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112-1-1227 D

Translation from: Referativnyy Zhurnal, Elektrotekhnika, 1957, Nr 1, p.191 (USSR)

AUTHOR: Polonnikov, D.Ye.

TITLE: Input Arrangements of Electron Amplifiers of Automatic Compensators (Vkhodnyye ustroystva elektronnykh usiliteley avtomaticheskikh kompensatorov)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of Candidate of Technical Sciences, presented to the Institute of Automation and Teleautomatics of the Academy of Sciences, USSR (In-t avtom. i telemekhan. AN SSSR), Moscow, 1956.

ASSOCIATION: Institute of Automation and Teleautomatics of the Academy of Sciences, USSR (In-t avtom. i telemekhan., AN SSSR)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

POLONNIKOV, D. Ye.

"New Circuits of Phase-Sensitive Electron Amplifiers and Contact Converters," pp 146-156, ill

Abst: The results of experiments conducted during the development of electron amplifiers of an aggregated unified system are given. Such amplifiers are those designed for the amplification of signals of direct and alternating current at a frequency of 50 cps. The amplifiers are widely used in electronic automatic potentiometers, self-compensators, servo systems, and electronic regulators.

SOURCE: Sbornik Rabor po Avtomatike i Telemekhanike. In-t Avtomatike i Telemekhaniki AN SSSR (Collection of Works in Automatics and Telemechanics. Institute of Automatics and Telemechanics of the Academy of Sciences USSR), Moscow, Publishing House of the Academy of Sciences USSR, 1956

Sum 1854

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

MININA, O.M. (Moskva); POLONNIKOV, D.Ye. (Moskva)

Performance characteristics of plate-circuited A.C. power amplifiers. (MLRA 9:8)
Avtom.i telem. 17 no.329-334 Ap '56.
(Amplifiers, Electron-tube)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

Polonnikov, D. Ye

103-10-4/10

AUTHOR: Polonnikov, D.Ye. (Moscow)

TITLE: On the Design of Input Circuits of Electronic Amplifiers of Self-Compensators
(O postroyenii vkhodnykh tsepey elektronnykh usiliteley avto-kompensatorov)

PERIODICAL: Avtomatika i Telemekhanika, 1957, Vol.18, Nr 10, pp. 911 - 917 (USSR)

ABSTRACT: In this connection self-compensators mean the various types of self-potentiometers, selfcompensating bridges and similar devices based on the principle of a continuous automatic compensation of the measuring scheme. In the case of the amplifiers of self-compensators it is demonstrated that the disturbances due to the thermionic current circuit are essential. This disturbance consists of two components: 1.) One component is proportional to the quantity of the total resistance in the grid circuit and can be explained by the existing capacity between the valve grid and the feed line of the thermionic current circuit. 2.) The second component is independent from the quantity of the resistance and is caused by the modulation of the electronic current due to the magnetic field, by active leaks ("losses") and

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L 27240-65 EWT(d)/EWD-2/EWP(1) Po-4/Pq-4/Pg-4/Pk-4 IJP(c) BB/GG/GS
ACCESSION NR: AT5003916 S/0000/64/000/000/0202/0208

31
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B+1

AUTHOR: Polonnikov, D. Ye.

TITLE: Determination of optimal forms of amplitude-frequency characteristics of decision amplifiers 16

SOURCE: Vsesoyuznaya konferentsiya - seminar po teorii i metodam matematicheskogo modelirovaniya. 3d, 1962. Vychislitel'naya tekhnika v upravlenii (Computer technology in control engineering); sbornik trudov konferentsii. Moscow, Izd-vo Nauka, 1964, 202-208

TOPIC TAGS: decision amplifier, amplitude frequency characteristic, transfer function, system response, system stability

ABSTRACT: An invariant formulation is proposed for the optimal amplitude-frequency characteristic of decision amplifiers used in analog computers. The characteristic is defined in terms of the maximum overshoot and the time during which the error of the amplifier does not exceed a specified value when a step-function perturbation is introduced in series with the feedback circuit. The problem is to find an optimal amplitude-frequency characteristic of the amplifier proper, for a specified

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range of variation of the structure and parameters of the external circuits and for a specified minimum sum of parasitic time constants of the amplifier, such that the static error does not exceed a given value, the system stays stable, and maximum bandwidth is ensured. A procedure for constructing an optimal frequency characteristic under these conditions is presented in step by step form, without proof. It is stated in the conclusion that the procedure was used to construct (for the case of absolute stability) 8 fundamental forms of amplitude-frequency characteristic, covering practically all possible relations (more than 100) between the feedback-circuit parameters, and yielding the conditions under which these forms are optimal. Orig. art. has: 6 figures and 19 formulas.

ASSOCIATION: None

SUBMITTED: 17Aug64 ENCL: 00 SUB CODE: DP

NR REF SOV: 004 OTHER: 000

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APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

POLONNIKOV, D.Ye. (Moskva)

Method for analyzing the errors of an operational amplifier invariant in respect to its mathematical operation. Avtom. i telem. 26 no.9:1614-1617 S '65. (MIRA 18:10)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

POLONNIKOV, D.Ye. (Moskva)

Method for determining the phase-frequency characteristics of a system using logarithmic amplitude-frequency characteristics with random slope of its individual sections. Avtom. i telem. 26 no.4:721-723 Ap '65. (MIRA 18:6)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3"

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ACCESSION NR: AR5014861 UR/0271/65/000/006/A024/A024
62-52: 621.375.2

16

SOURCE: Ref. zh. Avtomatika, telemekhanika i vychislitel'naya tekhnika. Sv. t., Abs. 6A176 B

AUTHOR: Polonnikov, D. Ye.

TITLE: Resolving amplifiers 15

CITED SOURCE: Sb. Entsiklopediya izmereniy kontrolya i avtomatiz. Vyp. 3. M.-L., Energiya, 1964, 33-36

TOPIC TAGS: resolving amplifier, negative feedback amplifier, tricascade amplifier, reduced zero drift, parallel channel amplifier, transient process duration

TRANSLATION: The report discusses various layouts of resolving amplifiers with deep negative feedback. Problems on errors and stability of amplifiers are analyzed, and various correction circuits allowing attainment of the required form of amplitude-frequency and phase responses are considered. A description is given of a simple amplifier circuit and a circuit for an amplifier with low zero drift, as well as a circuit

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for a DC amplifier. A 3-cascade, DC, vacuum-tube amplifier without automatic zero drift compensation represents the simplest design. The primary cascade represents an asymmetric parallel-balance layout. This amplifier is characterized by a brief transient process following an overload and insures a very low noise level at output. The amplifier with reduced zero drift consists of a DC amplifier, modulator, AC amplifier, demodulator and filter. The design requires a stabilized power supply. It is characterized by a long transfer process after overload and the zero drift depends on the magnitude of the grid current of the first tube. A block diagram is given for a parallel channel amplifier which is free of these shortcomings. Amplifier parameters are cited. Bibl. with 7 titles; 11 illustrations. O. Sh.

SUB CODE: IE, EC ENCL: 00

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Card 2/2

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

AVEN, O.A.; DVORETSKIY, V.M.; DOMANITSKIY, S.M.; ZALMANZON, L.A.; KRASSOV, I.M.; KRUG, Ye.K.; TAL', A.A.; KHOKHLOV, V.A.; BULGAKOV, A.A.; DEMIDENKO, Ye.D.; BERNSHTEYN, S.I.; YEMEL'YANOV, S.V.; LERNER, A.Ya.; MEYEROV, M.V.; PEREL'MAN, I.I., FITSNER, L.N.; CHELYUSTKIN, A.B.; ZHOZHIKASHVILI, V.A.; IL'IN, V.A.; AGEYKIN, D.I.; GUSHCHIN, Yu.V.; KATYS, G.P.; MEL'TTSER, L.V.; PARKHOMENKO, P.P.; MIKHAYLOV, N.N.; FITSNER, L.N.; PARKHOMENKO, P.P.; ROZENBLAT, M.A.; SOTSKOV, B.S.; VASIL'YEVA, N.P.; PRANGISHVILI, I.V.; POLONNIKOV, D.Ye.; VOROB'YEVA, T.M.; DEKABRUN, I.Ye.

Work on the development of systems and principles of automatic control at the Institute of Automatic and Remote Control during 1939-1964. Avtom. i telem. 25 no. 6:807-851 Je '64. (MIRA 17:7)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

POLONNIKOV, D.Ye.

Device for measuring weak currents and voltages. Prib. i tekh. eksp. 8 no.1:67-72 Ja-F '63. (MIRA 16:5)

1. Institut avtomatiki i telemekhaniki AN SSSR.
(Electric measurements)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

POLONNIKOV, D.Ye. (Moskva)

Automatic null compensation circuit in electrometer amplifiers and its analysis. Avtom.i telem. 23 no.12:1668-1674 D '62. (MIRA 15:12)

(Electronic measurement)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

S/120/63/000/001/014/072
E140/E135

AUTHOR: Polonnikov, D.Ye.

TITLE: Instrument for measuring small currents and voltages

PERIODICAL: Pribory i tekhnika eksperimenta, no.1, 1963, 67-72

TEXT: A vacuum tube electrometer circuit is described with a range of 5×10^{-17} to 2×10^{-7} A and 0.02 - 200 mV. Automatic zero drift correction is included, reducing the zero drift to "a level comparable with the noise level", 1 - 2 mV during 8 hours.
There are 3 figures and 1 table.

ASSOCIATION: Institut avtomatiki i telemekhaniki AN SSSR (Institute of Automation and Remote Control, AS USSR)

SUBMITTED: April 28, 1962

Card 1/1

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

POLONNIKOV, D.Ye. (Moskva)

Method for constructing amplitude and phase frequency characteristics using a generalized family of logarithmic characteristics. Avtom. i telem. 22 no.6:739-747 Je '61. (MIRA 14:7)
(Amplifiers (Electronics)) (Frequency measurements)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

POLONNIKOV, D.Ye. (Moskva)

Wide-band operational amplifiers. Avtom. i telem. 21 no. 12:1613-1622 D '60. (MIRA 14:1)
(Electronic analog computers) (Amplifiers (Electronics))

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3"

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86218

S/103/60/021/012/005/007
B012/B064

9,7150

AUTHOR: Polonnikov, D. Ye. (Moscow)

TITLE: Broadband Decision (Operational) Amplifiers

PERIODICAL: Avtomatika i telemekhanika, 1960, Vol. 21, No. 12, pp. 1613-1622

TEXT: The present paper gives the structure of multistage decision amplifiers. As compared with the usual single-stage circuit, these amplifiers permit, under the same conditions, the stability to be increased considerably and the transmission range of the amplifier to be widened. Two circuits of decision amplifiers are given as examples of a practical application of this principle. The principle of the successive connection of cascades is a further development of the signaling ahead first applied by C. S. Deering (Ref. 3) in amplifiers. Figs. 5 and 6 show the two circuits, the cascade connection being only partly applied in the second. Some results are given, obtained from testing a three-channel amplifier designed in accordance with the circuit shown in Fig. 6. Conditions for the selection of the time constants warranting a given attenuation of the

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Broadband Decision (Operational) Amplifier

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amplitude-time characteristic are found in these circuits. The relationship between the frequency range within which a given accuracy is warranted and the least time constant in the system is found.
Legend to Fig. 5: Circuit of a multichannel-computing amplifier (МУ-12 (MU-12)) with a transmission range of 7 Megacycles. 1) U_{output}, 2) amplifier, consisting of a modulator, three-cascade alternating current amplifier, and demodulator.
Legend to Fig. 6: Circuit of a three-channel amplifier (ТУ-10 (TU-10)) with a transmission range of 1 Megacycle. 1) Vibrapack, 2) modulator, 3) demodulator, 4) from the second amplifier, 5) cps.
There are 8 figures and 7 references: 3 Soviet.

SUBMITTED: May 7, 1960

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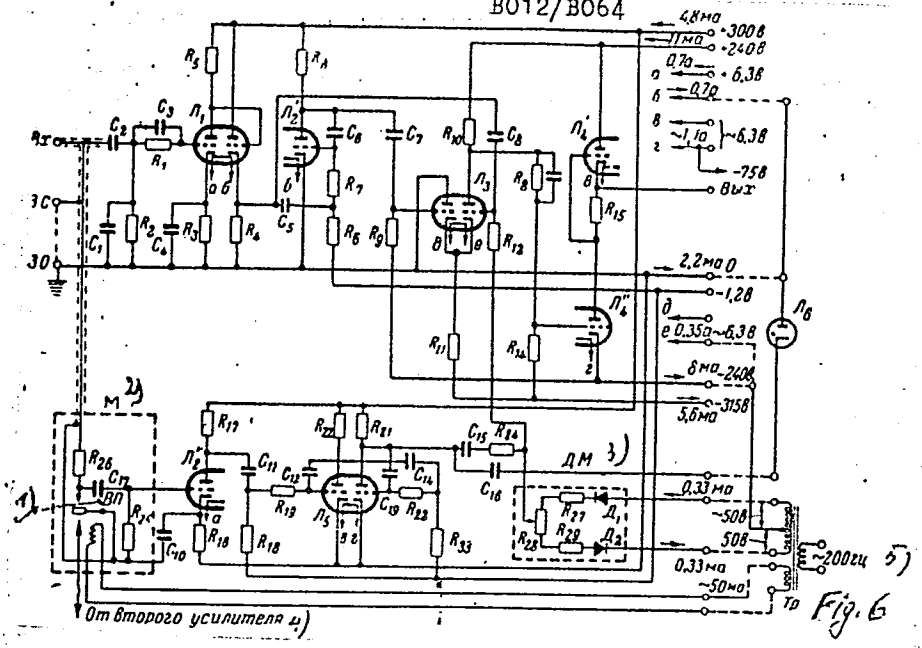

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Fig. 6

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PHASE I BOOK EXPLOITATION SOV/3669

Polonnikov, Dmitriy Yevstigneyevich

Elektronnyye usiliteli avtomaticheskikh kompensatorov (Electronic Amplifiers of Automatic Compensators) Moscow, Fizmatgiz, 1960. 334 p. 15,000 copies printed.

Ed.: N. A. Korolev; Tech. Ed.: S. N. Akhlamov

PURPOSE: This monograph is intended for specialists in the fields of automation, electronics, and instrument construction.

COVERAGE: This book partially fills deficiencies in Soviet and non-Soviet literature in the study of electronic amplifiers used in automatic compensator circuits. Particular attention is devoted to amplifier circuits and to methods of designing them. The author describes in detail problems of developing input and output amplifier circuits, noise abatement methods, and ways of obtaining high equipment sensitivity. The author thanks V. A. Trapeznikov, Corresponding Member of the Academy of Sciences, N. A. Korolev, K. E. Erglis, R. A. Valitova, and T. V. Pritullo. There are 62 references: 39 Soviet, 22 English, and 1 German

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Electronic Amplifiers of Automatic Compensators SOV/3669

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25. Power amplifiers with a-c powered plate circuits 291
26. Power amplifiers with plate circuits on direct and pulse currents 315
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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

AUTHORS: Kogan, B. Ya., Maslov, A. A., Polonnikov, D. Ye.

SOV/30-58-7-12/49

TITLE: Electronic Modelling Apparatus of the Type EMU-8A (Elektronnaya apparatura modelirovaniya tipa EMU -8A)

PERIODICAL: Vestnik Akademii nauk SSSR, 1958, Nr 7, pp. 69 - 74 (USSR)

ABSTRACT: Such devices are increasingly used in connection with the solution of various scientific and technical problems. Their use in the form of elements of complicated automatic systems is also projected. The apparatus EMU-8A demonstrated at the International Exhibition in Brussels is the most recent modification of the type EMU-8A and is destined for the investigation of both linear and non-linear systems. These two apparatus were worked out in the Institute of Automation and Telemechanics (Institut avtomatiki i telemekhaniki) under the supervision of V.A.Trapeznikov and B.Ya.Kogan. Besides, the authors of this article, V.V.Gurov and F.Ye.Tranin took part in this work. This apparatus is designed according to the block-principle (see Fig 1) in which case each block guarantees - according

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to its limitations - the solution of both linear and non-linear differential equations up to second order inclusively. Complicated problems may be solved by connecting some fundamental blocks provided with the necessary units. The power consumption of a unit amounts to 140 W, its full weight is 36,8 kg. Its dimensions are: 320 mm high, 450 mm wide and 460 mm deep. It operates with an error of from 0,5 to 1%. The basic scheme of the solving amplifier which differs from that worked out by V.M.Yevseyev, is given in figure 2. Figure 3 shows the basic scheme of the multiplication device. A special control desk was developed according to the scheme given in figure 4 for its adjustment. The diode circuits of the transformer are given in figure 5. As no stabilized supply voltage is required and because of the block structure and because of improved technical characteristics this apparatus can be used also as an element in complicated automatic systems. There are 5 figures and 2 references, 1 of which is Soviet.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

AUTHOR: Polonnikov, D. Ye. (Moscow) 103-19-6-7/13

TITLE: Input Circuits in Amplifiers With Contact Vibration Transformers (Vkhodnyye tsepi usiliteley s kontaktnymi vibropreobrazovatelyami)

PERIODICAL: Avtomatika i telemekhanika, 1958, Vol 19, Nr 6, pp 582 -591 (USSR)

ABSTRACT: The results of the investigation of the most widely spread diagrams of input circuits contact-vibration-transformers and recommendations for the use in amplifiers of autopotentiometers are given here. At first the demands made on such amplifiers are shown. Then the most widely used diagrams and the formulae for their basic parameters are given in the form of tables. The derivations of these formulae are not given, only some concerning explanations. The last scheme no.9 is especially thoroughly discussed. At the end the mentioned recommendations are given: 1) In those cases where no division of the input circuits is necessary and where a zone of insensitiveness above 1o μV seems admissible the diagram 8 without transformer is most expedient. 2)When a division of the input circuits or a zone of insensitiveness below 1o μV are necessary, diagram 9 with an input trans-

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Input Circuits in Amplifiers With Contact Vibration Transformers 103-19-6-7/13

former is of advantage. 3) Diagram 6 without transformer is expedient in cases where a high input resistance in the case of high dynamic properties, e.g., in the measurement of small amperages, must be used. 4) The use of the other diagram of the table in amplifiers of autocompensators is as a rule expedient. There are 4 figures, 1 table and 6 references, 4 of which are Soviet.

SUBMITTED: May 30, 1957

1. Servo amplifiers--Circuits

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

AUTHOR: Polonnikov, D. Ye. (Moscow) 103-19-7-6/9

TITLE: Automatic Compensation of the Zero Drift in Electrometric Amplifiers (Avtomaticheskaya kompensatsiya dreyfa nulya v elektrometricheskikh usilitelyakh)

PERIODICAL: Avtomatika i telemekhanika, 1958, Vol 19, Nr 7, pp 684 - 694 (USSR)

ABSTRACT: The author analyzed schemes for the automatic compensation of the zero drift which operate by means of a contact switch, explains the errors introduced by the switch and finds a method for their removal. On the basis of these investigations in the IAT AS USSR two types of electrometric amplifiers were worked out. It was succeeded to bring the drift nearer to the level of the noise and, concerning the sensitivity, to reach the limit, which is theoretically attainable and which is conditioned by the thermal noise at the input. First a general survey on the errors which form in the automatic compensation of the zero drift and on the methods for their diminution is given. It is shown that in case of corresponding selection of material and construction the error introduced by the switch can be reduced to a very small value. Some variants

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of the compensation scheme were worked out. On figure 2 a block scheme of the amplifier which practically guarantees a perfect continuity of the measurements is given. On figure 3 a fundamentally simpler circuit is shown, in which only one electrometric amplifier and only half of the number of contacts is used. This circuit performs a logical operation. It chooses the moments for the drift compensation guaranteeing the minimum measuring error. The considerations on the basis of which a control of the operation of the pulse generator was not provided are given. The two worked out equipment circuits serve for the measurement of quite low and slowly varying amperages and of the e.m.f. with a high internal resistance. Here the electrometric self-balancing amplifier of the type ESU -1 is described briefly. The block scheme is analogous to that in figure 3, it does not, however, provide any control of the operation period of the pulse generator. The testing of this device showed that its sensitivity is limited only by the thermal noise in the input circuit. During an arbitrary period (the investigations lasted for 2 months) the zero drift does not exceed the two-fold level of the noise at an internal resistance of the signal source of 10^9 ohm and even of 10^{10} ohm.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

Automatic Compensation of the Zero Drift in Electrometric Amplifiers 103-19-7-6/9

The testing of the model for the developed device proves the expediency of the application of a compensation of the zero drift in the amplifier with dynamic condenser by means of a contact switch. There are 6 figures, 2 tables, and 8 references, 3 of which are Soviet.

SUBMITTED: July 20, 1957

1. Amplifiers—Performance 2. Amplifiers—Signal to noise ratio 3. Switches—Electrical effects 4. Amplifiers—Test results

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APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

POLONNIKOV, D.Ye. (Moskva).

Input circuits of amplifiers modulated by contact vibrators [with summary in English]. Avtom. i telem. 19 no.6:582-591 Je '58.
(Amplifiers, Electron-tube) (MIRA 11:6)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

KOGAN, B.Ya.; MASLOV, A.A.; POLOMNIKOV, D.Ye.

Electronic simulating apparatus of the EMU-SA type. Vest. AN SSSR 28 no. 7:69-74 Jl '58. (MIRA 11:7)
(Electromechanical analogies)

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POLONNIKOV, Dmitriy Yevstigneyevich; ERGLIS, K.E., retsenzent; KOROLEV, N.A., red.; AKHLAMOV, S.N., tekhn.red.

[Electronic amplifiers of automatic compensators] Elektronnye usiliteli avtomaticheskikh kompensatorov. Moskva, Gos.izd-vo fiziko-matem.lit-ry, 1960. 334 p. (MIRA 13:3)
(Amplifiers (Electronics))

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

S/089/61/010/003/004/021
B108/B209

21.1230

AUTHORS: Galkin, N. P., Mayorov, A. A., Polonnikova, G. A., Shcherbakova, V. G., Utkina, L. V.

TITLE: Separation of uranium from impurities by means of ammonium carbonate

PERIODICAL: Atomnaya energiya, v. 10, no. 3, 1961, 233-237

TEXT: The authors investigated the dissolution of pure $(NH_4)_2U_2O_7$ in $(NH_4)_2CO_3$ and NH_4HCO_3, the separation of uranium in the form of $(NH_4)_4[UO_2(CO_3)_3]$, and the behavior of some impurities in the salting out of the crystals of this carbon complex. The dissolution involves the following processes:

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$$(NH_4)_2U_2O_7 + 6(NH_4)_2CO_3 + 3H_2O \rightleftarrows 2(NH_4)_4[UO_2(CO_3)_3] + 6NH_4OH; \quad (1)$$

$$(NH_4)_2U_2O_7 + 6NH_4HCO_3 \rightleftarrows 2(NH_4)_4[UO_2(CO_3)_3] + 3H_2O. \quad (2)$$

(1),

(2)

The experiments were made with a special vessel in a thermostat at 40 ± 0.1°C. Equilibrium was practically reached after one hour. The higher solubility of $(NH_4)_2U_2O_7$ in NH_4HCO_3 (Fig. 1) may be explained by the action of NH_4OH which shifts the equilibrium to the left (see reaction (1)). Dilute solutions containing $(NH_4)_2CO_3$ or NH_4HCO_3 in a stoichiometric ratio (according to (1) and (2)) may completely dissolve ammonium di-uranate without formation of the above carbon complex. The precipitation of small and large crystals was determined in order to study the influence of certain factors upon crystallization. Large

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20174

crystals are called such of a size of 100 × 20 - 300 × 60 μ. The experiments were carried out as follows: $(NH_4)_2CO_3$ was added under stirring to the $(NH_4)_4[UO_2(CO_3)_3]$ solution until saturation was reached. After salting out had ceased, the solution with the crystals was stirred further on for some time. The crystals were then filtered off and subjected to sedimentation analysis. It was found that a temperature rise from 20 to 40°C and an increase of the time of admixing $(NH_4)_2CO_3$ lower the quantity of small crystals. The same holds for an increase in the speed of the stirrer from 60 to 180 rpm. However, a further increase has hardly any effect. Fig. 7 shows the uranium concentration in the solution during salting out of $(NH_4)_4[UO_2(CO_3)_3]$. The best conditions of crystallization are: temperature - 40°C; time of $(NH_4)_2CO_3$ admixture - 1 hour; uranium concentration in the initial solution - 30 g/l; speed of the stirrer - 180 rpm. The impurities to be investigated entered the initial $(NH_4)_4[UO_2(CO_3)_3]$ solution immediately before crystallization. The resulting ammonium di-uranate containing one kind of impurity was

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B108/B209

Separation of uranium from ...

dissolved in a 5% NH_4HCO_3 solution. Under the above conditions, the carbon complex crystallized. The filtered crystals were rinsed with a saturated $(NH_4)_2CO_3$ solution. After drying they were oxidized by annealing. Table 1 shows that most of the elements are easy to separate from uranium. Table 2 shows the results of purification of ammonium di-uranate which contained several kinds of impurities. There are 7 figures, 2 tables, and 3 references: 2 Soviet-bloc.

SUBMITTED: August 11, 1960

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B108/B209

Separation of uranium from ....

Legend to Fig. 1: Solubility of ammonium di-uranate in solutions of $(NH_4)_2CO_3$ (curve 1) and NH_4HCO_3 (curve 2). Abscissa: Carbonate concentration, g/l. Ordinate: Uranium concentration in the solution, g/l.

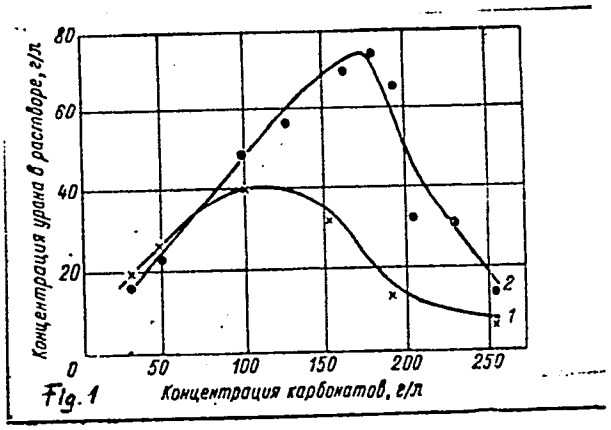

Fig. 1

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B108/B209

Separation of uranium from ...

Legend to Fig. 7: Variation in uranium concentration in the solution during $(NH_4)_4[UO_2(CO_3)_3]$ separation. Abscissa: Excess carbonate, g/l. Ordinate: Uranium concentration in the solution, g/l.

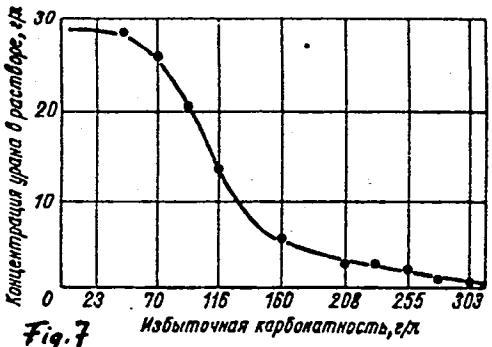

Fig. 7

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Separation of uranium from ....

Legend to Table 1: a) Impurity soluble in $(NH_4)_2CO_3$; b) impurity unsoluble in $(NH_4)_2CO_3$.
1) Element; 2) impurity concentration in the initial solution, g/l; 3) impurity concentration in uranium oxide, %, with respect to U; 4) impurity concentration in ammonium di-uranate, %, with respect to U.

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Примеси, растворимые в $(NH_4)_2CO_3$ a)			Примеси, нерастворимые в $(NH_4)_2CO_3$ b)		
элемент 1)	концентрация примеси в исходном растворе, г/л 2)	концентрация примеси в закиси-окиси урана, % к урану 3)	элемент 1)	концентрация примеси в диуранате аммония, % к урану 4)	концентрация примеси в закиси-окиси урана, % к урану 3)
Cu	1,9 1,0 0,1 0,01	0,015 0,007 <0,0001 <0,0001	Fe	4,0 1,0 0,4	0,12 0,055 0,039
B	0,1 0,01 0,001	$\geqslant 1\cdot10^{-4}$ $1\cdot10^{-4}$ $1\cdot10^{-5}$	Mn	5,0 0,52 0,16	0,059 0,012 0,0083
V	0,5 0,1 0,01	0,076 0,039 0,0032	Al	21,0 8,0 0,83	0,0059 0,0059 0,0048
P	2,0 1,0 0,1 0,01	0,20 0,165 <0,001 <0,001	Cr	8,06 0,83 0,08	0,115 0,077 <0,01
Na	10 5 1	0,012 0,007 0,001	—	—	—
K	10 5 1 0,1	16,6 7,9 1,64 0,102	—	—	—

Table 1

Таблица 2

при помощи $(NH_4)_2CO_3$

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Separation of uranium from ....

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Legend to Table 2: 1) Material; 2) initial ammonium di-uranate (containing 30.0% uranium when dry); 3) uranium oxide (containing 84.0% uranium); 4) content, % by weight (with respect to uranium).

Продукт 1)	Содержание, вес. % (в пересчете на уран) 4)							
	Fe	Al	P	V	Mn	Cu	Cr	Si
Исходный диуранат аммония . . . . . 2)	15,0	26,0	0,66	0,10	1,3	0,03	0,10	1,67
Закись-окись урана . . 3)	0,035	0,0059	0,012	Не обн.	0,035	0,0035	0,0047	0,0035

X

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

POLONNIKOVA, G.A.; KUDINOVA, K.F.

Crystal hydrates of uranyl sulfite. Zhur. neorg. khim. 6 no.7: 1520-1522 Jl '61. (MIRA 14:7)

(Uranyl sulfite)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

GALKIN, N.P.; MAYOROV, A.A.; POLONNIKOVA, G.A.; SHCHERBAKOVA, V.G.; UTKINA, L.V.

Seperation of uranium from impurities by means of ammonium carbonate. Atom. energ. 10 no.3:233-237 Mr '61. (MIRA 14:3)
(Uranium) (Ammonium carbonate)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

POLONNIKOVA, G.A.; UTKINA, L.V.

Ammonium uranyl sesquicarbonate. Zhur.neorg.khim. 6 no.4:1001-1003 Ap '61. (MIRA 14:4)

(Uranyl compounds)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

GALKIN, N.P.; POLONNIKOVA, G.A.

Separation of uranium from impurities by means of ammonium sulfite. Atom. energ. 10 no.3:277-279 Mr '61. (MIRA 14:3)
(Uranium) (Ammonium sulfite)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

S/089/61/010/003/018/021
B102/B205

21.3100

AUTHORS: Galkin, N. P., Polonnikova, G. A.

TITLE: Separation of uranium from impurities by means of ammonium sulfite

PERIODICAL: Atomnaya energiya, v. 10, no. 3, 1961, 277-279

TEXT: Though the possibility of using $(NH_4)_2SO_3$ for uranium separation has been known since 1843, there are no accurate methods available. The authors believe that this substance is particularly suited for laboratory work. The present "Letter to the Editor" deals with the conditions for the purification of ammonium diuranate. The authors studied the solubility of pure ammonium diuranate in ammonium-sulfite solution as dependent on various factors, as well as the conditions for the separation of uranium from an ammonium-sulfite solution. Specifically, they studied the effect of the concentration of $(NH_4)_2SO_3$, temperature, and the T : ЖС ratio (T - weight of wet diuranate; ЖС - weight of the ammonium-sulfite solution) upon the solubility of ammonium diuranate in the

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presence of $(NH_4)_2SO_3$. The dissolution took place according to the reaction equation $(NH_4)_2U_2O_7 + 4(NH_4)_2SO_3 + 3H_2O \rightleftarrows 2(NH_4)_2[UO_2(SO_3)_2] + 6NH_4OH$. The experiments were carried out as follows: A weighed portion of pure ammonium diuranate of 56% moisture was introduced into thick-walled test tubes, and a certain amount of freshly prepared ammonium-sulfite solution was added. The tubes were stoppered and mounted on a disk which was placed in an air thermostat. By perpendicular rotation of the disk, the substance in the thermostat was intermixed. The dissolution took 2 hr. The graphically represented results show that the solubility of ammonium diuranate increases with an increase in temperature and in the ratio of ammonium sulfite to uranium. The highest uranium concentration in the solution reached in the experiments was 39.3 g/l at an ammonium sulfite/uranium ratio of 14. A further expansion of the volume of the $(NH_4)_2SO_3$ solution led to a complete dissolution of ammonium diuranate. The solubility of the diuranate can be increased by neutralizing the forming ammonia with the help of sulfurous acid.

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Addition of 0.5 M H_2SO_3 per mole of uranium increases the uranium content in the solution from 16 to 28 g/l, and addition of 1 M H_2SO_3 per mole of uranium increases it to 52 g/l (T: Ma = 1:2). Uranium can be separated from ammonium-sulfite solutions by boiling and keeping the volume of the solution constant. Deposits form at pH=6, one hour after the solution has begun boiling. The deposits consist of coarse, yellowish, transparent crystals. The ratio U : SO_3 : NH_3 in the deposit was determined to be 1 : 1.96 : 2.26. Optimum conditions for the dissolution process: saturated ammonium-sulfite solution (concentration of 320 g/l), temperature of 80°C, ammonium-sulfite to uranium ratio of 13.6, and T: Ma = 1:2. The unsoluble deposit is filtered off, and the solution is boiled for 5 hr. The resulting crystals are washed twice in 10% ammonium-sulfite solution, dried, and tempered at 800-900°C in order to obtain a mixed uranium oxide. Results of an analysis of the initial and the final product are contained in Table 3. There are 3 figures, 3 tables, and 3 references: 1 Soviet-bloc and 1 non-Soviet-bloc.

SUBMITTED: August 4, 1960

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Separation of uranium from impurities ... S/089/61/010/003/018/021
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Legend to Table 3:
1) Product. 2) Content, % by weight. 3) Initial ammonium diuranate.
4) Mixed uranium oxide.

Продукт (1)	Содержание, вес.% (2)									
	U	Fe	Mn	Cu	Al	P	Ca	Co	As	H_2O
(3) Исходный диуранат аммония . . .	36,0	11,2	0,15	0,06	1,4	0,34	0,40	0,006	0,3	61
Закись-окись урана (4)	83,3	0,045	0,006	0,01	0,01	0,02	0,1	<0,0001	0,1	—

Tab.3

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

Polonova, A.P.

KYDYNOV, M., nauchnyy sotrudnik; BATYRCHAYEV, I.; LOPINA-SHENDRIK, M.D.; KALBAYEV, A.; IMANAKUNOV, B.; SULAYMANKULOV, K., kand.khim.nauk; DUYSHENALIYEVA, N.; AKBAYEV, A.; KAZIYEV, K.; GOLOVIN, F.I.; BAKASOVA, Z.; KOVALENOK, Z.P.; SHELUKHINA, N.P.; BUGUBAYEV, A.B., starshiy prepodavatel'; BAYBULATOV, E.B., mladshiy nauchnyy sotrudnik; FILIPPOV, N.A., mladshiy nauchnyy sotrudnik; MAMBETA-KUNOV, T., aspirant; IMANKULOV, A., aspirant; TURMAMBETOV, S., mladshiy nauchnyy sotrudnik; MUKHAMEDZIYEV, M.M., nauchnyy sotrudnik; KONURBAYEV, A.O.; PAK, L.V.; RUDAKOV, O.L.; TOKTOSUNOV, A.; KULAKOVA, R.I.; ASHIRAKHMANOV, Sh., aspirant; ALYSHBAYEV, B.; SULTANALIYEV, A.; AKHMETOV, K.; POLONOVA, A.P.; NIKITINSKIY, Yu.I.; SHAMBETOV, S.Sh.; DZHUMBAYEV, B.O., nauchnyy sotrudnik; DRUZHININ, I.G., red.; ANOKHINA, M.G., tekhn.red.

[Papers by junior scientists of the Academy of Sciences of the Kirghiz S.S.R.] Trudy molodykh nauchnykh rabotnikov AN Kirgizskoi SSR. Frunze, 1958. 411 p. (MIRA 12:3)

(Continued on next card)

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KYDYNOV, M.---(continued) Card 2.

1. Akademiya nauk Kirgizskoy SSR, Frunze. 2. Institut khimii AN Kirg.SSR (for Kydynov). 3. Kirgizskiy gosudarstvennyy universitet (for Bugubayev). 4. Institut geologii AN Kirg.SSR (for Baybulatov). 5. Institut vodnogo khozyaystva i energetiki AN Kirg.SSR (for Filippov). 6. Otdel fiziki i matematiki AN Kirg.SSR (for Mambetakunov, Imankulov). 7. Institut zoologii i parazitologii AN Kirg.SSR (for Turmambetov). 8. Kirgizskiy meditsinskiy institut (for Mukhamedziyev). 9. Otdel pochvovedeniya AN Kirg.SSR (Ashirakhmanov). 10. Institut botaniki AN Kirg.SSR (for Alyshbayev, Sultanaliyev, Akhmetov, Polonova, Nikitinskiy). 11. Institut istorii AN Kirg.SSR (for Dzhumbayev).

(Science--Collections)

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BC

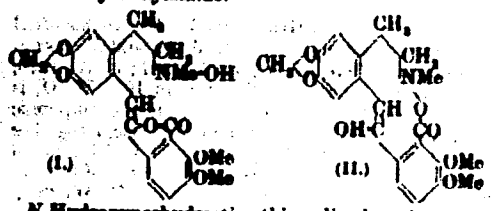
1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

A-3

Amine oxides of alkaloids. VIII. Transformation of hydrastine *N*-oxide into dialkylhydroxylamine; *N*-hydroxynorhydrastimethine and *N*-hydroxyhydrasteine. M. POLONOVSKI and M. POLONOVSKI (Bull. Soc. chim., 1931, [iv], 49, 533—543; cf. A., 1930, 935).—Hydrastine *N*-oxide slowly in the cold or rapidly in boiling $CHCl_3$ loses H_2O, basicity, and optical activity, giving anhydro-*N*-hydroxynorhydrastimethine (I), m. p. 189° (*hydrochloride*, m. p. 196°). In HCl with SO_4 I yields a mixture of a *sulphamino-derivative*, $C_{21}H_{22}O_6N{\cdot}SO_3H$, m. p. 229° (*Ba* salt), and a *sulphone*, $C_{21}H_{22}O_6N{\cdot}SO_3$, m. p. 218°, which on alkaline hydrolysis both yield the same Na_2 salt of hydrasteinesulphamic acid, $C_{21}H_{21}O_6(CO_2Na)(SO_3Na)$; when kept for several months I becomes insol. in HCl and is converted into anhydro-*N*-hydroxyhydrasteine (II), m. p. 192°. It therefore represents an intermediate stage in the conversion of hydrastine-*N*-oxide into the disubstituted hydroxylamine.



(I.) (II.)

N-Hydroxynorhydrastimethine dissolves in warm aq. $Ba(OH)_2$, yielding on acidification and extraction with $CHCl_3$ 70% of *N*-hydroxyhydrasteine, m. p. 205° [*Et ether*, m. p. 125° (*hydrochloride*, m. p. 132°; *sulphonic acid*, m. p. 177°), from either *N*-hydroxynorhydrastimethine or *N*-hydroxyhydrasteine], which on reduction with alkaline $FeSO_4$ yields a small amount of a secondary base, m. p. 175°, probably hydrasteine, together with a secondary alcohol.

R. BRIGHTMAN.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

ZHINKIN, D.Ya.; MAL'NOVA, G.N.; POLONSKAYA, A.P.; ANDRIANOV, K.A.

Simultaneous hydrolytic condensation of trimethyl-, triethylchlorosilanes, and phenyltrichlorosilane. Zhur. ob. khim. 35 no.5:909-911 My '65. (MIRA 18:6)

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ZHINKIN, D.Ya.; MAL'NOVA, G.N.; POLONSKAYA, A.P.

Simultaneous hydrolytic condensation of trimethyl- and triethylchlorosilane in an acid medium. Zhur. ob. khim. 35 no.6:1054-1055 Je '65. (MIRA 18:6)

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L 61484-65 EWT(m) JAJ/RM

ACCESSION NR: AP5016409 UR/0079/65/035/006/1054/1055

546.287: 542.938

13

B

AUTHOR: Zhinkin, D.Ya.; Mal'nova, G.N.; Polonskaya, A.P.

TITLE: Hydrolytic cocondensation of trimethyl- and triethylchlorosilane in an acid medium

SOURCE: Zhurnal obshchey khimii, v. 35, no. 6, 1965, 1054-1055

TOPIC TAGS: organosilicon compound, silanol, siloxane, silane condensation, hydrolytic cocondensation

ABSTRACT: The hydrolytic cocondensation of triethyl- and trimethylchlorosilane (with benzene as solvent) at 20-25C forms a mixture containing products of both individual condensation and cocondensation. The mixture obtained has the following composition (in mole %): 29% hexamethyldisiloxane, 12% triethylsilanol, 35% 1,1,1-trimethyl-3,3,3-triethyldisiloxane, and 24% hexaethyldisiloxane. On the basis of the considerable difference in the condensation rates of trimethyl- and triethylsilanol (310:0.5), the large quantity of the cocondensation product obtained is unexpected. This is attributed to the fact that when the process is carried out in a heterogeneous medium (solution of the chloride in benzene and water), the trimethylsilanol formed during hydrolysis

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ACCESSION NR: AP5016409

dissolves in water in large amounts as compared to triethylsilanol. The condensation reaction is fastest at the interface, and is represented as follows:

$$(CH_3)_3SiOH + HOSi(C_2H_5)_3 \rightarrow (CH_3)_3Si-O-Si(C_2H_5)_3$$
$$(CH_3)_3SiOH + ClSi(C_2H_5)_3 \rightarrow (CH_3)_3Si-O-Si(C_2H_5)_3$$

Furthermore, the condensation of triethylsilanol forming hexaethyldisiloxane takes place in the benzene solution, and the condensation of trimethylsilanol resulting in hexamethyldisiloxane takes place in water. Orig. art. has: 2 formulas.

ASSOCIATION: none

SUBMITTED: 14May64 ENCL: 00 SUB CODE: OC

NO REF SOV: 004 OTHER: 005

Card 2/2

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

L 16512-66 EWT(m)/EWP(j) RM (A)

ACC NR: AP6001496 SOURCE CODE: UR/0191/65/000/012/0017/0019

AUTHORS: Zhinkin, D. Ya.; Mal'nova, G. N.; Polonskaya, A. P.; Sobolevskiy, M.V.

ORG: none

TITLE: Synthesis of α, ω -bis-(hexamethyldisilazo)polydimethylsiloxanes and investigation of their properties

SOURCE: Plasticheskiye massy, no. 12, 1965, 17-19

TOPIC TAGS: siloxane, organosilicon compound, hydrolysis, organic synthetic process

ABSTRACT: Hexamethyldisilylazochloropolydimethyl siloxanes (I) of general structure 1

UDC: 678.84

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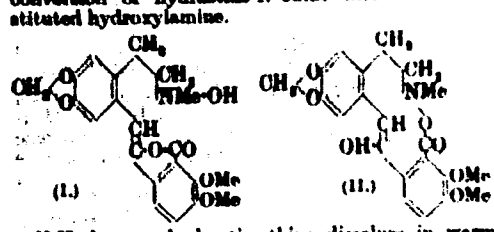
1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

BC

A-3

Amine oxides of alkaloids. VIII. Transformation of hydrastine *N*-oxide into dialkylhydroxylamine; *N*-hydroxynorhydrastimethine and *N*-hydroxyhydrasteine. M. Polonovski and M. Polonovski (Bull. Soc. chim., 1931, [iv], 49, 533—543; cf. A., 1930, 935).—Hydrastine *N*-oxide slowly in the cold or rapidly in boiling $CHCl_3$ loses H_2O, basicity, and optical activity, giving anhydro-*N*-hydroxynorhydrastimethine (I), m. p. 189° (*hydrochloride*, m. p. 196°). In HCl with SO_2 I yields a mixture of a *sulphamino*-derivative, $C_{21}H_{22}O_6N{\cdot}SO_3H$, m. p. 229° (*Ba* salt), and a *sulphone*, $C_{21}H_{22}O_6N{\cdot}SO_2$, m. p. 218°, which on alkaline hydrolysis both yield the same Na_2 salt of hydrasteinsulphamic acid, $C_{21}H_{21}O_6(CO_2Na)(SO_3Na)$; when kept for several months I becomes insol. in HCl and is converted into anhydro-*N*-hydroxyhydrasteine (II), m. p. 192°. It therefore represents an intermediate stage in the conversion of hydrastine-*N*-oxide into the disubstituted hydroxylamine.



(I.) (II.)

N-Hydroxynorhydrastimethine dissolves in warm aq. $Ba(OH)_2$, yielding on acidification and extraction with $CHCl_3$ 70% of *N*-*hydroxyhydrasteine*, m. p. 205° [*Et ether*, m. p. 125° (*hydrochloride*, m. p. 132°; *sulphonic acid*, m. p. 177°), from either *N*-hydroxynorhydrastimethine or *N*-hydroxyhydrasteine], which on reduction with alkaline $FeSO_4$ yields a small amount of a secondary base, m. p. 175°, probably hydrasteine, together with a secondary alcohol.

R. Brightman.

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1ST AND 2ND ORDERS

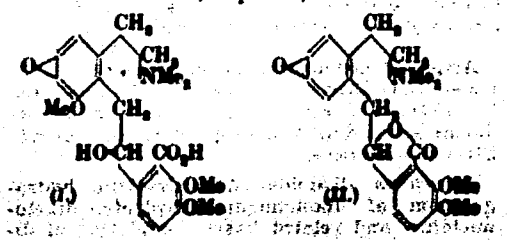
3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

BC

A-3

Some derivatives of narcotine. M. Polonovski and M. Polonovski (Bull. Soc. chim., 1951, [iv], 48, 542—550).—Reduction of narcotine in H_2O solution (Na–Hg) gives the secondary alcohol, *hydronarcotine* (I), m. p. 154—155°, similarly obtained from narcotimethine and narcotine methiodide, which are intermediately converted into narcotine. Reduction (Zn and HCl) of narcotine and narcotimethine gives *hydronarcotimethine* (II) (*hydrochloride*, m. p. 200—210°; *nitrate*, m. p. 196°; *tartrate*, m. p. 140°; *chloroplatinate*, m. p. 192°; *methiodide*, m. p. 233—234°; *acid*). With narcotine methiodide the insol. $ZnCl_2$ compound of narcotine methiodide, m. p. 248°, is formed.



20% H_2O_2 in $COMe_2$ converts hydronarcotimethine into its *N-oxide*, m. p. 153°. On esterification in presence of HCl hydronarcotimethine and hydronarceine yield the same *Me*, m. p. 197°, and *Et*, m. p. 199—200°, esters of chlorohydronarceine. Nornarceine and excess of Ac_2O give *acetylnornarcomethine*, m. p. 120°, hydrolysed by alkali to acetylnornarceine, m. p. 130°. Reduction (Na–Hg and H_2O) of nornarceine yields *hydronornarceine*, m. p. 132°, which with HCl gives *hydronornarcotimethine*, m. p. 176°.

R. Brightman.

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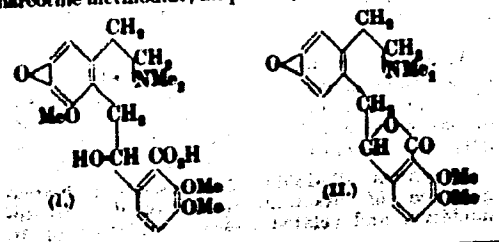
1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

130

A-3

Some derivatives of narcotine. M. Polonovski and M. Polonovski (Bull. Soc. chim., 1931, [4], 49, 543—550).—Reduction of narcotine in aq. solution (Na–Hg) gives the secondary alcohol, *hydronarcotine* (I), m. p. 154—155°, similarly obtained from narcotimethine and narcotine methiodide, which are intermediately converted into narcotine. Reduction (Zn and HCl) of narcotine and narcotimethine gives *hydronarcotimethine* (II) (*hydrochloride*, m. p. 200—210°; *nitrate*, m. p. 196°; *tartrate*, m. p. 140°; *chloroplatinate*, m. p. 192°; *methiodide*, m. p. 233—234°; *anil*). With narcotine methiodide the insol. $ZnCl_2$ compound of narcotine methiodide, m. p. 248°, is formed.



(I.) (II.)

30% H_2O_2 in $COMe_2$ converts hydronarcotimethine into its *N-oxide*, m. p. 153°. On esterification in presence of HCl hydronarcotimethine and hydronarceine yield the same *Me*, m. p. 197°, and *Et*, m. p. 199—200°, esters of chlorohydronarceine. Nornarceine and excess of Ac_2O give *acetylnornarcotimethine*, m. p. 120°, hydrolysed by alkali to acetylnornarceine, m. p. 130°. Reduction (Na–H[illegible] H_2O) of nornarceine yields *hydronornarceine* [illegible] p. 1[illegible], which with HCl gives *hydronornarcotimethine*, m. p. 176°.

R. Brightman.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

Measurement of the ternary carbon of the plasma by the residual chromic index. M. Polonovski and H. Warembourg. *Sang* 12, 484-95(1938).—Fifty % of the residual chromic index (I) of the plasma is made up of ternary carbon, which results from the degradation of glucose. The origin of the ternary C is discussed, and it is suggested that variations in I may serve as an indication of the changes in the intermediary metabolism of glucose.

I. Arthur Mirsky

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

CA

Antagonism and synergism among vitamins. K. Z. Tul'chinskaya. *Proc. Sci. Inst. Vitamin Research U. S. Veterinar. Inst. im. Baumana* 30, No. 2, 3-18(1939); *Khim. Referat. Zhur.* 1940, No. 4, 37-8.—In 20 dromedaries the av. contents of sugar and chlorides in whole blood were 48 and 313 mg. % and in the serum 108 and 380 mg. %, resp. The serum contains (av.) Ca 11.2, K 18.2, Na 231 and inorg. P 5.8 mg. %. W. R. Henn

Effect of sugar ingestion on resistance to anoxemia and acapnia at high altitudes. M. Polonovski. *Bull. acad. méd.* 123, 688-94(1940); cf. Sukhovskii, *C. A.* 34, 5137[1].—Physiopathologic variations within the organism from decreased atm. pressure, psychophysiol. tests and the threshold of altitude, where biochem. imbalance starts,

COMMON ELEMENTS

COMMON VARIABLES INDEX

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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1ST AND 2ND LETTER

3RD AND 4TH ORDERS

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CA

Role of ascorbic acid in the catalytic oxidation of aldehydes. Michel Polonovski and Lasislas Robert. *Bull. soc. chim. biol.* 33, 1174-88(1951).—The rate of decolorization of methylene blue by ascorbic acid is accelerated by HCHO, AcH, RCHO, and Me_2CHCH_2CHO in the presence of absence of raw whole milk (aldehyde dehydrogenase). The rate is decreased by benzoic, salicylic, and monochloroacetic aldehydes and chloral hydrate. The effects of concn., pH, and temp. were studied. The possible mechanism of the reaction is discussed. L. F. Gilson

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

TEODOROVICH, Georgiy Ivanovich; POLONSKAYA, Brungil'da Yakovlevna; ANDRIANOVA, Aleksandra Glebovna; MELAMEDOVA, Valentina Semenovna; PISARENKO, Irina Aleksandrovna; SHVEDOVA, Tamara Mikhaylovna; VARENTSOV, M.I., otv.red.; SHAPOVALOVA, G.A., red.izd-va; RYLINA, Yu.V., tekhn.red.

[Mineralogical-geochemical facies and conditions of the formation of petroleum-producing terrigenous Devonian strata in western Bashkiria and eastern Tatarstan] Mineralogo-geokhimicheskie fatsii i usloviia obrazovaniia nefteproizvodiashchikh terrigennykh otlozhenii devona Zapadnoi Bashkirii i Vostochnoi Tatarii. Moskva, Izd-vo Akad.nauk SSSR, 1960. 148 p. (MIRA 14:3)

1. Chlen-korrespondent AN SSSR (for Varentsov).
(Ural-Volga region--Petroleum geology)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

TEODOROVICH, G.I.; POLONSKAYA, B.Ya.

Petrographic characteristics and formational factors of rocks in the D_2^2 and D_2^1 Devonian terrigenous formation in western Bashkiria. Trudy Inst.nefti 9:172-190 '58. (MIRA 12:4)
(Bashkiria--Geology, Stratigraphic)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

TEODOROVICH, Georgiy Ivanovich; POLONSKAYA, Brungil'da Yakovlevna; CHEPIKOV, K.R., otvetstvennyy red.; IL'INA, N.S., red. izd-va; MAEKOVICH, S.G., tekhn. red.

[Stratigraphy, petrography, and facies of the Devonian period of the Minusinsk and Nazarovka depressions] Stratigrafiia, petrografiia i fatsii devona Minusinskikh i Nazarovskoi vpadin. Moskva, Izd-vo Akad. nauk SSSR, 1958. 233 p. (MIRA 11:8)

1. Chlen-korrespondent Akademii nauk SSSR (for Chepikov).
(Krasnoyarsk Territory--Geology)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

POLONSKAYA, Z. YA.

Dissertation: "Petrography of the Devonian Deposits of the Kuybyshev Povolzh'ye and the Paleography of Their Formation." Cand Geol-Min Sci, Inst of Petroleum, Acad Sci USSR, 6 May 54. (Vechernyaya Moskva, Moscow, 28 Apr 54)

SO: SUM 243, 19 Oct 1954

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

POLONSKAYA, Brungil'da Yakovlevna; TEODOROVICH, G.I., doktor geologo-mineralogicheskikh nauk, otvetstvennyy redaktor; IL'INA, N.S., redaktor izdatel'stva; NOVIKOVA, S.G., tekhnicheskiy redaktor

[Petrography and facies characteristics of Devonian deposits of the Kuybyshev region of the Volga Valley] Petrografiia i fatsial'nye osobennosti devonskikh otlozhenii Kuibyshevskogo Povolzh'ia. Moskva, Izd-vo Akademii nauk SSSR, 1956. 134 p. (MLRA 9:11)
(Volga Valley—Petrology)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

POLONSKAYA, B. O.

35472. Bronkhial'naya astma i giperinsvlinnzm.—V olg. 2-y avt: B.I. Polonskaya. Vrachebn delo, 1949, No. 11, stb. 1001-04.

Letopis' Zhurnal'nykh Statey, Vol. 48, Moskva, 1949

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POLONSKAYA, B.YA.

3(5) PHASE I BOOK EXPLOITATION SOV/2938

Akademiya nauk SSSR. Bashkirskiy filial. Gorno-geologicheskiy institut

Voprosy geologii i neftenosnosti devonskikh otlozheniy Zapadnoy Bashkirii i smezhnykh oblastey; materialy nauchnoy sessii... (Problems in the Geology and Oil-Bearing Possibilities of the Devonian Sediments of Western Bashkiriya and Adjacent Provinces; Papers at a Scientific Session...) Ufa, 1958. 137 p. 750 copies printed.

Ed.: V. V. Sidorov; Tech. Ed.: I. G. Shafin; Editorial Board: S. N. Krause (Resp. Ed.), M. F. Mikryukov, I. S. Ogarinov, A. I. Olli, L. N. Rozanov, K. R. Timergazin, and A. P. Tyazheva.

PURPOSE: The book is intended for petroleum geologists.

COVERAGE: This book contains papers on the petroleum geology of Bashkiriya. These papers were originally read at a conference held in Ufa on December 23-25, 1957. Individual reports discuss the stratigraphy, lithology, geochemistry, tectonic structure, and oil-bearing capacities of the Devonian sediments in Bashkiriya and adjacent regions. No references are given.

Yegorova, L. Z. Stratigraphy of the Devonian Sediments of the Kuybyshevskaya and Orenburgskaya Oblasts 41

Chibrikova, Ya. V. Results of Spore-Pollen Analysis of the Oils and Oil Waters of Bashkiriya 51

Nalivkin, D. V. Ashinskiye and Bavlinskiye Series 57

Garris, M. A. Formation Conditions of Eifelian, Givetian, and Lower Frasnian Sediments of Western Bashkiriya 61

Postnikov, D. V. Lithology, Reservoir Rocks, and Oil-bearing Potential of the Terrigenous Devonian Beds in the Belebeyskiy-Shkapovskiy Region 73

Krause, S. N. Formation Conditions of Terrigenous Middle Devonian Series on the Western Flank of the Southern Urals 77

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Teodorovich, G. I., and B. Ya. Polonskaya. Study of the Mineralogy and Conditions of Sedimentation of Probable Petroliferous Devonian Beds in Various Regions of Western Bashkiriya 89

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Novoshilova, S. I. Tectonic Structure of the Devonian Sediments in the Kuybyshevskaya and Orenburgskaya Oblasts 111

Senchenko, G. S. Morphology of the Folds in the Zone Adjacent to the Marginal Downwarp of the Zilairskiy Synclinorium in Relation to the Estimates of Oil-producing Capacity of the Devonian and Other Sediments in Southern Bashkiriya 116

Kamaletnikov, M. A. Prospects of Oil Production From the Devonian Sediments of the Western Flank of the Southern Urals 132

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POLONSKAYA, E.R., uchitel'nitsa

Biology textbooks for grades 5-7 in the schools of the German Democratic Republic. Biol.v shkole no.4:70-72 Jl-Ag '62. (MIRA 15:12)

1. Srednyaya shkola No.92 Moskvy.
(Germany, East--Biology--Study and teaching)

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POLONSKAYA, E.R., uchitel'nitsa

Lessons on the Rosaceae. Biol.v shkole no.2:19-22 Mr-Ap '60. (MIRA 13:8)

1. Shkola No. 92 goroda Moskvy.
(Botany--Study and teaching)

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POLONSKAYA, E.R., uchitel'nitsa; FEDOROVA, V.N., kand.ped.nauk

Testing the knowledge of students acquired in studying the subject "Cellular structure of plants." Biol. v shkole no.4: 17-22 Jl-Ag '58. (MIRA 11:9)
(Botany--Study and teaching) (Plant cells and tissues)

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POLONSKAYA, E.R.

Textbook of botany for secondary schools of the German Democratic Republic ("Botany": textbook of biology for the ninth school year [in German] by Horst Drawert and Willy Matthes. Reviewed by E.R. Polonskaia). Biol. v shkole no.2:63-64 Mr-Ap '58. (MIRA 11:4)
(Germany, East--Botany--Study and teaching)
(Drawert, Horst) (Matthes, Willy)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

TARASOVA, A.V.; ARTAMONOVA, V.G.; POLONSKAYA, F.L.

Specific character of morbidity among upholsterers. Zdrav.Ros. Feder. 6 no.9:19-22 S '62. (MIRA 15:10)

1. Iz kafedry gigiyeny truda s klinikoy professional'nykh bolezney (zav. - prof. Ye.TS.Andreyeva-Galanina) Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta i sanitarno-epidemiologicheskoy stantsii Oktyabr'skogo rayona Leningrada.
(FURNITURE WORKERS--DISEASES AND HYGIENE)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

POLONSKAYA, F.M.; BELOV, V.F.

New method of determining moisture content of materials. Trudy NIKFI no.45:26-33 '62. (MIRA 15:9)

(Moisture--Measurement)
(Photographic emulsions--Testing)

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LEPILKINA, L.A.; POLONSKAYA, F.M.

Effect of the form of moisture bonds on the structure of materials. Inzh.-fiz.zhur. no.11:46-52 N '58. (MIRA 12:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy Kinofotoinstitut, g. Moskva.

(Heat--Transmission) (Colloids)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

POLONSKAYA, F.M.

Applying Onsager theory in studying heat and mass transfer in porous bodies. Inzh.-fiz.zhur. no.4:87-89 Ap '58. (MIRA 11:7)

1.Kinofotoinstitut, g.Moskva.
(Heat--Radiation and absorption) (Mass transfer)

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POLONSKAYA, F. M.

USSR

Investigation of the temperature field of moist materials during the process of drying (period of constant rate). F. M. Polonskaya. *Zhur. Tekh. Fiz.* 23, 796–801(1953).—A report of a math. and exptl. study of the problem of the redistribution of heat and moisture in a substance during the initial period of the process of drying, when the rate of drying is const. An expt. was carried out with gypsum as the substance to be dried. The gypsum plates used measured 120 × 60 × 25 mm. The temps. were measured by a copper-constantan thermocouple, of a diam. of 0.1 mm., placed at 8 points at different depths of the sample. On the basis of the results obtained it is possible to det., by a simple method, the portion of moisture converted to vapor inside the material. Gladys S. Macy

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POLONSKAYA, F.M.

Investigating the binding forms of moisture in motion-picture photographic materials with the method of plotting the isotherms of sorption and desorption. Trudy NIKFI no.45:84-92 '62. (MIRA 15:9)

(Moisture) (Motion-picture photography--Films)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

POLONSKA, F. M.

POLONSKA, F. M. -- "Investigation of Heat and Moisture Exchange in the Process of Combined Drying." Sub 11 Jun 52, Moscow Technological Inst of Food Industry. (Dissertation for the Degree of Candidate in Technical Sciences)

SO: Vechernaya Moskva, January-December 1952

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POLONSKAYA, F.M.

5(4) PHASE I BOOK EXPLOITATION SOV/1435

Akademiya nauk SSSR. Energeticheskiy institut

Teplo- i massoobmen v protsessakh isparenlya (Heat- and Mass-Transfer in Evaporation Processes) Moscow, Izd-vo AN SSSR, 1958. 254 p. 5,000 copies printed.

Resp. Ed.: Lykov, A.V., Academician, BSSR Academy of Sciences; Eds. of Publishing House: Tal', A.A. and Smirnov, V.A.

PURPOSE: This book is intended for scientists and engineers in heat engineering and chemical technology and for students and teachers of higher educational institutions in these fields.

COVERAGE: This collection contains articles relating to analytical and experimental investigations of heat - and mass-transfer under conditions of phase and chemical transformations. A new method of solving unsteady-state heat-flow problems is presented. Methods of determining heat - and mass-transfer coefficients during the heating and drying of a composite substance are given. New experimental principles of surface heat- and mass-transfer in vaporization processes are explained and new

Card 1/5

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relationships in the theory of molecular energy transfer are ascertained through the thermodynamics of irreversible processes.

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LYKOV, A.V.; POLONSKAYA, F.M.

Determining the coefficients of mass transfer in colloidal and capillary porous substances with variable moisture content. Trudy NIKFI no.2:113-127 '58. (MIRA 13:5)
(Mass transfer) (Heat--Transmission) (Capillarity)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

LYKOV, A.V.; POLONSKAYA, F.M.

Kinetical study of the moisture transfer within the material.
Trudy NIKFI no.2:170-177 '58. (MIRA 13:5)
(Photographic emulsions--Drying)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

POLONSKAYA, F.M.; MEL'NIKOVA, I.V.

Studying the heat exchange between a gas and a solid body. Inzh.-fiz.zhur. no.2:32-37 F '58. (MIRA 13:1)

1. Energeticheskiy institut AN SSSR, Moskva.
(Heat--Radiation and absorption)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

POLONSKAYA, F. M.

USSR.

Heat- and mass-exchange during the period of constant rate of drying. F. M. Polonskaya. *Zhur. Tekh. Fiz.* 23, 802-5(1953).—A report of two series of expts. carried out to investigate the heat exchange during the period of const. rate of drying of a substance. The equation, $Nu = A\,Re^{n}Gu^{m}$, was used as the criterion equation for the intensity of the heat exchange under conditions of drying, where $Nu = \alpha d/\lambda$, α is the coeff. of heat exchange, d is the size of sample (length of plate), λ is the coeff. of heat cond., $Re = wd/\nu$, w is the rate of movement of the gas, ν is the kinematic viscosity of the medium surrounding the sample; A and n are consts. which must be detd. experimentally; and $Gu = (t_s - t_m)/t_m$, where t_m is the temp. of the wet thermometer and t_s is the temp. of the medium. In one expt., the criterion Gu was the const. parameter and in the other, Re was the const. parameter. The following values of the equation consts. were found: $A = 3.38$; $n = 0.5$; and $m = 0.21$. When the influence of the temp. of the radiator on the intensity of heat exchange is taken into account, $Nu = 113.4\,Re^{0.5}Gu^{0.21}\theta^{0.7}$, which holds only for the temps. studied (122 and 150°), and does not apply to other condi tions.

Gladys S. Macy

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LEPILKINA, L.A.; POLONSKAYA, F.M.

Effect of the form of moisture bond on the structure of materials. Inzh.-fiz.zhur. no.10:55-61 O '58. (MIRA 11:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut, g. Moskva.
(Drying)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

POLONSKIY, M. I.

11133* (Electronic Equipment for Modelling Electromechanical Follower Systems.) Elektronnaia ustanovka dlia modelirovaniia elektromekhanicheskikh sledjashchikh sistem. I. V. Polonskaia. *Elektrichestvo*, 1954, no. 4, Apr., p. 41-45

Automatic control system. Diagrams, graphs. 5 ref.

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1. POLONSKAYA, K. P.

2. USSR (600)

4. Problem of antique realism in ancient Greek tragedy. Vest. Mosk. un. no N '52.

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

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

C a.
1951

Foods
12

Vitamin preservation in beef liver. L. Polonskaya. *Myasnaya Ind. S.S.S.R.* 22, No. 3, 65-8(1951).—The vitamin A, thiamine, riboflavin, and folic acid contents of beef livers were detd. on fresh samples (I) after cooling to 2-4° in the course of 24 hrs. (II), after storage 48 hrs. at 2-4° (III), after freezing to −23° (IV), and after frozen storage for 1, 3, 6, and 9 months (V). In I-IV inclusive the changes were small except that during III there was a 23.1% loss of vitamin A. In test V the 9-month losses were vitamin A 9, thiamine 32, riboflavin 2.5, and folic acid 43.1% of the original present at the beginning of storage. Mechanisms which can be assocd. with losses are discussed.

M. M. Piskur

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

4

The Influence of Certain Ions on the Acid Corrosion of Nickel and Iron. L. E. Sabinina and L. A. Polonskaia (*Zhurnal Prikladnoi Khimii (J. Applied Chem.)*, 1936, **9**, (8), 1405-1415; *Brit. Chem. Abs.*, **1937**, [B], 144). [In Russian.] The corrosion of iron or nickel in 0·1*N*- and *N*-sulphuric acid, and in 0·1*N* acetic acid is enhanced by cadmium and inhibited by mercury and lead salts. In particular, the corrosion of nickel is completely inhibited by 0·000004*M* mercuric sulphate. S. O.

METALLURGICAL LITERATURE CLASSIFICATION

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PROCESSES AND PROPERTIES INDEX

*On the Dissolution of Metallic [Zinc] Single Crystals. L. E. Sabinina and L. A. Polonskaja (*Zhurnal Fizicheskoy Khimii* (*J. Phys. Chem.*), 1934, 5, (7), 946–953).—[In Russian.] Potential-time curves have been obtained in 0·1*N* and in *N*-sulphuric acid for the polycrystalline metal and for single crystals cut parallel to the basal plane. The differences between the curves are related to the surface structure of the specimens, that for the single crystal showing the existence of a well-defined period of induction. The dissolution of single crystal zinc is attributed to the presence of atoms of other metals in the space-lattice.—N. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

BC

Diffusion of hydrogen through metallic cathodes. L. E. Sabinina and L. A. Polonskaja (J. Phys. Chem. U.S.S.R., 1935, 6, 107—113).—The rate of diffusion was measured by the change of pressure in a hollow Fe cylinder, previously evacuated and then subjected to electrolytic polarisation in 1N- and 0·1N-H_2SO_4 solutions. Addition of 0·001 g.-mol. of the oxides of K, Sn, Pb, Hg, and Pd per litre of solution was found to change the rate of diffusion. (Ch. Abs. (c)

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001341820009-3

POLONSKAYA, L.A.; POLONSKIY, T.M.

Solubility of salts in formamide. Nauk.zap.L'viv.un. 21:60-62 '52. (MLRA 10:7)

(Solubility) (Chlorides) (Formamide)

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POLONSKAYA, L. A.

USSR/Organic Chemistry - Theoretical and General Questions on Organic Chemistry, E-1

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 756

Author: Berkman, Ya. P., and Polonskaya, L. A.

Institution: Lvov Polytechnical Institute

Title: Acid Properties of Dioxydiarylsulfones

Original Periodical: Nauch. zap. L'vovsk. politekhn. in-ta, 1956, Vol 22, 49-60

Abstract: The effect of substituents on the acidity of phenols has been investigated in a series of potentionmetric titrations with a glass electrode in which the dissociation constant (K) of phenol; o-, n-, and n-cresol (I-III) and the sulfones obtained from them (Ia-IIIa); 4-monoxy- and 4,4-dioxydiphenylsulfone (IV and V), in 71.9 weight percent solution in alcohol was determined. The following values were obtained for K at 24°: phenol, $1.52 \cdot 10^{-12}$; I, $4.39 \cdot 10^{-13}$; Ia, $1.32 \cdot 10^{-10}$ ($K_2 = 6.46 \cdot 10^{-3}$); II, $1.80 \cdot 10^{-12}$; IIa, $2.41 \cdot 10^{-10}$ ($K_2 = 1.49 \cdot 10^{-12}$); III, $2.35 \cdot 10^{-13}$; IIIa, $5.69 \cdot 10^{-9}$ ($K_2 = 2.89 \cdot 10^{-11}$); IV, $2.63 \cdot 10^{-10}$; V, $5.31 \cdot 10^{-10}$ ($K_2 = 1.93 \cdot 10^{-11}$). In water K_1 for V is $2.67 \cdot 10^{-8}$ and

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