

ACC NR: AP6032924

SOURCE CODE: UR/0142/66/009/003/0354/0359

AUTHOR: Avdeyev, V. V.

ORG: none

TITLE: Estimating the accuracy of direction finding of a pulse-modulated scanning radar with discrete signal processing

SOURCE: IVUZ. Radiotekhnika, v. 9, no. 3, 1966, 354-359

TOPIC TAGS: radar scanning, pulsed radar

ABSTRACT: W. Storz and W. D. Wirth proposed a general formula for estimating the potential accuracy of pulsed radar with binary quantization of detector output signals (Nachrichtentechn. Z., 1963, v. 16, no. 12, 643). The present article considers this related problem: assuming a single target lying within a given range, find the limits of accuracy which are imposed by a

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UDC: 621.396.3

ACC NR: AP6032924

noncorrelated noise that acts jointly with a definite signal-fluctuation type; the accuracy of determining the target angular position during one revolution of the antenna is considered. Antenna azimuth rotation and stationary point-type target are assumed. The cases of nonfluctuating and independently-fluctuating targets are examined. As the estimated plots of optimal quantization threshold vs. signal-to-noise ratio show, the discrete signal processing is not as efficient as analog (higher loss in the strong-signal range is caused by the nonoptimality of the quantization threshold). However, considering possible saturation in analog storage units and loss caused thereby, both methods are roughly equal in their direction-finding accuracy. Orig. art. has: 2 figures and 17 formulas.

SUB CODE: 17 / SUBM DATE: 27Oct64 / ORIG REF: 002 / OTH REF: 003

Card 2/2

L 3856-66 EWT(d)/EWT(1) BC/WR

ACCESSION NR: AP5018265

UN/0108/65/020/007/0074/0075
621.396

58
55
B

AUTHOR: Avdeyev, V. V. (Active member)
44, 55

TITLE: Potential accuracy of direction finding to a target fluctuating in unison

SOURCE: Radiotekhnika, v. 20, no. 7, 1965, 74-75
9, 44

TOPIC TAGS: direction finding, noncoherent radar
24, 55

ABSTRACT: Formulas for the potential accuracy of direction finding to non-fluctuating and independently fluctuating targets by a pulsed noncoherent radar were developed by P. Sverling (Russ. transl. "Voprosy radiolokatsionnoy tekhniki, no. 2, 1957). The present short article considers the case of a fluctuating-in-unison target. An asymptotic formula is suggested for calculating the minimum dispersion of the estimated angular coordinate, for a strong-signal case. It is found that, in this case, the potential accuracy of direction finding is 1.8-times lower than that in the case of a nonfluctuating target, but is higher than that in the case of an independently fluctuating target. Orig. art. has: 1 figure and 3 formulas.

Card 1/2

1. 3856-66

ACCESSION NR: AP5018265

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi
(Scientific and Technical Society of Radio Engineering and Electrocommunication) 3

SUBMITTED: 01Dec64

ENCL: 00

SUB CODE: DC 44.5

NO REF SOV: 002

OTHER: 000

Card 2/2 *hel*

L 6446-66 ENT(1) WR

ACC NR: AP5026204

SOURCE CODE: UR/0142/65/008/004/0500/0503

AUTHOR: Andreyov, V. V. ³

28
B

ORG: none

TITLE: Finding the center in a packet of binary-quantized signals

SOURCE: IVUZ. Radiotekhnika, v. 8, no. 4, 1965, 500-503

TOPIC TAGS: search radar, radar scanning

ABSTRACT: As radar search does not permit optimal evaluation of the target azimuth, the maximum-likelihood principle was applied by P. Sverling in order to develop an algorithm for processing an incoherent packet of nonquantized signals. Using the same method, the present article develops an algorithm for processing a packet of binary-quantized signals for nonfluctuating, unison-fluctuating, and independently fluctuating targets. It is found that the measurement of the target azimuth, when the detector signals are binary-quantized, should be carried out by superposing -- upon the sequence of "units" -- an antisymmetrical weight function which depends on the antenna directional pattern; with low signal-to-noise ratios, this function has the same form for different types of fluctuation of return

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UDC: 621.396.962.3

0901 1816

L 6446-66

ACC NR: AP5026204

signals: $\eta_1 = g_1 g_1'$, where g_1 is the antenna power directional pattern and g_1' is its derivative. Orig. art. has: 20 formulas.

SUB CODE: DC, EC/ SUBM DATE: 02Oct64/ ORIG REF: 002/ OTH REF: 001

beh
Card 2/2

AVDEYEV, Ya.I.; GAMZATOV, S.M.; LYKOV, Ye.A.

Controlling a gasser at well No.1 in the Kultak area. Burenie
no.3:29-31 '64. (MIRA 18:5)

1. Trest "Karshineftegazrazvedka".

SHUTKOVICH, I.Ya., inzhener; AVDEYEV, Ye.A., inzhener.

Establishing rice fields and rice growing in Krasnodar Territory. Gidr.1
mel. 5 no.12:3-11 D "53. (MLRA 6:11)
(Krasnodar Territory--Rice) (Rice--Krasnodar Territory)

CHUKLIN, S.G., doktor tekhn. nauk; AVDEYEV, Ye.S., inzh.; NIKUL'SHINA,
D.G., kand. tekhn. nauk

Principles of designing and operational characteristics of
cooling panel systems of refrigerator ships. Sudostroenie 30
no.11:29 N '64. (MIRA 18:3)

ACC NR: AP6027234

SOURCE CODE: UR/0109/66/011/008/1419/1427

AUTHOR: Avdeyev, Ye. V.; Voskresenskiy, G. V.

ORG: none

TITLE: Calculation of the diffraction radiation by a linear source moving near a periodic delay structure

SOURCE: Radiotekhnika i elektronika, v. 11, no. 8, 1966. 1419-1427

TOPIC TAGS: electromagnetic radiation, electromagnetic wave diffraction, delay structures *mechanism*

ABSTRACT: Earlier Voskresenskiy articles (Dokl. AN SSSR, 1964, v. 156, no. 4, 770; ZhTF, 1964, v. 34, no. 10, 1856) reported an exact solution of the problem of radiation that arises when a charged filament or a linear current moves uniformly in the vicinity of a periodic delay structure which is formed by a

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UDC: 621.372.8-59

ACC NR: AP6027234

set of equidistant perfectly-conducting semiplanes. The present article develops these formulas for calculating energy characteristics of radiation that occur under the above-described conditions: total energy loss for radiation, spectral density of the source loss over one spatial period of the delay structure, and approximate total energy loss (valid for two boundary cases: ultra-relativistic source speed and low source speed). Plots of total loss vs. source speed, for two fixed values of b/a , are shown; b - filament target parameter, a - structure period. A numerical example of the spectral distribution of radiation, at the first spatial harmonic, at various source speeds, illustrates the radiation characteristics of a linear source. Orig. art. has: 8 figures and 16 formulas.

SUB CODE: 20, 09 / SUBM DATE: 03May65 / ORIG REF: 002

Card 2/2

AVDEYEV, Yu.A.; NIKOLAYEVA, A.P.; SKOTNIKOVA, M.B., red.

[Analysis of graphic work schedules without using electronic computers. Report at the seminar "Practice in using computer and organizational techniques in construction" conducted by the Institute of Standard and Experimental Design and Technological Research on May 12-16, 1964] Analiz setevykh grafikov bez primeneniia EVM. Doklad na seminare "Opyt primeneniia vychislitel'noi i organizatsionnoi tekhniki v stroitel'stve," provedennom institutom Giprotis 12-16 maia 1964 g. Moskva, Giprotis, 1964. 7 p. (MIRA 18:8)

1. Institut ekonomiki i organizatsii promyshlennogo proizvodstva Sibirskogo otdeleniya AN SSSR (for Avdeyev, Nikolayeva).

AVDEYEV, Yu.A.; NIKOLAYEVA, A.P.

Control of complex development operations using a critical path
method (introduction to the "Fast-Time" system). Vych. sist.
no.11:27-54 '64 (MIRA 18:1)

AVDEYEV, Yu.G., inzh.; BELONozhko, A.F., inzh.

Determination of the optimum diameter of boreholes in
drilling with rock drills. Shakht. stroi. 7 no.6:17-19
Je '63. (MIRA 16:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tsvetnykh
metallov (for Avdeyev). 2. Trest Svinetsshakhtostroy (for
Belonozhko).

(Rock drills)

AVDEYEV, Yu.G.; VORONIN, V.S.; KOROSTYLEV, N.P.; SMIRNOV, V.G.;
PUSTOVALOV, A.I.; CHEBOTYREV, B.A.; ZENKOV, B.N.; KARABACH, T.L.

Determining the efficiency of various ways of charging boreholes
along the contour of a mine working. Shakht. stroi. 8 no.10:
19-21 0 '64. (MIRA 17:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tsvetnoy metallurgii (for Avdeyev, Voronin, Korostylev, Smirnov).
2. Rudnik imeni XXII s"yezda Kommunisticheskoy partii Sovetskogo Soyuza Zyryanovskogo kombinata (for Pustovalov, Chebotyrev, Zenkov, Karabach).

AVDEYEV, Yu.G., gornyy inzh.

Review of the book by K.I.Ivanov, V.N.Glazunov and M.F.Nadion
"Modern methods of boring hard rock." Gor.zhur. no.3:80 Mr '65.
(MIRA 18:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tsvetnoy
metallurgii, Ust'-Kamenogorsk.

AVDEYEV, YU I.

2788. Voznikovenie, i razvitiye veimarskoy respubliky M. 1954, 19c. 21cm. (Mosk. ordena Lenina Gos. un-T im. M. V. Lomonosova Yurid Fak.) 100 ekz. B.TS.- (54-56699)

SO: Knizhnaya Letopis, Vol. 2, 1955

AVDEYEV, Yu.I.

Dynamics of pathomorphological changes in the kidneys and
lungs in acute amyl alcohol poisoning. Sud.-med. eksper. 7
no.1:22-24. Ja-Mr'64 (MIRA 17:4)

1. Kafedra sudelnoy meditsiny (zav. - dotsent Z.I. Safonova)
Omskogo meditsinskogo instituta imeni M.I.Kalinina.

DENISENKO, Vasilij Semenovich [Denisenko, Vasil']; AVDEYEV, Yu.O., red.;
KALASHNIKOVA, O.G., tekhn. red.

[In the Far North] Na dalekii pivnochi. [Kyiv, Vyd-vo TsK IKSU
"Molod'," 1957] 331 p. (MIRA 11:8)
(Arctic regions—Description and travel)

BOBOSHKO, Konstantin Klement'yevich; AVDEYEV, Yu.O.[Avdieiev, IU.O.],
red.; TIMCHISHINA, N.A.[Tymchyshyna, N.A.], tekhn. red.

[Pulse of the seven-year plan; studies on new machinery and
their creators] Pul's semyrichky; narysy pro novu tekhniku ta
li tvortsiv. Kyiv, Vyd-vo TsK LKSMU "Molod'," 1961. 146 p.
(MIRA 15:3)

(Technology) (Suggestion systems)

PIS'MENNYI, Grigoriy Gavrilovich [Pys'mennyi, H.H.], kand.ist. nauk;
AVDEYEV, Yu.G. [Avdieiev, IU.O.], red.; KALASHNIKOVA, O.G.
[Kalashnykova, O.H.], tekhn. red.

[Mighty army of a Great Nation; young people about the Armed
Forces of the U.S.S.R.] Mohutnia armia Velikoho Narodu;
molodi - pro sfoini nyly SRSR. Kyiv, Molod', 1963. 85 p.
(MIRA 16:6)

(Russia--Armed Forces)

ALEKSEYEV, V.I.; AVDEYEV, Yu.Ye.

Centralized and automatic control of machines in a coal-preparation
section. Koks i khim. no.5:12-15 '56. (MLRA 9:10)
(Coal preparation) (Automatic control)

AVDEYEVA, A. A.

12114* (Effect of Cultivating Soil on Activity of Micro-organisms Under Vineyards in the Southern Chernozems.)
Vlivanie plantazhnoi obrabotki pod vinogradniki na tuzhnykh chernozemakh na delitel'-nost' pochvennykh mikroorganizmov. A. A. Avdeeva. *Izsvodents*, 1954, no. 4, Apr., p. 74-76.
Depth of plowing; condition and number of soil micro-organisms at new level; nitrate and phosphate content. Graph, table.

AVDEYEVA, A. A.

526. DETERMINATION OF EFFICIENCIES IN THE FIRING OF STEAM BOILERS WITH
NATURAL GAS. Avdeeva, A. A. (Gos. Prom. (Gos. Ind., Moscow), 1956, (19), 15-
 17; see abstr. in Chem. Abstr., 1957, vol. 51, 2252). A discussion of (a)
 the direct and (b) the indirect method for carrying out efficiency of gas-
 fired boilers is based on data obtained in firing a Babcock and Wilcox boiler.

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SOV/112-53-1-171

Translation from: Referativnyy zhurnal, Elektrotehnika, 1958, Nr 1, p 20 (USSR)

AUTHOR: Avdeyeva, A. A.

TITLE: Balance Tests of a Boiler Operating With Variable-Composition Gas Fuel
(Balansovyye ispytaniya kotla pri rabote na gazoobraznom toplive peremennogo sostava)

PERIODICAL: Naladochn. i eksperim. raboty ORGRES, 1956, Nr 13, pp 9-16

ABSTRACT: Moscow gas consisting of coke gas, natural gas, petroleum gas and water gas, was burned in a fire box of 200 m³ (with the back and side walls screened) under the boiler of 65 t/h, 23 atm gauge, 385° C. Effect of boiler load within 35-55 t/h, on surplus air $\alpha = 1.25-1.15$, on heat loss $q_2 = 5-6\%$ and $q_3 = 0.3-0.5\%$; on gross boiler efficiency 92.5-93.0% was determined. From the relationship $CO_2 = f(\alpha)$ obtained for each individual gas and for the mixture ($CO_{2max} = 10.5-12.5\%$) it follows that, with a variable gas composition, α cannot be kept in a definite relation to CO_2 , i. e., the percentage of CO_2 content in

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SOV/112-58-1-171

Balance Tests of a Boiler Operating With Variable-Composition Gas Fuel

the combustion products cannot serve as a characteristic of burning conditions in the boilers operating on variable-composition fuels. It is suggested that combustion be maintained on the basis of O₂ content in the combustion products which is practically independent of the fuel composition. To evaluate heat losses associated with combustion products, Professor Ravich's method is recommended, which is based on the heat capacity of fuel defined as the maximum combustion temperature at $\alpha = 1$ and assumes that all heat is consumed by the combustion products. The above method saves time in calculating the heat balance compared with the conventional method; fuel analysis and determination of its calorific value become unnecessary; there is no need to determine the weighted mean specific heat of combustion products.

F. I. A.

AVAILABLE: Library of Congress

1. Boilers--Operation
2. Boilers--Test methods
3. Fuels--Performance
4. Mathematics

Card 2/2

AUTHOR: Avdeyeva, A.A. Engineer SOV/96-58-6-4/24
TITLE: Some test results on boilers working on gaseous fuel. (Nekotorye rezul'taty ispytaniy kotlov, rabotayushchikh na gazoobraznom toplive)
PERIODICAL: Teploenergetika, 1958, No.6. pp. 21-30 (USSR)
ABSTRACT: This article gives the results of tests on boilers under operating conditions when burning gas from the Shebelinsk field and Moscow town gas. The boiler furnace chambers were originally intended for pulverised fuel. The normal operational instruments were used and additional gas analyses were made. Heat balances were calculated by a simplified procedure. Gas from the Shebelinsk field was analysed with the results given in table.1. The calorific values was 9050 kcal/m³ at N.T.P. (0°C, 760 mm Hg). The first boiler tested was type TP-150, working at 35 atm. and 425°C. For conversion to natural gas, its six Babcock-Taganrog Boiler Works burners were replaced by the type illustrated in fig.1, with central gas-delivery. Details of the fitting of the burners to the furnace are given. Operation was unsatisfactory and much smoke was formed. The tips of the burners were modified by providing a large number of holes instead of slots, and other modifications were made. The boiler tests were then undertaken, with the results given in table.2. and fig.2. The results are fully discussed, but may be summarised by saying that

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Some test results on boilers working on gaseous fuel. SOV/96-58-6-4/24

the burners with central gas-delivery worked unsatisfactorily on this boiler under the given conditions. A similar boiler, type TP-150 was fitted with combined fuel-gas burners with central gas-delivery, as shown in fig.1., but also worked unsatisfactorily. During major overhaul in June 1957, burners with peripheral gas-delivery, as illustrated in fig.3., were fitted. This yielded the results given in table.2. and fig.4. In summary, the discussion of the results indicated that, on boiler type TP-150, these burners considerably improved the efficiency of combustion as compared to those with central gas-delivery. Nevertheless, the operation of the two boilers was not entirely satisfactory. Tests were made on a boiler 67-2-SP of 230 tons/hr, 100 atm and 510°C fitted with slot-type burners. The furnace was intended for burning pulverised anthracite dust with liquid ash-removal. Multi-nozzle gas burners of the type illustrated in fig.5. were fitted in the embrasures of the main solid-fuel burners. The gas ducting of the combined gas/solid-fuel burner is illustrated in fig.6. The test results on this boiler are given in table.3. and fig.7. The discussion of them may be summarised by saying that these burners did not ensure complete combustion of the gas. Tests were made on a Borsig-type boiler of 90 tons/hr, 32.5 atm., and 400°C., originally intended for burning pulverised fuel, but fitted with burners with peripheral

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Some test results on boilers working on gaseous fuel. SOV/96-58-6-4/24

gas-delivery, as illustrated in fig.5. They were examined after operating for 3½ months. The gas chambers had then burned away and some gas was burning in the space between the gas chamber and the furnace lining. The test results are given in table.4. and fig.9. Combustion of the gas was incomplete. Tests were also made on a Borsig-type boiler of 75 tons/hr, 32 atm and 400°C, with burners intended for gas only. These are illustrated in fig.10. and consist of two vertical headers each with 190 holes of 6 mm diameter. The test results are given in table.4. and fig.9. curve.2. Combustion of the gas was again incomplete. The next tests used a boiler type TP-230 burning Moscow town gas, and analysis of which is given in table.5. The boiler delivered 230 tons/hr at 100 atm and 510°C, and had six Babcock-Taganrog Boiler Works burners with central gas-delivery, the type illustrated in fig.1. The test results given in table.6. showed that this boiler worked satisfactorily; operation was stable and soot and smoke formation were not observed. Since the tests were made on different boilers under different conditions, they cannot provide a fully rational basis for selection of burner design. However, none of the burners ensured complete combustion of gas over the entire working range of excess-air factor. Heat losses greater than 1.4% due to incomplete combustion show that the flows of gas

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Some test results on boilers working on gaseous fuel. SOV/96-58-6-4/24

and air are not properly mixed. The burners may be classed in two groups, according to the manner of mixing the gas and air. The first group includes those in which the flows of gas and air meet in the furnace chamber at the outlet of the embrasure. The best results with this group were obtained on burners with central gas-delivery when the ratio of the dynamic head of air to that of gas was 1.25, and on multi-nozzle type burners when this ratio was 0.66. Very poor combustion was obtained on burners with central gas-delivery when this ratio was 0.04. The second group is that of burners in which the gas and air flows meet in the actual embrasure. Here the best performance was by burners with peripheral gas-delivery and a dynamic head ratio of 0.07; the worst occurred with vertical burners and a ratio of 0.32. It follows that the best head ratio of air to gas depends on the type of burner. For simplicity of construction, and ease of operation and repair, burners with central gas-delivery are best. In some cases they have been installed without stopping the boiler. Multi-nozzle burners and those with peripheral gas-delivery are much more complicated. Further work will be done to study the relationship between the efficiency of combustion of gas and the dynamic head ratio with various kinds of mixing and with different types of burner installed on a single boiler. There are 6 tables, 10 figures, 3 literature references (Soviet).

ASSOCIATION: OBGRES

Card 4/4

1. Boilers--Test results 2. Fuels---Performance 3. Gases--Analysis

AVDEYEVA, A. A. (Eng.)

"Several Facts Concerning Experiments by the ORGRES MES (State Trust for the Organization and Efficiency of Electric Power Plants, Ministry of Electric Power Plants) with Boilers Operating of Gaseous Fuel"

(Theory and Practice of Gas Combustion; Transactions of a Scientific and Technical Meeting) Leningrad, Gostoptekhizdat, 1958. 343 p.

AVDEYEVA, A.A., inzh.

Some test results of gas-fired boilers [with summary in English].
Teploenergetika 5 no.6:21-30 Ja '58. (MIRA 11:9)

1. Gosudarstvennyy trest po orgniazatsii i ratsionalizatsii
elektostantsiy. (Boilers--Testing)

8(6)

SOV/112-59-4-6546

Translation from: Referativnyy zhurnal. Elektrotehnika, 1959, Nr 4, p 21 (USSR)

AUTHOR: Avdeyeva, A. A., and Lin'kov, A. N.

TITLE: Some Problems in Gas Fuel Combustion

PERIODICAL: Naladochnyye i eksperim. raboty ORGRES, Nr 15, 1958, pp 209-223

ABSTRACT: Tests of industrial plants have shown that in switching boilers from the anthracite culm over to a gas fuel, the superheater-steam temperature drops 25-30°C. In switching boilers from a liquid fuel over to a gas fuel, the superheated-steam temperature rises by 15-20°C. In this connection, to preserve the superheated-steam temperature, it is expedient to burn the gas with a dull flame in the first case, and to burn it with a bright flame in the second case. The efficiency of gas burning that is determined by the chemically incomplete combustion depends on: the relation between the dynamic pressures of air and gas n , the stream turbulent agitation, shape and size of gas-outlet ports, shape and size of embrasure, and other factors. On the basis of tests conducted with four boilers having external-mixing burners and four boilers

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SOV/112-59-4-6546

Some Problems in Burning Gas Fuel

having internal-mixing burners, the following conclusions are drawn:
For various cases of air-gas mixing, optimum values of n vary widely. For an external-mixing burner, the heat loss due to chemically incomplete combustion decreases with increasing n . The best results have been obtained with $n = 0.1$. With a bright flame combustion, the central-gas-distribution burner should be used; with a dull flame, the preliminary-mix burner should be used. With the vortex-type air supply, the best results were obtained from a peripheral-gas-distribution burner. Within 90,000-140,000 kcal/m³hr in the furnace, the proper burner design would reduce losses due to chemically incomplete combustion to a minimum for both bright and dull flames. The central-gas-distribution burners are most rational as they are simple to manufacture, convenient to mount and repair, and reliable in operation.

S. M. Sh.

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SOV/96-59-8-6/27

AUTHOR: Avdeyeva, A.A., Engineer

TITLE: The Analysis of Boiler Combustion Products by Gas Chromatography

PERIODICAL: Teploenergetika 1959, Nr 8, pp 16-20 (USSR)

ABSTRACT: Existing methods of gas analysis are not accurate or quick enough to meet the needs of modern power station practice and accordingly ORGRES has been trying to use chromatographic methods of gas analysis. An experimental chromatothermal gas analyser type KhTKhG-1 was developed by the All-Union Scientific Research Institute for Petroleum Prospecting: it is a portable instrument intended for the determination of hydrogen, oxides of carbon, methane, propane, and other hydro-carbons in gas mixtures. Adsorption development chromatography is used to determine the hydrogen, carbon oxide, and methane. The adsorbent is activated charcoal grade AG or KAD, and the desorbent is a flow of air. The basic principles of operation of the equipment are briefly explained. In the gas analyser the carrier consists of silica gel grade ASK and diatomite,

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The Analysis of Boiler Combustion Products by Gas Chromatography

and the solvents are dibutylphthalate and medicinal paraffin; the mobile phase is air. As the gaseous components are recovered from the analyser they are burned by contact with an incandescent platinum wire. The chromatothermal gas analyser consists of three main units; a schematic diagram is given in Fig 1. The function of the first unit is to clean the gas and air prior to analysis, to measure quantities and to establish rates of flow. The second, chromatography unit consists of three tubes of sorbents, one containing activated charcoal, another containing silica gel saturated with dibutylphthalate, and the third diatomite soaked in medicinal paraffin. The third unit is a thermo-chemical gas analyser which determines the thermal effect of burning the gas on the platinum wire. The third unit is then discussed. It is based on the principle of an unbalanced bridge, whose circuit diagram is given in Fig 2. The method of operating the gas analyser is explained. A complete analysis to determine the content of hydrogen carbon monoxide and methane takes ten minutes; subsequent determination of ethane, propane and butane takes 30 minutes,

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The Analysis of Boiler Combustion Products by Gas Chromatography

and finally with determination of the isomers of propane and butane the total time is 50 minutes. The chromato-thermal gas analyser type KhtKhG-1 was tested at the Heat and Electric Power Station of the Moscow Power Institute. The instrument was first calibrated using a recording potentiometer type EPP-09 to chart the results. Fig 3 shows a typical chromatogram for a gas mixture of the following volumetric composition: hydrogen 0.02%, carbon monoxide 0.04%, methane 0.05%. Similarly Fig 4 is a chromatogram for a mixture of methane 0.5%, ethane 0.5%, propane 0.5%, and butane 0.5%. Analyses of combustion products taken from different boilers when burning Moscow City gas, Moscow brown coal and Chelyabinsk coal are tabulated to show the consistency of the results. It will be seen that the repeatability is good, the greatest differences being: for hydrogen 0.004%, for carbon monoxide 0.005%, for methane 0.007%. Other chromatographic methods might be applied to gas analysis, and thermal treatment might be used in other ways. Fig 5 shows a chromatogram of a mixture containing 0.5% of each of the following gases: hydrogen, carbon

Card 3/4 monoxide, methane, ethane, propane and butane. The procedure

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The Analysis of Boiler Combustion Products by Gas Chromatography

was to inject one ml of the mixture into aluminium oxide contained in a coiled metal tube which was then heated to 80°C. The chromatogram was produced by passing air through the coil at a rate of 40 ml/min. The time required to analyse this mixture was only 5 minutes. The method may be used to analyse complicated mixtures of hydrocarbons. It is concluded that gas chromatography should be used extensively for the analysis of gas in power stations. The method is more accurate than existing methods and can determine quantities down to 0.01% by volume with an error not greater than 5%. The time required to determine hydrogen carbon monoxide and methane is only ten minutes. There are 5 figures, 1 table and 6 Soviet references.

ASSOCIATION: ORGRES.

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5.5600(1023)
11.7000

27918
S/096/61/000/011/003/006
E194/E155

AUTHOR: Avdeyeva, A.A., Engineer

TITLE: The use of gas chromatography for the analysis of combustion products

PERIODICAL: Teploenergetika, no. 11, 1961, 37-42

TEXT: Several types of chromatographic equipment for gas analysis have been developed in the USSR but as yet none is specially designed for the analysis of combustion products, which has a number of special features. In existing designs, the column is filled with activated charcoal which can adsorb both combustible and certain incombustible gases. In particular, the adsorption properties of activated charcoal relative to carbon monoxide, oxygen and nitrogen are very similar and the three gases are evolved from the column almost simultaneously and so they are difficult to separate. Again, Soviet chromatographs commonly use detectors based on the thermal effect on burning the combustible components of the gas mixture on a platinum wire that forms part of a Wheatstone bridge circuit. Incombustible gases can affect the result insofar as they are of different thermal conductivity.

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The use of gas chromatography

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S/096/61/000/011/003/006
E194/E155

Usually the gas is blown through the column with air and the platinum wire is maintained at a temperature of 650-750 °C. At this temperature the thermal conductivity of oxygen is greater than that of air, whilst that of nitrogen is less. Thus, if the gas to be analysed contains nitrogen and oxygen in the same proportions as in air the instrument does not react to them at all; if there is more nitrogen a positive nitrogen peak is shown, and if more oxygen a negative oxygen peak. Carbon dioxide can give similar anomalous effects. A brief review is given of various attempts that have been made to overcome these difficulties, but none of them are without their defects. Work on the use of gas chromatography to analyse combustion products was carried out in the laboratory for the Intensification of Furnace Processes of ENIN AS USSR. The object was to find methods of separating carbon monoxide, nitrogen and oxygen so as to be able to determine CO accurately in the presence of nitrogen in any proportions. In seeking ways of improving the separation, special attention was paid to column geometry and it was found that satisfactory separation could be obtained on a column with an internal diameter of 3 mm and a length of 3.5 m with air sweep. With these
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proportions the presence of nitrogen in the sample does not interfere with the determination of carbon oxides, whether or not the mixture contains CO₂ and O₂. With a column of these proportions the sensitivity to methane is poor, being about 0.1% CH₄ by volume. When the methane content must be determined accurately the column should be split into two parts connected in series, the total length remaining 3.5 m and the second part being 1 m. Arrangements are made to introduce a sample between the sections. A test is first run in the ordinary way with a column length of 3.5 m. Then if it is necessary to determine a concentration of CH₄ less than 0.1% a second sample of the mixture is introduced at the intermediate sample point. The effective column length is 1 m. A column of this construction may be used in a portable gas analyser, which is briefly described. The air first passes through a filter in which it is dried and cleaned, then it picks up the gas sample and passes through the column. The separate components of the analysed mixture reach the detector where they burn in turn on a platinum wire, thus unbalancing a bridge and causing the deflection of an instrument. An instrument
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of this kind can easily be made in quite a small laboratory. Separation of a mixture is improved when the sample is small. The lower limit of sample size depends upon the sensitivity of the detector, and with the equipment described it is 0.5 - 1 ml for rich mixtures. The maximum sized sample which can be adequately separated is 10 ml. The method of introducing the sample is most important and in particular the sample should be introduced as close as possible to the column so that it reaches the adsorbent quickly. The best way of driving the sample from the sample tube to the equipment is by liquid displacement, and laboratory equipment used for this purpose is described. Liquid displacement methods of sampling have their disadvantages, principally because some liquid is left behind in the calibrated volume. A dry sampling tube is described in which by means of a four-way tap the flow of gas may be directed through the sampling tube or may by-pass it. The methods described are particularly convenient for mobile installations. It is convenient to use the standard portable gas analyser type PGF-11 (PGF-11) as a platinum-wire detector. A pointer-type micro-ammeter is connected across the

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bridge in parallel with an electronic potentiometer type 3001-09 (EPP-09) with a scale of 5 mV. The voltage applied to the bridge is maintained constant and depends upon the problem in hand. Each component of the mixture reacts differently to increase the temperature of the platinum wire, as is illustrated by the graphs of Fig.5. In this figure the instrument deflection (in mm) is plotted against the voltage applied to the bridge. The rate of air flow was 40 ml/min, and the column dimensions were $l = 3.5$ m, $d = 3$ mm. Curve 1 corresponds to H_2 , 0.1%; curve 2 to CO , 0.3%; curve 3 to CH_4 , 0.6%. Curve 4 relates to a column of $l = 1$ m, $d = 3$ mm, with 100% nitrogen. It will be seen that the character of the curves is different for the different gases. In particular, methane is detected only if the voltage is greater than 1.7 V. The shape of these curves explains the lack of success in developing an instrument to indicate total under-combustion in combustion products. In practice, a voltage of over 2 V is used only when methane must be detected, because the wires quickly burn out at voltages above 2.4. If it is required to detect only CO and H_2 a voltage of 1.4 V is sufficient. The instrument is calibrated with a gas mixture containing known proportions of the

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The use of gas chromatography

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substances to be analysed. The laboratory uses a volumetric method of making concentrated mixtures, followed by dilution. The accuracy of the final result depends, of course, on the accuracy of making up the standard mixture and it is considered that the overall accuracy is 0.05%. Because of its simplicity and high accuracy gas chromatography will be more widely used for the analysis of products of incomplete combustion in research institutes and power stations. However, the method requires further detailed and general study.

There are 5 figures and 6 Soviet-bloc references.

ASSOCIATION: ENIN AN SSSR (ENIN AS USSR)

LH

Card 6/7

AVDEYEVA, A.A., inzh.

Gas burner with central gas feed. Teploenergetika 9 no.3:38-41
Mr '62. (MIRA 15:2)

1. Gosudarstvennyy trest po organizatsii i ratsionalizatsii
rayonnykh elektrostantsiy i setey.
(Gas burners)

AVDEYEVA, A.A.

Chromatographic analysis of the combustion products of natural gas.
Gaz.delo no.1:30-35 '64. (MIRA 17:4)

1. Energeticheskiy institut im. G.M.Krzhizhanovskogo AN SSSR.

AVDEYEVA, A.A., inzh.; FETISOVA, V.N., tehnik

Preparation of control mixtures for calibrating chromatographic
gas analyzers. Teploenergetika 11 no. 1:94-96 Ja '64.
(MIRA 17:5)

1. Energeticheskiy institut im. G.M.Krzhizhanovskogo.

AVDEYEVA, A.A., inzh.; VETKINA, G.I., inzh.

Distortion of the sample of combustion products after the
determination of oxygen using VTI and ORSA apparatus.
Teploenergetika 11 no.5:93-94 My'64. (MIRA 17:5)

AVDEYEVA, A.A., inzh.

Effectiveness of burning mazut. Elek. sta. 35 no. 5:79-80
My '64. (MIRA 17:8)

1. Energeticheskiy institut im. Krzhizhanovskogo AN SSSR.

AVDEYEVA, A.A., inzh.; SPEYSHER, V.A., kand. tekhn. nauk, red.;
SOBOLEVSKAYA, L.A., red.

[Methods and control of gas combustion in electric power
plants] Metody i kontrol' szhiganiia gaza na elektro-
stantsiakh. Moskva, Energiia, 1965. 143 p.

(MIRA 18:7)

1. ORGRES, trust, Moscow.

AVDEYEVA, A.A., inzh.; POLYATSKIN, M.A., kand. tekhn. nauk

Accuracy of the determination of combustible components in combustion products. Elek. sta. 36 no.11:25-28 N '65. (MIRA 18:10)

I 30785-66 EWT(m)/EWP(t)/ETI IJP(c) JD/WB

ACC NR: AP6022097

SOURCE CODE: UR/0096/66/000/004/0088/0090

AUTHOR: Avdeyeva, A. A. (Engineer)

ORG: Power Institute im. G. M. Krzhizhanovskiy (Energeticheskij institut)

44
B

TITLE: Using the chromatographic method for checking corrosion processes

SOURCE: Teploenergetika, no. 4, 1966, 88-90

TOPIC TAGS: corrosion, corrosion protection, gas chromatography, water

ABSTRACT: In the determination of the corrosive agents involved in power station corrosion problems, as well as the determination of the concentration of corrective additives -- ammonia and hydrazine -- the methods currently used are not sufficiently sensitive. This article presents a description of the analytical portion of work now going on at the author's institute in connection with possible use of a chromatographic method for such analyses. In their method, air is made to bubble through a sample of the water to be analysed for a time, until there is generated on top of the liquid an equilibrium gas phase which can be analysed chromatographically. It was found that 40 minutes of recirculation bubbling was sufficient to establish equilibrium, so 60 minutes were used in all further experiments to insure accuracy. The device, with proper substitution of adsorbents in the gas chromatograph column, could be used for the determination of hydrogen, carbon, oxygen and nitrogen in water samples. Orig. art. has: 7 figures. [JPRS]

SUB CODE: 13, 07 / SUBM DATE: none / ORIG REF: 003 / OTH REF: 001

Card 1/1

UDC: 543.544:662.69

AVDEYEVA, A. B., CAND GEOL-MINER SCI, "THE HYDROGEOLOGY
OF THE PRINCIPAL DEPOSITS OF CARBONACEOUS WATERS OF THE
NAKHICHEVANSKAYA ASSR. MOSCOW, 1960. (MIN OF HEALTH USSR.
CENTRAL SCI RES INST OF HEALTH RESORT SCI AND PHYSIOTHERAPY).
(KL, 2-61, 201).

AVDEYEVA, A.B.

Conditions governing the formation of carbonated waters in
the Nakhichevan A.S.S.R. Uch.zap.AGU, Geol.-geog.ser. no.1:43-54
'59. (MIRA 15:12)
(Nakhichevan A.S.S.R. Mineral waters)

PROCESS AND PROPERTIES INDEX

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cr

A laboratory study of the separate steps in the ammonia-soda process. N. F. Yonakovich and A. V. Avdeyeva. *J. Chem. Ind. (Moscow)* 5, No. 17, 4 17(1961); cf. C. A. 29, 5516.—To study the decompn. of NaHCO₃ to Na₂CO₃, the vapor pressures of H₂O and CO₂ over NaHCO₃ were detd. at 100°, 118° and 130°. The work of Caven and Sand (C. A. 2, 1770; 6, 966) was confirmed. It was found also that an intermediate compd., Na₂CO₃·4NaHCO₃, resulted during the decompn. It was also formed when an equimol. mixt. of H₂O and CO₂ stood over Na₂CO₃. During the decompn. the ratio H₂O/CO₂ remained at 1 except at the moment of disappearance of NaHCO₃. It then rose to 1.8 and fell rapidly to 1. At 130–45° the vapor pressure, which remained const. at lower temps., fell off through loss of free CO₂, probably because of formation of a solid soln. Although at 101° the dissocn. pressure reached 1 atm., even at 120° the rate of dissocn. of NaHCO₃ was hardly noticeable, contradicting the work of Bakharov (C. A. 23, 1953). Only above 140° was the speed fast enough for com. use. The compn. of the gas phase had little effect on the dissocn. In soda factories the crude NaHCO₃ should be dried in a sep. drum heated by passing through it the gases from the calcination and other processes, along with the stream of NaHCO₃. Under these conditions no decompn. occurs. The final calcination should take place in a rotating drum heated externally. Numerous economies are thus effected.

H. M. Lancaster

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A

A study of poisoning of ammonia catalysts by hydrogen sulfide and phosphine. V. P. Kamzolkin and A. V. Aydarskiy. *J. Chem. Ind. (Moscow)* 1933, No. 7, 32-5.
Concn. of 0.001% of H₂S and PH₃ in the gas for the synthesis of NH₃ suffice to poison the catalyst. This effect is less above 400° and increases rapidly at lower temps. and higher pressures. H. M. Leicester

COMMON ELEMENTS
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METALLURGICAL LIBRARY CLASSIFICATION

10000 01
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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES WHEN

180 AND 4TH ORDERS

CA

Catalysts for the purification of nitrogen-hydrogen mixtures from carbon monoxide. V. P. Kamzolkin and A. V. Avdeeva. *J. Chem. Ind. (Moscow)* 1934, No. 6, 403.

Ural magnetite and Cu-Fe catalysts for the conversion of CO into CH₄, soon become covered with C and lose much of their activity. Ni does not do this, but is expensive. The cheapest good catalyst is Ural titanomagnetite.

H. M. Leicester

COMMON ELEMENTS

COMMON VARIABLES MORE

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ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

1ST LETTERS

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The use of titanomagnetite as a catalyst for the synthesis of ammonia. V. P. Kamzolkin and A. V. Aydycheva. *J. Chem. Ind. (Moscow)* 1934, No. 10, 48-50; cf. C. A. 28, 6253².--Ural titanomagnetite is not a very active catalyst for NH₃ synthesis at 250 atm. Its activity depends on its cryst. form, and fusing or other treatment of the ore destroys or weakens its activity. H. M. L.

ASB-313 METALLURGICAL LITERATURE CLASSIFICATION

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z AA AB AC AD AE

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3RD AND 4TH ORDERS

Chemical Elements

Chemical Variables Index

The reaction of pyrite with water vapor and sulfur dioxide. V. A. Karzhavin and A. V. Avdeeva. *J. Chem. Ind. (Moscow)* 1924, No. 12: 25-9. FeS loses S when heated, but the FeS formed does not pyrolyse easily. By thermodynamic calcs. it is found that at 1000° a great excess of steam is required to decompose FeS into H₂S and Fe₂O₃, with small amounts of SO₂ and S₂ as by-products. When FeS reacts with SO₂, free S and Fe₂O₃ are the products. If a mixt. of H₂O and SO₂ is used, the reaction goes better, particularly at lower tempa. M. Leicester

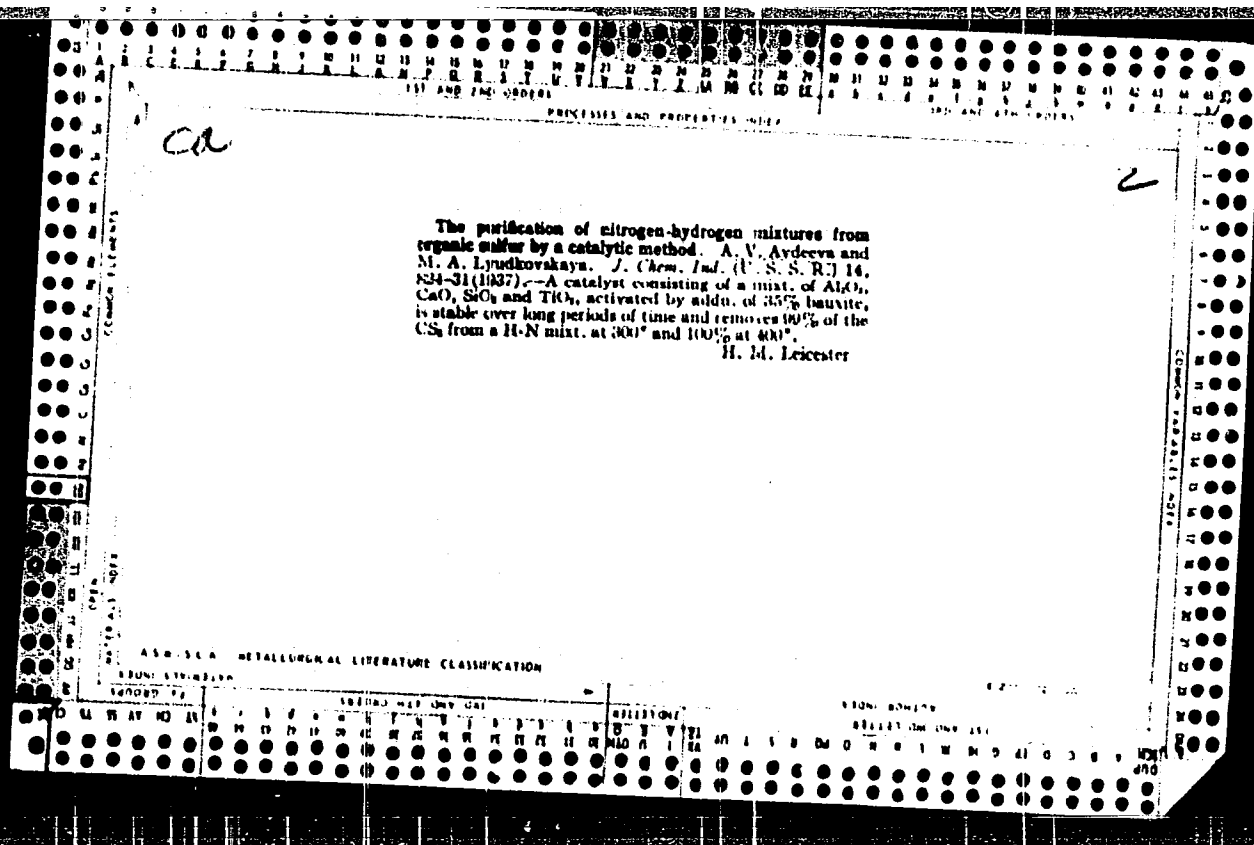
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1930: 1710227A

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CO													18												
The purification of nitrogen-hydrogen mixtures from oxygen by a catalytic method. A. V. Artyev. J. Chem. Phys. (U. S. S. R.) 16, (337-4) (1947). — Pumice, on which is deposited 7% Ni and 3% Al, is a very active and stable catalyst for converting the last traces of O ₂ in N ₂ -H ₂ mixts. into H ₂ O. H. M. Leicester																									
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PROCESSES AND PROPERTIES

Reaction of sulphur dioxide with carbon disulphide and carbon oxysulphide. A. V. AVDEKVA
 (J. Chem. Ind. Russ., 1937, 14, 1077-1082).—The reactions $CS_2 + SO_2 \rightarrow CO_2 + 2S$ and $2COS + SO_2 \rightarrow 2CO_2 + 2S$ proceed practically to completion when the gas mixture is passed over a slag- Al_2O_3 cement catalyst activated with bauxite, at 400-450°. The activity of the catalyst falls when it is heated at >700°, or when $Fe(OH)_3$ is added to it. The catalyst does not undergo inactivation while in use, but later exposure to the air brings about reversible inactivation, due to formation of a surface film of sulphates. R. T.

METALLURGICAL LITERATURE CLASSIFICATION

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Ca

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— New uses for the method of diphas reduction of sulfur dioxide. K. F. Pavlov and A. V. Avdeeva. *J. Chem. Ind. (U. S. S. R.)* 14, 1231-2(1937).— The reduction of SO_2 with C to S and the formation of H from the CO_2 , C_2H_4 and H_2S also formed can be applied to waste gases contg. about 8% SO_2 as well as to 100% SO_2 . H. M. L.

ASA-52A METALLURGICAL LITERATURE CLASSIFICATION

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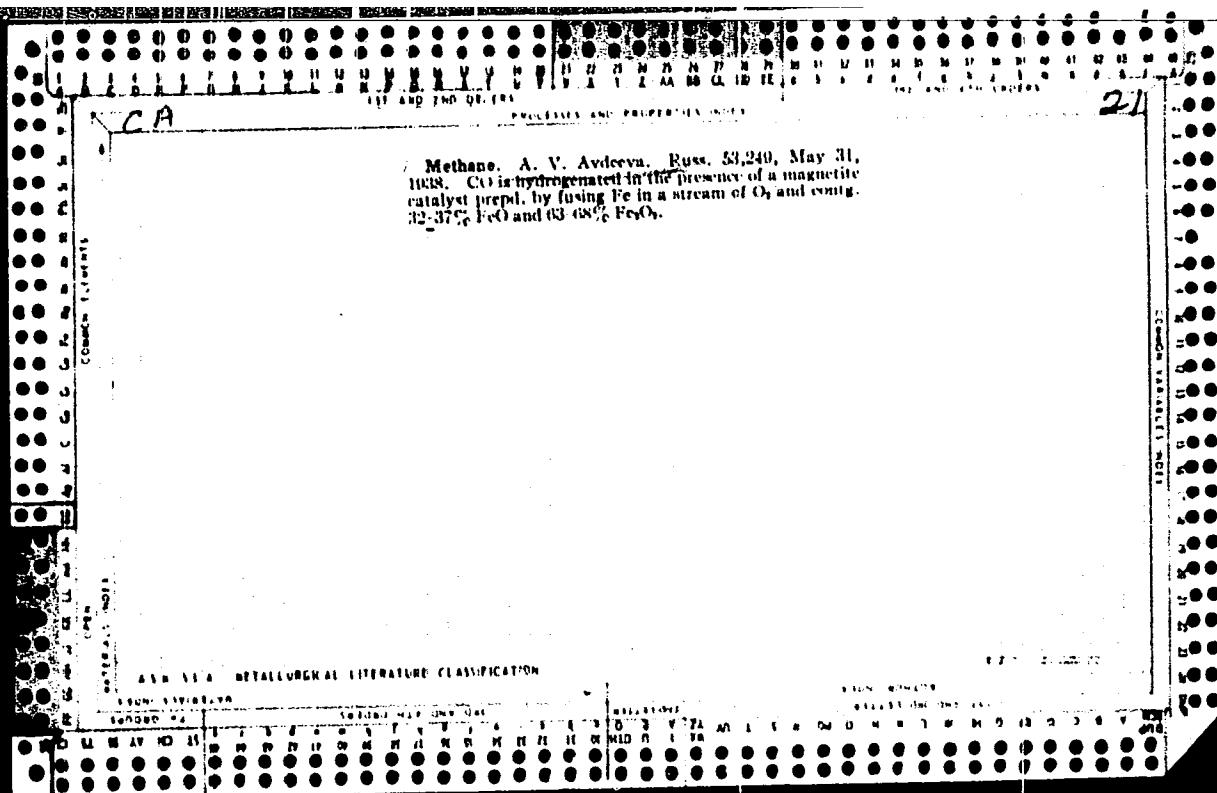
LIST AND INDEX ORDERS PROCESSES AND PROPERTIES INDEX

3c A-1

Thermodynamic data for gaseous sulphur compounds. A. V. AYBEKVA (J. Chem. Ind. Russ., 1937, 16, 1688—1693).—Free energy, entropy, and sp. heat data are reported for SO_2 , CS_2 , CO_2S , and H_2S . The heats of formation of these substances, and of S from H_2 , are determined by a spectrographic method; this is more particularly to be preferred to the calorimetric method in the case of the formation of CS_2 from graphite and gaseous S_2 . R. T.

ASB 514 METALLURGICAL LITERATURE CLASSIFICATION

SUBJECT	SUBJECT MATTER	CLASSIFICATION	CLASSIFICATION
M O L I V H O A S	O N D T I P O K R E A T E M H C E I I O	M I D O I X A	M O L I V H O A S



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DETERMINATION OF CARBON DISULPHIDE AND OXYSULPHIDE PRESENT TOGETHER IN GASES. A. V. Avdeeva (Zavol. Lab., 1938 7, 279-281).--The gas is passed successively through I in KI to remove SO₂ and H₂S, through 7.5% CaCl₂ in aq. NH₃ to absorb COS, and through 15% KOH in EtOH to remove CS₂. The second and third solutions are heated with H₂O₂, and the COS and CS₂ contents of the gas are derived from the SO₄ content of the resulting solutions. (R.T.)

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2

The partial pressure of ammonia, carbon dioxide and water vapor over the liquid in the upper part of the apparatus for the decomposition of ammonium carbonate. A. V. Aydarov. *J. Chem. Ind. (U. S. S. R.)* 16, No. 2, 26 (1930).—Increase in NH_3 in the soln. decreases the partial pressure of CO_2 . Increase in CO_2 in the soln. lessens the partial pressure of NH_3 , somewhat, but has almost no effect on that of the H_2O . H. M. Leicester

Chemical Abstracts

Metals Abstracts

ABSTRACTS METALLURGICAL LITERATURE CLASSIFICATION

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REVISION

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UNIT AND LITERATURE

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ca

Catalytic oxidation of hydrogen sulfide to sulfur dioxide in purifying natural gas. A. Y. Avdeeva, N. V. Adou'eva, and E. M. Bukhareva. *Khim. Prom.* 1946, No. 11, 17-18. Oxidation of H₂S to SO₂ was studied with and without catalysts. The following were studied: an empty tube, a tube packed with pumice, and pumice on which were deposited Ni, Ni-Pb, Ni-Bi, Ni-Ag, Ni-Mo, Ni-Al, Ni-Pb-Al, Ni-Bi-Al, Ni-Pb-Bi, etc. The compn. of the gas used in these expts. was N 96.7, O 2.8-3.25, and H₂S 0.2-0.75%. The vol. velocities at which the gas was passed through the reactor were 1700-10,000. The temp. were 200-300°. At low velocities there was no difference in the results between an empty reactor and one packed with pumice. As the velocity of the gas increased the effectiveness of the empty reactor dropped faster than that of the one packed with pumice. Of the catalysts tested the most effective was Ni-Al. At 250-300° and velocities up to 7500 the oxidation of H₂S with this catalyst was complete. Other catalysts required higher temps. for equal results. M. Hosh

A 58-51.4 METALLURGICAL LITERATURE CLASSIFICATION

A 58-51.4 METALLURGICAL LITERATURE CLASSIFICATION

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2

CA

Solubility of sulfur-containing gases in oils. A. V. Avdeeva and N. P. Pitelina. *Khim. Prom.* 1947, No. 2, 19-21. The soly. of CS₂, CO₂, SO₂, and H₂S in green (d. 0.9188, b. start 178°), spindle (d. 0.9066, b. start 218°), and solar oil (d. 0.8768, b. start 218°) at 30, 60, and 100° was studied. The soly. of CS₂ was detd. by passing N through tubes filled with oil + CS₂. The quantity of CS₂ varied from 0.23 to 23 g. per l. of oil. The N was circulated at a rate of 0.5 l. per hr. until it became satd. with CS₂. The CS₂ in the gas was detd. by absorbing it in an alc. KOH soln. and titrating it with I. The soly. of CS₂ in oil is given by $G_{oil} = P_1 \cdot d \cdot 1000 / M \cdot P_2$, where G_{oil} is the CS₂ content in oil in g. per l., P_1 is the CS₂ pressure over the oil in mm. Hg at temp. t° , P_2 is the pressure of pure CS₂ at t° , d is the d. of the oil, and M is the mol. wt. of CS₂. At 23°, the soly. of CO₂ was one twenty-fifth that of CS₂. The soly. of SO₂ in oil was approx. 10 times that of H₂S. The solubilities of CO₂, SO₂, and H₂S follow Henry's law. The results are presented graphically. M. H.

ASIS-USA METALLURGICAL LITERATURE CLASSIFICATION

FROM DONORS

LONDON OIL

BIBLIOGRAPHY

BIBLIOTECA

BIBLIOTECA

AVDEYEVA, A.V., professor, doktor tekhnicheskikh nauk; PITELINA, N.P.,
inzhener

Solubility of sulfur gases in various oils. Khim.prom. no.2:51-53
F '47. (MIRA 8:12)

1. Tsentral'naya nauchno-issledovatel'skaya laboratoriya "NIOGAZ"
(Sulfur compounds) (Solubility)

AYDYEVA, A V

Gazovaya sera. (Sulfur from outgoing gas) Moskva, Goskhemizdat, 1950.
106 p diagrs., tables.
"Literatura" at the end of each chapter.

A description of technological methods for the extraction of sulfur from sulfide ores and gases, as well as methods for reprocessing of sulfurous anhydrides and hydrogen sulfides into elemental sulfur. Lists also main productional systems for sulfur from gas and methods for analytical control of processes.

LEVIN, I.A.; ~~AVDEYEV, A.V.~~; KOVALENKO, N.P.

Corrosion of arsenic-soda apparatus of desulfurating installations.
Khim.prom.no.4:237-239 Je '56. (MLRA 9:10)

1.Gosudarstvennyy nauchno-issledovatel'skiy institut promyshlennoy
i sanitarnoy oчитki gazov.
(Corrosion and anticorrosives) (Arsenic) (Sulfur)

AVDEYEVA, A. V.

Met.

Investigation of metal corrosion by the action of wines.
A. V. Avdeeva and V. D. Orlova (Technol. Inst. Food Ind.,
Moscow). *Vinogradarstvo S.S.S.R.* 16, No. 6,
7-4 (1956).—The investigations were carried out at room
temp. in the lab. for 300-1500 hrs. and in the factory during 3
months. Cast iron and steel give unpleasant flavor to wines,
especially cast iron (formation of H_2S). Al decolorizes
wines and gives a metallic taste which is due to H_2O_2 forma-
tion. Only app. for viticulture from the Russian steels
such as G-17-T (C 17% and 1% Ti), Ya-1-T (C 17.3%,
Ni 8.11%, and Ti 1%), and EI-490 (Cr 27% and Ni 1.2%)
are completely resistant to the corrosion caused by fruit,
berry, and grape wines. The above-mentioned steels were
investigated during 4 months and gave the good results.

2

M. Charmandaris

AVDEYKOVA, A.V.; TSYGANOVA, P.A.; SOSNOVSKIY, L.B.

Studying the corrosion resistance of materials for making apparatus used in the production of pectin from beet pulp. Khleb. i kond. prom. l. no. 5:12 May '57. (MIRA 10:6)

1. Moskovskiy tekhnologicheskii institut pishchevoy promyshlennosti (for Avdeyko and Tsyganova). 2. Vsesoyuznyy konditerskiy nauchno-issledovatel'skiy institut (for Sosnovskiy).
(Pectin) (Corrosion and anticorrosives)

Avdeyeva, A. V.

137-1957-12-24542

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 12, p 228 (USSR)

AUTHORS: Avdeyeva, A. V., Sokolovskiy, A. L., Tsyganova, P. A.

TITLE: Corrosion Resistance of Metals in Sugar and Caramel Syrups
(Korroziionnaya stoykost' metallov v sakharnykh i karamel'nykh siropakh)

PERIODICAL: Khlebopek. i konditersk. prom-st', 1957, Nr 4, pp 12-14

ABSTRACT: Some results of corrosion experiments conducted on various metals in the preparation of caramel under both laboratory and industrial conditions. The degree of corrosion was determined by the weight method. Sugar (pH 2.87; 3.14) and caramel (pH 6.22; 6.14; 2.81; 2.12) syrups were investigated as the corroding media. Tests in the plant apparatus have demonstrated that steel 3 is unsuitable either for syrup made of crumbs or for caramel syrup. Cu is unsuitable for syrup made of crumbs, whereas Cr and Cr-Ni steels are corrosion resistant in the media mentioned.

Card 1/1

O. P.

1. Caramel syrup-Corrosive effects
2. Sugar syrup-Corrosive effects
3. Metals-Corrosion-Test results

AVDEYEVA, A.V.

137-58-5-10155

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 181 (USSR)

AUTHORS: Avdeyeva, A.V., Sokolovskiy, A.L., Tsyganova, P.A.

TITLE: An Investigation of the Corrosion Resistance of Metals in the Confectionery Industry (Issledovaniye korrozionnoy stoykosti metallov v konditerskom proizvodstve)

PERIODICAL: Tr. Mosk. tekhnol. in-t pishch. prom-sti, 1957, Nr 10, pp 96-103

ABSTRACT: A study is made of the corrosion resistance of Zh-17-T, Ya-1-T, and St 3 steels and of Al and Cu, at 120°C, in the following aggressive mediums: 1) sugar syrup with 1% added lactic and 1% added citric acid, pH 2.87; 2) invert syrup, pH 3.14; 3) caramel syrup on molasses base, pH 6.22 and 2.8; 4) caramel syrup on invert sugar base, pH 6.14 and 2.12. Zh-17-T steel proved fully resistant to all these mediums. Ya-1-T steel was less stable. St 3 steel was totally unstable. Al starts to corrode in acid caramel syrup. Cu corrodes in acidified syrups. Shop tests showed that steels Zh-17-T and Ya-1-T are completely stable in a medium of caramel crumbs and caramel syrup and are suited for the fabrication of cooking tanks. Studies

Card 1/2

137-58-5-10155

An Investigation of the (cont.)

are made of the corrosion strength of metals in caramel mass with 1% lactic and 1% citric acids added (at 145°C), in caramel fillings (1 part apple puree plus 1 part sugar at 95°) and in reboiled preparations of apples, apricots, and alycha [a member of the damson plum family; Transl. Ed. Note] (at 120°). Zh-17-T steel and Al are completely stable in caramel mass. Ya-1-T and Cu become corroded. St 3 steel is completely unstable.

T.A.

1. Metals--Corrosion 2. Industrial plants--Equipment

Card 2/2

SOV/137-58-11-23042

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 11, p 173 (USSR)

AUTHORS: Avdeyeva, A. V., Sokolovskiy, A. L., Tsyganova, P. A., Begunova, T. N.

TITLE: Investigation of Corrosion Resistance of Metals in Aggressive Media of Caramel Production (Issledovaniye korroziynoy stoykosti metallov v agressivnykh sredakh karamel'nogo proizvodstva)

PERIODICAL: Khlebopek. i konditersk. prom-st', 1958, Nr 2, pp 14-15

ABSTRACT: A study was made of the corrosion of Zh-17-T and Ya-1-T steels, Al, Cu, and St3 steel in a caramel mass, caramel filling (1 part apple puree + 1 part sugar) and in boiled apple, apricot, and damson-plum purees. Zh-17-T and Ya-1-T steels are resistant in all three media, Al is resistant in the caramel medium, Cu in the caramel filling and in the boiled purees. The addition of 1% citric and 1% lactic acids to the caramel mass and filling does not increase corrosion. The addition into the boiled puree of 2% [a line must have been skipped in the Russian original. Trans. Note]Cu. Upon the addition of 2% trioxylglutaric acid to the apricot puree all metals are corroded. Tests under shop conditions showed a good resistance

Card 1/2

SOV/137-58-11-23042

Investigation of Corrosion Resistance of Metals in Aggressive Media (cont.)

of Zh-17-T and Ya-1-T steels in the filling vacuum apparatus. Only Ya-1-T steel is resistant in the storage tank for puree treated with SO_2 , and it can also be recommended for the manufacture of the condenser of the water-jet air pump where SO_2 of various concentrations may always be present.

T. A.

Card 2/2

06219
SOV/64-59-6-11/28

5(1)
AUTHORS:

Avdeyeva, A. V., Burba, A. A.

TITLE:

Purification of Gaseous Sulfur of Arsenic by Lime Milk

PERIODICAL:

Khimicheskaya promyshlennost', 1959, Nr 6,
pp 501 - 502 (USSR)

ABSTRACT:

Since only few data are found in publications on the purification of gaseous sulfur of arsenic it has been tried to clarify the influence of the main factors, i.e. CaO concentration, specific consumption of lime milk, duration of scrubbing, etc on the quality of sulfur purification. Gaseous sulfur containing 0.4% of As was scrubbed in the laboratory at a pressure of 2.5 atm and 125° in an autoclave in 4 different salt solutions (Table 1), and it was found that scrubbing with lime milk (15 g of CaO/l) for 50 minutes is the best method. Based on these preliminary experiments investigations were carried out on a larger scale, i.e., an amount of 70 to 140 t of sulfur was tested for 24 h. The sulfur was also scrubbed at 125° and 2.5 atm. in a horizontal, rotating cylinder, with variations in the concentration (10-20 g of CaO/l) as

Card 1/2

Purification of Gaseous Sulfur of Arsenic by Lime Milk SOV/64-59-6-11/28 06219

well as in the ratio lime milk - sulfur, and the duration of scrubbing (Table 2, data of scrubbing with 13 - 15 g of CaO/l and processing of 100-140 t of sulfur in 24 h). The best concentration was found to be 15 g of CaO/l, in which case the As content decreases at a working capacity of 70-80 t of sulfur/24 h from approximately 0.011 - 0.013%, and in the case of 100-120 t/24 h from 0.070 - 0.190%. There are 2 tables and 2 Soviet references.

Card 2/2

AVDEYEVA, A.V., doktor tekhn.nauk; ALIKHIN, S.F., inzh.; ALTUNDZHI, K.S., inzh.; BRONSHTEYN, I.I., kand.khim.nauk; BRUSHTEYN, M.S.; GRIGOR'YEV, F.B., inzh.; ZHELEZNOVA, V.V., inzh.; ISTOMINA, M.M., kand.tekhn.nauk; KOZLOV, S.A., inzh.; KOLESNIKOVA, V.K., inzh.; KOCHETKOV, I.A., inzh.; LUNIN, O.G., kand.tekhn.nauk; MANNINA, T.A., inzh.; SEREBRYAKOV, M.N., inzh.; SMOLYANITSKIY, M.Ye., inzh.; TYURIN, A.I., kand.tekhn.nauk; TSYBUL'SKIY, A.A., inzh.; CHERNOIVANNIK, A.Ya., inzh.; SHILOVSKAYA, A.Ye., inzh.; BEN', G.M., inzh., retsenzent; MARSHALKIN, G.A., kand.tekhn.nauk, retsenzent; GUSAKOV, A.I., red.; MARTYNOV, M.I., kand:tekhn.nauk, red.; KRUGLOVA, G.I., red.; KISINA, Ye.I., tekhn.red.

[Confectioner's manual] Spravochnik konditera. Pod obshchei red. M.I. Martynova. Moskva, Pishchepromizdat. Pt.2.[Technological equipment of the confectionery industry] Tekhnologicheskoe oborudovanie konditerskogo proizvodstva. 1960. 630 p. (MIRA 14:3)
(Confectionery--Equipment and supplies)

AVDEYEVA, Aleksandra Vasil'yevna, prof.; OSTROVSKIY, A.I., prof.,
retsenzent; KRASIL'SHCHIKOV, A.I., doktor khim. nauk, retsenzent;
KALMENS, R.I., red.; KISINA, Ye.I., tekhn. red.

[Metal corrosion in the food industry] Korrozia metallov v pishche-
voi promyshlennosti. Moskva, Pishchepromizdat, 1962. 209 p.

(MIRA 15:12)

(Food industry--Equipment and supplies)
(Corrosion and anticorrosives)

TYURIN, Sergey Timofeyevich, kand. tekhn. nauk; BAZANOVA, Adelaida Ivanovna, nauchn. sotr.; IL'CHENKO, Boris Nikolayevich, nauchn. sotr.; AYDEYEVA, A.V., doktor tekhn. nauk, prof., retsenzent; SKURIKHIN, I.M., kand. tekhn. nauk, retsenzent; CHERNYAVSKIY, N.F., inzh.-konstruktor, retsenzent; SEBKO, G., red.; VASIL'YEV, I., red.

[Protective coatings of containers in wine making] Zashchitnye pokrytiia rezervuarov v vinodelii. Simferopol', Izd-vo "Krym," 1965. 103 p. (MIRA 18:5)

1. Zaveduyushchiy laboratoriyey Vsesoyuznogo nauchno-issledovatel'skogo instituta vinodeliya i vinogradarstva "Magarach" (for Tyurin). 2. Laboratoriya Vsesoyuznogo nauchno-issledovatel'skogo instituta vinodeliya i vinogradarstva "Magarach" (for Bazanova, Il'chenko).

AVDEYEVA, Aleksandra Vasil'yevna; OSTROVSKIY, A.I., prof.;
KRASIL'SECHIKOV, A.I., doktor khim. nauk; FUKS, V.K.,
red.

[Corrosion in food production and measures for its pre-
vention] Korroziia v pishchevykh proizvodstvakh i sposoby
zashchity. Moskva, Pishchevaia promyshlennost', 1965.
242 p. (MIRA 18:9)

GERSHANOVICH, V.N.; AVDEYEVA, A.V.; GOL'DFARB, D.M.

Release of the enzymes of the glucose transformation system from the spheroplasts of Escherichia coli B obtained under the influence of the "ghosts" of the even series of T phase. (MIRA 18:3)
Biokhimiia 28 no.4:700-708 J1-Ag '63.

1. Institut epidemiologii i mikrobiologii imeni Gamalei AMN SSSR, Moskva.

FRADKIN, G.Ye.; GOL'DFARB, D.M.; IL'YASHENKO, B.N.; AVDEYEVA, A.V.;
VINETSKIY, Yu.P.

Mechanism of radiation injury of the bacteriophage under the
indirect action of ionizing radiation. Med. rad. 5 no.12:36-42
'60. (MIRA 14:3)
(BACTERIOPHAGE) (ESCHERICHIA COLI)

AVDEYEVA, D.

Iulia Vecherova makes a correction. Rabotnitsa 37 no.12:9
D '59. (MIRA 13:3)

1. Nachal'nik tsekha fabriki "Solidarnost'," poselok
Savino, Ivanovskoy oblasti.
(Savino(Ivanovo Province)--Textile industry)

SHOCV, I.N.; LI, P.S.; GURIN, Yu.A.; AVDEYEVA, G.M.

Using the viscosimetry method for determining the molecular weight
of unsaturated polyesters. Plast.massy no.6:9-10 '85.

(MIRA 18:8)

L 20378-66 EWT(m)/EWP(j)/T WW/RM

ACC NR: AP6006544

(A)

SOURCE CODE: UR/0191/65/000/011/0032/0035

AUTHORS: Sedov, L. N.; Li, P. Z.; Avdeyeva, G. M.

39

ORG: none

B

TITLE: Properties of polyesters of diethylene glycol and maleic and sebacic acids and their styrene copolymers

SOURCE: Plasticheskiye massy, no. 11, 1965, 32-35

TOPIC TAGS: polyester, resin, polymer, copolymerization, styrene, chemical composition, diethylene glycol, maleic acid, sebacic acid, copolymer

ABSTRACT: The influence of the composition on the properties of mixed polyesters of diethylene glycol and maleic and sebacic acids and on their styrene copolymers was investigated. The polymers were synthesized after P. Z. Li and L. N. Sedov (Plast. massy No. 9, 12, 1963). The effect of polymer composition on the molecular weight, acid number, hydroxyl number, density, viscosity, density of cross linkages, rate of gelatinization, strength limit, and deformation was determined. The experimental results are presented in graphs and tables (see Fig. 1). It was found that the composition of the polymer had a greater effect on its strength

Card 1/2

UDC: 678.674.4.10

L 20378-66

ACC NR: AP6006544

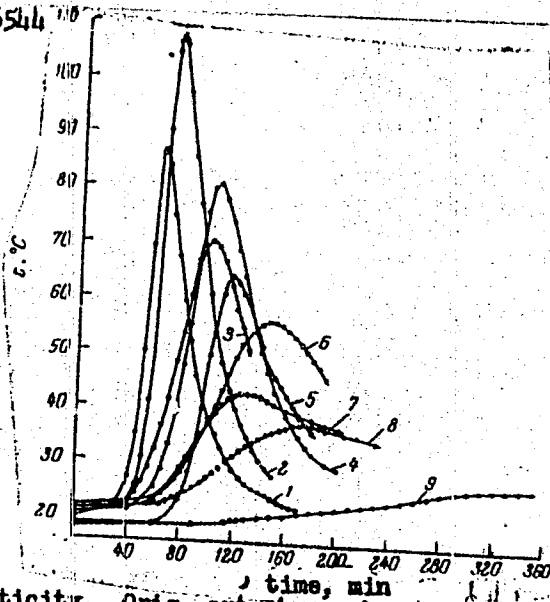


Fig. 1. Temperature curves for the copolymerization of unsaturated esters with styrene. 1 - 3: polyester I; 4 - 6: polyester II; 7 - 9: polyester III. Styrene content: 1, 4, 7 - 33%; 2, 5, 8 - 50%; 3, 6, 9 - 67% where I, II, and III refer to the following mole ratios of diethylene glycol: maleic anhydride: sebacic acid, I - 1:0.5:0.5; II - 1:0.33:0.67; III - 1:0.166:0.834 respectively.

than on its elasticity. Orig. art. has: 3 tables, 4 graphs, and 3 equations.

SUB CODE: 07,11/
Card 2/2 vmb

SUBM DATE: none/

ORIG REF: 003/

OTH REF: 010

NIVINSKAYA, M.M.; PICHUGINA, M.N.; AVDEYEVA, I.A.

Short focus skin distance intrauterine X-ray therapy in compound treatment of cancer of the cervix uteri. Med. rad. 10 no.7:19-23 JI '65. (MIRA 18:9)

I. Rentgenoradiologicheskiy otdel (zav. - prof. I.L.Fager), ginekologicheskiy otdel (zav. - korr. korrespondent AMN SSSR prof. I.A.Novikova) i otdel patologicheskoy anatomii opukholy cheloveka (zav. - zapsheitel'nyy chlen AMN SSSR prof. N.A.Krayevskiy) Institut eksperimental'noy i klinicheskoy onkologii AMN SSSR, Moskva.

TRAPEZNIKOV, N.N.; AVDEYEVA, I.A.; MUSHEGYAN, S.A.; LEVITSKAYA, L.A.

Experimental basis of chemotherapy of malignant tumors of the extremities by the method of regional perfusion. Vest. ANN SSSR 17 no.6:67-72 '62. (MIRA 15:8)

1. Institut eksperimental'noy i klinicheskoy onkologii ANN SSSR i Institut eksperimental'noy khirurgicheskoy apparatury i instrumentov Ministerstva zdravookhraneniya SSSR.
(EXTREMITIES (ANATOMY)—CANCER) (CHEMOTHERAPY) (PERFUSION PUMP (HEART))

MAYEVSKIY, M.M.; AVDEYEVA, I.A.; ROMANENKO, Ye.A.; URAZOVA, A.P.; BONDAREVA, A.S.;
TIMOFEYEVSKAYA, Ye.A.; MAZAYEVA, V.G.; GOR'KOVA, N.P.; TAYSHINA, N.M.

Aurantin and its effect on experimental tumors. Antibiotiki
4 no.4:43-46 J1-Ag '59. (MIRA 12:11)

1. Laboratoriya eksperimental'noy bioterapii (zav. - chlen-
korrespondent AMN SSSR prof.M.M.Mayevskiy) Institute eksperimental'-
noy patologii i terapii raka AMN SSSR.
(ANTINEOPLASTIC AGENTS pharmacol)
(ANTIBIOTICS pharmacol)

ROMANENKO, Ye.A.; AVDEYEVA, I.A.; MAZAYEVA, V.G.

Effect of some antineoplastic antibiotics on induced tumors.
Antibiotiki 9 no 4:348-351 Ap '64. (MIRA 19:1)

1. Laboratoriya eksperimental'noy bioterapii (zav. - chlen-korrespondent AMN SSSR prof. M.M. Mayevskiy) Instituta eksperimental'noy i klinicheskoy onkologii AMN SSSR, Moskva.

L 23008-65 FSS-2/EWT(l)/EWT(m)/ETC(f)/EWG(m) ID/HW

30

ACC NR: AP6007662

SOURCE CODE: UR/0413/66/000/003/0031/0031

AUTHOR: Rozovskiy, V. M.; Fisher, T. L.; Basharina, Yu. I.; Chebakova, N. A.; Kuz'min, V. A.; Maklyarskaya, A. A.; Avdeyeva, I. D.; Gavrilina, L. V.

51
B

ORG: none

TITLE: Iron-nickel alkaline battery.²⁷ Class 21, No. 178401 [announced by the Scientific-Research Institute for Chemical Current (Nauchno-issledovatel'skiy institut khimicheskikh istochnikov toka)]

SOURCE: Izobreteniya, promyshlennyye obratsy, tovarnyye znaki, no. 3, 1966, 31

TOPIC TAGS: battery, alkaline cell

ABSTRACT: An Author Certificate has been issued for an iron-nickel alkaline battery with lamellar-perforated electrodes of which the negative one is made from hydrogen-reduced iron. In order to increase the capacity at low temperatures and after prolonged discharge, the active mass of the iron electrode is supplemented with additions of antimony oxide and sulfide sulfur. The additions range from 2--4% for antimony oxide and 0.4--0.6% for sulfide sulfur. The iron electrode is

Cont1/2

UDC: 621.355.8

L 23008-66

ACC NR: AP6007662

produced in the form of lamellar tape with 16 to 18% open surface. ⁰
[LD]

SUB CODE: 10/

SUBM DATE: 13Aug64/

Card 2/2 *plu*

AVERBUKH, T.D.; APAKHOV, I.A.; MAYDUROVA, G.V.; BAKINA, N.P.; ELINOVA,
N.P.; BURBA, A.A.; AVDEYEVA, I.V.

Removal of sulfur from waste gases of copper and sulfur plants
by the method of afterburning. Khim.prom. no.4:281-283 Ap '62.
(MIRA 15:5)

1. Ural'skiy nauchno-issledovatel'skiy khimicheskiy institut i
Mednogorskiy medno-sernyy kombinat.
(Gases—Purification) (Sulfur oxides)

T

Country : USSR
Category: Human and Animal Physiology. Metabolism.
Water-salt Metabolism.

Abs Jour: RZhBiol., No 19, 1958, No. 88582

Author : Avdeyeva, K.F.
Inst : Turkmen Agricultural Institute
Title : On the Content of Ca, P and Chlorides in the Blood
Serum of Karakul Sheep (Preliminary Report)

Orig Pub: Tr. Turka. s.-kh. in-ta, 1956, 8, 81-83

Abstract: The content of Ca, P and chlorides in the serum of Karakul sheep is lower during the fall-winter season than during the spring-summer period. In young and well nourished animals the quantity of P and Ca was higher than in poorly nourished and old ones; the changes in the Ca

Card : 1/2

T-6