOH)]; *Bu*, m. 162.5–3.0° (from EtOH) [206–7° (from EtOH)]; *iso-Bu*, m. 152–3° (from EtOH) [m. 181–2° (from EtOH)]; *heptyl*, m. 148–9° [m. 191–2° (from EtOH)]. 5,1-$O_2NC_{10}H_5COCl$ with $BuNHCH_2CH_2OH$ in $CHCl_3$ satd. with HCl gave *2-butylaminoethyl 5-nitro-1-naphthoate-HCl*, m. 197–8°, reduced to the *5-amino compd.*, m. 217–20°. Similarly was obtained *2-isobutylaminoethyl 5-nitro-1-naphthoate-HCl*, m. 220–1°, which could not be reduced satisfactorily. Heating $1\text{-}C_9H_7CH{:}CHCOCl$ with $BuNHCH_2CH_2OH$ in $CHCl_3$ satd. with HCl gave *2-butylaminoethyl 1-naphthaleneacrylate-HCl*, m. 139.5–40.5°; iso-$BuNHCH_2CH_2OH$ gave the *iso-$BuNHCH_2CH_2$ ester-HCl*, m. 182–3° (from EtOH). The products were prepd. for evaluation as anesthetics.

G. M. Kosolapoff

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CA

N-Alkyl-N-hydroxyethyl)amides of 4(5)-nitro-1-naphthoic acids. S. I. Sergievskaya and K. N. Petrova (S. Ordzhonikidze All-Union Chem.-Pharm. Inst., Moscow). Zhur. Obshchei Khim. (J. Gen. Chem.) 21, 2174-8(1951). Stirring 1 hr. at 30-40° 2.34 g. BuNHCH$_2$CH$_2$OH, 15 ml. H$_2$O, 1 g. NaOH, and 4.34 g. 4,1-O$_2$NC$_{10}$H$_6$COCl gave 75% N-butyl-N-(2-hydroxyethyl)-4-nitro-1-naphthamide (I), m. 91-2° (from C$_6$H$_6$). With BzCl in pyridine it yields the O-Bz deriv., m. 69-71° (from petr. ether). Similarly was obtained N-isobutyl-N-(2-hydroxyethyl)-4-nitro-1-naphthamide, m. 116-17° (from C$_6$H$_6$), and N-isobutyl-N-(2-hydroxyethyl)-5-nitro-1-naphthamide (II), m. 125-6° (from C$_6$H$_6$). Stirring 0.5 g. iso-BuNHCH$_2$CH$_2$OH, 1.1 g. 4-C$_{10}$H$_7$CH:CHCOCl, 0.25 g. NaOH, and 12 ml. H$_2$O 0.5 hr. at 40° gave 1-naphthacrylic acid, m. 207-8°, apparently because of instability of the amide. Similarly 4,1-O$_2$NC$_{10}$H$_6$CH:CHCOCl gave the corresponding free acid, m. 253-5°. Heating 0.8 g. I with 1.12 ml. concd. HCl to 100° 1 hr. gave 58.7% 2-butylaminoethyl 4-nitro-1-naphthoate·HCl (III), m. 161-2°. Similarly II gave 2-isobutylaminoethyl 5-nitro-1-naphthoate HCl, m. 220-1°. When 1.4 g. III is dissolved with gentle warming in 60 ml. H$_2$O, and the soln. is cooled, treated with 0.2 g. NaOH, and kept 1 hr. at 100° there slowly seps. an oil which on trituration with petr. ether and C$_6$H$_6$ yields 74% crude, 60% pure I, to complete the reversible amide-ester isomerization. G. M. Kosolapoff

S/137/61/000/011/018-023
A060/A101

AUTHORS: Shapranov, I. A., Petrova, E. V., Stepanov, L. K.

TITLE: On the main factors affecting the structure and the mechanical characteristics of magnesium cast iron

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 11, 1961, abstract ... (V sb.: "Polucheniye izdeliy iz zhidk. met. s uskoren. kristallizatsey", Moscow - Kiyev, Mashgiz, 1961, 14 - 38)

TEXT: The main conditions for obtaining Mg-cast iron possessing the highest and most homogeneous mechanical characteristics are: provision of graphite in the spherical form, sufficiently complete elimination of the modification products, optimal chemical composition of the cast iron, use of heat-treatment. To obtain graphite in the spherical form it is necessary to have not only a definite quantity of residual Mg in the cast iron (0.03 - 0.1%), but also an increased C content in the original metal. The main sources of non-homogeneity of the mechanical characteristics of the Mg cast iron is the presence in the body of the cast metal of nonuniformly distributed modification products. To eliminate them completely it is necessary to ensure a C content of no less than 3.4 - 3.5% in the liquid

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On the main factors affecting... S/137/... AC06-A1...

metal before modifying, a sufficiently intense and long metal stirring, a ... temperature during the modifying (1,3... - 1,410°C) and the casting (1,3... - 1,340°C). The casting of molds by stopcock or siphon ladles ... As result of ... ... Mg in the case of sufficiently complete elimination of the modification products, the C content in the cast iron is reduced to 2.5 - 3.0%, ... 0.008%. To obtain the highest mechanical characteristics in Mg cast iron the following content of the main elements in the original metal before modifying is required (in %): C not less than 3.5, Si ... - 3.0, Mn not more than ..., ... more than 0.1, S not more than 0.1. Heat-treatment improves the mechanical characteristics of Mg cast iron. There are ... references.

A. ...

[Abstracter's note: Complete translation]

Card ...

AUTHOR: Gulyayev, B.B.

TITLE: Conference on Crystallisation of Metals (Soveshchaniye po Kristallizatsii Metallov)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Tekhnicheskikh Nauk, 1958, Nr 4, pp 153 - 155 (USSR)

ABSTRACT: This conference was held at the Institut mashinovedeniya AN SSSR (Institute of Mechanical Engineering of the Ac.Sc. USSR) on June 28-31, 1958. About 400 people participated and the participants included specialists in the fields of foundry, metallurgy, crystallography, physics, welding, heat, physical chemistry, mathematical physics and other related subjects. In addition to Soviet participants, foreign visitors included Professor D. Czikl (East Germany) and K.I. Chvorinov (Czechoslovakia). This conference on crystallisation of metals was the fourth conference relating to the general problem of the theory of foundry processes.

Conference on Crystallisation of Metals SOV/24-58-4-31/39

Crystallisation of Cast Iron. I.A. Shapranov and P.V. Petrova in their paper "Investigation of the crystallisation of magnesium-inoculated iron", reported on experimental data relating to the conditions of solidification and the structure of castings made of magnesium-inoculated iron; they presented a theory of crystallisation of magnesium-inoculated iron.

B.B. Gulyayev, in his paper "Investigation of the Process of Formation of Spheroidal Graphite in Iron", considered the influence of various factors and characteristics of the metal on the formation of graphite inclusions.

Professor D. Czikl (East Germany) presented a paper on crystallisation of graphite in cast iron, which was illustrated by extensive crystallographical information.

Ya.S. Malinochka and A. Zhukov dealt with the problem of intracrystalline liquation of silicon and its influence on the structural diagram of cast iron.

I.I. Khoroshev and I.Ye. Lev dealt with the mechanism of germination of centres of crystallisation of graphite in castings made of white iron and the influence of the speed of crystallisation on the distribution of the elements between the individual phases of iron-carbon alloys. I.V. Salli proposed a method of hardening alloys from the liquid state using an extremely high speed of cooling. Investigations relating to this method enabled conservation of saturated solutions of carbon in iron which corresponded to the liquid state crystallisation, the primary structure and the properties of quasi-eutectic grey iron.

METALV

128-58-6-14/17

AUTHORS: Demidova, A.A., Petrova, E.V., and Kolesnikova, V.S. Engineers

TITLE: Conference on the Crystallization of Metals (Soveshchaniye po kristallizatsii metallov)

PERIODICAL: Liteynoye Proizvodstvo, Nr 6, pp. 30-31 (USSR) 1958

ABSTRACT: The conference on the problem of crystallization of metals and alloys, convened 28-31 Jan 1958 at the Institut Mashinovedeniya AN SSSR (Institute of Mechanical Engineering AS USSR), was the 4th and final conference on the general problem of the theory of foundry processes. About 400 delegates of scientific research institutes, industry, higher technical schools, and other organizations of 36 towns participated. Professor Chikl' of the German Democratic Republic and Professor N.I. Khvorinov of Czechoslovakia were present. Academician V.I. Dikushin opened the session and outlined the present state of theoretical knowledge and the tasks of the conference. The conference heard the following reports: B.B. Gulyayev, "The Modern State and the Tasks of the Study of Metal Crystallization"; N.N. Sirota, "The Mechanism of the Crystallization Process"; K.P. Bunin and Yu.N. Taran, "Eutetic Crystallization of Grey Cast Iron"; L.S. Kame-

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[illegible]-58-6-14/17

Conference on the Crystallization of [illegible]

[illegible]netskaya, B.Ya. Lyubov, A.[illegible] [illegible]kin, and G.P. Ivantsov, on the existing theories of the origin and growth of crystals; B.Ya. Lyubov, "Calculation of the Rate of Solidification of Metal in Large Volumes"; V.[illegible] Novitskiy, A.V. Mikul'chik, and V.V. Blinov, "Influence of Inner Crystallizers on the Structure and Quality of Steel Ingots"; N.I. Khvorinov, "On Crystallization of Steel"; [illegible] [illegible]pitskiy, [illegible]I. Stupar', K.I. Rudichev, [illegible] [illegible] and [illegible]I. Marin[illegible]v, "Some Ways of Decreasing the Heterogeneity of Large [illegible] Steel Ingots up to [illegible] tons (the use of [illegible]-shaped ingot molds with spherical covers was recommended); I.L. Mirkin, "Theory of the Crystallization of Solid Phases in Complex Alloys; A.G. Spasskiy, "The Basic Factors Influencing the Structure of Ingots" (results of own studies on non-ferrous alloys); M.V. Mal'tsev, on ways of improving the structure and quality of cast metal by modification; [illegible] [illegible], A.A. Demidova and B.B. Gulyayev, "The Effect of the Alloy Composition on the Conditions of Crystallization and the Properties of Castings"; Ya.V. Grechnyy, on the origin and growth of crystals in two-metal alloys; V.[illegible] [illegible], on the effect of modifiers (magnesium,

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cerium, zirconium, titanium, etc.) on the deformation of the crust and the rate of solidification of carbon-iron and non-ferrous alloy ingots; L.S. Kamenetskaya, L.F. Rakhmanova, and Ye.Z. Spektor, on the effect of active non-soluble particles, and the small quantity of surface-active components accounting for the absence of dendrites during the crystallization of alloys under defect conditions; I.I. Goryunov, on the results of investigation of the effect of modifications on the structure and physico-mechanical properties of high-alloyed steel; V.G. Gruzin, P.I. Yemshanov and N.I. Neverovskaya, on the problems of the formation of the primary structure of structural steel, and the effect of the pouring temperature; L. I. Morozenskiy and O.D. Zigel', "The Effect of the Movement of Metal in the Liquid Core on the Crystallization of Steel Ingots and Castings"; A.F. Fromov, "The Crystallization of a Continuous Ingot and Its Effect on the Properties of Ingot Steel"; G.P. Ivantsov, "Thermic Stresses and Deformations in the Crust on a Crystallising Ingot"; I.N. Guglin, A.A. Levikova, and B.B. Gulyayev, "Crystallization and Mechanical Properties of Steel at High Temperatures"; I.A. Shapranov and A.V. Petrova, "Investigation of the Crystallization of Cast Iron Treated by Magnesium"; B.B. Mil'man, on the increased surface tension, decreased content of

gases in metal, and increased undercooling degree being the necessary conditions for the formation of nodular graphite in cast iron; S.F. Balandin, "Crystallization of Cast Iron", with an attempt at mathematical interpretation of the theory of the formation of the structure of castings; I.I. Khoroshev and I.Ye. Lev, on the mechanism of the origin of the centers of crystallization of graphite in white cast iron castings, and the influence of the crystallization rate on the distribution of alloying elements between the phases; Ya.N. Malinochka and A.A. Zhukov, on the intercrystalline segregation of silicon, and its effect on the structure-formation of cast iron; E.Ya. Shrapkovskiy, on the primary crystallization and properties of quasi-eutectic grey cast iron; Professor Shikl' illustrated the theory of graphite crystallization in cast iron by the results of metallographic studies; S.F. Shimushkin, on new heat-resistant steels and on the effect of crystallization conditions on their properties; P.V. Arkenov, P.P. Lashko and E.Ya. Rodina, on the peculiarities of the structure-formation during the solidification of heat-resistant steels while casting with cast models; I.V. Sally, on the laws of the crystallization of binary iron-carbon and non-ferrous alloys at strong undercooling (Lead, containing super-saturated carbon, and iron and bismuth solutions,

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Conference on the Crystallization of Metals 118-58-6-14/17

has been fixed at very high rate of cooling from the liquid state); A.M. Tuferev, on the process of re-crystallization; N.N. Belousov and A.A. Lebedev, "Study of the Crystallization and Properties of Non-Ferrous Alloys Under Applied Pressure"; Ye.D. Zakharov, on the dependance of mechanical properties of ingots on the shape of the alveole during continuous casting of aluminum alloys; V.L. Pokrovskiy and L.Ye. Cvsiyenko, on the peculiarities of the [illegible] of non-ferrous alloys and the physico-chemical processes accompanying it; I.F. Kolobnev and A.Ye. Semenova, on the effect of crystallization conditions on the foundry properties and mechanical properties of heat-resistant aluminum alloys at normal and high temperatures; N.N. Sirota, Ye.A. Lekhtman and D.M. Storyarenko, "Crystallization of Metals and Alloys in Ultra-Sonic Field"; I.I. Teumin, "The Influence of Elastic Oscillations on the Processes of Crystallization and the Technologic Properties of Alloys; L.L. Shkin and A.A. Yerokhin, "The Effect of Ultra-Sound on the Crystallizing Metal in the Welding Puddle"; P.A. Movchan, "Study of the Peculiarities of the Microscopic Chemical Heterogeneity in Alloys"; G.L. Petrov, "The Crystallization and Chemical Heterogeneity of Welded Seams"; M.Kh. Sharshorov and V.S. Sedykh, "The Effect of Non-Uniform Crystalliza-

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tion of the welding puddle on the formation of hot cracks"; K.V. [illegible], [illegible] and V.S. Kolesnikova, on the results of a study of the structure of copper alloys obtained by a new galvanic-diffusion method (crystallization in the process of diffusion of zinc in gaseous state into solid copper); N.I. Varich, on the results of X-ray analysis of the parameters of aluminum alloys crystallized under low and high piston pressures. The conference cited lack of coordination of research work on crystallization, and very little practical application of the research results by the industry. Basic trends in research on the crystallization of metals were noted. The next conference will convene in 1959.

AVAILABLE: Library of Congress

Card 6/6 1. Metals-Crystallization 2. Alloys-Crystallization

ACC NR: AP6035885 (A) SOURCE CODE: UR/0413/66/000/020/0124/0124

INVENTOR: Shapranov, I. A.; Stepanov, S. A.; Petrova, E. V.; Peznikova, S. Ya.; Kul'bitskiy, A. K.; Bulychev, A. I.

ORG: none

TITLE: Steel. Class 40, No. 187315

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 20, 1966, 124

TOPIC TAGS: steel, nickel molybdenum steel, vanadium ~~containing~~ steel, cerium ~~containing steel~~

ABSTRACT: An Author Certificate was issued for a steel containing silicon, manganese, nickel, and molybdenum. To improve weldability and mechanical properties, the composition of the steel is set as follows (in %): 0.08 max. carbon, 0.5 max. manganese, 0.5 max. silicon, 13—15 nickel, 5—6,0 molybdenum, 0.1—0.2 vanadium, 0.02 max. cerium, 0.015 max. sulfur, and 0.015 max. phosphorus.

SUB CODE: 11/ SUBM DATE: 16Dec64/ ATD PRESS: 5106

Card 1/1 UDC: 669.14.018.62: :669.15'24'28-194

I T.OVA, ..Y.

On the treatment of persons suffering of bronchial asthma by means of neosemin ..

Sovie Medicine, No. 3, p 27, 1953.

KOSTOV, Sazdo, arkh.; PETKOVA, Ek., inzh.; TOSKOV, Iv.

Standard designing of furniture. Durvomebel prom [illegible] no.3:16-20 My-Je '[illegible].

1. Nauchnoizsledovatelski institut po durvoobrabotvashta i mebelna promishlenost.

B/184/60/000/005/[illegible] XX
A104/A026

AUTHORS: Kondrat'yeva, T.F., Candidate of Technical Sciences and Petrova, F.P., Engineer

TITLE: Pressure Oscillations in Suction Pipes and Their Influence on the Performance of the Piston Compressor

PERIODICAL: Khimicheskoye mashinostroyeniye, 1960, No. 5, pp. 21 - 24

TEXT: The influence of pressure oscillations on the performance of the piston compressor and their causes are discussed. Natural oscillations are not affected by bends or local resistances, which only decrease the amplitude of pressure oscillations. Theoretical and experimental investigations on pressure oscillations in piston compressor pipes were carried out in the Leningradskiy filial NIIKhIMMASha (Leningrad Branch of the All-Union Designing and Scientific Research Institute of Chemical Machinery) and admission criteria for one and two-cylinder compressors were established. КСЭ-3м (KSE-3m) compressors with one 1st-stage cylinder, ЗИФ-5 (ZIF-5) compressors with two 1st-stage cylinders and 2ВГ (2VG) air compressors were used. A description of the method and instruments used are given. Following conclusions were reached: the use of pressure oscil-

Card 1/2

B/184/60/000/005/016/021/XX
A104/A026

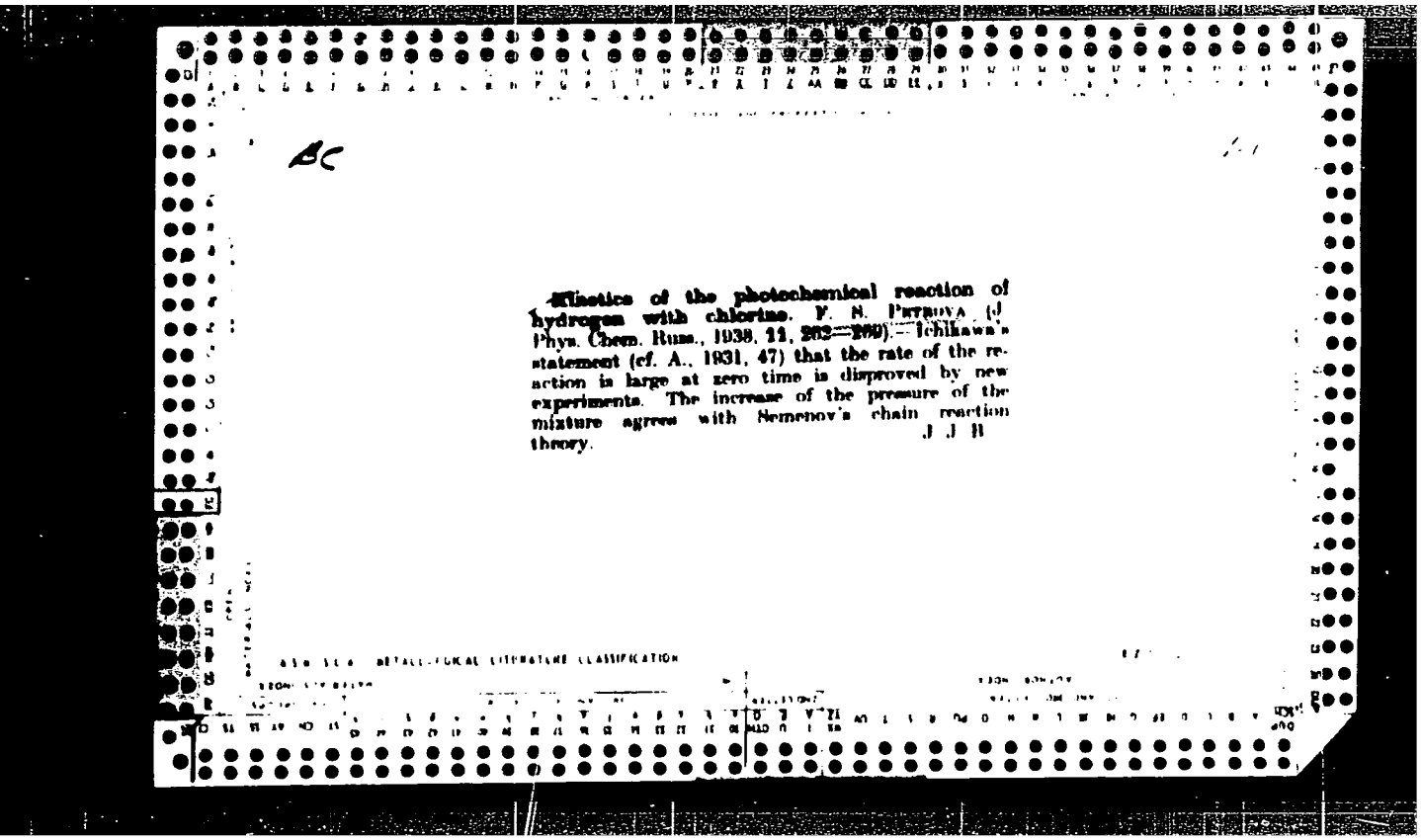
Pressure Oscillations in Suction Pipes and Their Influence on the Performance of the Piston Compressor

lations in suction pipes for acoustic pressure charging may increase the discharge of the piston compressor by 10 - 15%, whereas the use of suction pipes without calculation of the resonance reduces the discharge while increasing the power consumption. Effective influence on the performance of the compressor is exercised by resonance with the 1st and 2nd harmonics. In compressors with one 1st-stage cylinder resonance with 1st harmonics provides the highest amplitude of the oscillations, accompanied by a reduced discharge of the compressor and an increased power consumption. Resonances with the 2nd harmonics increased the discharge at unchanged power consumption. In compressors with two 1st-stage cylinders highest oscillation amplitudes occur at resonances with 2nd harmonics, i.e., discharge rises while the power consumption remains unchanged. Pressure oscillations in the suction pipe are particularly dangerous to compressors with one 1st-stage cylinder. The resonance factor should always be included in calculations of the suction system. Undesired gas pulsation can be prevented by choosing pipes of appropriate dimensions (in simple systems) or by damping the oscillations in their place of origin, i.e., close to the compressor (in complicated systems). There are 10 figures, 1 table and 10 references: 7 German, 1 English and 2 Soviet.
Card 2/2

KONDRAT'YEVA, T.F., kand.tekhn.nauk; PETROVA, F.P., inzh.

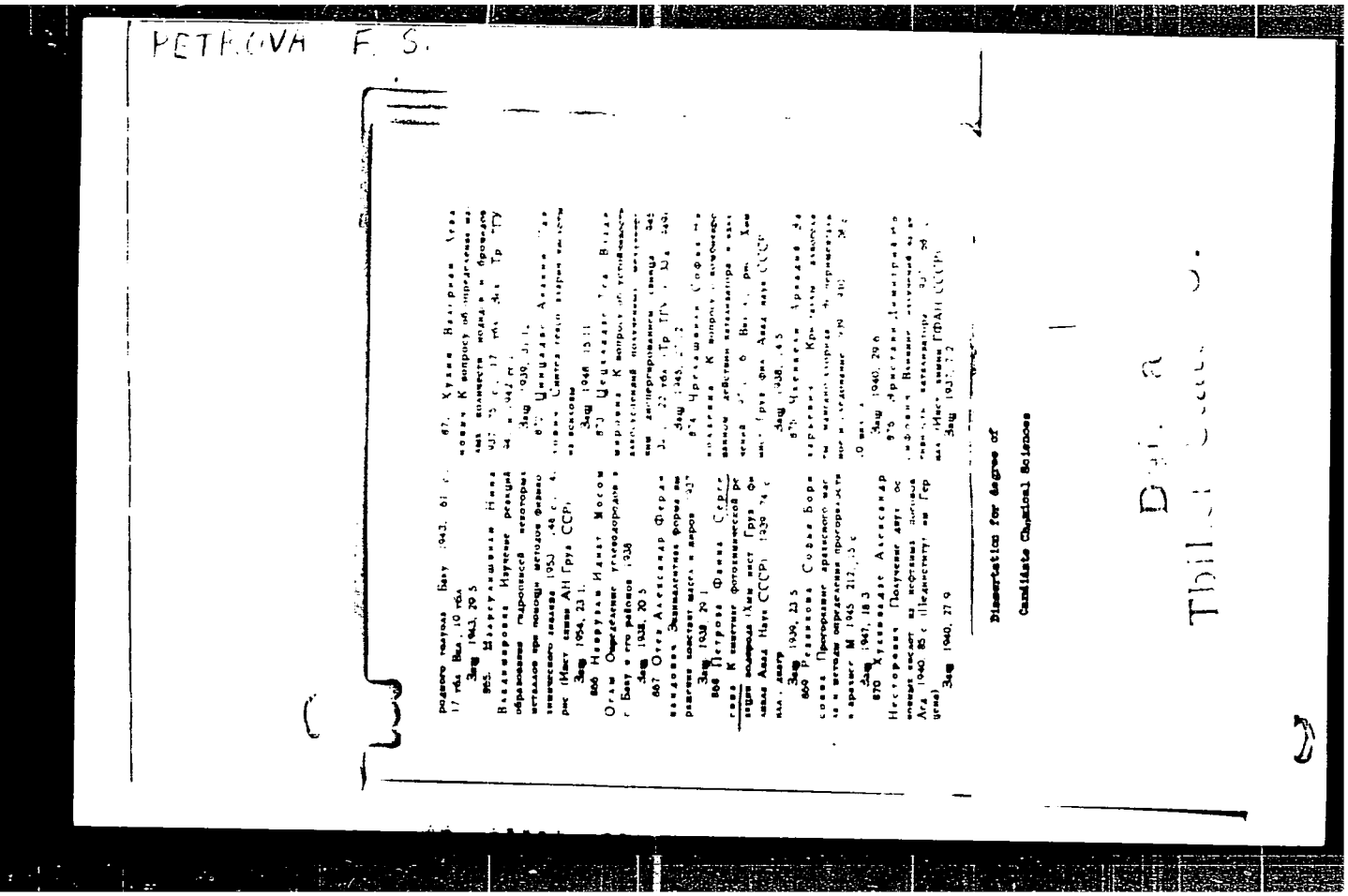
Pressure variation in a suction pipeline and their effect on the operation of a piston compressor. Khim.mash. no.5:21-26 S-O '60. (MIRA 13:9)

(Compressors)



AC

Kinetics of the photochemical reaction of hydrogen with chlorine. P. N. PETROVA (J. Phys. Chem. Russ., 1938, 11, 262—269).—Ichikawa's statement (cf. A., 1931, 47) that the rate of the reaction is large at zero time is disproved by new experiments. The increase of the pressure of the mixture agrees with Semenov's chain reaction theory. J. J. B.



PETROVA F. S.

Dissertation for degree of

Candidate Chemical Sciences

PETROVA, G.

"Investigating the Effect of the Changing Operational Condition of the Hydroelectric-Power Stations on the Operational Condition of the Thermoelectric-Power Stations for the Typical 1960 Year with the Largest Capacity of Water Power."

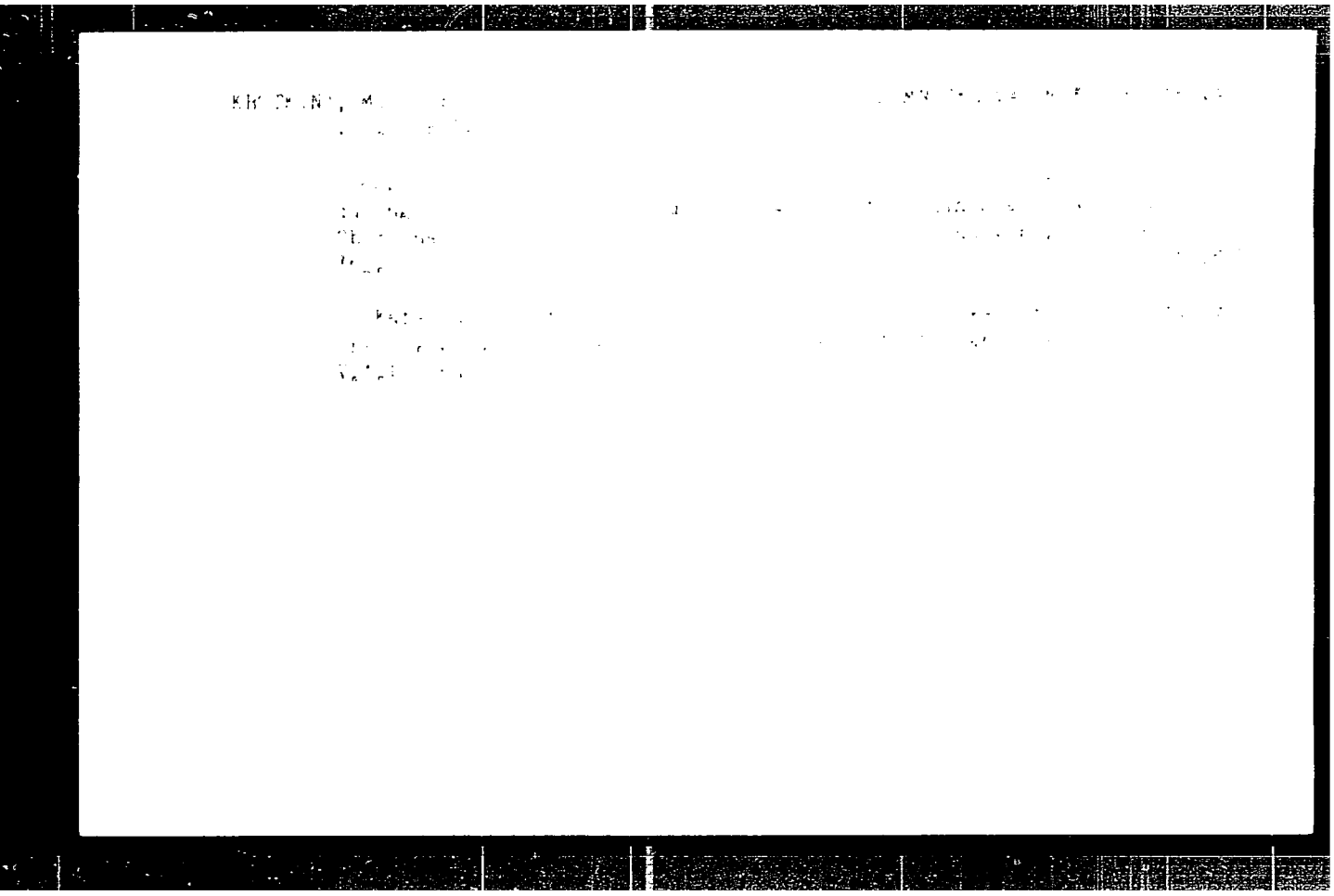
P. 8 (Elektroenergiia, Vol. 9, No. 6, June 1958, Sofiia, Bulgaria)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 11, Nov. 1958

PETROVA, T.

"Women in Machine-Tractor Stations." p.7 (MASHINO-TRAKTORNYE STANTSII, Vol. , No. 2/2, 1953, Sofiya.)

SO: Monthly List of East European Accessions, Vol. 3, No. 5, Library of Congress, May 1954, Uncl.



AUTHORS: Shtraykhman, G. A., Vansheydt, A. A., Petrova, G. A. 76-32-3-4/43

TITLE: Investigations on the Effect of the Structure of Unsaturated Compounds on Their Reactivity in Copolymerization Processes (Issledovaniye vliyaniya struktury nenasyshchennykh soyedineniy na ikh reaktsionnosposobnost' v protsessakh sopolimerizatsii). I. The Determination of the Constant of Relative Activity of Monomers for the General Case of Copolymerization (I. Opredeleniye konstant otnositel'noy aktivnosti monomerov dlya obshchego sluchaya sopolimerizatsii)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1958, Vol 32, Nr 3, pp 512-519 (USSR)

ABSTRACT: Presently 5 methods for the determination of the constant of the relative activity of monomers, the so-called "copolymerization constant", exist: those, according to Alfrey et al. (Ref 3), according to Mayo and Lewis (Ref 1) according to Fineman and Ross (Ref 5), according to S. S. Medvedev and A. D. Abkin (Ref 6) and according to Joshi and Kapur (Ref 7). All methods, except the last-mentioned, are of graphical type and depend on subjectivity in determining the constant whilst that one (last-mentioned) is objective. However it only

Card 1/3

Investigations on the Effect of the Structure of Unsaturated Compounds on Their Reactivity in Copolymerization Processes. I. The Determination of the Constant of Relative Activity of Monomers for the General Case of Copolymerization

can be employed for experiments at small conversion depth. The present work describes an analytical method for determining the copolymerization constants r_1 and r_2 based on the application of the integral form of the composition equation, as a further development of the method according to Mayo and Lewis. The differential form of the equation of composition of the copolymers was determined beside Mayo and Lewis, independently by Alfrey and Goldfinger (Ref 8), as well as by Wall (Ref 9). The present method has some advantages, compared with that last-mentioned, if a sharply marked difference exists between the composition of the copolymer and that of reaction mixture. Accordingly, as in the method of Mayo and Lewis the deviation from the linear form (even a small one) of the experimental lines is not taken into consideration, the described method introduces a mean value (parameter p), which is considered as constant in the system to be investigated. The parameter p is determined by a test series and is applied in the computations of r_1 and r_2, whereby the shape of the curve of the function $r_2 = f(r_1)$ is considered.

Investigations on the Effect of the Structure of Unsaturated Compounds on Their Reactivity in Copolymerization Processes. I. The Determination of the Constant of Relative Activity of Monomers for the General Case of Copolymerization

Also a graphical variant of the method is possible, whereat diagrams $r_2 - p$ are drawn, and a mean value for p is taken from the intersections of the curves and is applied in the further calculations. This method was applied in calculating the copolymerization constants in the system methyl metacrylate methacrylamine, whereat a value of $p_{op} = -1,279$ (p=const) and $r_1 = 1,65 \pm 0,05$ and $r_2 = 0,49 \pm 0,02$ (at $70^{\circ}C$) is given. This is in agreement with data of Crauwels and Smets (Ref 11). Data on the experimental procedure are given, whereat among others, it is to be seen that the experiments were performed with (0,1 weight %) benzoyl peroxide, at $70^{\circ}C$. There are 1 figure, 4 tables, and 12 references 4 of which are Soviet.

ASSOCIATION: Akademiya nauk SSSR, Institut vysokomolekulyarnykh soyedineniy, Leningrad (AS USSR Leningrad Institute of High molecular Compounds)

SUBMITTED: July 7, 1956

MAKLYAYEV, F.L.; PETROVA, G.B.

Secondary and tertiary amines with different kinds of radicals.
Zhur.ob.khim. 33 no.12:3926-3928 D '63. (MIRA 17:3)

PHASE I BOOK EXPLOITATION SOV/4199

Leningrad. Politekhnicheskiy institut

Sovremennyye dostizheniya liteynogo proizvodstva; trudy mezhvuzovskoy nauchno-tekhnicheskoy konferentsii (Recent Achievements in Founding: Transactions of the Scientific and Technical Conference of Schools of Higher Education) Moscow, Mashgiz, 1960. 330 p. Errata slip inserted. 4,000 copies printed.

Resp. Ed.: Yu. A. Nekhendzi, Doctor of Technical Sciences, Professor; Eds.: N. G. Girshovich, Doctor of Technical Sciences, Professor, and K. P. Lebedev, Docent; Managing Ed. for Literature on Heavy Machine Building (Leningrad Department, Mashgiz): Ye. P. Naumov, Engineer; Tech. Eds.: Ye. A. Dlugokanskaya, and L. V. Shchetinina.

PURPOSE: This book is intended for the technical personnel of foundries. It may be used by students of the field.

COVERAGE: This collection of articles discusses problems in founding processes. Individual articles treat the melting of metals and their alloys, mechanization and automation of casting processes, aspects of the manufacture of steel, cast iron, and nonferrous metal castings. No personalities are mentioned. References accompany individual articles.

PETROVA , Galina [Piatrova, Halina]

Great deeds are in store for them. Rab.i sial. 36 no.2: 18-19 F '60. (MIRA 13:6)
(Mogilev District--Dairying)

KASHURICHEV, A.P.; FILIPPOVA, T.N.; PETROVA, G.A.

Solid fuel as a source of power and chemical raw materials.
Ispol'. tverd. topl., ser. maz. i gaza no. 5:66-71 '64
(MIRA 19:2)

BORZOVA, L.D.; TORINA, I.V.; PETROVA, G.A.

Additives and control of vanadium corrosion. Ispol'. tverd. topl., ser. maz. i gaza no. 5:113-120 '64 (MIRA 19:2)

5 (4)

AUTHORS: Petrova, G. A., Shtraykhman, G. A., Vansheydt, A. A. SOV/76-33-6-12/44

TITLE: Investigation of the Influence of the Structure of Unsaturated Compounds Upon Their Reactivity in Co-polymerization Processes (Issledovaniye vliyaniya struktury nenasyshchennykh soyedineniy na ikh reaktsionnosposobnost' v protsessakh sopolimerizatsii). II. Influence of Various Substituents at the Nitrogen Upon the Reactivity of the Derivatives of Methacrylamide With Respect to a General Type of Radical (II. Vliyaniye razlichnykh zamestiteley pri azote na reaktsionnosposobnost' proizvodnykh metakrilamida po otnosheniyu k obshchemu tipu radikala)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959 Vol 33, Nr 6 pp 1246-1252 (USSR)

ABSTRACT: An investigation was made of the co-polymerization (C) of methylmethacrylate (I) with methyl-, ethyl-, phenyl-, n-tolyl-, n-anisyl methacrylamide (II) as well as methacrylyl glycine ester and the dimethyl ester of methacrylyl imino acetic acid. The two last mentioned compounds were synthesized for the first time. On the strength of the co-polymerization constants (CC)

Card 1/3

Investigation of the Influence of the Structure of Unsaturated Compounds Upon Their Reactivity in Co-polymerization Processes. II. Influence of Various Substituents at the Nitrogen Upon the Reactivity of the Derivatives of Methacrylamide With Respect to a General Type of Radical

SOV/76-33-6-12/44

(r_1 and r_2) obtained, the authors determined the relative activities of the monomers, which characterize the influence of the various substituents on reactivity (with respect to the general radical of (I)) (Table 3). A computation was made of the values of the specific acitivity Q and polarity e (Table 4) of the monomers; by the aid of these values the position of the monomers is determined in the coordinate system Q - e. The (C) occurred at 70° in sealed glass ampules under the addition of 0.1 % benzoyl peroxide. The results of (C) are shown (Table 1) as well as the properties of the monomers and the (CC) obtained (Table 2). The aromatic derivatives of methacrylamide are found to exhibit a higher activity than the aliphatic derivatives; thus, for example, the activity of (II) is almost 12 times higher than that of the non-substituted amide. The position of the monomers in the series of relative activities agrees with present conceptions concerning the influence of the substituents in

Card 2/3

Investigation of the Influence of the Structure of Unsaturated Compounds Upon Their Reactivity in Co-polymerization Processes II. Influence of Various Substituents at the Nitrogen Upon the Reactivity of the Derivatives of Methacrylamide With Respect to a General Type of Radical

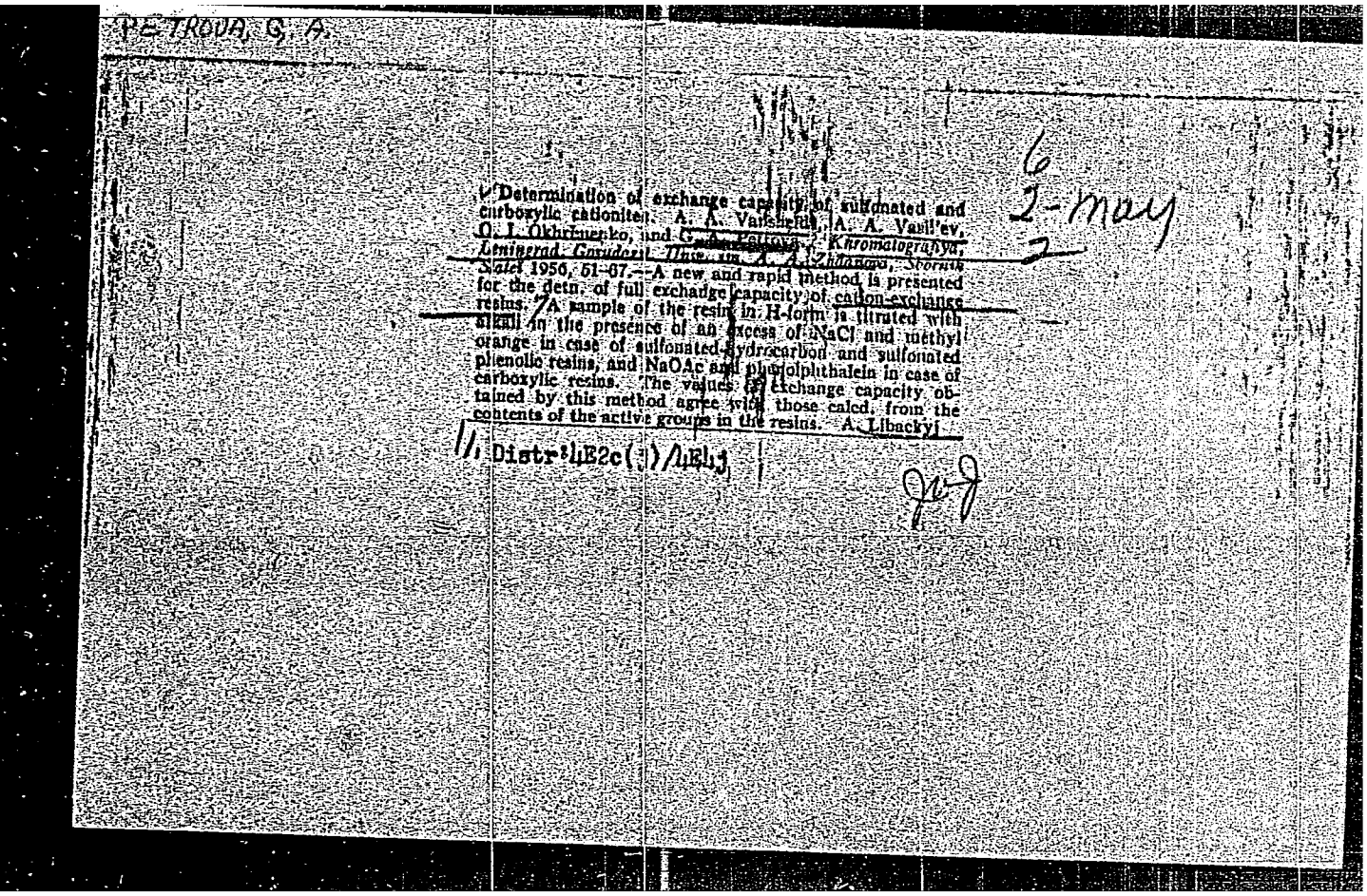
SOV/76-33-6-12/44

the case of double bonds on the degree of bond and polarity; the same applies to the experimentally determined values of Q and e. Pertinent explanations as well as data concerning the influence of some substituents on the activity of the monomers (Table 5) are supplied. There are 5 tables and 12 references, 4 of which are Soviet.

ASSOCIATION: Akademiya nauk SSSR, Institut vysokomolekulyarnykh soyedineniy Leningrad (Academy of Sciences of the USSR, Institute of High-molecular Compounds, Leningrad)

SUBMITTED: October 25, 1957

Card 3/3



PETROVA, G. A.

6
2-may
2

Determination of exchange capacity of sulfonated and carboxylic cationites. A. K. Vanshtein, A. A. Vasil'ev, O. L. Okhrimenko, and G. A. Petrova. *Khromatografiya, Leningrad. Gorudarst. Univ. im. A. A. Zhdanova, Sbornik Statei* 1956, 61–67.—A new and rapid method is presented for the detn. of full exchange capacity of cation-exchange resins. A sample of the resin in H-form is titrated with alkali in the presence of an excess of NaCl and methyl orange in case of sulfonated-hydrocarbon and sulfonated phenolic resins, and NaOAc and phenolphthalein in case of carboxylic resins. The values of exchange capacity obtained by this method agree with those calcd. from the contents of the active groups in the resins. A. Libachyi

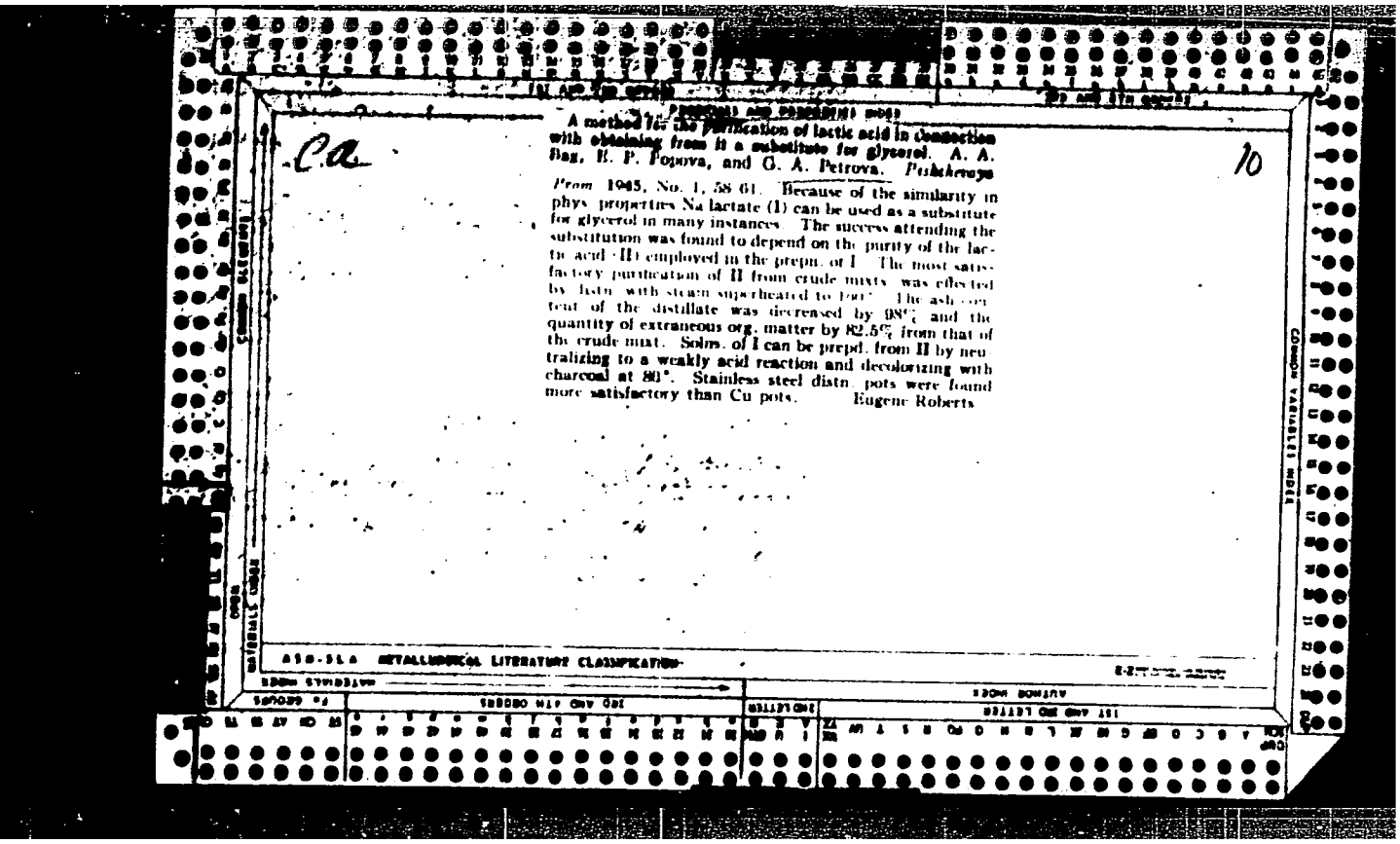
11, Distr: 4E2c(3)/4E4j

PETROVA, [illegible] A.

Petrova, [illegible] A.

"Teaching Artistic Texts in Lessons and in Homework on the Basis of Literature, as One of the Ideological Tasks of the Literature Course in the Intermediate School." Min Higher Education USSR. Kazan' State [illegible]me i [illegible]. Ul'yanov-Lenin. Kazan', 1955. (Dissertation for the Degree of Candidate in Pedagogical Science)

So: Knizhnaya letopis', No. 27, 2 July 1955



Ca

10

A method for the purification of lactic acid in connection with obtaining from it a substitute for glycerol. A. A. Baz, E. P. Pojarova, and G. A. Petrova. *Pishchevaya*

Prom 1945, No. 1, 58-61. Because of the similarity in phys. properties Na lactate (I) can be used as a substitute for glycerol in many instances. The success attending the substitution was found to depend on the purity of the lactic acid (II) employed in the prepn. of I. The most satisfactory purification of II from crude mixts. was effected by heating with steam superheated to 160°. The ash content of the distillate was decreased by 98%, and the quantity of extraneous org. matter by 82.5% from that of the crude mixt. Solns. of I can be prepd. from II by neutralizing to a weakly acid reaction and decolorizing with charcoal at 80°. Stainless steel distn. pots were found more satisfactory than Cu pots. Eugene Roberts

L 37647-65 EWT(m)/EWP(b)/EWA(d)/EWP(t) IJP(c) JD/JG/WB

ACCESSION NR: AT5008257 S/3144/64/000/005/0113/0120

AUTHOR: Borzova, L. D.; Torina, I. V.; Petrova, G. A.

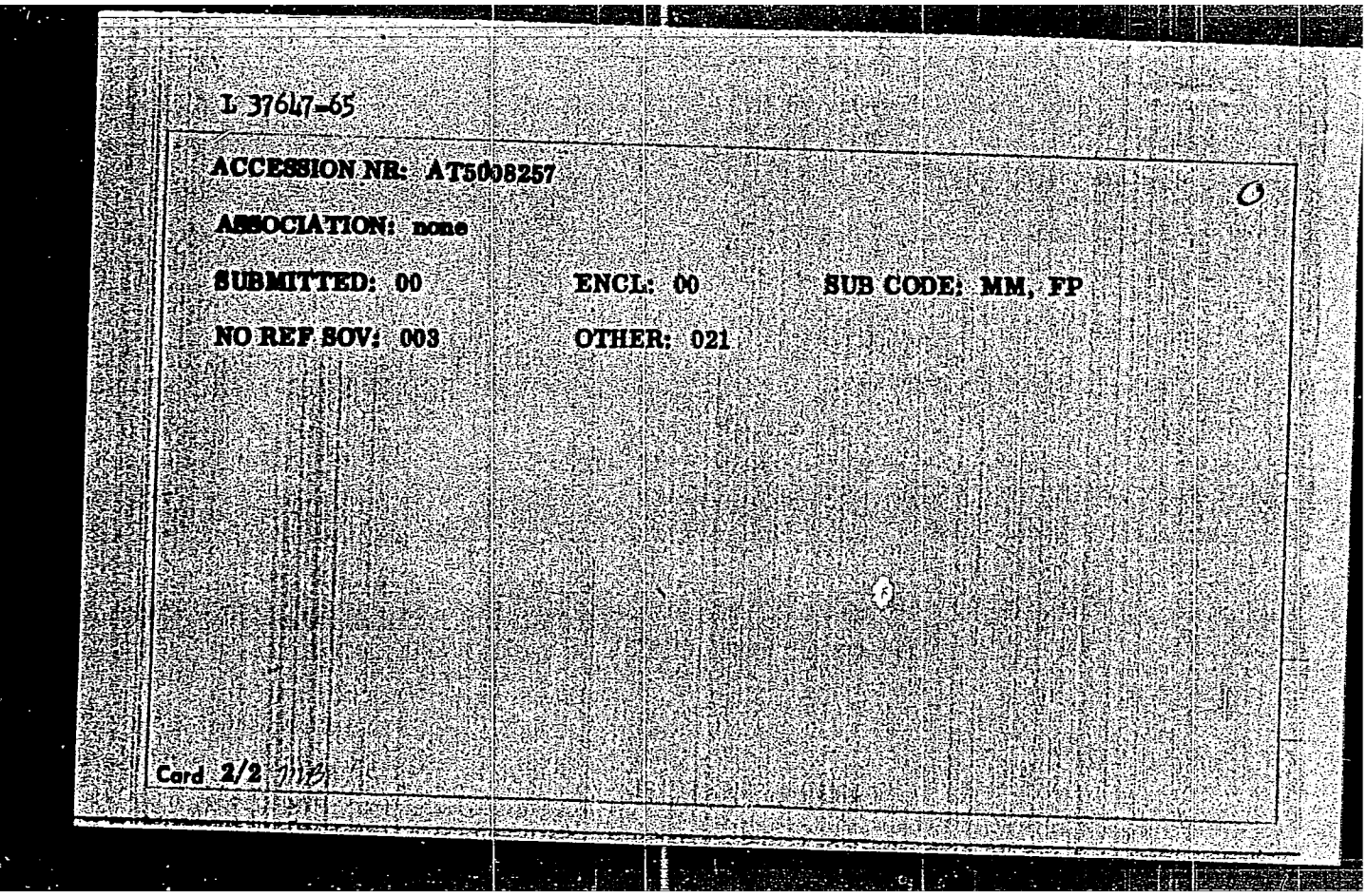
TITLE: Additives and prevention of vanadium corrosion

SOURCE: AN SSSR. Energeticheskiy institut. Ispol'zovaniye tverdykh topliv, sernistykh mazutov i gaza, no. 5, 1964, 113-120

TOPIC TAGS: vanadium corrosion, fuel additive, corrosion prevention, Crimean cill

ABSTRACT: In this survey article, the authors discuss the status of the fight against vanadium corrosion by the use of fuel additives on the basis of 22 Western and 3 Soviet references. Such additives (dolomite) were used in the Soviet Union for the first time in 1954 at the Groznenskaya TETs (Groznyy Thermoelectric Station) and extended the boiler running time from 23-30 to 90-120 days. Later, a group of researchers at the VNII NP (V. G. Nikolayeva, A. Ya. Dukhnina, et al., Khimiya i tekhnologiya topliv i masel, no. 10, 17-21, 1961) found that the Crimean cill additive (62% SiO_2, 20% Al_2O_3) mixed with equal amounts of manganese stopped the corrosion altogether. All other information in the article refers to Western data.

Card 1/2



L 37647-65

ACCESSION NR: AT5008257

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM, FP

NO REF SOV: 003 OTHER: 021

Card 2/2

PETROVA, G. B.

USSR/ Chemistry

Card : 1/1

Authors : Khromov, S. I., Novikov, S. S., Petrova, G. B. and Zelinskiy, N. D. Acad.

Title : Contact conversions of propyl substitutes of benzene and cyclohexane

Periodical : Dokl. AN SSSR, 96, Ed. 6, 1175 - 1178, June 1954

Abstract : Contact conversion of propyl substitutes of benzene and cyclohexane was investigated. A study of the catalysate showed that complete or partial cleavage of the side chain carbon atoms takes place in the investigated hydrocarbons. This process is much smoother for proylcyclohexanes than in propyl benzenes whereas isopropylbenzene is more stable against contact conversions than n-propylbenzene which corresponds with the facts observed during catalytic conversions of ethyl- and butyl benzenes and ethyl- and butylcyclohexanes. Five references. Table, graph.

Institution : The M. V. Lomonosov State University, The N. D. Zelinskiy Lab. of Org. Chem., Moscow.

Submitted : April 5, 1954

BRUDZ', V.G.; USKOVA, L.Ye.; NOVKOVSKAYA, N.A.; POSLAVSKAYA, K.D.; RAKOVSKAYA, V.A.; PETROVA, G.D.; BROVKIN, I. ..., red.; SHPAK, Ye.G., tekhn. red.

[Manual of technical specifications for reagents and preparations used in laboratory work; organic reagents and preparations] Sbornik tekhnicheskikh uslovii na reaktivy i preparaty dlia laboratornykh rabot; organicheskie reaktivy i preparaty. Moskva, Gos.nauchno-tekhn.izd-vo khim.lit-ry. 1961. 582 p. (MIRA 14:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimreaktivov i osobo chistykh veshchestv Gosudarstvennogo komiteta Soveta Ministrov SSSR po khimii (for all except Brovkin, Shpak).
(Chemical tests and reagents)

CHASOVENNAYA, A.A.; PETROVA, G.P.

Soil reaction in the rhizosphere of herbaceous plants.
Vest. Len. un. 11 no.15:18-27 '56. (MLRA 9:10)

(Soil chemistry) (Hydrogen-ion concentration)

[redacted] system of group intransitivity engendered by the [redacted] substitutions. Dokl. AN BSSR 9 no.8:503-505 Ag '65.

(MIRA 18:10)

1. Institut matematiki AN BSSR.

BOGDANOV, G.A.; KOLOBKOVA, R.V.; PETROVA, G.L.

Catalytic decomposition of H_2O_2 by sodium tungstate in the presence of salts of zinc subgroup elements. Zhur. fiz. khim. 39 no.3:751-756 Mr '65. (MIRA 18:7)

1. Moskovskiy tekstil'nyy institut.

Category: USSR / Physical Chemistry - Kinetics. Combustion. Explosives. Topochemistry. Catalysis

B-9

Abs Jour: Referat Zhur-Khimiya, No 9, 1957, 29997

Author : Bogdanov G. A., Petrova G. L.
Inst : not given
Title : Homogenous Catalysis of H_2O_2 by Sodium Chromate and New Peroxide Compounds

Orig Pub: Zh. fiz. khimii, 1955, 29, No 1, 84-94

Abstract. Rate of decomposition of H_2O_2 (v) at 15°, and concentrations 0.00125 M H_2SO_4 and 0.005 M Na_2CrO_4, conforms to the 2nd order and does not depend on initial concentration of H_2O_2. At 25° and constant initial concentrations of H_2O_2 and Na_2CrO_4, v increases in proportion to the concentration of H_2SO_4, and the 1st order of the reaction changes to 2nd order. At 5-15° the apparent energy of activation E = 11.0 kcal/mole, at above 25° v does not depend on temperature and E = 0. On the basis of kinetic data the authors had predicted, as intermediate products of the reaction, peroxide compounds (different in the case

Card 1/2

-7-

PETROVA, G.L.

USSR/ Chemistry - Catalysis

Card 1/1 Pub. 147 - 11/26

Authors : Bogdanov, G. A., and Petrova, G. L.

Title : Homogeneous catalysis of H_2O_2 with sodium chromate and new peroxides

Periodical : Zhur. fiz. khim. 29/1, 84-94, Jan 1955

Abstract : The process of catalytic decomposition of H_2O_2 under the effect of Na_2CrO_4 was investigated under different conditions of initial H_2O_2 concentration, different sulfuric acid concentrations and temperatures. Kinetic equations are presented which permit one to determine the composition of the intermediate compounds, and to calculate the decomposition constants, the equilibrium constants of the intermediate products at various temperatures as well as the thermal effect and changes in free energy and entropy. The formation of two new sodium perchromates is described. Eleven references: 10 USSR and 1 German (1905-1951). Table; diagrams.

Institution : .....

Submitted : April 21, 1954

PETROVA, G. L., CAND CHEM SCI, "HOMOGENEOUS CATALYSIS OF HYDROGEN PEROXIDE [illegible] SODIUM CHROMATES IN THE PRESENCE OF SALTS OF ELEMENTS OF IRON SUBGROUPS." MOSCOW, 1961. (MOSCOW ORDER OF LENIN CHEM-TECHNOL INST IM D. I. MENDELEYEV). (KL, 3-61, 201).

SAVINA, M.V.; BOGDANOV, G.A., [illegible]; YUR[illegible]ENKO, G.K. (Moscow)

Catalytic decomposition of [illegible] under the combined action of sodium molybdate and salts of the zinc subgroup. Part 1. Zhur. fiz. khim. 37 no.4:746-[illegible] Ap '63. (MIRA 17:7)

1. Moskovskiy tekstil'nyy institut.

BOGDANOV, G.A.; PETROVA, G.L.; MINAYEV, A.I. (Moskva)

Calcium peroxychromates and the mechanism of the catalytic decomposition of H_2O_2 by chromates. Zhur.fiz.khim. 35 no.8:1716-1717 Ag '61. (MIRA 14:8)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova i Moskovskiy tekstil'nyy institut.
(Calcium chromate)
(Hydrogen peroxide)

L 41690-65 EWT(m)/EPF(c)/EPR/EWP(j)/EWP(t)/EWP(b) Pc-4/Pr-4/Ps-4 IJP(c)
JD/WW/RM

ACCESSION NR: AP5008914 S/0076/65/039/003/0751/0756

AUTHOR: Bogdanov, G. A.; Kolobkova, R. V.; Petrova, G. L.

TITLE: Catalytic decomposition of hydrogen peroxide by sodium tungstate together with the salts of elements of the zinc subgroup

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 3, 1965, 751-756

TOPIC TAGS: hydrogen peroxide, sodium tungstate, zinc sulfate, cadmium sulfate, mercuric nitrate, peroxide decomposition, redox potential

ABSTRACT: The article describes the results of the catalytic decomposition of hydrogen peroxide in solution in the presence of the following salts, taken in pairs: $Na_2WO_4 + ZnSO_4$; $Na_2WO_4 + CdSO_4$; $Na_2WO_4 + Hg(NO_3)_2$. Volumetric and potentiometric methods and electrical conductivity measurements were employed. The decomposition of H_2O_2 by sodium tungstate is appreciably retarded by Zn^{2+}, Cd^{2+}, and Hg^{2+} ions. The rate constants were calculated for the first-order regions of the catalytic reaction. Curves of redox potentials versus time show three sections which indicate the formation of no less than three intermediate peroxides; this is in agreement with the kinetic data and colorimetric observations. In catalysis involving Hg^{2+} or Hg_2^{2+} ions, radical-chain processes and compensating reactions

Card 1/2

L 41690-65
ACCESSION NR: AP5008914

take place, and intermediate compounds are formed. Orig. art. has: 5 figures, 1 table and 7 formulas.

ASSOCIATION: Moskovskiy tekstil'nyy institut (Moscow Textile Institute)

SUBMITTED: 14Feb64 ENCL: 00 SUB CODE: IC

NO REF SOV: 009 OTHER: 002

Card 2/2

BOGDANOV, G.A., SAVINA, M.V.; PETROVA, G.L.

Catalytic decomposition of H_2O_2 under the combined action of sodium molybdate and salts of the zinc subgroup elements. Zhur. fiz. khim. 37 no.6:1258-1263 Je '63. (MIRA 16:7)

1. Moskovskiy tekstil'nyy institut.
(Hydrogen peroxide) (Catalysis)

L 30230-66 EWP(k)/EWI(d)/EWP(h)/EWP(l)/EWP(v) BC

ACC NR: AP6020151 SOURCE CODE: UR/0250/65/009/008/0501/0503

AUTHOR: Suprunenko, D. A.; Petrova, G.L.

ORG: Institute of Mathematics, AN BSSR(Institut matematiki AN BSSR)

TITLE: Note on systems of intransitivity of a group due to prescribed substitutions

SOURCE: AN BSSR. Doklady, v. 9, no. 8, 1965, 501-503

TOPIC TAGS: automatic control system, automatic control design

ABSTRACT: This paper deals with a problem that arises with machines that have a finite number of states and whose inputs act upon the states as substitutions. Let Sn be a symmetric group of degree n and Γ its subgroup generated by substitutions $f_1, \ldots, f_m$. The requirement is to construct systems of intransitivity for group Γ. This is done for both general and specific cases. Orig. art. has: 13 formulas. [JPRS]

SUB CODE: 13/ SUBM DATE: 10Apr65

Card 1/1 CC

PETROVA, G.I.; BOGDANOV, G.A.

Activating effect of cobalt sulfate on the catalysis of H_2O_2 decomposition by sodium chromates. Zhur.fiz.khim. 32 no.10:2324-2332 O '58. (MIRA 11:12)
(Cobalt sulfate) (Hydrogen peroxide) (Catalysis)

AUTHORS: Bogdanov, G. A., Petrova, G. L.

76-32-4-2/43

TITLE: An Anomalous Case of Catalysis in the Liquid Phase[Anomal'nyy sluchay kataliza v zhidkoy faze]

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1958, Vol. 32, Nr 4, pp. 746 - 755 (USSR)

ABSTRACT: This paper treats the joint effect of sodium chromate with nickelsulphate on the catalytic process of the decomposition of hydrogen peroxide in solution. As the experimental part quoted shows, the determination was accomplished by means of a volumetric method described earlier. The experiments showed the catalytic velocity independant of the initial concentration of the hydrogen peroxide, while determination under various temperatures and constant nickel sulphate content showed that the catalytic effect of nickel sulphate rises with the temperature. Determination of the effect of the concentration of nickel sulphate (0,005 to 0,05M) at 15°C led to the conclusion that an increase of concentration caused only a minor increase of reaction, that is only 1,2 times, so that the concentration is not in linear proportion to the velocity of

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76-32-4-2/43

An Anomalous Case of Catalysis in the Liquid Phase

catalysation. Investigation into the influence of the concentration of sodium-chromate on the velocity of catalysis conducted for this reason yielded interesting and unexpected results. The concentration of sodium chromate was changed in an interval of 0.000625 to 0.05806 M at 25°C and it was observed that the reaction velocity rises proportionally to the square root of the catalyst concentration, reaching a maximum at $c_{Na_2CrO_4} = 0.0025$ M and then sharply declining to $c_{Na_2CrO_4} = 0.02$ M, from where it rises again to a final maximum, so that the function has two maxima. Another interesting observation showed that in a ratio of $NiSO_4 : Na_2CrO_4$ an increase of the quantity of nickel sulphate caused a decrease in the catalytic properties of the nickel sulphate, while it rose with an increase of the quantity of sodium chromate, reaching a maximal effect at $c_{Ni}/c_{Cr} = 1$. Investigation on the influence

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An Anomalous Case of Catalysis in the Liquid Phase 76-32-4-2/43

of temperature on the velocity of reaction at c_{H^+} = 0.00125 M; c_{Cr} = 0.005 M, c_{Ni} = 0.01 M, $c_{H_2O_2}$ = 0.15 M and temperatures of 5 - 75°C showed that the influence of temperature on the velocity of reaction does not, in the case presented, follow van't Hoff's rule, the formula seems to be identical with Ye. I. Shpital'skiy's, which is, however, not applicable. Single determination and a diagram of the change of activation energy with the temperature showed that the activation energy decreases at first, passing through a minimum at about 35°C and rising to a maximum at about 63°C. It is indicated in conclusion that the second report will cover the influence of H^+ - ions, of electro-conduction properties and cryoscopy of the solutions, as well as an examination of intermediate products of catalysis. There are 7 figures, 3 tables and 9 references, all of which are Soviet (including 1 translation).

SUBMITTED: March 31, 1956
AVAILABLE: Library of Congress
Card 3/3

1. Sodium chromate--Catalytic properties 2. Nickel sulfate--Catalytic properties 3. Hydrogen peroxide--Decomposition 4. Hydrogen peroxide--Catalysis

MINAYEV, A.I.; PETROVA, G.L. (Moskva)

Kinetics of the catalytic decomposition of H_2O_2 by chromium and calcium salts. Zhur. fiz. khim. 35 no.7:1512-1517 Jl '61. (MIRA 14:7)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova i Moskovskiy tekstil'nyy institut.
(Hydrogen peroxide) (Catalysis)

5(4)

AUTHORS: [illegible]

TITLE: The Activating Effect [illegible] H_2O_2 (Aktivir [illegible] na katalir H_2O_2 [illegible])

PERIODICAL: Zhurnal fizicheskoy khimii, 19[illegible], Vol [illegible], Nr 10, pp 23[illegible] (USSR)

ABSTRACT: The investigations mentioned in the title were carried out in acid media; some observations on the activating effect of iron sulfate were made for purposes of comparison. The method of the kinetic investigation had already been described (Refs [illegible]). The catalyst solutions were added to the reaction mixture [illegible] after the [illegible]; first [illegible] and after the temperature [illegible] had been [illegible]. In all experiments [illegible] H_2O_2 [illegible]. The following experimental conditions were maintained: $c_{H_2O_2}$ = 0,1[illegible] M

Card 1/3 $c_{H_2SO_4}$ = 0,00[illegible] M, c_{Cr} = 0,001 M, c_{Ni} = 0,01 M ([illegible] $NiSO_4$),

The Activating Effect of C[illegible] Sulf[illegible] [illegible] C[illegible] [illegible] [illegible] of H_2O_2 SOV/[illegible]

$c_{[illegible]}$ = 0,0[illegible] M. An [illegible] activating eff[illegible] salt was [illegible]erved [illegible]. The [illegible] stronger eff[illegible] [illegible] the decomposition of hydrogen peroxide. Thus, the activating eff[illegible] of the salts of the elements of the [illegible] group of iron in[illegible] with the increase of the ordinal number within the Mendeleyev system. The course of the kinetic reaction of the decomposition of hydrogen peroxide is almost independent of the initial concentration of the substrate. Robertson (Ref [illegible]) found that the activation of the H_2O_2 decomposition in potassium bichromate by cobalt [illegible] is a logarithmic function of the amount of cobalt chloride [illegible]. No direct proportionality between the concentration of cobalt sulfate and the catalytic decomposition of H_2O_2 [illegible] found. A comparison of the activating effect of nickel [illegible] and cobalt [illegible] that an increase in concentration of the cobalt salt causes a higher reaction velocity than the nickel salt. An increase in temperature in activation with the cobalt salt (in contrast to nickel salt) causes an increase of the temperature coefficient and of the activation energy. The influence of the H[illegible] concentration

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SOV/76-[illegible]

The Activating Effect of Cobalt Sulfate in the Oxidation of Oxalic Acid by H_2O_2

on the process must be observed at $c_{H^+} < c_{Cr}$ and $c_{H^+} > c_{Cr}$. In the former case an approximately direct proportional relationship between the reaction velocity and the acid concentration may be found. At $c_{H^+} > c_{Cr}$ the velocity of the catalytic process [illegible] the increase in the H^+-ion concentration. The oxidation of H_2O_2 with Na chromate as well as nickel sulfate [illegible] van't Hoff law (Vant-Goff) (Ref. 2,3), and a flat maximum is observed with cobalt sulfate at temperatures of 15° and 25°. The formation of intermediate complex compounds of chromium with cobalt was proved by the method by Kurnakov-Il'inskaya (Ref. [illegible]). There are 6 figures, 2 tables, and 7 references, 4 of which are Soviet.

SUBMITTED: May 8, 1957

Card 3/3

L 12699-63 EPF(c)/EWT(m)/BDS Pr-4 RM/MM

ACCESSION NR: AP3002926 S/0076/63/037/006/1258/1263

AUTHOR: Bogdanov, G. A.; Savina, M. V.; Petrova, G. L.

TITLE: Catalytic decomposition of hydrogen peroxide under the combined action of sodium molybdate and salts of the zinc subgroup elements

SOURCE: Zhurnal fizicheskoy khimii, v. 37, no. 6, 1963, 1258-1263

TOPIC TAGS: hydrogen peroxide catalytic decomposition, sodium molybdate, zinc salt, kinetic curve, electroconductivity, pH curve

ABSTRACT: In a study of the catalytic decomposition of H sub 2 O sub 2 under the action of Na sub 2 MoO sub 4 + Hg(NO sub 3) sub 2 in solution it was found that the kinetic curves can possess one or two peaks, depending upon the condtions. The electroconductivity and pH curves also possess an involved relation to the substrate concentration. The findings when regarded in their entirety led to the conclusion that the catalytic process is due to the simultaneous: a) formation of intermediate mercury peroxomolybdates; b) occurrence of compensating reactions; and c) formation of chains. New mercury peroxomolybdates have been synthesized. Orig. art. has: 3 figures and 1 table.

Association: Moscow Textile Inst.

Card 1/2

AUTHORS: Bogdanov, G. A., Petrova, G. [illegible] SOV/[illegible]

TITLE: An Anomalous Case of Catalysis in the Liquid Phase. II (Anomal'nyy sluchay kataliza v zhidkoy faze. II.)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol. [illegible], Nr 6, pp. [illegible] (USSR)

ABSTRACT: As a continuation of a previous paper, the influence of hydrogen ions on the velocity of catalysis, the electric conductivity and the cryoscopic nature of solutions of catalysts Na_2CrO_4 and Ni [illegible] in the catalytic decomposition of hydrogen peroxide were investigated. Special experiments were concerned with the intermediate products. The investigations of the influence of H^+-ions was investigated at concentrations of sulfuric acid of from $6.25 \cdot 10^{-4}$ to [illegible] mol/liter, [illegible] and $c_{Cr} = 0.005$, $c_{Ni} = 0.01$, $c_{H_2O_2} = 0.17$ mol/liter. It was found that at $c_{H^+} < c_{Cr}$ the velocity of catalysis increases as the concentration of the H^+-ions, the kinetic curves corresponding to a reaction of first order. If $c_{H^+} > c_{Cr}$

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the velocity of reaction decreases with an increase of the H^+-concentration. The kinetic curves show a maximum. This second type of reaction is considered to be due to the formation of perchromic acids. In connection with the experiments by Ye. I. Shpital'skiy tests with calium chromate were conducted by E. V. Kolobkova, showing an analogy with sodium chromate. The investigations of electric conductivity and of the freezing point of the solutions conducted with a solution of $Na_2Cr_2O_7 + NiSO_4$ and an addition of hydrogen peroxide showed that at the addition of the substrate the electric conductivity drops sharply. This is explained by the formation of an active (unstable) and of an inactive (stable) intermediate product. The process of complex formation and of decomposition, respectively, is divided into several macro stages. Experiments with the freezing point showed that a stabilization can be reached for several days according to the complex modifications. The decrease of the freezing temperature takes place only after heating to from 70 80° which fact substantiates the effect of the complexes. It may be seen from the experimental results of the separation of the complexes of intermediate products, that $NiCrO_5$

An Anomalous Case of Catalysis in the Liquid Phase. II

is present as an individual substance and not as an incidental mixture of $NiCrO_4$ and $NiCrO_6$ in the decomposition of the latter. There are 3 figures and 6 references, which are Soviet.

ASSOCIATION: Moskovskiy aviatsionnyy tekhnologicheskiy institut (Moscow Institute of Aviation Technology)

SUBMITTED: March 3, 1956

1. Hydrogen peroxide--Decomposition 2. Catalysis--Velocity
3. Catalysts--Performance 4. Hydrogen ions--Chemical effects

L 16911-63 EPR/EPF(c)/EWP(q)/EWT(m)/BDS AFFTC Pe-4/Pr-4 WW/JW/JD
S/076/63/037/004/002/029

AUTHOR: Savina, M., Bogdanov, G., Petrova, G. L., and Yurchenko, G. K. 69 68

TITLE: Catalytic decomposition of H_2O_2 under the combined action of sodium molybdate and salts of the elements of the zinc subgroup. I

PERIODICAL: Zhurnal fizicheskoy khimii, V. 37, No. 4, 1936, 746-752

TEXT: The article examines the combined effect of zinc sulfate and sodium molybdate on the catalytic decomposition of H_2O_2 in neutral and acid media. Zinc sulfate retards the rate of the decomposition of H_2O_2 by sodium molybdate, the catalytic process being the slower, the higher the concentration of $ZnSO_4$. The reaction is of the first order regardless of the temperature and of the hydrogen ion and substrate concentration. The activation energy is 12.8 Kcal/mole. The electroconductivity under all conditions diminishes as the decomposition of H_2O_2 progresses. The change in electroconductivity and in the rate of catalysis is determined by the concentration and nature of the intermediate products which are formed in the solution. New zinc peroxomolybdates with very high decomposition constants ($ZnMoO_4 \cdot nH_2O$ or $ZnMoO_4 \cdot 2H_2O_2 \cdot nH_2O$ and $ZnMoO_5 \cdot nH_2O$ or $ZnMoO_4 \cdot H_2O_2 \cdot nH_2O$) have been isolated. The experimental results indicate that the retarding action of the zinc ions is due to the low equilibrium constant of zinc

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L 16911-63

S/076/63/037/004/002/029

Catalytic decomposition of H_2O_2 ...

peroxomolybdates which are the intermediate products in the catalytic reaction. There are 4 figures and a table.

ASSOCIATION: Moskovskiy tekstil'nyy institute (Moscow Textile Institute)

SUBMITTED: February 3, 1962

Card 2/2

PETROVA, G.L.; ZAYTSEVA, K.I.; MIRONICHENKO, S.A.

Catalytic decomposition of H_2O_2 by Na_2CrO_4+$BaCl_2$ salts and barium peroxychromate formation. Izv.vys.uch.zav.; khim.i khim.tekh. 5 no.4:533-535 '62. (MIRA 15:12)

1. Moskovskiy tekstil'nyy institut, kafedra obshchey i neorganicheskoy khimii.

(Hydrogen peroxide) (Sodium chromate) (Bari...

BOGDANOV, G.A.; PETROVA, G.L.

Homogenous catalysis of H_2O_2 with sodium chromate and new peroxide compounds. Zhur.fiz.khim. 29 no.1:84-94 Ja '55. (MLRA 8:7)
(Hydrogen peroxide) (Sodium chromate)

Petrova, G. L.

Chem

Homogeneous hydrogen peroxide catalysis with sodium chromate, and new peroxide compounds. G. A. Bogdanov and G. L. Petrova. *Zhur. Fiz. Khim.* 29, 54-94(1955).—The principal peculiarity of the catalytic decompn. of H_2O_2 in acid soln. with K_2CrO_4 is existence of a sharp $i_{max.}$ which is absent in the catalysis with H_2SO_4, $NaCrO_4$. The kinetics of H_2O_2 catalytic decompn. under the Na_2CrO_4 effect has peculiarities that were investigated. The process was studied at different initial concns. of H_2O_2 and H_2SO_4 and at different temps. The reaction is 1st-order at the different H_2O_2 concns.; the reaction rate changes nearly directly proportionally to the H_2SO_4 concn. and is gradually changed from 1st-order to 2nd-order as the H^+ concn. increases; the 1st-order reaction at 5 and 15° has a temp. coeff. of 2, and an activation energy of 11.0 kcal., but at a temp. exceeding 25° the reaction becomes independent of the temp., and at 25° and higher the reaction order becomes 2. The elec. cond. of the soln. drops sharply at first, and then rises proportionally to time, and returns to the original value at the end of the reaction. An assumption is made of a reversible instantaneous formation of 2 different intermediate products. The kinetic equations derived from this assumption agree with the exptl. data, and justify conclusions about the compn. of the intermediate compds., calcn. of their decompn. rates, the equil. consts. of the intermediate compds. at different temps., and the heat effects, free energy and entropy changes. Two new Na perchromates, $Na_2CrO_4 \cdot nH_2O$, dark brick-red, and $Na_2CrO_4 \cdot nH_2O$, light brick-red, predicted by the kinetic and thermodynamic analysis, were isolated.

—W. M. Sternberg

KRAVTSOV, V.I.; PETROVA, G.M.

Kinetics of aquation of iridium chloride ions and the oxido-reduction potential of $IrCl_6^{2-}$ / $IrCl_6^{3-}$. Zhur.neorg.khim. 9 no.4:1010-1013 Ap '64. (MIRA 17:4)

1. Leningradskiy gosudarstvennyy universitet imeni Zhdanova.

PETROVA, G.M.; BERLYAND, O.S.

Estimation of the vertical scattering coefficient of a precipitating foreign substance in the atmosphere taking as a basis its distribution on the earth's surface. Dokl. AN SSSR 146 no.6:1318-1321 O '62. (MIRA 15:10)

1. Predstavleno akademikom Ye.K. Fedorovym.
(Air—Pollution)

L 07989-67 EWT(1) GW

ACC NR: AP6009417 SOURCE CODE: UR/0020/66/166/006/1315/1318

AUTHORS: Petrova, G. M.; Mar'in, N. P.; Borlyand, O. S.

ORG: none

TITLE: Precipitation of a cloud of interacting particles and the formation of "dust" sources as a result of atmospheric diffusion

SOURCE: AN SSSR. Doklady, v. 166, no. 6, 1966, 1315-1318

TOPIC TAGS: atmospheric diffusion, atmospheric cloud, atmospheric precipitation, turbulent flow

ABSTRACT: The concentration [illegible] precipitating [illegible] form dust sources [illegible] distinct [illegible] term $Q = Q_0 (t) \delta(x) \delta(y) \delta(z$ [illegible] T_1.

To determine the particle concentration q, the following equation of turbulent mixing is solved: $\partial q / \partial t = K_x \partial^2 q / \partial x^2 + K_y \partial^2 q / \partial y^2 +$ [illegible] $- w \partial q / \partial z +$ [illegible]

Card 1/2 UDC: 532.5[illegible]

L 07284-67

ACC NR: AP600[illegible]

To integrate the above equation, [illegible] distribution of particles [illegible]

The solution is given in [illegible] Taylor series around the point [illegible] the form

$$q^* \simeq H\Gamma(2)A^{-2}\exp[-d \ldots] \ldots$$

$$-H\int \exp(-C) \int F_1(t,\xi)\,d\xi\,dt.$$

The equation is then used to calculate K_x and K_z (mixing length coefficients) in terms of experimentally determined values of q*. Several special examples are considered. The authors express their acknowledgements to A. Ya. Pressman for his remarks. This paper was presented by Adademician Ye. K. Fedorov on 9 June 1965. Orig. art. has: 11 equations.

SUB CODE: 04, 20/ SUBM DATE: 20May64/ ORIG REF: 001

Card 2/2

MINIBAYEV, R.A.; KOLESNIKOV, L.V.; PETROVA, G.N.

Self-rev· ·sal of thermo-remanent magnetism in natural hemoilmenite from Kamchatka peninsula. Izv. AN SSSR. Fiz. zem. no.4:85-90 '65. (MIRA 18:8)

1. Institut fiziki Zemli AN SSSR.

PETROVA, G.N., kand.fiz.-matem.nauk

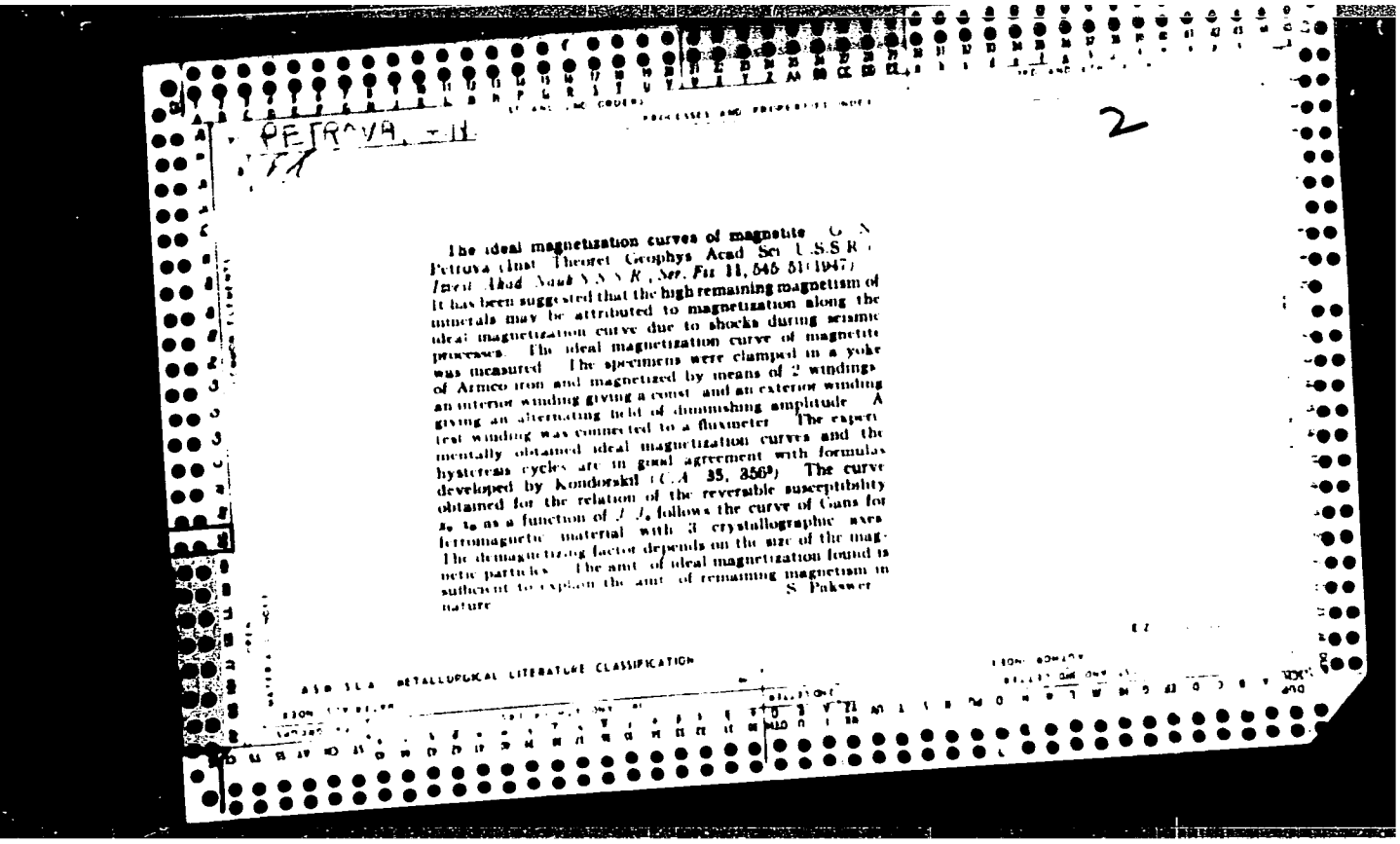
Ninth Symposium of the Association of Hungarian Geophysicists.
Vest. AN SSSR 34 no.3:121 Mr '64. (MIRA 17:4)

PETROVA, G. N.

"Investigation of the Magnetic Properties of Magnetites." Sub 9 Apr 47, Inst of Theoretical Geophysics, Acad Sci USSR

Dissertations presented for degrees in science and engineering in Moscow in 1947

SO: Sum No. 457, 18 Apr 55



PETROVA, G. N.

2

The ideal magnetization curves of magnetite. G. N. Petrova (Inst. Theoret. Geophys. Acad. Sci. U.S.S.R., Izvest. Akad. Nauk S.S.S.R., Ser. Fiz. 11, 546-51 (1947)). It has been suggested that the high remaining magnetism of minerals may be attributed to magnetization along the ideal magnetization curve due to shocks during seismic processes. The ideal magnetization curve of magnetite was measured. The specimens were clamped in a yoke of Armco iron and magnetized by means of 2 windings, an interior winding giving a const. and an exterior winding giving an alternating field of diminishing amplitude. A test winding was connected to a fluxmeter. The experimentally obtained ideal magnetization curves and the hysteresis cycles are in good agreement with formulas developed by Kondorskii (C.A. 35, 3569). The curve obtained for the relation of the reversible susceptibility χ_0 to α as a function of J/J_s follows the curve of Gans for ferromagnetic material with 3 crystallographic axes. The demagnetizing factor depends on the size of the magnetic particles. The amt. of ideal magnetization found is sufficient to explain the amt. of remaining magnetism in nature. S. Paksweer

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

PETROVA, G. N.

"Ideal Magnetisation as one of the Reasons of High Residual Magneasation of Mountain Rock".
SO: Geog i Geol 12.5.48.