YANOVSKIY, K. A.

104-3-32/45

AUTHOR: Prokhorova, A.M., Engineer, Prokhorov, F.G. and Yanovskiy, K.A., Candidates of Technical Sciences.

TITLE: Experience of using total chemical de-salting of water on an industrial scale. (Opyt primeneniya polnogo khimicheskogo obessolivaniya vody na promyshlennykh ustanovkakh)

PERIODICAL: "Elektricheskiye Stantsii" (Power Stations), 1957, Vol.28, No.3, pp. 80 - 83 (U.S.S.R.)

ABSTRACT: The chemical method of water de-salting is to be widely used during the sixth Five Year Plan. This note gives brief information about this new method of purifying water as it has been applied at a number of Soviet power stations. One equipment with an output of 50 m^3/hour consists of eight ionite filters. The circuit is given, it consists of first stage H-cation exchange, first stage anion exchange, decarbonating and second stages of cation and anion exchange. The processes are described. Somewhat different circuits are used in other stations. If the process is correctly operated very pure water is produced. The total salt content not exceeding 0.02 mg/l (without SiO_2). It may be used for single-pass boilers without evaporators as well as for drum type boilers. Full scale tests are to be carried out at power stations. There are 6 figures and 1 Slavic reference.

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AVAILABLE: Library of Congress

YANOVSKIY, L.

LIVSHITS, I.; YANOVSKIY, L., aspirant.

Tetrahedrons in hydraulic engineering. Mor.flot 17 no.10:30-31 O '57. (MIRA 10:12)

1.Glavnyy inzhener proyektnoy kontory tresta "Gidromekhanizatsiya" Ministerstva stroitel'stva RSFSR (for Livshits)
(Hydraulic engineering)

YANOVSKIY, L.A., kand.med.nauk; OSTAPKO, K.I., kand.med.nauk

Epicritic sensitivity in the defects of extremities and its importance in training for work and in prosthesis. Trudy Ukr. nauch.-issl. inst. ortop. i travm. no.13:249-254 '59 (MIRA 16:12)

1. Iz Ukrainskogo tsentral'nogo nauchno-issledovatel'skogo instituta ekspertizy trudosposobnosti i organizatsii truda invalidov (dir. - prof. A.P. Kotov).

YANOVSKIY, L.A.

Medical testimony on neurogenic contractures following gunshot wounds of the peripheral nerve trunks. Zhur.nev. i psikh. 59 no.6:735-741 '59.

1. TSentral'nyy ukrainskiy institut ekspertizy trudosposobnosti i trudoustroystva invalidov (dir. - prof. A.P. Kotov), Khar'kov.

(NERVES, PERIPHERAL, wds. & inj.
gunshot wds. causing contractures, work capacity determ. (Rus))
(CONTRACTURE, etiol. & pathogen.
peripheral nerve gunshot wds., work capacity determ. (Rus))
(WORK,
capacity determ. in contractures caused by peripheral nerve gunshot wds. (Rus))

DERGACHEV, N.F., kand.tekhn.nauk; YANOVSKIY, L.P., inzh.

Scrubbing of the flue gases of the TP-80 steam boilers.
Teploenergetika 8 no.6:20-24 Je '61. (MIRA 14:10)

1. Vsesoyuznyy teplotekhnicheskiy institut.
(Boilers) (Scrubber (Chemical technology))

YANOVSKIY, M.

GOMBERG, M.; YANOVSKIY, M.

Shipment of Goods

Standardize accounting of delivery of shipped goods. Den. i kred. 11 no. 5, 1952.

Monthly List of Russian Accessions, Library of Congress, August 1952. Unclassified.

YANOVSKIY, M.A.; KEYLIN, G.S.; LOZOVSKIY, V.L.

Anticorrosive flux for soldering with soft solders. Med.prom. no.3: 38-39 Jl-S '55. (MLRA 9:12)

1. Mediko-instrumental'nyy ordena Lenina zavod "Krasnogvardeyets."
(APPARATUS AND INSTRUMENTS, anticorrosive soldering)

YANOVSKIY, M.A.

Mechanization of grinding; drum grinding under water. Med.prom. 11 no.1:19-25 Ja '57. (MLRA 10:2)

1. Mediko-instrumental'nyy ordena Lenina zavod "Krasnogvardeyets"
(GRINDING AND POLISHING)

YANOVSKIY, M.A.

Mechanical removal of projections from plastic parts. Med.prom. 14 no.6:48-49 Je '60. (MIRA 13:6)

1. Mediko-instrumental'nyy zavod "Krasnogvardeyets".
(PLASTICS--MOLDING)

ACC NR: AT7005057 SOURCE CODE: UR/2649/66/000/232/0050/0055

AUTHOR: Gordeyev, A. S. (Doctor of technical sciences, Professor); Klokov, V. G. (Engineer); Yanovskiy, M. F. (Engineer)

ORG: None

TITLE: Effect of the shape of blade profiling on the characteristics of a type TP-1000 hydraulic coupling

SOURCE: Moscow. Institut inzhenerov zheleznodorozhnogo transporta. Trudy, no. 232, 1966. Gidroperedachi teplovozov i gruzopod"yemnykh mashin (Hydraulic transmissions of diesel locomotives and hoisting machines), 50-55

TOPIC TAGS: hydraulic engineering, hydraulic device, blade profile, sheet metal

ABSTRACT: The article is a report on experiments conducted in the Hydraulic Transmission Laboratory of the Moscow Institute of Transportation Engineers in conjunction with the Kaluga Machine Building Plant to determine the effect which the shape of blade profiling in the pump runner and two reactor wheels has on the characteristics of a type TP-1000 hydraulic coupling. Comparative tests of conventional blades made according to plant drawings and blades of constant thickness notched on the input and output edges without mechanical finishing of the working surfaces, as well as experiments on a hydraulic converter model with artificial distortion of the blade profiles showed

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ACC NR: AT7005057

the possibilities for effective use of constant-thickness blades. The experimental TP-1000 hydraulic converter is made in two versions--one with a standard blade system and the other with blades in the form of arcs of constant thickness with notches on the input and output edges--so that the two blade systems may be subjected to comparative tests while eliminating the effect of other factors on the hydraulic characteristics. Tests at pump speeds of 1000-4500 rpm using DT GOST 4749-49 diesel fuel as the working fluid showed that the profiling of the blades in the pump runner and reactors has an insignificant effect on the external characteristics of the hydraulic coupling. This conclusion is important from the standpoint of technological economy since considerable savings can be realized by using blades pressed from sheet steel in hydraulic couplings of this type. Orig. art. has: 3 figures.

SUB CODE: 13/ SUBM DATE: None/ ORIG REF: 03

Card 2/2

KOGTEV, Petr Nikolayevich; YANOVSKIY, M.I., red.; SEDOVA, Z.D., red.izd-va; SHIBKOVA, R.Ye., tekhn. red.

[Financial plan of a woodworking enterprise]Finansovyi plan derevoobrabatyvaiushchego predpriiatiia. Moskva, Goslesbumizdat, 1962. 105 p. (MIRA 16:3)
(Woodworking industries--Finance)

YANOVSKIY, M. I.

"Experimental Investigation in the Field of Sorption Separation of Gas Mixtures." Sub 15 May 47, Moscow Inst of Chemical Machine Building

Dissertations presented for degrees in science and engineering in Moscow in 1947.

SO:: Sum. No. 457, 18 Apr 55

YANOVSKIY, M.I.

Chemical Abstracts
Vol. 48 No. 5
Mar. 10, 1954
General and Physical Chemistry

The theory of chromatographic processes on nonhomogeneous surfaces. S. Z. Roginskii and M. I. Yanovskii. *Trudy Vsesoyuz. Soveshch. Issledovaniya v Oblasti Khromatog. i Khromatog. Metodov, Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1950, 46–55(Pub. 1952).—See *C.A.* 47, 10310i. G. M. Kosolapoff

YANOVSKIY, M.I.

CATALYST

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
General and Physical Chemistry

(3) 6'

Theory of chromatography on heterogeneous surfaces. S. Z. Roginskii and M. I. Yanovskii. *Trudy Moskov. Inst. Khim. Mashinostroeniya* 1950, No. 2(Whole No. 10), 79-85; cf. *C.A.* 47, 10310i.—By analogy with analysis of adsorption on homogeneous surfaces, R. and Y. write for chromatography on heterogeneous surfaces (over a restricted range of concn. change): $p(Q) = CV/Mf.T$, where $p(Q)$ is the distribution function for heat of adsorption Q, C is concn. at the time vol. V has passed through a bed of length x contg. M g. of packing per unit length.
H. J. Kandiner

9-2-54
JJP

CA YANOVSKY, M.I.

Desorption of gases in dynamic conditions. S. Z. Roginskii and M. I. Yanovskii (Acad. Sci. U.S.S.R., Moscow). *Zhur. Fiz. Khim.* 24, 137-43(1950).—Mixts. of air with CO_2, ethylene (I), or propene (II) were passed at 20° through 4 tubes filled with activated C (bulk d. 0.47, particle size 1.5-2.75 mm.) until the outgoing gas had the concn. of the incoming gas (approx. 0.012 mol./l.). Then pure air was slowly (a few cc./min.) forced through the 4 tubes and 4 addnl. tubes, equally filled, all in series, and the concn. c of the admixt. in the air was detd. after every tube as function of the vol. V cc. that passed through. The rate of displacement increased from II to I to CO_2; e.g., the concn. after the 4th tube became 0.002 mol./l. after V = 4500, 2500, and 1000, resp. At a given (large) V, c increased gradually from the 1st to the fifth or 7th tube and then rapidly decreased to zero. The adsorption zone increased with V. The adsorption isotherms of CO_2, I, and II on C were detd. up to 0.04 mol./l. Assuming that the outgoing air was in equil. with the amt. adsorbed, a was calcd., and the calcn. confirmed by detg. a in the 8 tubes by complete displacement of the admixt. with N_2 at 350-400°. The equation $V/XM = (da/dc)[1 - (c/c_0)]$ was valid; X is the distance from the inlet, M the amt. of adsorbent per cm. of the column, and c_0 is the total concn. of air and admixt. J. J. Bikerman

YANOVSKIY, M.I.

Chromatographic method of determination of adsorption isotherms, isobars, and isosteres. M. I. Yanovskii. *Zhur. Fizikal. Khim.* 24, 681-6(1951).—The adsorption isotherm, $f(C) = (1/Mx)\int_0^C vdC$ (where M is the wt. of unit length of the adsorption column, x the distance from its origin in the direction of the flow, v the vol. of solvent passed) is derived from the chromatographic desorption curve $C(v, x)$ by graphic integration. Isobars and isosteres are detd. from series of desorption curves at different temps. Constructions are given for the case when the mass of the adsorption column is less than the Mx necessary for complete desorption.
N. Thon

ROGINSKIY, S.Z.; YANOVSKIY, M.I.

The theory of chromatography on nonhomogeneous surfaces. I. Determination of the distribution function of portions of a solid surface over heats of adsorption from the desorption curves. III. Dynamics of the adsorption of mixtures on heterogeneous surfaces. Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci. '52, 63-8, 69-79 [Engl. translation].
(CA 47 no.20:10310 '53)

USSR/Chemistry - Adsorption Jan/Feb 52

"The Theory of Chromatography on Nonhomogenous Surfaces. I. Determination of the Distribution Function of Portions of a Solid Surface by Heat of Adsorption Taken From Desorption Curves," S. Z. Roginskiy, M. I. Yanovskiy, Inst of Phys Chem, Acad Sci USSR

"Iz Ak Nauk, Otdel Khim Nauk" No 1, pp 59-63

Studied the effect of energy nonhomogeneities of the surface on the character of dynamic desorption curves in chromatographic analysis. Found the

208T4

USSR/Chemistry - Adsorption (Cont'd)

connection between the form of the desorption curves and the function of distribution of surface portions at adsorption temp. Gives a method for constructing this function. Obtained eqs of desorption curves for general forms of distribution. Gives the limits and conditions under which this method can be used.

208T4

YANOVSKIY, M. I.

YANOVSKIY, M.I.; KAPUSTIN, D.S.; NOGOTKOV-RYUTIN, V.A.

The method of rapid determination of molar radioactivity during chromatography of C^{14} labeled gases. Probl. kin. i kat. 9:391-398 '57. (MIRA 11:3)

(Radioactivity--Measurement)
(Gases)
(Chromatographic analysis)

GAZIYEV, G. A., YANOVSKIY, M. I.

"A Radiometric Cell for Measuring the Radioactivity of Gases During the Volumetric-Chromatographic Separation of Mixtures."

Problemy Kinetiki i Kataliza, v. 9, Isotopes in Catalysis, Moscow, Izd-vo AN SSSR, 1957, 442p.

Most of the papers in this collection were presented at the Conf. on Isotopes in Catalysis which took place in Moscow, Mar 31 - Apr 2, 1956.

20-118-4-28/61

AUTHORS: Sinyak, Yu. Ye., Roginskiy, S. Z., Corresponding Member of the AS USSR, Yanovskiy, M. I.

TITLE: The Isotopic Exchange of Carbon Dioxide Chemically Adsorbed on an Iron Catalyst in the Synthesis of Ammonia (Izotopnyy obmen CO_2, khemosorbirovannoy na zheleznom katalizatore sinteza ammiaka)

PERIODICAL: Doklady AN SSSR, 1958, Vol. 118, Nr 4, pp. 727-730 (USSR)

ABSTRACT: The catalytic synthesis from nitrogen and hydrogen at an ison catalyst with aluminum- and potassium additions has already often been studied. The nature of the accelerating effect of these additions has hitherto remained unexplained. The second author emphasized in a previous work (reference 2) the exploitation of the velocity measurements of the isotopic exchange between the atoms of the surface and the gases. The kinetic isotopic method has a number of advantages, campared to the former methods (references 1,3-5) suggested for the study of the heterogeneity. If it is used, the probability of a redistribution of molecules decreases and all measurements are carried out with an unchanged filling of the surface, which

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is essential. The exchange velocity of chemically adsorbed carbon monoxide at the same catalyst has already been studied (reference 6). The velocity constant of the exchange decreased gradually in these experiments which cannot be explained by the influence of the interaction. The iron catalyst was double--activated, reduced, and passivated outside of the reaction system. Active carbonic acid was produced from $BaC^{14}O_3$ and H_2SO_4 of 96%. The inactive carbonic acid was formed in a pyrolytic decomposition of Na_2CO_3. Figure 1 gives a scheme of the experimental plant. The lower curves of figure 2 show that adsorbed CO_2 in an atmosphere of CO, H_2, and Ar at a pressure of 500 mm torr. is not desorbed. In the case of presence of CO_2 in the plant a quick rise of the activity is observed in the gas phase. After the equilibrium had been reached CO_2 was freezed out in a calibrated container (figure 1,4) which was fitted out with an end-counter MST-17. Then the total activity ($A_{IAust} = A_{Iobm}$) of the CO_2 was determined. It was found that A_{IAust} forms a quantity of approximatively 40-50% of the total quantity of the adsorbed $C^{14}O_2$. Then an equal quantity

of inactive CO_2 was introduced into the catalyst. The activity (A_{IIAust}) in the gas phase increased unimportantly. This operation was carried out a second time. No rise of the activity ($A_{IIIAust}$) was found in the gas phase. Then the reactor was heated up to 475°C. Thus an activity appears in the gas phase which amounts to approximately 20% of the total activity which was absorbed by the contact. Only the introduction of hydrogen at 475°C into the circulation makes possible the consumption of the residual activity. Figure 3 shows the second experimentla series. The trained catalyst had to absorb a certain quantity of inactive CO_2 and then a strictly dosed quantity of active $C^{14}O_2$. Then the kinetic experiment was carried out. In the second experiment an equal quantity of $C^{14}O_2$ was absorbed by the catalyst immediately after the draining and then the curve of the isotopic exchange was recorded (figure 3). Hence follows that the exchange percentage depends on the sequence of the absorption. If $C^{14}O_2$ is absorbed first, the

exchange portion is lower by 15-20% than in the case of a reverse sequence. Figure 4 shows the exchange velocity of CO_2 in experiments in which first 2,85 cm^3 of inactive CO_2 and only 0.42 ml of active $C^{14}O_2$ act on the catalyst. In this case the exchange portion amounts to approximately 60-65%. The given data point to the existence of two sections which differ according to their properties sharply from one another and are characteristic of the alkaline part of the surface of the catalyst. The exchange mechanism is apparently approximated to that of carbonate-alkaline and alkaline-earth elements (reference 8). There are 4 figures, and 8 references, 5 of which are Soviet.

SUBMITTED: July 25, 1957

AVAILABLE: Library of Congress

AUTHORS: Yanovskiy, M. I., Ozziyev, G. A. SOV/ 20-120-4-34/67

TITLE: Application of Frontal Analysis in Gaseous-Liquid Chromatography of Radioactive and Not-Radioactive Gases (Primeneniye frontal'nogo analiza v gazo-zhidkostnoy khromatografii radioaktivnykh i neradioaktivnykh gazov)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 120, Nr 4, pp. 812-814 (USSR)

ABSTRACT: The frontal gaseous-liquid analysis is not widespread in practical analysis since with this method the dynamics of adsorption in the layer of the adsorbent are considerably complicated by displacement processes. Those processes are connected with the interaction of the mixture components during their adsorption on the surface (Refs 1-3). Therefore it is impossible to determine the composition of the mixture from the frontal diagram directly. Exhaustive data on the isothermal lines of adsorption of the mixtures and the individual components in the entire investigated field of concentration are required for computations. An insufficiently worked out adsorption theory of mixtures under static and dynamic conditions and the insufficiency of the experimental results

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in this field limit the application of the mentioned analysis to a circle of systems which obey the adsorption equations of the Langmuir type (Lengmyur, Refs 2, 3). The attempt was made of using the frontal analysis in the mentioned chromatogram. Its developing variant found a widespread application (after the publication of Ref 4). The experiment consisted in an uninterrupted passage of the mixture through the column and a taking of a so-called frontal diagram. It characterizes the dependence between the concentration of components at leaving the column and the volume of the mixture having passed the column. Figure 1 shows some frontal diagrams in a diatomite-dibutyl-phthalate column. They prove that in a first approximation the interaction of the components in the phase without mobility may be neglected. Figure 2 shows the possibility of the analysis of an 8-component mixture (diatomite-nitrobenzene). Figure 2 b shows a gaseous-liquid developing chromatogram of the same mixture as figure 2a. By comparing the figures it can be seen that each step on the frontal diagram corresponds to a developing

Application of Frontal Analysis in Gaseous-Liquid Chromatography of Radio-active and Not-Radioactive Gases SOV/20-120-4-34/67

maximum. The analysis mentioned in the title may apart from the radiochromatographical developing variant (Ref 5) be used for the determination of the specific radioactivity of the components of a gas mixture. The methods are discribed. Figure 3 shows a typical radiochromatogram of an air-propylene--divinyl-pentane mixture in hydrogen. There are 4 figures and 6 references, 5 of which are Soviet.

PRESENTED: January 2, 1958, by S. I. Vol'fkovich, Member, Academy of Sciences, USSR

SUBMITTED: December 31, 1957

1. Gases (Radioactive)--Chromatographic analysis 2. Gases--Chromatographic analysis 3. Adsorbents--Chemical effects

Card 3/3

5(4)

AUTHORS: Roginskiy, S. Z., Corresponding Member, Academy of Sciences, USSR, Yanovskiy, M. I., Zhabrova, G. M., Vinogradova, O. M., Kadenatsi, B. M., Markova, Z. A. SOV/20-121-4-28/54

TITLE: A Catalytic Synthesis of Unsaturated Hydrocarbons of the Series C_4, Labelled by the Radioactive Carbon C^{14}, With the Use of Vapor Phase Distributive X-Ray Chromatography (Kataliticheskiy sintez nepredel'nykh uglevodorodov ryada C_4, mechennykh radiouglerodom C^{14}, s ispol'zovaniyem parofaznoy raspredelitel'noy radiokhromatografii)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 121, Nr 4, pp 674-677 (USSR)

ABSTRACT: This paper reports on the results of the production of labelled unsaturated hydrocarbons on the basis of ethyl alcohol labelled by C^{14}. It is a peculiarity of this method that all the labelled molecules are produced simultaneously by the same catalytic process which develops under the influence of S. V. Lebedev's catalyst for the synthesis of divinyl.

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SOV/20-121-4-28/54

A Catalytic Synthesis of Unsaturated Hydrocarbons of the Series C_4, Labelled by the Radioactive Carbon C^{14}, With the Use of Vapor Phase Distributive X-Ray Chromatography

This paper discusses a special case of the general principle of the synthesis of labelled molecules. This principle consists of the carrying out of a group synthesis (which gives a mixture of some substances with an unusual isotopic composition) and of the subsequent application of physical-chemical separation methods. Especially interesting is the separation of the labelled hydrocarbons of the C_4 series with various degrees of saturation and with various structural-isomeric shapes. Such hydrocarbons are butadiene (divinyl), α-butylene, β-butylene (cis-variant), β-butylene (trans-variant). The catalytic synthesis was carried out by means of S. V. Lebedev's catalyst at 390°. A labelled ethyl alcohol $C^{14}H_3C^{14}H_2OH$ with the specific radioactivity 0,724 Curie/ml was used for the synthesis. The chromatographic separation of the marked gaseous labelled products is then discussed. A figure shows a typical chromatogram of the mixture of the gaseous radioactive products of the synthesis of divinyl from

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A Catalytic Synthesis of Unsaturated Hydrocarbons of the Series C_4, Labelled by the Radioactive Carbon C^{14}, With the Use of Vapor Phase Distributive X-Ray Chromatography

the labelled alcohol ($C_2^{14}H_5OH$). According to this chromatogram, the main gaseous product is divinyl (81,3 %). The percentage of butylene is not higher than 4,7 %. The composition of the products may be changed by a heat treatment of the catalyst. The specific activities of the hydrocarbons have approximately the same values. In order to identify the individual fractions, their infrared absorption spectra were taken; they are shown by a figure. The combination of chromatography with rectification, extraction and with a counterflow distribution is very promising. These methods are very productive and may be used for the preliminary group separation of a mixture into some fractions with a subsequent extraction of the individual components. The catalytic experiment takes 1 hour and the chromatographic separation - 2 - 2,5 hours. There are 4 figures and 9 references, 7 of which are Soviet.

A Catalytic Synthesis of Unsaturated Hydrocarbons of the Series C_4, Labelled by the Radioactive Carbon C^{14}, With the Use of Vapor Phase Distributive X-Ray Chromatography

SOV/20-121-4-28/54

ASSOCIATION: Institute fizicheskoy khimii Akademii nauk SSSR
(Institute of Physical Chemistry, AS USSR)

SUBMITTED: April 16, 1958

Card 4/4

28(5)

AUTHORS: Oziranar, S. N., Gaziyev, G. A., Yanovskiy, M. I., Kornyakov, V. S.

SOV/32-25-6-43/53

TITLE: Ionization Detector With Prometium-147 for the Gas-chromatography (Ionizatsionnyy detektor s prometiyem-147 dlya gazovoy khromatografii)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 6, pp 760-761 (USSR)

ABSTRACT: A gas analyzer is described with Pm^{147} as source of the ionizing β-radiation. Pm^{147} is electrolytically applied, in form of a thin oxide layer (surface 2 cm^2) and has a specific activity of 2.5 mC/cm^2. The differential detector consists of two chambers separated from each other with teflon. The pure carrier gas flows continuously through one chamber, while the other one is connected with the chromatographing column, receiving the components to be analyzed. Measurements are carried out by means of an amplifier EMU-3 and potentiometer EPP-09; instead of the latter it is however also possible to use an automatic potentiometer EPPV-51. The schematical drawing of the construction of one of the ionization chambers is given (Fig 1). The described detector was tested on a chromatographic device of the usual type (Ref 6). The chromatograms obtained were compared with those obtained under the same conditions by the

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thermoconductometric gas analyzer GEUK-2i. The chromatograms of a mixture of propylene, isobutylene and pentane (Fig 2) show that far more marked and precise diagrams were obtained by the ionization detector. It was found that the ionization detector is practically insensitive with respect to variations in the velocity of flow and temperature (Figs 3,4) and, therefore, well suited for separating substances with a high boiling point as well as for determinations at high temperatures. There are 4 figures and 6 references, 3 of which are Soviet.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences, USSR)

YANOVSKIY, M.I.

PHASE I BOOK EXPLOITATION SOV/3921

Akademiya nauk SSSR. Institut fizicheskoy khimii

Problemy kinetiki i kataliza. [t] 10: Fizika i fiziko-khimiya kataliza (Problems of Kinetics and Catalysis. [vol.] 10: Physics and Physico-Chemistry of Catalysis) Moscow, Izd-vo AN SSSR, 1960. 461 p. Errata slip inserted. 2,600 copies printed.

Eds.: S.Z. Roginskiy, Corresponding Member of the Academy of Sciences USSR, and O.V. Krylov, Candidate of Chemistry; Ed. of Publishing House: A.L. Bankvitser; Tech. Ed.: G.A. Astaf'yeva.

PURPOSE: This collection of articles is addressed to physicists and chemists and to the community of scientists in general interested in recent research on the physics and physical chemistry of catalysis.

COVERAGE: The articles in this collection were read at the conference on the Physics and Physical Chemistry of Catalysis organized by the Otdel khimicheskikh nauk AN SSSR (Section of Chemical Sciences, Academy of Sciences USSR) and by the Academic Council on the problem of "the scientific bases for the selection of catalysts." The Conference was held at the Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry of the AS USSR) in Moscow, March 20-25, 1958. Of the great volume of material presented at the conference, only papers not published elsewhere were included in this collection.

S/195/60/001/004/007/015
B017/B055

AUTHORS: Gaziyev, G. A., Yanovskiy, M. I., Brazhnikov, V. V.

TITLE: Simplified Chromatographic Method for the Determination of Adsorbent and Catalyst Surfaces

PERIODICAL: Kinetika i kataliz, 1960, Vol. 1, No. 4, pp. 548-552

TEXT: A simple and rapid chromatographic method for the determination of adsorbent and catalyst surfaces was developed. The surface area was found by determining the vapor volume of reaction products adsorbed on adsorbents and catalysts at fairly low concentrations. Fig. 1 gives a scheme of the experimental arrangement. The surfaces of adsorbents and catalysts were calculated by the equation $S_g = A \cdot V_g$ (5), where S_g is the specific surface and V_g is the specific volume of adsorbed vapor. The method was tested using various adsorbents and catalysts and the results are listed in a table. The relation between the surface area of various adsorbents and catalysts and the volume adsorbed, as determined for

n-heptane, is shown graphically in Fig. 3. Experimental and calculated values are in good agreement. The dependence of V_g on the amount of the liquid sample introduced is shown graphically in Fig. 4. According to Table 5, the experimental and calculated values at various carrier gas velocities are in good agreement. N_2 or Ar were used as carrier gas. A linear relationship was found to exist between the adsorbed volume and the specific surfaces of the adsorbents and catalysts. There are 5 figures, 1 table, and 10 references: 3 Soviet, 2 US, 1 British, and 3 German.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry of the AS USSR)

SUBMITTED: April 28, 1960

ROGINSKIY, S.Z.; AL'TSHULER, O.V.; YANOVSKIY, M.I.; MALININA, Ye.I.; MOROKHOVETS, A.Ye.

Preparation of radioactive cesium concentrates by the use of ion exchange glauconite columns. Radiokhimiia 2 no.4:431-437 '60. (MIRA 13:9)

(Cesium--Isotopes) (Glauconite)

ROGINSKIY, S.Z.; MALININA, Ye.V.; YANOVSKIY, M.I.; AL'TSHULER, O.V.; MOROKHOVETS, A.Ye.

Preparation of concentrates of radioactive cesium isotopes on heavy metal ferrocyanides precipitated from solutions with a high content of extraneous salts. Radiokhimiia 2 no.4:438-445 '60. (MIRA 13:9)

(Cesium--Isotopes) (Ferrocyanides)

ROGINSKIY, S.Z.; SINYAK, Yu.Ye.; YANOVSKIY, M.I.

Investigation of the surface of an alkali promoter of the ammonia catalyst by means of the isotopic method. Probl. kin. i kat. 10:210-213 '60. (MIRA 14:5)

1. Institut fizicheskoy khimii AN SSSR.
(Catalysts) (Alkali metal oxides) (Alkaline earths)

5,5600
5,5500

S/030/60/000/05/05/056
B015/B008

AUTHORS: Yanovskiy, M. I., Candidate of Chemical Sciences,
Gaziyev, G. A.

TITLE: Gas - Liquid Radiochromatograph

PERIODICAL: Vestnik Akademii nauk SSSR, 1960, No. 30, No. 5, pp. 27-31

TEXT: A few days are required for conducting a complete radiochemical analysis of a complicated mixture by the present method. The Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences, USSR) succeeded in conducting such a radiochemical analysis in a time required for a chromatographic analysis alone (15-30 minutes), by combining the methods of the chromatographic analysis which takes 15-30 minutes with the measuring of the radioactivity of materials in the flow. On the basis of this principle, some types of radiochromatographs were worked out, built and tested at the Institute, as can be seen from the paper by M. I. Yanovskiy, D. S. Kapustin, V. A. Nogotkov-Ryutin. The gas chromatograph by S. N. Oziraner, G. A. Gazivev, M. I. Yanovskiy and V. S. Kornyakov, the scheme of which

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Gas - Liquid Radiochromatograph

S/030/60/000/05/05/056
B015/B008

can be seen in Fig. 1, and which is described in detail, proved to be the best. One of the chambers of the ionization detector is shown in Fig. 2 and a proportional counter in Fig. 3. In contrast with the detector with an Sr^{90} source, described in publications, the radiation of the Pm^{147} is used as ionizing radiation in the paper under review. A typical radiochromatogram of a mixture of radioactive and nonradioactive gases and vapors is shown in Fig. 4. A number of investigations were conducted at the Institute of Physical Chemistry, at the laboratoriya S. Z. Roginskogo (Laboratory of S. Z. Roginskiy) by means of this radiochromatograph, which showed good prospects for the application of radiochromatography and chromatography for the solution of various problems of kinetics and catalysis. The formation of butylenes according to S. V. Lebedev could be clarified by means of radiochromatographic methods. It is assumed that the radiochromatographic method will allow the determination of the relative adsorption coefficients of individual products in the course of the catalytic reaction. There are 4 figures and 2 non-Soviet references.

Card 2/2

YANOVSKIY, M.I., OZIRANER, S.N., LU PEY-CHZHAN [Lu P'ei-chang]

Mechanism of chromatographic separation of gases in thermal displacement analysis. Zhur.prikl.khim. 33 no.5:1084-1091 My '60. (MIRA 13:7)

(Gas chromatography)

S/020/60/133/004/040/040XX
B004/B067

AUTHORS: Roginskiy, S. Z., Corresponding Member of the AS USSR, Yanovskiy, M. I., Lu Pey-chzhan, Gaziyev, G. A., Zhabrova, G. M., Kadenatsi, B. M., and Brazhnikov, V. V.

TITLE: Rapid Chromatographic Method of Measuring the Adsorption Isotherms of Gases and Vapors

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 4, pp. 878-881

TEXT: Since in heterogeneous catalysis the dimensions of the specific surface are of great importance, the authors attempted to develop a rapid method of determining the specific surface. Their studies were based on a paper by J. N. Wilson (Ref. 1) where the relation between the chromatographic curve and the form of the isotherm is theoretically studied. The results were compared with those of the ordinary vacuum technique. Fig. 1 shows the scheme of the experimental apparatus. The gas analyzer was an ionization detector on the basis of Pm^{147} (Ref. 5). The adsorption of heptane was measured. Nitrogen and sometimes argon were used as carriers.

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The height of the steps recorded corresponds to the initial concentration C_0 of the adsorbate. The desorption curves recorded on blowing the pure carrier gas through the column permit the calculation of the isothermal line of adsorption. In a variation of this method, the column is not saturated, but the sample is periodically injected into the column through which the carrier gas flows. The experiment then lasts only 10-15 min. On the assumption of an immediately established equilibrium and the absence of longitudinal diffusion, the adsorption was calculated from the following equations: $f(C) = \omega k S_i / ug$ (2), where $f(C)$ is the amount of the substance adsorbed by 1 g of adsorbent (mmole/g) in which C is the equilibrium concentration; k is the constant of the detector (mmole/cm^3.cm); u is the speed of the recorder tape; g is the weight of the adsorbent (g); and S_i is the area below the desorption curve. The following adsorbents were used: refractory diatomite bricks, silica gel of the type E (Ye), nickel-hydroxide gel, nickel catalyst, MgO produced from $Mg(NO_3)_2$, ZnO+14.5 $ZnSO_4$, and carbon black. The values for MgO, silica gel Ye, nickel hydroxide, and diatomite were in good agreement with those obtained by the vacuum technique. For adsorbents with a large number of very narrow pores (active

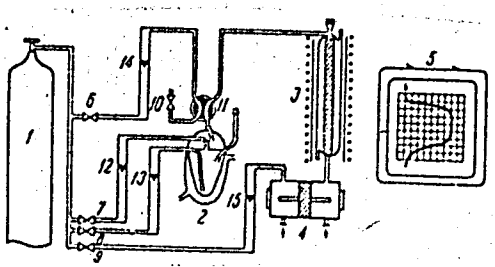
coal) the results were unsatisfactory. The range of application of the chromatographic method must be further studied. The authors thank I. Ye. Neymark and M. A. Piontrovskiy for preparing the coarse-pored silica gel Ye and nickel-hydroxide samples. There are 4 figures, 1 table, and 5 references: 2 Soviet, 1 US, 1 British, 1 Dutch, and 1 Hungarian.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences USSR)

SUBMITTED: January 28, 1960

Legend to Fig. 1: 1: cylinder with carrier gas; 2: bubbler with adsorbate; 3: chromatographic column; 4: gas analyzer; 5: recording potentiometer; 6-10: fine-regulating valves; 11: four-way cock; 12-15: rheometers.

S/020/60/133/004/040/040XX
B004/B067



Card 4/4

YANOVSKIY, M I.

137

PHASE I BOOK EXPLOITATION SOV/5486

Vsesoyuznoye soveshchaniye po vnedreniyu radioaktivnykh izotopov i yadernykh izlucheniy v narodnoye khozyaystvo SSSR. Riga, 1960.

Radioaktivnyye izotopy i yadernyye izlucheniya v narodnom khozyaystve SSSR; trudy soveshchaniya v 4 tomakh. t. 1: Obshchiye voprosy primeneniya izotopov, pribory s istochnikami radioaktivnykh izlucheniy, radiatsionnaya khimiya, khimicheskaya i neftepererabatyvayushchaya promyshlennost' (Radioactive Isotopes and Nuclear Radiations in the National Economy of the USSR; Transactions of the Symposium in 4 Volumes. v. 1: General Problems in the Utilization of Isotopes; Instruments With Sources of Radioactive Radiation; Radiation Chemistry; the Chemical and Petroleum-Refining Industry) Moscow, Gostoptekhizdat, 1961. 340 p. 4,140 copies printed.

Sponsoring Agency: Gosudarstvennyy nauchno-tekhnicheskiy komitet Soveta Ministrov SSSR, and Gosudarstvennyy komitet Soveta Ministrov SSSR po ispol'zovaniyu atomnoy energii.

Ed. (Title page): N.A. Petrov, L.I. Petrenko and P.S. Savitskiy; Eds. of this Vol.: L.I. Petrenko, P.S. Savitskiy, V.I. Sinitsin, Ya. M. Kolotyrkin, N.P. Syrkus and R.F. Romm; Executive Eds.: Ye. S. Levina and B. F. Titskaya; Tech. Ed.: E.A. Mukhina.

Card 1/10

Radioactive Isotopes (Cont.) SOV/5486

PURPOSE: The book is intended for technical personnel concerned with problems of application of radioactive isotopes and nuclear radiation in all branches of the Soviet economy.

COVERAGE: An All-Union Conference on problems in the introduction of radioactive isotopes and nuclear radiation into the national economy of the Soviet Union took place in Riga on 12-16 April 1960. The Conference was sponsored by: the Gosudarstvennyy nauchno-tekhnicheskiy komitet Soveta Ministrov SSSR (State Scientific and Technical Committee of the Council of Ministers, USSR); Glavnoye upravleniye po ispol'zovaniyu atomnoy energii pri Sovete Ministrov SSSR (Main Administration for the Utilization of Atomic Energy of the Council of Ministers, USSR); Academy of Sciences, USSR; Gosplan USSR; Gosudarstvennyy komitet Soveta Ministrov SSSR po avtomatizatsii i mashinostroyeniyu (State Committee of the Council of Ministers, USSR, for Automation and Machine Building) and the Council of Ministers of the Latvian SSR. The transactions of this Conference are published in four volumes. Volume I contains articles on the following subjects: the general problems of the Conference topics; the state and prospects of development of radiation chemistry; and results and prospects of applying radioactive isotopes and nuclear radiation in the petroleum refining and chemical industries. Problems of designing and manufacturing instruments which contain sources of radioactive radiation and are used for checking and automation of technological processes are examined, along with problems of accident prevention in their use. No personalities are mentioned. References accompany some of the articles.

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YANOVSKIY, M.I.[translator]; ANVAYER, B.I.[translator]; TURKEL'TAUB, N.M., red.; YANOVSKIY, M.I., red.; FESENKO, Ye.P., red.; YENISHERLOVA, O.M., vedushchiy red.; MUKHINA, E.A., tekhn. red.

[Progress and achievements of gas chromatography; collected reports and articles] Uspekhi i dostizheniia gazovoi khromatografii; sbornik dokladov i state. Pod red. N.M.Turkel'tauba, M.I.IAnovskogo i E.P. Fesenko. Moskva, Gos. nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry, 1961. 280 p. Translated from the English. (MIRA 14:10)
(Gas chromatography)

FRANK, Yu.A.; YANOVSKIY, M.I.

Microionization detector for capillary gas-liquid chromatography on promethium-147 without the use of additional gas admission. Kin. i kat. 2 no.2:292-294 Mr-Ap '61. (MIRA 14:6)

1. Institut fizicheskoy khimii AN SSSR.
(Chromatographic analysis)
(Promethium)

S/195/61/002/005/025/027
E194/E412

AUTHORS: Aleksandrov, A.Yu., Yanovskiy, M.I.

TITLE: A flow proportional counter for capillary radio-chromatography

PERIODICAL: Kinetika i kataliz, v.2, no.5, 1961, 794-800

TEXT: In the recently developed capillary gas-liquid chromatography a tube of 0.25 to 0.35 mm diameter and 50 to 200 m long is wetted on the inside with a thin film of low volatile fluid. The amount of mixture necessary for effective separation on the capillary column is 5 to 10 micrograms and high sensitivity detectors (10^{-11} to 10^{-13} moles) of very low volume (10 to 50 mm^3) have been developed to determine these small quantities, generally using flame ionization and β-ionization detectors. It would be very convenient to develop a capillary radio-chromatograph which could quickly analyse the complicated mixture such as is formed in a catalytic vacuum equipment of 2 litres volume at pressures of 10^{-5} to 10^{-7} mm Hg. This article gives a brief review of published work on detectors and the results of experimental work undertaken to investigate the possibility of developing a capillary radio-chromatograph. The relative merits of

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A flow proportional counter ... S/195/61/002/005/025/027
E194/E412

ionization chambers, geiger-muller counters, scintillation counters and proportional counters for recording ionizing radiation of gaseous radioactive substances are compared. It is concluded that the proportional counter is the most suitable; it is not very sensitive to chemical contamination of the working medium and can record comparatively active samples and operate stably at temperatures up to 125°C. However, the electronic measuring equipment required with proportional counters is more complicated than with geiger-muller counters. The present work was carried out with proportional counters of the kind illustrated in Fig.1 but of various sizes. In this diagram the gas enters at the lower left tube and leaves at the upper right, the notation is as follows: 1 - spring, 2 - frame, 3 - teflon gland, 4 - anode, 5 - plug connection, 6 - nut. Counter diameters ranged from 2 to 20 mm and lengths from 10 to 50 mm. Since argon was used as the carrier gas, the calibration was also made on argon using methane as a damper. Preliminary tests showed that the results were little influenced by the degree of purity of the methane. As the methane content is increased, it is necessary to increase the working voltage but if the internal diameter of the cathode is

Card 2/4

above 10 mm, this has little influence on the operation of the counters which have a fully acceptable plateau up to 400 V even when pure methane is passed. Moreover, the best operating conditions are obtained when the argon and methane are in the ratio of 1:1. The counter characteristics do not alter much in the range 20 to 120°C. Stable conditions could not be obtained above this temperature with mixtures of argon and methane using teflon glands. The mean relative errors in measuring radioactivity of acetone, ethanol and benzene are 1.36, 3.34 and 5.6% respectively. The accuracy of measurement falls as the quantity of radioactive substance is reduced. The use of large volume counters increases the sensitivity and accuracy of measurement but reduces the effectiveness of the capillary column.
A calibration curve was plotted to determine the sensitivity of the counter and it is found that the detector reading is a linear function of the concentration giving a potentiometer reading of approximately 150 mm for a sample quantity of 7×10^{-6} g. Then radioactive acetone with a specific radioactivity of 8×10^{-3} micro curies/g was passed through the equipment and a radiochromatogram was obtained. The sensitivity of the equipment

was 4.5×10^{-10} curie/mm.ml. Reckoning the threshold of sensitivity as the value of activity which exceeds fluctuation of the baseline by a factor of 3 to 5, the threshold of sensitivity for the instrument is 1.35×10^{-9} to 2.25×10^{-9} curies. There are 4 figures, 3 tables and 12 references: 8 Soviet-bloc and 4 non-Soviet-bloc. The references to English language publications read as follows:

Ref.2: M.I.E.Golay, Nature, Lond., v.182, 1146, 1958;
Ref.3: J.G.McWilliam, R.A.Dewar, Nature, Lond., v.182, 1664, 1958;
Ref.9: R. Wolfgang, Nucleonics, v.16, no.10, 69, 1958;
Ref.10: R.Wolfgang, An. Chem., v.30, 903, 1958.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR
(Institute of Chemical Physics AS USSR)

GAZIYEV, G.A.; OZIRANER, S.N.; YANOVSKIY, M.I.; KORNYAKOV, V.S.

Effect of some parameters on the functioning of an ionization detector for Pm^{147}. Zhur. fiz. khim. 35 no.5:1150-1152 My '61. (MIRA 16:7)

1. Institut fizicheskoy khimii AN SSSR.
(Promethium--Isotopes) (Ionization)

GAZIYEV, G.A.; KRYLOV, O.V.; ROGINSKIY, S.Z.; SAMSONOV, G.V.; FOKINA, Ye.A.; YANOVSKIY, M.I.

Dehydrogenation of cyclohexane on certain carbides, borides, and silicides. Dokl. AN SSSR 140 no.4:863-866 O '61. (MIRA 14:9)

1. Chlen-korrespondent AN SSSR (for Roginskiy).
(Cyclohexane) (Dehydrogenation) (Catalysts)

ROGINSKIY, S.Z.; YANOVSKIY, M.I.; GAZIYEV, G.A.

Chemical reactions under chromatography conditions. Dokl. AN SSSR 140 no.5:1125-1127 O '61. (MIRA 15:2)

1. Institut khimicheskoy fiziki AN SSSR. 2. Chlen-korrespondent AN SSSR (for Roginskiy).

29818
S/020/61/140/006/015/030
B103/B101

5.5600

AUTHORS: Al'tshuler, O. V., Vinogradova, O. M., Roginskiy, S. Z., Corresponding Member AS USSR, and Yanovskiy, M. I.

TITLE: Preparation of high-purity hydrocarbons by the method of thermo-desorption chromatography

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 140, no. 6, 1961, 1307-1309

TEXT: The applicability of thermo-desorption chromatography to preparative uses was studied. Isolation and purification of propylene was selected as example. The methods were studied by M. I. Yanovskiy, S. N. Oziraner, and Lu P'ei - chang (ZhPKh, 33, 1084 (1960)). The laboratory apparatus used consisted of adsorption columns connected in series, which were filled with the same or different sorbents. After a certain section of the adsorption layer had been saturated by the mixture of the gases to be separated, the columns were immersed gradually into an oven heated to 200-220°C. It was not possible to obtain complete desorption of propylene

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Preparation of high-purity ...

at temperatures below 200°C. At higher temperatures, secondary reactions may occur in the heated zone. Gas samples were taken at the column outlet and their composition was determined chromatographically. Helium was used as inert carrier gas. A katharometer or an ionization detector with a Pm source were used to detect the components of the mixture. Coarse and close-grained silica gels and alumo gels of various types as well as active carbon were used as adsorbents. 10 - 20 liters of the mixture could be separated with a sorbent volume of 1 liter and a temperature of -20 to -30°C of the cold section of the column. The content of propylene in the initial mixtures was varied from 25 to 98%. Moreover, they contained different volumes of ethane, propane, ethylene, acetylene, and hydrocarbons boiling higher than propylene, as well as H_2O and sulfur-containing compounds. First, the partition capacity of the sorbents for the mixture of propylene and one of these components was determined. It was characterized by the ratio $V_{R\,comp}/V_{R\,C_3H_6}$. Based on these values ($V_{R\,rel}$) suitable sorbents and their sequence for isolating the propylene from the mixture were selected. The effect of the sorbents is shown in Table 1:

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S/020/61/140/006/015/030
B103/B101

Preparation of high-purity ...

Sorbent	admixture to be removed
active carbon	heavy hydrocarbons (boiling point > 50°C), CS_2, mercaptans, acetylene, ethylene, ethane, H_2S
silica gel	propane, carbon sulfochloride, ethane, ethylene, CS_2
alumo gel	ditto + CH_2 and H_2O

It has been established that the less sorbable components, such as air, ethane, ethylene, and propane, concentrate in the first fractions; thereafter, only propylene is found at the column outlet. In the ultimate gas samples desorbed by heating the column end, admixtures were found which were more intensively sorbed than propylene. The use of the highly sensitive detector revealed that the admixture of propane, the separation of which from propylene is most difficult, can be reduced to traces. Thus, it is possible to obtain pure propylene even from initial mixtures poor in propylene.

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Preparation of high-purity ...

The purification coefficients do not become worse, when passing to the range of propylene with very low admixture concentrations. This is an advantage of the present alternative as compared with the rectification, since it ensures a very high degree of purification. Unlike in development chromatography, the components are isolated undilute in thermo-desorption chromatography. Moreover, this method can be applied to obtain further components of the mixture in pure state (e. g., benzene, cyclohexane). The paper by Ye. V. Vagin, Gazovaya khromatografiya, Tr. I Vsesoyuzn. konfer., Izd. AN SSSR, 1960, p. 118, is mentioned. There are 4 figures and 3 Soviet references.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR
(Institute of Chemical Physics of the Academy of Sciences USSR)

SUBMITTED: June 23, 1961

L 1[illegible] FWP [illegible] ET[illegible] EWI[illegible]/BDS Pc-4/Pr-4 RM/WW/AE

ACCESSION NR: AP3005449 S/0204/63/003/004/0523/0530

AUTHORS: Krivoruchko, O. P.; Lapidus, A. L.; Samoylenko, Ye. A.; Yanovskiy, M. I.

TITLE: Production of acetylenic concentrates from the gaseous products obtained from electrocracking of liquid hydrocarbons by thermal displacement

SOURCE: Neftekhimiya, v. 3, no. 4, 1963, 523-530

TOPIC TAGS: acetylenic concentrate , liquid hydrocarbon electrocracking, electrocracking, He, teflon, helium, adipic acid

ABSTRACT: The gaseous products formed during electrocracking of liquid hydrocarbons contain products which are both heavier and lighter than acetylene. Based on this fact, it was assumed that it would be possible to obtain acetylene of higher purity by using the method of thermal displacement. An apparatus was constructed for this purpose which permits the study of the mechanism of the adsorption separation process of gaseous hydrocarbons by the stated

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ACCESSION NR: AP3005449

method. The apparatus consists of a stainless steel column with 15 sections. Each section is 120 mm long and 15 mm inside diameter. These sections are connected by teflon fittings. The optimum conditions for the thermal displacement separation were obtained with a model mixture of $C_3H_8 + C_3H_6$. The carrier gas in this study was helium with a flow rate of 15 to 30 ml/min. The analysis of propane-propylene mixture was performed either by silicagel adsorption or by gas-liquid chromatography on an 8-meter column filled with INZ60D stationary phase and 20% by wt. of adipic acid dinitrile liquid phase. This study shows the possibility of obtaining acetylene concentrates from gaseous products from electrocracking of liquid hydrocarbons. Orig. art. has: 2 tables, and 7 figures.

ASSOCIATION: Moskovskiy institute tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow institute of fine chemical technology); Institut khimicheskoy fiziki, AN SSSR (Institute of chemical physics, AN SSSR)

SUBMITTED: 16Jan63 DATE ACQ: 06Sep63 ENCL: 00
SUB CODE: CH, PH NO REF SOV: 008 OTHER: 000

Card 2/2

GAZIYEV, G.A.; FILINOVSKIY, V.Yu.; YANOVSKIY, M.I.

Kinetics of heterogeneous catalytic reactions carried out under pulse-chromatographic operating conditions of ideal linear chromatography. Kin.i kat. 4 no.5:688-697 S-O '63. (MIRA 16:12)

1. Institut khimicheskoy fiziki AN SSSR.

ROGINSKIY, S.Z.; SEMENENKO, E.I.; YANOVSKIY, M.I.

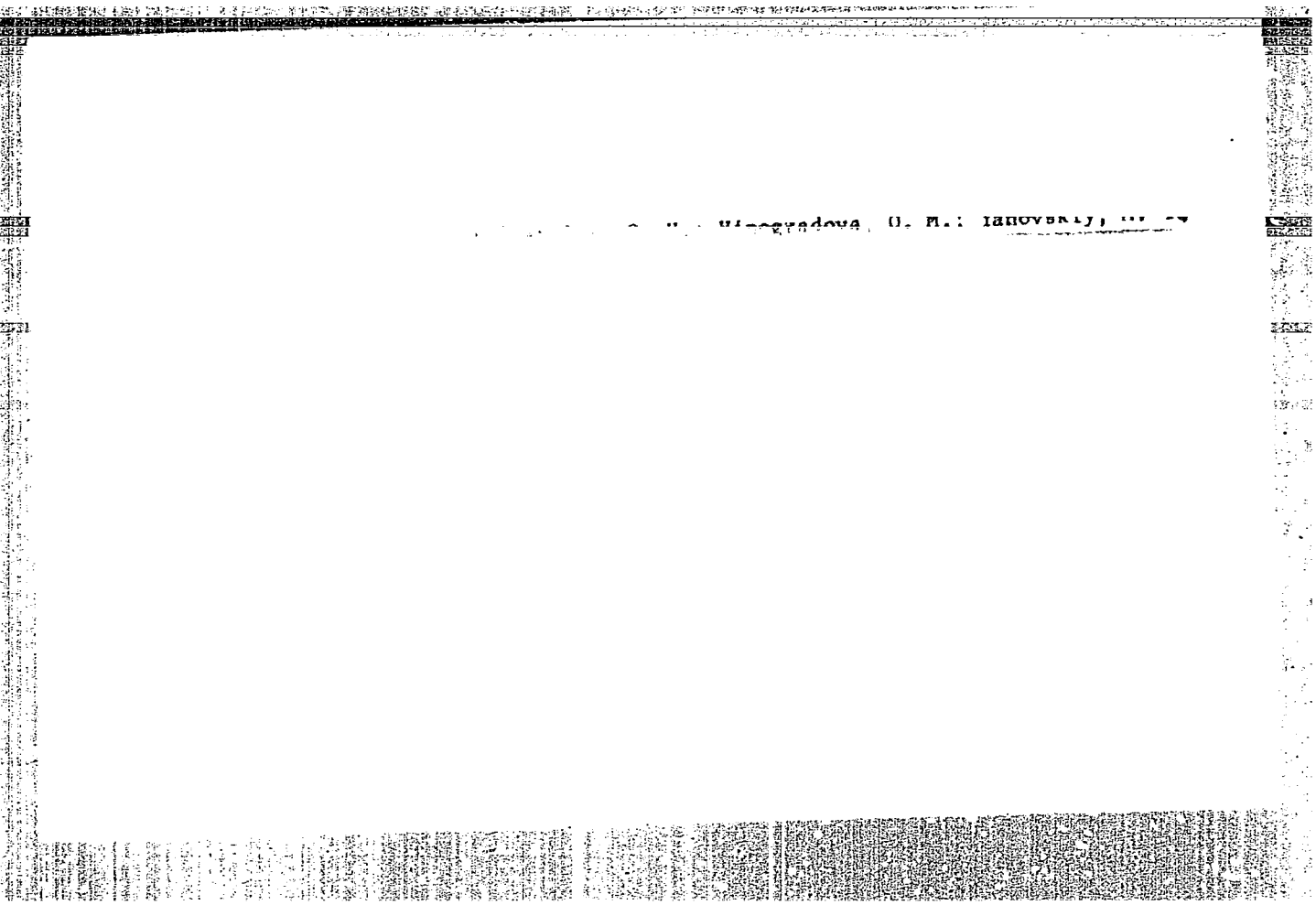
Possibility of carrying out the catalytic dehydrogenation under chromatographic conditions. Dokl. AN SSSR 153 no.2:383-385 N '63. (MIRA 16:12)

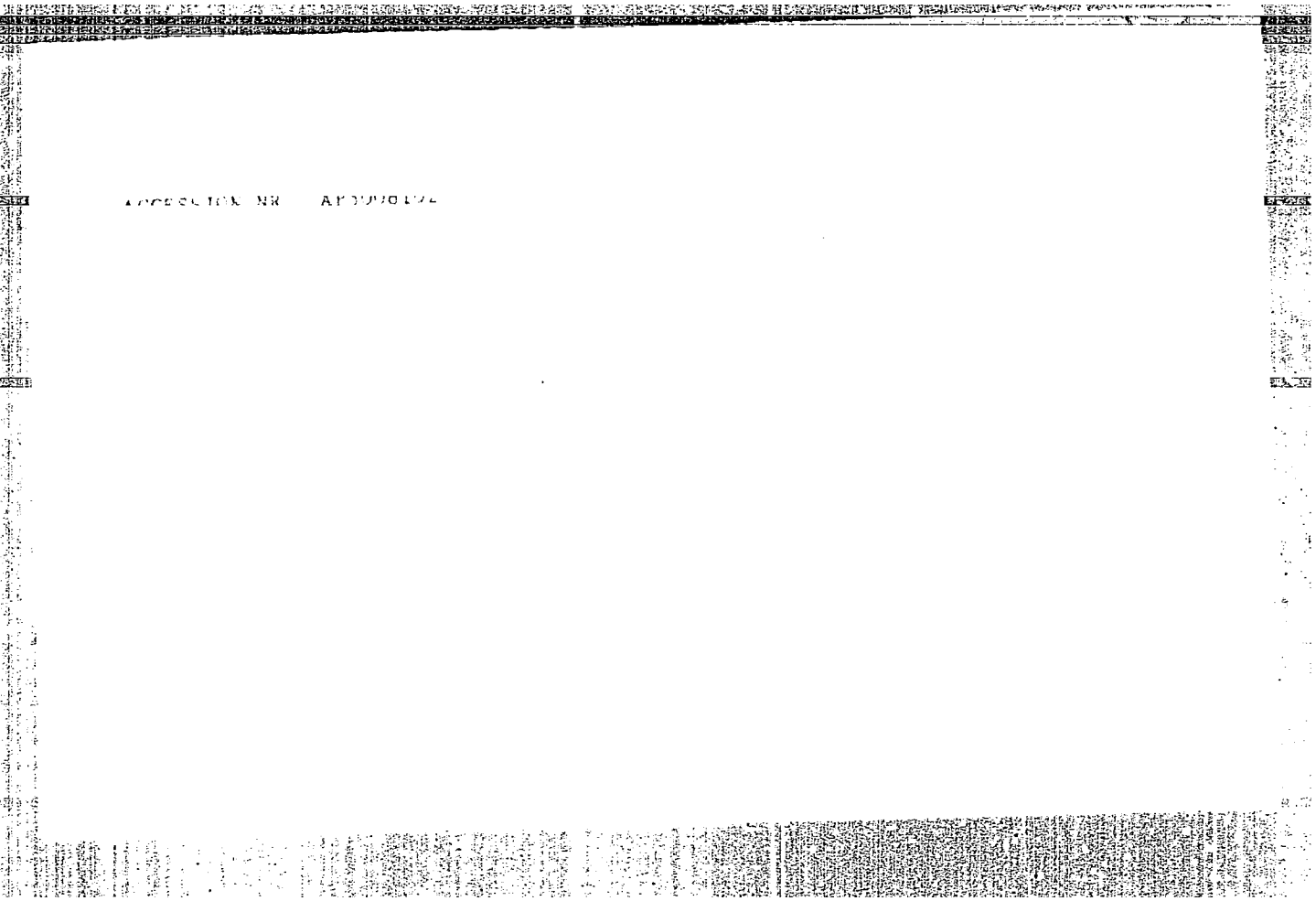
1. Institut khimicheskoy fiziki AN SSSR. 2. Chlen-korrespondent AN SSSR (for Roginskiy).

ZHUKHOVITSKIY, A.A., otv. red.; VAGIN, Ye.V., red.; GOL'BERT, K.A., red.[deceased]; KISELEV, A.V., red.; TURKEL'TAUB, N.M., red.; FESENKO, Ye.P., red.; YANOVSKIY, M.I., red.

[Gas chromatography; transactions] Gazovaia khromatografiia; trudy. Moskva, Nauka, 1964. 483 p. (MIRA 17:12)

1. Vsesoyuznaya nauchno-tekhnicheskaya konferentsiya po gazovoy khromatografii. 2d, Moscow, 1962.





SEMENENKO, E.I.; ROGINSKIY, S.Z.; YANOVSKIY, M.I.

Combined radiochromatography technique for studying the mechanism of heterogeneous catalytic reactions. Kin. i kat. 6 no.2:320-328 Mr-Ap '65. (MIRA 18:7)

1. Institut khimicheskoy fiziki AN SSSR.

YANOVSKIY, M.I.; GAZIYEV, G.A.; NIKIFOROV, V.P.; MAKARENKO, V.G.; ZIMIN, R.A.; MARININ, P.I.; FRANK, Yu.A.

Gas chromatograph with automatic pickup of samples from a flow. Zav. lab. 31 no. 12:1526-1528 '65 (MIRA 19:1)

1. Institut khimicheskoy fiziki AN SSSR.

ROGINSKIY, S.Z.; ZIMIN, R.A.; YANOVSKIY, M.I.

Selective oxidizing dehydrogenation studied by pulse chromatographic method. Dokl. AN SSSR 164 no.1:144-146 S '65. (MIRA 18:9)

1. Institut khimicheskoy fiziki AN SSSR. 2. Chlen-korrespondent AN SSSR (for Roginskiy).

USSR/Chemistry - Adsorption Jan/Feb 52

"The Theory of Chromatography on Nonhomogenous Surfaces. III. The Dynamics of Adsorption of Mixtures on Inhomogenous Surfaces," S. Z. Roginskiy, M. N. Yanovskiy, Inst of Phys Chem, Acad Sci USSR

"Iz Ak Nauk, Otdel Khim Nauk" No 1, pp 64-73

On the basis of the statistical theory, the following results were obtained. The effect of the inhomogeneity of an absorbent on the dynamics of adsorption of a mixt of 2 substances was investigated. Crit data were established, which show that

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USSR/Chemistry - Adsorption (Contd) Jan/Feb 52

one dynamic adsorption regime can change to another. The conditions for the complete sepn of a binary mixt were established. Conclusions drawn from this are of particular interest for the dynamics of adsorption in the field of low degs of filling, where the effect of inhomogeneities is generally very pronounced.

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YANOVSKIY, M. N.

27591
S/108/61/016/010/004/006
D209/D306

9,1300 (1144)

AUTHORS: Yanovskiy, M.S., and Knyaz'kov, B.N., Members of the Society

TITLE: A polarization-type wave guide modulator

PERIODICAL: Radiotekhnika, v. 16, no. 10, 1961, 26 - 27

TEXT: This is an abstract prepared by the author of his own article. In solving many problems the need arises to transform the SHF oscillations of frequency ω into the oscillations having two frequencies, differing from each other by a certain small magnitude. Such a transformation can be achieved by using a waveguide modulator belonging to the instruments of polarization type. The principle of operation of such a modulator is as follows: Two rectangular-to-circular waveguide transition sections I and IV, each having an absorption vane parallel to the wide walls of the wave guide, placed at both ends of the modulator transform the H_{10} wave into H_{11} or vice versa, the transformation being accompanied by the absorption of the tangential

Card 1/5

A polarization-type wave ...

component of the field. Between the two transition-sections are placed 2 sections II and III of a circular waveguide. Section II has in its axial plane a sheet of dielectric and introduces thus between the two field components, the one polarized in the plane of the sheet and the other perpendicular to it, a differential phase shift by 180° (the Δ 180° section). The second section III introduces between the two field components a differential phase shift of 90° (Δ 90° section) the Δ 180° section II is rotated with a velocity Ω rev/sec. The position angle of the Δ 90° section with respect to the fixed section (angle φ + 45°) is adjustable. The linearly polarized wave E sin ωt at the input of the Δ 180° section may be represented as a superimposition of two circularly polarized oscillations. After passing through the revolving Δ 180° section the angular velocity of one of the oscillations increases by $+2\Omega$ and the other by -2Ω. The Δ 90° section transforms these two into linearly polarized oscillations, at 90° with respect to each other and at 45° to the plane of the sheet of the Δ 90° section. The position angle of the Δ 90° section relative to transition determines the amplitudes of these oscillations at the output:

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A polarization-type wave ...

$$\left.\begin{aligned} e_+ &= \frac{1}{\sqrt{2}} E \sin\varphi \sin(\omega + 2\Omega) t \\ e_- &= \frac{1}{\sqrt{2}} E \cos\varphi \sin(\omega - 2\Omega) t \end{aligned}\right\} \quad (1)$$

The power averaged over one period at the output is independent of angle φ. It constitutes one half of the input power which may be easily seen from Eq. (1). If the differential phase shift in sections II and III differs from 180° and 90° by δ_2 and δ_3 respectively, the spectrum at the output will have the component of frequency ω and changed amplitudes of side band frequency components

$$\left.\begin{aligned} e_0 &= \frac{1}{2} E \sin\frac{\delta_3}{2} \sqrt{3 - \cos 4\varphi (1 + \sin\delta_3) - \sin\delta_3} \sin\omega t \\ e_+ &= \frac{1}{\sqrt{2}} E \sin\varphi \cos\frac{\delta_3}{2} \sqrt{\frac{1 - \cos 2\varphi \cos\delta_2}{1 - \cos 2\varphi}} \sin(\omega + 2\Omega) t \\ e_- &= \frac{1}{\sqrt{2}} E \cos\varphi \cos\frac{\delta_3}{2} \sqrt{\frac{1 + \cos 2\varphi \cos\delta_2}{1 + \cos 2\varphi}} \sin(\omega - 2\Omega) t \end{aligned}\right\} \quad (2)$$

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A polarization-type wave ...

Another type of modulator is also possible which produces at the output two frequencies, one equal to the input frequency ω and one other differing from it either by $+2\Omega$ or -2Ω, depending on the direction of rotation of the waveguide phasing section. This modulator differs from the previous one in that a fixed Δ 90° phasing section is placed after the first transition section; the dielectric sheet is placed at an angle of 45° to the vane in the transition section and instead of a Δ 180° section the Δ 90° section III is rotated. The relationship between the amplitudes of frequencies ω and $\omega + 2\Omega$ or $\omega - 2\Omega$ depends exactly in the same manner on the positioning of the last Δ 90° section IV with respect to the transition section V and can be, as in the previous case, regulated. It can be shown that with the signal propagating through the modulator in the opposite direction with the same direction of revolution of the phasing section, an inverse relationship exists between the oscillations amplitude at the output, as if the direction of rotation was changed without the change in the direction of propagation. It is stated in conclusion that instead of a rotating Δ 180° or

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27591
S/108/61/016/010/004/006
D209/D306

A polarization-type wave ...

Δ 90° phasing sections with dielectric, a ferrite phasing section, controlled by a transverse rotating field, could be substituted. There are 2 figures, and 2 references: 1 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: A.G. Fox, PIRE, v. 35, no.12, 1947.

ASSOCIATION: Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi im. A.S. Popova (Scientific and Technical Society of Radio Engineering and Electrical Communication im. A.S. Popov [Abstractor's note: Name of Association taken from first page of journal]

SUBMITTED: April 11, 1961
[Author's abstract June 12, 1961]

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4479

S/142/62/005/004/007/010
E192/E382

9,4200

AUTHORS: Yanovskiy, M.S. and Shamfarov, Ya.L.

TITLE: Dynamic method of measuring the quality factor of resonators by using synchronous detection

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, v. 5, no. 4, 1962, 515 - 518

TEXT: The method is based on the dynamic plotting of the frequency characteristic of the imaginary and the real components of the reflection coefficient of a resonator. It has the advantage of being based on measuring the spacing between clearly defined points (minima or zeros). The reflection coefficient for a resonator as a function of frequency (for frequency-deviations $\Delta\omega/\omega_o \ll 1$) is expressed by:

$$\overline{\Gamma} = \frac{\Gamma_o - j2Q_H\Delta\omega/\omega_o}{1 + j2Q_H\Delta\omega/\omega_o},$$

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Dynamic method ....

where Γ_o is the reflection coefficient at the resonance frequency ω_o, Q_H is the quality factor of the resonator (with load) and $\Delta\omega = \omega - \omega_o$, where ω is the frequency of the generator driving the resonator. It is seen from the above equation that the imaginary part of the reflection coefficient is:

$$\mathrm{Im}\,\Gamma = - \frac{2(1 + \Gamma_o) Q_H \Delta\omega/\omega_o}{1 + (2Q_H \Delta\omega/\omega_o)^2}$$

and this has extrema at $\omega_o \pm \omega_o/2Q_H = \omega_o \pm \Delta\omega_H$. Thus, the quality factor is expressed as:

$$Q_H = \omega_o/2\Delta\omega_H \qquad (2) .$$

The signal proportional to the imaginary part of the reflection coefficient can be separated experimentally by using a a synchronous detection method for an amplitude-modulated signal

Dynamic method ....

reflected from the investigated resonator. The real part of the reflection coefficient is expressed by:

$$\mathrm{Re}\,\tilde{\Gamma} = \frac{\Gamma_o - (2Q_H \Delta\omega/\omega_o)^2}{1 + (2Q_H \Delta\omega/\omega_o)^2}$$

and this is equal to zero at:

$$2Q_H \Delta\omega_1/\omega_o = \pm\sqrt{\Gamma_o}$$

so that the quality factor is defined by:

$$Q_H = \sqrt{\Gamma_o}\ \omega_o/2\Delta\omega_1 \qquad (3)$$

Again, the real part of the reflection coefficient can be separated by using the synchronous detection method. There are 3 figures.

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Dynamic method ....

S/142/62/005/004/007/010
E192/E382

ASSOCIATION: Institut radiofiziki i elektroniki AN UkrSSR (Institute of Radiophysics and Electronics of the AS UkrSSR)

SUBMITTED: January 22, 1962

4

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S/142/62/005/005/002/009
E192/E382

9.3272
9.3273

AUTHORS: Yanovskiy, M.S. and Knyaz'kov, B.N.

TITLE: Frequency spectrum of single-sideband waveguide-modulators

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, v. 5, no. 5, 1962, 552 - 556

TEXT: Small shifts of frequency spectra at UHF can be produced by single-sideband waveguide-modulators of the polarized type (A.G. Fox, PIRE, 1947, 35, no. 12, 1489). Such a modulator is represented in Fig. 2 and it consists of so-called differential phase sections I, II and III, which are made of sections of an anisotropic waveguide; these introduce a known phase-shift between the two field components which are polarized along the major axes, x and y of the sections. Sections I and III, whose principal axes are at an angle of 45° with respect to the polarization plane of the excitation wave, introduce a differential phase-shift of $\pi/2$ (90°-sections), while section II, whose plane of anisotropy can be rotated, introduces a differential phase-shift of π (180°-section). Section I transforms the linearly polarized

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Frequency spectrum ....

signal into a circularly polarized wave while section III performs the reverse transformation. When a sinusoidal non-modulated signal $E\sin\omega t$ is applied to the input of the device and the plane of anisotropy of the 180°-section is rotated with an angular velocity $\pm\Omega$, the signals obtained at the output are e_o, e_ω and e_3; e_o is the useful signal shifted in frequency by $\pm 2\Omega$, e_ω is a component having the frequency of the input signal and e_3 is a component having the "image" frequency $\omega \mp 2\Omega$; the amplitudes of these components depend on $\alpha_i = E_{yi\ out}/E_{yi\ in}$ and $E_{xi\ out}/E_{xi\ in} = \beta_i$, where E_{xi} and E_{yi} are the attenuated components of the field. The spectrum at the output of the device can be "improved" by directing the principal axes of the 90°-section at an angle:

$$\gamma_1 = \arctan \frac{\alpha_1}{\beta_1} \qquad (1).$$

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In this case, the wave at the output of the 90°-section will be circularly polarized. The signal at the output will contain frequencies $\omega + 2\Omega$ or $\omega - 2\Omega$; on the other hand, at the output of the 90°-section III a signal of frequency ω will be obtained but this is polarized in the plane of the attenuation plate of the waveguide transition sections and is absorbed by it. In the case when the differential phase shift differs from 90 and 180° it is assumed that the shifts in sections I, II and III are $\pi/2 + \delta_1$, $\pi + \delta_2$ and $\pi/2 + \delta_3$. The spectrum components at the output of the device are now in the form:

$$e_0 = \alpha E \cos\frac{\delta_1}{2}\cos\frac{\delta_2}{2}\cos\frac{\delta_3}{2}\sin[(\omega \pm 2\Omega)t + \varphi];$$
$$e_\omega = -\alpha E \sin\frac{\delta_1}{2}\sin\frac{\delta_2}{2}\sin\frac{\delta_3}{2}\sin(\omega t + \varphi); \quad (2)$$
$$e_0 = -\alpha E \sin\frac{\delta_1}{2}\cos\frac{\delta_2}{2}\sin\frac{\delta_3}{2}\sin[(\omega \mp 2\Omega)t + \varphi],$$

where

$$\varphi = \frac{\delta_1 + \delta_2 + \delta_3}{2} \quad \text{и} \quad \alpha = \alpha_1\alpha_2\alpha_3.$$

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From Eqs. (3) it is seen that e_3 can be suppressed if either section I or III gives an accurate 90^o differential shift; on the other hand, e_ω can be eliminated if $\delta_2 = 0$ or $\delta_1 = -\delta_3$. The error in measuring the phase-shift Θ by means of such a single sideband modulator is determined for the case of square-detectors used in balanced and non-balanced mixers. The maximum error for an unbalanced mixer is shown to be:

$$\Delta\Theta_M = \pm \text{ arc tan } \frac{E_3}{E_o} \approx \pm \frac{E_3}{E_o} \quad (5).$$

On the other hand, the maximum error for a balanced mixer at δ_1 and δ_3 is given by:

$$\Delta\Theta_M = \pm \frac{\delta_1 \delta_3}{4} .$$

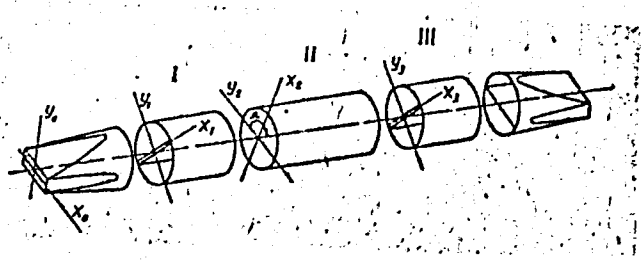
This indicates the necessity of accurate adjustment and the use of wideband 90^o phase-shift sections in the modulators.
There are 3 figures.

Frequency spectrum S/142/62/005/005/002/009
E192/E382

ASSOCIATION: Institut radiofiziki i elektroniki AN UkrSSR
(Institute of Radiophysics and Electronics
of the AS UkrSSR)

SUBMITTED: December 25, 1961

Fig.2



Card 5/5

YANOVSKIY, M.S.; KNYAZ'KOV, B.N.

Amplitude modulation of oscillations in a waveguide.
Radiotekhnika 17 no.12:33-37 D '62. (MIRA 15:12)

1. Deystvitel'nyye chleny Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi imeni Popova.
(Wave guides) (Microwaves)

L 23996-66 EWT(1)/EWA(h)

ACC NR: AP6009842 SOURCE CODE: UR/0413/66/000/004/0034/0034

AUTHOR: Yanovskiy, M. S.; Knyaz'kov, B. N.

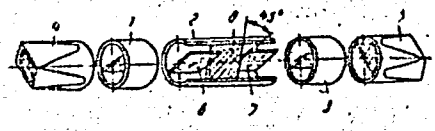
ORG: none

TITLE: A continuous waveguide phase shifter. Class 21, No. 178870

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 4, 1966, 34

TOPIC TAGS: waveguide, phase shifter, SHF

ABSTRACT: This Author's Certificate introduces a continuous waveguide phase shifter consisting of differential phase sections in the form of lengths of a circular waveguide and circular-to-square waveguide sections. Spurious components in the spectrum of the SHF signal are suppressed to increase the accuracy of the phase setting by using two dielectric plates in the center section for 90° differential phase shifts. An absorber plate in the form of a film resistor is mounted between these dielectric plates at an angle of 45°.



1-3--phase sections (2--center section); 4 and 5--circular-to-square waveguide sections; 6 and 7--dielectric plates; 8--absorber plate

SUB CODE: 09/ SUBM DATE: 04Apr64/ ORIG REF: 000/ OTH REF: 000

UDC: 621.372.852.21

Card 1/1

L 46195-66 EWT(1)

ACC NR: AP6023862 SOURCE CODE: UR/0108/66/021/007/0069/0071

55
B

AUTHOR: Yanovskiy, M. S. (Active member); Knyaz'kov, B. N. (Active member)

ORG: Scientific and Technical Society of Radio Engineering and Electro-Communications im. A. S. Popov (Nauchno-tekhnicheskiy obshchestvo radiotekhniki i elektrosvyazi)

TITLE: On the possibility of reducing the spectral distortion and spectral widening of a continuous waveguide phase shifter 25

SOURCE: Radiotekhnika, v. 21, no. 7, 1966, 69-71

TOPIC TAGS: phase shifter, phase shift, waveguide, microwave, circular waveguide

ABSTRACT: Polarization waveguide phase shifters used in microwave work, especially as precision phase shifters and single-band waveguide modulators, are discussed. The basic elements of these phase shifters are sections of a non-isotropic waveguide which introduce a frequency dependent differential phase shift between the orthogonal components of the electromagnetic field within the waveguide. The waveguide is shown in figure and its operation is discussed. The phase shifter is analyzed as an equivalent eight-terminal network. A matrix of coefficients is given which describes transmission between any two sets of terminals. A method for the reduction of elimination of spurious output components is discussed. The phase shifter is compared with a phase shifter discussed by A. G. Fox (*Proc. IRE*, Vol. 35, No. 12, 1947): useful output signal, level of spurious responses, and phase error. A graph illustrates the

UDC: 621.372.852

Card 1/2

L 46195-66

ACC NR: AP6023862

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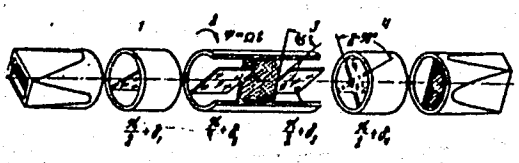

Fig. 1.

comparison between the two phase shifters. Orig. art. has: 3 figures, 5 formulas.

[14]

SUB CODE: 09/ SUBM DATE: 05Jul64/ ORIG REF: 001/ OTH REF: 002

Card 2/2

YANOVSKIY, M. YA.

USSR/Medicine - Medical Equipment May/Jun 52

"Portable Arterial Oscillograph," G.B. Volkovoynov, M.Ya. Yanovskiy, Order of Lenin "Krasnogvardeyets" (Red Guard) Med Instr Plant

"Med Prom" No 3, pp 40, 41

Describes design of oscillograph for measuring and recording arterial pressure which is manufd by the "Krasnogvardeyets" Plant.

216T29

IVANOVSKIY, N.I.

DUBININ, M.M., akademik, otvetstvennyy redaktor; GAPON, Ye.N.; GAPON, T.B.; ZHYPAKHINA, Ye.S.; RACHINSKIY, V.V.; BELEN'KAYA, I.M.; SHUVAEVA, G.M.; ROGINSKIY, S.Z.; IVANOVSKIY, N.I.; FUKS, N.A.; KISELEV, A.V.; NEYMARK, I.Ye.; SLINYAKOVA, I.B.; KHATSET, F.I.; LOSEV, I.P.; TROSTYANSKAYA, Ye.B.; TEVLINA, A.S.; DAVANKOV, A.B.; SALDADZE, K.M.; BRUMBERG, Ye.M.; ZHIDKOVA, Z.V.; VEDENEEVA, N.Ye.; NAPOL'SKIY, S.A.; MIKHAYLOVA, Ye.A.; KAZANSKIY, B.A.; RYABCHIKOV, D.I.; SHEMYAKIN, F.M.; KRETOVICH, V.L.; BUNDEL', A.A.; SAVINOV, B.G.; VENDT, V.P.; EPSHTEYN, Ya.A.

[Research in the field of chromatography transactions of the All-Union Conference on Chromatography, November 21-24, 1950] Issledovaniia v oblasti khromatografii; trudy Vsesoiuznogo soveshchaniia po khromatografii, 21-24 noiabria 1950 g. Moskva, Izd-vo Akademii nauk SSSR, 1952. 225 p.

(MLRA 6:5)

1. Akademiya nauk SSSR. Otdelenie khimicheskikh nauk.

(Chromatographic analysis)

YANOVSKIY, Nikolay Mikhaylovich[translator]; BORISOVA, G.A., red.; MAMONTOVA, N.N., tekhn. red.

[Storage of vegetables and potatoes in China; popular storing methods] Khranenie ovoshchei i kartofelia v Kitae; narodnye metody khraneniia. Moskva , Gos.izd-vo torg. lit-ry, 1962. 166 p. (MIRA 15:3)

(China—Vegetables—Storage)
(China--Potatoes—Storage)

YANOVSKIY, N.V.

Work practices of the Scientific Technological Society of a metallurgical plant. Metalloved. i term. obr. met. no.11:63-64 3 of cover N '61. (MIRA 14:12)
(Metallurgical research)

S/129/60/000/012/012/013
E073/E235

AUTHOR: Yanovskiy, N. V.

TITLE: Young NTO Members in the Fight for Technical Progress

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, 1960, No. 12, p. 54

TEXT: The scientific-technical society of the Izhevskiy Metallurgicheskiy Zavod (Izhevsk Metallurgical Works) was formed in 1959. It has the following 5 sections: rolling, steel smelting, forging-heat treatment, mechanization and automation, technical information. At the beginning of 1960 the Society unified 20 shop organizations (about 420 members). A council of 51 people was elected and 10 sections were organized: steel smelting, rolling, forging - heat treatment, mechanization and automation, power, civil engineering, economics, technical publicity and information, transport and mechanical repairs. From March 1960 onwards the functions of the technical council were unified and monthly meetings were held instead of bi-monthly ones. Three conferences, lectures on various problems and exchange visits are scheduled. The number of active members increased to 600 in two months and

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S/129/60/000/012/012/013
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Young NTO Members in the Fight for Technical Progress

the number of shop organizations to 30. Over 30% of the active members are young engineers, technicians and innovators. Engineer A. Sh. Rabaneyev is the chairman of the forging-heat treatment section and also the chairman of the same section of the NTO MASHPROM of the Udmart oblast organization. Engineer S. P. Bakumentko is the chairman of the NTO shop organization, B. A. Kireyev is the chairman of the section for technical publicity and information, K. I. Tseytlin is the chairman of the section for mechanization and automation, N. Ye. Vasil'yev is the scientific secretary of the main NTO organization in the plant. During 1959 the young members have presented numerous lectures and papers and have also participated in the execution of research work (148) and in introducing new techniques (10). For the first time steam-evaporation cooling of 100 ton open hearth furnaces with a steam pressure of 12-13 atm was introduced and also the smelting in electric arc furnaces, teeming and rolling of 700 kg ingots of the steels Р18 (R18), Х15Н60 (Kh15N60) and Х13Ю4 (Kh13Yu4). The production of bright sheet from steels Р9 (R9) and Р18 (R18) of high ductility

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Young NTO Members in the Fight for Technical Progress

wire for cold upsetting were developed and introduced. In 1959 young NTO members published over 25 papers. Engineers A. Sh. Rabaneyev and L. D. Demidov investigated the possibility of using the forging heat for heat treatment of the forgings. Jointly with B. A. Kirayev they proposed normalization annealing of track links after hot stamping. The latter and K. F. Kadzhak developed heat treatment conditions for the steel 18ХГТ (18KhGT) which reduces by 50% the duration of the process. Yu. A. Bushmakin and V. V. Bryndin developed and introduced heat treatment of 1.5 mm thick strip of Steel 50 with an increased strength (up to 90 kg/mm^2). They proposed a rational distribution of the heating elements in bell-type furnaces. Jointly with B. A. Kireyev they investigated the possibility of straightening deformed cold-rolled strip during heating prior to quenching. Engineer G. F. Demchenko worked out suitable heat treatment conditions for tyres of the Steels У7 (U7) and 75 in salt baths (55% KCl + 40% NaCl) at 740-760°C. This regime improves the plastic properties and reduces the strip rejects caused by torn edges during cold rolling.

S/129/60/000/012/012/013
E073/E235

Young NTO Members in the Fight for Technical Progress

Candidate of Technical Sciences I. M. Meriin and Engineer Yu. A. Bushmakin proposed a method of normalization annealing of tyres of the Steel У10А (U10A) instead of isothermal annealing, reducing considerably the quantity of rejects. Engineers B. A. Kireyev, N. A. Ponomarev, V. I. Sarafanov, and others are at present engaged in introducing exothermal mixtures on the basis of silico calcium together with scale or iron ore and fillers which will permit reducing, down to 50%, the cut off of the excess parts of the ingots. A large group of engineers and technicians are engaged in: producing col rolled stainless steel strip with thicknesses down to 20-60 microns on a 20 roll cold rolling mill; studying the properties of steel the surface of which is saturated with boron in an electric bath; searching for substitute steels to replace high alloy chromium nickel steels and developing a technology of teeming steel with double vacuum treatment. Altogether 87 research works, of which 25 related to metals and heat treatment of metals, were complete in 1960.

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