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24 45, K. F.

11(4) PHASE I BOOK EXPLOITATION SOV/2124

Mezhvuzovskoye soveshchaniye po voprosam novoy tekhniki v neftyanoy promyshlennosti. Moscow, 1956

Razvedka i razrabotka neftyanykh i gazovykh mestorozhdeniy; materialy soveshchaniya, tom. 1 (Prospecting and Development of Oil and Gas Deposits; Papers of the Inter-Vuz Conference on New Techniques in the Petroleum Industry, Vol 1) Moscow, Gostoptekhizdat, 1956. 311 p. Errata slip inserted. 1,500 copies printed.

Eds.: I. M. Murav'yev, Professor, Doctor of Technical Sciences, and V. N. Dakhnov, Professor, Doctor of Geological and Mineralogical Sciences; Editorial Board: K. F. Zhigach, Professor (Resp. Ed.), I. M. Murav'yev, Professor, A. A. Tikhomirov, Candidate of Economical Sciences, V. I. Yegorov, Candidate of Economical Sciences, M. M. Charygin, Professor, F. F. Dunayev, Professor, M. I. Chernozhukov, Professor, Ye. N. Kuzmak, Professor, I. A. Charnyy, Professor, G. M. Panchenkov, Professor, V. N. Dakhnov, Professor, Doctor of Geological and Mineralogical Sciences, N. S. Nametkin, Doctor of Chemical Sciences, N. A. Almazov, Docent, V. N. Vinogradov, Candidate of Technical Sciences, V. I. Biryukov, Candidate of Technical Sciences, E. I. Tagiyev, and V. M. Gurevich. Executive Ed.: N. P. Dobrynina. Tech. Ed.: E. A. Mukhina.

PURPOSE: The book is intended for engineers and scientific personnel working in the petroleum industry and vtuzes. It may also serve as a textbook for advanced students of petroleum vtuzes.

COVERAGE: The book contains articles written by staff members of the Moscow, Groznyy, and Ufa Petroleum Institutes, the Kuybyshev and Azerbaydzhan Industrial Institutes, the UFNII (Ufa Scientific Research Institute of Oil Drilling), VNIIburneft (All-Union Scientific Research Institute of Oil Drilling), KBNP (Design Office of Petroleum Instrument Making), the Bashneft Association (Bashkiriya Petroleum). These papers, read at the Mezhvuzy (Inter-Vuz) Scientific Conference, deal with new techniques in the petroleum industry introduced since 1956. Emphasis is given to the importance of efficient drilling, geophysical prospecting, working of oil and gas deposits, and the use of new devices employed in oil and gas exploitation. There are 52 references: 44 Soviet, and 8 English.

Zhigach, K. F., L. K. Mukhin, V. N. Demishev, and N. M. Goncharov [Moscow Petroleum Institute]. Petroleum-Base Drilling Fluids 92

The authors state that petroleum-base drilling fluids are being used to open productive horizons to maintain the penetration rate at the bottom-hole zone, and to increase the well output. The use of petroleum-base drilling fluids is particularly efficient for opening formations with high permeability and low pressure, where the absorption of a large amount of mud by the productive formation may prove dangerous. Petroleum-base drilling fluids also prove useful in opening formations with low permeability, particularly where the formation contains swelling clay. Petroleum-base drilling fluids produce good results in drilling under complex geological conditions and in drilling deep and directional wells.

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Zhigach, K. F., L. K. Mukhin, and V. N. Demishev [Moscow Petroleum Institute]. Specification of Petroleum-Base Drilling Fluids 101

The authors describe the formula of petroleum-base drilling fluids developed at the laboratories of the MNI imeni Gubkina (Moscow Petroleum Institute im. Gubkin) and VNIIburneft' (All-Union Scientific Research Institute for Petroleum Drilling), and also cites foreign formulae and methods for controlling parameters during the operation.

Zhigach, K. F., and K. F. Paus. Drilling Mud for Opening up Productive Formations 112

The authors state that drilling mud had been used almost exclusively for many years. The development of new techniques called, however, for the use of drilling fluids that would speed up and allow drilling under difficult geological conditions, deeper penetration without reducing the penetrability at the bottom-hole. Drill practices in eastern regions and experimental surveys established that rocks are better crushed when drilling fluids or gases with low specific gravity and viscosity are used. In eastern fields, water is being substituted for clayey fluids and may soon be replaced in drilling by air and gas.

Zhigach, K. F., and S. Z. Zaripov. Use of Powdery Clay in Drilling 118

The authors report on recent tests made in the production of powdery clay and its application in drilling. They refer specifically to the production of powdery clay from Bashkiriya and Tatariya clay, manufactured at local plants.

Dakhnov, V. N. [Moscow Petroleum Institute]. Geophysical Methods for Studying Reservoir Properties and Oil Saturation of Rocks 12[illegible]

The author stresses the need for more thorough prospecting of carbonaceous profiles previously neglected. The industrial importance of carbonaceous profiles of Bashkirskaya ASSR may be judged by the results of extensive prospecting and geophysical studies of the Devonian horizons undertaken in the last 10 years. They confirmed the presence of oil and gas-bearing horizons in other strata.

Latyshova, M. G., and V. M. Dobrynin, [Moscow Petroleum Institute]. Method of Potentials of Induced Polarization and Its Importance in the Study of Oil and Gas Wells 150

The authors stress the importance of studying the reservoir properties of productive horizons on the basis of geophysical data, without coring. Of particular interest is the method of induced polarization developed in the past few years by members of the MNI chair in industrial geophysics: it determines the specific surface and permeability of sandy reservoirs. The method of induced polarization, actually proposed long ago, remained purely academic because the phenomena of induced polarization had originally been misinterpreted. The method was later used extensively in modified form in the coal industry, and helped in establishing the presence of coal layers. Systematic studies of this method were initiated in 1949 by the MNI chair of industrial geophysics. Laboratory tests established that induced polarization of rocks may, under specific conditions, reach considerable dimensions. The studies revealed another alternative on the nature of induced polarization of porous rocks. The principal cause of the emission of potentials induced by polarization in porous rocks, when saturated with an electrolyte solution, is the deformation of the dual electrical layer present on the surface of rock grain in the polarized electrical field.

Conclusions:

1. Induced polarization assists in making a fractional breakdown of well cuts and classifies reservoirs of the lowest, medium and highest permeability; it also distinguishes clays of greater and lesser degrees of sandy content.
2. Induced polarization allows an appraisal of the degree of permeability of sandy reservoirs in situations, placing it thereby among the most interesting methods of geophysical studies of oil and gas wells.

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BYKOV, B.I.; PAUS, K.F.; AZIMOV, P.K.

Narrowing the well bore in the drilling of deep wells. Neftyanoe
41 no.10:61-64 O '63.

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PAUS, K. F., Cand Tech Sci -- (diss) "Selection of flushing liquids for opening of petroleum strata." Mos, 1958. 15 pp (Min of Higher Education USSR, Mos Order of Labor Red Banner Petroleum Inst im Academician I. M. Gubkin), 110 copies (KL, 15-58, 115)

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PAUS, K.F.

ZHIGACH, K.F.; PAUS, K.F.

Effect of drilling muds on the permeability of cores. Neft. khoz. 35 no.11:62-67 N '57. (MIRA 10:11)
(Oil well drilling fluids) (Rocks--Permeability)

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PAUB, K.F.

Control of well deflection in turbine drilling. Neft.khoz.34 no.7: 10-15 Jl '56. (Oil well drilling) (MLRA 9:10)

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PAUSCH, H.

Wood-dust explosions because of defective sucking devices. Tr. from the German. p. 238. Vol. 6, No. 9 Sept. 1956. FAIPAR. Budapest, Hungary.

SOURCE: East European List, (EEAL) Library of Congress Vol. 6, No. 1 January 1956.

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DUDAS, Pal, dr.; AUGUSTIN, Vince, dr.; Muskatarsak: PAUSCH, Ilona, dr.
SCHLAFFER, Erzsebet, dr.

Role of carious organisms in lung diseases complicating measles.
Gyermekgyogyaszat 15 no.3:80-85 Mr'64

1. Budapest Foraros Laszlo korhaz kozlemenye.

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TOTH, Gabriella, dr.; DUDAS, Pat, dr.; PAUSCH, Ilona, dr.; VINCZE, Erzsebet, dr.

Data on the symptomatology of drug poisoning (Quinoseptyl) Stevens-Johnson syndrome. Orv. hetil. 105 no.17:787-790 26 Ap'64.

1. Laszlo Korhaz, III. Gyermekosztaly (foorvos: Dudas, Pal, dr.)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

CZECHOSLOVAKIA/Acoustics - Ultrasonics. J

Abs Jour : Ref Zhur Fizika, No 9, 1959, 21137

Author : Pauser, Vladimir
Inst : -
Title : Thixotropic Effect of Ultrasound

Orig Pub : Spisy vyd. prirodoved. fak. Masarykovy univ., 1958, No 5, 197-215

Abstract : The isothermal variation of a gel in an ultrasonic field was investigated by the ring method of Liesegang (Liesegang R., Kolloidchemie des Lebens, 1923, Dresden). Here the colloidal medium used were emulsion films, stripped from photographic plates. The sound of ultrasonic field was a therapeutic ultrasound generator of 800 kc frequency with intensity of radiation of 0.2 - 4 watts/cm^2. The rate of formation of rings in the ultrasonic field was considerably increased, and the number of rings dependent on the duration and intensity of action of the

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MARINESCU, Voinea; IONESCU,M.; PAUSESCU,E.; FOTIADE,B.

Aspects of the metabolic and haemodynamic behaviour of the organism in deep hypothermia. Rumanian med.rev. 7 no.4:73-79 O-D'63.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

TURAI, I.; FONI, I.; PAUSESCU, E.

Correlations between the functional modifications of the stomach and the seat of the experimental intestinal occlusion. Comunicare AR 11 no.6:731-738 Je '61.

1. Membru corespondent al Academiei R.P.R. (for Turai)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

[illegible]
[illegible] (in caps), Given Names

Country: Rumania

Academic Degrees: -not given-

Affiliation: Corresponding Member of the Rumanian Academy (Membru Corespondent al Academiei RPR).

Source: Bucharest, Comunicarile Academiei Republicii Populare Romine, Vol 11, No 6, 1961, pp 731-735.

Data: "Studies on the Correlation Between Functional Modifications of the Stomach and the Location of Experimental Intestinal Occlusion."

Co-authors:

FONI, I. [Academic degrees and affiliations not given]
RAUSESCU, E.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSESCU, E.; NEGREA, Florica; FLORESCU, Rodica

Enzymatic activity of the kidney perfused at low temperatures. Part V. Stud. cercet. de fiziol. 10 no.2:157-164 '65.

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NEGREA, Florica; PAUSESCU, E.; CARNARU, Stela

Enzymatic activity of the kidney perfused at low temperatures. Pt.6. Stud. cercet. fiziol. 10 no.3:263-271 '65.

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PAUSESCU, Cracustodian

Bucharest, [illegible], No 5, May [illegible]

1. "Productive Varieties of Hybrids," Professor E. GIOSAN, pp 3-4.

2. "Machines for High Farm Yields," Livia ZAPLATAN, candidate of Technical Sciences and Scientific Director of the ICMA (Institutul de Cercetari Privind Mecanizarea Agriculturii); p 4.

3. "Productive Livestock Breeds," Engr E. RAICU, scientific secretary of the ICZ (Institutul de Cercetari Zootechnice; Zootechnical Research Institute); p 5.

4. "Vineyards and Orchards on Eroded Soils," professor Dr M. NEAGU; p 5

5. "'VUIA' Boilers Manufactured in Rumania," Engr V. DUMITRU; pp 6-7.

6. "The Paradox of Time," I. [illegible], physicist, and engineer E. GHEORGHIZIU; pp 8-11.

7. "Plastic Valve Protheses in Heart Surgery," Dr Exacustodian PAUSESCU, Clinical Hospital (Spitaul Clinic) in Fundeni; pp 12-13.

8. "A Few Words About Lacquers and Paints," Engr Margareta TOMESCU; pp 14-15.

9. "The Model of a Live Cell," V. [illegible], director of the Institute of Cybernetics ([illegible] Cibernetica) of the Grodian Academy of Sciences (original-language version not given), and researcher A. [illegible]; pp [illegible].

10. "Basic Noise," Engr Alexandru PREDA; pp 18-19.

11. "News from the Entire World" [briefs], pp 20-21.

12. "The Mayan Hieroglyphics Are Deciphered," Teodor TAUTH; pp 22-23

13. "Baicoi -- The Zootechnical Combine," Dr Ion [illegible], Institute of Agronomy (Institutul Agronomic), Bucharest; pp 24-[illegible].

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IONESCU, Marian, dr.; PAUSESCU, Exacustodian, dr.

Profound hypothermy. St si Ten B.c 14 no.1:18-[illegible] Ja '[illegible].

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PAUSESCU, Exarhistodian, dr.

Valvular prosthesis from plastic materials for heart surgery.
St si Teh Buc 14 no.5:12-13 My '62

1. Fundeni Clinic Hospital.

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FAIBIS, A.; BERNTHAL, I.; PAUSESCU, E.; SARAGEA, M.

Study of some circulatory modifications produced by bile salts.
Studii cerc fiziol 5 no.2:371-381 '60. (EEAI 10:2)

1. Catedra de fiziopatologie a Institutuui de medicina si farmacie, Bucuresti.
(BLOOD) (BILE SALTS)

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ROSENBERG, M.; NICOLAU, P.; MANAILA, R.; PAUSESCU, P.

Electric properties of crystalline structures in the system $(CuO)_x(Mn_2O_3)_{1-x}$. Studii cerc fiz 13 no.4:651-665 '62.

1. Institutul de fizica, Bucuresti.

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PAUSEVICH-KOLYADA, V. I.

Allene hydrocarbons. I. Preparation of methylphenylallene. V. I. Pausevich-Kolyada. *Zhur. Obshchei Khim.* (J. Gen. Chem.) 21, 491-5(1951).—Bromination of MeEtC(CH)Ph yields *3-bromo-2-phenyl-2-butene*, b_5 101-4°; this (220 g.) heated 10-15 min. in 600 g. 20% EtOH-KOH gave 122 g. KBr and 141 g. liquid products, b_{15} 42-above 90°; repeated distn. gave an unstated amt. of $C_{12}H_{16}O$, $b_{0.5}$ 90.5-1.0°, d_4^{20} 0.9966, n_D^{20} 1.5382, contg. some Cl derivs. Oxidation with 1% $KMnO_4$ gave AcPh, BzOH, HCO_2H, $EtOCH_2CO_2H$, possibly $HCOCO_2H$, and *MePhC(OH)COCH_2OEt*, b_1 111.5-2.5°, $d_4^{18.5}$ 1.0900, $n_D^{18.5}$ 1.5170 (*semicarbazone*, m. 162-3°). Hence, the original reaction with KOH-EtOH apparently yielded a *gem-methylphenylallene*, which under the reaction conditions added EtOH, yielding *2-phenyl-4-ethoxy-2-butene*, which is the probable structure of the $C_{12}H_{16}O$ described above. II. **Addition of bromine to unsymmetrical dimethylallene.** *Ibid.* 498-501.—Refluxing MeCBrCHBrMe with alc. KOH gave a monoBr compd., b. 117-21°, d_4^{20} 1.3073, n_D^{20} 1.4612, apparently *Me_2C:CBrMe*; this heated 12 hrs. in a sealed tube with alc. KOH to 140-50° gave *3-methyl-1,2-butadiene*, b. 40.5-2.5°. This (3 g.) treated under ice cooling with 7 g. Br gave a range of products, including 2.5 g. *1,2-dibromo-3-methyl-2-butene*, b_{10} 111-12°, d_4^{20} 1.7702, n_D^{20} 1.5479, oxidized with 1% $KMnO_4$ to AcH, Me_2CO, HCO_2H, and $BrCH_2CO_2H$.

G. M. Kosolapoff

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ISACESCU, Dimitrie A.; PAUCESCU, Stelian D.

Studies in the field of furfurole. XV. The Cannizzaro mixed heterogenous reaction furfurole and formaldehyde (I). Studii cerc chim 8 no.2:339-358 '60. (EEAI 10:2)

1. Centrul de cercetari chimice al Academiei R.P.R., Sectorul schimbatori de ioni, Bucuresti. 2. Membru corespondent al Academiei R.P.R.; Comitetul de redactie, Studii si cercetari de chimie (for Isacescu)
(Furaldehyde) (Cannizzaro reaction) (Formaldehyde)

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PAUSHEVA, Z.P., kand.sel'skokhozyaystvennykh nauk

Biological heterogeneity of the pollen grains of buckwheat. Izv. TSKhA no.2:207-213 '60. (MIRA 14:4)
(Buckwheat) (Pollen)

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PAUSHEVA, Z.P.

Change of intracellular reactions in the buckwheat stigma due to the effect of pollination. Zhur. ob. biol. 22 no.3:220-225 My-Je '61. (MIRA 14:5)

1. Timiriazev Agricultural Academy, Moscow.
(FERTILIZATION OF PLANTS) (BUCKWHEAT)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHEVA, Z.P.

Studying aerial nutrition of buckwheat as related to podlination. Agrobiologiia no.6:833-837 N-D '62. (MIRA 16:1)

1. Selektsionno-geneticheskaya stantsiya Moskovskoy sel'skokhozyaystvennoy akademii imeni Timiryazeva, Moskovskaya oblast'.
(Fertilization of plants) (Buckwheat)
(Photosynthesis)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHEVA, Z.P., aspirant.

Using labeled tracers for investigating the dying stages of ovaries in buckwheat. Dokl. TSKhA no.27:108-111 '57. (MIRA 11:4)
(Buckwheat)
(Fertilization of plants)
(Ovaries (Botany))

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHEVA, Z.P., kand.sel'skokhozyaystvennykh nauk

Premature death of flowers and ovaries in buckwheat. Izv. TSKhA no.4:204-208 '61. (MIRA 14:9)

(Buckwheat)

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COUNTRY : USSR
CATEGORY : Cultivated Plants. Cereals. M

[illegible] : MikhBiol., No.14, 1958, No.63375

AUTHOR : Pausneva, Z. P.
INST. : Moscow Agricultural Academy imeni K. A. Timiryazev
TITLE : Results of the Study of the Dying-off Process in the Ovaries of Buckwheat With the Aid of Tagged Atoms.

ORIG. PUB. : Dokl. Mosk. s.-kh. akad. im. K. A. Timiryazeva, 1957, vyp. 27, 109-111

ABSTRACT : Experiments on the study of different types of pollination of the flowers of buckwheat Bogatyr' were conducted at the selection and genetic station of TSKhA.* Self-pollination lengthens the flowering stage more than twofold and the vegetative period by 40-[illegible] days during which the number of blossoming flowers became 25 times greater. Grain formation did not exceed 0.5% of the number of blossoming flowers in contrast to the daily regular pollination with which grain formation comprises 44%; the ripening of the grain proceeds considerably more rapidly. Cross pollination accompanied by the top dressing of the plants with a solu-

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* Timiryazev Agricultural Academy in Moscow

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Pausheva, Z. P.

Name: PAUSHEVA, Z. P.

Dissertation: The effectiveness of inter-variety hybridization of buckwheat in connection with its biological peculiarities

Degree: Cand Agr Sci

Defended at ~~Affiliation~~: Moscow Order of Lenin Agricultural Acad imeni K. A. Timiryazev

Publication ~~Defense~~ Date, Place: 1956, Moscow

Source: Knizhnaya Letopis', No 47, 1956

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PAUSHEVA, Z.P.

Biology of buckwheat pollination and fertilization. Agrobiologiia no.4:62-69 Jl-Ag '56. (MLRA 9:10)

1.Kafedra genetiki, selektsii i semenovodstva polevykh kul'tur Moskovskoy sel'skokhozyaystvennoy akademii imeni K.A.Timiryazeva. (Buckwheat) (Fertilization of plants)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHEVA, Z.P., kand. sel'skokhoz. nauk

Cell structure seen through an electron microscope. Zemledelie 27 no.11:80-88 N '65. (MIRA 18:10)

1. Moskovskaya ordena Lenina sel'skokhozyaystvennaya akademiya imeni Timiryazeva.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

MAMINA, Serafima Yefimovna, dots.; TERERHINA, Galina Mikhaylovna, st. prepod.; [illegible], dots.; BELYAKOVA, Ye.V., red; [illegible], prof., ret. [illegible]

[Handbook for practical work in engineering geology] Sukovodstvo k prakticheskim zaniatiiam po inzhenernoi geologii. Moskva, Vysshaia shkola, [illegible]. [illegible] p.

(MIRA [illegible])

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHKIN, G.A., kand.tekhn.nauk

Effect of flow pulsation on spillway aprons. Nauch.dokl.vys. shkoly; stroi. no.2:265-270 '58. (MIRA 12:1)
(Spillways)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHKIN, G.A., inzh.

Conference on soil characteristics relative to construction. (MIRA 11:12)
Gidr. stroi. 27 no.10:62-64 O '58.
(Soil mechanics) (Hydraulic engineering)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

SOV-98-58-10-16/16

AUTHOR: Paushkin, S.A., Engineer

TITLE: Conference on the Research of Structural Properties of Soils (Soveshchaniye po issledovaniyam stroitel'nykh svoystv gruntov)

PERIODICAL: Gidrotekhnicheskoye stroitel'stvo, 1958, Nr 10, pp 62-64 (USSR)

ABSTRACT: The representatives of scientific research organizations and vuzes of 25 cities attended a conference at the Moskovskiy inzhenerno-stroitel'nyy institut imeni V.V. Kuybysheva (The Moscow Institute of Construction Engineering imeni V.V. Kuybyshev) from 19-21 March 1958. The structural properties of grounds was the theme of this conference. A lecture on results of the IV International Congress in London on mechanics of grounds and foundation construction, was delivered by N.A. Tsytovich, Member of the AS USSR. Lectures on radioactivity eradiation soil research methods were delivered by: Candidate of Technical Sciences D.S. Fol'shin of the NII Foundations and Underground Structures; Doctor of Technical Sciences I.I. Cherkasov, Candidate of Technical Sciences Ye.M. Filippov of the VNII Geophysics: Engineer V.P. Ponomarev of the Institut merzlotovedeniya (Institute of Perma-

Card 1/2

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SOV-98-58-10-16/16

Conference on the Research of Structural Properties of Soils

frost Study); Engineer V.A. Lukin of the MISI. A lecture on foundation construction in clayey soils was delivered by Doctor of Technical Sciences, Professor N.N. Maslov of the MADI. Creeping properties of compact clay in dislocations was the lecture theme of Engineer A.A. Skibitskiy of the NIS Gidroproyekt. A lecture on indices of clayey soil dislocation and the duration of laboratory tests was delivered by Engineer Ye.S. Lovetskiy of the Gidroproyekt. Experience exchange in designing of earth dams was described by Engineer V.A. Durante of the Gidroproyekt. Doctor of Technical Sciences Professor A.A. Nichiporovich participated in the discussions. Reports on tests and research work were delivered by Professor N.Ya. Denisov; Engineer, V.V. Radina of the NIS Gidroproyekt; Candidate of Technical Sciences Ya.L. Kogan of the NIS Gidroproyekt; Candidate of Technical Sciences B.I. Nechayev of the TsNII MPS; Engineer N.N. Uskov and [illegible] Baranov of the MISI imeni V.V. Kuybyshev.

1. Soils--Properties

Card 2/2

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124-57-1-1269D

Translation from: Referativnyy zhurnal Mekhanika, 1957 Nr 1, p 174 (USSR)

AUTHOR: Paushkin, G. A.

TITLE: The Calculation of Scour-protection Aprons on Nonrocky Foundations (Investigation of the Pulsating Action of the Flow on a Scour-protection Apron) [Raschet vodoboynykh plit na neskal'nykh osnovaniyakh (Issledovaniye pul'satsionnykh vozdeystviy potoka na vodoboy)]

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of Candidate of Technical Sciences, presented to the Mosk. inzh.-stroit. in-t (Moscow Institute of Structural Engineering) Moscow 1956

ASSOCIATION: Mosk. inzh.-stroit. in-t (Moscow Institute of Structural Engineering), Moscow

1. Structures--Mathematical analysis--Bibliography

Card 1/1

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2"

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PAUSHKIN, G. A.

Paushkin, G. A.

"The calculation of water splash slabs on non-rock foundations (investigation of the pulsating effect of the water stream on the splashing.)" Min Higher Education USSR. Moscow Order of Labor Red Banner Construction Engineering Inst imeni V. V. Kuybyshev. Moscow, 1956. (Dissertation for the Degree of Candidate in Technical Sciences).

Knizhnaya letopis'
No. 25, 1956. Moscow

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHKIN, N.

Producing local building materials for our housing construction projects. Stroi. mat. 4 no.1:4-6 Ja '58. (MIRA 11:2)

1.Zaveduyushchiy otdelom stroitel'stva i lesnoy promyshlennosti Gor'kovskogo obkoma Kommunisticheskoy partii Sovetskogo Soyuza.
(Gorkiy Province--Building materials industry)

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PAUSHKIN, [illegible]

PAUSHKIN, [illegible] -- "Radiant [illegible] Wall-Story [illegible] Air." Sub [illegible], Moscow [illegible] Construction Inst [illegible] Kaganshev. [illegible] Degree of Candidate in Technical Sciences)

SO: Vecherna a Moskva, [illegible]

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

LUNIN, A.F.; PAUSHKIN, Ya.M.

Homopolycondensation of urea to polycyanamide, a nitrogen-containing polymer with conjugated double bonds. Vysokom.soed. 6 no.8:1467-1470 Ag '64. (MIRA 17:10)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti imeni Gubkina.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHKIN, Ya.M.; VISHNYAKOVA, T.P.; SMIRNA[illegible]

Liberation of heat during the extensive decomposition of hydrocarbons. Khim. i tekh. topl i masel 9 no.8:5-8 Ag '64. (MIRA 17:10)

1. Moskovskiy ordena Trudovogo Krasnogo Znameni institut neftekhimicheskoy i gazovoy promyshlennosti im. akad. Gubkina.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHKIN, Ya.M.; BOCHAROV, B.V.; SMIRNOV, A.P.; [illegible]
F.F.; PANIDI, I.S.

Production of polyvinyl compounds by means of the [illegible] calcium carbide with carbonyl compounds. Plast.mas[illegible] 16[illegible].

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2"

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1936-57

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PROCESSES AND PROPERTIES INDEX

Relation between the energy of carbon atoms and the reactivity of organic molecules. Ya. M. Paushkin. *J. Gen. Chem.* (U. S. S. R.) 6, 1133-43(1936).—A discussion, with math. treatment, is given of the relation between the bond energy of primary, secondary, tertiary and quaternary C atoms and the reactivity rate of org. compds. In cyclic and acyclic hydrocarbons a greater energy of C atoms corresponds to a greater mobility of its substituents. The reactivity of olefins in additive reactions increases with increasing energy of C atoms at the double bond. In the reactions of addn. to olefins and lower cyclic hydrocarbons the parts of a complex mol. are oriented according to the same principle, viz., the C atom annexes with greater energy that part of the mol. which generally reacts more easily with hydrocarbons. The tendency to orientation toward the C atom with greater energy may be represented by the following order: [illegible] > −I > −II. Methylene groups in cyclic and acyclic hydrocarbons differ in energy by 114/°CH_2 cal., though formally in both cases 150-8 cal. are sepd. for each CH_2 burned. The greater reactivity of cycloparaffins is detd. by a special excess of energy of the cyclic mol., equal to 114 cal. Thirty references. Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PROCESSES AND PROPERTIES INDEX

Energy of carbon atoms, the energy of bonds and the reacting capacity of organic compounds Va. M. Paushkin. *J. Phys. Chem. A. S. S. R.* 10, 468-77 (1937). Theoretical. Large energies correspond to ready additivity in olefins and ready mobility of substituents in cyclic and alicyclic compds. The chem. differences in cyclic and alicyclic compds. are due to the 21 Cal./n_{CH_2} energy difference. The energy of activation in a given type of reaction is a function of both the summarized total and band energies of the compds. F. H. Rathmann

METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

Heterogeneous catalyst for the sulfonation of benzene with sulfur trioxide at 250–450°. A. V. Topchiev and Ya. M. Paushkin. *J. Applied Chem.* (U. S. S. R.) 12, 64-8(in French, 68)(1939). C_6H_6 (10 cc.), freed from thiophene, was sulfonated with 25–28 g. of SO_3 in a special app. (described) at 250–450° in the presence of various catalysts. All expts. were carried out under a pressure of 20–5 mm. and their duration was 24–6 min. In the presence of an asbestos catalyst at 350–60° the sulfonation was the best, yielding $PhSO_3H$, $C_6H_4(SO_3H)_2$, $C_6H_3(SO_3H)_3$, and Ph_2SO_3. The increase of temp. increased the degree of sulfonation but decreased the yield of the products. Glass catalyzed the sulfonation to a smaller extent; the yield and the degree of sulfonation were much lower than in the case of the previous catalyst. A Cu(I) catalyst yielded less of the product, and the degree of sulfonation was also much less than with the 1st catalyst. Platinized asbestos and asbestos impregnated with C retarded the sulfonation reaction in spite of the high temp. and the concn. of the reagents. A. A. Podgorny.

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PROCESSES AND PROPERTIES INDEX

CA

10

Molecular compounds of boron fluoride as new catalysts for polymerization and alkylation. Ya. M. Paushkin and A. V. Topchiev (I. M. Gubkin Petroleum Inst., Moscow). *Bull. acad. sci. U.R.S.S., Classe sci. tech.* 1947, 813-16(in Russian). -Polymerization of n-butene under atm. pressure at 50-150° is achieved by mol. compds. of BF_3 with H_3PO_4 or HPO_3 whereas the sep. substances are inactive under the same conditions. The compds. $HPO_3.BF_3$ (I) and $H_3PO_4.BF_3$ (II) are liquids, solidifying at low temp. In runs with activated C wetted with 25 ml. liquid catalyst, 155 mm. high, 25 mm. diam., at 100°, rate of flow of $EtCH:CH_2$ gas 10 l./hr., the yields of polymer in the 1st, 2nd, 3rd, and 4th hr. were (I) 20, 25, 20, and 16 ml., (II) 15, 15, 20, and 10 ml.; with 100% H_3PO_4, H_2SO_4, H_2SO_4 + BF_3, and H_2SO_4 + H_3PO_4 catalysts, the yields in the 1st hr. were 1-2 ml., none in the following hrs.; under the same conditions, results were completely neg. with aq. H_3PO_4 + BF_3, BF_3, $Et_2O.BF_3$, $(MeC_6H_5O)_3PO.BF_3$, and $AlCl_3$. The rate of polymerization falls with time; thus with I, 10 l./hr., the yields of polymers in the 1st, 2nd, 6th, and 3-penten-5-ol, and 40 g. 50% NaOH, stirred 4 hrs. at 100°, gave 9 g. unreacted I, 8 g. unreacted alc., and 12 g. $(MeOCH_2CH_2CH:CHCH_2)_2O$, b_6 136-7°, n_D^{20} 1.4566, d_4^{20} 0.9353. PhOH (12 g.), 20 g. I, 10 g. calcined soda, and 15 g. Me_2CO boiled 5 hrs. yielded 3.3 g. $MeOCH_2CH_2CH:CHCH_2OPh$, b_6 130-1°, n_D^{20} 1.5146, d_4^{20} 1.0000. PhOH (25 g.), 20 g. KOH, 20 cc. H_2O, and 25 g. I kept 3 hrs. at 100° with stirring gave 19.5 g. of the above phenoxy compd. From 50 g. $MeOCH_2CH_2CHClCH:CH_2$ (II) heated 3 hrs. to 100° with 22 g. KOH in 88 g. 95% EtOH were obtained 11 g. 1-methoxy-2,4-pentadiene, b_{10} 111-12°, n_D^{20} 1.4493, d_4^{20} 0.8253, and 2.5 g. 1-methoxy-5-ethoxy-3-pentene, as well as unidentified material, b_{10} 140-3°. I (15 g.) heated 3 hrs. at 100° with 8 g. Na in 40 cc. EtOH gave 14 g. 1-methoxy-5-ethoxy-3-pentene. II (23 g.) heated 2 hrs. at 100° with 4 g. Na in 60 cc. EtOH gave 4.2 g. 1-methoxy-2,4-pentadiene, 2.3 g. 1-methoxy-5-ethoxy-3-pentene, and 2.6 g. material, b_{10} 38-45°. KOH (20 g.), 20 g. II, and 37 g. 1-methoxy-3-penten-5-ol stirred 3 hrs. at 100° gave 5.5 g. 1-methoxy-2,4-pentadiene, 4.5 g. $(MeOCH_2CH_2CH:CHCH_2)_2O$, and 20 g. unreacted alc. The *diene* (2.9 g.) and 2.9 g. maleic anhydride heated to 140° gave a *product* b_6 145-8° (2.9 g.). I (20 g.) heated with 34 g. powd. K_2S 5 hrs. at 130-40° gave 6.2 g. *bis(1-methoxy-3-penten-5-yl) sulfide*, b_{10} 163°, n_D^{20} 1.4920, d_4^{20} 0.9763; the same product (15 g.) was obtained when NaSH (obtained by passage of H_2S into NaOEt from 5 g. Na in 100 cc. EtOH) and 20 g. I were heated 3 hrs. on a steam bath; oxidation of the thio ether with $KMnO_4$ gave *β-methoxypropionic acid*, b_6 103-5°, n_D^{20} 1.4184. A similar reaction of 20 g. II gave 11.5 g. of the same thio ether. Thus the primary chloride gives essentially simple ethers on treatment with KOH and primary alcs. or PhOH; the reaction mechanism is basically that of the S_2 type (Roberts, Young, and Winstein, *C.A.* 36, 6497[9]) with bimol. solvolysis reaction. The reactions of the secondary chloride are explained on the basis of a S_2 reaction type with formation of a bound carbonium

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ion at the C adjacent to the allyl group; the formation of the resonating, bound carbonium ion, in the presence of excess alkoxy ions, leads to the formation not only of the usual ether but also to proton sepn. and diene formation. The hydrosulfide reaction is explained by formation of a very reactive intermediate mercaptan which reacts with excess chloride. The secondary chloride reacts with NaSH according to the S_N1 type. G. M. Kosolapoff

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CA

13

Boron fluoride compounds as catalysts in alkylation and polymerization reactions. A. V. Topchiev and Va. M. Paushkin. *Uspekhi Khim.* 16, 604-80(1947). cf. C.A. 43, 1711f. - Crit. reviews. 108 references. N. Thon

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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PAUSHKIN, YA. M.

USSR/Alkylation
Catalysis

Jun 1947

"The Significance of Fluorine Compounds as Catalyzers in the Alkylation Reaction," Prof A. V. Topchiyev, Candidate Ya. M. Paushkin

"Neftyanoye Khozyaystvo" Vol 25, No 6

The synthesis of iso-paraffin and alkyl-benzol. The disadvantages of technological processes of alkylation. The Characteristics of catalyzers not receiving technological application. Two tables showing the characteristics of some molecular compounds of boron fluorides and the activity of various catalysts in the alkylation reaction of isobutane propene.

PA 9T95

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CA

Fluorine compounds in polymerization reactions. A. V. Topchiev and Ya. M. Paushkin. *Neftyanoe Khoz.* 25, No. 10, 36-45(1947); cf. *C.A.* 42, 1182a.—A discussion of literature (38 references) deals with the use of BF_3 and its complexes as catalysts for the polymerization of olefins to gasoline-range hydrocarbons, lubricating oil, and high polymers. The authors' own expts. were conducted under unusually mild conditions, i.e. 100°, and atm. pressure at a feed rate of 10 l. of olefin per hr., in a column packed with catalyst on activated C carrier. The polymer yield was 8-10 ml./hr. with propene and 15-20 ml./hr. with 1-butene, with $H_3PO_4.BF_3$ at 20°. With $BF_3.2H_2SO_4$ at 100° the polymer yield was about 1/3 as large and with other org. and inorg. BF_3 complexes, BF_3 on carrier, $AlCl_3$, H_2SO_4, and H_3PO_4 almost nil. The polymers boil within 90-350° and have a Br no. of 40-43.

Bruno C. Metzner

ASB SLA METALLURGICAL LITERATURE CLASSIFICATION

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PAUSHKIN, YA. M.

USSR/Chemistry - Catalysts
Chemistry - Polymerization

Nov 1947

"Molecular Compound of Barium Fluoride and Phosphoric Acid as a New Catalyst for Polymerization and Alkalizing," A. V. Topchiyev, Ya. M. Paushkin, Moscow Petroleum Institute imeni I. M. Gubkin, 4 pp

"Dok Ak Nauk" Vol LVIII, No 6

Discusses the work done by the authors in investigating the compound of metaphosphoric acid and barium fluoride as a catylist for the polymerization of prepelene. Discusses the experiments and the equipment used. Discovered that barium fluoride goes into molecular union with orto-, piro-, and metaphosphoric acids. Submitted by Academician S. S. Nametkin 17 Apr 1947.

PA 36T7

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHKIN, YA. M.

USSR/Chemistry - Propylene, Polymerization Aug 48
Chemistry - Fluorides

"Polymerization of Propylene With the Aid of Molecular Compounds of Boron Fluoride," A. V. Topchiyev, Ya. M. Paushkin, Moscow Petroleum Inst imeni Acad I. M. Gubkina, 7½ pp

"Zhur Obshch Khimii" Vol XVIII (LXXX), No 8

Boron fluoride forms molecular compounds with ortho-pyro-, and metaphosphoric acids; the acid and boron fluoride combine in equimolecular quantities. Propylene polymerizes rapidly at atmospheric pressure and 100° over boron fluoride -- metaphosphoric acid on activated charcoal. Reaction does not occur under these conditions with any other known catalyst. Polymerization is better under pressure as there is then no loss of boron fluoride whose connection with phosphoric acid is unstable at 100-150°. Molecular compound of boron fluoride and metaphosphoric acid is most active catalyst known for olefin polymerization. Submitted 26 May 47.

PA 19/49T19

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHKIN, YA. M.

PA 43/49T26

USSR/Chemistry - Benzene Oct 48
Chemistry - Alkylation

"Alkylation of Benzene by Propene," Ya. M. Paushkin, A. V. Topchiyev, 8 pp

"Zhur Priklad Khim" Vol XXI, No 10

Shows that boron fluoride forms a molecular compound with orthophosphoric acid which is an active catalyst for alkylation of benzene by propene. Shows that a large quantity of isopropyl benzene, amounting to 160-180% of initial propene, results from process. When reaction is carried out while boiling in range 120-170°, quantity reaches 196-217%. For continuous process, amount of isopropyl benzene in product resulting after alkylation and rectification is 74%, and alkylate 87%. Submitted 30 Jun 47.

43/49T26

FDB

USSR/Chemistry - Benzene (Contd) Oct 48

43/49T26

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHKIN, YA. M.

10-15-51
Chemistry

PHYSICO-CHEMICAL NATURE AND CATALYTIC ACTIVITY OF BORON TRIFLUORIDE COMPOUNDS. Ya. M. Paushkin. Translated from Zhur. Fiziked. Khim. 21, 1199-1209(1948). 17p. (AEC-tr-1588)

The molecular compounds of BF_3 with organic and inorganic substances are constructed according to one and the same type: with an ion of 4-valent B forming a bond with a molecule of the uniting substance via an atom of O, N, S, or another atom, capable of giving up an electron. The theory of resonance is used to explain the nature of the compounds. In the case of molecular compounds of BF_3 with hydroxyl-containing molecules, the O atom of the hydroxyl group acts as the ligand, and hence the H atom of the OH group acquires an ionic bond, as in fluoroboric acid, but the place of the fourth F atom in the ion with 4-valent B is occupied by the remainder of the molecule of the uniting substance $H[XOBF_3]$. In connection with this, all the molecular compounds with hydroxyl-containing substances acquire the character of strong acids. The addition of a second molecule of H_2O, ROH, or RCOOH to $H_2O \cdot BF_3$, $ROH \cdot BF_3$, or $RCOOH \cdot BF_3$, is not associated with phenomena of a co-ordinate character but is explained by salt formation of the type of perchloric acid with water or the weaker acids. A general regularity of catalytic activity in alkylation and polymerization of numerous compounds of BF_3 is reported in which the increased effect of the catalyst is explained by the formation of an ionized molecule $H^+[XOBF_3]$; the activity of the catalyst relative to BF_3 increases with increase in the acidity of the compound. This does not exclude other mechanisms, as, for example, complex-formation in the case of free BF_3 and its compounds with ethers and esters, although in this case the catalytic effect is less. (auth)

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CA

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Boron fluoride compounds as new catalysts of alkylation and polymerization A. V. Topchiev and Va. M. Paushkin. *Doklady Akad. Nauk S.S.S.R.* 62, 641-4(1948). cf. C.A. 43, 1214b. Activities of different catalysts were compared by the yield of the fraction b. above 50° (with respect to CH_3CHMe passed) obtained in alkylation expts. with 50 ml. iso-C_6H_{12}, 20 ml. catalyst, and a total 4.5 l. C_6H_6 passed at the rate of 2 l./hr. The yields and the d_4^{20} of the alkylate are: with H_3PO_4.BF_3 (I) 175% (0.743), H_3PO_4 + BF_3 (II) 170 (0.7100), H_2O + BF_3 (III) 168 (0.707), BF_3 + 2.5 H_2SO_4 (IV) 164 (0.7050), MeOH.BF_3 (V) 135 (0.7538), EtOH.BF_3 (VI) 90 (0.771), HPO_3.BF_3 (VII) 55 (0.730), AcOH.BF_3 (VIII) 45 (0.60), $AlCl_3$ (IX) 95 (0.7502), H_2SO_4 (100%) (X) 165 (0.7076). The activities of VII and VIII are insignificant. C_6H_5N.BF_3, PhOH.BF_3, Et_2O.BF_3, AcOEt.BF_3, $(MeC_6H_4O)_3PO$.BF_3, and BF_3 alone are completely inactive. I and II showed unchanged activity in 6 consecutive runs, the activity of III dropped from the 3rd run on, that of IV and V fell after the 1st run. The same applied to IX and to X, which can be used only once. By its fractional compn., the alkylate of I is characterized by a high proportion of high boiling hydrocarbons, with only 20 vol. % b. below 170°, the remainder between 170 and 350°; this is indicative of extensive polyalkylation, due to the high activity of the catalyst. The low Br no., 0.1, indicates nearly complete absence of unsatd. compds. With II and III, about 50-60 vol. % of the alkylate b. below 150° (isooctanes), i.e. the product is similar to that obtained with X. By Raman spectra, the alkylates have the approx. compn.: III, 2,5-dimethylhexane 55, 2,4-dimethylhexane 30, other hydrocarbons 15%; II, 2,3-dimethylhexane 54, 2,4-dimethylhexane 14, 2,5-dimethylhexane 19, 2,2,3-trimethylpentane 6, other hydrocarbons 7%; X,

BOORD, R. W. HOST, EDGAR C. BRITTON, AND J. K. GOHRER'S main components [illegible] 2,4- and 2,5-dimethylhexane [illegible] N. Thom

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Alkylation of isopentane with ethylene in the presence of boron fluoride catalysts V. M. Paushkin and A. A. Topchiev. *Doklady Akad. Nauk S.S.S.R.* **63**, 673-6 (1948), cf. C. 1. **42**, 1555g. In runs with 50 ml. isopentane, 20 ml. of liquid catalyst (prepd. by satn. of the corresponding acid, or H_2O, with BF_3), and 1.5 l. C_2H_4 passed at 1.5 l. hr., at a rate of stirring of 1200-1500 r.p.m., catalysts $H_4P_2O_7$ + BF_3, H_3PO_4.BF_3, and H_2O.BF_3 gave about equal yields of alkylate (approx. 7 ml.), corresponding to about 170% of the C_2H_4 reacted, or, roughly, 50% conversion of the C_2H_4 passed. In each run was collected about 5 l. gas composed of C_2H_4 48.96, C_3H_6 39.1, C_3H_8 1.5, C_4H_{10} + C_4H_8 2.1, H_2 1.38, CO_2 0.70, CO 1.14, N_2 4.12%. No loss of activity of the catalyst was observed in 8 consecutive runs. The activity of MeOH + BF_3 is distinctly lower, $Et_2O.BF_3$ is inactive. Fractionation of the alkylates gave: b. 40-50° (pentanes) (19.7 vol. %), 50-60° (isohexanes) (29), 60-80° (3.5), 80-90° (isoheptanes) (14), 90-100° (2.6), 100-110° (2.9), 110-120° (10.4), 120-130° (5.8), 130-140° (9.2), >140° (14.4). The isohexane fraction is practically absent with $H_2O.BF_3$. By Raman spectra, the 80-90° fraction obtained with the catalysts $H_4P_2O_7$ + BF_3 and $H_2O.BF_3$, resp., has the compn. 2,3-dimethylheptane 55 and 48%, 2,4-dimethylpentane, and 37, 2,2-dimethylpentane 13 and 3, 2-methylhexane, and 9, other 12 and 3, the 100-120° fraction, 2,2-dimethylhexane 35 and 70, 2,5-dimethylhexane, and 30, 2,2,4-trimethylpentane 25 and , 2,3,3-trimethylpentane 25 and , other octane isomers 15 and . The 40-50° fraction is isopentane 72, pentane 16, 2-methylbutane 12%. N. Thon

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2"

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PAUSHKIN, YA. M.

"The Properties of Boron Fluoride as a Catalyst in Alkylation, Polymerization, and Condensation" (Svoystva Ftoristogo Bora Kak Katalizatora v Reaktsiyakh Alkilirovaniya, Polimerizatsii i Kondensatii), A. V. Topchiyev, and Ya. M. Paushkin, Gostoptekhizdat, Moscow/Leningrad, 1949, 152 pages, 12 rubles.

In addition to treating subject material, this book gives in a method for reclaiming the boron fluoride.

SO: Uspekh Khimii, Vol. 18, #6, 1949; Vol. 19, #1 1950 (W-10083)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUTSKIN, YA. M.

22362-Pautskin, Ya. M. Alkilirovanyye I Polimerizatsiya Uglevodorodov S. Novymi Kombinirovannymi Vysokoaktivnymi Katalizatorami (Soyedineniya Ftora). Trudy Mosk. Neft. In-Ta Im. Akad. Gubkina, Vyp. 9, 1949, S.87-93.-Bibliogr: 5 NAZV.

SO: Letopis' No. 30 1949

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

CA

Boron fluoride compounds as new catalysts of alkylation and polymerization. V. Alkylation of isopentane with propylene. A. V. Topchiev and Ya. M. Paushkin. *Zhur. Obshchei Khim.* (J. Gen. Chem.) **19**, 2173-81(1949); cf. C.A. **43**, 8074d.—The following data refer to runs with 50 ml. iso-C_5H_{12}, 20 ml. liquid catalyst, C_3H_6 fed at 2 l./hr., total amt. 4.5 l., corresponding to a mol. ratio C_3H_6:iso-C_5H_{12} = 1:2.3; yields of hydrocarbons b. >50° are expressed in % of the theory (% per poss. of C_3H_6). Catalyst 0.5 P_2O_5 + 1.5 H_2O + BF_3 (I) 73.6 (175); 0.5 P_2O_5 + H_2O + BF_3 (II) 71.5 (170); $BF_3.H_2O$ (III) 70.5 (168); $BF_3.2\,SH_2SO_4$ (IV) 69 (164); $BF_3.MeOH$ (V) 43 (105); $BF_3.EtOH$ (VI) 38 (90); $BF_3.HPO_3$ (VII) 23 (55); $BF_3.AcOH$ (VIII) 19 (45). Inactive are equimol. compds. of BF_3 with C_5H_5N, PhOH, Et_2O, AcOEt, $(MeC_6H_4O)_3PO$, and BF_3 alone. For comparison, AlCl, 40 (95), and H_2SO_4 (101%) 70 (165). I, III can be used repeatedly, IV, VI suffer a loss of activity after the 1st run. With I, at −10, −5, 0, +20°, the yields of alkylate b. >50°, per C_3H_6 passed, were 120, 150, 181, 180%, i.e. optimum between 0 and 20°. For best yields, the reaction must should contain not less than 15-20 vol.-% catalyst. Excess of iso-C_5H_{12} over C_3H_6 is favorable, a 4:1 to 6:1 excess is sufficient to suppress secondary reactions and polymerization. Fractionation of the alkylate obtained with III gave: b. 40-50° (pentanes), 50-60° (0.5 vol.-%), 60-80° (4.4), 90-110° (22.4 vol.-% isobutanes 47.3%), 110-120° (24.4), 120-130° (1.7), 130-140° (1.2), 140-150° (4), 150-160° (2.2), 160-170° (8.8), >170° (28.7). All told, 69.5% of the alkylate pass below 170°. Fractionation of the heavy residue b. >170°, obtained with catalyst I, gave the following fractions (vol.-%, mol. wt.): b. 170-180° (1.7, —), 190-210° (6.5, 152), 210-230° (16, 189), 230-250° (18.6, 197), 250-270° (9.6, 240), 270-300° (25.5, 262), 300-330° (13, 262). The alkylates contain no olefins, aromatics, or cycloparaffins. The compn. of the C_5 fraction varies but little with the catalyst. Thus, by Raman spectra, the corresponding fraction, with H_2SO_4 as catalyst, consisted mainly of 2,3-, 2,4-, and 2,5-dimethylhexane, with I, 2,3-, 34%, 2,4-, 14%, 2,5-, 10%, 2,2,4-trimethylpentane 6%, other hydrocarbons 7%; with III 2,3-, 35%, 2,4-, 30%, other hydrocarbons 15%. The small amt. of highly-branched hydrocarbons is striking.

VI. Alkylation of isopentane with ethylene and isobutylene. Ya. M. Paushkin and A. V. Topchiev. *Ibid.* 2182-90; cf. C.A. **43**, 3773b.—(1) With 50 ml. iso-C_5H_{12}, 20 ml. liquid catalyst, and a total of 4.5 l. C_2H_4 passed at 1.5 l./hr. on catalyst I, the degree of conversion of C_2H_4 was about 50%. The gas analyzed C_2H_4 48.96, C_3H_6 39.1, C_4H_8 1.5, C_5H_{10} + C_5H_{12} 2.1, H_2 1.38, CO_2 0.70, CO 1.14, and N 1.12%. The yield was 186%, per mol. of C_2H_4, which is actual, and about the same yield was obtained with a catalyst 0.5 P_2O_5 + H_2O + BF_3 (Ia), i.e., with 0.5 mol. H_2O less than I. With III, the yield was about the same, with V, 40-170°, whereas BF_3 and $BF_3.Et_2O$ were inactive. Fractionation of the alkylates shows, with Ia, a considerable isohexane fraction along with isopentanes, with III only isopentanes, with hardly any isohexanes. By Raman spectra, the compn. of the C_6 fraction, b. 80-90°, with Ia, is 2,3-dimethylpentane 35, 2,4- + 2,2-dimethylpentane + 2-methylhexane 31, other 12%; with III, 2,4- 48, 2,4- 37, 2,2- 3, 2-methylhexane 9, other 3%. The C_7 fraction, b. 100-120°, with Ia, 2,2-dimethylhexane 35, 2,2,4-trimethylpentane 25, 2,3,3-trimethylpentane 5, other 15%; with III, 2,2- 70, 2,5- 30%. The fraction b. 40-50°, isopentane 72, n-pentane 17, 2-methylbutane 12%. (2) With 50 ml. iso-C_5H_{12}, 20 ml. liquid catalyst, iso-C_5H_{12} passed at 2.1 l./hr., total corresponding to the mol. ratio iso-C_5H_{12}:iso-C_4H_8 2:1, alkylation was brought

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about by catalysts I, Ia, and III, with the yields 18%, 22%, and 20.5%, resp., per iso-C_4H_8 passed; $BF_3.Et_2O$ and BF_3 C_5H_5N gave alkylation yields of only 10% and 10%, resp., but produced considerable polymerization. Fractionation of the product obtained with Ia, b. 30-100° (27.2 vol.-%), 100-120° (9.3, isooctanes), 120-150° (26.8, isononanes), 150-160° (6.8), 160-170° (8.5), total passing below 170°, 65%, shows only a relatively small yield of the isononanes expected to be the main product. (3) BF_3 is active in alkylation only if it is combined with a compd. possessing a OH group, with which it forms a mol. compd. having a strongly acidic character. N. Thon

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PAUCHKIN, YA. M.

"Boron fluride compounds as new alkylation and polymerisation catalysts. VI. Alkylation of iso-pentane with ethylene and isobutylene."
Ya. M. Pauchkin and A. V. Topchiev. (p. 2182)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1949, Vol. 19, No. 12

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PA 53/49T19

USSR/Chemistry - Boron Fluoride (Oct 49
Chemistry - Catalysts

"Boron Fluoride Compounds as New Catalysts in the Process of Alkylation and Polymerization," A. V. Topchiyev, Ya. M. Paushkin, 4 pp

"Dok Ak Nauk SSSR" Vol LXII, No 5

Compares results of alkylation of isopentane with propene, obtained in presence of $H_3PO_4.BF_3$, with results obtained with a number of other catalysts. Among other results, shows that compounds of boron fluoride with hydroxyl-containing compounds of acidic nature were catalytically active, while

[redacted] 53/49T19

USSR/Chemistry - Boron Fluoride (Contd) Oct 49

those with ethers, esters, pyridine, and amines were not active in this reaction. Submitted by Acad S. S. Nametkin, 17 Aug 48.

[redacted] 53/49T19

PAUSHKIN, YA. M.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PA 26/49T6

PAUSHKIN, YA. M.

USSR/Chemistry - Benzene, Alkylation of Jan 49
Chemistry - Alkylation, of Benzene

"The Reaction of the Catalytic Alkylation of Benzene With Propylene and Ethylene," A. V. Topchiyev, Ya. M. Paushkin, L. I. Sergacheva, 4 pp

"Dok Ak Nauk SSSR" Vol LXIV, No 1

Describes alkylation of benzene using molecular compound of boron fluoride with orthophosphoric acid as catalyzer. Submitted 22 Sep 48.

26/49T6

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHKIN, Ya. M.

USSR/Chemistry - Petroleum Oct 51

"Effect of Boron Trifluoride on the Cracking of Hydrocarbons," Ya. M. Paushkin, Yu. S. Lipatov

"Zhur Obshch Khim" Vol XXI, No 10, pp 1794-1799

Cracked diesel oil over activated C and aluminosilicate, with and without presence of BF_3. With BF_3 on activiated C starting material became denser, yield of light fractions was reduced (due to polymerizing action of BF_3). BF_3 on carbon inhibits cracking above 450°. BF_3 on aluminosilicate increased yield of light fractions, octane

194T25

USSR/Chemistry - Petroleum (Contd) Oct 51

number of gasoline fraction. BF_3 reduces yield of unsatd hydrocarbons when added to either of the 2 catalysts.

194T25

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

USSR/Chemistry -- Petroleum Technology 21 Jan 51
Synthetic Elastomers

178T12

"Polymerization of Isobutene to High-Molecular Products," Acad A. F. Topchiyev, Ya. M. Paushkin, T. E. Lipatova

"Dok Ak Nauk SSSR" Vol LXXVI, No 3, pp 415-418

Isobutene can be polymerized to diisobutene which is later hydrogenated to isooctane. It can also be polymerized by means of chain reaction to products having high mol wt. In chain reaction, activity of catalysts with reference to deg of polymerization achieved is as follows: $BF_3 > C_6H_5OCH_3 \cdot BF_3 > H_3O \cdot BF_3 > H_3PO_4 \cdot BF_3 > (C_2H_5)_2O \cdot BF_3$.

[redacted] 178T12

USSR/Chemistry - Petroleum Technology 21 Jan 51
(Contd)

Activity of catalysts is different with ref to the stepwise reaction resulting in low polymers: [illegible] $H_3PO_4 \cdot BF_3 > H_2O \cdot BF_3 > H_2SO_4 + BF_3 > BF_3 > [illegible]$ $(R_1)_2O \cdot BF_3$. Solvent in which polymerization is carried out has effect on deg of polymerization. Copolymerization of isobutene with n-butene or propene was also investigated.

[redacted] 178T12

PAUSHKIN, YA. M.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

USSR/Chemistry - Cracking 1 Feb 51

"Inhibition and Activation of Cracking Over Carbon and Aluminosilicates," Ya. M. Paushkin, Yu. S. Lipatov

"Dok Ak Nauk SSSR" Vol LXXVI, No 4, pp 547-550

Diesel fuel was cracked over catalysts in question in presence of boron fluoride. Over activated carbon, addn of boron fluoride cuts in half yield of gasoline, lowers bromine number of resulting gasoline, and reduces yield of gas and content of unsatd compd in the gas. With aluminosilicate catalyst, addn of boron fluoride increases yield of gasoline by 15-45% depending on temp, lowers sp gr of the gasoline, above 400°

178T19

[redacted]

USSR/Chemistry - Cracking (Contd) 1 Feb 51

reduces content of unsatd com in gasoline and gas, and raises octane number of the gasoline by 0.7 to 66.8.

178T19

[redacted]

PAUSHKIN, Ya. M.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

The proton-ionic mechanism of alkylation and polymerization reactions. A. V. Topchiev, Ya. M. Paushkin, T. P. Vishnyakova, and M. V. Kurashov. *Doklady Akad. Nauk S.S.S.R.* 80: 381-4(1951).—The Whitmore (*C.A.* 28, 1327[9]) and Ciapetta (*C.A.* 40, 1441[7]) mechanisms involving intermediate carbonium ion formation through reaction between the hydrocarbon and the proton or the anion of the dissocd. catalyzing acid, are tested by confronting the elec. cond. of the catalyst and its catalytic activity in alkylation and in polymerization. The following data give the sp. elec. cond. in ohm^{-1} cm^{-1} at 25° (equiv. cond., mol. cond.); the activity in the liquid-phase alkylation of iso-C_6H_{10}, with C_3H_6, C_4H_8, C_6H_{10} (+ indicates active, 0 = inactive, (+) weakly active; − indicates absence of data); activity in the gas-phase polymerization, at 100°, of C_3H_6, C_4H_8, iso-C_4H_8. H_3PO_4 BF_3, 0.00722 (0.305, 0.614); +, +, +; (+), +, +. $H_4P_2O_7$ $2BF_3$, 0.0067 (0.27, 1.08); +, +, +; (+), +, +. H_2O BF_3, 0.0386 (0.94, 1.88); +, +, +, −, +, +. BF_3 $2H_2O$, 0.1660; 0, 0, 0; 0, 0, +; MeOH BF_3, 0.01371 (0.966, −); 0, (+), +, −, −, −; EtOH BF_3, 0.00854 (0.718, −); 0, (+), +; 0, −, −; PhOH BF_3, 0.000528; 0, 0, 0, 0, +, +. Et_2O BF_3, 0.0028 (0.350, −); 0, 0, 0, 0, 0, +. H_2SO_4 + BF_3, 0.0356, +, +, +, +, +, +. H_2SO_4, 0.0445 (1.158, 2.316), 0, (+), +; 0, (+), +. H_3PO_4, 0.0510 (0.385, 2.66); 0, 0, 0, 0, 0, +. HF, −, 0, +, +, 0, +, +. The absence of a correlation between ionization and the catalytic activities is evident. The catalysts H_3PO_4 BF_3 and $H_4P_2O_7$ $2BF_3$, which are most active in both alkylation and in polymerization, have a lower elec. cond. than H_2SO_4 and H_3PO_4. Satn. of the latter acids with HF lowers their elec. cond. whereas it increases their catalytic activity. These facts refute the carbonium-ion mechanism. It is more likely that the catalytic activity of the acids is due to complex formation, in analogy with the mechanism of the catalytic activity of $AlCl_3$. N. Thon

Translation W-22513, 24 Apr 52

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CA

Relation between the electric conductivity and the activity of catalysts in alkylation reactions. A. V. Topchiev, Ya. M. Paushkin, I. P. Vishnyakova and M. A. Kurashov. *Doklady Akad. Nauk S.S.S.R.* **80**, 611-13(1951); cf. C.A. **46**, 2476g. Although there is no parallelism between the elec. cond. of such alkylation catalysts as H_2SO_4, H_2SO_4 + BF_3, H_3PO_4, H_3PO_4 BF_3, and their catalytic activities, the fall of the elec. cond. of a sp. catalyst in the course of the reaction, due to its progressive consumption and depletion through esterification of the olefin by the acid, is an index of falling catalytic activity. This is illustrated by a series of successive runs of alkylation of 200 ml. C_3H_8 with, in each run, a total of 30.5 l. C_3H_6 (mol. ratio C_3H_6 : C_3H_8 = 1:1.75) passed at 1.5-5 l. hr. at 15°, in the presence of 25 ml. H_3PO_4 BF_3; after each run, the elec. cond. was detd. at 25° and the catalytic activity was measured by the yield of alkylate (fraction b. 120-70°, mostly contg. 75-80% iso PrPh). With an initial cond. of 0.0071 ohm^{-1} cm^{-1} the data in 5 successive runs (yield of alkylate in % of C_3H_6 passed; consumption of catalyst in % of alkylate; elec. cond.) were: 186, 46.2, 0.00647; 220, 21.4, 0.00627; 236, 13.9, 0.00618; 269, 9.9, 0.00535; 130, 8.5, 0.00058. Similar results were obtained in the alkylation of iso C_3H_8 with iso C_3H_6 in the presence of H_2SO_4. N. Thon

Translation W-23316, 1 aug 52
1952

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHKIN, Ya. M

USSR/Chemistry - Hydrocarbons 11 Dec 51

"Disproportionation Reaction of Isopentane With Aluminum Chloride Catalyst," Ya. M. Paushkin, L. M. Fleysh

"Dok Ak Nauk SSSR" Vol LXXXI, No 5, pp 845-848

At room temp, isopentane disproportionates under the action of aluminum chloride forming butanes to the extent of about 75% and a mix of hydrocarbons with boiling points above that of pentane. At 80°, liquid products were obtained in 30-35% actual yield. At 160-180°, isopentane is transformed into gaseous products completely.

210T41

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

NEKRASOV, A.S.; KRENTSEL', B.A.; PAUSHKIN, Ya.M., professor, otvetstvennyy redaktor.

[Chemical utilization of petroleum hydrocarbon gases] Khimicheskoe ispol'zovanie neftianykh uglevodorodnykh gazov. Moskva, Izd-vo Akademii nauk SSSR, 1952. 144 p. (MLRA 7:4)

(Petroleum) (Gas)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHKIN, YA. M.

USSR/Chemistry - Petroleum Jul/Aug 52

"Contemporary Trends in the Field of Application of Boron Fluorides for the Catalytic Conversion of Hydrocarbons," A.V. Topchiyev, Ya.M. Paushkin, Moscow, S.V. Zagorodniy, Voronezh

"Uspekh Khim" Vol XXI, No 4, pp 422-451

Discusses physicochem properties of BF_3, methods of prepg BF_3, chem properties of BF_3, alkylation of hydrocarbons, disproportionation and isomerization of hydrocarbons, cracking in the presence of BF_3, polymerization catalyzed by BF_3 sepn and purification of hydrocarbons with the aid of BF_3

216T23

compds, alkylation of phenols with olefins, alkylation of carboxylic acids with olefins. The discussion is based on 40 Russian references (among which publications by the authors of this review predominate) and 132 foreign references.

216T23

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

USSR/Chemistry - Fuels, Alkylation 11 Sep 52

PA 235T27

"The Thermal Process of the Destructive Alkylation of Pentane," Ya. M. Paushkin, Acad A.V. Topchiyev, B.A. Krentsel', I.M. Tolchinskiy, Inst of Petroleum, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol 86, No 2, pp 321-323

The destructive alkylation of pentane at high temps and pressures without the use of catalysts was carried out in a rotating autoclave. The optimum temp for converting pentane into liquid, high-boiling hydrocarbons lies between 450-460°; the pressure for this temper is 250-310 atm. The optimum time

235T27

for the reaction is 2 hrs. Prolongation of time, as well as increase in temp, leads to formation of gaseous products. The hydrocarbons formed during the thermal conversion of pentane are a result of destructive alkylation, cyclization, and cracking of pentane with subsequent polymerization of the unsatd hydrocarbons.

235T27

PAUSHKIN, Ya. M.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

1. TOPCHIYEV, A. V., Acad.; KLENTSEL', D. A.; LAUSKIN, Ya. M.; [illegible]

2. USSR (600)

4. Alkylation

7. High temperature destructive alkylation of pentane in the presence of oxidic catalysts. Dokl. AN SSSR, 86, No. 4, 1952

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

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHKIN, Ya. M.

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Transformation of pentane into liquid hydrocarbons and gas at 250-350 atmospheres and 400-500°. A. V. Topchiev, Ya. M. Paushkin, B. A. Krentsel, and L. M. Tolchinskii. Izv. Akad. Nauk S.S.S.R., Otd. Khim. Nauk, 1953, 237-42.—See C.A. 47, 10207d. H. L. H.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

Ya.M.

Journal of Applied Chemistry
June 1954
Fuel and Fuel Products

Conversion of pentane to liquid hydrocarbons and gas at 250–360 atmospheres and 400–500°. A. V. Topchiev, Ya. M. Paushkin, B. A. Krentsel, and I. M. Tolchinskii (*Izvestia*, 1953, No. 2, 260–265).—In the absence of a catalyst, *n*-pentane undergoes destructive alkylation, cyclisation, cracking, and polymerisation, whilst on various oxide catalysts (Al_2O_3, Cr_2O_3, etc.) large quantities of branched-chain hydrocarbons and naphthenes, including pentamethylenes, are formed; the % conversion is about the same, at the same temp., with or without catalyst. R. C. MURRAY.

CH

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHKIN, YA. M.

USSR/Chemistry - Boron Hydrides Sep 53

"Boron Hydrides," Ya.M. Paushkin

Usp Khim, Vol 22, No 9, pp 1114-1137.

Reviews recent developments in the chemistry of boron hydrides and of substances derived from them. Refers to the work of B.V. Nekrasov in this field. Points out that boron hydrides are very reactive substances which may form compds with a number of other compds and elements, i.e. metals, metal hydrides, ammonia, etc. The review is based primarily on foreign work: the bibliography consists of 6 USSR refs and 81 foreign refs.

268T15

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHKIN, YA. M.

Phosphate catalysts for polymerization in the oil industry. Ya. M. Paushkin and T. P. Vishnyakova. *Neftyanoe Khoz.* 31, No. 8, 38-45(1953); *Referat. Zhur., Khim.* 1956, Abstr. No. 768. —The compn. and properties of phosphate catalysts and their use for the polymerization of olefinic hydrocarbons to motor fuel are discussed. N. V.

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PAUSHKIN, YA. M.

USSR/Chemistry - Fuels, Aromatics 11 Feb 53

"The Alkylation on Benzene With Propylene in the Presence of Polyisopropylbenzene and Aluminum Chloride," Acad A. V. Topchiyev, Ya. M. Paushkin, M. V. Kurashev

DAN SSSR, Vol 88, No 5, pp 849-852

Studied the reaction products from the alkylation of benzene with propylene after polyisopropylbenzene had been added to the reaction mixt. Found that the alkylation can then take place with practically no polyisopropylbenzene formation.

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Paushkin, Ya. M.

2

4800

1423. Electrical conductivity as a catalyst characteristic in the reactions of polymerization and alkylation with boron fluoride compounds. Ye. M. Paushkin and I. V. Kozeshkov. Doklady Akad. Nauk [illegible] 1953, 93, 695-8.—Cat. used was $H_3PO_4BF_3$, which was [illegible] in heptane, tests at 20°-25° C on polymerization of propylene and isobutylene and alkylation of benzene with propylene. Cat. conductivity falls parallel to decrease of d_4, whilst there is no general relationship, for different cat., between conductivity and activity, a linear relationship holds for any given cat. Change in cat. is more gradual with alkylation than with polymerization. V. B.

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PAUSHKIN, Ya. M.

Electrical conductivity as a characteristic of the catalyst in alkylation and polymerization with sulfuric acid. Ya. M. Paushkin and M. V. Kurashev. *Doklady Akad. Nauk S.S.S.R.* 99, 69-72 (1954): cf. *C.A.* 47, 11923i.—The elec. cond. was det'd. for a series of H_2SO_4 catalysts and related to their catalytic activity. The elec. cond. was also det'd. in the alkylation and polymerization reactions. Propylene and isobutylene were used as polymerizing materials. The electrochem. properties changed sharply during the polymerization process, but the change was gradual for the alkylation of isopentane with isobutylene. The decrease in the cond. is attributed to the formation of esters that have low values of the elec. cond. J. Rovtar Leach

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PAUSHKIN, YA. M.

USSR.

62

Combined hydro-dehydropolymerization with boron fluoride on platinum and chromium catalysts. Ya. M. Paushkin and G. I. Kislik. *Doklady Akad. Nauk S.S.S.R.* 90, 557-9(1953).—Hydro-dehydropolymerization was studied on Pt and Cr catalysts covered by a layer of BF_3, the latter acting as a polymerization catalyst. The reactions were carried on with isoamylene and isobutylene at different temps. and with different catalysts (Pt-carbon with and without BF_3, C + BF_3, BF_3 + Cr_2O_3.Al_2O_3, and Cr_2O_3.Al_2O_3). A study of the phys. consts. of the polymers formed shows that increase in temp. decreases the degree of polymerization and decreases the mol. wt. of the polymers. The Pt- carbon catalyst did not yield any polymerization and the conversion of the olefin on C + BF_3 was only 84%, as compared to 90% for Pt-carbon + BF_3. The polymers formed with the latter catalyst contain aromatic compds. Polymers obtained with catalysts contg. BF_3 had decreased degree of unsatn. as the temp. was increased. There is a combined polymerization, cyclization, and hydrogenation reaction at 400° in the presence of platinized carbon and BF_3.

J. Roytar Leach

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PAUSHKIN, Ya. M.

(2)

Rôle of carbon and alumino-silicates in the polymerisation of olefines with gaseous boron trifluoride. Ya. M. Paushkin and L. I. Shcherbakov (*Dokl. Akad. Nauk. SSSR*, 1953, 90, 795—798).—The d_4^{20}, n_D^{20}, mol. wt. content of unsaturateds dimeric, trimeric, and tetrameric products from the polymerisation of *iso*- and *n*-butylene, and isoamylene on alumino-silicate and active C, both pure and when used as supports for BF_3, are recorded. It is suggested that BF_3 combines with alumino-silicates and is thereby activated for catalysis.

R. C. MURRAY.

10-14-54 MEF

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

Paushkin, Ya. M.

Cycloalkylation of isobutane and isopentane by cyclohexene with formation of alkylisohthanes. Ya. M. Paushkin and A. K. Zhomov. *Doklady Akad. Nauk S.S.S.R.* 90, 1047-9(1953); cf. *C.A.* 43, 8074*d*; 47, 2121*h*.—Alkylation of isopentane with cyclohexene was accomplished with $H_3PO_4.BF_3$ catalyst. When the catalyst and isopentane were agitated vigorously with slow addn. of cyclohexene, the following yields of fractions b. 180-210° and 192-4°, resp., were obtained under various conditions. With $H_3PO_4.BF_3$ catalyst and with a reagent ratio of 1:1 the yields were 12.8 and 9%, resp. With the cyclohexene-isopentane ratio 1:2 these were 37 and 35.8%, resp., in one run and 42 and 27%, in another. In these instances the addn. of the olefin required 2 hrs. (25 ml. used, with 30 ml. catalyst). With $AlCl_3$ catalyst (20 g.) and an equimolar ratio of reagents the yields were 14.9 and 0%, while at a 1:2 reagent ratio they were 9.8 and 0%, and with a 1:4 reagent ratio 2 and 2%, resp. With 30 ml. 94.2% H_2SO_4 catalyst and any reagent ratio the yield was zero; this catalyst leading to polymerization rather than to alkylation. Similarly, to 0.49 mole isobutane (at −15° in a Dewar flask) and 20 ml. $H_3PO_4.BF_3$ catalyst was slowly added 0.18 mole cyclohexene, as above, yielding 20% $C_6H_{11}R$ (R = cyclohexyl), b. 170-4°, aniline point 70. With isopentane the higher fraction consisted of $C_6H_{11}R$, b. 194-6°, aniline point 83. No other products were obtained. The probable structures of the products are (RCMe$_2$Et and RCMe$_3$).

G. M. Kosolapoff

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PAUSHKIN YA. M.

The character of alkylation of benzene by propylene with various catalysts in the presence of diisopropylbenzene. Ya. M. Paushkin, A. V. Topchiev and M. V. Kurashev. [illegible] Nauk S.S.S.R. 91, 1141-4(1953).—The following distribution of yields (%) of polyisopropylbenzene, b. above 170°, isopropylbenzene, b. 145-60°, and alkylate, b. 12[illegible]-70° was obtained with various catalysts: $AlCl_3$ 35.4, 51.[illegible]; 90% H_2SO_4 20.4, 62, 81; $H_3PO_4.BF_3$ 9.6, 91, 91; $H_2O.BF_3$ 5.9, 82, 93. Increase of the proportion of C_3H_6 to C_6H_6 from 1.5:1 to 4:1 with $H_3PO_4.BF_3$ catalyst improved the yield of the monoalkylate, this catalyst being generally superior to the others. When 1.5 moles C_3H_6 and 30 g. $C_6H_4(CHMe_2)_2$ were stirred 18 hrs. at 50° with the various catalysts, it was found that only $AlCl_3$ served to dealkylate and to form iso-PrPh; the other catalysts gave 0% RPh. When C_6H_6 was alkylated with C_3H_6 in the presence of $C_6H_4(CHMe_2)_2$ and, in the presence of 15% catalyst at 50°, it was found that the addn. of $R_2C_6H_4$ did not improve alkylation with the acidic catalysts, and actually reduced the yield or RPh.

G. M. Kosolapoff

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TOPCHIYEV, A.V., akademik; KURASHEV, M.V.; PAUSHKIN, Ya.M.

Reaction of benzene alkylation with propylene and a catalyst based on the system $H_2O \cdot BF_3 - H_3PO_4 \cdot BF_3$. Dokl.AN SSSR 93 no.5:839-842 D '53. (MLRA 6:12)

(Alkylation) (Benzene)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

KRENTSEL', B.A.; PAUSHKIN, Ya.M., professor, redaktor; LOKTEV, S.M., redaktor; POLYAKOVA, T.V., tekhnicheskiy redaktor.

[Principles of the synthesis of aliphatic alcohols from petroleum hydrocarbons] Osnovy sinteza alifaticheskikh spirtov iz neftianykh uglevodorodov. Moskva, Izd-vo Akad. nauk SSSR, 1954. 182 p. (MLRA 7:8)

(Alcohols) (Hydrocarbons)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHKIN, YA. M.

USSR.

Electrical conductivity of acid catalysts and its alteration in reactions of alkylation and polymerization. Ya. M. Paushkin and M. V. Kurashev. *Bull. Acad. Sci. U.S.S.R. Div. Chem. Sci.* 1954, 109-15 (Engl. translation).—See *C.A.* 48, 9797*h*. H. L. H.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHKIN, Ya. M.

62

Electrical conductivity of acid catalysts and its alteration in reactions of alkylation and polymerization. Ya. M. Paushkin and M. V. Kurashev. *Izvest. Akad. Nauk S.S.S.R., Otd. Khim. Nauk* 1954, 133-41; cf. *C.A.* 48, 3657*e*; 47, 11923*i*.—No relation was found between the activity and concn. of various acidic catalysts (HF, BF_3, hydrates, $BF_3.H_3PO_4$, $2BF_3.H_4P_2O_7$, $BF_3.ROH$, $BF_3.Et_2O$, $BF_3.H_2SO_4$, H_2SO_4, and H_3PO_4), although for a given catalyst it is possible to follow the change in activity during a reaction by means of changes in cond. Cond. declines in parallel with d and titratable acidity. Generally, in alkylation reactions cond. changes rather slowly, while in polymerization reactions of olefins the cond. of the catalyst declines rapidly. Typical curves of these changes are shown. Cf. Sklyarenko and Smirnov, *C.A.* 48, 6016*f*. G. M. Kosolapoff.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHKIN, YA. M.

Subject : USSR/Engineering AID P - 576

Card 1/1 Pub. 78 - 13/22

Author : Paushkin, Ya. M.

Title : Conversion of heavy petroleum residues into high caloric-value gaseous fuel and ethylene-containing gases

Periodical : Neft. Khoz., v. 32, #8, 56-61, Ag 1954

Abstract : General discussion of hydrogenation and gasification methods of heavy petroleum residues used in the Russian, British and American industries. The discussion concerns mainly gaseous fuel of high caloric value containing ethylene for use in automotive and agriculture engines, locomotives, ships, metallurgical furnaces and for other industrial purposes. Two tables, 2 diagrams and 6 Russian references (1936-1953).

Institution : None

Submitted : No date

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUS[illegible], Y. [illegible]

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

TOPCHIYEV, A.V.; PAUSHKIN, Ya. M.

[The use of boron fluoride and its compounds as catalysts in reaction of alkylation and polymerization] Primenenie ftoristogo bora i ego soedinenii kak katalizatovor v reaktsiiakh alkilirovaniia i polimerizatsii. Moskva, Izd-vo Akademii nauk SSSR, 1955. 53 p. (MLRA 8:7)

(Boron fluoride) (Alkylation) (Polymers and polymerization)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHKIN, Ya.M.; RUDENKO, M.G.; doktor khimicheskikh nauk; redaktor; SOKOLOVA, T.F., tekhnicheskiy redaktor.

[Catalytic polymerization of olefins into motor fuel] Kataliticheskaia polumerizatsiia olefinov v motornoe toplivo. Moskva, Izd-vo Akademii nauk SSSR, 1955. 183 p. (MLRA 8:8)
(Olefins) (Polymers and polymerization)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHKIN, Ya.M.; OSIPOVA, L.V.

Boron fluoride compounds with free radicals and with hydrocarbon chlorides. Dokl. AN SSSR 103 no.3:439-442 Jl'55. (MLRA 8:11)

1. Institut nefti Akademii nauk SSSR. Predstavleno akademikom A.V.Topchiyevym

(Boron fluoride) (Hydrocarbons)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

TOPCHIEV, A.V.; ZAVGORODNIY, S.V.; PAUSHKIN, Ya.M.; SHUYKIN, N.I., redaktor; STRUCHKOV, Yu.T., redaktor; [redacted], Ye.V., tekhnicheskiy redaktor

[Boron fluoride and its compounds as catalyzers in organic chemistry] Ftoristyi bor i ego soedineniia kak katalizatory v organicheskoi khimii. Moskva, Izd-vo Akademii nauk SSSR, 1956. 356 p. (MLRA 9:4)

1. Chlen-korrespondent AN SSSR (for Shuykin)
(Boron fluoride)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

PAUSHKIN, YA. M.

Alkylation of benzene with propylene, propane, and butylene with the use of a phosphoric acid-boron trifluoride catalyst. I. F. Baev, A. V. Topchiev, Ya. M. Paushkin, and M. V. Kyrashev. *Khim. Pererabotka Nefti Uglevodorod., Trudy Vsesoyuz. Soveshchan. Kompleks. Khim. Pererabot. Nefti. Gazov* 1955, 429-31.—Results of exptl. studies on the alkylation of benzene with propylene, propane, and butylene with the use of a catalyst prepd. from tech. H_3PO_4 and BF_3 demonstrate its superiority over $AlCl_3$. The alkylbenzenes so prepd. may be converted into the corresponding hydroperoxides, isopropylbenzene, butylbenzene, and diisopropylbenzene. H. L. Olin

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4E4j
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Paushkin, Ya. M.

Effectiveness of various catalysts in alkylation of benzene with propylene. Ya. M. Paushkin and M. V. Kurashev (Petroleum Inst., Kuibyshev). *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1950, 1006-15.—In alkylation of C_6H_6 under comparable conditions (50°, 150 g. C_6H_6, 42 g. C_3H_6) with the various catalysts, it was found that the catalyst of $H_3PO_4.BF_3$ was most effective (with 5% catalyst the yield of alkylate was 71.8%, with 35% catalyst, 84.5%). Catalysts such as $H_2O.BF_3$, $H_3PO_4.BF_3$, $AlCl_3$, H_2SO_4, and $AlCl_3.HSO_4$ were less effective. With $AlCl_3$ as catalyst the reaction of C_6H_6 and C_3H_6 in the presence of $PrCl$ yielded polyisopropylbenzenes, but this side reaction could be blocked by addn. to the reaction mixt. of polyisopropylbenzenes (about 1 mole per mole of C_6H_6). The yields of alkylates with various proportions of the reactants were tabulated. In alkylation with acidic catalysts such as H_2SO_4 or H_3PO_4-BF_3 the addn. of polyisopropylbenzene did not produce the above result since the reaction did not approach an equil. among the reactive components. — G. M. Kosolapoff

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001239510017-2

Paushkin, Ya. M.

Alkylation of benzene with butylenes with a catalyst based on boron fluoride. A. V. Topchiev, M. V. Kurashev, and Ya. M. Paushkin. *Proc. Acad. Sci. U.S.S.R., Sect. Chem.* 107, 1[1-4(1956)(Engl. translation.—See *C.A.* 50, 14512b. B. M. F.

Chem

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Inst. Petroleum, Acad. Sci USSR

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