AUTHORS: Torner, R. V. and Dobrolyubov, G. V. SOV/ 138-58-4-3/13

TITLE: An Approximate Theory of the Mechanism of Rubber Milling (Priblizhennaya gidrodinamicheskaya teoriya mekhanizma val'tsevaniya)

PERIODICAL: Kauchuk i Rezina, 1958, Nr 4, pp 6-10 (USSR)

ABSTRACT: Theory of milling rubber has been based on the assumption that the material behaves as a plastic substance with definite limits of flow, analogous to metals. This leads to the conclusion that roll thrust force is a square function of the rotational velocity. This is in contradiction to experimental findings where the roll thrust forces are, in fact, proportional to the square root of angular velocity. The material does not exhibit Newtonian viscosity and account must be taken of the dependence of its rheological proportion on the velocity gradient of flow. The relationship between torque and rotational speed is non-linear. The authors develop equations, starting from the Harvey-Stokes equation, modified for an average viscosity coefficient dependent on an average velocity gradient. These equations give the instantaneous velocities V_x and V_y of the mass of

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An Approximate Theory of the Mechanism of Rubber

milled material at any point within the mass above and through the roll gap. (The material is assumed to adhere to roll surface in the region considered). Representative roll conditions are assumed and velocity profiles are drawn for several sections, the velocities being derived from these formulae. The maximum velocity of the material is 7 to 9 times the peripheral velocity of the rolls. Above the gap, the bulk of the material exhibits counter-flow. Equations are developed, also for pressure on the rolls over the arc of contact, and a pressure profile is drawn, similarly, from these equations. From this, the shear forces opposing rotation can be calculated, and a figure obtained for total torque. The necessary rheological constants for construction of these velocity and pressure profiles were obtained by measurement of roll thrust forces on an actual set of rolls with a given rubber mix and inserting the actual values into the pressure equation to deduce these constants. These results show that the rheological constants are independent of roll gap and confirm the square root relationship of

An Approximate Theory of the Mechanism of Rubber

spreading forces, to angular velocity of the rolls. Further confirmation of the velocity profiles was obtained by constructing open model sections of rolls, and using a two-coloured layered mix to indicate the flow of the material.
There are 5 figures and 14 references, 8 of which are Soviet, 6 English.

ASSOCIATIONS: Nauchno-issledovatel'skiy institut rezinovoy promyshlennosti (Scientific Research Institute of the Rubber Industry) and Moskovskiy institut khimicheskogo mashinostroyeniya (Moscow Institute of Chemical Machine-building.

Card 3/3 1. Rubber--Theory 2. Rolling mills--Applications
3. Rolling mills--Equipment 4. Mathematics--Equipment

S/081/60/000/016/012/012
A006/A001

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 16, p. 575, # 67708

AUTHORS: Dobrolyubov, G.V., Aristov, L.G., Starov, I.M.

TITLE: Increasing the Efficiency of Rollers When Masticating Nitrile Rubbers

PERIODICAL: Opyt raboty prom-sti Sovnarkhoza (Mosk. gor. ekon. adm. r-n), 1958, No. 8, pp. 40-44

TEXT: The research for means of improving the efficiency of rollers was conducted in two directions: 1) by establishing the dependence of the efficiency of rollers on the weight of the pack; 2) by revealing means of reducing the time of mechanical mastication of rubber as compared to the effective regulations (20 min). The time of mechanical mastication depends only on the type of rubber. A reduction in weight of the pack does not accelerate mechanical mastication and raises considerably the specific electric power consumption required for the drive motor. Electric power consumption, per time unit of processing, depends only on the type of rubber and serves to determine the specific consumption of electric power per unit of the rubber amount. Changes in the power consumed by the motor

S/081/60/000/016/012/012
A006/A001

Increasing the Efficiency of Rollers When Masticating Nitrile Rubbers

are connected with structural changes occurring in the rubber during mechanical mastication, which are completed within the first ten minutes of processing; subsequently the mean power required by the electric motor does not vary. The process of changes in power during the initial processing period is analogous to that of changes in conditional viscosity, determined on a 10% solution in ethyl-acetate with a B3 -4 (VZ-4) viscosimeter. The moment of completed mechanical mastication can be determined by measuring the power consumed by the drive motor. The use of this method provides for a double increase of the roller efficiency with the simultaneous reduction of electric power consumption, and makes possible automation of the mastication process.

V. Glagolev

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

5(1)
AUTHOR: Dobrolyubov, G. V. SOV/153-2-2-28/31

TITLE: Determination of Power During the Rolling of Rubber Mixtures (Opredeleniye moshchnosti pri val'tsevanii rezinovykh smesey)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1959, Vol 2, Nr 2, pp 294-298 (USSR)

ABSTRACT: The process of rolling cannot be investigated without considering the actual properties of the rolled material (Refs 1-3). Otherwise one arrives at wrong assumptions and conclusions, which are not proved by the experiment (Ref 4). Furthermore, the previously proposed theories do not take into account the particularities of the rolling-process, which depend on the properties of the caoutchouc- and rubber-mixtures, so that the obtained results cannot be utilized in practice. The caoutchouc-fluxing, the rolling of the rubber-mixture into sheets and their heat-treatment before further processing, are the most interesting among them. It follows from the analysis of the load-diagrams (Fig 1) of the fluxing- and heat-treatment on rollers, that two spheres of activities exist: a) a non-stationary, where the power consumption

Card 1/3

by the rollers varies with the time, and b) a stationary-one, where the power remains unchanged. When rolling sheets, there is only one stationary working process. The existence of two working processes during rolling is explained by the properties of the rolled material, i.e. its ability to produce during deformation simultaneously the properties of solid bodies as well as of liquids. The rolling of rubber-mixtures must be considered a deformation-process of materials, which have a complicated property-complex: The properties of solid bodies are revealed during the non-stationary part of the process; during the stationary part, however, this material begins to flow, analogous to the flow of a viscous liquid. Under these circumstances, the mathematical description of the entire rolling-process is a complicated task. The determination of the deformation-power of the rubber-solution during the stationary process is most important for the determination of the power-output of the electro-motor which drives the rollers. Figure 2 shows the dependence of the power output on the speed of the rollers. Figure 3 shows the same dependence on the friction. Table 1 gives the

composition of the mixtures, table 2 the size of the deformation-zone. On the basis of the results, the author arrives at the following conclusion: Considering the analysis of the processes which occur during the rolling of rubber-mixtures from the hydrodynamical point of view, make it possible to derive an equation which is well in line with the experimental results. This equation may, therefore, be used for the determination of the power output of the electro-motor which is needed for driving the rollers. There are 3 figures, 2 tables, and 9 references, 7 of which are Soviet.

ASSOCIATION: Moskovskiy institut khimicheskogo mashinostroyeniya; Kafedra elektrotekhniki i elektrooborudovaniya (Moscow Institute for Chemical Engineering; Chair of Electrical Engineering and Electrical Equipment)

SUBMITTED: October 3, 1957

VESELOV, V.A.; VINNIKOV, D.N.; DOBROLYUBOV, G.V.

Application of induction and semiconductor heating in the processing of plastics into articles. Trudy MIKHM 27:167-177 '64.
(MIRA 18:8)

DOBROLYUBOV, G.V.

Calculating the operative capacity of rollers. Trudy MIKHM 27:190-193 '64. (MIRA 18:8)

ACC NR: AT6037043 SOURCE CODE: UR/0000/66/000/000/0044/0054

AUTHOR: Likharev, V. A. (Candidate of technical sciences); Dobrolyubov, L. V. (Engineer); Kobzev, N. A. (Engineer)

ORG: none

TITLE: Simulation of random numbers on an electronic digital computer

SOURCE: Moscow. Aviatsionnyy institut. Teoriya i tekhnika radiolokatsii (Radar theory and techniques); sbornik statey, no. 1, Moscow, izd-vo Mashinostroyeniye, 1966, 44-54

TOPIC TAGS: computer simulation, digital computer, random number, random number simulation / BESM-2M digital computer

ABSTRACT: Methods are received of obtaining random number sequences with a given law of distribution by means of uniformly distributed random numbers. Output programs of the latter are presented on a high-speed BESM-2M computer. As examples, a description is given of the derivation of one-dimensional normal, exponential, Rayleigh and generalized Rayleigh laws, as well as of the results of

ACC NR: AT6037043

the verification of the correlation of uniform distribution, of the coincidence of normal and given distributions, and of an evaluation of the numerical characteristics by the method of confidence intervals. Orig. art. has: 12 formulas, 2 figures, 2 tables and 4 appendixes. [Translation of abstract] [DW]

SUB CODE: 09/SUBM DATE: 15Jul66/ORIG REF: 005/OTH REF: 001/

DOBROLYUBOV, N.A.

Izbrannye pedagogicheskie proizvedeniia [Selected pedagogical works]. Vvodnaia stat'ia [i sost.] V.Z. Smirnova. Moskva, Akad. ped. nauk. RSFSR, 1952. 735 p.

SO: Monthly List of Russian Accessions, Vol. 6, No. 2, May 1953

DOBROLYUBOV, L.V., inzh.

Use of symbolic methods in the calculation of forced processes. Izv.vys.ucheb.zav.; energ. 8 no.9:85-87 S '65. (MIRA 18:10)

1. Vychislitel'nyy tsentr Moskovskogo aviatsionnogo instituta. Predstavlena kafedroy vychislitel'noy tekhniki.

DOBROLYUBOV, Nikolay Nikolayevich; RYABCHIKOV, N., red.

[Design and construction of drilled wells] Proektirovanie i stroitel'stvo burovykh kolodtsev. Minsk, Urozhai, 1964. 28 p. (MIRA 19:1)

L 17800-63 EWT(d)/FCC(w)/T-2/BDS ASD/ESD-3/APGC/IJP(C)
Pq-4/Po-4/Pk-4/Pg-4 GG

ACCESSION NR: AP3006400 S/0119/63/000/008/0014/0016 48

AUTHOR: Basova, N. A.; Dobrolyubov, S. A.; Mityashin, I. P.

TITLE: Calculating a pneumatic jet relay 10

SOURCE: Priborostroyeniye, no. 8, 1963, 14-16

TOPIC TAGS: pneumatic relay, fluid amplification, pneumatic amplifier, nozzle, jet interaction, air jet, pneumatic transducer, sensing element, pneumatic relay calculation, external temperature disturbance

ABSTRACT: A pneumatic relay 16 based on the interaction of air jets has been developed. The relay (see Figs. 1 and 2 of the Enclosure) has no moving parts, is simply constructed, and is not sensitive to external temperature variations. The device consists of a system of nozzles, a throttle valve, and a flapper by means of which the control pressure (P_c) in section A (Fig. 1) can be varied. The following approximate pressure relationship has been derived:

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L 17800-63

ACCESSION NR: AP3006400

$$P_{out} = P'_{in} - kP_c, \text{ where}$$

$$k = \frac{L}{Dr} \cdot \frac{P'_{in}}{P_{in}}$$

(P'_{in} is the portion of inlet pressure corresponding to $P_c = 0$; D_r is the receiving-nozzle diameter). Experiments were conducted with nozzles 0.3—1.3 mm in diameter. The experimental results obtained (Fig. 3) for nozzles 0.6 mm and larger in diameter are close to the calculated. For nozzles less than 0.6 mm in diameter, greater differences arose between experimental and calculated results due, in part, to inaccuracies in manufacturing the nozzles and in conducting the experiments. However, experiments conducted with small-diameter receiving nozzles and with control nozzles twice as large in diameter as the supply nozzles produced results in good agreement with the calculated (Fig. 3). The pressure in the chamber behind the receiving nozzle can be calculated from the following

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L 17800-63

ACCESSION NR: AP3006400

expression:

$$P_{ch} = \frac{P_1 R_1^4 + P_2 R_2^4}{R_1^4 + R_2^4}.$$

If nozzle radii $R_1 = R_2$, the pressure in the chamber is $(P_1 + P_2)/2$. The spacing (L) between the power nozzle and receiving nozzle (for nozzle diameters D = 0.3—1.2 mm) was experimentally determined to be 3.5—4.5 times larger than the diameter of the power nozzle (Fig. 4). The obtained formulas can be used for design calculation of pneumatic-jet elements with a feed pressure of 1.4 atm. Orig. art. has: 6 figures and 3 formulas.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 23Sep63 ENCL: 04

SUB CODE: AE NO REF SOV: 002 OTHER: 000

Card 3/7

SHCHUKIN, A.I.; [illegible], S.A.

The RT temperature regulators. Bibl. tekh.-ekon. inform. Gos. nauch.-issl. inst. nauch. i tekh. inform. 17 no.6:56-57 Je '64. (MIRA 17:11)

ACC NR: AP5026817 SOURCE CODE: UR/0286/65/000/017/0095/0095

AUTHOR: Nityashin, I. P.; Dobrolyubov, S. A.; Grekov, Ye. A.

ORG: none

TITLE: A direct-action pressure regulator. Class 42, No. 174450 [announced by Smolensk Branch of the Scientific Research Institute of Heat and Power Engineering Equipment (Smolenskiy filial Nauchno-issledovatel'skogo instituta teploenergeticheskogo priborostroyeniya)]

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 17, 1965, 95

TOPIC TAGS: pressure regulator, pressure measuring instrument

ABSTRACT: This Author's Certificate introduces a direct-action pressure regulator which contains a diaphragm-type actuating mechanism with control valve, and also incorporates a measurement diaphragm, spring, and screw for adjustment of the spring tension. The quality of control is improved by using a proportional-plus-integral device which contains a baffle with a groove. This baffle is mounted on the lower side of the measurement diaphragm, and supply and receiving nozzles are located opposite the groove. The supply nozzle is connected with tubing to a high pressure line, and the receiving nozzle is connected to a tank above the diaphragm of the actuating mechanism through a tube containing the control valve for the isodrome.

UDC: 621.646.4

SUB CODE: IE/ SUBM DATE: 15Apr64/ ORIG REF: 000/ OTH REF: 000

Card 1/1

L 13523-63 BDS

ACCESSION NR: AP3002600 S/0122/63/000/006/0015/0022

AUTHOR: Dobrolyubov, V. A. 46

TITLE: Calculation of the parabolic vanes on rotating guiding device

SOURCE: Vestnik mashinostroyeniya, no. 6, 1963, 15-22

TOPIC TAGS: rotating guiding device, supercharger, parabolic surface, vane, efficiency

ABSTRACT: The rotary guiding device of a centrifugal supercharger is designed to take the stream of fluid and to guide it with minimum losses over the vanes of the rotor. A special parabolic surface must be chosen for the vanes of the rotary guiding device to secure the highest efficiency of the supercharger. Figure 1 (see Enclosure 1) shows the design of the parabolic surface expressed by Formula 1 (see Enclosure 2). Formula 2 (see Enclosure 2) is used for determining the entrance angle of the stream in relation to the radius of the inlet rim on the rotary guiding device. Figure 2 (see Enclosures 3 and 4) shows the vane of the rotary guiding device, composed of two symmetrically disposed parabolic surfaces. Formulas 3 and 4

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ACCESSION NR: AP3002600 O

(see Enclosure 5) express the curvature of these surfaces. The application of the described rotary guiding device in industry shows that the use of such vanes increases the life and efficiency of the supercharger. Orig. art. has: 33 formulas, 6 figures, and 1 table.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 15Jul63 ENCL: 05

SUB CODE: 00 NO REF SOV: 000 OTHER: 000

Card 2/2

L 47468-66 EWT(d)/EWT(l)/EWP(v)/T-2/EWP(k)/EWP(h)/EWP(l) WW

ACC NR: AP6029067 SOURCE CODE: UR/0413/66/000/014/0122/0123

INVENTOR: Dobrolyubov, S. A.; Kuklik, L. F.; Zakharevich, A. T.

ORG: none

TITLE: Three way control valve. Class 46, No. 184066 [announced by the Smolensk branch of Scientific Research Institute of Heat and Power Instrument Construction (Smolenskiy Filial Nauchno-issledovatel'skogo instituta teploenergeticheskogo priborostroyeniya)]

SOURCE: Izobret prom obraz tov zn, no. 14, 1966, 122-123

TOPIC TAGS: control valve, three way control valve, flow distribution, three way valve, valve

ABSTRACT: The proposed three-way control valve for the proportional distribution of a flow or for mixing two flows with different temperature gradients has a locking element consisting of four sealing edges, interacting with the corresponding fitting bands of the casing seats (see Fig. 1). In order to compensate for the static and dynamic unbalance of the locking element, the latter is amde in a form of a hollow cylinder with two bands, joined together by the contour profile of the sealing edges: openings for the main

Card 1/2 UDC: 621.646.23: 621.43

L 47468-66

ACC NR: AP6029067

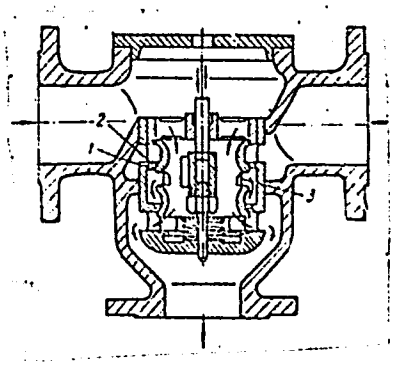

Fig. 1. Three way valve
1 -
1 - Sealing edges; 2 - fitting band; 3 - openings.

supply of the flow to be separated or the drain fo the mixed flows are located between the sealing edges. Orig. art has: 1 figure. [AV]

SUB CODE: 13/ SUBM DATE: 30Jan65/

Card 2/2 mjc

DOBROLYUBOV, V.I., inzh.

Experience with radiant heating using very hot water.
Vod. i san. tekh. no.12:20 D '62. (MIRA 15:12)
(Radiant heating)

129-58-7-4/17

AUTHORS: Romanov, V.V., Candidate of Chemical Sciences and Dobrolyubov, V.V., Engineer

TITLE: Effect of the Cathode and Anode Polarisation on the Speed of Corrosion Cracking of Stainless Austenitic Steels (Vliyaniye katodnoy i anodnoy polyarizatsii na skorost' korrozionnogo rastreskivaniya austenitnoy nerzhaveyushchey stali)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, Nr 7, pp 19-21 (USSR)

ABSTRACT: The aim of the work described in this paper was to obtain curves of the cathode and anode polarisation during corrosion cracking of stainless austenitic steel and to follow microscopically the influence of polarisation on the character of developing corrosion cracks. Sheet steel 1Kh18N9 was investigated containing 0.01% C, 19.98% Cr, 0.95% Ni and 0.06% Ti; strength 67 kg/mm^2, relative elongation 64%. The specimens were cut in the direction of rolling. The used corrosion medium was a boiling 42% solution of $MgCl_2$. Microscopically the effect of polarisation on the character of the corrosion cracks has been established; an explanation is given of the shape of the curves of cathode and anode

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129-58-7-4/17

Influence of the Cathode and Anode Polarisation on the Speed of Corrosion Cracking of Stainless Austenitic Steels

polarisation; this explanation is based on the polarisation diagrams of corrosion cracking and the results of observations of the effect of polarisation on the character of the developing corrosion cracks. There are 7 references, 5 of which are Soviet, 2 English.

ASSOCIATION: Institut metallurgii AN SSSR (Institute of Metallurgy, Ac. Sc. USSR)

Card 2/2

ROMANOV, V.V.; DOBROLYUBOV, V.V.

Temperature dependence of the cathodic and anodic polarization effect in the corrosive disintegration of the MA2 alloy in .1 N solution of H_2SO_4 + 35 g/l NaCl. Zhur. prikl. khim. v 31 no.5: 743-748 My '58. (MIRA 11:6)
(Magnesium alloys--Corrosion) (Sulfuric acid)
(Polarization (Electricity))

DOBROLYUBOV, V.V., inzh.

Protection of rails and fastenings against corrosion. Put' i put. khoz. 7 no.11:20 '63. (MIRA 16:12)

DOBROLYUBOV, V.V., inzh.

Effect of corrosion on the wear of rail steel. Vest.TSNII MPS 22 no.6:60-62 '63. (MIRA 16:10)

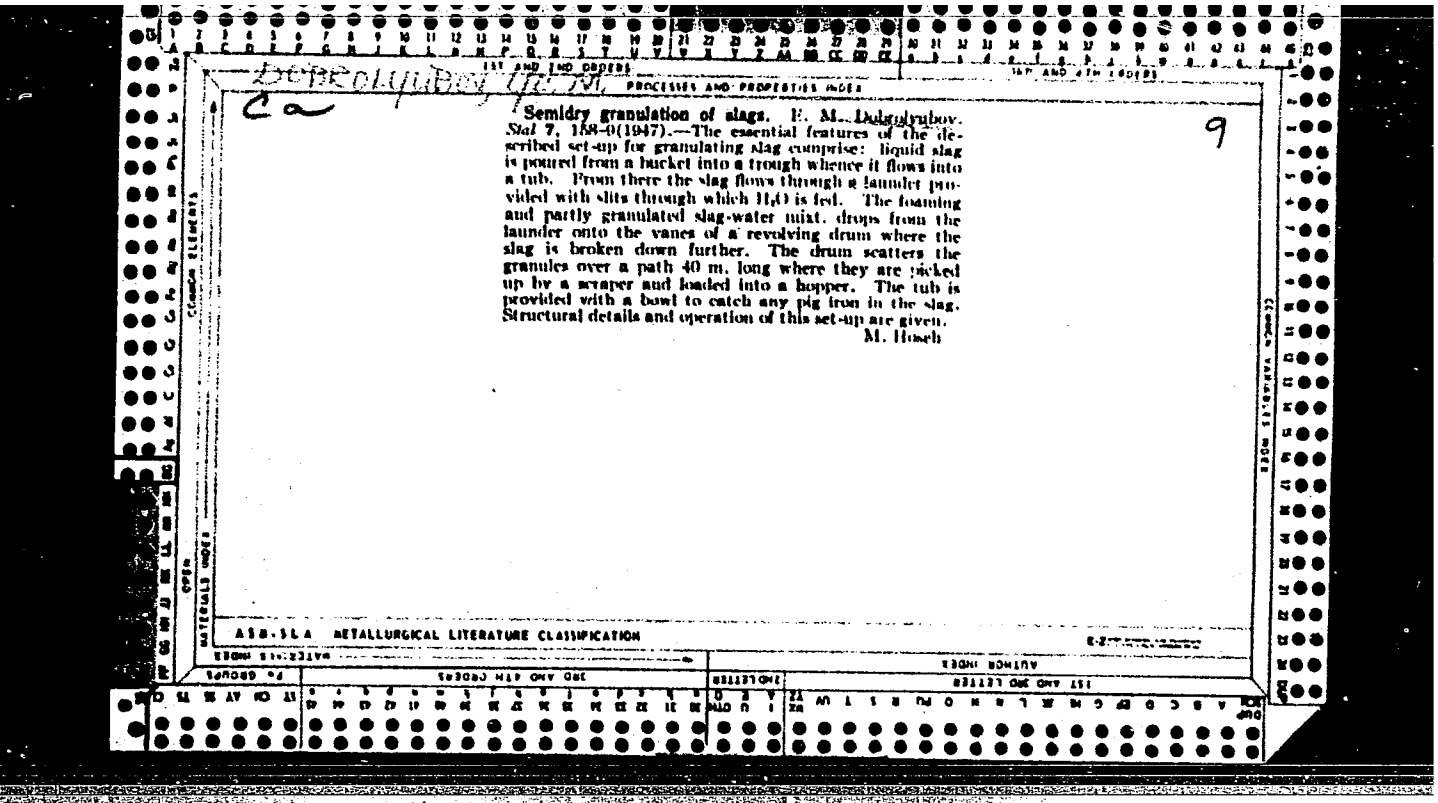
DOBROLYUBOV, V.V., inzh.

Destruction of wooden ties by the products of iron corrosion. Vest. TSNII MPS 22 no.8:61-62 '63. (MIRA 17:2)

VEDENKIN, S.G.; DOBROLYUBOV, V.V.

Corrosion and protection of rails in tunnels. Zashch.met. 1 no.1:84-90 Ja-F '65. (MIRA 18:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta.



Ca

9

Semidry granulation of slags. P. M. Dolgushov. *Stal* 7, 158-9(1947).—The essential features of the described set-up for granulating slag comprise: liquid slag is poured from a bucket into a trough whence it flows into a tub. From there the slag flows through a launder provided with slits through which H_2O is fed. The foaming and partly granulated slag-water mixt. drops from the launder onto the vanes of a revolving drum where the slag is broken down further. The drum scatters the granules over a path 40 m. long where they are picked up by a scraper and loaded into a hopper. The tub is provided with a bowl to catch any pig iron in the slag. Structural details and operation of this set-up are given.

M. Hosch

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

42229. DOBROLYUBOV, YE. M. Iz olyta izgotovleniya zhelezobyetonnykh izdeliy s nemedlennoy raspalubkoy. (S primech. red.) Byulleten' stroit. Tekhniki, 1948, No.22, c.21-24.

So: Letopis' Zhurnal'nykh Statey, Vol.47, 1948.

DOBROLYUBOV, Ye.M., inzhener; MEYLIKHOV, Z.Ye., inzhener.

Mechanical enrichment of limestone rubble. Avt. dor. 19 no.7:9-10 Jl '56. (MLRA 9:10)

(Road materials)

AVILOVA, T.P., kand.khim.nauk; DOBROLYUBOVA, L.V., inzh.

Simultaneous adsorption of alcohols and xanthates on the surface of galenite. Izv.vys.ucheb.zav.;gor.zhur. 7 no.6:136-139 '64.
(MIRA 17:12)

1. Dal'nevostochnyy gosudarstvennyy universitet. Rekomendovana kafedroy neorganicheskoy khimii.

S/078/62/007/005/003/014
B101/B110

AUTHORS: Kuznetsov, V. G., Tokareva, S. A., Dobrolyubova, M. S.

TITLE: X-ray diffraction analysis of sodium ozonide NaO_3

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 7, no. 5, 1962, 967 - 970

TEXT: X-ray powder patterns were taken for determining the crystallization form of NaO_3. NaO_3 was synthesized by reaction of O_3 with anhydrous NaOH at -80°C and subsequent extraction with liquid NH_3 which was removed in vacuo at -50°C. The resulting product (red crystals) contained 90-92% NaO_3. Because of the instability of NaO_3, the x-ray patterns were taken at nitrogen temperature by an УРС-55 (URS-55) camera. The x-ray patterns of $NaNO_3$, $(NH_4)NO_3$, NaOH, $NaOH \cdot H_2O$, and NaO_2 were taken for comparison. NaO_3 was found to contain small amounts of NaOH and NaO_2. The indication of the x-ray patterns showed good agreement with the interplanar spacings

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calculated for a tetragonal cell, and the lattice data were a = 10.43, c = 6.88kX; c/a = 0.660. Nearly all lines of the x-ray patterns can be explained by superposition of reflections with different hkl indices. In default of systematic extinctions it was not possible to determine the space group. A comparison of NaO_3 with KO_3 data (G. S. Zhdanov, Z. V. Zvonkova, Zh. fiz. khimii, 25, 100 (1951)) showed no isomorphism between NaO_3 and KO_3. The x-ray pattern of NaO_3 is also different from the patterns of NaN_3 and $NaNO_2$. There are 1 figure and 1 table. The most important English-language references are: A. D. McLachlam, M. C. R. Symons, M. G. Towsend, J. Chem. Soc., 952 (1959); I. J. Solomon, A. I. Kacmaber, J. Phys. Chem., 64, 168 (1960).

SUBMITTED: May 8, 1961

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000410620003-5"

ACCESSION NR: AT4028338 S/0000/63/000/000/0188/0192

AUTHOR: Tokareva, S. A.; Dobrolyubova, M. S.; Makarov, S. Z. (deceased)

TITLE: Study of the NaOH ozonization process at low temperatures and identification of the physical chemical properties of sodium ozonide

SOURCE: Soveshchaniye po khimii perekisny*kh soyedineniy. Second, Moscow, 1961. Khimiya perekisny*kh soyedineniy (chemistry of peroxide compounds); Doklady* soveshchaniy. Moscow, Izd-vo AN SSSR, 1963, 188-192

TOPIC TAGS: sodium hydroxide, sodium ozonide, ozonization, ozone, hydroxal, potassium hydroxide, alkali, ammonia, ozonide, sodium, potassium

ABSTRACT: In this paper the authors discuss the ozonization process of sodium hydroxide, the precipitation of sodium ozonide in a crystalline state, and the study of the properties of sodium ozonide. Crystalline sodium ozonide with a NaO_3 content of 80-90% was precipitated. The ozonization process of sodium hydroxide is studied within a temperature range of from +40 through -100°C. The formation process of sodium superoxide in the ozonization of sodium hydroxide in a temperature range of -40 through -100°C is also studied. X-ray examination of sodium ozonide was made. An x-ray analysis yielded a satisfactory agreement between the experimental

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ACCESSION NR: AT4028338

and calculated values of $\sin^2\theta$ for a body centered tetragonal nucleus with a period of a = 11.61Å; c = 7.66Å. A differential thermal analysis of sodium ozonide was conducted. The exothermal effect of -10 through -20°C which corresponds to the dissociation of sodium ozonide is reproduced on all thermograms. Orig. art. has: 3 figures and 1 formula.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. NS Kurnakova AN SSSR (Institute of General and Inorganic Chemistry AN SSSR)

SUBMITTED: 13Dec63 DATE ACQ: 06Apr64 ENCL: 00

SUB CODE: CH NO REF SOV: 007 OTHER: 007

Card 2/2

ACCESSION NR: AP4033391 S/0062/64/000/004/0739/0740

AUTHOR: Tokareva, S. A.; Dobrolyubova, M. S.

TITLE: Ozonidizing sodium hydroxide in the -100 to 50C temperature range

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 4, 1964, 739-740

TOPIC TAGS: sodium hydroxide, ozonization sodium ozonide, NaO sub 3, stability, sodium superperoxide, synthesis

ABSTRACT: The process of ozonidizing NaOH at -100 to +50C was investigated. The possibility of forming NaO_3 depends on the experimental conditions: at a slow ozone-oxygen feed rate, the ozone decomposes; at very high rates and low temperatures, the contact time is too short. With an ozone-oxygen mixture feed of 20 liters/hour, noticeable ozonidation in NaOH occurs at -60C. At 200 liters/hour ozone-oxygen feed rate, ozonidation of NaOH was insignificant at -100 to -40C; in the -20 to +50C range a maximum yield of about 2% NaO_3 (on the weight of the initial alkali) was obtained at 0C, with yield reduced to 0.18-0.2% at 50C. The material is storable for several months in the absence of atmospheric moisture. Small amounts of sodium superperoxide were formed simultaneously during ozonidation.

Card 1/2

ACCESSION NR: AP4033391

Orig. art. has: 3 figures.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry Academy of Sciences SSSR)

SUBMITTED: 11Mar63 ENCL: 00

SUB CODE: IC NO REF SOV: 002 OTHER: 002

Card 2/2

L 47554-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG/RO

ACC NR: AP6032907 SOURCE CODE: UR/0062/66/000/009/1665/1665

AUTHOR: Vol'nov, I. I.; Dobrolyubova, M. S.; Tsentsiper, A. B.

27

B

ORG: Institute of General and Inorganic Chemistry im. N. S. Kurnakova, Academy of Sciences SSSR (Institut obshchey i neorganicheskoy khimii Akademii nauk SSSR)

TITLE: Synthesis of rubidium ozonide from rubidium superoxide

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 9, 1966, 1665

TOPIC TAGS: inorganic synthesis, rubidium ozonide, rubidium superoxide, rubidium compound

ABSTRACT: Rubidium ozonide containing 96.6% RbO_3 and 3.4% Rb_2O was obtained by using for the first time a new reaction which was earlier successfully applied for the preparation of high-purity C_2O_3 [I. I. Vol'nov and V. V. Matveyev. Izv. AN SSSR. Ser. Khim., 1963, 1136]. The reaction between rubidium superoxide RbO_2 and ozonized oxygen was carried out at 0C in a fluidized bed. Rubidium ozonide was extracted by liquid ammonia. The RbO_2 starting material was prepared by Matveyev by spraying Rb metal in oxygen and argon in a special apparatus which was previously described. The purest rubidium ozonide which was obtained by an older method from rubidium hydroxide contained only 66.6% RbO_3. [JK]

SUB CODE: 07/ SUBM DATE: 19Feb66/ ORIG REF: 004/ ATD PRESS: 5094

Card 1/1

UDC: 542.91:546.342.5:546.35

DOBROLYUBOVA, M.A.; OBRUCHEV, D.V., otvetstvennyy redaktor; AMLINSKIY, I.Ye., redaktor izdatel'stva; SIMKINA, Ye.N., tekhnicheskiy redaktor.

[Stratigraphic distribution and evolution of the corals Rugosa in the middle and upper Carboniferous of the Moscow Basin.] Stratigraficheskoy raspredelenie i evoliutsiia korallov Rugosa srednego i verkhnego karbona Podmoskovnogo basseina. Moskva, Izd-vo Akad. nauk SSSR, 1948. 61 p. (Akademiia nauk SSSR. Paleontologicheskii institut. Trudy, vol.11, no.4). (MLRA 10:7)
(Moscow Basin--Corals, Fossil)

DOBROLYUBOVA, T. A.

"Changes in Corals Belonging to the Filogenetical Group Dibunophyllum Bipartitim (McCoy), Caninia Okensis Stuck," Iz. Ak. Nauk SSSR, Biological Series, No 2, 1948.

Paleontological Institute, AS USSR

1. DOBROLYUBOVA, T. A.

2. USSR (600)

4. Corals - Moscow Basin

7. Corals of the genus Lonsdaleia and their stratigraphic significance in the Moscow Basin. Biul. MOIP. Otd. geol. 27 no. 4, 1952

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

1. DOBROLYUBOVA, T. A.

2. USSR (600)

4. Corals

7. Structural formation of Lithostrotion and Lonsdaleia, the lower carboniferous corals, in the light of Michurin's theory, Izv. AN SSSR Ser. biol., No. 6, 1952

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

1. DOBROLYUBOVA, T. A.

2. USSR 600

4. Moscow Basin - Corals, Fossil

7. Corals of the genus Gangamophyllum from the Lower Carboniferous of the Moscow Basin, Trudy Paleont. inst., No. 40, 1952.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

DOBROLYUBOVA, Tat'yana Alaksandrovna; SARYCHEV, T.G., otvetstvennyy red.; KOMIN, K.B., red. izd-va; KASHINA, P.S., tekhn. red.

[Lower Carboniferous colonial Tetracorallia of the Russian Platform] Nizhnekamennougol'nye kolonial'nye chetyrekhluchevye korally Russkoi platformy. Moskva, Izd-vo Akad. nauk SSSR, 1958. 216 p. (Akademiia nauk SSSR. Paleontologicheskii institut. Trudy, vol. 70).
(Russian Platform--Corals, Fossil) (MIRA 11:5)

DOBROLYUBOVA, T.A.; KABAKOVICH, N.V.; CHUDINOVA, I.I.; SARYCHEVA, T.G., otv. red.;

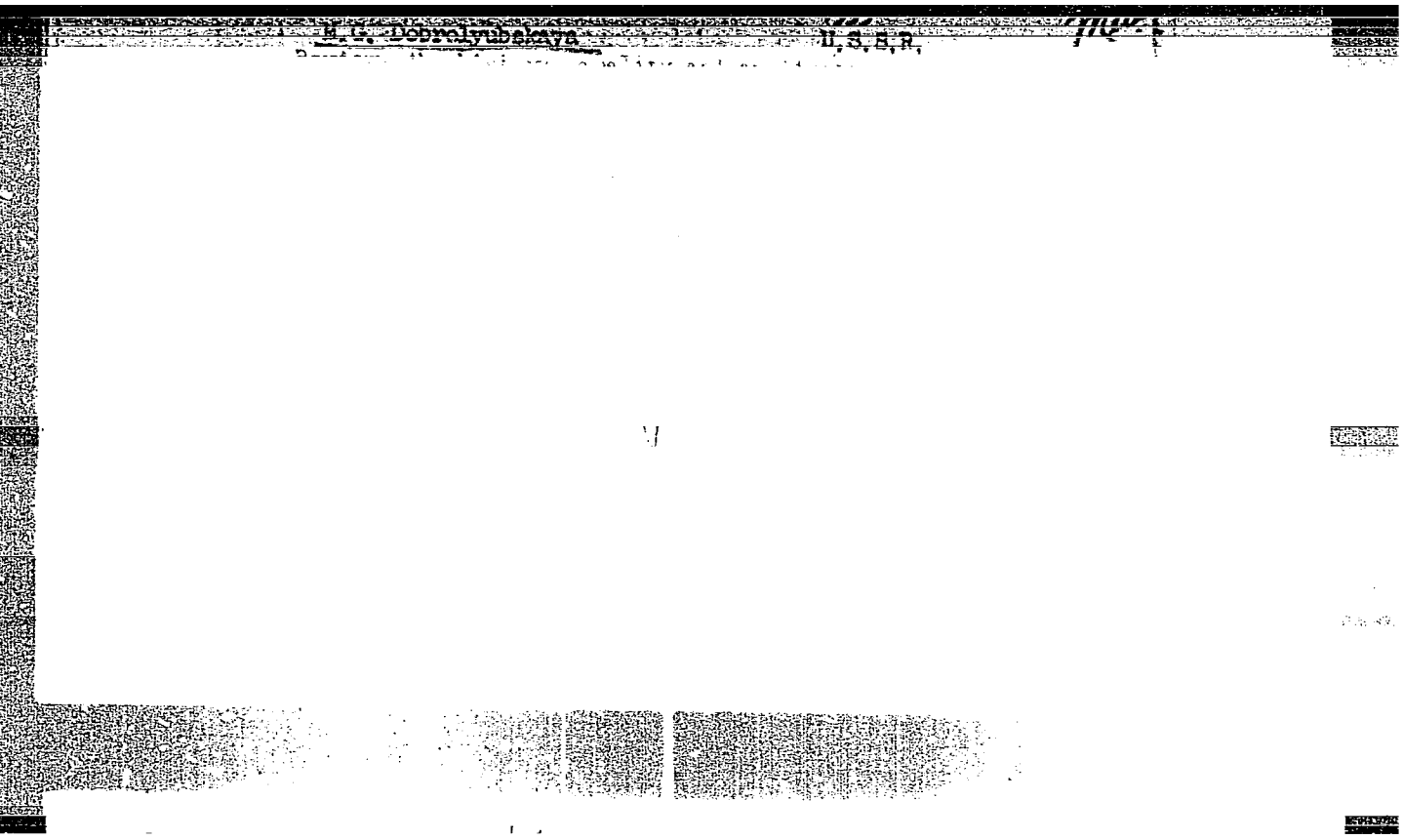
[Instructions for the collection and study of Paleozoic corals] Nastavlenie po sboru i izucheniiu paleozoiskikh korallov. Moskva, Izd-vo "Nauka," 1964. 55 p. (Nastavlenii po sboru i izucheniiu iskopaemykh organicheskikh ostatkov, no.9) (MIRA 17:6)

DZHORDZHADZE, V.A.; BEHEZOVA, Ye.F., doktor biologicheskikh nauk, professor; BUSHINSKIY, V.P., akademik; GERASIMOV, V.P., dandidat pedagogicheskikh nauk; DOBROLYUBOVA, Ya.M., dotsent; IVANOV, P.P.; IMSHENETSKAYA, L.I.; TEREKHOV, V.D., redaktor; YUSFINA, N.L., tekhnicheskiy redaktor

[Publicizing the natural sciences in connection with practical problems in agriculture] Propaganda estestvennonauchnykh znanii v sviazi s prakticheskimi zadachami sel'skogo khoziaistva. Moskva, Gos. izd-vo kul'turno-prosvetit. lit-ry, 1956. 158 p. (MLRA 9:11)
(Agriculture--Study and teaching)

DOBROLYUBOVA, Ye.

Development and distribution of the construction industry in Voronezh Province. Nauch. zap. Vor. otd. Geog. ob-va:136-139 '63.
(MIRA 17:9)



APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000410620003-5"

DOBROLYUBSKAYA, M. [Dobroliubs'ka, M.], kand.khim.nauk

From an insulator to a diamond. Nauka i zhyttia 12 no.11:42 N '62. (MIRA 16:1)

(Polymers)

DOBROLYUBSKAYA, M.G., kand. khimich. nauk; IL'CHENKO, A.N., inzh.

Solubility of limestones in natural water. Gidr. stroi. 33 no.2:46 F '63. (MIRA 16:4)

(Limestone—Testing)

DOBROLYUBSKAYA, M.G. [Dobroliubs'ka M.H.], kand.khim.nauk, dots.
(Odessa)

Synthetic rubber. Nauka i zhyttia 9 no.11:14-16 N '59.
(MIRA 13:3)
(Rubber, Synthetic)

DOBROLYUBSKAYA, M. [Dobroliubs'ka, M.]

Unsplinterable glass. Znan. ta pratsia no.9:16-17 S '60.
(MIRA 13:9)
(Glass reinforced plastics)

FRIDMAN, S. A., CHEREPNEV, A. A., and DOBROLYUBSKAYA, T. S.

"Luminosity and Spectral Distriubtion of the Luminescence of Zinc Sulfide Phosphors with Different Activators," Dok. AN, 57, No. 4, 1947

"Phosphorescence of Zinc Sulfide Phosphors Containing Different Activators," Dok. AN, 57, No. 6, 1947

DOBROLYUBSKAYA, T. S.

USSR/Physics
Luminescence
Zinc Sulfide

Aug 1947

"Brilliance and Spectral Diffusion of the Glow of Zinc Sulfide Luminophors With Various Activators," S. A. Fridman, A. A. Cherepnev, T. S. Dobrolyubskaya, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 3 ½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 5

Deals with two main characteristics of photoluminescence of ZnS luminophors, i.e., equiponderent brilliance at the time of excitation, and spectral diffusion under similar conditions. Submitted by Academician S. I. Vavilov, 11 Mar 1947.

PA 58T88

FRIDMAN, S. A., CHEREPNEV, A. A., AND DOBROLYUBSKAYA, T. S.

"Phosphorescence of Zinc Sulfide Phosphors Containing Different Activators,"
Dok. AN, 57, No. 6, 1947

DOBROLYUBSKAYA, T. S.

USSR/Physics Dec 47
Luminescent Materials
Spectrophotometry

"The Relationship of the Zinc and Copper Bands of Luminescence in Zinc Sulphide Luminophors," S. A. Fridman, A. A. Cherpnev, T. S. Dobrolyubskaya, Phys Inst imeni P. N. Pavlov, Acad Sci USSR, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 7

Spectrophotometric studies of temperature behavior and interrelationship of zinc and copper pole of luminescence in zinc sulphide luminphors during a high temperature state in surrounding media. Also spectral analysis of characteristics which occur at various temperatures. Submitted by Academician S. I. Vavilov, 16 Jul 1947.

PA 60T113

DOBROLYUBSKAYA, T. S.

PA 36/49T 78

USSR/Physics Sep 48
Luminophors
Cobalt

"Cobalt Bearing Zinc-Sulfide Luminophors," A. A. Cherepnev, T. S. Dobrolyubskaya, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 4 pp

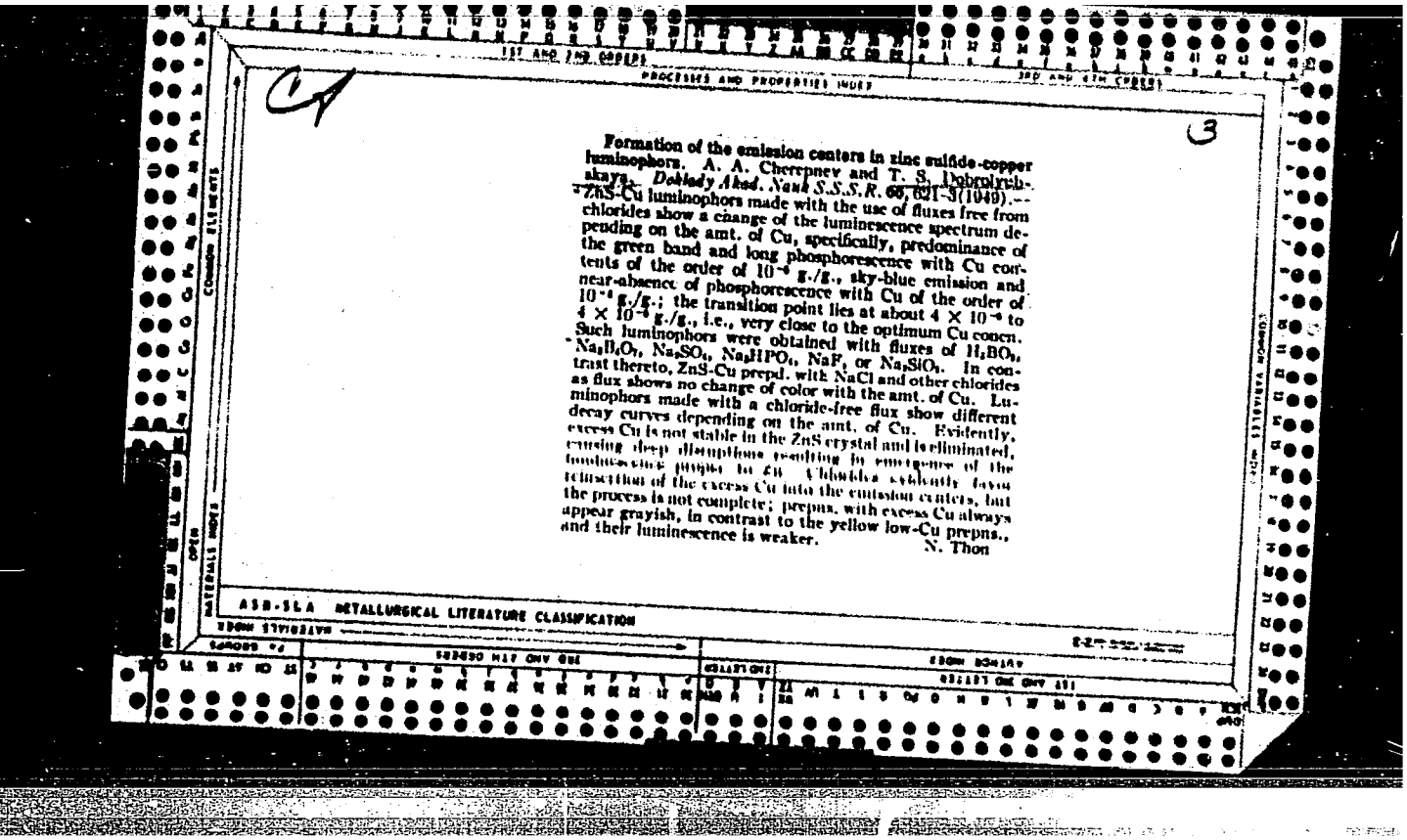
"Dok Ak Nauk SSSR" Vol LXII, No 3

Graphs and describes data contrasting ZnS CuCo luminophors with those not containing cobalt, according to following dependencies: (1) dependence of spectral distribution and total brilliance of luminescence upon temperature, (2) effect of temperature of the medium on extinguishing of the [redacted]. 36/49T78

USSR/Physics (Contd) Sep 48

component, and (3) dependence of postluminescence upon the concentration of copper. Submitted by Acad S. I. Vavilov, 17 Jul 48.

36/49T78



Formation of the emission centers in zinc sulfide-copper luminophors. A. A. Cherepnev and T. S. Dobrolyubskaya. *Doklady Akad. Nauk S.S.S.R.* 66, 621–3(1949).—ZnS-Cu luminophors made with the use of fluxes free from chlorides show a change of the luminescence spectrum depending on the amt. of Cu, specifically, predominance of the green band and long phosphorescence with Cu contents of the order of 10^{-4} g./g., sky-blue emission and near-absence of phosphorescence with Cu of the order of 10^{-4} g./g.; the transition point lies at about 4×10^{-4} to 4×10^{-3} g./g., i.e., very close to the optimum Cu concn. Such luminophors were obtained with fluxes of H_3BO_3, $Na_2B_4O_7$, Na_2SO_4, Na_2HPO_4, NaF, or Na_2SiO_3. In contrast thereto, ZnS-Cu prepd. with NaCl and other chlorides as flux shows no change of color with the amt. of Cu. Luminophors made with a chloride-free flux show different decay curves depending on the amt. of Cu. Evidently, excess Cu is not stable in the ZnS crystal and is eliminated, causing deep disruptions resulting in emergence of the fundamental purple to Zn. Chlorides evidently favor retraction of the excess Cu into the emission centers, but the process is not complete; prepns. with excess Cu always appear grayish, in contrast to the yellow low-Cu prepns., and their luminescence is weaker.

N. Thon

1. BUNDEL', A.A.: VAYNBERG, V.I.: DOBROLYUBSKAYA, T.S.: ZOLINSKIY, V.V.: PEKERMAN, F.M.: SMIRNOVA, R.G.: TROFIMOV, A.K.: FRENKEL', S.P.

2. USSR (600)

4. Electric Lighting, Fluorescent

7. Development and study of luminophors based on phosphates for luminescent lamps. Izv. AN SSSR, Ser.fiz. 15 No. 6, 1951.

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

B3R DOBROLYUBSKAYA, T.S. Physics 32

859* Phosphors on a Magnesium Arsenate Base, Activated by Manganese. (Russian.) T. S. Dobroliubskaia. *Doklady Akademii Nauk SSSR*, new ser., v. 85, July 21, 1951, p. 537-538. A series of phosphors based on $nMgO \cdot As_2O_5$ were prepared and studied. Data are tabulated.

DOBROLIUBSKAIA, T. S.

235T89

USSR/Physics - Phosphors

21 Jul 52

"Phosphors Due to Magnesium Arsenate Activated by Manganese," T. S. Dobrolyubskaya, Phys Inst imeni Lebedev, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol 85, No 3, pp 537-538

Gives the dependence of the intensity of radiation upon the content of magnesium oxide in the compn of 6 different phosphors of As_2O_5-Mn, around 3,650 Å. Acknowledges assistance of M. N. Alentsev, L. A. Vinokurov, and A. A. Cherepnev. Submitted by Acad G. S. Landsberg 21 May 52.

235T89

SOV/137-59-1-2186

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 1, p 287 (USSR)

AUTHOR: Dobrolyubskaya, T. S.

TITLE: Fluorometric Method for Determining Uranium (Fluorimetricheskiy metod opredeleniya urana)

PERIODICAL: Tr. Komis. po analit. khimii AN SSSR, 1958, Vol 8(11), pp 178-182

ABSTRACT: A survey. Development of a fluorometric method for the determination of U. Importance of the change over from the visual method of measurement of the luminescence intensity to the objective measurement with fluorometers. Effect of impurities on the luminescence of U. Expediency of using a complex flux composed of (in g) NaF 9, Na_2CO_3 45.5, and K_2CO_3 45.5 instead of NaF. It is established that U should be separated from the accompanying elements by extracting it with ethylacetate from a nitric-acid solution in the presence of $Al(NO_3)_3$, since Al does not extinguish the luminescence of U, and not by the ammonium carbonate procedure with $Fe(OH)_3$ as the carrier. The presence of the F ion in the pearl is of substantial importance to the luminescence process. If instead of NaF Na_2CO_3

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Fluorometric Method for Determining Uranium

or Na_2SiO_3 were used as a base for the preparation of fluxes activated by a U compound, the characteristic luminescence of the NaF-U flux would be absent.

V. N.

Assoc. Institut geokhimii i analiticheskoy khimii im V.I. Vernadskogo, AS USSR

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S/075/61/016/001/013/019
B013/B055

AUTHORS: Davydov, A. V., Dobrolyubskaya, T. S., and Nemodruk, A. A.

TITLE: Quantitative Determination of Uranium Based on Its Fluorescence in Phosphoric-acid Solutions

PERIODICAL: Zhurnal analiticheskoy khimii, 1961, Vol. 16, No. 1, pp. 68-72

TEXT: The present publication describes a highly sensitive method suggested for the determination of uranium basing on its fluorescence in phosphoric-acid solutions. The authors studied the dependence of the fluorescence intensity of uranyl-nitrate solutions (containing 100 γU/ml) on the addition of various substances (Table 1). The most intensive fluorescence occurs in phosphoric-acid solutions of uranyl salts, monosubstituted phosphates, sulfate- and fluoride ions producing the next highest fluorescence. The measurements were carried out in a horizontal Pulfrich photometer. Fluorescence excitation was carried out by ultraviolet irradiation (253.7 mμ) from above by means of a БУВ -15 (BUV-15) germicidal lamp with a УСФ -1 (USF-1) filter. A ЭФ-3 (EF-3) photoelectric

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Quantitative Determination of Uranium Based on Its Fluorescence in Phosphoric-acid Solutions

fluorimeter produced by the zavod Kontrol'no-izmeritel'nykh priborov Ministerstva pishchevoy promyshlennosti (Moskva) (Plant for Control Instruments of the Ministry of Food Industry (Moscow)) is recommended for measuring fluorescence intensities of phosphoric-acid solutions with low uranium contents (0.1 - 10 γU/ml). At very low concentrations (up to $\sim 1 \cdot 10^{-4}$ g U/ml) of uranium(VI) in 5% phosphoric-acid solutions the fluorescence intensity was found to vary linearly with the uranium concentration (Fig. 1). At concentrations higher than $\sim 2.5 \cdot 10^{-4}$ g U/ml the fluorescence intensity decreases with increasing uranium concentration. The fluorescence of phosphoric-acid solutions of uranium(VI) may therefore be utilized for the quantitative determination of uranium(VI) at concentrations of $< 1 \cdot 10^{-4}$ g U/ml. Measurements in the short-wave region of the ultraviolet radiation by means of a СФ-4 (SF-4) spectrophotometer showed that the addition of phosphoric acid to a nitric-acid solution of uranium(VI) increases the absorption (Fig. 2), and, to a much greater extent, the fluorescence. The latter is excited both by short-wave and long-wave ultraviolet light. In dilute solutions, excitation by short-

wave ultraviolet light (253.7 mμ) produces a much higher intensity of fluorescence. Studies in the temperature range 0° - 90°C showed that the fluorescence intensity of uranium(VI) in phosphoric-acid solution increases with decreasing temperature. The standard- and test solutions must therefore be at the same temperature. Within a limited range, the fluorescence intensity also depends on the phosphoric-acid concentration (Fig. 3). It increases with an increase in the acid concentration up to 5% and from then on remains unchanged at further addition of phosphoric acid. The quantitative determination of uranium basing on its fluorescence in aqueous phosphoric-acid solution can be performed after separating the quenching impurities (Fe, Cu, Mn, Cr, Ni, Co, and others) by uranium extraction. Tributyl phosphate (Refs. 7,8) was used as extraction solvent, carbon tetrachloride as diluent and calcium nitrate as salting agent. Prior to extraction, the quenching impurities were masked by addition of Complexone III. Extraction of uranium from nitric-acid solutions containing 40% $Ca(NO_3)_2 \cdot 4H_2O$ with an equal volume of a 20% tributyl phosphate solution in carbon tetrachloride results in 99.9% recovery of uranium. A second extraction with the same quantity of tributyl-phosphate/carbon-

tetrachloride renders the recovery quantitative. After extraction, the uranium may be backextracted into aqueous phase by means of pure water or a 5 - 10% phosphoric-acid solution. The intensity of fluorescence is considerably increased by boiling the backextract for 2 - 3 min (Fig. 4). Permissible concentration ratios of uranium to quenching impurities at which determination may be carried out with or without the use of Complexone III are given in Table 2. The constancy of the analytical results is good. The measuring error at uranium concentrations of ~1 γ/ml is +10%. The time required for one analysis is at most 25 min. The authors thank P. N. Paley for valuable advice. V. G. Melkov, Z. M. Sverdlov, and Levshin are mentioned. There are 4 figures, 2 tables, and 9 references: 4 Soviet, 3 US, 1 Czechoslovakian, and 1 British.

SUBMITTED: October 5, 1959

Card 4/4

UDAL'TSOVA, N.I.; SAVVIN, S.B.; NEMODRUK, A.A.; NOVIKOV, Yu.P.; DOBROLYUBSKAYA, T.S.; SINYAKOVA, S.I.; BILIMOVICH, G.N.; SERDYUKOVA, A.S.; BELYAYEV, Yu.I.; YAKOVLEV, Yu.V.; NEMODRUK, A.A.; CHMUTOVA, M.K.; GUSEV, N.I.; PALEY, P.N.; VINOGRADOV, A.P., akademik, glav. red.; ALIMARIN, I.P., red.; BABKO, A.K., red.; BUSEV, A.I., red.; VAYNSHTEYN, E.Ye., red.; YERMAKOV, A.N., red.; KUZNETSOV, V.I., red.; RYABCHIKOV, D.I., red. toma; TANANAYEV, I.V., red.; CHERNIKHOV, Yu.A., red.; SENYAVIN, M.M., red. toma; VOLYNETS, M.P., red.; NOVICHKOVA, N.D., tekhn. red.; GUS'KOVA, O.M., tekhn. red.

[Analytical chemistry of uranium] Analiticheskaia khimiia urana. Moskva, Izd-vo Akad.nauk SSSR, 1962. 430 p. (MIRA 15:7)

1. Akademiya nauk SSSR. Institut geokhimii i analiticheskoy khimii.

(Uranium--Analysis)

33762
S/075/62/017/001/002/003
B106/B101

5.5300

AUTHORS: Dobrolyubskaya, T. S., Davydov, A. V., and Nemodruk, A. A.

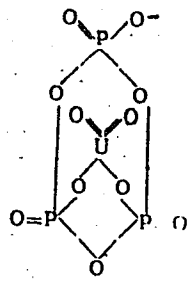
TITLE: Use of sodium trimetaphosphate to determine uranium by its luminescence in solutions

PERIODICAL: Zhurnal analiticheskoy khimii, v. 17, no. 1, 1962, 70-74

TEXT: A method worked out before by the authors (Zh. analit. khimii 16, 68 (1961)) for the quantitative uranium determination by its luminescence in phosphoric acid solutions was greatly improved by replacing the phosphoric acid by sodium trimetaphosphate. To clarify the composition of the luminescent compound, the dependence of the luminescence intensity of hexavalent uranium on the structure of various condensed phosphates was studied. Intensive luminescence in the presence of uranium was only observed with sodium trimetaphosphate. The preparation was made by 1 hr heating of $NaH_2PO_4 \cdot 2H_2O$ with uranium nitrate ($1 \cdot 10^{-4}$ g of uranium per 1 g of phosphate) to 525°C. After cooling down, a glassy substance formed which showed intensive green luminescence in ultraviolet light (λ = 253.7

Use of sodium trimetaphosphate to...

and 365 mμ). Aqueous sodium trimetaphosphate solutions activated with uranium also showed intense luminescence. At room temperature, the luminescence spectrum of uranium-activated sodium trimetaphosphate agreed with the spectrum of uranyl nitrate solution in 5 % phosphoric acid. By the method of isomolar series it was found that uranium reacted with the trimetaphosphate ion during the formation of the luminescent compound at the ratio of 1:1. The structural formula



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Use of sodium trimetaphosphate to...

is suggested for the luminescent compound. Luminescence increases with increasing uranium concentration in 0.1 % sodium trimetaphosphate solution due to the increase of $[UO_2(PO_3)_3]^-$ in the solution. With $\sim 2.4 \cdot 10^{-4}$ g of U/ml, luminescence reaches a maximum, and decreases again with a further increase in U concentration. With a concentration of $\sim 1 \cdot 10^{-3}$ g of U/ml, a precipitate falls out in the form of a pale-yellow turbidity. The elementary analysis of the precipitate yielded the formula $UO_2[UO_2(PO_3)_3]_2$. The identity of the luminescence spectra of hexavalent uranium in 5 % phosphoric acid and in 0.1 % sodium trimetaphosphate solution suggests that also in phosphoric acid solutions the uranium luminescence was due to the formation of the $[UO_2(PO_3)_3]^-$ complex. The decrease in luminescence with increasing uranium concentration as from $\sim 2.4 \cdot 10^{-4}$ g of U/ml is associated with the formation of poorly soluble $UO_2[UO_2(PO_3)_3]_2$. An increase of the sodium trimetaphosphate concentration

Card 3/5

initially causes a rapid increase in luminescence which remains practically constant from a certain value. The luminescence intensity of uranium in a sodium trimetaphosphate solution has an optimum at pH ~5 and 20°C and decreases as the temperature rises. The results obtained were used for working out a method for quantitative U determination by its luminescence in 0.1 % Na trimetaphosphate solution. Uranium is separated from the extinguishing impurities by extraction with a tributyl phosphate solution in carbon tetrachloride, calcium nitrate being used as salting-out agent. Uranium is re-extracted with 0.1 % Na trimetaphosphate solution. This method is 15 % more sensitive than the U determination in 5 % phosphoric acid; consumption of Na trimetaphosphate is only 1/50 of that of phosphoric acid. By the method described, U concentrations up to 0.05 γ/ml can be determined in an ЭФ-3 (EF-3) electronic fluorometer. The method was tested on synthetic mixtures (0.10-5.0 γ of U/ml; 100 γ of Fe(III)/ml, 100 γ of Cu/ml, 20 γ of Ni/ml) and on pure, aqueous uranyl nitrate solutions. Results were in good agreement. The error did not exceed ± 7 %. The luminescent reaction of U with Na trimetaphosphate is one of the most sensitive reactions for detecting U directly in aqueous solutions. A paper by E. Thilo (Zh. priklad. khimii 29, 621 (1956)) is

Use of sodium trimetaphosphate to...

mentioned. There are 6 figures, 1 table, and 3 references: 2 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: Sill C., Peterson H., Anal. Chem. 19, 646 (1947).

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo AN SSSR, Moskva (Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy of the AS USSR, Moscow)

SUBMITTED: November 15, 1960

Card 5/5

DOBROLYUBSKAYA, T.S.

Effect of the concentration of hydrogen ions in luminescence determination of hexavalent uranium in uranyl nitrate solutions. Zhur.anal.khim. 17 no.4:486-488 Jl '62. (MIRA 15:8)

1. V.I.Vernadsky Institute of Geochemistry and Analytical Chemistry, Academy of Sciences, U.S.S.R., Moscow.
(Uranium--Analysis) (Luminescence)

DOBROLYUBSKAYA, T.S.

Luminescence of uranium (VI) in condensed sodium phosphates and their solutions. Zhur. neorg. khim. 8 no. 8:2004-2005 Ag '63.
(MIRA 16:8)

(Uranium phosphates) (Luminescence)

L 16602-63 EPF(n)-2/EWP(q)/EWT(m)/BDS AFFTC/ASD/SSD Pu-4 WW/JW/
JD/JG S/075/63/018/004/011/015

AUTHOR: Dobrolyubskaya, T. S.

TITLE: A study of the luminescence of uranyl sulfate and uranyl fluoride solutions to increase the sensitivity of uranium determination

PERIODICAL: Zhurnal analiticheskoy khimii, v. 18, no. 4, April 1963, 486-491

TEXT: The author's study of the luminescence of uranium (VI) in solutions containing fluorides and sulfates has revealed possibilities for the use of luminescence for the quantitative determination of radium. The wavelength involved would be 253.7 mμ . The author discovers, further, that the sensitivity of the determination is improved in the presence of sodium trimetaphosphate.
Since in the case of uranyl fluoride and sulfate solutions there definite relationships between intensity of luminescence and concentration of uranium (IV), the number of fluorine (and sulfate) ions, and temperature, it is possible to employ as standard solutions only those which in concentration of

Card 1/2

L 16602-63

S/075/63/018/004/011/015

A study of the luminescence of uranyl ..... /

uranium, salt composition and temperature are similar to the solutions analyzed. There are 6 figures. The most important English-language reference reads as follows: Sill, C., Peterson. H., Analyt. Chem., 19, 646 (1947).

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo AN SSSR, Moskva (Institute of Geochemistry and Analytical Chemistry im. V. I. Vernadskiy, Academy of Sciences USSR, Moscow)

SUBMITTED: July 13, 1962

Card 2/2

L 11980-66 EWT(m)/EWP(t)/EWP(b) IJP(c) JD

ACC NR: AP6001802 (A) SOURCE CODE: UR/0089/65/019/006/0542/0544

AUTHOR: Dobrolyubskaya, T.S.

ORG: none

TITLE: Determination of uranium (VI) in carbonate solutions by the far ultraviolet absorption spectrum

SOURCE: Atomnaya energiya, v. 19, no. 6, 1965, 542-544

TOPIC TAGS: uranium, quantitative analysis, spectrographic analysis, UV spectroscopy, absorption spectrum

ABSTRACT: The author considers the absorption spectrum of uranium (VI) in carbonate solutions. Such solutions are encountered in the separation of uranium and plutonium from fission products and the author attempts to establish a short-wave UV absorption method for the determination of uranium in such solutions containing admixtures of dibutylphosphate, tributylphosphate, and synthine. The analysis of the results of the experiment described shows that in the 205—340 mμ region the absorption spectrum of uranium in carbonate solutions is characterized by a broad band having a maximum at 213 mμ. It is shown that this maximum can be used as the basis of quantitative determination of uranium (VI) in the solutions discussed. Author expresses deep gratitude to junior research associate, G.D. Yatsyn, for absorption spectra measurements. Orig. art. has: 4 figures.

SUB CODE: 07 / SUBM DATE: 02Jun64 / ORIG REF: 007 / OTH REF: 008

Card 1/1 UDC: 661.879:167.2

RASKIN, L.; DOBROLYUBSKIY, A.

Give more attention to current work on the establishment of work norms. Sots. trud 5 no.5:88-94 My '60. (MIRA 13:11)
(Moscow--Machinery industry--Production standards)

DOBROLYUBSKIY, A.

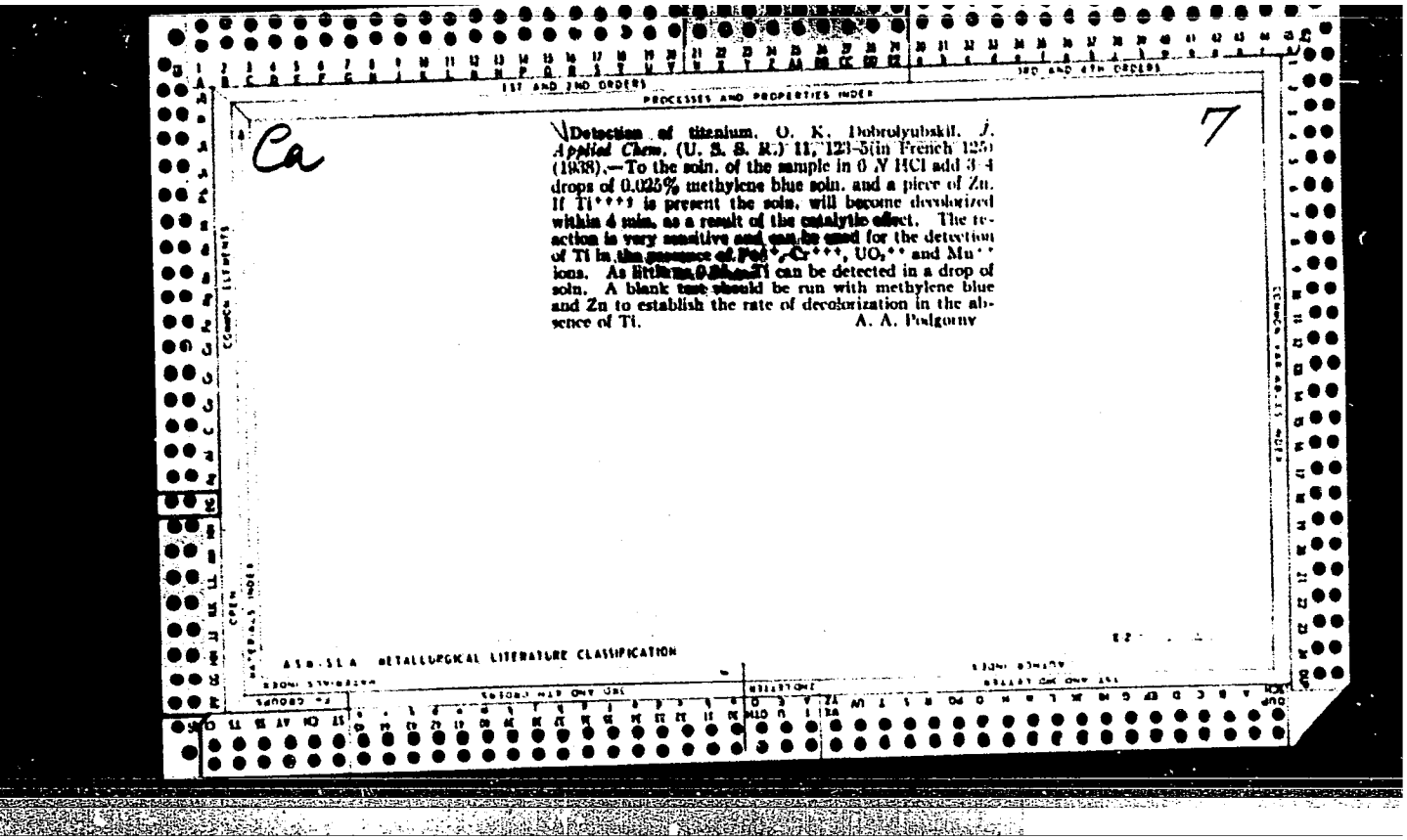
Conference on the establishment of work norms in the machinery industry. Biul. nauch. inform.: trud i zar. plata 4 no.1:47-51 '61. (MIRA 14:3)

(Machinery industry—Production standards)

DOBROLYUBSKIY, A.S.

"The working man." Mashinostroitel' no.6:38-41 Je '61. (MIRA 14:6)

(Turin--Exhibitions) (Industrial management)



PROCESSES AND PROPERTIES INDEX

Ca

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Detection of titanium. O. K. Dobrolyubskii. *J. Applied Chem.* (U. S. S. R.) 11, 123-5(in French 125) (1938).—To the soln. of the sample in 0 *N* HCl add 3-4 drops of 0.025% methylene blue soln. and a piece of Zn. If Ti^{++++} is present the soln. will become decolorized within 4 min. as a result of the catalytic effect. The reaction is very sensitive and can be used for the detection of Ti in the presence of Fe^{+++}, Cr^{+++}, UO_2^{++} and Mn^{++} ions. As little as 0.01 mg Ti can be detected in a drop of soln. A blank test should be run with methylene blue and Zn to establish the rate of decolorization in the absence of Ti. A. A. Polgonv

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

DOBROLYUBSKIY, O. K.

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Cobalticyanic acid. O. K. Dobrolyubskii (Odessa Agr. Inst.). *Zhur. Priklad. Khim.* 26, 1233-7(1953).—A mixt. of a soln. of 25% $K_3Co(CN)_6$ and a slight excess of H_2SO_4 (d. 1.84) was heated for 15–20 min. at 50–55°, cooled, and the K_2SO_4 formed pptd. with abs. EtOH. The filtrate was carefully concd. at 50–55°; the free acid that seps. is recrystd. 3 times. $H_3Co(CN)_6.5H_2O$ (I) (mol. wt. 308) was formed; colorless, needle-like crystals, hygroscopic, not sensitive to light and not toxic. When concd. at 100° $H_3Co(CN)_6.0.5H_2O$ (mol. wt. 227), white and opaque, was formed. At 185° the product was green, at 250° it became blue and finally the carbide of Co was obtained. I was sol. in dil. H_2SO_4, HNO_3, and HCl but only slightly sol. in HNO_3 (d. 1.42). For short periods of time the soln. of I was stable in boiling fuming nitric and sulfuric acids. Hot H_2SO_4 (1.84) converted I to $Co_2[Co(CN)_6]_2$; when heated to 80–90° I decompd., forming CO and CO_2. I. Beneowitz

DOBROLYUBSKIY, O. K.

USSR/Chemistry - Book review

Card 1/1 : Pub. 145 - 10/10

Authors : Dobrolyubskiy, O. K.

Title : Book review

Periodical : Zhur. anal. khim. 9/5, 314-316, Sep-Oct 1954

Abstract : Critical review of a book entitled, "Introduction into Analytical Chemistry", by B. N. Nadenskiy, published in Soviet Science 1953, is presented.

Institution : .....

Submitted : .....

DOBROLYUBSKIY, O.K.

"Biological role of trace elements in the organism of animals and man." A.O.Voinar. Reviewed by O.K.Dobroliubskii. Biokhimiia 19 no.1:125-128 Ja-F '54. (MLRA 7:3)
(Trace elements)

DOBROLYUBSKIY, O.K.

AG V [Application of] zinc fertilizers in viticulture. A. V. Shavyo and O. K. Dobrolyubskii. *Sadovodstvo, Vinogradarstvo i Vinodelie Moldavii* 10, No. 3, 35-8(1955).—The effect of Zn on yield and chem. compn. of grapes is reported. On 4 sides of each vine bush at a distance of 70–80 cm. were put (into 30-35-cm. pits) 0.5-l. portions of the $ZnSO_4$ solns. supplying the plants with 6, 3, 0.5, 0.1, 0.05, and 0.01 g. $ZnSO_4$/bush, resp. The grapes obtained from the plants so treated showed the following characteristics (control given in parentheses): av. wt. of single grape 1.75 (1 expt.), 1.76–2.03 (3 expts.), 1.44–194, 1.34–1.71, 1.53, and 1.47 (1.31–1.45) g. (2 expts.); av. vol. of single grape 1.48, 1.46–1.00, 1.38–1.60, 1.50–1.58, 1.50, and 1.00 (1.30–1.48) cc.; sugar 18.0, 18.6–22.2, 18.3–20.7, 17.2–21.4, 20.4, and 17.2–20.8 (17.5–18.6) %; acid titratable acidity 10.4, 8.0–9.8, 8.0–9.3, 10.2, 8.2, and 8.0–10.0 (8.6–10.5) mg./l., resp. Three g. $ZnSO_4$/bush (9 kg./ha.) gave the best results. The time of the application of $ZnSO_4$ (in fall or in spring just before flowering) and the simultaneous addn. of NH_4NO_3 (16 g./bush) slightly modified the effect of Zn on the grape characteristics studied. E. Wierbicki

DOBROLYUBSKIY, O.K., dotsent, kandidat khimicheskikh nauk

Deficiencies in the manual redox reactions ("Oxidation-reduction reactions"). A.A. Kudriavtsev, G.A. Khrapov-Shmarov. Reviewed by O.K. Dobroliubskii. Khim.v shkole 10 no.3:67-69 My-Je '55. (MLRA 8:8)
(Oxidation-reduction reaction) (Kudriavtsev, A.A.)
(Khrapov-Shmarov, G.A.)

AID P - 3758

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 22/22

Author : Dobrolyubskiy, O. K.

Title : All-Union Conference on trace elements

Periodical : Zhur. prikl. khim. 28, 9, 1022-1024, 1955

Abstract : An All-Union conference on trace elements sponsored by the Academy of Sciences of the U.S.S.R. took place in Riga on March 22-26, 1955. Several papers have been reviewed in this article. Use of industrial wastes containing minor elements (Mn) as fertilizers on a 500,000 ha area was suggested.

Institution : None

Submitted : No date

DOBROLYUBSKIY, O. K.

USSR/ Biology - Plant physiology

Card 1/1 Pub. 22 - 48/54

Authors : Dobrolyubskiy, O. K., and Slavvo, A. V.

Title : Effect of root feeding with Zn and Co microelements on the fertility and chemical composition of grapes

Periodical : Dok. AN SSSR 100/3, 583-586, Jan 21, 1955

Abstract : The effect of Zn and Co microelements on the fertility of grapes was investigated. The results obtained are tabulated. Eleven USSR references (1949-1954). Tables.

Institution : The Agricultural Institute, Odessa

Presented by: Academician A. L. Kursanov, November 30, 1954

DOBROLYUBSKIY, O. K.

USSR/Biology - Plant physiology

Card 1/1 Pub. 22 - 43/47

Authors : Dobrolyubskiy, O. K.

Title : Combined effect of certain microelements on the blossoming and fertility of eggplants

Periodical : Dok. AN SSSR 101/6, 1135 - 1137, Apr. 21, 1955

Abstract : The effect of certain microelements of Zn, Mn, Co applied separately and in combined form on the process of blossoming and fertility of eggplants is explained. Six USSR references (1949-1955). Table.

Institution : The Agric. Ins., Odessa

Presented by: Academician A. L. Kursanov, February 10, 1955

DOBROLYUBSKIY, Oleg Konstantinovich, kandidat khimicheskikh nauk; METANIYEVA, M., redaktor; SHUVALOV, I., tekhnicheskiy redaktor

[Microelements and life] Mikroelementy i zhizn'. [Moskva] Izd-vo TsK VLKSM "Molodaia gvardiia," 1956. 124 p. (MLRA 10:2)
(Trace elements)

DOBROLYUBSKIY, O.K., kandidat sel'skokhozyaystvennykh nauk; SLAVVO, A.V., kandidat sel'skokhozyaystvennykh nauk.

Trace element fertilizers in viticulture. Nauka i pered.op. v sel'-khoz. no.9:16 S '56. (MLRA 9:10)
(Trace elements) (Viticulture)

USSR/Cultivated Plants. Fruits. Berries. M

Abs Jour: Ref Zhur-Biol., No 5, 1958, 20508.

Author : O.K. Dobrolyubskiy, A.B. Slavvo
Inst : Odessa Agricultural Institute.
Title : The Combined Action of the Microelements on Grapes. (Kombinirovannoye vozdeystviye mikroelementov na vinograd).

Orig Pub: Sadovodstvo, vinogradarstvo i vinodeliya Moldavii, 1956, // No 5, 28-29.

Abstract: At the training farm of the Odessa Agricultural Institute a study was made in 1954-1955 of non-root feeding of microelements in various varieties of grapes. $ZnSO_4$ $5 \cdot 10^{-3}$ and $CoSO_4$ $5 \cdot 10^{-5}$ were applied separately or together. The vines were sprayed for 2-3 days up to the large scale blossoming in the amount of 200 milliliters of solution per

Card : 1/2