VELIKORETSKIY, D.A.; LORIYE, K.M.; FINKEL', I.I.; GRIGORCHUK, Yu.F.; BERGER, L.Kh.; UTROBINA, V.V.; KHARCHENKO, V.P.; MESHCHERYKOV, A.V., student V kursa; OBEREMCHENKO, Ya.V., kand.med.nauk; NIKITIN, A.V.; MUKHOYEDOVA, S.N.; KUSMARTSEVA, L.V., assistent; KUZNETSOV, V.A., dotsent; KUKHTINOVA, R.A., assistent; BONDARENKO, Ya.D. (g. Fastov); KURTASOVA, L.V. (g. Fastov); PEVCHIKH, V.V.; CHURAKOVA, A.Ye.; BABICH, M.M.; KUZ'MIN, K.P.; PAVLOV, S.S.; SHEVLYAKOV, L.V., kand. med.nauk; IGNAT'YEVA, O.M.; ZEYGERMAKHER, G.A.; GUTKIN, A.A.; POLYKOVSKIY, T.S.

Resumes. Sov.med. 25 no.11:147-152 N '61. (MIRA 15:5)

1. Iz Instituta grudnoy khirurgii AMN SSSR (for Velikoretskiy, Loriye, Finkel'). 2. Iz bol'nitsy No.3 Gorlovki Stalinskoy oblasti (for Grigorchuk). 3. Iz Tyumenskoy oblastnoy bol'nitsy (for Berger, Utrobina). 4. Iz Karatasskoy rayonnoy bol'nitsy Yuzhno-Kazakhstanskoy oblasti (for Kharchenko). 5. Iz Gospital'noy khirurgicheskoy kliniki I Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova (for Meshcheryakov). 6. Iz kliniki propedevticheskoy terapii Stalinskogo meditsinskogo instituta na baze oblastnoy klinicheskoy bol'nitsy imeni Kalinina (for Oberemchenko). 7. Iz kliniki gospital'noy terapii Voronezhskogo meditsinskogo instituta (for Nikitin, Mukhoyedova). 8. Iz kafedry obshchey khirurgii Kishinevskogo meditsinskogo instituta (for Kusmartseva).

(Continued on next card)

VELIKORETSKIY, D.A.---(continued) Card 2.

9. Iz akushersko-ginekologicheskoy kliniki Stalinskogo meditsinskogo instituta na baze bol'nitsy imeni Kalinina (for Kuznetsov, Kukhtinova). 10. Iz gospital'noy terapevticheskoy kliniki Izhevskogo meditsinskogo instituta (for Pevchikh, Churakova). 11. Iz Nosovskoy rayonnoy bol'nitsy Chernigovskoy oblasti (for Babich). 12. Iz Vyborgskoy mezhrayonnoy bol'nitsy (for Pavlov). 13. Iz 1-y gorodskoy bol'nitsy Tyumeni (for Ignat'yeva). 14. Iz 2-y infektsionnoy bol'nitsy g. Zaporozh'ya (for Zeygermakher). 15. Iz infektsionnogo i prozektorskogo otdeleniy Petrozavodskoy gorodskoy bol'nitsy (for Gutkin, Polykovskiy).

(MEDICINE--ABSTRACTS)

KUZ'MIN, K.P. (Pskovskaya oblast')

Rare observation of a thoracoabdominal wound. Khirurgiia 37 no.1:126 Ja '61. (MIRA 14:2)
(CHEST--WOUNDS AND INJURIES)
(ABDOMEN--WOUNDS AND INJURIES)

VLASOV, V.V., kand.med.nauk; KUZ'MIN, K.P.

Pancreatic cyst. Vest. khir. 93 no.12:98-99 D '64.

(MIRA 18:5)

L 36829-66 EWT(d)/EWP(1) IJP(c) GG/BB

ACC NR: AP6017929 SOURCE CODE: UR/0378/66/000/002/0057/0102

AUTHOR: Korolev, M. A.; Kuz'min K. S.; Lavrov, S. S.; Letichevskiy, A. A.; Stolyarov, G. K.; Shura-Bura, M. R.

ORG: None

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52
B

TITLE: Report on the ALGEK algorithmic language 16

SOURCE: Kibernetika, no. 2, 1966, 57-102

TOPIC TAGS: algorithmic language, economics, information processing, computer application, machine translation

ABSTRACT: This paper presents a description of an algorithmic language termed ALGEK (algorithmic language for economic problems). It extensively uses the data on the ALGOL-60 language, the SUBSET ALGOL-60 (IFIP) language, and the input-output procedures developed for ALGOL. The present work also makes use of the ideas of COBOL-60 language and the input-output procedures developed elsewhere (D. E. Knuth, L. L. Bumgarner, P. Z. Ingerman, J. H. Werner, D. E. Hamilton, M. P. Lietzke, D. T. Ross, A Proposal for Input — Output Conventions in Algol-60 (A Report of the Subcommittee on ALGOL of the ACM Programming Languages Committee). Communications of the ACM, V.7, N 5, May 1964.) The proposed language may be utilized for the composition of pro-

Card 1/2 UDC: 681.142.001:330.115

grams for some typical problems in the processing of economic information and makes it possible to start the development of translators. The preliminary versions of the language were discussed at several conferences and seminars. The draft of the language was sent out to several organizations. The present publication has been approved by the Group of Algorithmic Languages for Processing Economic Information attached to the Commission for Multilateral Cooperation Between Academies of Sciences of Socialist Countries on the Problem of "Scientific Problems in Computing Technology" (Gruppa algoritmicheskikh yazykov po pererabotke ekonomicheskoy informatsii (GAYaPEY) pri komissii mnogostoronnego sotrudnichestva mezhdu akademiyami nauk sotsialisticheskikh stran po probleme "Nauchnyye voprosy vycheslitel'noy tekhniki") and is being recommended for a description of economic problems and for the creation of translators in the cooperating countries. GAYaPEY recommends that the authors of the language perform work on the creation of an input-output apparatus and retains the right to insert corrections into the language. The following are treated in great detail: the structure of the language; fundamental symbols, identifiers, digits, quotations, and fundamental concepts; expressions; and operators. Comrades Yu. Ya. Bazilevskiy, M. N. Yefimova, and A. S. Frolov rendered a great deal of assistance in the work, and the authors express their gratitude to them. Orig. art. has: 9 tables and 3 figures.

SUB CODE: 05/ SUBM DATE: 04Dec65/ ORIG REF: 000/ OTH REF: 007

AYNBERG, V.D.; DUVALYAN, S.V.; KUZ'MIN, K.S.; SRAGOVICH, V.G., kand. fiz.-matem. nauk, otv. red.

[Input, output, and exchange programs for "Ural-3" and "Ural-4" computers. Part 1.] Programmy vvoda, vyvoda i obmena dlia "Urala-3" i "Urala-4". Moskva. Pt. 1. 1965. 72 p. (Akademiia nauk SSSR. Vychislitel'nyi tsentr. Standartnye i tipovye programmy dlia mashin "Ural," no.5) (MIRA 18:8)

AID P - 4609

Subject : USSR/Aeronautics - bibliography

Card 1/1 Pub. 135 - 21/23

Author : Kuz'min, K. S., Col.

Title : Reconnaissance aviation of the USA and British Air Forces.

Periodical : Vest. vozd. flota, 3, 87-91, Mr 1956

Abstract : On basis of the United States and British periodicals the author reviews the reconnaissance aviation of those countries and their equipment of aerial photography. Four photos.

Institution : None

Submitted : No date

Kuz'min, K.S.

86-9-36/36

AUTHOR: Kuz'min, K.S., Colonel

TITLE: Reconnaissance Units of the Strategic Air Command of the USAF (Razvedyvatel'naya aviatsiya strategicheskikh VVS SShA)

PERIODICAL: Vestnik Vozdushnogo Flota, 1957, Nr 9, pp.93-96 (USSR)

ABSTRACT: The article summarizes some of the information at the disposal of the Soviet armed forces concerning:

- The organization of the reconnaissance units of the USAF Strategic Air Command, and the type of planes these units are formed of.

- The missions strategic reconnaissance planes may be charged with, and the tactics they are likely to follow in carrying out these missions.

- the photographic equipment used by USAF for strategic reconnaissance purposes.

Card 1/2

86-9-36/36

Reconnaissance Units of the Strategic Air Command of the USAF (Cont.)

- The ways the radio-communications between the reconnoitering planes and their bases may be expected to be maintained.

In the concluding paragraphs of his article, Col. Kuz'min offers also Soviet figures on the alleged violations by US planes of the air space above the Soviet Union and other Eastern countries, and criticizes the Eisenhower "open skies" plan as aimed simply at facilitating the peacetime air reconnaissance of the defenses of the Warsaw pact owners. The article is said to be based on the information gathered from Western publications. As sources are named: "Air Force" (April 1956), "Jane's" (1955-1956), "Canadian Aviation" (February 1956) and "Forces Aériennes Françaises" (October 1955), but occasionally the author refers directly to "the experience gathered at USAF exercises". As far as exact sciences are concerned, the article contains no data of value.
3 drawings.

AVAILABLE: Library of Congress
Card 2/2

MOURA, Aristoteles; KUZ'MIN, L.F.[translator]; FILATOV, A.I. [translator]; KLESMET, O.G., red.; BORODIN, Yu.V., red.; DZHATIYEVA, F.Kh., tekhn. red.

[Foreign capital in Brazil] Inostrannyi kapital v Brazilii. Pod red. i s predisl. O.G.Klesmet. Moskva, Izd-vo inostr. lit-ry, 1961. 435 p. Translated from the Portuguese. (MIRA 15:5)
(Brazil--Investments, American)

KUZ'MIN, L.I.; REVYAKOV, V.F.; POKROVSKAYA, G.N.; TROFIMOV, [illegible]; PANFILOV, R.A.

Increasing the durability of linings in low-frequency induction channel furnaces. TSvet. met. 38 no.8:81-83 Ag '65.
(MIRA 18:9)

KUZ'MIN, L.I.

Comparing the properties of quartzites from the Ovruch and Pervoural'sk deposits. TSvet. met. 38 no.8:91-92 Ag '65. (MIRA 18:9)

KUZ'MIN, L.K., inzhener.

Rapid unloading of local freight from through trains. Zhel.dor. transp. 37 no.10:75 O '55. (MLRA 9:1)

1.Stantsiya Prokhladnaya.
(Railroads--Freight)

KUZ'MIN, L. L.

PA 75T19

USSR/Chemistry - Electrodes, Iron Apr 1948
Chemistry - Powder Metallurgy

"Iron Powder Electrodes. I. The Effect of Dispersion and Composition of the Powder on the Properties of Iron Electrodes," L. L. Kuz'min and L. V. Borisova, Ivanovo Inst of Chem Tech, 9¼ pp

"Zhur Prikład Khimii" Vol XXI, No 4

Describes studies conducted to determine properties of iron powder and relationship of its character to nature of its formation by reduction of iron oxides with hydrogen. Submitted 5 Mar 1947.

75T19

HOMYAKOV, V. G.; MASHOVETS, V. P.; KUZMIN, L. L.
KUZMIN, L. L.

Tehnologiya Elektrohimicheskih Proizvodstv (Technology of Electrechemical Production), Moscow-Leningrad, 1949. -676 pp.

USSR/Chemistry - Iron, Metallurgy of, Mar 49
Powder
Chemistry - Powder Metallurgy

"Electrolytic Method of Obtaining Powdered Iron and Properties of Iron Obtained in This Manner," L. L. Kuz'min, V. L. Kiseleva, Ivanovo Chemico-tech Inst, 8 pp

"Zhur Prikład Khim" Vol XXII, No 3, 311-8

Electrolytic methods do not permit obtaining iron grains of equal size. When a small quantity of hydrates is released, it is noticed that iron deposited on the cathode is active. Trivalent iron power is created by oxidation of the surface [redacted] 48/49T23

USSR/Chemistry - Iron, Metallurgy of, Mar 49
Powder (Contd)

of iron. This process passes through all points from FeII to Fe_3O_4. Capacitances of electrodes produced from powdered metal obtained by electrolytic method are not stable. Additions of mercury tend to stabilize the capacitance. Submitted 15 Sep 47.

[redacted] 48/49T23

KUZ'MIN, L. L.

PA 48/49T23

62/49T80

KUZ'MIN, L. L.

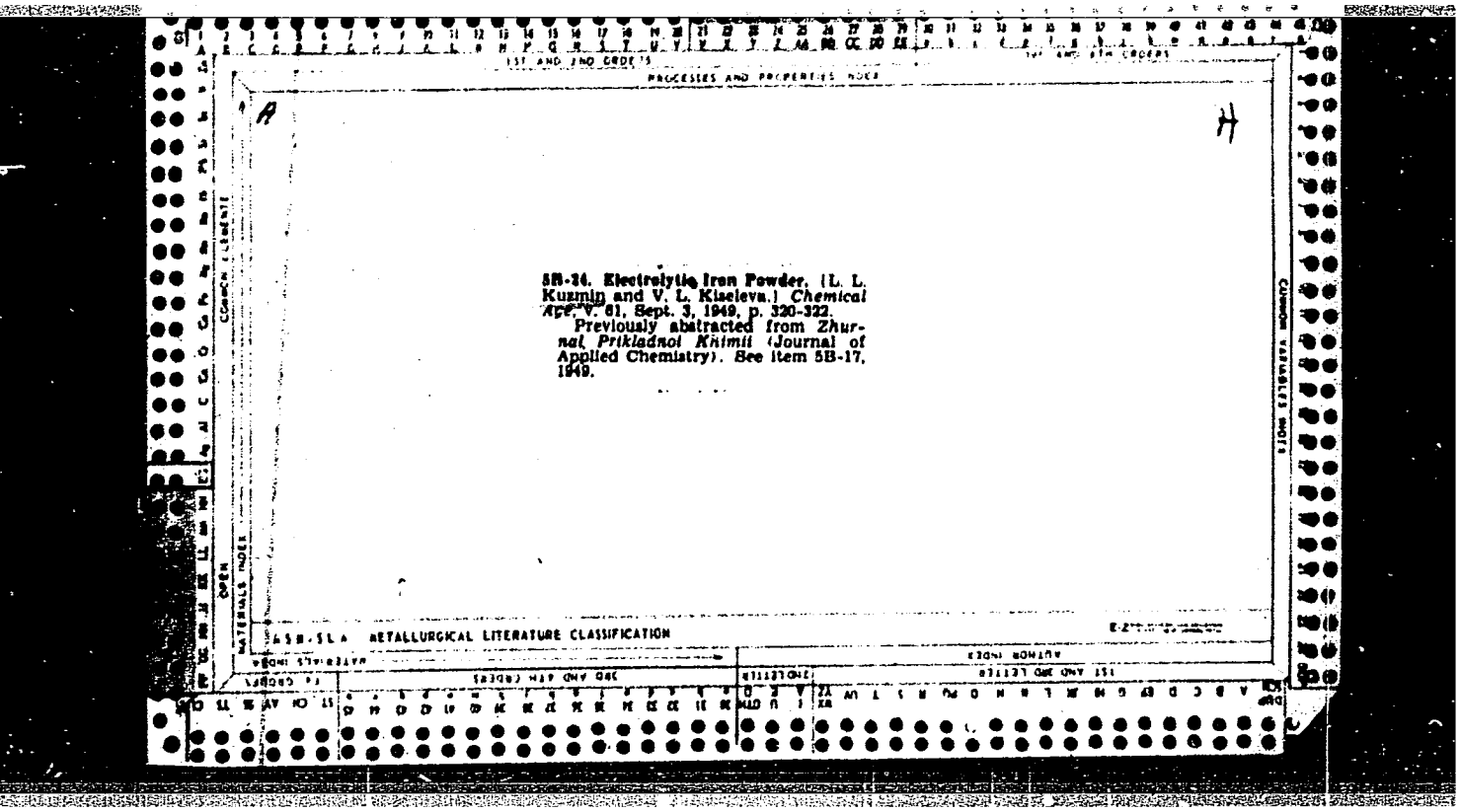
USSR/Chemistry - Overvoltage Jun 49
Chemistry - Electrodes

"Hydrogen Overvoltage on Porous Iron," L. L. Kuz'min, V. S. Poroykova, Ivanovo Chemico-technol Inst, 5 1/2 pp

"Zhur Prik Khim" Vol XXII, No 6 pp. 572-577

Determines that hydrogen overvoltage is almost 0.3 v less on electrodes with surfaces developed metalloceramically than on smooth iron. Submitted 29 Mar 48.

62/49T20



5B-24. Electrolytic Iron Powder. (L. L. Kuzmin and V. L. Kiseleva.) *Chemical Age*, V. 61, Sept. 3, 1949, p. 320-322.

Previously abstracted from *Zhurnal Prikladnoi Khimii* (Journal of Applied Chemistry). See item 5B-17, 1949.

SOV/137-57-1-452

Translation from: Referativnyy zhurnal. Metallurgiya, 1957, Nr 1, p 60 (USSR)

AUTHORS: Kuz'min, L. L., Gunyayeva, M. M.

TITLE: Cathode Reduction of Mercuric Oxide (Katodnoye vosstanovleniye okisi rtuti)

PERIODICAL: Tr. Ivanovsk. khim.-tekhnol. in-ta, 1956, Nr 5, pp 34-36

ABSTRACT: The author investigated the reduction of HgO in electrolysis during direct contact between Hg particles and the cathode in relation to the current density D and the cathode material used. A 500-cc battery container was used as the electrolyzer. The horizontal cathode was located on the bottom of the bath. An Ni anode was placed 17 mm above it. A 3% NaOH solution served as the electrolyte. The upper surface of the cathode was coated with a uniform layer of HgO. Cu, Ni, and Fe plates were used as the cathodes. The electrolysis was carried out with I = 0.25 amp for 4 hours, the ratio of the cathode surface to the anode surface being $\leq$ 1:10. The reduction of HgO with low D densities proceeds very rapidly. Graphs of the results of the experiments are submitted.

Card 1/1

G. A.

SOV/137-59-1-551

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 1, p 73 (USSR)

AUTHORS: Filippova, L. I., Kuz'min, L. L.

TITLE: Investigation of Cermet Electrodes Manufactured From Magnetite and Metallic Iron. Report I. Process of Compaction of a Two-component System (Issledovaniye metallokeramicheskikh elektrodov, izgotovlennykh iz magnetita i metallicheskogo zheleza. Soobshcheniye I. Protsess pressovaniya dvukhkomponentnoy sistemy)

PERIODICAL: Tr. Ivanovsk. khim.-tekhnol. in-ta, 1958, Nr 7, pp 69-74

ABSTRACT: The authors studied the electrical resistivity (ER) of compacted mixtures of Fe_3O_4 and Fe powders of various compositions. It was established that ER depends not only on the composition but also on the structure of the Fe particles and on the relative sizes of the Fe and Fe_3O_4 particles. ER is at its minimum at a 400 - 600 kg/cm^2 compacting pressure. An increase in ER is observed when the pressure is raised to 1000 kg/cm^2.

I. B.

Card 1/1

SOV/137-59-1-552

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 1, p 73 (USSR)

AUTHORS: Fillippova, L. I. [Filippova, L. I., according to Index], Kuz'min, L.L.

TITLE: Investigation of Cermet Electrodes Manufactured From Magnetite and Metallic Iron. Report 2. Process of Sintering of a Two-component System (Issledovaniye metallokeramicheskikh elektrodov, izgotovlennykh iz magnetita i metallicheskogo zheleza. Soobshcheniye 2. Protsess spekaniya dvukhkomponentnoy sistemy)

PERIODICAL: Tr. Ivanovsk. khim.-tekhnol. in-ta, 1958, Nr 7, pp 75-86

ABSTRACT: The authors investigated the effect of the conditions of sintering in an inert atmosphere on the properties of the electrodes made of a mixture of the following powders of magnetite and Fe: a) 80% Fe_3O_4 + 20% Fe and b) 60% Fe_3O_4 + 40% Fe. It is established that during sintering, besides recrystallization, a chemical reaction takes place with the formation of a new crystalline phase, namely wüstite. An increase in the temperature and length of sintering time decreases porosity and electrochemical activity and increases mechanical strength and electrical resistance. Electrochemical activity depends not only on the active component but also on the strength of the

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Investigation of Cermet Electrodes Manufactured From Magnetite (cont.)

current-conducting skeletal structure and depends but little on the dispersion and activity of the Fe powder.

I. B.

Card 2/2

5(1, 2) SOV/153-2-4-20/32

AUTHORS: Filippova, L. I., Kuz'min, L. L.

TITLE: Cermet Iron Electrodes for Alkaline Accumulators

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1959, Vol 2, Nr 4, pp 573-577 (USSR)

ABSTRACT: The accumulators mentioned in the title which are produced in series are usually provided with an active mass enclosed in a thin perforated metal envelope by means of electrodes. Thus, the electrodes gain mechanical strength. Moreover, the access of current to the active mass is thereby to be secured. This construction, however, has a principal shortcoming: the envelope mentioned does not secure a uniform current supply. At the same time, additional internal resistance is formed in the accumulator causing an unfavorable effect in the discharge of the accumulator by a current of high amperage. The production of electrodes without lamellas for alkaline accumulators (Refs 1-6) by using cermet products has recently been attempted. These electrodes can be given new valuable properties by the sintering of iron electrodes from active iron powder (Ref 7). The practical utilization of this method shows certain difficulties: the sintering has

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Cermet Iron Electrodes for Alkaline Accumulators

to be carried out in a reduced atmosphere with accurate observance of the temperature; otherwise the quality becomes inferior. It was assumed that these shortcomings could be eliminated by the production from a mixture of iron- and iron-oxide powders because these have different recrystallization temperatures. The strength of such electrodes is then secured by iron sintering whereby a skeleton is formed at comparatively low temperature. Iron oxides having higher recrystallization temperature, however, will maintain their activity under these conditions, and thus secure the applicability of the electrode. The paper under discussion is devoted to the investigation of these problems. The powders mentioned above which had been carefully mixed were briquetted at 600 kg/cm^2; the briquettes were sintered in nitrogen atmosphere at various temperatures and for a varying period of time. Figures 1 and 3, respectively, show the discharge curves at various current densities and temperatures. Figure 2 and table 1 show the capacity dependence of the electrodes on the discharge temperature. Figure 4 shows the dependence of the electrode capacity on the duration of casehardening. It was found that electrodes of powdered Fe_3O_4 + Fe or F_2O_3 + Fe have high

Cermet Iron Electrodes for Alkaline Accumulators

electrochemical activity and sufficient mechanical strength (Table 2). These electrodes have a higher specific capacity as well as a smaller specific volume as compared with a usual iron-powder electrode. They can be shaped more quickly, and work better under hard discharge conditions. Thus, they can be used in starter accumulators. The production method of the electrodes suggested is much simpler than other methods. There are 3 figures, 3 tables, and 9 references, 7 of which are Soviet.

ASSOCIATION: Ivanovskiy khimiko-tekhnologicheskiy institut; Kafedra tekhnologii elektrokhimicheskikh proizvodstv
(Ivanovo Institute of Chemical Technology; Chair of Technology of Electrochemical Industrial Processes)

SUBMITTED: May 13, 1958

POBEDINSKIY, S.N.; BULYGIN, B.M.; KUZ'MIN, L.L.

Behavior of magnesium anode in galvanic cells. Izv.vys.ucheb.zav.; khim.i khim.tekh. 4 no.6:1006-1010 '61. (MIRA 15:3)

1. Ivanovskiy khimiko-tekhnologicheskiy institut, kafedra tekhnologii elektrokhimicheskikh proizvodstv.
(Magnesium) (Electric batteries)

BULYGIN, B.M.; POBEDINSKIY, S.N.; KUZ'MIN, L.L.

Anodic dissolution of magnesium in oxidizing electrolytes. Izv. vys.ucheb.zav.; khim.i khim.tekh. 5 no.1:120-125 '62. (MIRA 15:4)

1. Ivanovskiy khimiko-tekhnologicheskiy institut, kafedra tekhnologii elektrokhimicheskikh proizvodstv.

(Electrodes, Magnesium) (Electrolytes)

S/153/62/005/006/009/015
E071/E333

AUTHORS: Pobedinskiy, S.N. and Kuz'min, L.L.

TITLE: Anodic behavior of magnesium in solutions of some salts in the presence of an alkali

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Khimiya i khimicheskaya tekhnologiya, v. 5, no. 6, 1962, 954 - 959

TEXT: The authors investigated the anodic behavior of magnesium in solution of sodium chloride, sodium bromide, potassium iodide, sodium sulfate and potassium thiocyanide in the presence of an alkali in order to study the possibility of decreasing the unproductive consumption of metal in magnesium cells (autosolution of anode). Introduction of a certain amount of sodium or potassium hydroxide into solutions of sodium chloride or sodium bromide sharply decreases the rate of autosolution of the metal without noticeable change in the electrode potential. Salt solutions in combination with alkalis give better results in cells at low current densities. There are 5 figures.

Card 1/2

Anodic behavior ...

S/153/62/005/006/009/015
E071/E333

ASSOCIATION: Kafedra tekhnologii elektrokhimicheskikh proizvodstv, Ivanovskiy khimiko-tekhnologicheskiy institut
(Department of Electrochemical Production Technology, Ivanovo Institute of Chemical Technology)

SUBMITTED: May 23, 1961

Card 2/2

L 11057-63 EWT(q)/EWT(m)/BDS--AFFTC/ASD--JD

ACCESSION NR: AP3000476 S/0153/63/006/001/0119/0124

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54

AUTHOR: Lukomskiy, Yu. Ya.; Kuz'min, L. L.

TITLE: Study of the effect of electrolysis conditions on the adhesion of a nickel coating to an aluminum base

SOURCE: Izv. VUZ: Khimiya i khim. tekhnologiya, v. 6, no. 1, 1963, 119-124

TOPIC TAGS: electroplating, chloride ions, electrolyte, NaF, K sub 2 S sub 2 O sub 8

ABSTRACT: The authors studied the adhesion of Ni to an Al base under various conditions. Ni was plated directly onto Al, with no intermediate layer of another metal. It was found that the passive film on the Al surface was chiefly responsible for preventing good adhesion of the Ni coating. Electroplating carried out at temperatures ranging from 20-70C showed that at higher temperatures and in the presence of chlorides, the quality of the material obtained was unsatisfactory as a result of interaction between Al and chloride ions in the electrolyte. To eliminate interference with the adhesion of Ni, the authors recommend that electrolysis be carried out at a high temperature in a bath containing NaF and K sub 2 S sub 2 O sub 8. The material should be heat treated after plating. By this method, good quality

Card 1/2

L 11057-63

ACCESSION NR: AP3000476

Ni-plated Al can be obtained over a broad range of conditions. Orig. art. has: 6 figures.

ASSOCIATION: Kafedra tekhnologii elektrokhimicheskikh proizvodstv, Ivanovskiy khimiko-tekhnologicheskiy institut (Department of Electrochemical Production Technology, Ivanovskiy Chemical Technological Institute)

SUBMITTED: 13Feb62 DATE ACQD: 21Jun63 ENCL: 00

SUB CODE: CH, ML NO REF SOV: 010 OTHER: 000

Card 2/2

LUKOMSKIY, Yu.Ya.; KUZ'MIN, L.L.

Electrolytic nickel plating of aluminum and its alloys. Izv.vys.ucheb. zav.;khim.i khim.tekh. 6 no.4:637-642 '63. (MIRA 17:2)

1. Ivanovskiy khimiko-tekhnologicheskiy institut. Kafedra tekhnologii elektrokhimicheskikh proizvodstv.

POBEDINSKIY, S.N.; KRESTOV, G.A.; KUZ'MIN, L.L.

Possibility of electrode processes taking place in the presence of the singly charged ions of alkaline earth metals. Izv.vys.ucheb.zav.; khim.i khim.tekh. 6 no.5:768-773 '63. (MIRA 16:12)

1. Ivanovskiy khimiko-tekhnologicheskiy institut, kafedra tekhnologii elektrokhimicheskikh proizvodstv i kafedra neorganicheskoy khimii.

ACCESSION NR: [illegible] 3016-0822

TOPIC TAGS: polystyrene, plastic, [illegible] powder, copper coating, [illegible] copper, [illegible] polystyrene powder, [illegible] plastic metal skeleton, conductive plastic, metal skeleton, metal coating

ABSTRACT: Copper coated polystyrene powder would deliver prefabricated particles for the electrical conductive skeleton, which can be more economical

with ethanol, degreasing in 15% potassium carbonate

3 tables and 2 equations.

Card 3/3

ACCESSION NR: AP4025262 S/0153/63/006/006/1002/1010

AUTHOR: Shorokhova, V. I.; Kuz'min, L. L.

TITLE: Production of electrically conductive plastics. II. Properties of plastics prepared from copper-coated polystyrene powder

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 6, no. 6, 1963, 1002-1010

TOPIC TAGS: electrically conductive plastic, conductive polystyrene, moisture absorption, forming temperature, forming pressure, residence time, particle size, resistivity, continous conductive film

ABSTRACT: Preparation of electrically conductive plastics from polystyrene powder coated with a conductive layer of copper has been studied. The effect of the conditions of preparing the material (temperature, forming pressure, residence time) on its properties (resistivity, mechanical strength, density, and moisture absorption) was studied. The effect on the electric resistance of the particle size of the powders used in the preparation of the sam-

Card 1/7

ACCESSION NR: AP4025262

ples is indicated in Fig. 1. As the particle size of the polystyrene is reduced a limit is reached where a given weight of copper (the tests were run with 25% Cu by weight) cannot cover the particle surfaces with a continuous strong coating. At this point the electric resistance becomes much higher and increases significantly with increased forming temperature. The mechanical strength of the formed polystyrenes increases with higher forming temperatures; the strength of samples made from pure polystyrene is higher than that of samples made of copper-coated polystyrene. The density and the water absorption of samples formed above 120C are constant; 100C gives a completely uniform mass on forming. Examination of forming pressures of 100-700 kg/cm^2 and various periods of residence during froming showed that compact masses were obtained at a pressure of 100 kg/cm^2 and a cycle time of 10 min. Increasing pressure or residence time did not lower resistivity or enhance mechanical strength of the samples. The effect of particle size on the resistivity, strength, density and water resistance of the samples is summarized in Fig.2. Fig. 3 shows the minimum copper content to form a continous metal coating on the polystyrene surface (with 2000 micron particle size) is 15%. With increasing copper content the

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ACCESSION NR: AP4025262

resistivity decreases; the mechanical strength decreases, then levels off; the fusion of the polystyrene decreases; and water adsorption remains constant (Fig. 4). The plastic material obtained from copper coated polystyrene has a resistivity of approximately one order less than a mass containing the same amount of copper in finely powdered form. Orig. art. has: 8 figures, 2 tables and 2 formulas.

ASSOCIATION: Ivanovskiy khimiko-tekhnologicheskiy institut, Kafedra tekhnologii elektrokhimicheskikh proizvodstv (Ivanovsk Chemico-technological Institute, Department of Electrochemical Production Technology)

SUBMITTED: 11Feb63 DATE ACQ: 10Apr64 ENCL: 04

SUB CODE: MT NO REF SOV: 003 OTHER: 000

ATD PRESS: 3044

Card 3/7

ACCESSION NR: AP4025262

ENCLOSURE: 01

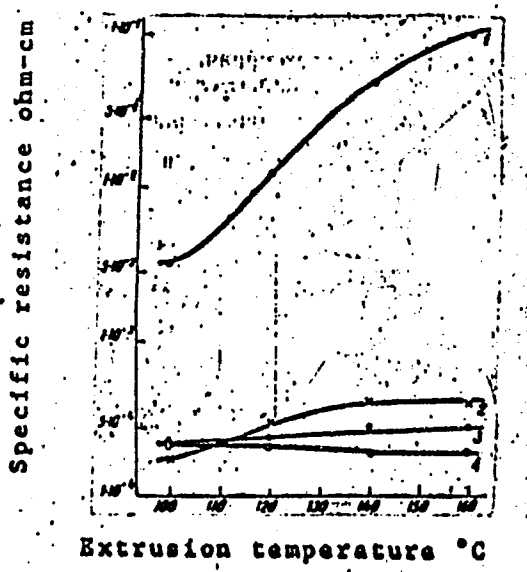


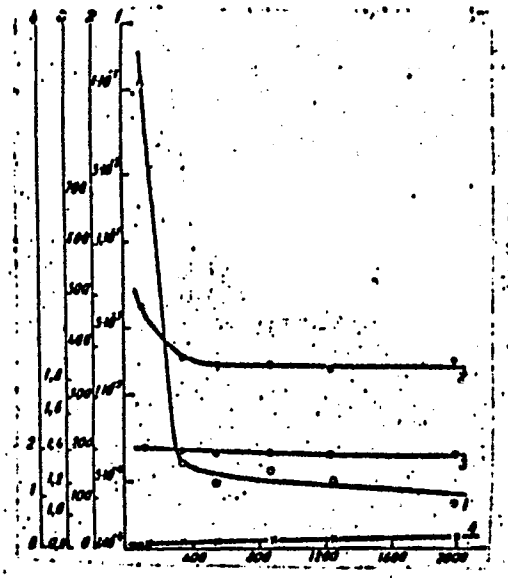
Fig. 1. Effect of forming temperature on resistivity of samples prepared from polystyrene with average particle size, microns

1 - 126, 2 - 342, 3 - 1260, 4 - 2000 (forming pressure 100 kg/cm^2, dwell time 10 min, Cu content 24—25%

Card 4/7

ACCESSION NR:AP4025262

ENCLOSURE: 02



Polystyrene particle size, micron

Fig. 2. Effect of polystyrene particle size on sample properties (forming temperature 160C, pressure 100 kg/cm^2, copper content 24—25%)

1 - Resistivity ohm. cm, 2 - breaking point, kg/cm^2, 3 - density, gm/cm^3, 4 - water absorption %

Card 5/7

ACCESSION NR: AP4025262

ENCLOSURE: 03

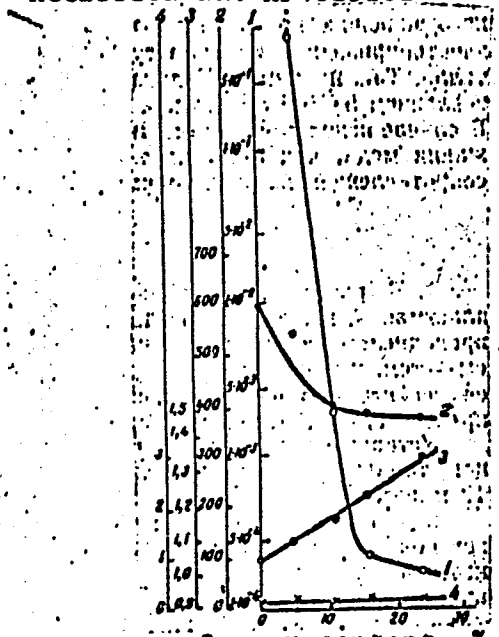


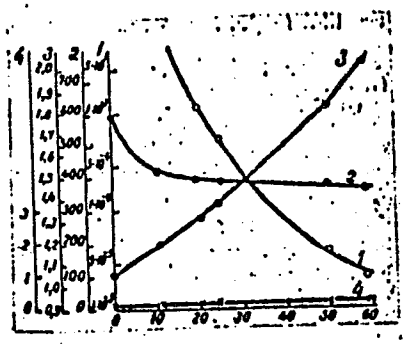
Fig. 3. Effect of copper content on sample properties, obtained with polystyrene with average particle diameter of 2000 microns (forming temperature 160C, forming pressure 100 kg/cm^2, dwell time 10 min.)

1 - Resistivity, ohm. cm, 2 - breaking point, kg/cm^2, 3 - density, gm/cm^3, 4 - water absoprtion, %

Card 6/7

ACCESSION NR: AP4025262

ENCLOSURE: 04



Copper content, %

Fig. 4. Effect of copper content on sample properties, samples obtained f from polystyrene with average particle diameter of 342 microns (forming temperature 160C; forming pressure 100 kg/cm^2 dwell time 10 min.)

1 -- Resistivity, ohm. cm, 2 - breaking point kg/cm^2, 3 - density, gm/cm^3, 4 - water absoprtion, %

Card 7/7

KUZ'MINA, A.V.; KUZ'MIN, L.L.

Behavior of the aluminum anode in galvanic cells with an alkaline electrolyte. Zhur.prikl.khim. 36 no.2:356-362 F '63. (MIRA 16:3)

1. Ivanovskiy khimiko-tekhnologicheskiy institut.
(Electrodes, Alunimum) (Electric batteries) (Alkalies)

NEMODRUK, A.A.; KUZMIN, L.I.

Behavior of a positive pressed electrode of a cadmium-nickel accumulator. Izv. vys. ucheb. zav.; khim. i khim. tekh. 7 no.2:263-268 '64. (MIRA 18:4)

1. Ivanovskiy khimiko-tekhnologicheskiy institut i zavod "Kuzbasselement."

L 41496-65 EPA(s)-2/EWT(m)/EPF(c)/EPR/EWP(j)/T/EWP(t)/EWT(z)/EWP(b) Pc-4/
Pr-4/Pad/Ps-4/Pt-10 IJP(c) JD/WW/EM/RM
ACCESSION NR: AP5006557 S/0191/65/000/003/0023/0025

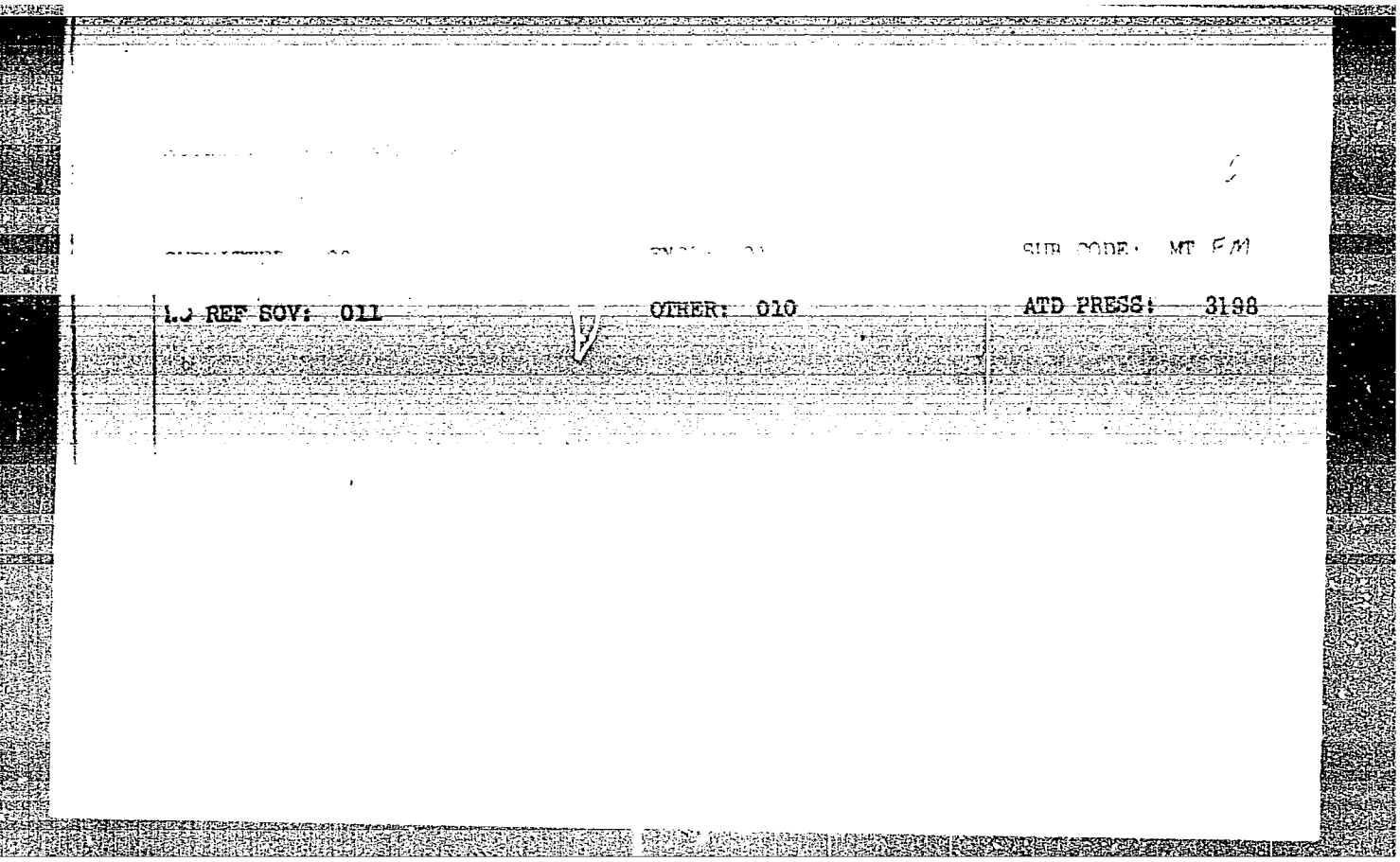
45
B

AUTHOR: Shcrokhova, V. I.; Kuz'min, L. L.

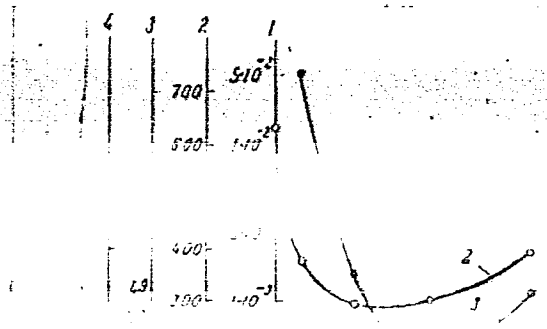
TITLE: Some properties of conductive plastics based on polystyrene and nickel

SOURCE: [illegible]

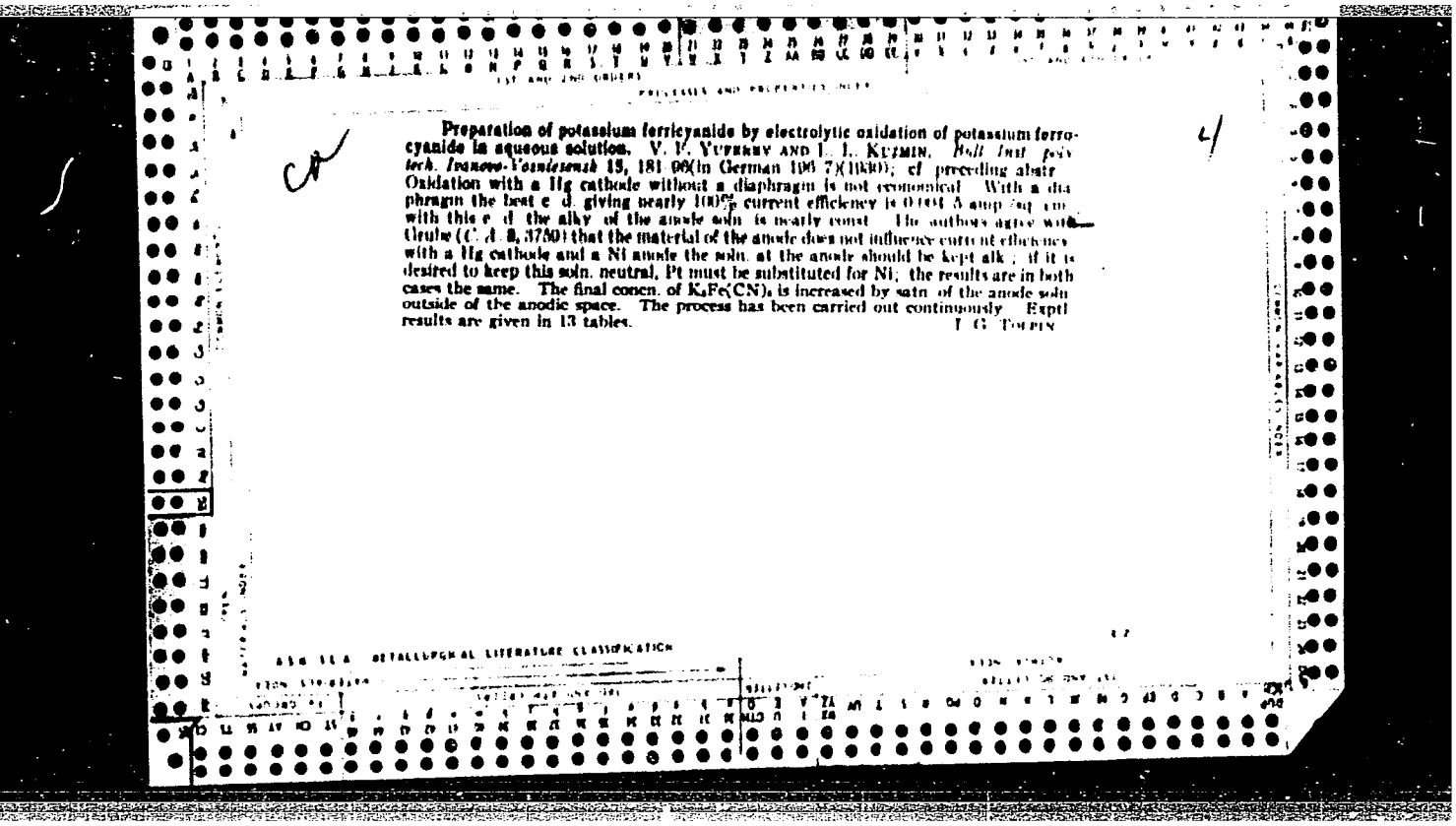
filled with copper flakes was one order of magnitude lower than that of the same material filled with copper powder [illegible] flakes [BC]



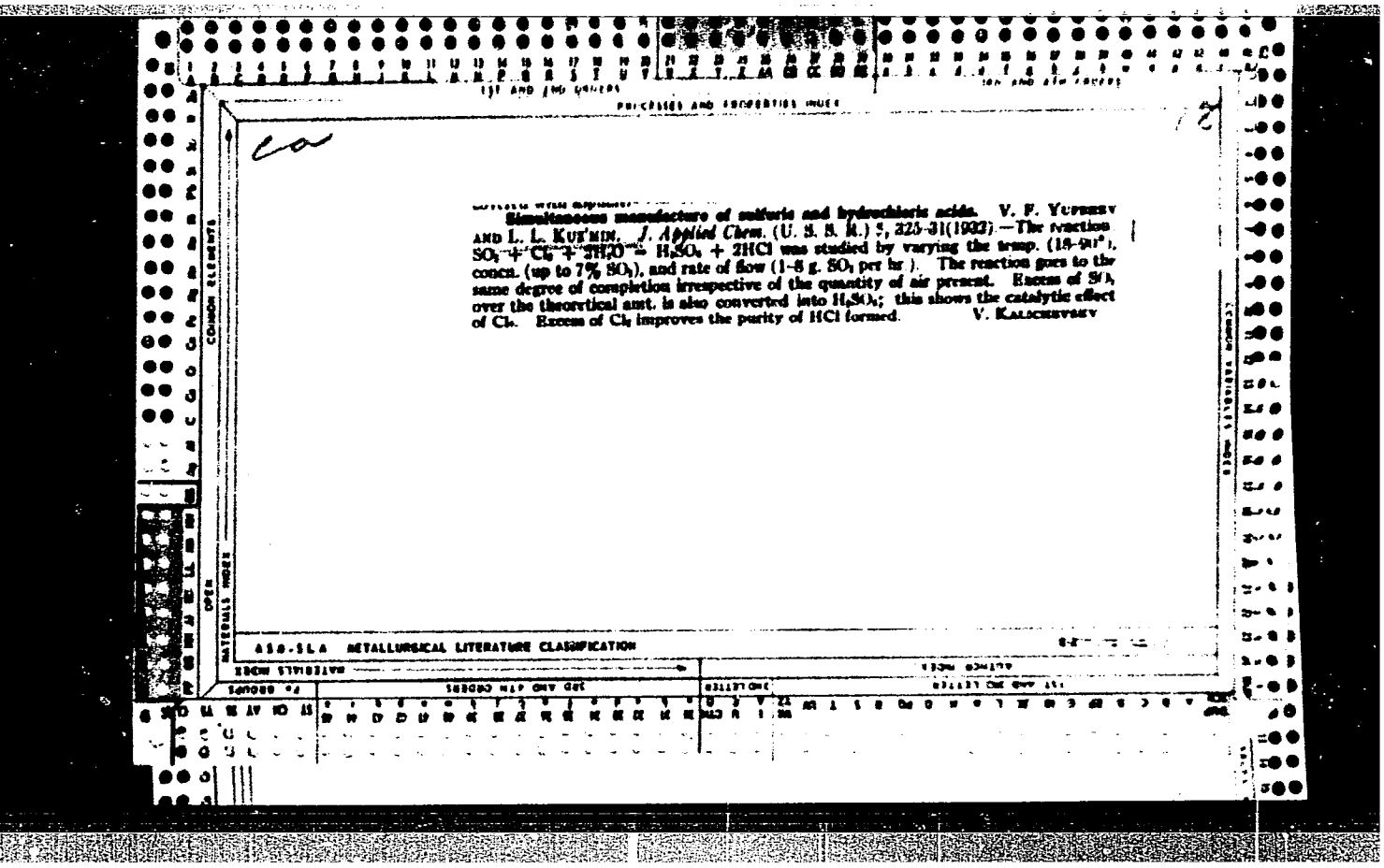
ACCESSION NR: AP5006557 ENCLOSURE: 01



1 - Resistivity, ohm·cm. 2 - bending

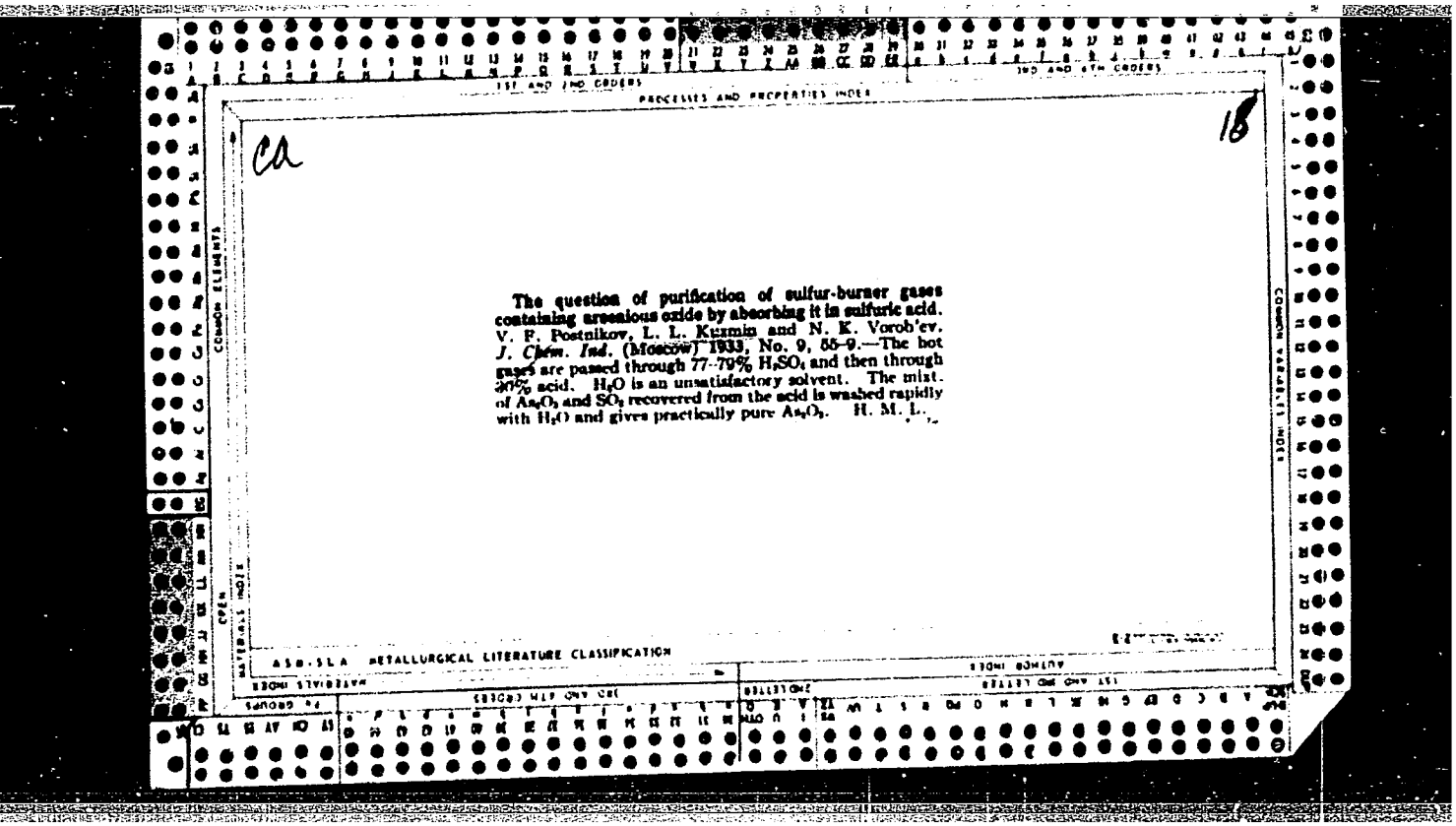


Preparation of potassium ferricyanide by electrolytic oxidation of potassium ferrocyanide in aqueous solution. V. P. Vysheny and I. I. Kuzmin. *Bull. Inst. pois tech. Ivanovo-Voznesensk* 15, 181-96(in German 196-7)(1930); cf. preceding abstr. Oxidation with a Hg cathode without a diaphragm is not economical. With a diaphragm the best c. d. giving nearly 100% current efficiency is 0.005 5 amp./sq. cm. with this c. d. the alky. of the anode soln. is nearly const. The authors agree with Creuse (C. d. 8, 3780) that the material of the anode does not influence current efficiency with a Hg cathode and a Ni anode the soln. at the anode should be kept alk.; if it is desired to keep this soln. neutral, Pt must be substituted for Ni; the results are in both cases the same. The final concn. of $K_4Fe(CN)_6$ is increased by satn. of the anode soln. outside of the anodic space. The process has been carried out continuously. Expt. results are given in 13 tables. I. G. Fourie



Simultaneous manufacture of sulfuric and hydrochloric acids. V. F. Yevreinov and L. L. Kut'kin. *J. Applied Chem.* (U. S. S. R.) 5, 225-31(1932).—The reaction $SO_2 + Cl_2 + 2H_2O = H_2SO_4 + 2HCl$ was studied by varying the temp. (18-90°), concn. (up to 7% SO_2), and rate of flow (1-8 g. SO_2 per hr.). The reaction goes to the same degree of completion irrespective of the quantity of air present. Excess of SO_2 over the theoretical amt. is also converted into H_2SO_4; this shows the catalytic effect of Cl_2. Excess of Cl_2 improves the purity of HCl formed. V. Kalichevsky

ASS-SLA METALLURGICAL LITERATURE CLASSIFICATION



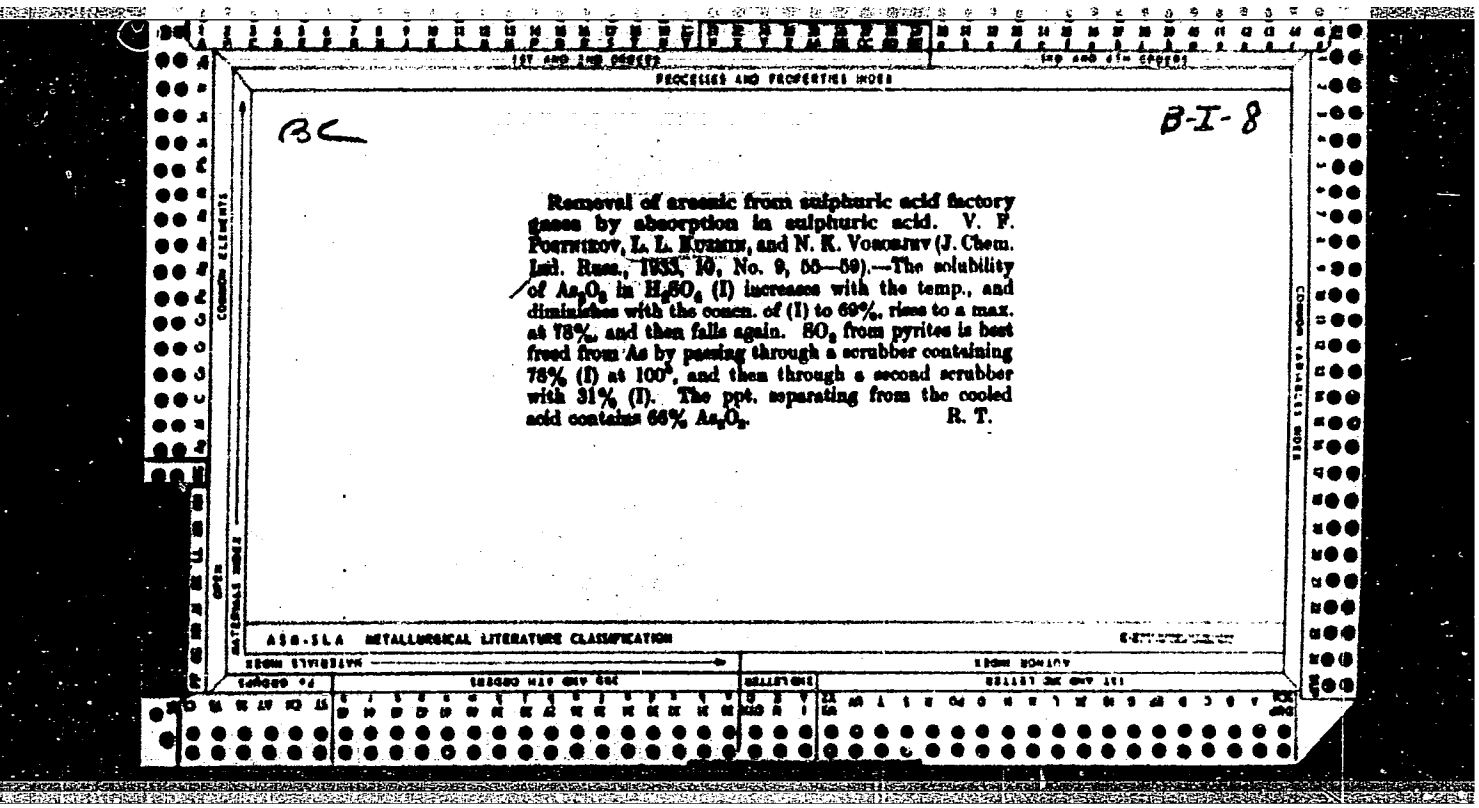
PROCESSES AND PROPERTIES INDEX

CA

18

The question of purification of sulfur-burner gases containing arsenious oxide by absorbing it in sulfuric acid. V. F. Postnikov, L. L. Kuzmin and N. K. Vorob'ev. *J. Chem. Ind.* (Moscow) 1933, No. 9, 55-9.—The hot gases are passed through 77–79% H_2SO_4 and then through 90% acid. H_2O is an unsatisfactory solvent. The mist of As_2O_3 and SO_3 recovered from the acid is washed rapidly with H_2O and gives practically pure As_2O_3. H. M. L.

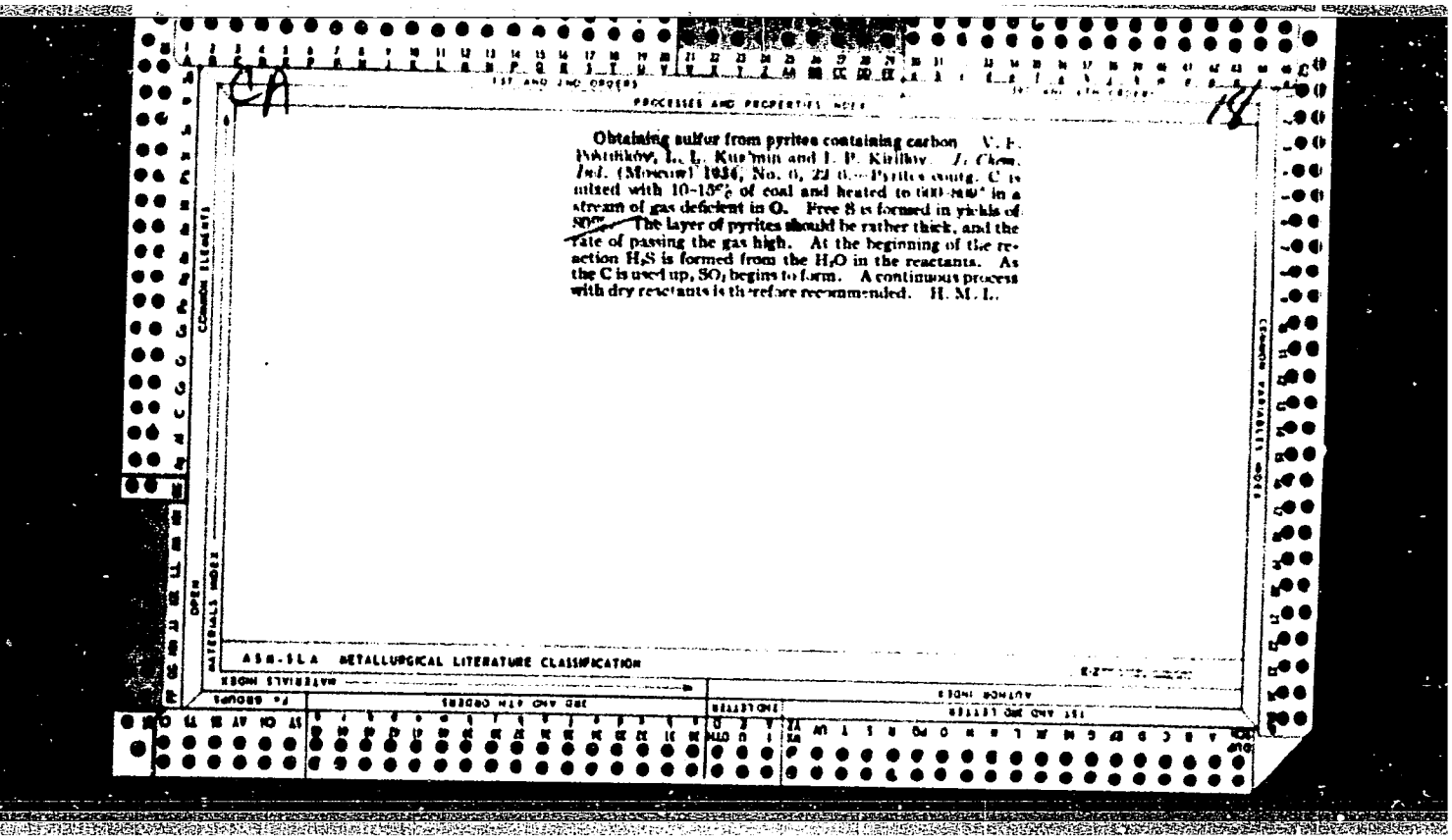
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



BC

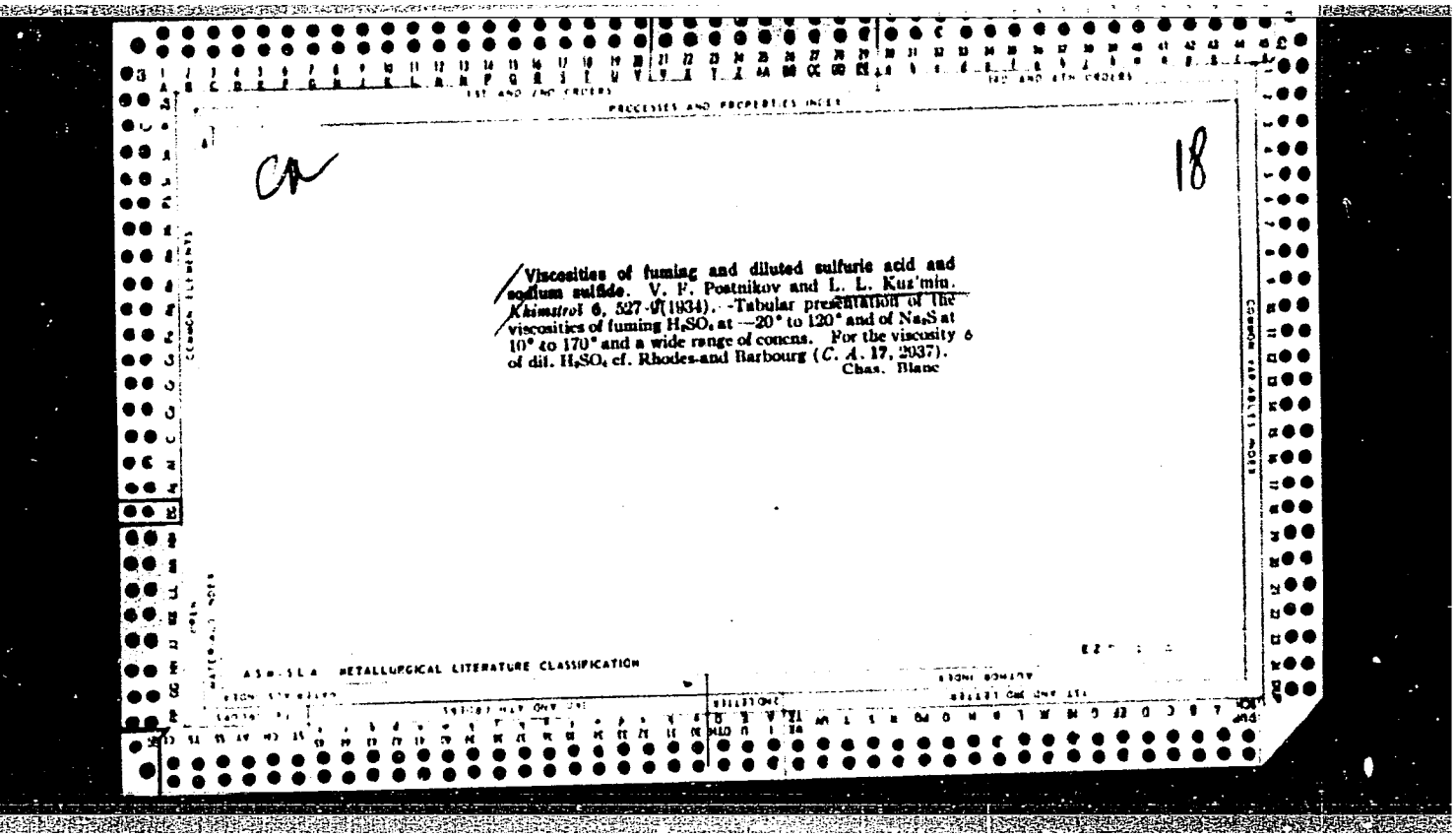
B-I-8

Removal of arsenic from sulphuric acid factory gases by absorption in sulphuric acid. V. F. Pozhitkov, L. L. Kuzmin, and N. K. Voronaev (J. Chem. Ind. Russ., 1933, 10, No. 9, 55—59).—The solubility of As_2O_3 in H_2SO_4 (I) increases with the temp., and diminishes with the concn. of (I) to 69%, rises to a max. at 78%, and then falls again. SO_2 from pyrites is best freed from As by passing through a scrubber containing 78% (I) at 100°, and then through a second scrubber with 31% (I). The ppt. separating from the cooled acid contains 66% As_2O_3. R. T.



Obtaining sulfur from pyrites containing carbon V. F. Pokrishkov, L. L. Kuz'min and I. P. Kirillov. *J. Chem. Ind.* (Moscow) 1934, No. 6, 22 ff.—Pyrites contg. C is mixed with 10–15% of coal and heated to 600–800° in a stream of gas deficient in O. Free S is formed in yields of 80%. The layer of pyrites should be rather thick, and the rate of passing the gas high. At the beginning of the reaction H_2S is formed from the H_2O in the reactants. As the C is used up, SO_2 begins to form. A continuous process with dry reactants is therefore recommended. H. M. L.

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

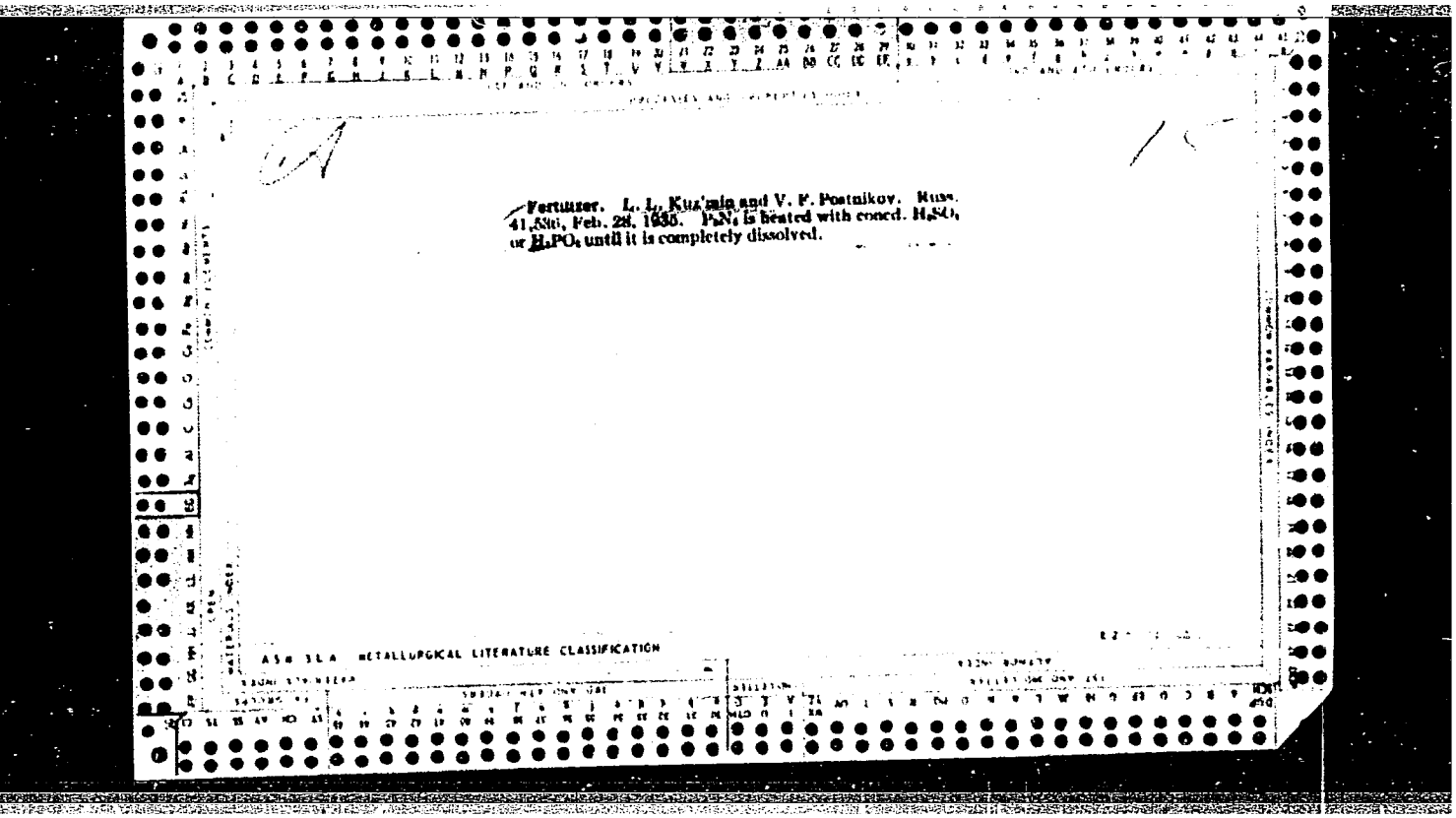


CA

18

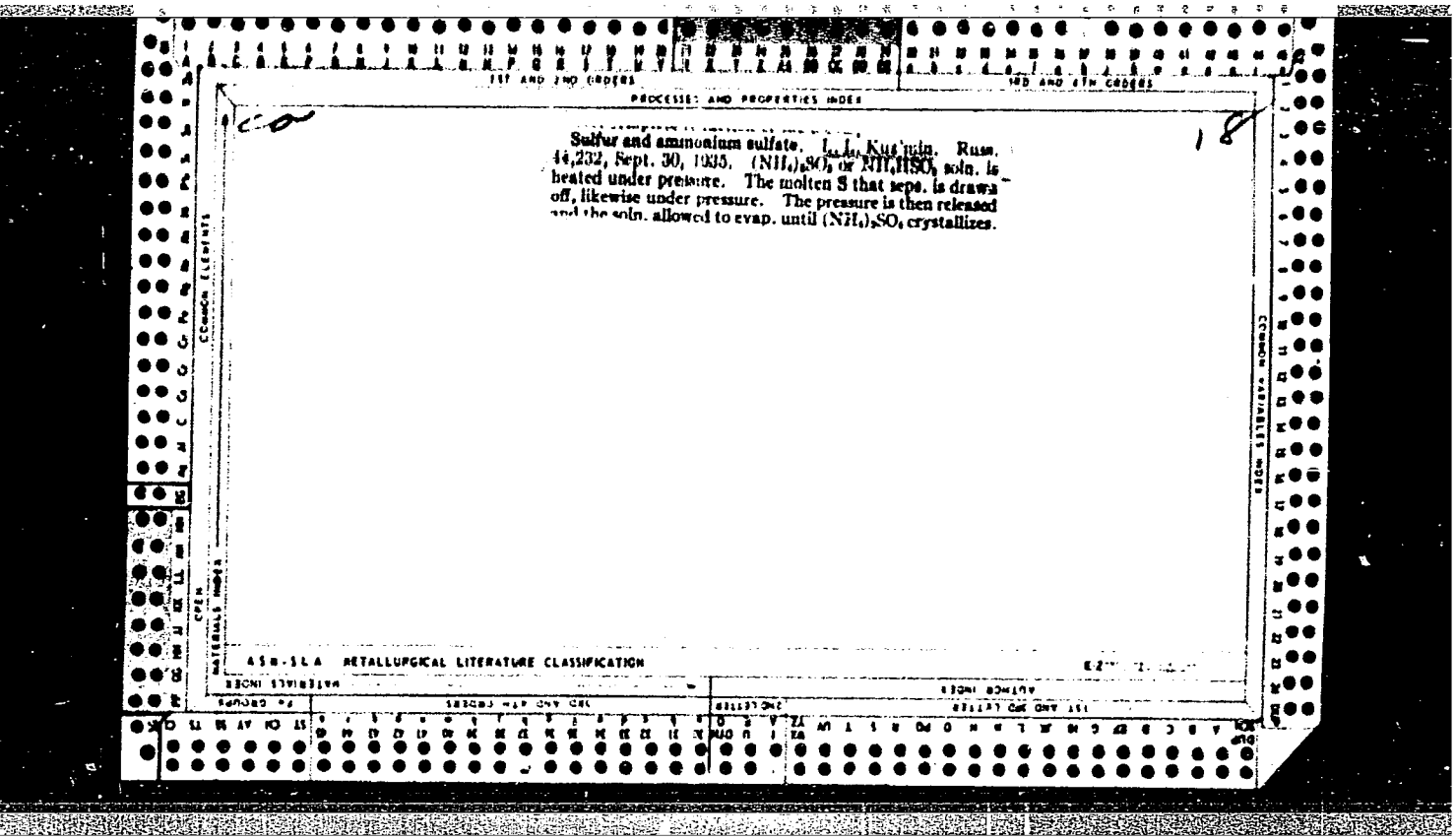
Viscosities of fuming and diluted sulfuric acid and sodium sulfide. V. F. Postnikov and L. L. Kuz'min. *Khimstroi* 6, 527-9(1934). -Tabular presentation of the viscosities of fuming H_2SO_4 at −20° to 120° and of Na_2S at 10° to 170° and a wide range of concns. For the viscosity of dil. H_2SO_4 cf. Rhodes and Barbourg (*C. A.* 17, 2037).
Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Fertilizer. L. L. Kuz'min and V. F. Postnikov. Russ. 41,580, Feb. 28, 1935. Pb_3N_4 is heated with concd. H_2SO_4 or H_3PO_4 until it is completely dissolved.

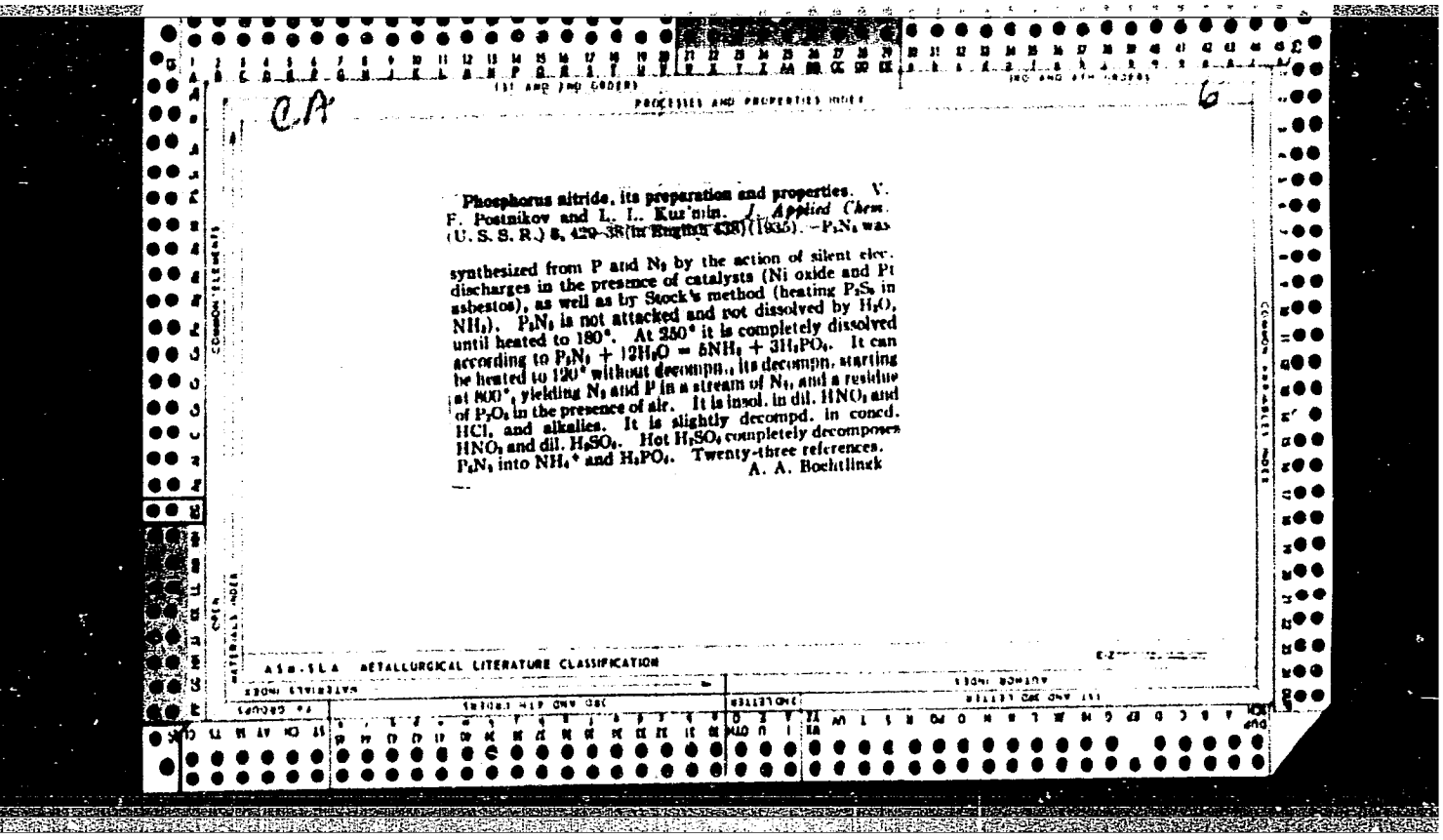
A58 31A METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

Sulfur and ammonium sulfate. L. I. Kus'min. Russ. 44,232, Sept. 30, 1935. $(NH_4)_2SO_4$ or NH_4HSO_4 soln. is heated under pressure. The molten S that sepa. is drawn off, likewise under pressure. The pressure is then released and the soln. allowed to evap. until $(NH_4)_2SO_4$ crystallizes.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



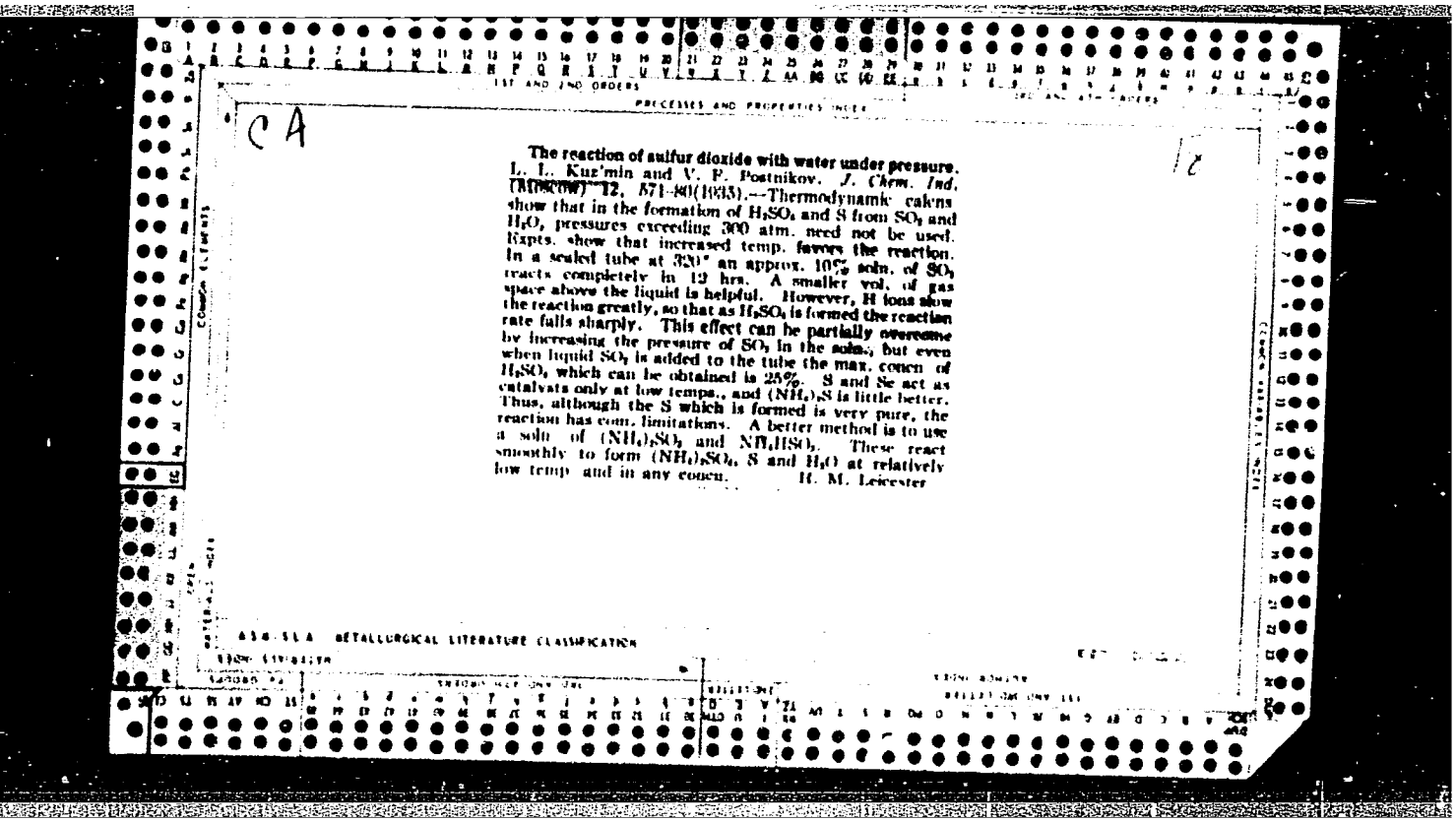
CA

6

Phosphorus nitride, its preparation and properties. V. F. Postnikov and L. L. Kuz'min. *J. Applied Chem.* (U. S. S. R.) 8, 429–38 (in English 438) (1935). — P_3N_5 was synthesized from P and N_2 by the action of silent elec. discharges in the presence of catalysts (Ni oxide and Pt asbestos), as well as by Stock's method (heating P_2S_5 in NH_3). P_3N_5 is not attacked and not dissolved by H_2O, until heated to 180°. At 250° it is completely dissolved according to $P_3N_5 + 12H_2O = 5NH_3 + 3H_3PO_4$. It can be heated to 120° without decompn., its decompn. starting at 800°, yielding N_2 and P in a stream of N_2, and a residue of P_2O_5 in the presence of air. It is insol. in dil. HNO_3 and HCl, and alkalies. It is slightly decompd. in concd. HNO_3 and dil. H_2SO_4. Hot H_2SO_4 completely decomposes P_3N_5 into NH_4^+ and H_3PO_4. Twenty-three references.

A. A. Bochtlingk

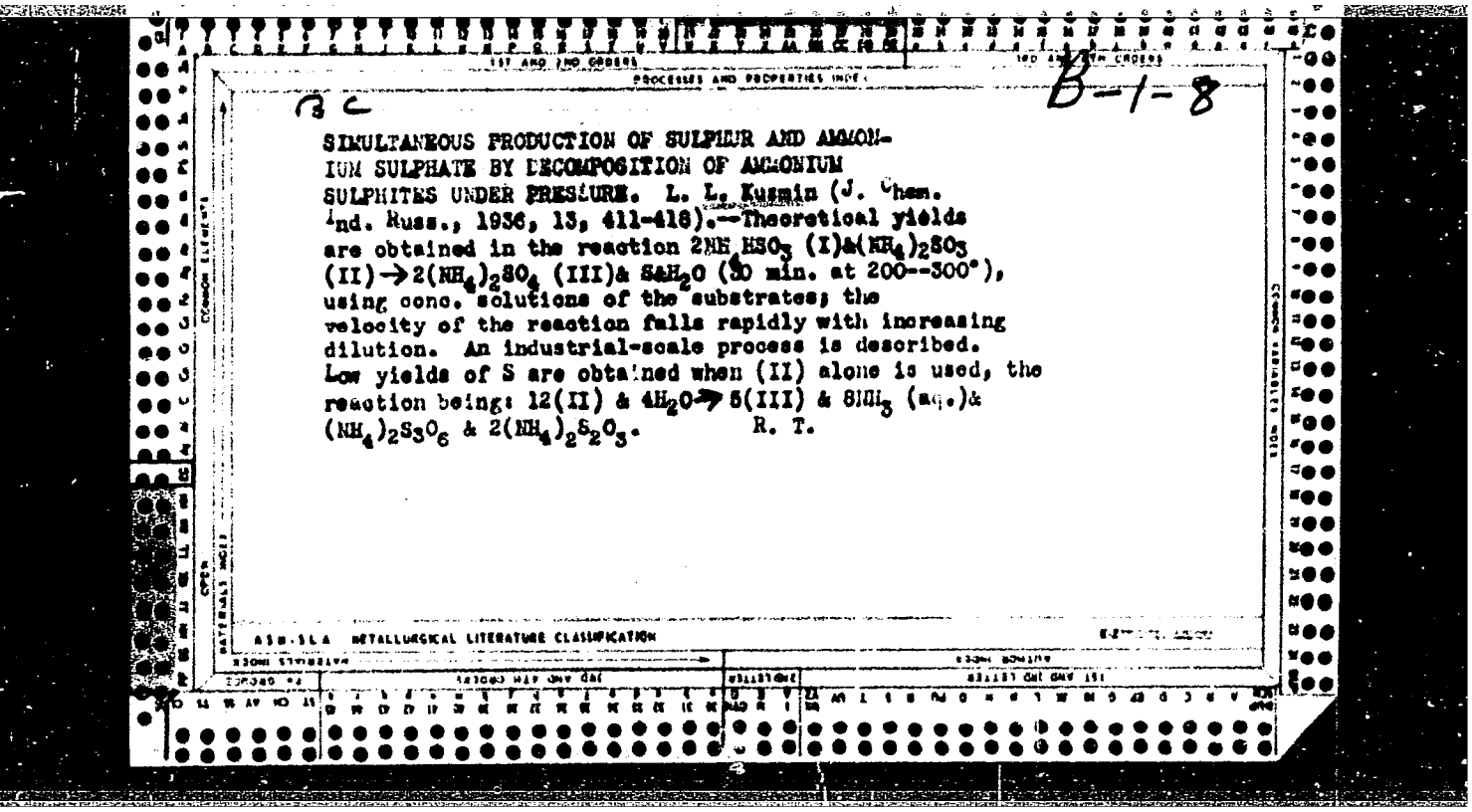
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

The reaction of sulfur dioxide with water under pressure. L. L. Kuz'min and V. P. Postnikov. *J. Chem. Ind. (Moscow)* 12, 871–80(1935).—Thermodynamic calcns show that in the formation of H_2SO_4 and S from SO_2 and H_2O, pressures exceeding 300 atm. need not be used. Expts. show that increased temp. favors the reaction. In a sealed tube at 320° an approx. 10% soln. of SO_2 reacts completely in 12 hrs. A smaller vol. of gas space above the liquid is helpful. However, H ions slow the reaction greatly, so that as H_2SO_4 is formed the reaction rate falls sharply. This effect can be partially overcome by increasing the pressure of SO_2 in the soln., but even when liquid SO_2 is added to the tube the max. concn. of H_2SO_4 which can be obtained is 25%. S and Se act as catalysts only at low temps., and $(NH_4)_2S$ is little better. Thus, although the S which is formed is very pure, the reaction has com. limitations. A better method is to use a soln. of $(NH_4)_2SO_3$ and NH_4HSO_3. These react smoothly to form $(NH_4)_2SO_4$, S and H_2O at relatively low temp. and in any concn. H. M. Leicester

12

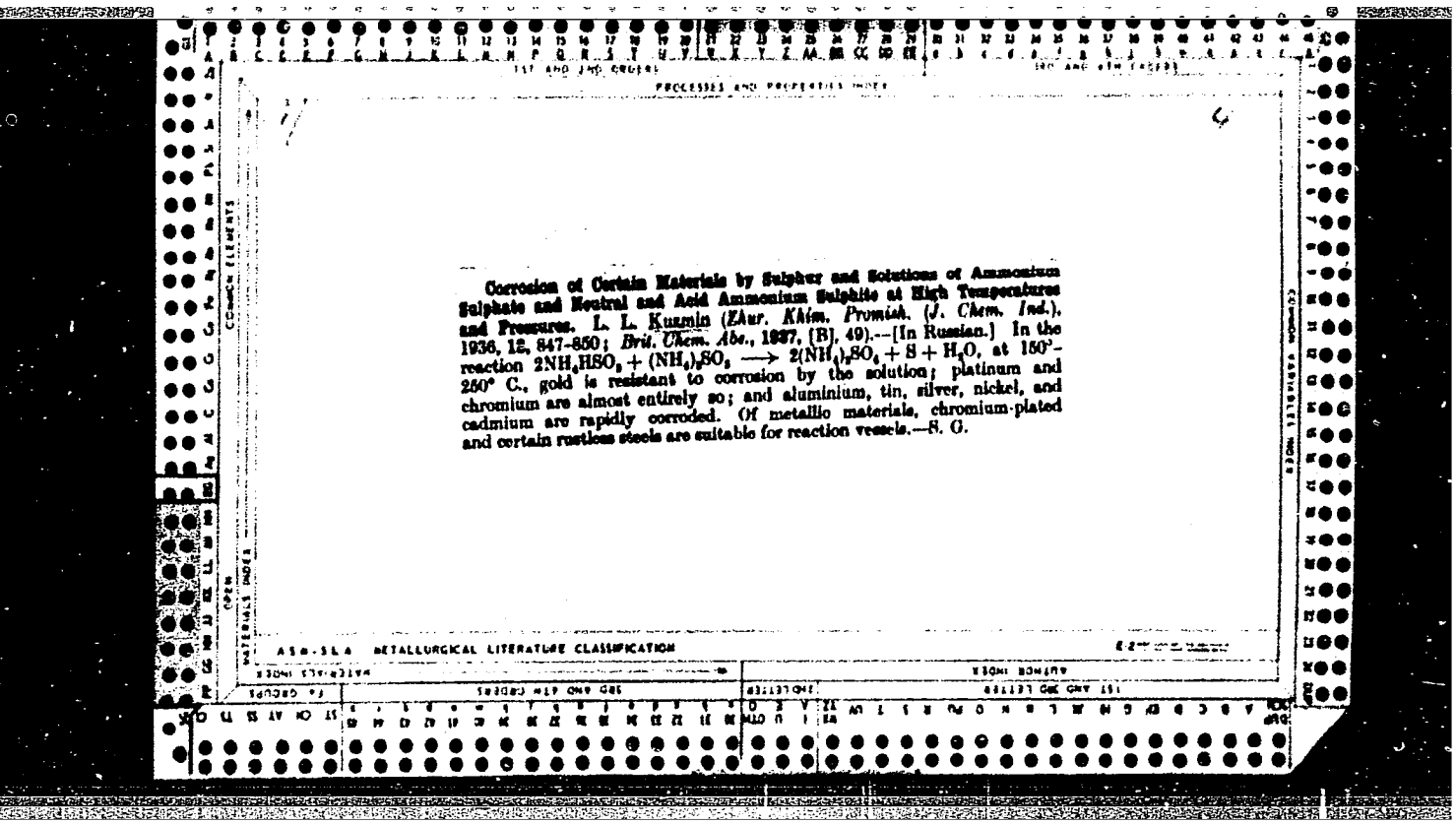


B-1-8

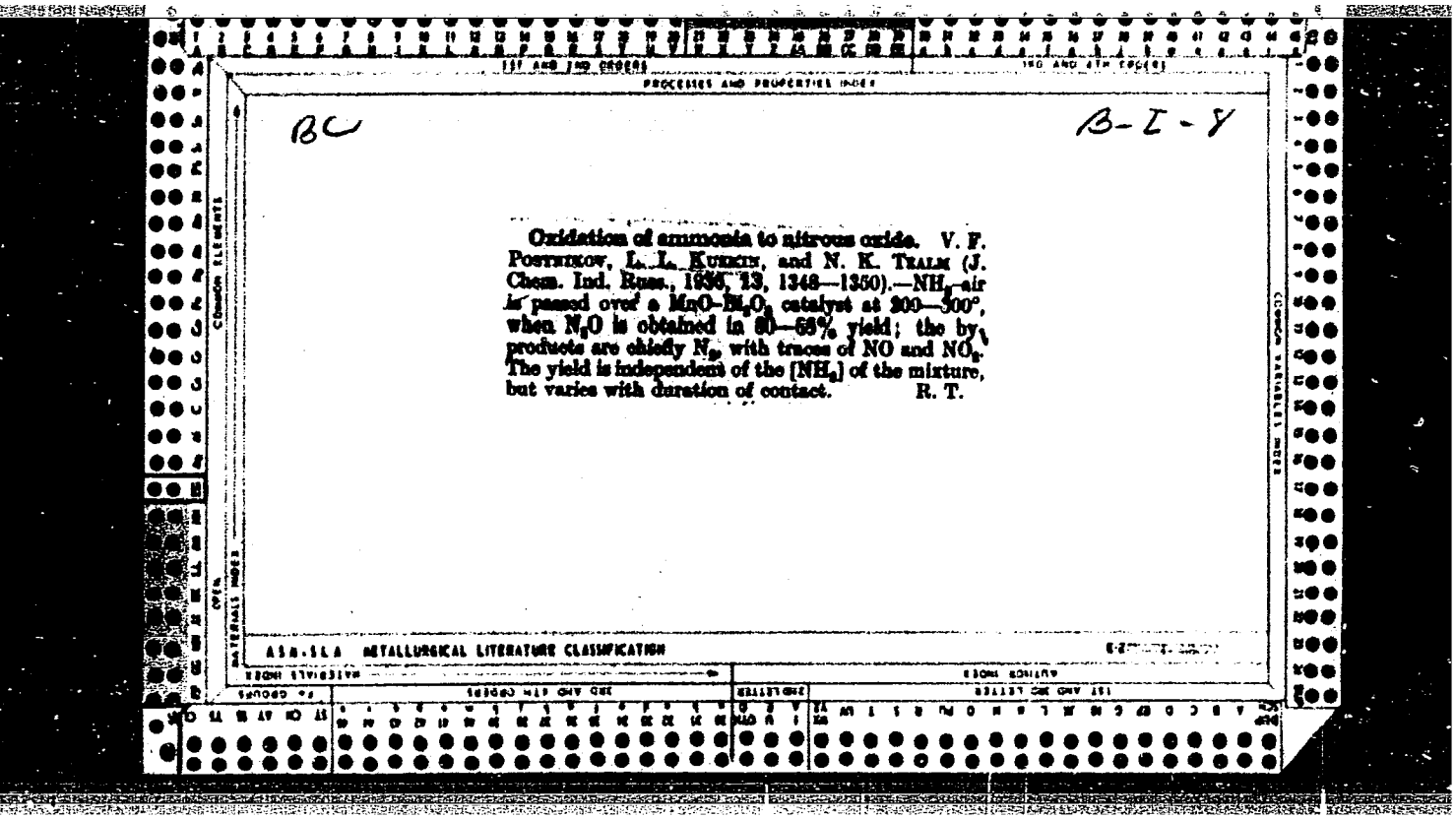
B C

SIMULTANEOUS PRODUCTION OF SULPHUR AND AMMONIUM SULPHATE BY DECOMPOSITION OF AMMONIUM SULPHITES UNDER PRESSURE. L. L. Kusmin (J. Chem. Ind. Russ., 1936, 13, 411-418).—Theoretical yields are obtained in the reaction $2NH_4HSO_3$ (I) $\rightarrow (NH_4)_2SO_3$ (II) $\rightarrow 2(NH_4)_2SO_4$ (III) + SaH_2O (30 min. at 200—300°), using conc. solutions of the substrates; the velocity of the reaction falls rapidly with increasing dilution. An industrial-scale process is described. Low yields of S are obtained when (II) alone is used, the reaction being: 12(II) + $4H_2O \rightarrow$ 5(III) + $8NH_3$ (aq.) + $(NH_4)_2S_3O_6$ + $2(NH_4)_2S_2O_3$. R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Corrosion of Certain Materials by Sulphur and Solutions of Ammonium Sulphate and Neutral and Acid Ammonium Sulphite at High Temperatures and Pressures. L. L. Kuzmin (*Zhur. Khim. Promish. (J. Chem. Ind.)*, 1936, 12, 847–850; *Brit. Chem. Abs.*, 1937, (B), 49).—[In Russian.] In the reaction $2NH_4HSO_3 + (NH_4)_2SO_3 \longrightarrow 2(NH_4)_2SO_4 + S + H_2O$, at 150°–250° C., gold is resistant to corrosion by the solution; platinum and chromium are almost entirely so; and aluminium, tin, silver, nickel, and cadmium are rapidly corroded. Of metallic materials, chromium-plated and certain rustless steels are suitable for reaction vessels.—S. G.

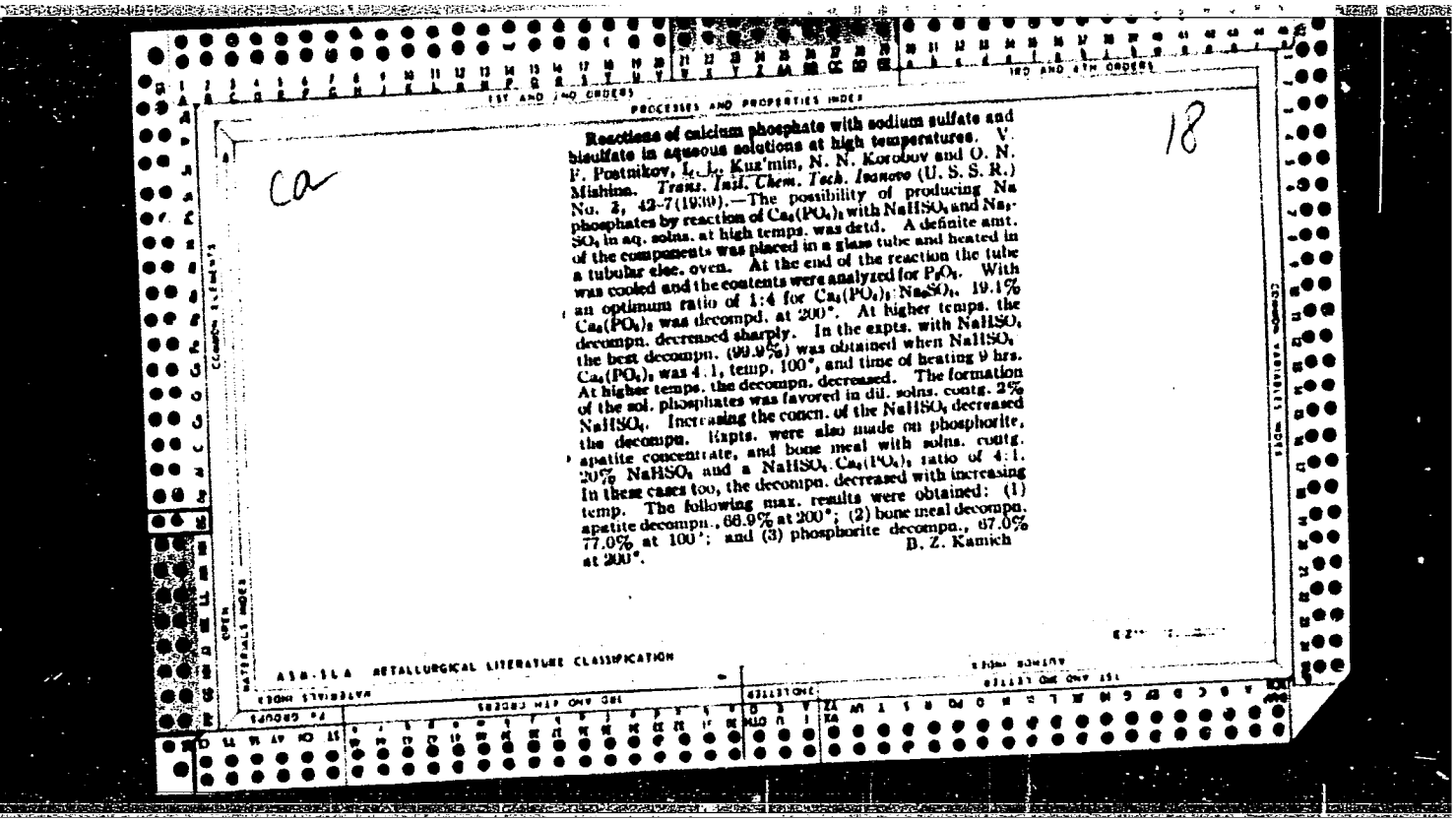


BC

B-I-8

Oxidation of ammonia to nitrous oxide. V. F. Postnikov, L. L. Kunkin, and N. K. Tralm (J. Chem. Ind. Russ., 1936, 13, 1348—1350).—NH_3–air is passed over a MnO–Bi_2O_3 catalyst at 300—500°, when N_2O is obtained in 60—68% yield; the by-products are chiefly N_2, with traces of NO and NO_2. The yield is independent of the $[NH_3]$ of the mixture, but varies with duration of contact. R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

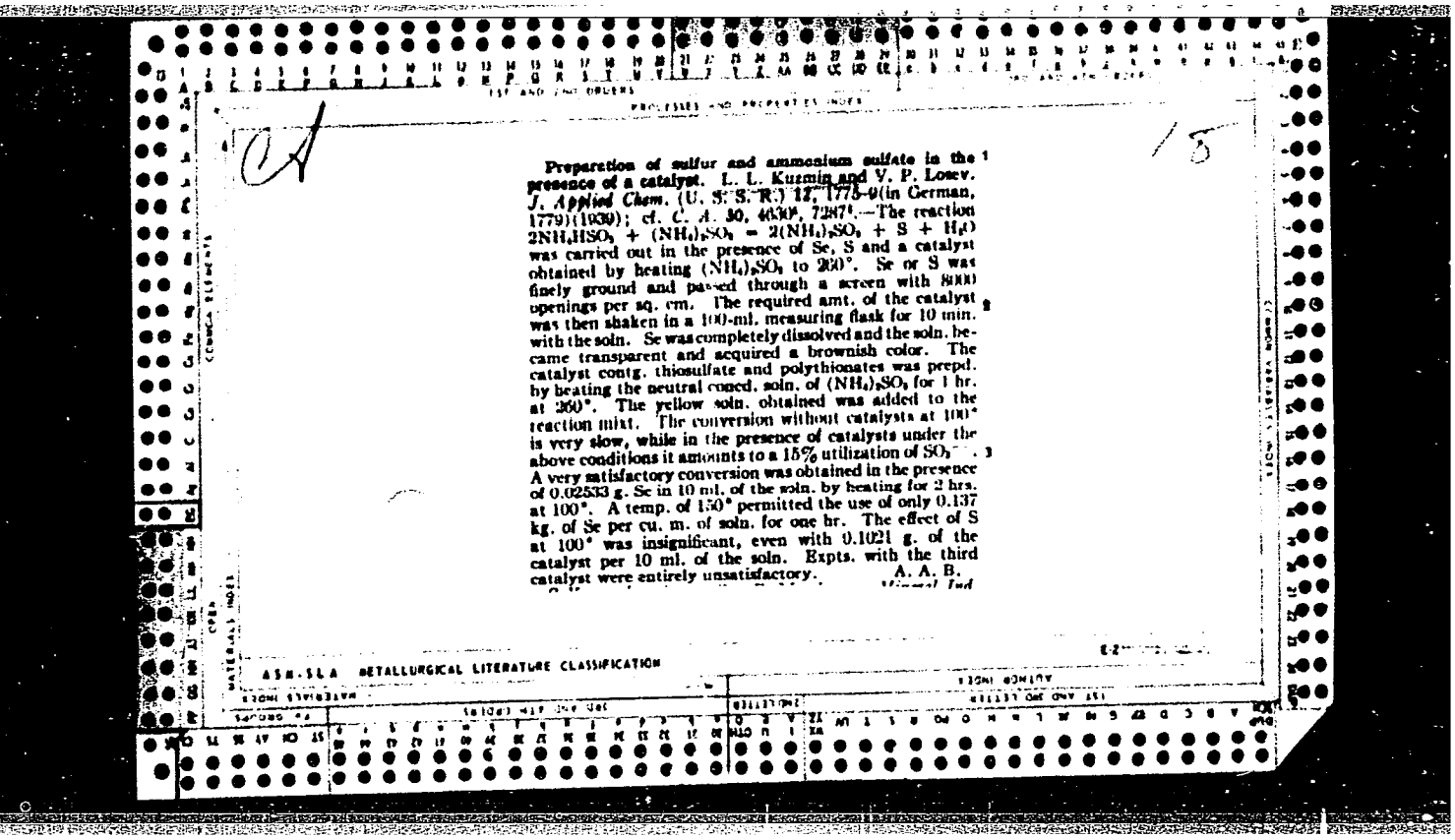
Ca

18

Reactions of calcium phosphate with sodium sulfate and bisulfate in aqueous solutions at high temperatures. V. F. Postnikov, L. L. Kuz'min, N. N. Korolkov and O. N. Mishina. *Trans. Inst. Chem. Tech. Ivanovo* (U. S. S. R.) No. 3, 42-7(1959).—The possibility of producing Na phosphates by reaction of $Ca_3(PO_4)_2$ with $NaHSO_4$ and Na_2SO_4 in aq. solns. at high temps. was detd. A definite amt. of the components was placed in a glass tube and heated in a tubular elec. oven. At the end of the reaction the tube was cooled and the contents were analyzed for P_2O_5. With an optimum ratio of 1:4 for $Ca_3(PO_4)_2$:Na_2SO_4, 19.1% $Ca_3(PO_4)_2$ was decompd. at 200°. At higher temps. the decompn. decreased sharply. In the expts. with $NaHSO_4$ the best decompn. (99.9%) was obtained when $NaHSO_4$:$Ca_3(PO_4)_2$ was 4:1, temp. 100°, and time of heating 9 hrs. At higher temps. the decompn. decreased. The formation of the sol. phosphates was favored in dil. solns. contg. 2% $NaHSO_4$. Increasing the concn. of the $NaHSO_4$ decreased the decompn. Expts. were also made on phosphorite, apatite concentrate, and bone meal with solns. contg. 20% $NaHSO_4$ and a $NaHSO_4$:$Ca_3(PO_4)_2$ ratio of 4:1. In these cases too, the decompn. decreased with increasing temp. The following max. results were obtained: (1) apatite decompn., 66.9% at 200°; (2) bone meal decompn., 77.0% at 100°; and (3) phosphorite decompn., 67.0% at 200°.

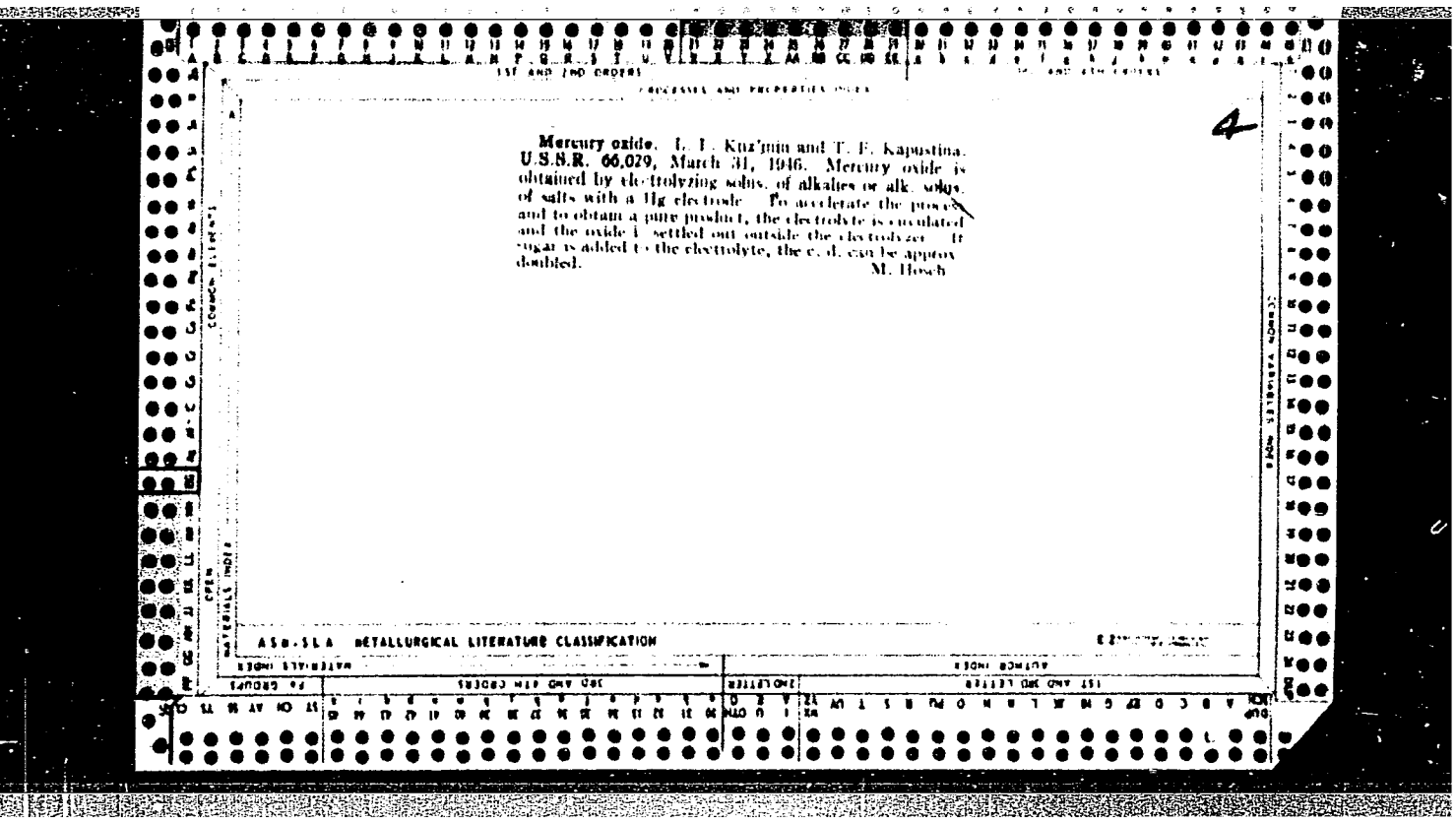
B. Z. Kamich

A58-11A METALLURGICAL LITERATURE CLASSIFICATION



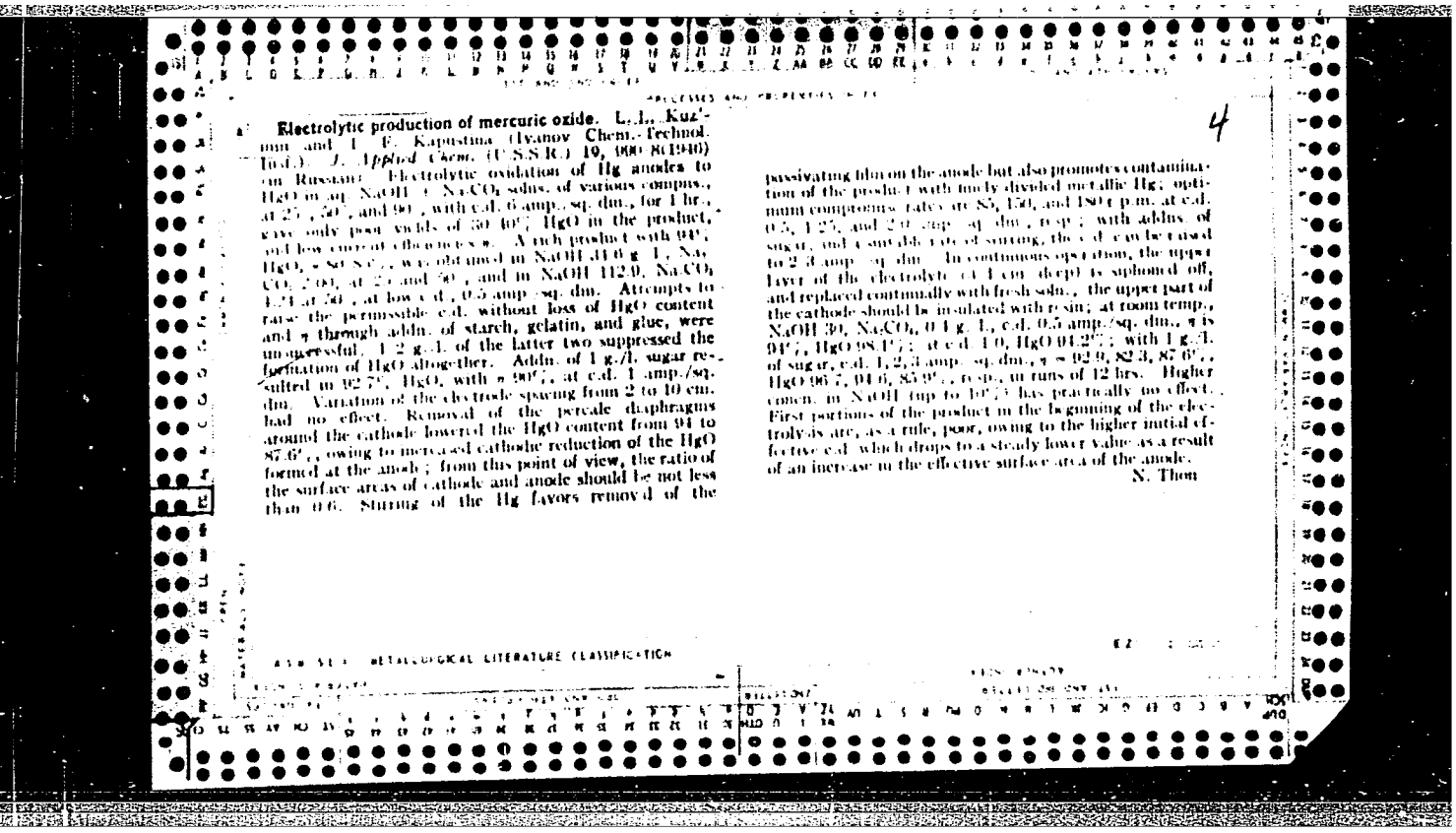
Preparation of sulfur and ammonium sulfate in the presence of a catalyst. L. L. Kuzmin and V. P. Losev. *J. Applied Chem.* (U. S. S. R.) 12, 1775-9 (in German, 1779) (1939); cf. *C. A.* 30, 4630⁸, 7287⁴.—The reaction $2NH_4HSO_3 + (NH_4)_2SO_3 = 2(NH_4)_2SO_3 + S + H_2O$ was carried out in the presence of Se, S and a catalyst obtained by heating $(NH_4)_2SO_3$ to 200°. Se or S was finely ground and passed through a screen with 8000 openings per sq. cm. The required amt. of the catalyst was then shaken in a 100-ml. measuring flask for 10 min. with the soln. Se was completely dissolved and the soln. became transparent and acquired a brownish color. The catalyst contg. thiosulfate and polythionates was prepd. by heating the neutral concd. soln. of $(NH_4)_2SO_3$ for 1 hr. at 260°. The yellow soln. obtained was added to the reaction mixt. The conversion without catalysts at 100° is very slow, while in the presence of catalysts under the above conditions it amounts to a 15% utilization of SO_3^{--}. A very satisfactory conversion was obtained in the presence of 0.02533 g. Se in 10 ml. of the soln. by heating for 2 hrs. at 100°. A temp. of 150° permitted the use of only 0.137 kg. of Se per cu. m. of soln. for one hr. The effect of S at 100° was insignificant, even with 0.1021 g. of the catalyst per 10 ml. of the soln. Expts. with the third catalyst were entirely unsatisfactory. A. A. B.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Mercury oxide. I. I. Kuz'min and T. F. Kapustina. U.S.S.R. 66,029, March 31, 1946. Mercury oxide is obtained by electrolyzing solns. of alkalies or alk. salts of salts with a Hg electrode. To accelerate the process and to obtain a pure product, the electrolyte is circulated and the oxide is settled out outside the electrolyzer. If sugar is added to the electrolyte, the c.d. can be approx. doubled.

M. Hosch



Electrolytic production of mercuric oxide. L. L. Kuz'minn and T. F. Kapustina (Ivanov Chem.-Technol. Inst.). *J. Applied Chem. (U.S.S.R.)* **10**, 980-81(1940) (in Russian). Electrolytic oxidation of Hg anodes to HgO in aq. NaOH + Na_2CO_3 solns. of various compns., at 25°, 50°, and 90°, with c.d. 0.5 amp./sq. dm., for 1 hr., gave only poor yields of 50-60% HgO in the product, and low current efficiencies. A rich product with 94% HgO, η 80-85%, was obtained in NaOH 11.0 g./l., Na_2CO_3 2.01, at 25° and 50°, and in NaOH 112.0, Na_2CO_3 1.24 at 50°, at low c.d., 0.5 amp./sq. dm. Attempts to raise the permissible c.d. without loss of HgO content and η through addn. of starch, gelatin, and glue, were unsuccessful. 1.2 g./l. of the latter two suppressed the formation of HgO altogether. Addn. of 1 g./l. sugar resulted in 92.7% HgO, with η 90%, at c.d. 1 amp./sq. dm. Variation of the electrode spacing from 2 to 10 cm. had no effect. Removal of the percale diaphragms around the cathode lowered the HgO content from 94 to 87.6%, owing to increased cathodic reduction of the HgO formed at the anode; from this point of view, the ratio of the surface areas of cathode and anode should be not less than 0.6. Stirring of the Hg favors removal of the passivating film on the anode but also promotes contamination of the product with finely divided metallic Hg; optimum compromise rates are 85, 150, and 180 r.p.m. at c.d. 0.5, 1.25, and 2.0 amp./sq. dm., respectively. With addns. of sugar, and a suitable rate of stirring, the c.d. can be raised to 2.5 amp./sq. dm. In continuous operation, the upper layer of the electrolyte (1.4 cm. deep) is siphoned off, and replaced continually with fresh soln.; the upper part of the cathode should be insulated with resin; at room temp., NaOH 30, Na_2CO_3 0.4 g./l., c.d. 0.5 amp./sq. dm., η is 94%, HgO 98.1%; at c.d. 1.0, HgO 91.2%; with 1 g./l. of sugar, c.d. 1, 2, 3 amp./sq. dm., η = 92.9, 82.3, 87.6%, HgO 96.7, 91.6, 85.9%, respectively, in runs of 12 hrs. Higher concn. in NaOH (up to 10%) has practically no effect. First portions of the product in the beginning of the electrolysis are, as a rule, poor, owing to the higher initial effective c.d. which drops to a steady lower value as a result of an increase in the effective surface area of the anode.

N. Thon

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A 1940 METALLURGICAL LITERATURE CLASSIFICATION

ACC NR: AP6019566 (A) SOURCE CODE: UR/0080/66/039/006/1327/1332

AUTHOR: Shmukler, Yu. S.; Kuz'min, L. L.

ORG: Ivanovo Chemical Engineering Institute (Ivanovskiy khimiko-tekhnologicheskiy institut)

TITLE: Behavior of vanadium pentoxide in certain salt electrolytes

SOURCE: Zhurnal prikladnoy khimii, v. 39, no. 6, 1966, 1327-1332

TOPIC TAGS: vanadium pentoxide, ammonium salt, ammonium sulfate, electrolyte, electrode potential

ABSTRACT: The article presents data on the cathodic behavior of vanadium pentoxide in the aqueous electrolytes NH_4Cl, $(NH_4)_2SO_4$, $ZnSO_4$, NaCl, and $CaCl_2$. The best electrolyte for studying this behavior was found to be 4 N NH_4Cl. The following reactions are thought to occur at the electrode:

$$V_2O_5 + 2H^+ + 2e = V_2O_4 + H_2O,$$

$$V_2O_5 + 4H^+ + 4e = V_2O_3 + 2H_2O.$$

$$V_2O_4 + 2H^+ + 2e = V_2O_3 + H_2O.$$

 UDC: 546.881+541.13

L 40101-66

ACC NR: AP6019566

For these three reactions, the dependence of the potential on the hydrogen ion activity in the solution at 25°C is expressed by the equation

$$\phi = \phi_0 - 0.059 \cdot pH.$$

The formation of vanadium tetroxide was demonstrated by analyzing the electrode mass. On the basis of the mechanism of phase transformation of vanadium pentoxide to the tetroxide during the discharge of the electrode, an explanation is provided for the behavior of the pentoxide in the various electrolytes studied. The discharge of the V_2O_5 electrode in NaCl and $CaCl_2$ solutions is accompanied by a fast rise of the pH of the electrolyte present in the pores of the active mass; this causes electrode polarization and a sharp potential drop. In the $ZnSO_4$ solution, particularly at low current densities, an increase in the acidity of the initial solution has a favorable effect, as does the buffering effect of the electrolyte, due to the precipitation of $Zn(OH)_2$. However, this shortens the operation of the electrode. The smooth course of the discharge curves in the ammonium electrolytes is explained by their buffering action and the formation of V_2O_4, which has a much higher conductivity than the initial pentoxide. It is concluded that the V_2O_5 electrode can be used in chemical current sources in ammonium chloride and sulfate electrolytes. Orig. art. has: 3 figures, 4 tables, and 5 formulas.

SUB CODE: 07/ SUBM DATE: 02Mar65/ ORIG REF: 003/ OTH REF: 003

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L 08904-67 EWT(m)/EWP(t)/ETI IJP(c) DS/JD/WB

ACC NR: AP6002206 SOURCE CODE: UR/0153/65/008/005/0804/0807

AUTHOR: Agapov, A. M.; Mol'nikov, A. M.; Kuz'min, L. L.

ORG: Ivanovo Chemical-Technological Institute, Department of Technology of Electrochemical Products (Ivanovskiy khimiko-tekhnologicheskiy institut, Kafedra tekhnologii elektrokhimicheskikh proizvodstv)

TITLE: Possibility of using a titanium anode in a galvanic cell. I. Corrosion of titanium in acid electrolytes

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 8, no. 5, 1965, 804-807

TOPIC TAGS: titanium, corrosion resistance, electrolysis, perchloric acid, hydrofluoric acid, oxide formation

ABSTRACT: The corrosion resistance of Ti was determined by weighing 10 x 10 x 0.5 mm samples of titanium BT-1 sheets suspended in a polyethylene vessel and exposed to the effect of 30 ml acid solution ($HClO_4$, HF, and their mixtures) at 25C. The Ti had a high corrosion resistance in $HClO_4$: no decrease in weight and no visible changes were observed in samples exposed for 6 months to $HClO_4$ having concentrations of 100-800 g/l, although the stationary potential of Ti increased with increased concentration of $HClO_4$ from 0.160 to 0.309 v. The addition of HF to the $HClO_4$ solution sharply decreased the corrosion resistance of Ti up to a certain maximum. The corrosion of Ti

Card 1/2 UDC: 620.193.41+621.352.8

in a pure HF solution increased proportionally with an increase in the concentration of HF. The presence of HF in the $HClO_4$ solution in all cases caused the activation of the Ti surface probably because of the destruction of the oxide film by fluoride ions. The activation effect of HF decreased at a larger rate at a higher concentration of $HClO_4$ in solution. An increase of the $HClO_4$ concentration from 100 to 800 g/l increased its activity from 0.932 to 1138. The concentration of fluoride ions, therefore, decreased with increased concentration of $HClO_4$. This caused a rapid accumulation of corrosion products on the surface of Ti. The dissolving of Ti in $HClO_4$, containing HF, occurred under mixed anode-cathode control and the process was decelerated equally on the anode and the cathode. The increase in concentration of $HClO_4$ promoted (1) an increase in thickness of the oxide film, which was indicated by changes in the values of the stationary potential, and (2) an increase in activity of H ions facilitating depolarization of H and causing the formation of maximums on the corrosion rate curve. The displacement of the maximum to the left side of the curve, i.e., to the side of lower concetrantions, during enrichment in HF of the solution, was related to a stronger effect of corrosion agents resulting in rapid passivation of the anode sections. Orig. art. has: 2 fig. and 2 tables.

SUB CODE: 09,11/ SUBM DATE: 15Jun64/ ORIG REF: 002/ OTH REF: 004

KUZ'MIN, L.K., inzh.; GUSEV, V.P., mashinist

Our readers discuss the book "Switching diesel locomotives." Elek. i tepl. tiaga 6 no.10:40, p.3 of cover O '62. (MIRA 15:11)

1. Depo Mineral'nyye Vody Severo-Kavkazskoy dorogi (for Kuz'min). 2. Depo Lyublino Moskovskoy dorogi (for Gusev).

(Diesel locomotives)
(Railroads—Making up trains)

KUZ'MIN, L.M.; FINKEL'SHTEYN, I.I.; MIZONOVA, A.I.; BELOV, I.F.

Studying the operation of saw-toothed drums in the front section of single-process pickers during table feeding. Izv.vys.ucheb.zav.; tekh.tekst.prom. no.2:94-99 '58. (MIRA 11:5)

1. Ivanovskiy tekstil'nyy institut.
(Cotton machinery)

KUZ'MIN, L.N.

Rheostat transmitting synchro for solving photogrammetrical problems.
Geod.i kart.no.7:19-25 Jl '57. (MIRA 10:10)
(Photogrammetry--Apparatus and supplies)

AUTHOR: Kuz'min, L. P. (Moscow) 103-19-4-1/12

TITLE: Graphical-Analytical Method for the Determination of the Characteristics of a Relay System (Grafoanaliticheskiy sposob opredeleniya kharakteristik releynoy sistemy).

PERIODICAL: Avtomatika i Telemekhanika, 1958, Vol. 19, Nr 4, pp. 285-295 (USSR)

ABSTRACT: Here the graphical-analytical method for the determination of the $J_1(\omega)$ - and $J_\gamma(\omega)$ - characteristic of a relay system is given. These characteristics are necessary for the investigation of the periodical mode of operation of the relay systems according to the frequency-method. The theoretical foundation of the method is demonstrated. The characteristics of a relay system are connected with the amplitude-phase-characteristic of the linear part by the formulae (4). The essence of the graphical-analytical method for the computation of the $J_1(\omega)$ and $J_\gamma(\omega)$ -characteristics is the representation of their components, which correspond to the values $m = 1,2,3,\ldots\infty$ and $\gamma = 1$, for each fixed frequency-value in form of vectors, then the determination of the hodographs of these vectors in case of a modification of γ in the domain $0 < \gamma \leq 1$, and finally the summation of the vectors for equal values of the para-

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meter γ. The resulting vectors determine the points of the $J_1(\omega)$ and $J_\gamma(\omega)$ characteristics for the gives frequency and for all γ-values in the domain $0 < \gamma \leq 1$. (Both characteristics $J_1(\omega)$ and $J_\gamma(\omega)$ are functions of two parameters: the frequency ω and the relative time in the closed state of the contacts - γ). It is shown that the hodographs of these vectors are determined by means of uncomplicated geometrical constructions. As for the practical determination at $J_1(\omega)$ and $J_\gamma(\omega)$ it is sufficient to restrict oneself to n summands of the series, the formula (4) is transformed into (6), where the summands $J_{1_1}(\omega)$, $J_{1_2}(3\omega)$, ...$J_{\gamma_1}(\omega)$, $J_{\gamma_2}(3\omega)$ correspond to the values of $m = 1, 2, \ldots, n$ and are determined by substitution of the respective m-value into the formulae. With the so obtained equations (7) correspond in the complex plane vectors, the magnitude and direction of which are determined by ω and γ, for the fixed frequency-value $\omega = \omega_k$, however, only by the parameter γ. In case of a continuous modification of the quantity γ in the range $0 < \gamma \leq 1$ the end of each one of these vectors describes a hodograph. The analytical term forthe hodographs of the J_1- and J_γ-vectors can be determined by substitution of the fixed value of the frequency

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$\omega = \omega_k$ into the formulae (7), from these formulae (7). The formula (7) is transformed and the equation for the hodograph of J_{1_m} and J_{γ_m} are represented in explicite form. The equations (1o) are obtained, this one being an ellipse with a center, which is shifted towards the point z_{1_m}. z_{1_m} is expressed by the equation (11). From equations (1o) it can be seen that the hodographs $J_{1_m}(\gamma, \omega_k)$ and $J_{\gamma_m}(\gamma, \omega_k)$ coincide and differ from each other only by the direction of rotation of the J_{1_m}- - J_{γ_m} - vectors. It is shown that in the determination of $J_1(\omega)$ and $J_\gamma(\omega)$ it is not necessary to determine for each frequency value the magnitude of the components of J_{1_m} and J_{γ_m} at $\gamma = 1$. All the other components, which correspond to the rest of the γ-values, can be found by means of the hodograph, which is determined by (1o) and (8'). The construction of the hodographs for the J_{1_m} - and J_{γ_m}- vectors and the determination of the points of this hodograph, which correspond to the various γ-values, takes place according to the equations (1o). More

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simply this operation canbe performed by graphical methods. Finally the order of the graphical-analytical determination of $J_1(\omega)$ and $J_\varphi(\omega)$ is given. Summarily it is stated that by the application of the graphical-analytical method the computation is restricted only to the determination of only one amplitude-phase-characte ristic, while all the other operations are performed by graphical methods. There are 14 figures and 5 references, all of which are Soviet.

SUBMITTED: July 24, 1957

AVAILABLE: Library of Congress

1. Relay systems---Characteristics 2. Relay systems---Analysis

KUZ'MIN, L.P., referent, otvetstv. za vypusk

[Increasing the durability of dies]Problemy povysheniia stoikosti shtampov; materialy konferentsii. Moskva, Ob-vo po rasprostraneniiu polit. i nauchn. znanii RSFSR. Vol.1. 1961. 125 p. Vol.2. 1961. 63 p. (MIRA 16:1)

1. Nauchno-proizvodstvennaya konferentsiya "Problemy povysheniya stoykosti i snizheniya stoimosti izgotovleniya shtampov v kuznechno-pressovom proizvodstve," Moscow, 1961.
(Dies (Metalworking))

KUZ'MIN, L.P.

Practices of the Moscow House of Scientific and Technological Propaganda. NTI no.9:12-14 '63. (MIRA 16:12)

KUZ'MIN, M.

Make every effort to strengthen economic accountability in grain storage enterprises. Muk.-elev.prom. 25 no.9:5 S '59. (MIRA 12:12)

1. Glavnyy bukhgalter Saratovskogo oblastnogo upravleniya khleboproduktov.
(Grain trade--Accounting)

KUZ'MIN, M.

Export resources of the regional economic councils are growing. Vnesh.torg. 30 no.7:38-39 '60. (MIRA 13:7)

(Russia--Commerce)

BABKIN, N.; KUZ'MIN, M., uchastkovyy vrach (Orekhovo-Zuyevo, Moskovskoy obl.)

Most advanced in Moscow Province. Zhil.-kom. khoz. 13 no.5: 14-15 My '63. (MIRA 16:8)

1. Predsedatel' domovogo komiteta pri domoupravlenii No.3 v gorode Orekhovo-Zuyevo, Moskovskoy obl. (for Babkin).
(Orekhovo-Zuyevo--Housing management)

KUZ'MIN, M.

We are uncovering internal potentials. Fin. SSSR. 37 no.11: 24-26 N'63. (MIRA 17:2)

1. Nachal'nik upravleniya Ministerstva finansov Tadzhikskoy SSR.

KUZ'MIN, M.

Business and meetings in Cuba. Vnesh. torg. 42 no.6:17-20 '62. (MIRA 17:3)

1. Zamestitel' ministra vneshney torgovli SSSR.

KUZMIN, M. A.; BAUM, V. A.; BUDRIN, D. V.; VASHENKO, A. I.; GLINKOV, M. A.; GRANOVSKIY, B.L.; KITAYEV, B. K.; MIKHAYLENKO, A. Ya.; NAZAROV, I. S.; PLOTNIKOV, L. A.; SEMIKIN, I. D.; TAYS, N. U.; TROIB, S. G.

Metallurgiueskie Peui (Metallurgical Furnaces), 975 p., 1951.

KUZ'MIN, M. A. (Prof.)

"Theory of Similarity and Heat Transfer by Convection," from the book Metallurgical Furnaces (Metallurgicheskiye Pechi) Metallurgizdat, 1951.

Doctor of Technical Sciences

KUZ'MIN, M.A.

KONDRAT'YEV, Georgiy Mikhaylovich; KUZ'MIN, M.A., prof., retsenzent; DUL'NEV, G.N., kand.fiz.-mat.nauk, red.; GOFMAN, Ye.K., red. izdatel'stva; SOKOLOVA, L.V., tekhn.red.

[Heat measurement] Teplovye izmereniia. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1957. 244 p. (MIRA 11:1)
(Heat--Measurement)

NOVICHKOV, Petr Vasil'yevich; REYZIN, Solomon Markovich; SHTEYN, Feliks Solomonovich; KUZ'MIN, M.A., prof., doktor tekhn.nauk, red.; KUBNEVA, M.M., tekhn.red.

[Methods of heating forging blanks without oxidation] Metody bezokislitel'nogo nagreva kuznechnykh zagotovok; obzor. Pod red. M.A.Kuz'mina. Leningrad, 1959. 55 p. (MIRA 13:10)
(Forging) (Furnaces, Heating)

PHASE I BOOK EXPLOITATION SOV/5496

Kuz'min, Mikhail Aleksandrovich

Raschet i konstruirovaniye bezynertsionnykh pechey (Design and Construction of Inertialess Furnaces) Moscow, Mashgiz, 1961. 220 p. Errata slip inserted. 4,500 copies printed.

Reviewer: A. U. Pugovkin, Candidate of Technical Sciences; Ed.: K. A. Valentinovich, Candidate of Technical Sciences; Ed. of Publishing House; Ye. K. Gofman; Tech. Ed.: O. V. Speranskaya; Managing Ed. for Literature on the Design and Operation of Machines (Leningrad Department, Mashgiz): F.I. Fetisov.

PURPOSE: This book is intended for technical personnel and scientific research workers concerned with the design, operation, and study of industrial furnaces. It may also be useful to students of machine-building, metallurgical, and electrical schools of higher education.

COVERAGE: Results of the author's experimental study of industrial furnaces and heating processes, carried out with the use of an electric simulator, are discussed. In generalizing his findings the author applies the similarity theory

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Design and Construction (Cont.)

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and makes practical suggestions regarding the design and construction of "inertialess" furnaces. These furnaces insure the desired rapid temperature change and easy temperature control. Design samples of inertialess flame-type and electric furnaces are discussed. Also described are furnaces with baffle walls; furnaces with gas-permeable brickwork and metallic (water- and air-cooled) radiant surfaces; inertialess furnaces with aluminum walls; and inertialess "electromagnatic" furnaces for the heating and melting of metals. The latter are electric resistance furnaces in which mineral or glass powders are employed as electrical-conductivity boosters. Temperatures of about 4000°C can be obtained with these furnaces. The following persons were among those who assisted the author in the development and construction of new furnaces: F. M. Tkachev, Foreman in Furnace-Building; K. A. Valentinovich, Candidate of Technical Sciences; M. F. Longinov and M. S. Belozerov, Engineers; A. V. Golubev, Designer, and A. N. Belov, N. Yu. Nemtsov, G. V. Pryalov, and R. M. Akhtireyev, staff members of the Department of Metallurgical Furnaces at the Leningradskiy politekhnicheskiy institut im. M. I. Kalinina (Leningrad Polytechnic Institute imeni M. I. Kalinin). There are 30 references, all Soviet.

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BUDRIN, Dmitriy Vasil'yevich; GLINKOV, Mark Alekseyevich, prof., doktor tekhn. nauk; KUZ'MIN, Mikhail Aleksandrovich; PLOTNIKOV, Liveriy Alekseyevich; SEMIKIN, Iosif Danilovich; TROYB, Samuil Grigor'yevich; SAL'NIKOV, A.P., red.izd-va; ISLENT'YEVA, P.G., tekhn. red.

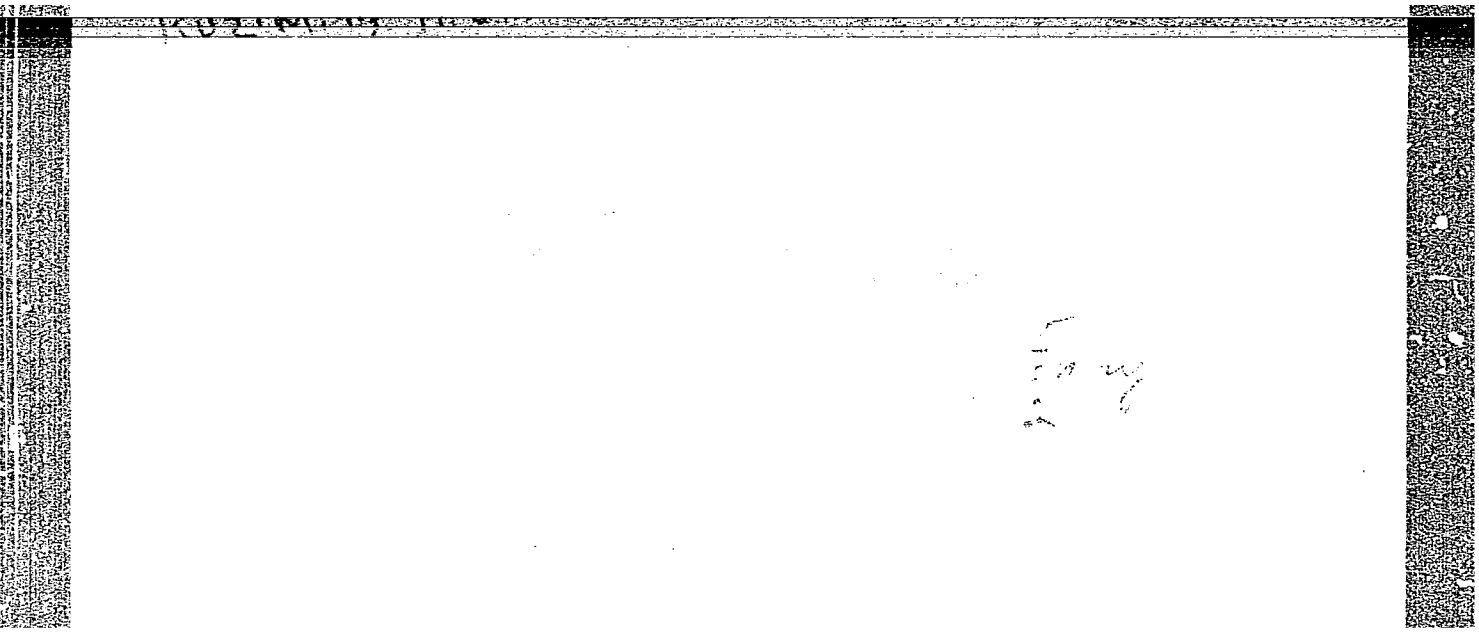
[Metallurgical furnaces] Metallurgicheskie pechi. [By] D.V. Budrin i dr. Moskva, Metallurgizdat. Pt.1. [Fuel, refractories, principles of heat engineering processes] Toplivo, ogneupory, osnovy pechnoi teplotekhniki. 1963. 436 p. (MIRA 16:10)
(Metallurgical furnaces)

KUZ'MIN, M.D., teplotekhnik

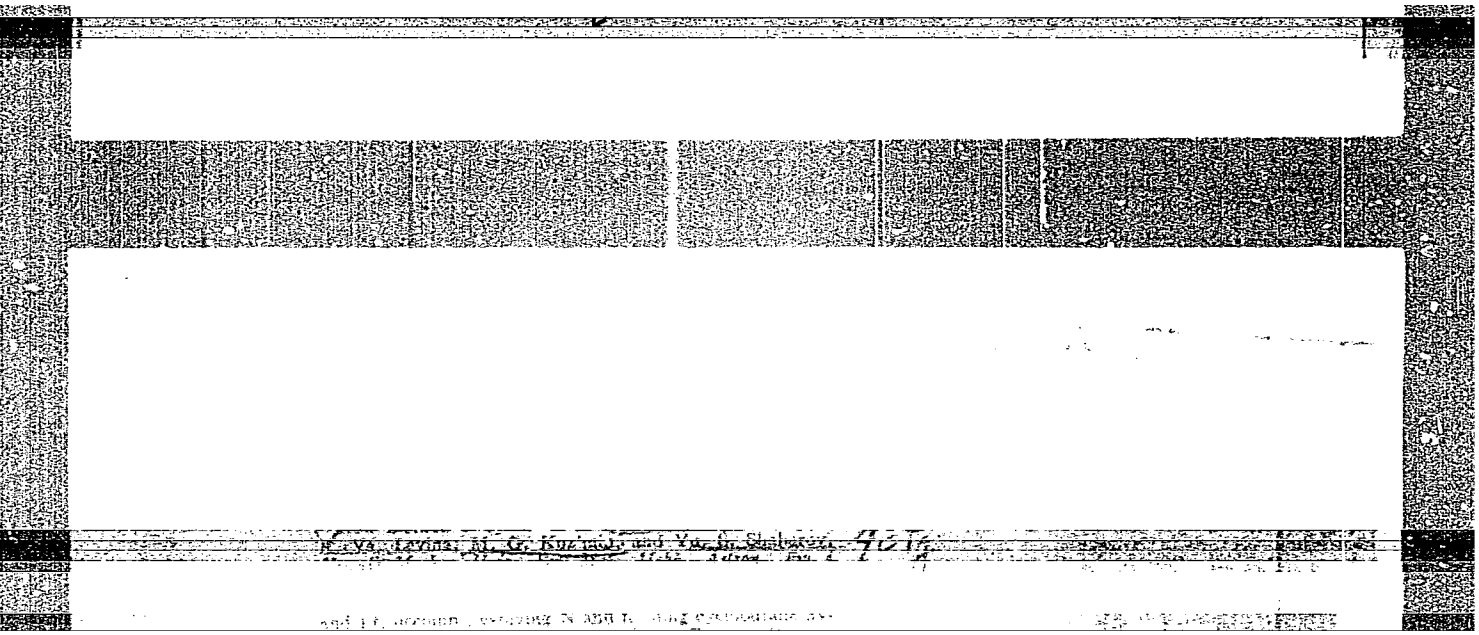
Utilizing waste heat in textile finishing mills. Tekst. prom. 19 no.5:67-69 My '59. (MIRA 12:10)

1.Otdelochnaya fabrika imeni rabochego F.Zinov'yeva.
(Waste heat) (Textile finishing)

KUZ'MIN, M. F., CAND MED SCI, "SANITARY-HYGIENIC EVALUATION OF THE IZHEVSK WATER RESERVOIR AS A SOURCE OF CENTRALIZED ECONOMIC-POTABLE WATER SUPPLY." SARATOV, 1960. (MIN OF HEALTH RSFSR, SARATOV STATE MED INST). (KL, 3-61, 232).



APPROVED FOR RELEASE: Monday, July 31, 2000 CIA-RDP86-00513R000928020



SKVARCHENKO, V.R.; LEVINA, R.Ya.; KUZ'MIN, M.G.

Synthesis of hydrocarbons. Part 60: Ethyl benzene homologues prepared from the adducts of alkadienes with methylethylmaleic anhydride. Zhur.ob.khim. 27 no.7:1784-1787 Jl '57. (MIRA 10:10)

1.Moskovskiy gosudarstvennyy universitet.
(Benzene) (Olefins) (Maleic anhydride)

KUZ'MIN, M. G. and GLAZUNOV, P. Ya.

"Obtaining Electron-impulse Radiation in a Straight Accelerator Tube"

Truly Transactions of the First Conference on Radioaction Chemistry, Moscow, Izd-vo AN SSSR, 1958. 330pp.
Conference -25-30 March 1957, Moscow

SOV/20-121-2-30/53

AUTHORS: Levina, R. Ya., Shabarov, Yu. S., Kuzmin, M. G., Vasil'yev, N. I., Treshchova, Ye. G.

TITLE: A New Method of the Production of Cyclobutane Hydrocarbons (Novyy metod sinteza tsiklobutanovykh uglevodorodov)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 121, Nr 2, pp. 303 - 306 (USSR)

ABSTRACT: Shortly the authors wrote about the possibility of a synthesis as mentioned in the title by means of the decomposition of tetra-hydro-pyridazine (Ref 1). In the present paper they investigate this reaction by means of some examples. The last mentioned initial substances are 6-membered analogs of pyrazolines. In the case of their heating in the presence of caustic potash and platinum they decompose under the separation of nitrogen and a formation of cyclobutane hydrocarbons. It showed that the biradicals III forming as intermediates not only do not cyclize but even cleave under the formation of ethylene hydrocarbons. The quantitative ratio between the aryl-cyclobutane formed and the corresponding styrene can be

Card 1/3

A New Method of the Production of Cyclobutane Hydrocarbons

classified according to the ratio between the quantity of nitrogen and that of ethylene separated in the decomposition of the initial monoaryl-tetra-hydro-pyridazine (IIa in IIb). Thus the authors were the first to succeed in extending the range of application of the classical Kizhner reaction which hitherto has been regarded only of use in the synthesis of cyclopropane hydrocarbons. This way the authors synthetized the hitherto not described p-tolyl cyclobutane and 1,2-diphenyl cyclobutane. In an earlier paper (Ref 3) the authors proved that in phenyl cyclopropane there exists a conjugation between the benzene nucleus and the 3-membered cycle. The comparison of the intensities of some of the most intensive frequencies (characteristic of the benzene ring) in the spectra of the combination dispersion of phenyl cyclobutane with the intensities of corresponding frequencies in the spectra of the propenyl benzene, phenyl cyclopropane on the one hand and alkyl benzenes on the other hand proved that the monosubstituted aromatic hydrocarbons are arranged in a series as follows: propenyl benzene > phenyl cyclopropane > phenyl cyclobutane > isopropyl benzene (Table 1). The same frequencies in the spectrum of p-tolyl cyclobutane