KIRILLOV, I.I., doktor tekhn. nauk, prof.; IVANOV, V.A., kand. tekhn. nauk

Static nonautonomous systems for joint control of turbines with steam takeoff. Izv. vys. ucheb. zav.; energ. 6 no.9:65-74 S '63. (MIRA 16:12)

1. Leningradskiy politekhnicheskiy institut imeni Kalinina. Predstavlena kafedroy turbinostroyeniya.

KIRILLOV, I.I., doktor tekhn.nauk prof.; YABLONIK, R.M., kand.tekhn.nauk, dotsent

Kinetics of a steam condensation process in a turbine stage. Energomashinostroenie 9 no.4:4-8 Ap '63. (MIRA 16:5)
(Steam turbines)

KIRILLOV, I.I., doktor tekhn. nauk, prof.; IVANOV, V.A., kand. tekhn. nauk

Problem in the control of a turbine with steam bleed. Energomashinostroenie 9 no.7:1-5 Jl '63. (MIRA 16:7)

(Steam turbines) (Automatic control)

KIRILLOV, I.I., doktor tekhn.nauk

Study of power losses in the low-pressure stages of large steam turbines. Teploenergetika 10 no.6:40-45 Je '63. (MIRA 16:7)

1. Leningradskiy politekhnicheskiy institut.
(Steam turbines)

KIRILLOV, I.I., doktor tekhn.nauk; PSHENICHNYY, V.D., kand.tekhn.nauk; SERMYAZHKO, B.I., inzh.

Investigating a full-scale, two-rim turbine stage with partial admission of steam. Sudostroenie 29 no.6:25-27 Je '63. (MIRA 16:7)

(Steam turbines, Marine--Models)

POVKH, I.L.; KIRILLOV, I.I., doktor tekhn. nauk, prof., retsenzent; BUSHMARIN, O.N., kand. fiz.-mat. nauk, red. Prinimal uchastiye KOLOVANDIN, B.A.

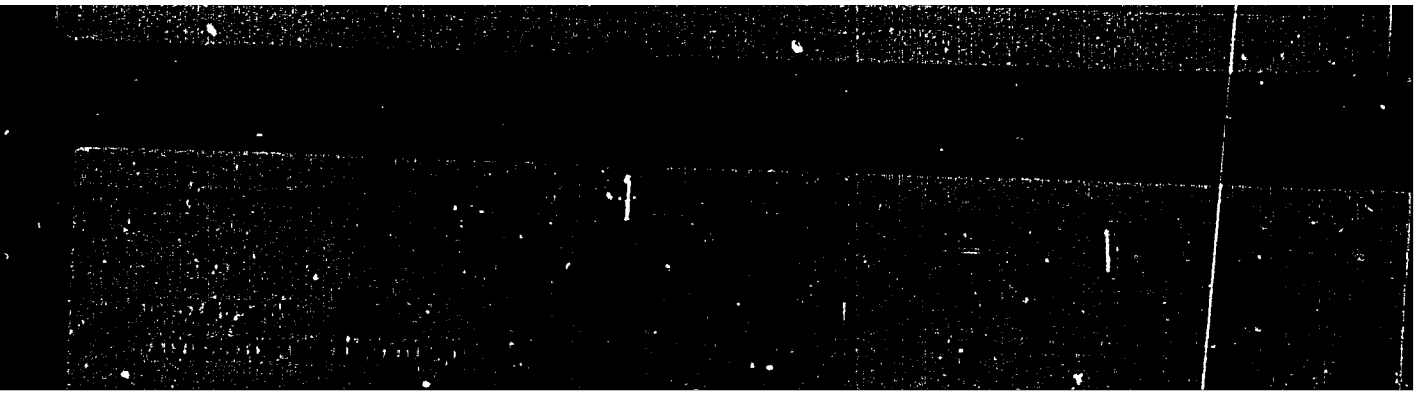
[Technical hydromechanics] Tekhnicheskaia gidromekhanika. Moskva, Mashinostroenie, 1964. 506 p. (MIRA 17:12)

1. Kafedra gidroaerodinamiki fiziko-mekhanicheskogo fakul'teta Leningradskogo politekhnicheskogo instituta im. M.I. Kalinina (for Bushmarin).

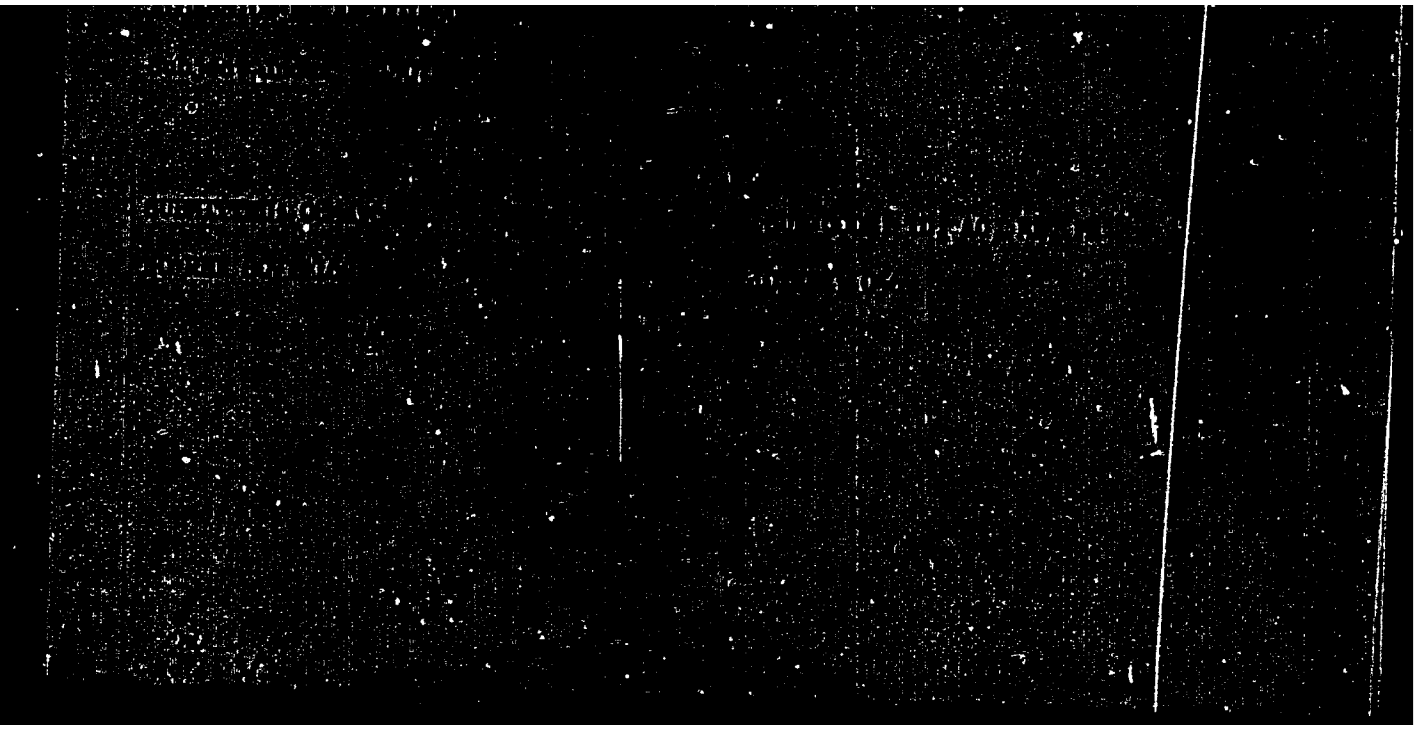
KIRILLOV, I.I., doktor tekhn. nauk, prof.; IVANOV, V.A., kand. tekhn. nauk

Effect of the operating mode on the regulation of turbines with steam takeoff. Izv. vys. ucheb. zav.; energ. 6 no.11:57-64 N'63. (MIRA 17:2)

1. Leningradskiy politekhnicheskiy institut imeni M.I. Kalinina.



APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000722620019-2"



ACCESSION NR: AP4029212 S/0114/64/000/004/0001/0005

AUTHOR: Kirillov, I. I. (Doctor of technical sciences, Professor); Kirillov, A. I. (Engineer)

TITLE: Characteristics of turbine stages in a wide range of u/C_0

SOURCE: Energomashinostroyeniye, no. 4, 1964, 1-5

TOPIC TAGS: turbine, steam turbine, gas turbine, off rating turbine characteristic, large attack angle turbine operation, steam turbine test, gas turbine test

ABSTRACT: Experimentally-determined characteristics of stage and blade-row models of various designs with wide angles of attack are reported; the tests were made in the Bryansk Institute of Transportation Machinery and the Leningrad Polytechnic Institute. Twisted and nontwisted blades with a 0.075-0.37 degree of reaction and blade heights of 42-130 mm were tested. Active, reactive, and special design, with a high torque at low u/C_0, models were used. The tests did not corroborate the widely accepted belief that the reactive stages always have a

Card 1/2

ACCESSION NR: AP4029212

flatter efficiency curve. With $\chi_e < 1$, the curves differed but little from one another; with $\chi_e > 1$, the reactive stages displayed a slight advantage; here, $\chi = (u/C_e) : (u/C_e)_{opt}$. A substantial improvement in the efficiency and torque characteristics, in the $\chi_e < 1$ zone, can be expected if stages with a low circulation factor and thick entrance edges of the blades be employed. The selection of rated conditions at $u/C_o > (u/C_e)_{opt}$ is important as it may substantially improve performance in the $\chi < 1$ zone. The Mach number has a great deal of influence upon the working fluid consumption in a stage and its torque characteristic. The above tests showed that with low Mach numbers, the gas consumption varied up to 20%, while with high Mach numbers, it remained practically constant. Orig. art. has: 5 figures, 1 formula, and one table.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 01May64 ENCL: 00

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

Card 2/2

TRUSHLYAKOV, V.P.; BEREZHINSKIY, A.I.; SPIVAK, M.Ya.; FINOGEYEV, I.A.; LIPETS, A.U.; AYZEN, B.G.; KOSTOVETSKIY, D.L.; BOLDYRI, K.I.; YAMPOL'SKIY, S.L.; FEDOTOV, D.K.; KIRILLOV, I.I.; OSHEROV, S.Ya.; [illegible]YSIN, V.A.; OGLOBLIN, G.A.; KANAYEV, A.A.; BULEGA, S.S.; BOGUKHVAN, V.A.; IOEL'SON, V.I.

Inventions. Energ. i elektrotekh. prom. no.3:48-49 Jl-S '64.
(MIRA 17:11)

KIR[illegible]EV, I.I.

Local suction device with a telescopic pipe. Mashinostroitel' no.7:25 Jl '64. (MIRA 17:8)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000722620019-2"

L 4563-66

ACC NR: AP5024597 UR/0114/65/000/009/0007/0009
621.165:62-546

AUTHOR: Kirillov, I.I. (Doctor of technical sciences, Professor); Pshenichnyy, V.D. (Candidate of technical sciences)

TITLE: An adjusting double rim stage with the second rim by-passed at higher loads

SOURCE: Energomashinostroyeniye, no. 9, 1965, 7-9

TOPIC TAGS: steam turbine, turbine stage, turbine design, turbine engine

ABSTRACT: In turbines operating at a variable rotational speed large variations in operating conditions are connected with large losses in energy. The losses in ordinary adjusting stages substantially affect the overall efficiency of the turbine irrespective of the partial recovery of heat in the subsequent stages. Whereas the addition of auxiliary stages which operate only at smaller loads improves the situation, it in general reduces the efficiency of turbine aggregates at higher loads. However, an increase in efficiency of the adjusting stage under load variations can be achieved (without any modifications of the subsequent structures) by having the adjusting stage operate as a single rim device at higher loads, while at small loads the by-pass is eliminated and the stage works as a double rim device. The present article describes the results of the theoretical and experimental investigation of double-rim control stages with the second rim by-passed at higher loads. The material refers to turbines in which the characteristic number of the adjusting stage varies within a wide range depending on the operating conditions. Graphs cover the internal efficiencies, relative heat

Card 1/2

L 4563-66

ACC NR: AP5024597

drop across the by-pass, the relative magnitudes of the kinetic energy, angle of flow of the absolute motion behind the working wheels, loss coefficient of the by-pass (as a function of the flow direction), and the peripheral efficiency. The article concludes with a discussion of the prospects for the application of this type of stage. Orig. art. has: 2 formulas and 5 figures.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: IE, PR

NO REF SOV: 004 OTHER: 000

Card 2/2

L 4006-66 EWT(d)/EWT(m)/EWP(w)/EWP(t)/EWP(v)/T-2/EWP(k)/EWA(c)/ETC(m) WW/EM
ACCESSION NR: AP5024421 UR/0286/65/000/015/0125/0125

AUTHORS: Kirillov, I. I.; Cogolev, I. G.; D'yakonov, R. I.

TITLE: A turbine with tangential feed of working medium. Class 46, No. 173545

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 15, 1965, 125

TOPIC TAGS: turbine, turbine design, turbine disk

ABSTRACT: This Author Certificate presents a turbine with tangential feed of working medium (see Fig. 1 on the Enclosure). The turbine contains a nozzle apparatus fixed to the casing, a disk with working vents tangentially distributed on its cylindrical surface, and a directing mechanism with rotary tubes for returning the working medium to the disk. To increase the operational economy, the tubes lie in a plane perpendicular to the rotation axis of the disk so as to provide a smooth flow of working medium between the inlet and the outlet of the turbine. Orig. art. has: 1 figure.

ASSOCIATION: none

SUBMITTED: 06Jan64 ENCL: 01 SUB CODE: PR

NO REF SOV: 000 OTHER: 000

Card 1/2 UDC: 621.438

L 4006-66
ACCESSION NR: AP5024421

ENCLOSURE: 01

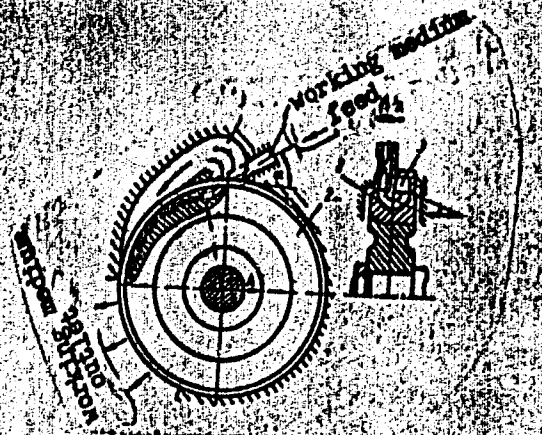


Fig. 1. 1- nozzle apparatus; 2- disk with working vents; 3- directing mechanism with rotary tubes

Card 2/2

KIRILLOV, I.I., doktor tekhn. nauk; IVANOV, V.A., kand. tekhn. nauk, dotsent

Reviews and bibliography. Energomashinostroenie 11 no.9:47-49 S '65. (MIRA 18:10)

KIRILLOV, I.I., dokter tekhn. nauk; NOSOVITSKIY, A.I., kand. tekhn. nauk; FADDEYEV, I.P., kand. tekhn. nauk

Effect of moisture on the efficiency of turbine stages. Teploenergetika 12 no.7:46-50 Jl '65. (MIRA 18:7)

1. Leningradskiy politekhnicheskiy institut.

L 47466-66 EWT(m)/EWP(w)/EWP(v)/T-2/EWP(k)/EWP(f) IJP(c) WW/RM

ACC NR: AP6029070 SOURCE CODE: UR/0413/66/000/014/0124/0124

INVENTOR: Kirillov, I. I.; Zysin, V. A.; Osherov, S. Ya.; Arsen'yev, L. V.

ORG: none

TITLE: High temperature steam-gas double-flow turbine. Class 46, No. 184070 [announced by the Leningrad Polytechnical Institute im. M. I. Kalinin (Leningradskiy politekhnicheskiy institut)]

SOURCE: Izobret prom obraz tov zn, no. 14, 1966, 124

TOPIC TAGS: steam gas turbine, double flow turbine, blade cooling, cooled blade, gas turbine, turbine, turbine blade

ABSTRACT: The proposed high temperature steam-gas double-flow turbine consists of a housing containing a centripetal rotor wheel equipped with hollow, cooled blades with separate flow of channels for the wet (or superheated) steam and the gas. In order to ensure a maximum temperature gradient in the high temperature range, and to simplify the design, the blades are made of two parts, forming inlet slots for

Card 1/2

SUB CODE: 21/0/ SUBM DATE: 15Jul65

Card 2/2 mjs

ACC NR: AP7009592

SOURCE CODE: UR/0096/67/000/001/0044/0047

AUTHOR: Kirillov, I. I. (Doctor of technical sciences); Zysin, V. A. (Doctor of technical sciences); Osherov, S. Ya. (Candidate of technical sciences); Arsen'yev, L. V. (Candidate of technical sciences); Petrov, Yu. Ye. (Engineer)

ORG: none

TITLE: Selection of optimal parameters for a high temperature steam-gas installation using a plan developed by the central boiler-turbine scientific research institute and the Leningrad Polytechnical Institutute

SOURCE: Teplo energetika, no. 1, 1967, 46-47

TOPIC TAGS: thermoelectric power plant, steam turbine, gas turbine, heating engineering, cooling, engine cooling system

SUB CODE: 21,10,13

ABSTRACT: The specific features of a method of calculating the parameters of a steam-gas installation are presented and some results of calculation are outlined. In its simplest variant, the steam-gas installation described provides for attainment of an efficiency of approximately 50% with a gas temperature of 1200°C. The optimal degree of gas pressure increase is 9, which considerably facilitates the problems of cooling the high temperature gas turbine and designing turbine machinery. The efficiency of the dual installation depends very little on the steam parameters. High efficiency values can be produced at a steam temperature of 540°C. With increasing initial gas temperature, the thermal effectiveness of the installation increases. In its simplest variant, the efficiency of the installation reaches 55-56% at a

Card 1/2

UDC: 621.433+621.165.091.24

0930 11.30

ACC NR: AP7009592

temperature of 1500°C. The introduction of intermediate heating of the gas provides a further increase in efficiency. Orig. art. has: 7 figures, 2 formulas and 2 tables. [JPRS: 40,102]

Card 2/2

KIRILLOV, I.K., glavnyy redaktor; BELOUSOV, V.V., redaktor; TYAPKIN, B.G., tekhnicheskiy redaktor.

[Unified production norms in planning and research works paid at piece rates] Edinye normy vyrabotki na proektnye i izyskatel'skie raboty, oplachivaemye sdel'no. Pt.4. [Sanitary engineering, heating and ventilation installations in residential, public, and industrial buildings] Vnutrennie sanitarno-tekhnicheskie ustroistva zdanii i sooruzhenii. Moskva, Gos. izd-vo lit-ry po stroitel'stvu i arkhitekture. 1953. 42 p. [Microfilm] (MIRA 8:2)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva.
(Plumbing) (Ventilation) (Wages)

Kirillov, I. M.

AUTHOR: Kirillov, I.M.

3-12-16/27

TITLE: The Book Exchange of the University Library (Knigoobmen universitetskoy biblioteki)

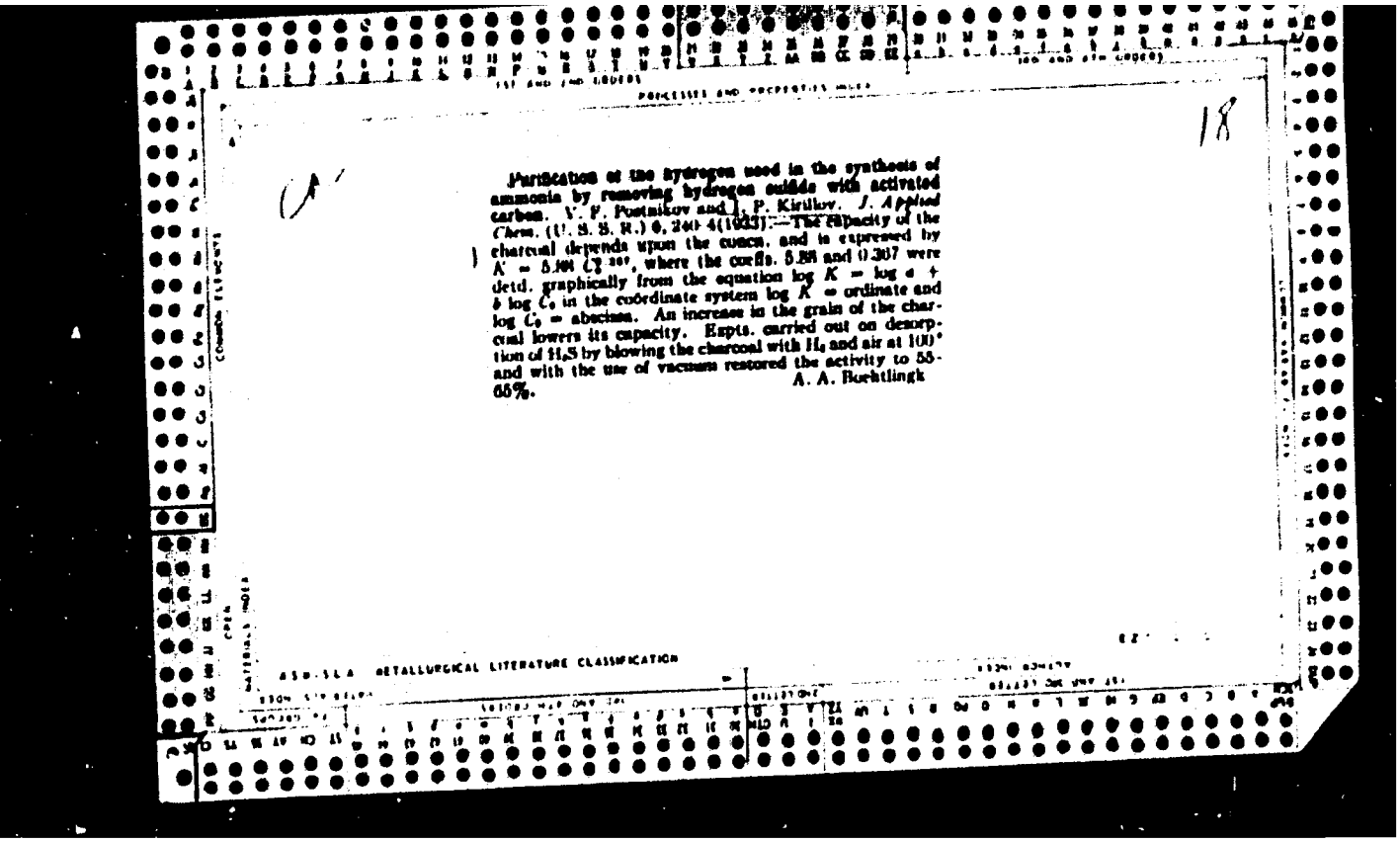
PERIODICAL: Vestnik Vysshey Shkoly, 1957, # 12, pp 74 - 76 (USSR)

ABSTRACT: The scientific library of the L'vov University organized in 1955 an international book exchange. During the first 6 months the exchange with 140 institutions was organized; 860 books were dispatched and 1,500 books and periodicals received. In 1956, 287 institutions in 39 countries were contacted, 3,264 books were dispatched and 3,760 received. During the first 6 months in 1957 2,025 books were dispatched and 2,130 books received. The Library issues every three months information on new publications of foreign literature, which are dispatched to the chairs, faculties and leading scientists of the university. The author states finally that the international book exchange has proved satisfactory with regard to the propagation of Soviet works and obtaining better information on foreign scientific experiences.

ASSOCIATION: The L'vov State University imeni I. Franko (L'vovskiy gosudarstvennyy universitet imeni I. Franko)

AVAILABLE: Library of Congress

Card 1/1



Purification of the hydrogen used in the synthesis of ammonia by removing hydrogen sulfide with activated carbon. V. F. Postnikov and I. P. Kirillov. *J. Applied Chem.* (U. S. S. R.) 6, 240-4(1933).—The capacity of the charcoal depends upon the cases, and is expressed by $A = 5.88\ C_0^{0.307}$, where the coeffs. 5.88 and 0.307 were detd. graphically from the equation $\log K = \log a + b \log C_0$ in the coördinate system $\log K$ = ordinate and $\log C_0$ = abscissa. An increase in the grain of the charcoal lowers its capacity. Expts. carried out on desorption of H_2S by blowing the charcoal with H_2 and air at 100° and with the use of vacuum restored the activity to 55-65%.

A. A. Buchtlingk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

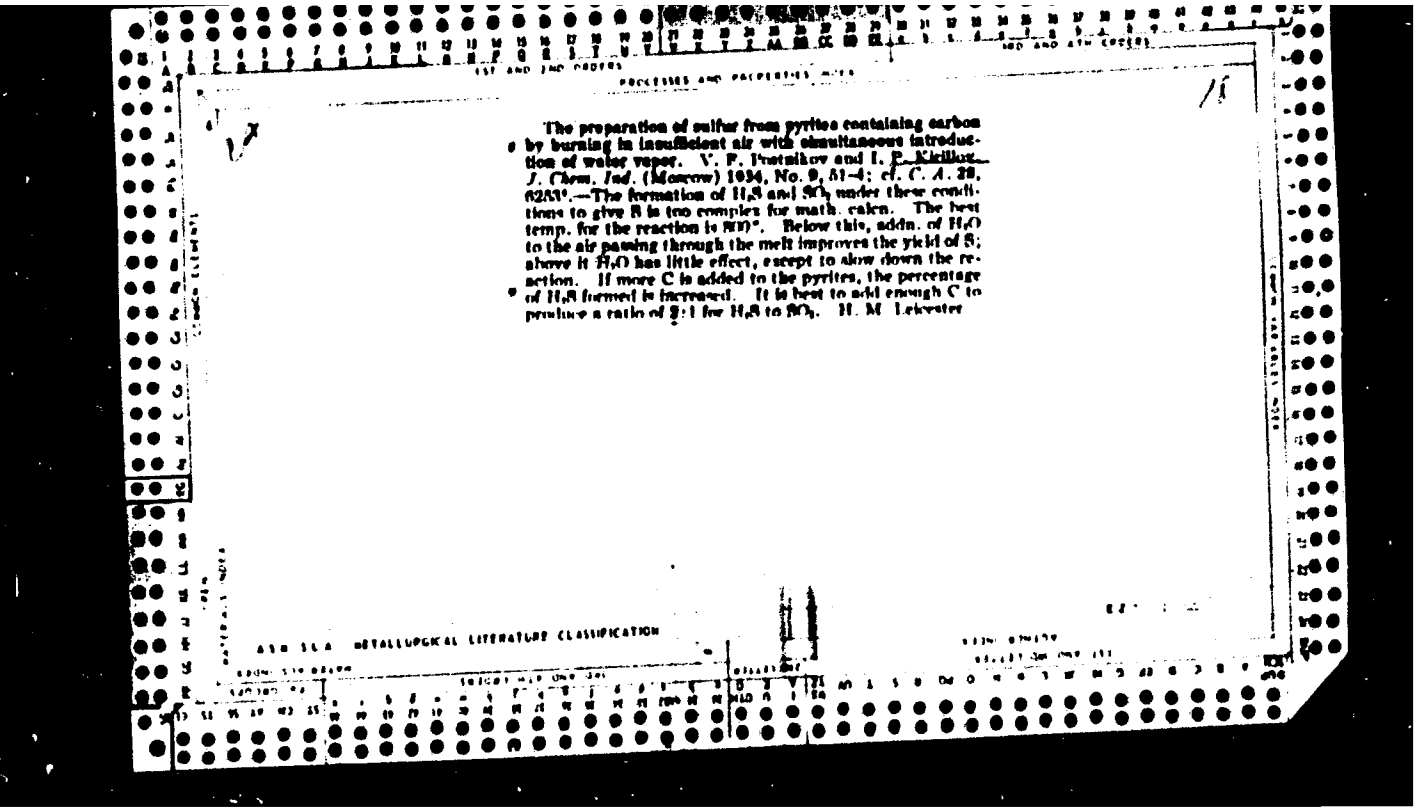
Co

18

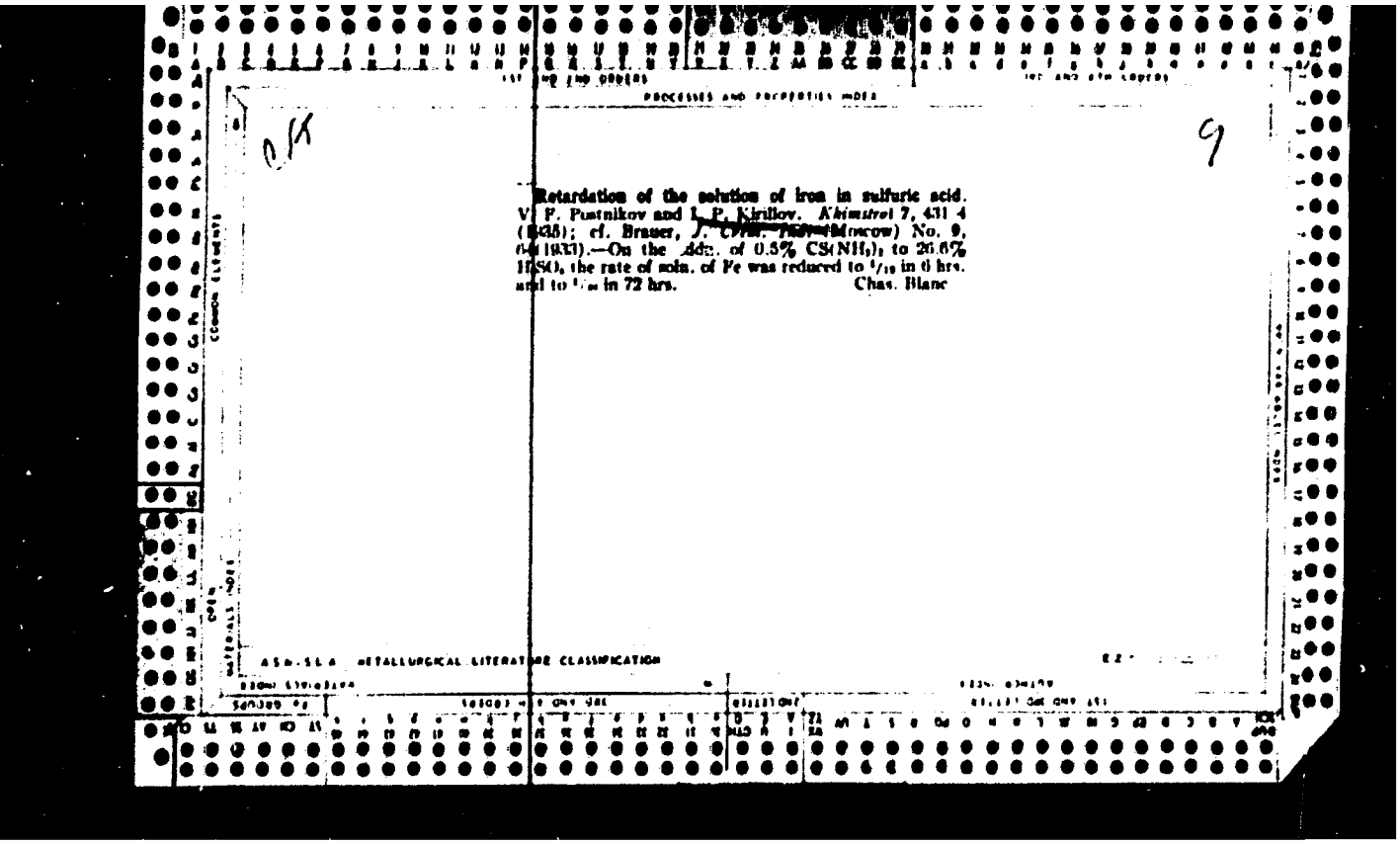
The oxidation of gases high in sulfur dioxide and oxygen in the presence of a vanadium catalyst. V. P. Postnikov, I. P. Kirillov and T. I. Kunin. *J. Applied Chem.* (U. S. S. R.) 7, 869-74(1934).—The catalyst used in the expts. was prepd. as follows: 20 g. $BaCl_2$ (or $CaCl_2$) was mixed with 40 g. SiO_2 (water glass) and one l. of H_2O. To the $BaSiO_3.12SiO_2$ (or $CaSiO_3.20SiO_2$) obtained was added 15% K_4VO_4. The finished mass was pressed into tablets. Gas mixts. contg. various ratios of SO_2 and O_2 were passed at various temps. and velocities through this catalyst. The oxidation of a mixt. contg. high ratios of SO_2 and O_2 proceeds in the same manner as mixts. contg. 7-8% SO_2, 10% O_2 and 72% N_2, *i. e.*, a mixt. used in com. processes. The most effective temp. for high concns. of gases is 440-500°. An increase in the velocity of the gas for all concns. necessitates a slight increase in temp. Gases high in SO_2 require a higher temp. In a mixt. of 30% SO_2 and 61% O_2 the oxidation per min. and per g. of catalyst is 5 times as rapid as in a gas contg. 7-8% SO_2, 10% O_2 and 72% N_2.

A. A. Boehtlingk

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



The preparation of sulfur from pyrites containing carbon by burning in insufficient air with simultaneous introduction of water vapor. V. P. Pratnikov and I. P. Kirillov. *J. Chem. Ind.* (Moscow) 1934, No. 9, 51–4; cf. *C. A.* 28, 6253⁹.—The formation of H_2S and SO_2 under these conditions to give S is too complex for math. calcn. The best temp. for the reaction is 800°. Below this, addn. of H_2O to the air passing through the melt improves the yield of S; above it H_2O has little effect, except to slow down the reaction. If more C is added to the pyrites, the percentage of H_2S formed is increased. It is best to add enough C to produce a ratio of 2:1 for H_2S to SO_2. H. M. Leicester



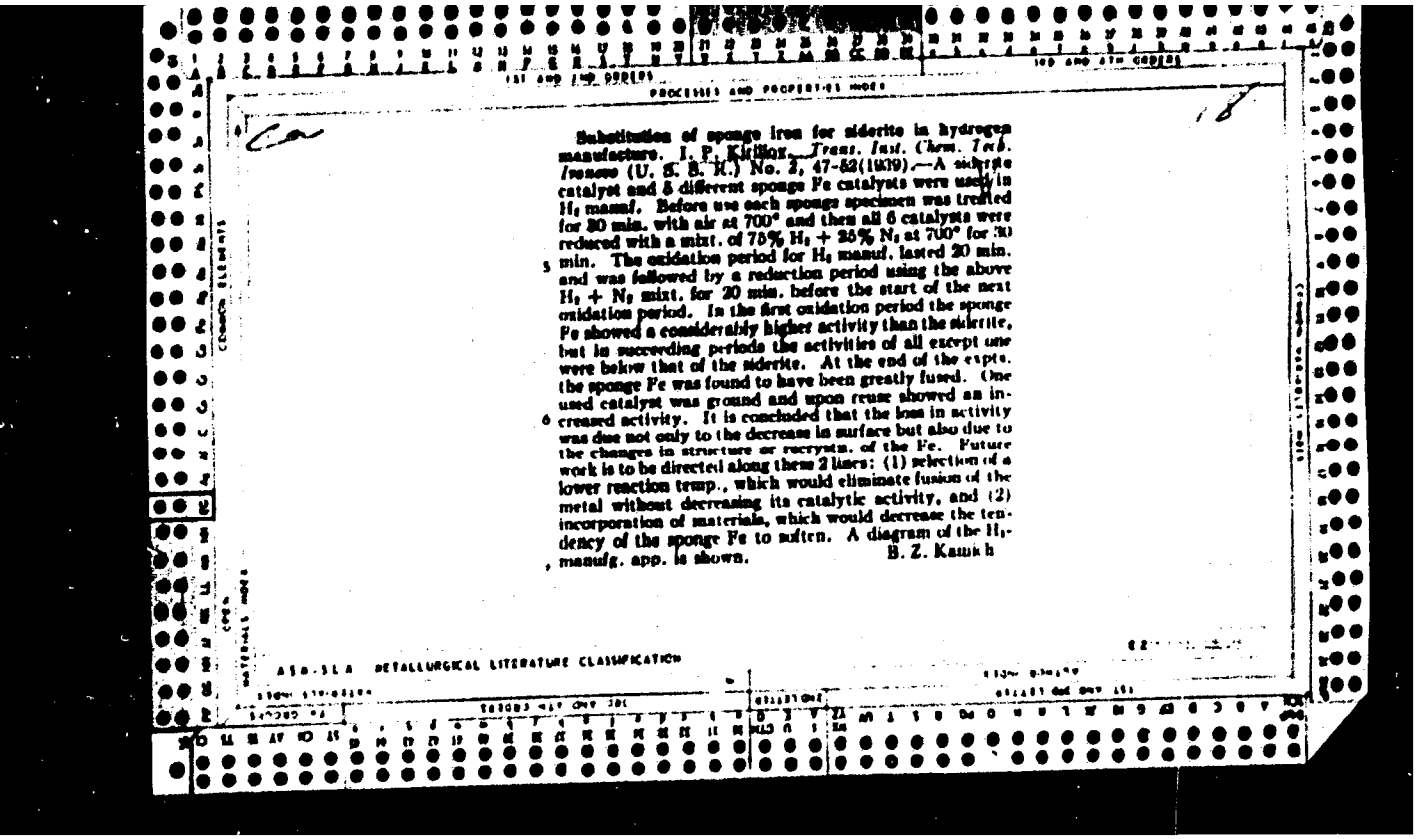
Retardation of the solution of iron in sulfuric acid. V. P. Pustnikov and I. P. Kirillov. *Khimstroi* 7, 431-4 (1935); cf. Brauer, *J. Chim. Phys. (Moscow)* No. 9, 64 (1933).—On the addn. of 0.5% $CS(NH_2)_2$ to 20.6% H_2SO_4, the rate of soln. of Fe was reduced to $^1/_{10}$ in 6 hrs. and to $^1/_{20}$ in 72 hrs. Chas. Blanc

BC

A-1

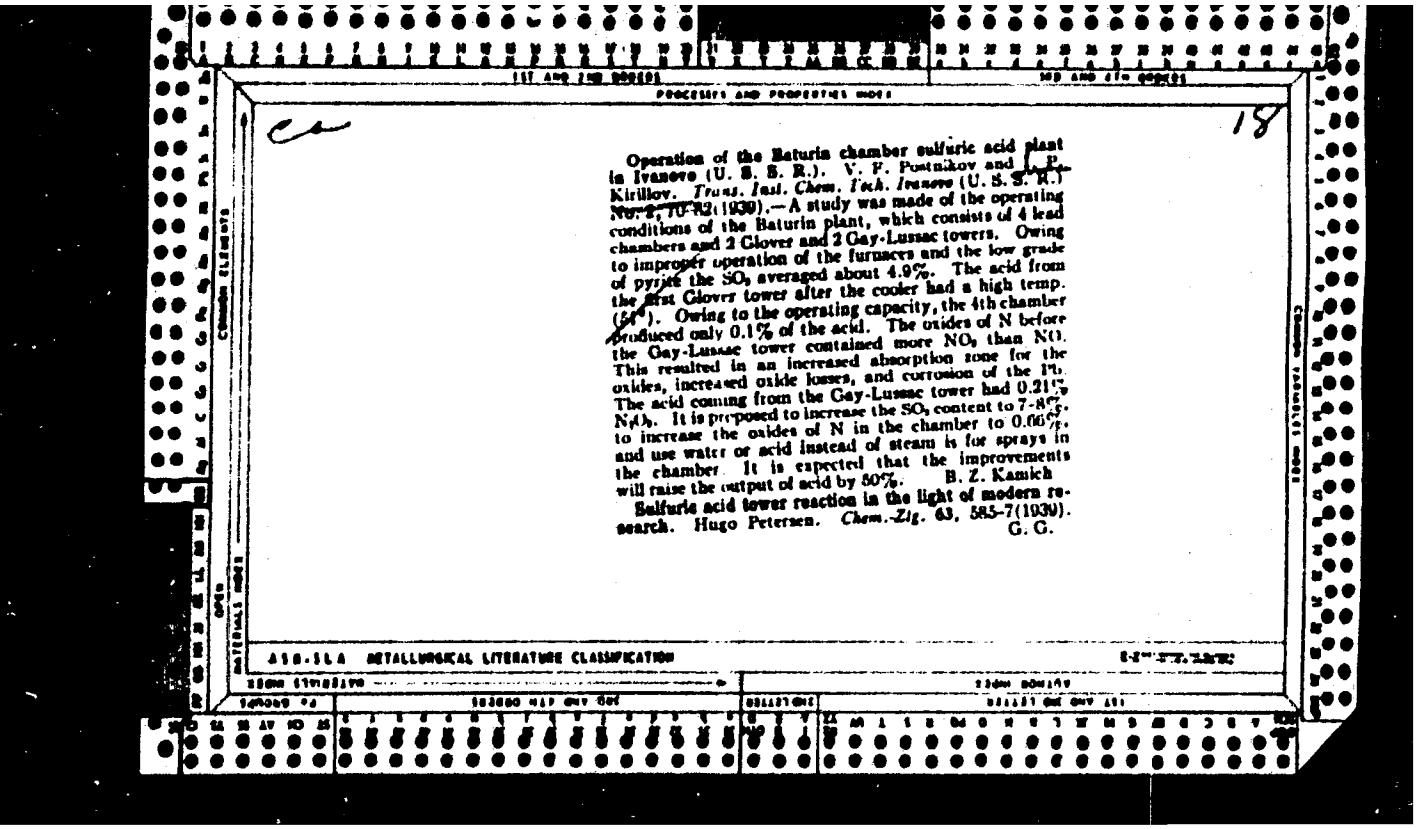
Viscosity of aqueous solutions of various salts. V. F. Postnikov and I. P. Kirillov (J. Appl. Chem. Russ., 1936, 9, 1926—1929).—Vals. of η and *d* for 0·5—10*M*-$NaNO_3$, -$(NH_4)_2CO_3$, and -NH_4HSO_4 at 0—100° are recorded. R. T.

METALLURGICAL LITERATURE CLASSIFICATION



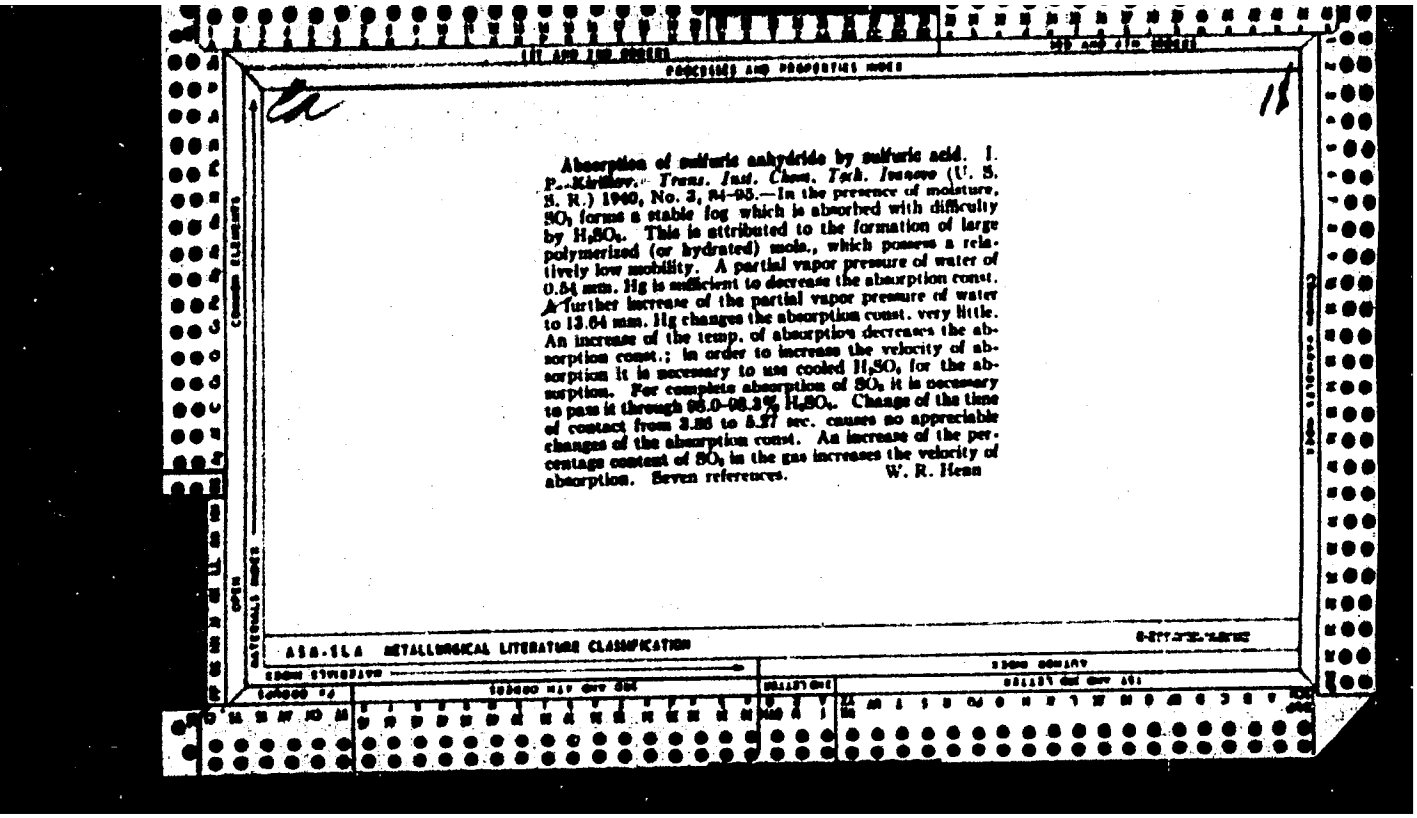
Substitution of sponge iron for siderite in hydrogen manufacture. I. P. Kirillov. *Trans. Inst. Chem. Tech. Ivanovo* (U. S. S. R.) No. 2, 47-52(1939).—A siderite catalyst and 5 different sponge Fe catalysts were used in H_2 manuf. Before use each sponge specimen was treated for 30 min. with air at 700° and then all 6 catalysts were reduced with a mixt. of 75% H_2 + 25% N_2 at 700° for 30 min. The oxidation period for H_2 manuf. lasted 20 min. and was followed by a reduction period using the above H_2 + N_2 mixt. for 20 min. before the start of the next oxidation period. In the first oxidation period the sponge Fe showed a considerably higher activity than the siderite, but in succeeding periods the activities of all except one were below that of the siderite. At the end of the expts. the sponge Fe was found to have been greatly fused. One used catalyst was ground and upon reuse showed an increased activity. It is concluded that the loss in activity was due not only to the decrease in surface but also due to the changes in structure or recrystn. of the Fe. Future work is to be directed along these 2 lines: (1) selection of a lower reaction temp., which would eliminate fusion of the metal without decreasing its catalytic activity, and (2) incorporation of materials, which would decrease the tendency of the sponge Fe to soften. A diagram of the H_2-manufg. app. is shown.

B. Z. Kamish



Operation of the Baturin chamber sulfuric acid plant in Ivanovo (U. S. S. R.). V. F. Postnikov and P. Kirillov. *Trans. Inst. Chem. Tech. Ivanovo* (U. S. S. R.) No. 2, 70-82 (1930).—A study was made of the operating conditions of the Baturin plant, which consists of 4 lead chambers and 2 Glover and 2 Gay-Lussac towers. Owing to improper operation of the furnaces and the low grade of pyrite the SO_2 averaged about 4.9%. The acid from the first Glover tower after the cooler had a high temp. (64°). Owing to the operating capacity, the 4th chamber produced only 0.1% of the acid. The oxides of N before the Gay-Lussac tower contained more NO_2 than NO. This resulted in an increased absorption zone for the oxides, increased oxide losses, and corrosion of the Pb. The acid coming from the Gay-Lussac tower had 0.21% N_2O_3. It is proposed to increase the SO_2 content to 7-8%, to increase the oxides of N in the chamber to 0.06%, and use water or acid instead of steam is for sprays in the chamber. It is expected that the improvements will raise the output of acid by 50%. B. Z. Kamich

Sulfuric acid tower reaction in the light of modern research. Hugo Petersen. *Chem.-Ztg.* 63, 585-7(1939). G. G.



Absorption of sulfuric anhydride by sulfuric acid. I. P. Kirillov. *Trans. Inst. Chem. Tech. Ivanovo* (U. S. S. R.) 1960, No. 3, 84–95.—In the presence of moisture, SO_3 forms a stable fog which is absorbed with difficulty by H_2SO_4. This is attributed to the formation of large polymerised (or hydrated) mols., which possess a relatively low mobility. A partial vapor pressure of water of 0.84 mm. Hg is sufficient to decrease the absorption const. A further increase of the partial vapor pressure of water to 13.64 mm. Hg changes the absorption const. very little. An increase of the temp. of absorption decreases the absorption const.; in order to increase the velocity of absorption it is necessary to use cooled H_2SO_4 for the absorption. For complete absorption of SO_3 it is necessary to pass it through 98.0–98.3% H_2SO_4. Change of the time of contact from 3.86 to 5.27 sec. causes no appreciable changes of the absorption const. An increase of the percentage content of SO_3 in the gas increases the velocity of absorption. Seven references. W. R. Henn

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

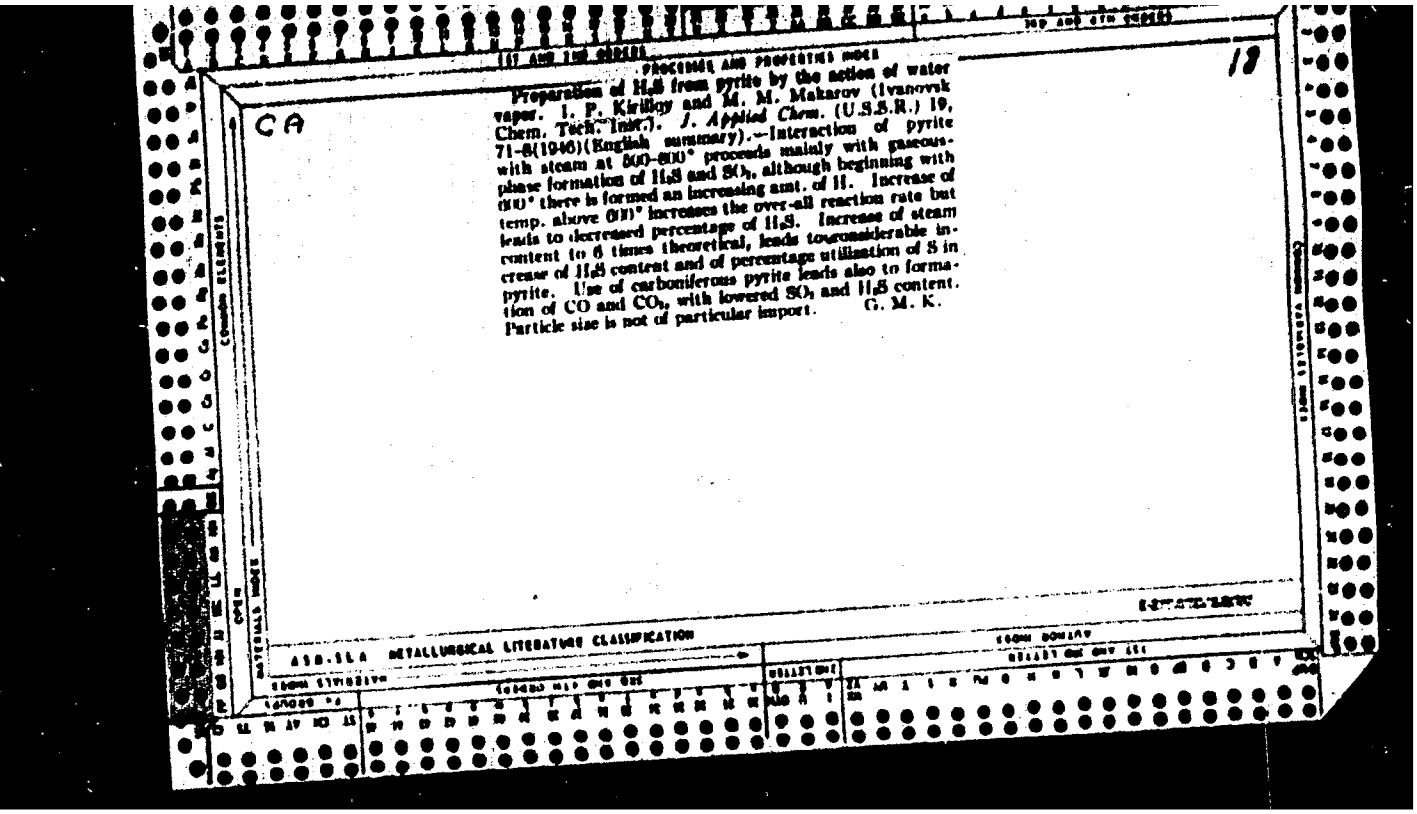
PROCESSES AND PROPERTIES INDEX

CA

Viscosity of nitrose. T. I. Kunin and I. P. Kirilk. *J. Applied Chem.* (U.S.S.R.) 17, 315-18(1944)(English summary).—The effects of temp. and compn. on the viscosity of nitroses was detd. in the range of 08 86% H_2SO_4 and 0.5-4.0% N_2O_3. Variation of viscosity with temp. is approx. the same as for H_2SO_4. Increase of N_2O_3 increases the viscosity of nitrose. The results are given in graphical form.

G. M. Kosolapoff

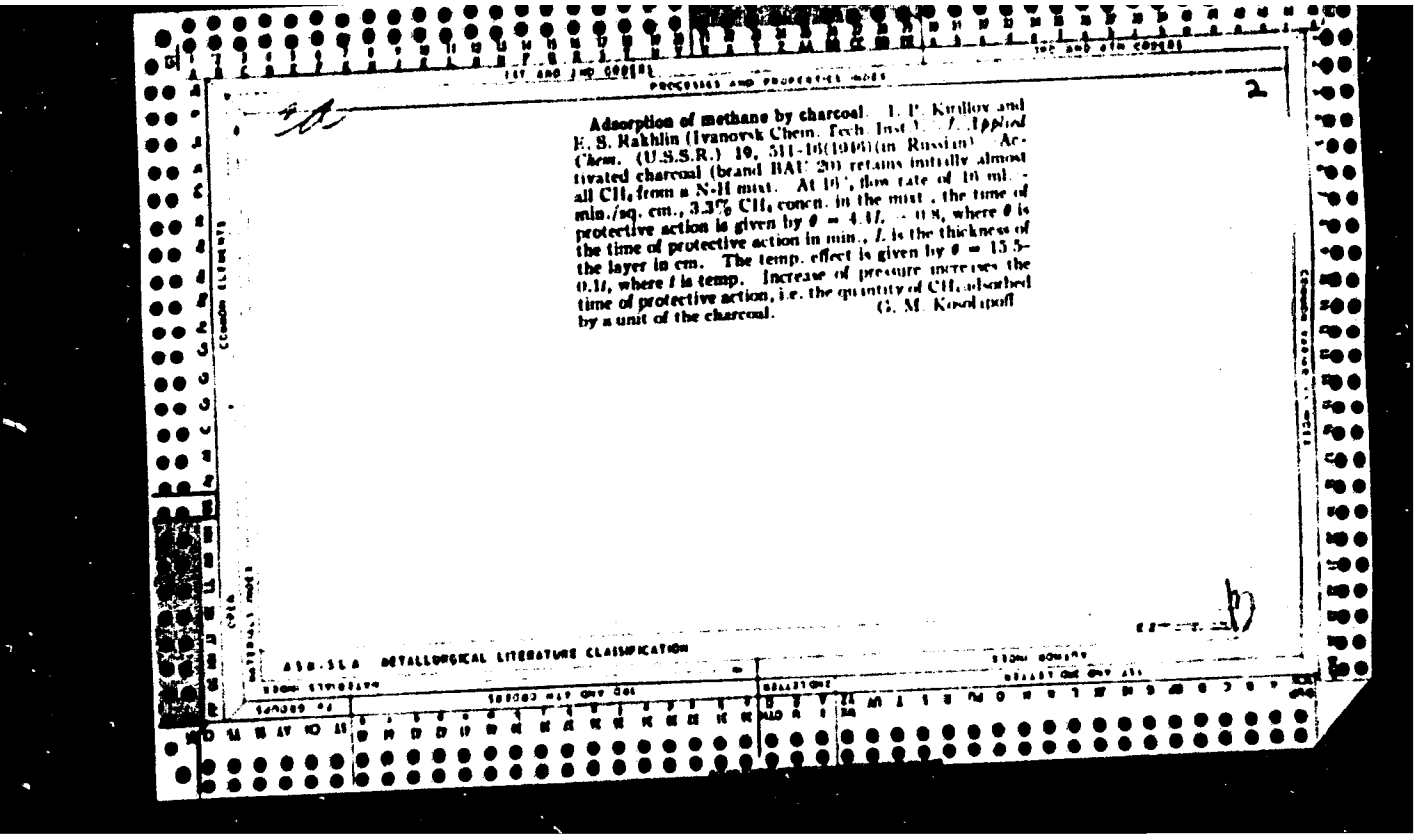
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

18

Preparation of H_2S from pyrite by the action of water vapor. I. P. Kirillov and M. M. Makarov (Ivanovsk Chem. Tech. Inst.). *J. Applied Chem.* (U.S.S.R.) 19, 71-8(1946)(English summary).—Interaction of pyrite with steam at 500-600° proceeds mainly with gaseous-phase formation of H_2S and SO_2, although beginning with temp. above 600° there is formed an increasing amt. of H. Increase of temp. above 600° increases the over-all reaction rate but leads to decreased percentage of H_2S. Increase of steam content to 6 times theoretical, leads to considerable increase of H_2S content and of percentage utilization of S in pyrite. Use of carboniferous pyrite leads also to formation of CO and CO_2, with lowered SO_2 and H_2S content. Particle size is not of particular import. G. M. K.

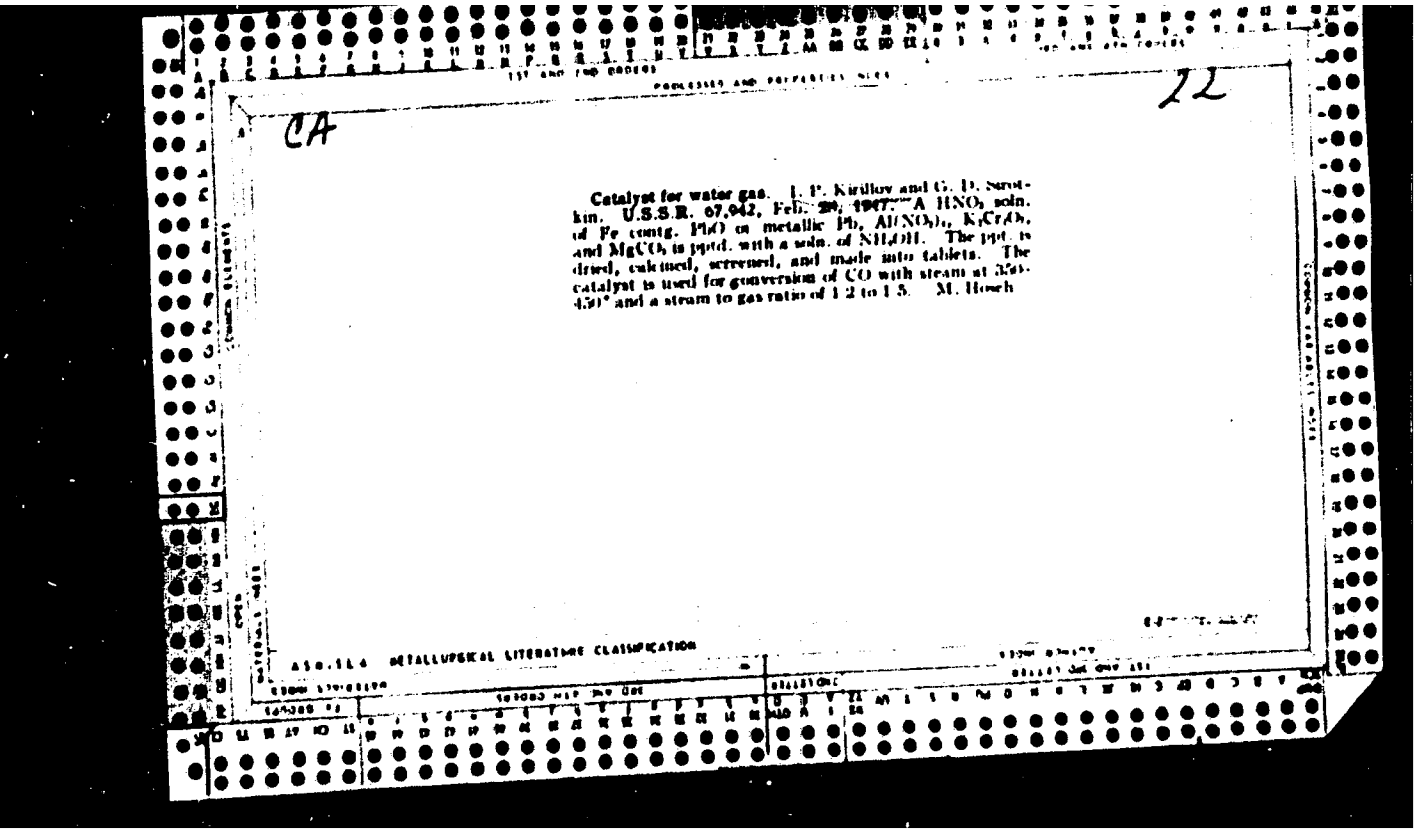


PROCESSES AND PROPERTIES INDEX

2

Adsorption of methane by charcoal. I. P. Kuzilov and E. S. Rakhlin (Ivanovsk Chem. Tech. Inst.). *Zhur. Prikladnoi Khim.* (U.S.S.R.) 19, 511-16(1946)(in Russian). Activated charcoal (brand BAU 20) retains initially almost all CH_4 from a N-H mixt. At 10°, flow rate of 10 ml./min./sq. cm., 3.3% CH_4 concn. in the mixt., the time of protective action is given by $\theta = 4.17l - 0.8$, where θ is the time of protective action in min., l is the thickness of the layer in cm. The temp. effect is given by $\theta = 15.5 - 0.1t$, where t is temp. Increase of pressure increases the time of protective action, i.e. the quantity of CH_4 absorbed by a unit of the charcoal. G. M. Kosolapoff

A58-51A METALLURGICAL LITERATURE CLASSIFICATION



CA

12

Catalyst for water gas. I. P. Kirillov and G. D. Serotkin. U.S.S.R. 67,942, Feb. 28, 1947. A HNO_3 soln. of Fe contg. PbO or metallic Pb, $Al(NO_3)_3$, K_2CrO_4, and $MgCO_3$ is ppd. with a soln. of NH_4OH. The ppt. is dried, calcined, screened, and made into tablets. The catalyst is used for conversion of CO with steam at 350-450° and a steam to gas ratio of 1.2 to 1.5. M. Hoch

METALLURGICAL LITERATURE CLASSIFICATION

KIRILLOV, I.P.

USSR/ Physical Chemistry - Kinetics. Combustion. Explosives. Topochemistry. Catalysis B-9

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11287

Author : Kirillov I.P.
Inst : Ivanovsk Chemico-Technological Institute
Title : Study of Kinetics of Catalytic Conversion of Carbon Monoxide over Iron Oxide Catalysts

Orig Pub : Tr. Ivanovsk. khim.-tekhnol. in-ta, 1956, No 5, 46-58

Abstract : A study was made of the reaction $CO + H_2O \rightleftharpoons CO_2 + H_2$ over technical low-temperature activated ferric oxide, in a circulation system at 300-380°, space velocities 600-6000 hour^{-1}, with different contents of CO, CO_2 and H_2 in the initial gas, and water vapor/gas ratios of 1.5 - 2.5 in the initial mixture. An equation of reaction velocity has been derived

$$dP_{CO}/dt = k_1 P_{H_2O} (P_{CO}/P_{CO_2})^{0.5} - k_2 P_{H_2} (P_{CO_2}/P_{CO})^{0.5} \ldots (1)$$

wherein k_1 and k_2 -- velocity constants of direct and reversed reaction, respectively,

1/2

USSR/ Physical Chemistry - Kinetics. Combustion. Explosives. Topochemistry. Catalysis B-9

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11287

P_{CO}, P_{CO_2}, P_{H_2}, P_{H_2O} -- partial pressures of components. Activation energy is 17.5 kcal/mole at 300-380° and increases to 37.6 kcal/mole on lowering of the temperature from 300 to 280°. Experimental results do not confirm kinetic equation proposed by N.V. Kul'kova and M.I. Temkin (Zh. fiz. khimii, 1949, 23, 895) for temperatures > 450°. The author believes that the reaction takes place in purely kinetic region below 300° and with some effects of internal diffusion at 300-380°.

2/2

Kirillov, I.P.

USSR/ Laboratory Equipment. Apparatuses, Their Theory, Construction and Application. I

Abs Jour: Referat. Zhur.-Khimiya, No. 8, 1957, 27334.

Author : I.P. Kirillov, F.A. Petrachkov.

Inst : Ivanovsk Institute of Chemistry and Technology.

Title : Instrument for the Determination of Magnetic Susceptibility of Powdered Substances.

Orig Pub: Tr. Ivanovsk. khim.-tekhnol. in-ta, k956, vyp. 5, 69 - 71.

Abstract: A laboratory instrument for the determination of magnetic susceptibility of powdered substances by the method of weighing in a magnetic field is described. The accuracy of the instrument varies from ± 0.15% to ± 1.5% in case of metal oxides.

Card 1/1

KIRILLOV, I. P.

USSR/Physical Chemistry - Thermodynamics. Thermochemistry. Equilibrium. Physico-Chemical Analysis. Phase Transitions B-8

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 3734

Author : Kirillov I.P., Krylov O.V., Alekseyev A.M.
Inst : Ivanovo Chemico-Technological Institute
Title : Study of Physicochemical Properties of System PbO Fe_2O_3.

Orig Pub : Tr. Ivanovsk. khim.-tekhnol. in-ta, 1956, No 5, 61-68

Abstract : Study of $PbO \cdot Fe_2O_3$ system produced by co-precipitation of the hydroxides from a mixture of nitrates of Fe and Pb, with NH_3. After a preliminary drying (90-120°) the system was calcined within 200-800° range at intervals of 100°. In the course thereof were investigated the magnetic susceptibility, adsorption power and solubility (relative rate of dissolution of Fe_2O_3 in 1.0 N HCl and PbO in 0.25 N CH_3COOH. It was found that the system under study passes through a series of intermediate states

Card 1/2 - 83 -

SOV/81-59-5-16829

Translation from: Referativnyy zhurnal, Khimiya, 1959 , Nr 5, p 455 (USSR)

AUTHORS: Kirillov, I.P., Budanov, V.V

TITLE: An Investigation of the Process of Carbon Monoxide Conversion Combined With the Decomposition of Organic Sulfur Compounds in Water Gas

PERIODICAL: Tr. Ivanovsk. khim.-tekhnol. in-ta, 1958, Nr 7, pp 32 - 40

ABSTRACT: A method is suggested for realizing a partial conversion of CO in the generator shop simultaneously with the decomposition of organic S-compounds of water gas (containing H_2S in the exhaust gas); for this purpose cheap, mechanically stable catalysts were chosen from the waste products of production and natural raw material. It is confirmed that the mechanism of catalyst poisoning by organic S in performing high-temperature conversion is identical to the mechanism of H_2S poisoning. The poisoning is reversible and consists in the formation of a crystal lattice of FeS.

Card 1/1

G. Bonvech

SOV/81-59-5-16833

Translation from: Referativnyy zhurnal, Khimiya, 1959, Nr 5, p 455 (USSR)

AUTHORS: Kirillov, I.P., Budanov, V.V.

TITLE: The Development of Conditions for the Process of Partial Conversion of Carbon Monoxide in a Dust-Containing Gas

PERIODICAL: Tr. Ivanovsk. khim.-tekhnol. in-ta, 1958, Nr 7, pp 41 - 47

ABSTRACT: The passage of a dust-containing gas flow, through a catalyst layer, was investigated in a laboratory installation, which is applicable to conditions of partial conversion of CO in a generator shop. The characteristic features of the hydraulic conditions for a "fluidized bed" of the catalyst are established, whereby no accumulation of dust occurs. It was shown that all the samples of the contact selected have a low mechanical destructibility when "fluidized" under the given conditions.

G. Bonvech

Card 1/1

SOV/156-59-1-51/54

5(2)

AUTHORS: Karavayev, M. M., Kirillov, I. P.

TITLE: On the Synthesis of Nitric Acid in the Gas Phase (K sintezu azotnoy kisloty v gazovoy faze)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1959, Nr 1, pp 197 - 201 (USSR)

ABSTRACT: The possibilities of the thermodynamic production of nitric acid in the gaseous phase are investigated. Experiments were carried out on the basis nitrogen oxides, steam, and atmospheric oxygen under different conditions. The equilibrium curves for the various possible reaction processes are plotted. All of them show falling tendencies with rising temperatures. The following reactions were carried out practically:

$4\ NO_2\ (= 2N_2O_4) + 2H_2O + O_2 = 4HNO_3$

$3\ NO_2\ (= 1\frac{1}{2}\ N_2O_4) + H_2O = 2HNO_3 + NO$

$4\ NO + 2H_2O + 3\ O_2 = 4HNO_3$

The data obtained do not yet give a complete survey of the course of the reaction. Probably nitreous acid is also formed;

Card 1/ 2

this acid is decomposed into NO. The oxidation of $NO \xrightarrow{\text{oxygen}} NO_2$ occurs slowly, which fact has an inhibitory effect on the overall process. Although the theoretical equilibrium concentrations were not attained, a condensate with approximately 60% nitric acid could be obtained. A technological utilization would require the use of catalysts and of higher pressures. There are 4 figures and 9 references, 1 of which is Soviet.

ASSOCIATION: Kafedra tekhnologii neorganicheskikh veshchestv Ivanovskogo khimiko-tekhnologicheskogo instituta (Chair of Technology of Inorganic Substances of the Ivanovo Institute of Chemical Technology)

SUBMITTED: October 6, 1958

5 (1, 2)

AUTHORS: Karavayev, M. M., Kirillov, I. P. SOV/153-2-2-17/31

TITLE: Thermal Decomposition of Some Nitrates (Termicheskoye razlozheniye nekotorykh nitratov)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1959, Vol 2, Nr 2, pp 231-237 (USSR)

ABSTRACT: Data from publications concerning the properties of metal nitrates are often contradictory, especially as far as the temperature of the decomposition is concerned. Industrial catalysts however, are produced (as oxides) from metal nitrates and used as such. The present article is dedicated to the thermographic investigation of the process of thermal decomposition of nitrates of Al, Cr, Fe, Mn, Co and Ni. An analogous investigation was carried out with samples applied on silica gel. The heat curves were registered by means of N. S. Kurnakov's pyrometer. The results achieved are shown in thermographs 1-14. Nr 1-6 show the processes for nitrates of Al, Cr, Fe, Mn, Co and Ni. Nr 7-12 the same for the decomposition of these nitrates in an air current, applied on silica gel. In the numbers 7-12 a third curve appears, illustrating the HNO_3 concentration in the products of

Card 1/4

decomposition according to the temperatures. As can be seen in the thermograph, the nitrates of trivalent metals (Al, Cr, and Fe) give 2 endothermal effects each. Aluminum nitrate still has a slight endothermal effect at a temperature of 308-336°, the reason for which is still unexplained. The temperature intervals of the effects occurring with the decomposition of chromium nitrate, are higher than in reference 7 and 8. The authors found that the second effect (124-160° and 86-137° on silica gel) is not only the result of boiling the fusion, but also of a simultaneous decomposition of the nitrate. The thermograph of pure silica gel (Fig 3) only has an endothermal effect (85-100°) in connection with the removal of the adsorbed moisture. In the air current (Fig 4) silica gel only has one effect - at a temperature of 54°, a rapid heating of 76-100° followed by a cooling down to 82°. The first endothermal effects during the decomposition of the nitrates of bivalent metals (Mn, Co, and Ni) within 22-51° are caused by melting the nitrate in the crystallizing water. With further heating, a number of endothermal effects develops, different for each nitrate. 2. The effect in the case of manganese nitrate consists of 2 effects: a. 117-161° - boiling with the

separation of some water. b. cooling at a temperature of 186° down to 168°. Cobalt nitrate has three endothermal effects: a. 32-51° (melting), b. 118-151° boiling with the partial removal of the crystallizing water; c. 191-245° intensive decomposition of the nitrate. An effect within 235-240° could not be deciphered. Cobalt nitrate only shows two effects when applied on silica gel: a. at 76-138° and b. at 210-235°. The effect at 110-131° is connected with a process occurring on silica gel. A third effect (290-337°) is the decomposition of the basic salt or of the remaining part of the nitrate. Nickel nitrate has three endothermal effects on silica gel, in all cases: a. at 45-132°, b. at 147-156° and c. at 272-290°. The authors carried out experiments with the HNO_3 synthesis in a bulb serving for measuring the HNO_3 concentration. HNO_3 is a primary decomposition product of the nitrate, or a product of the reciprocal action of N_2O_5 and H_2O, but not a product of the

synthesis with NO_2 and H_2O. The temperatures of the developing HNO_3 vapors in the gas phase were determined. One may regard these temperatures as being equal to the original temperatures of the nitrate decomposition. There are 4 figures, 1 table, and 8 references, 5 of which are Soviet.

ASSOCIATION: Ivanovskiy khimiko-tekhnologicheskiy institut; Kafedra tekhnologii neorganicheskikh veshchestv (Ivanovo Institute of Chemical Technology, Chair of Technology of Inorganic Substances)

SUBMITTED: January 10, 1958

SOV/153-2-4-16/32

5(1,2)

AUTHORS: Kirillov, I. P., Karavayev, M. M.

TITLE: Investigation of the Catalytic Synthesis of Nitric Acid in the Gaseous Phase

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1959, Vol 2, Nr 4, pp 553 - 557 (USSR)

ABSTRACT: Either increased pressure or catalysts are necessary to obtain concentrated acid in the process of nitric-acid synthesis in the vapor phase in a homogeneous medium (Ref 1). It was assumed that the oxidation of nitrogen oxide formed in this synthesis is the slowest stage of the entire reaction (1). The synthesis mentioned was not referred to in publications except for references 2, 6-9. Moreover, it was interesting to examine whether iron, aluminum, and chromium oxides can serve as catalysts of the process mentioned since the nitrates of these metals start disintegrating already at temperatures below 100°, and separate vapors of nitric acid into the gaseous phase. In this case, the formation of nitrates on the oxide surface might be considered intermediate compounds. The experimental plant and the method had been previously described (Ref 1) by the

Card 1/3

authors. The experimental temperatures were: 102, 127, and 152° at which 2 gas compositions were tested: (volume%) 1) NO_2 - 50; H_2O - 12.5; O_2 - 37.5 and 2) NO_2 - 53.3; H_2O - 6.7, O_2 - 40.0. Hydrated aluminum-, iron-, and chromium-nitrates were tested as catalysts. They were either applied to silica gel, or used in the form of tablets produced according to various methods. The table (p 554) shows the experimental results. Hence it appears that aluminum oxide is most favorable in accelerating the formation process of the nitric acid mentioned. The main difficulty in choosing catalysts among metal oxides is their interaction with the gaseous medium. Thus, the phase composition of the catalysts (salt formation) is changed. 40 different catalyst samples were tested in addition to the nitrates mentioned in the table. Those metal oxides, the nitrates of which disintegrate at temperatures above that of the process, cannot be used for the purpose mentioned. The catalysts found show a catalytic activity also in relation to the oxidation reaction of nitrogen oxide in the presence of water vapor. 80% nitric acid was prepared by the synthesis in the gaseous phase at atmospheric pressure (by means of further condensation). The

Investigation of the Catalytic Synthesis of Nitric Acid SOV/153-2-4-16/32
in the Gaseous Phase

residual gases present after the acid condensation can be worked in a closed cycle. There are 1 table and 9 references, 6 of which are Soviet.

ASSOCIATION: Ivanovskiy khimiko-tekhnologicheskiy institut, Kafedra tekhnologii neorganicheskikh veshchestv (Ivanovo Institute of Chemical Technology, Chair of Technology of Inorganic Substances)

SUBMITTED: March 25, 1958

Card 3/3

S/153/60/003/004/005/006
B004/B058

AUTHORS: Shirokov, Yu. G., Kirillov, I. P.

TITLE: A Semiautomatic Apparatus for Thermographic Studies

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1960, Vol. 3, No. 4, pp. 740 - 742

TEXT: The authors describe a circuit used by them for regulating the temperature in the metal block of a thermographic apparatus (Fig. 1). The linear temperature rise is warranted by an electronic ЭПВ-01 (EPV-01) potentiometer, an РНО 250-5 (RNO 250-5) autotransformer, and a 2АСМ-400 (2 ASM-400) reversible motor. The control apparatus of the potentiometer switches the motor into forward or reverse motion; the motor displaces a contact of the transformer, thus altering the voltage in a compensating winding of the heater. Fig. 2 shows the (nonlinear) rise of temperature without regulation, and the linear rise by means of the regulating circuit described. The thermographic curve was recorded by an ЭПП-09 (EPP-09) potentiometer. The cooling of the block can also be linearly controlled. There are 2 figures and 5 references: 4 Soviet and 1 German.

Card 1/2

A Semiautomatic Apparatus for Thermographic Studies

S/153/60/003/004/005/006
B004/B058

ASSOCIATION: Ivanovskiy khimiko-tekhnologicheskiy institut Kafedra tekhnologii neorganicheskikh veshchestv (Ivanovo Institute of Chemical Technology, Chair of Technology of Inorganic Substances)

SUBMITTED: October 2, 1958

Card 2/2

20444

S/153/61/004/004/008/013
E194/E135

15.2660

AUTHORS: Shirokov, Yu.G., and Kirillov, I.P.

TITLE: Certain magnetic properties of nickel oxide (NiO)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Khimiya i khimicheskaya tekhnologiya, vol.4, no.4, 1961, 599-603

TEXT: Nickel compounds are widely used as catalysts and as there is a general relationship between the catalytic and magnetic properties of solids it was decided to measure the magnetic properties of nickel oxide (NiO) produced by thermal decomposition of the salt $2NiCO_3.3Ni(OH)_2.4H_2O$ and of $Ni(NO_3)_2.6H_2O$. The following magnetic properties were measured or calculated: the specific magnetic susceptibility χ, the magnetisation at saturation σ_s, the paramagnetic susceptibility χ_o, as a function of the temperature at which the oxide was produced. NiO is not a stoichiometric oxide but contains excess oxygen at temperatures below about 700 °C. There is no general agreement about the composition of the nickel oxide produced by the method adopted. However, the stoichiometric oxide is an antiferromagnetic compound. According to a number of investigators non-stoichiometric NiO has

Card 1/4

Certain magnetic properties of nickel...

ferromagnetic properties. The salts were decomposed in an open crucible furnace at constant temperatures for periods of 5-7 hours. All the specimens were vacuum dried before testing. For testing, the samples were contained in ampules 15 mm long and 1.5 mm in diameter held vertically in a frame and suspended horizontally on threads of capron . The attractive force of the magnet was balanced by a compensating magnet and solenoid. The field intensity was determined using Mohr's salt. Graphs of H(dH/dS) as function of S were plotted for five different fields and the best position of the ampule was determined from the maxima on the graphs. The field intensity was then directly measured. The maximum error was about 1% in the determination of H(dH/dS), ±3.5% in that of the field H, and in determination of χ, ±3.72%. The tests were made at 25 °C. Measurements were made, at field strengths ranging from 6800 to 10 000 oe, of the specific susceptibility of each specimen. All the specimens of NiO were found to have weakly ferromagnetic properties. The specific magnetic susceptibility of NiO was found to change quite sharply as a function of the temperature at which the salt was formed. Thus, a sample of NiO produced from nickel carbonate at 300 °C has a

Card 2/4

2 4444

Certain magnetic properties of nickel... S/153/61/004/004/008/013
E194/E135

specific susceptibility of about 36 x 10^{-6}, whilst the susceptibility of that produced at 800 °C and above is only about a third of this value. NiO produced from nickel nitrate had substantially lower susceptibility when produced at temperatures below 800 °C but at higher temperatures the susceptibility of the NiO produced from the two salts was about the same. The test results indicate that, as the temperature at which it is formed is raised, the NiO loses more and more oxygen and tends to the stoichiometric composition. Results are also given for the paramagnetic susceptibility of NiO produced from basic carbonate and nitrate of nickel and here at temperatures of formation below 500 °C the basic carbonate gives substantially higher paramagnetic susceptibility of NiO than does the nitrate but, at temperatures above 600 °C, they are approximately the same. Curves of spontaneous magnetisation as function of temperature of production of NiO display a maximum for both basic carbonate and nitrate of nickel at a temperature near 400 °C though the value for salt produced from the nitrate is only about 70 as against 120 for that from carbonate. The anomalous shapes of the curves of spontaneous magnetisation and paramagnetic susceptibility point to changes in

Card 3/4

Certain magnetic properties of nickel... S/153/61/004/004/008/013
E194/E135

the crystal lattice at certain temperature regions. The presence of maxima on the curves has previously been attributed to formation of a metallic phase but it is considered here that this is unlikely because there is no maximum on the curve of specific susceptibility and, therefore, the anomalous shape of the curves must be due to changes in the crystal lattice in which the number and type of defects alter with variation of the amount of oxygen in the lattice. There are 4 figures, 2 tables and 7 references: 2 Soviet-bloc and 5 non-Soviet-bloc. The 3 English language references read:

Ref 4: J.Shimomura, J.Tsubokawa, M.Kojima. J.Phys.Soc.Japan, Vol.9, 521 (1954).

Ref.5: J.Shimonura, M.Kojima, S.Saito. J.Phys.Soc.Japan, Vol.11, 1136 (1956).

Ref.7: P.Jacobson, P.Selwood. J.Amer.Chem.Soc., Vol.76, 2641 (1954).

ASSOCIATION: Kafedra tekhnologii neorganicheskikh veshchestv, Ivanovskiy khimiko-tekhnologicheskiy institut (Department of Technology of Inorganic Substances, Ivanovo Chemico-technical Institute)

Card 4/4

SUBMITTED: October 27, 1959

ATROSHCHENKO, Vasiliy Ivanovich; ALEKSEYEV, Arkadiy Mefodiyevich; ZASORIN, Anatoliy Petrovich; KIRILLOV, Ivan Petrovich; KONVISAR, Viktor Ivanovich; YASTREBENETSKIY, Anisim Rudol'fovich; VVEDENSKIY, P.I., prof., retsenzent; VARLAMOV, M.L., prof., retsenzent; BAZILYANSKAYA, I.L., red.; TROFIMENKO, A.S., tekhn. red.

[Technology of combined nitrogen] Tekhnologiia sviazannogo azota [By] V.I.Atroshchenko i dr. Khar'kov, Izd-vo Khar'kovskogo univ. 1962. 322 p. (MIRA 17:1)

KIRILLOV, I.P.; SHIROKOV, Yu.G.

Ferromagnetic properties and structure of nickel catalysts for methane conversion. Izv.vys.ucheb.zav.;khim.i khim.tekh. 6 no.4:617-624 '63. (MIRA 17:2)

1. Ivanovskiy khimiko-tekhnologicheskiy institut. Kafedra tekhnologii neorganicheskikh veshchestv.

SHIROKOV, Yu.G.; KIRILLOV, I.P.

Magnetic properties of deposited and mixed nickel oxide-alumina catalysts. Izv.vys.ucheb.zav.; khim. i khim. tekh. 6 no.6: 945-951 '63. (MIRA 17:4)

1. Ivanovskiy khimiko-tekhnologicheskiy institut, kafedra tekhnologii neorganicheskikh veshchestv.

KIRILLOV, I.P.; OPOLOVNIKOVA, N.P.; ALEKSEYEV, A.M.

Study of the formation of zinc-chromium catalysts for the synthesis of alcohols. Part 1. Izv.vys.ucheb.zav.; khim. i khim. tekh. 7 no. 1:77-83 '64. (MIRA 17:5)

1. Ivanovskiy khimiko-tekhnologicheskiy institut, kafedra tekhnologii neorganicheskikh veshchestv.

SHIROKOV, Yu.G.; KIRILLOV, I.P.; KORCHKIN, V.M.

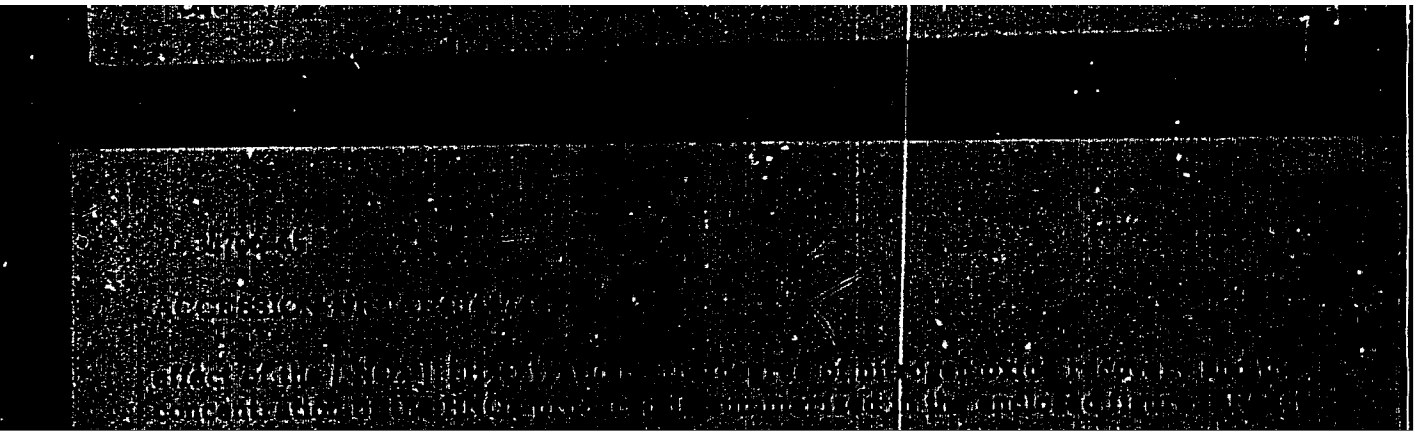
Effect of the conditions of reduction, passivation, and sintering on the ferromagnetic properties of a deposited nickel catalyst. Izv.vys.ucheb.zav.;khim. i khim. tekh. 7 no. 1:41-45 '64. (MIRA 17:5)

1. Ivanovskiy khimiko-tekhnologicheskiy institut, kafedra tekhnologii neorganicheskikh veshchestv.

KIRILLOV, I.P.; ALEKSEYEV, A.M.; SARBAYEV, A.N.

Processes of oxidation of a catalyst for carbon monoxide conversion during its regeneration. Izv.vys.ucheb.zav.; khim. i khim.tekh. 7 no.2:246-251 '64. (MIRA 18:4)

1. Ivanovskiy khimiko-tekhnologicheskiy institut, kafedra tekhnologii neorganicheskikh veshchestv.



APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000722620019-2"

KIRILLOV, I.P.; SARBAYEV, A.N.

Vapor-phase oxidation and hydration of acetylene on a molybdenum oxide catalyst. Izv. vys. ucheb. zav.; khim. i khim. tekh. 7 no.4: 613-618 '64. (MIRA 17:12)

1. Kafedra tekhnologii neorganicheskikh veshchestv Ivanovskogo khimiko-tekhnologicheskogo instituta.

[redacted]

[redacted]

[redacted]

SARBAYEV, A.N.; KIRILLOV, I.P.

Catalytic conversion of acetylene on molybdenum catalysts in the vapor phase. Izv.vys.ucheb.zav.; khim.i khim.tekh. 7 no.6:948-952 '64. (MIRA 18:5)

1. Ivanovskiy khimiko-tekhnologicheskiy institut, kafedra tekhnologii neorganicheskikh veshchestv.

KIRILLOV, I.P.; KALININ, A.A.

Thermal stability of phosphate catalysts for vapor-phase hydration of acetylene. Izv. vys. ucheb. zav., khim i khim. tekh. 7 no.5:801-805 '64 (MIRA 18:1)

1. Kafedra tekhnologii neorganicheskikh veshchestv Ivanovskogo khimiko tekhnologicheskogo instituta.

KALININ, A.A.; KABANOVA, G.B.; KIRILLOV, I.P.

Relation between the catalytic activity of phosphate catalysts and the conditions of their preparation. Izv. vys. ucheb. zav.; khim. i khim. tekh. 8 no.1:88-93 '65. (MIRA 18:6)

1. Ivanovskiy khimiko-tekhnologicheskiy institut, kafedra tekhnologii neorganicheskikh veshchestv.

PETROV, Yu.I.; KIRILLOV, I.P.

Equilibrium in the reactions of nitrogen oxides with water vapor. Izv.vys.ucheb.zav.; khim. i khim.tekh. 8 no.2:265-274 '65. (MIRA 18:8)

1. Ivanovskiy khimiko-tekhnologicheskiy institut, kafedra tekhnologii neorganicheskikh veshchestv.

L 00935-66 EWT(m)/EPF(c)/EWP(t)/EWP(b) IJP(c) JD

ACCESSION NR: AP5019729 UR/0153/65/008/003/0435/0439
661.56

17
15B

AUTHOR: Karavayev, M. M.; Kirillov, I. P.; Skvortsov, G. A.

TITLE: Desorption of nitrogen oxides from nitric acid solutions by intermediate concentration

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 8, no. 3, 1965, 435-439

TOPIC TAGS: nitrogen oxide, nitric acid bleaching, nitrogen oxide desorption

ABSTRACT: Preliminary laboratory experiments were carried out on the desorption of nitrogen oxides from nitric acid solutions (bleaching) at atmospheric pressure; the process was also studied on a semi-industrial scale at pressure up to 5.5 atm. An artificial mixture of 70% HNO_3 + N_2O_4 was prepared at zero degrees, then heated. It was found that the desorption process is determined by the temperature, by the quantity of gas supplied, and by the area of contact between the phases. The rate of evolution of nitrogen oxides increases with rising temperature and is relatively high during the initial stage over the entire temperature range. The best conditions for carrying out the process in a packed column at 5.5 abs. atm. are: temperature, 45-55C; reflux

Card 1/2

L 00935-66

ACCESSION NR: AP5019729

2

density, 40-50 m^3/m^2 of column cross section; air flow, 120-200 m^3/t. By increasing the amount of air supplied, the temperature of the process can be lowered to 35-40C. The reflux densities in the bleaching columns of operating plants can be increased by a factor of approximately two by carrying out the process under the conditions studied. The reaction volumes can be correspondingly reduced. Orig. art. has: 1 figure and 3 tables.

ASSOCIATION: Kafedra tekhnologii neorganicheskikh veshchestv, Severodonetskiy filial instituta azotnoy promyshlennosti (Department of Technology of Inorganic Compounds, North Donets Branch, Institute of the Nitrogen Industry); Ivanovskiy khimiko-tekhnologicheskiy institut (Ivanovo Chemical Engineering Institute)

SUBMITTED: 06Apr64 ENCL: 00 SUB CODE: IC

NO REF SOV: 003 OTHER: 001

dg

Card 2/2

OPOLOVNIKOVA, N.P.; ALEKSEYEV, A.M.; KIRILLOV, I.P.

Studying the forming and reduction of zinc-chromium catalysts for alcohol synthesis. Report No.2. Izv.vys.ucheb.zav.; khim.i khim.tekh. 8 no.4:633-638 '65. (MIRA 18:11)

1. Ivanovskiy khimiko-tekhnologicheskiy institut, kafedra tekhnologii neorganicheskikh veshchestv.

L 26263-66 EWT(m) JD

ACC NR: AP6014264 SOURCE CODE: UR/0153/66/009/001/0080/0084

38
B

AUTHOR: Skvortsov, G. A.; Kirillov, I. P.; Karavayev, M. M.

ORG: Severodonets Branch of GIAP (Severodonetskiy filial GIAP); Department of the Technology of Inorganic Substances of the Ivanovo Chemical Technology Institute (Kafedra tekhnologii neorganicheskikh veshchestv, Ivanovskiy khimiko-tekhnologicheskiy institut)

TITLE: Absorption of nitrogen oxides by 65—70% nitric acid

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 9, no. 1, 1966, 80-84

TOPIC TAGS: nitric acid, oxidizer, liquid propellant, propulsion

ABSTRACT: This work deals with the feasibility of using 65—70% nitric acid as a solvent for nitrogen oxides. The absorption parameters were determined. It was found that 99% of nitrogen oxides from catalytic-oxidation products of ammonia could be absorbed, leaving a residual concentration of nitrogen oxides of 0.1% by volume. Nitrogen oxides were absorbed by 65—70% nitric acid, accompained by oxidation of NO to NO_2 to the extent of 85—90%. The N_2O_3 present in the gas stream dissolves without reacting with nitric acid. The degree of nitrogen-oxide absorption with respect to the number of theoretical plates was determined, and the efficiency of the theoretical plates was calculated. Orig. art. has: 5 figures and 1 table. [VS]

SUB CODE: 21/ SUBM DATE: 06Apr65/ ORIG REF: 003/ OTH REF: 001/ ATD PRESS: 4243

Card 1/1

L 33383-66 EWT(m)/EWP(t)/ETI IJP(c) JD
ACC NR: AP6021971 SOURCE CODE: UR/0153/66/009/002/0273/0275

AUTHOR: Kirillov, I. P.; Samsonov, O. A.

ORG: Ivanovo Chemical Technology Institute, Department of Technology of Inorganic Substances and Chemical Fertilizers (Ivanovskiy khimiko-tekhnologicheskiy institut, Kafedra tekhnologii neorganicheskikh veshchestv i khimicheskikh udobreniy)

TITLE: Synthesis of higher concentration nitric acid in cooler-condensers

SOURCE: IVUZ. Khimiya i khimicheskaya tekhnologiya, v. 9, no. 2, 1966, 273-275

TOPIC TAGS: nitric acid, inorganic synthesis, nitric acid concentration

ABSTRACT: The effects of temperature and pressure on the formation of nitric acid in cooler-condensers have been studied experimentally in a flow-type unit. The flow-sheet of the unit is given. The process of nitric acid formation was based on the reaction: $4NO_2(2N_2O_4)$ gas + $2H_2O$ gas + O_2 gas $\rightleftarrows$ $4HNO_3$. The gaseous mixture was directed under 1—6 atm pressure into a series of water-cooled vertical coil condensers, where the process of HNO_3 formation continued. Starting nitrogen dioxide gas (28% NO_2) was obtained by oxidation of ammonia. The data indicated the possibility of producing in the cooler-condensers 70% HNO_3 at 1 atm and 90% HNO_3 at 6 atm pressure. A decrease in temperature of condensation from 200C led to an increase in HNO_3 concentration in the liquid phase to a maximum at 5—10C, independ-

Card 1/2 UDC: 661.563:546.175-323

L 33383-66
ACC NR: AP6021971

ently of the pressure in the 1—6 atm range. This optimum temperature is dependent on the type of cooler-condenser. Power consumption and desired acid concentration would be the decisive factors in selection of optimum pressure for the process, which is reasonably expected not to exceed 6—8 atm. Orig. art. has: 3 figures and 1 formula. [JK]

SUB CODE: 07/ SUBM DATE: 020ct64/ ORIG REF: 005/ ATD PRESS: 5026

Card 2/2 JS

L 41333-66 EWT(m)/EWP(t)/ETI IJP(c) JD/WW/JW

ACC NR: AP6025584 SOURCE CODE: UR/0413/66/000/013/0018/0018

36
B

AUTHORS: Skvortsov, G. A.; Karavayev, M. M.; Kirillov, I. P.; Ford, M. L.; Alekseyenko, D. A.; Kaganskiy, I. M.

ORG: none

TITLE: A method for obtaining nitric acid. Class 12, No. 183194 [announced by Severodonets Branch of State Scientific Research and Design Institute of the Nitrogen Industry and of the Products of Organic Synthesis (Severodonetskiy filial Gosudarstvennogo nauchno-issledovatel'skogo i proyektnogo instituta azotnoy promyshlennosti i produktov organicheskogo sinteza)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 13, 1966, 18

TOPIC TAGS: nitric acid, nitrogen compound, nitric ~~acid~~ oxide

ABSTRACT: This Author Certificate presents a method for obtaining nitric acid under the pressure of 5—10 atm, out of nitrogen oxides in the system of condensation of water vapors. To increase the concentration of nitric acid, the unreacted nitrogen oxides are absorbed by the produced acid at a temperature no higher than -5C, bleached, and used to strengthen the acid at a temperature of 25—45C in the absorption part of the bleaching column. [04]

SUB CODE: 07/ SUBM DATE: 13Apr64/ ATD PRESS: 5158

UDC: 661.562.05

Card 1/1 11b

ACC NR: AP7007130 SOURCE CODE: UR/0382/66/000/004/0107/0114

AUTHOR: Glukhikh, V. A.; Kirillov, I. R.

ORG: none

TITLE: Experimental investigation of an asynchronous MHD generator with a liquid metal working medium under self excitation conditions

SOURCE: Magnitnaya gidrodinamika, no. 4, 1966, 107-114

TOPIC TAGS: MHD generator, magnetic induction, unsaturated magnetic system

ABSTRACT: This study presents the results of an experimental investigation of the a-c MHD generator with a liquid metal as working medium operating under self-excitation conditions. Experimental data are compared with the theoretical ones obtained from the existing induction pump theories. They are found to be in satisfactory agreement. The possibility of generator's self-excitation and its reliable performance even in the case of an unsaturated magnetic core has been continued. Orig. art. has: 5 figures, 10 formulas, and 1 table. [Authors' abstract]
[NT]

SUB CODE: 20/SUBM DATE: 06May66/ORIG REF: 002/OTH REF: 001/

Card 1/1 UDC: 621.313.39:538.4

KIRILLOV, I. V.

KIRILLOV, I.V.; SOROKIN, V.I., redaktor; PROZOROVSKAYA, V.L., redaktor.

[Traction substations in coal pits] Tiagovye podstantsii na ugol'nykh kar'erakh. Moskva, Ugletekhizdat, 1953. 227 p. (MLRA 7:7)
(Electricity in mining)

SOV-5-58-2-20/43

AUTHOR: Kirillov, I.V.

TITLE: Hypothesis of the Earth's Development, Its Continents and Oceanic Depressions (Gipoteza razvitiya Zemli, yeye materikov i okeanicheskikh vpadin)

PERIODICAL: Byulleten' Moskovskogo obshchestva ispytateley prirody - Otdel geologicheskiy, 1958, Nr 2, p 142 (USSR)

ABSTRACT: As a result of the expansion of the earth, its continuous sial cover broke apart; in places of rupture a simatic cover was formed on the surface. As the expansion of the earth continued, entire zones were formed where an outcrop of simatic covers occurred. These represent the bottom of the contemporary oceanic depression. An analysis of the outlines of continents leads to the conclusion that the continents were connected with each other at the beginning of the Mesocenozoic epoch. An analysis of the tectonic structures proves the homology of tectonic zones of various continents, taking into consideration a smaller radius of the earth in the past. The change of the comparative situation

Card 1/2

[illegible]-5-58-2-20/43

Hypothesis of the Earth's Development, Its Continents and Oceanic Depressions

of continents during the process of their "separation" could give interesting data on paleomagnetism.

1. Earth--Geophysical factors 2. Geophysics--Theory

Card 2/2

S/169/62/000/002/005/072
D228/D301

AUTHORS: Neyman, V. B. and Kirillov, I. V.

TITLE: Hypothesis of the expanding earth in its geologico-geophysical essence (author-amended paper read on December 9, 1960)

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 2, 1962, 4-5, abstract 2A14 (Byul. Mosk. o-va ispyt. prirody, Otd. geol., 36, no. 2, 1961, 125-126)

TEXT: The sharp boundary between the oceanic and the continental crust, the acute continental slope between continents and oceans, and also the frequency curve for encountering heights and depths in continents and oceans -- which discloses the presence of a deep minimum (corresponding to the continental slope) between the two maxima corresponding to continents and oceans -- all testify to the genetic isolation of continents and oceans and render incompetent the hypotheses of the expansion of continents and oceans at each other's expense. Having constructed a rather accurate model of a

Card 1/2

Hypothesis of the ...

cortical earth with a diameter two times smaller than is the case today, I. V. Kirillov showed the reality of the stretching process. Since younger zones cut the older within the continents, on the successive imaginary removal of the younger zones it is, finally, possible to arrive at a homogeneous and miniature earth. Thanks to this the break between the existing cosmic theories and the earth's present structure may be eliminated by means of the hypothesis of an expanding earth. According to I. V. Kirillov the process of orogenesis has the following form from the viewpoint of the expansion of the earth. Expansion, affecting on the whole only the crust's granitic part results in the accumulation of thick sediments in a given zone which corresponds to the establishment of a geosyncline. Fusions and gaseous substances start to act from below on the rupture of the crust's granitic part. These considerably further the growth of mountains occurring in the stage when the stretching, whose attenuation results in the development of denudation processes, is temporarily retarded. /Abstracter's note: Complete translation./

Card 2/2

TSVETAYEV, A.A.; GOLOVANOV, Yu.N.; CHUZHKO, R.K.; KIRILLOV, I.V.

Thermoelectric properties of polycrystalline uranium. Atom. energ. 18 no.6:642-644 Je '65. (MIRA 18:7)

OKOROKOV, A.A., otv. red.; MARKIN, A.M., otv. red.;
BEREZOVSKIY, V.I., red.; DOLGUSHIN, N.I., red.;
KIRILLOV, I.Ye., red.; MIKHAYLOV, G.N., red.;
NEVZOROV, L.A., red.; NIKOLAYEVSKIY, G.N., red.;
ROZHDESTVENSKIY, V.A., red.; USHAKOV, P.N., red.;
KHODOV, M.P., red.; SHARONOV, M.S., red.

[Regulations for the design and safe operation of load-lifting cranes] Pravila ustroistva i bezopasnoi ekspluatatsii gruzopod"emnykh kranov. Moskva, Nedra, 1965. 127 p.
(MIRA 18:7)

1. Russia (1917- R.S.F.S.R.) Gosudarstvennyy komitet po nadzoru za bezopasnym vedeniyem rabot v promyshlennosti i gornomu nadzoru.

KIRILLOV, I.Ye., inzh.; KOREL'SKIY, K.S., inzh.

Improve the organization of the operation of jib cranes. Bez.truda v prom. 6 no.1:13-14 Ja '62. (MIRA 15:1)
(Cranes, derricks, etc.--Safety measures)

KIRILLOV, I. Ye., inzh.; BALIN, M. M., inzh.

New regulations for the operation of heating boiler units.
Bezop. truda v prom. 6 no.9:13-14 S '62. (MIRA 16:4)

1. Upravleniye Severo-Zapadnogo okruga Gosudarstvennogo komiteta pri Sovete Ministrov RSFSR po nadzoru za bezopasnym vedeniyem rabot v promyshlennosti i gornomu nadzoru.

(Steam heating)

KIRILLOV, K.

"Steaming" metal. Tekh.mol.24 no.3:23 Mr '56. (MLRA 9:7)
(Induction heating) (Magnetic fields)

6 (7)

SOV/112-57-5-11191

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1957, Nr 5, p 234 (USSR)

AUTHOR: Ablyazov, V. S., Kirillov, K. A.

TITLE: Checking Equipment for a Mine-Shaft Telephone-Communication System (Kontrol'no-poverochnaya apparatura dlya sistemy shakhtnoy svyazi)

PERIODICAL: Sb. statey nauch.-stud. o-va Mosk. energ. in-ta, 1956, Nr 9, pp 99-106

ABSTRACT: A block diagram of mine-shaft carrier telephone communication between the dispatcher and locomotive machinists via the trolley network is presented. The dispatcher's station operates at 58 kc, subscribers' stations operate at 100 kc. The dispatcher can selectively call the subscribers' stations; the dispatcher's carrier is modulated by the call frequency to which the called station is tuned. The call frequencies lie within the band of 300-3,000 cps. To prevent short-circuiting of the carrier voltage through supply sources, trolleys, and locomotive motors, the filters tuned to the average frequency of 76 kc are cut in.

M.A.K,

Card 1/1

KIRILLOV, K.I., kand.tekhn.nauk, dots.

New ways of using compressed wood in machinery manufacture.
Shor.trud.VISI no.4:113-117 '58. (MIRA 12:8)
(Wood, Compressed) (Machinery--Construction)

KLEMENT'IEV, Sergey Dmitriyevich [deceased]. Prinimal uchastiye KIRILLOV, K.K., inzh.; TEMNIKOV, F.Ye., kand.tekhn.nauk, red.; MIKHAILEVICH, T.V., red.; GOLOVKO, B.N., tekhn.red.

[Telemechanics] Teleavtomatika. Moskva, Gos.uchebno-pedagog. izd-vo M-va prosv. RSFSR. Vol.2. [Homemade radio equipment for remote control] Samodel'naia radiotelemekhanicheskaia apparatura. Pod.red. F.E.Temnikova. 1958. 255 p. (MIRA 12:5)
(Remote control) (Radio--Equipment and supplies)

KIRILLOV, K.N., inzh.; GRUDZINSKIY, S.V., inzh.

RC circuits in control and protection systems of electric equipment on ships. Sudostroenie 29 no.7:41-43 Jl '63. (MIRA 16:9)
(Electricity on ships—Safety measures)

[illegible], I.[illegible]

Drilling of difficult-to-machine materials. Stan. i instr. 35 no.11 [illegible] N '64. (MIRA 18:3)

ACC NR: AM6003479 Monograph UR/

Kirillov, K. N.; (Candidate of Technical Sciences); Kirillova, O. M. (Candidate of Technical Sciences)

Drilling holes in parts made of materials of low workability (Sverleniye otverstiy v delayakh iz trudnoobrabatyvayemykh materialov) Moscow, Izd-vo "Mashinostroyeniye", 1965. 87 p. illus., biblio. 4000 copies printed.

TOPIC TAGS: heat resistant steel, machine tool, material deformation

PURPOSE AND COVERAGE: This booklet is intended for engineer-technologists at machine works. The booklet reviews the problems connected with drilling machine parts from stainless, hardened, and heat-resistant steels and alloys. The construction and geometry of drills, the processes of metal deformation by drilling and chop forming and the methods for cooling and lubricating the cutting zone and drilling equipment are discussed.

TABLE OF CONTENTS

Card 1/2 UDC 621.95

ACC NR: AM6003479

SUB CODE: 11,13/ SUBM DATE: 09Jul65/--65/ ORIG REF: 012/ SOV REF: 001

Card 2/2

ANDRIANOV, A.S.; KATS, M.L.; KIRILLOV, L.A.; FOMICHEV, V.V.

Effect of an electric field on the luminescence of alkali halide compounds. Izv. AN SSSR. Ser.fiz. 29 no.3:493-496 Mr '65. (MIRA 18:4)

Kirillov, LA

USSR/Optics - Physical Optics K-5

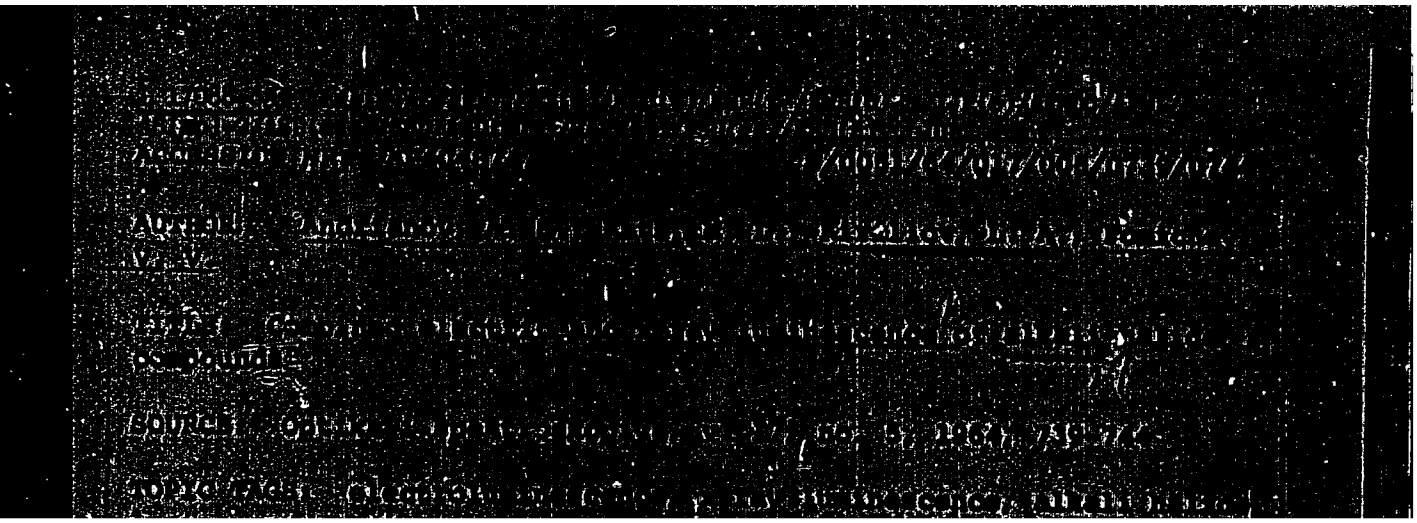
Abs Jour : Referat Zhur - Fizika, No 5, 1957, 12963

Author : Sidorov, N.K., Kirillov, L.A.
Inst : -
Title : Luminescence Spectra of Petroleum Products in Frozen Solution.

Orig Pub : Nauk. ezhegodnik za 1954 g. Saratovsk. in-t. Saratov, 1955, 596-598

Abstract : An investigation was made at room temperatures and at the temperature of liquid oxygen (-183°) of the spectra of luminescence of petroleum fractions and accompanying tarry substances, when glow is excited by filtered ultraviolet light. The glows of the 230-325° tar-free fraction, obtained at room temperature and at low temperature, have spectra of identical structure. In the latter case the short-wave maximum of 450 millimicrons is resolved into two maxima, at 442 and 458 millimicrons. The glow spectra

Card 1/2



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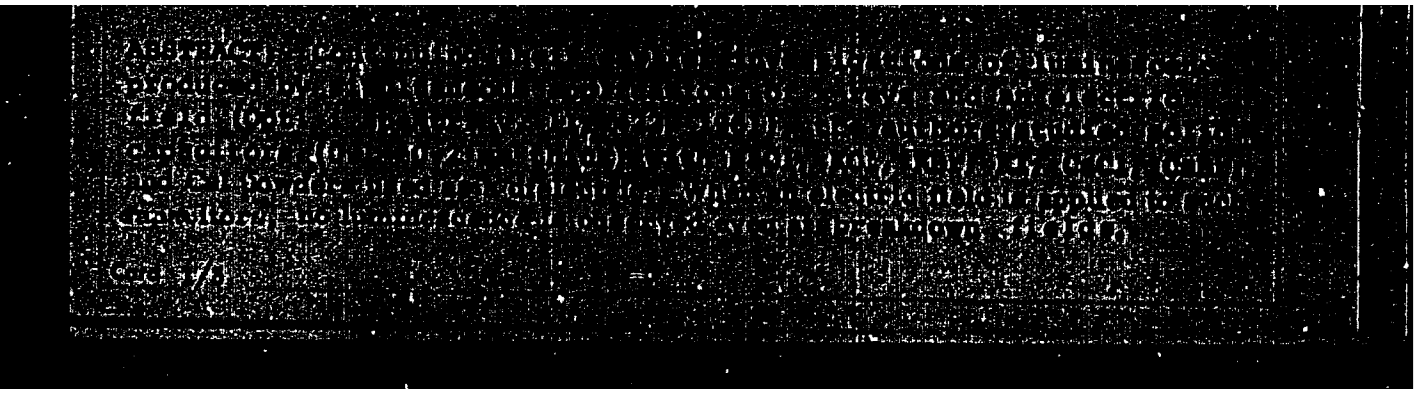

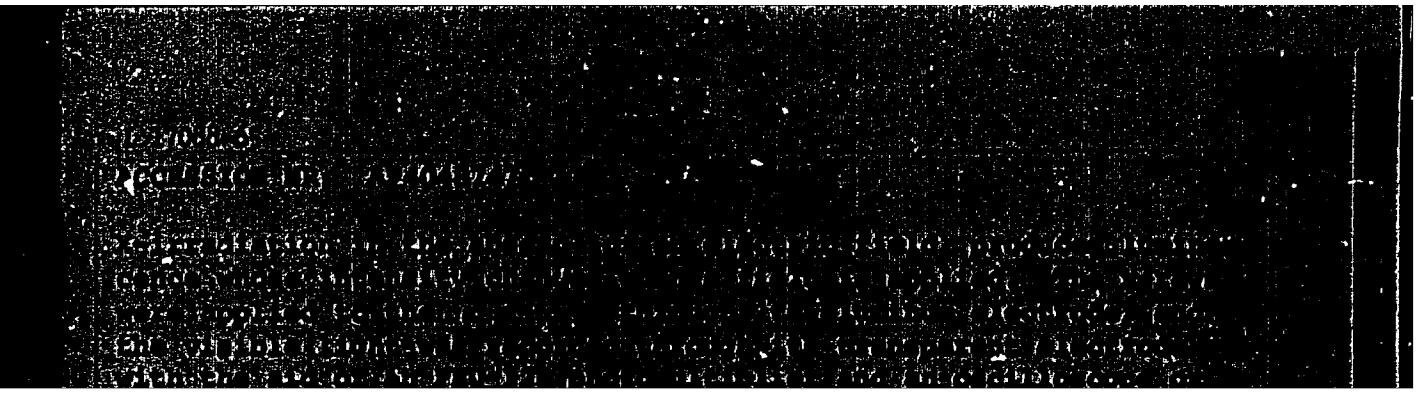

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