"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

Influence of shallows ...

ASSOCIATION: Instytut hidrologiyi ta hidrotekhniky AN UkrRSR (Institute of Hydrology and Hydraulic Engineering of the AS UkrRSR)

PRESENTED: by Academician H. Ye. Pavlenko of the AS UkrRSR

SUBMITTED: July 31, 1961

Card 6/6

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

S/198/62/008/002/009/011
D299/D301

AUTHOR: Panchenkov, A.M. (Kyyiv)

TITLE: Two-dimensional motion of a hydrofoil near the free surface of a fluid

PERIODICAL: Prykladna mekhanika, v. 8, no. 2, 1962, 200 - 213

TEXT: The motion of a submerged hydrofoil is considered. The theory of small waves is used. The problem is solved in the first approximation which is sufficient for practical calculations; thereby, N.Ye. Kochin's function $H(\lambda)$ is introduced, the complex velocity of the hydrofoil near the free surface being replaced by the complex velocity of motion in an infinite stream. The function H is expressed by

$$\bar{H}(\lambda) = \int_{c_1} e^{-i\lambda z} \bar{v}_\infty(z)\, dz, \tag{9}$$

Thereupon, the expression for the hydrodynamic forces becomes:

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

S/198/62/008/002/009/011
D299/D301

Two-dimensional motion of a ...

$$P - iQ = \varrho v_0 \Gamma_\infty - \frac{\varrho}{2\pi} \int_0^\infty |H(\lambda)|^2 - i\nu\varrho |H(\nu)|^2 + \frac{\varrho\nu}{\pi} \int_{-\infty}^{1} |H(\nu - \lambda\nu)|^2 \frac{d\lambda}{\lambda}. \quad (10)$$

Formula (10) differs substantially from Kochin's formula, the circulation Γ_∞ being independent of the depth of submersion; formula (10) permits one to completely determine the forces acting on a body which moves near the free surface of a fluid, since Γ_∞ $\overline{v}_\infty(z)$ are determined by the motion of the body in the infinite stream. The formulas for the lift force and the wave resistance are:

$$P = \varrho v_0 \Gamma_\infty - \frac{\varrho}{2\pi} \int_0^\infty |H(\lambda)|^2 d\lambda + \frac{\varrho\nu}{\pi} \int_{-\infty}^{1} |H(\nu - \lambda\nu)|^2 \frac{d\lambda}{\lambda} + D, \quad (11)$$

$$Q = \varrho\nu |H(\nu)|^2,$$

where

$$H(\lambda) = \int_c e^{-i\lambda z} \overline{v}_\infty(z)\, dz.$$

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

where the coefficients B, C, L can be readily determined. The following particular cases are considered: A thin plate, a thin airfoil and Zhukovs'kiy's airfoil. The lift coefficient, calculated by the obtained formula, is in good agreement with the experimental results. There are 3 figures and 7 references: 6 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: T. Hishiama, Hydrodynamical investigation on submerged hydrofoil, A.S.N.E., Journal, August, 1958.

ASSOCIATION: Instytut hidrolohiyi i hidrotekhniky AN URSR (Institute of Hydrology and Hydraulic Engineering of the AS UkrRSR)

SUBMITTED: January 25, 1961

Card 4/4

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

L 10501-63 EPA(b)/EWT(d)/FAS/EWT(m)/BDS/T-2--AFFTC/ASD--Pd-4
ACCESSION NR: AP3000461 S/0198/63/009/003/0331/0335

AUTHOR: Panchenkov, A. M. (Kiev); Yukhy*menko, A. I. (Kiev)

TITLE: Establishing the optimum relationships of quantities which characterize the motion of a hydrofoil wing

SOURCE: Prykladna mekhanika, v. 9, no. 3, 1963, 331-335

TOPIC TAGS: hydrofoil-motion parameter, hydrofoil-wing lift, hydrofoil-wing dihedral

ABSTRACT: The practical optimal angles of attack of a hydrofoil ensuring the necessary vertical stability near the open water surface are discussed first. The total drag of a hydrofoil and relationships among drag components associated with the optimum lift are considered in deriving formulas of the optimum lift coefficient for horizontal and dihedral wings. These formulas give the dependence of the lift on the profile drag of the hydrofoil, relative depth of submersion, aspect ratio, and dihedral angle of the wing. A formula for the optimum dihedral angle derived as a function of these parameters is plotted in a diagram. A quadratic equation in terms of nondimensional hydrodynamic and constructional parameters of horizontal and dihedral wings is derived. By means of this equation, a proper

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

L 10501-63
ACCESSION NR: AP3000461

selection of one or the other wing system can be made according to the particular conditions and hydrodynamic characteristics of the hydrofoil. The equation is plotted in a diagram. Orig. art. has: 2 figures and 19 formulas.

ASSOCIATION: Insty*tut gidrologiyi i gidrotekhniky* AN URSR (Institute of Hydrology and Hydraulic Engineering, AN URSR)

SUBMITTED: 01Feb62 DATE ACQ: 19Jun63 ENCL: 00

SUB CODE: AC NO REF SOV: 003 OTHER: 000

SS/WS
Card 2/2

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

L 6592-65 EWT(d)/EWT(m)/EWP(e) AFWL/ASD(f)/SSD/AEDC(a)/AFETR/APGC(a)/AFD(p)-3
EM

ACCESSION NR: AP4023367 S/0198/64/010/002/0173/0180

AUTHOR: Panchenkov, A.M. (Panchenkov, A.N.)(Kiev); Stepanov, V.O. (Stepanov, V.A.) (Kiev)

TITLE: A method for computing the load distribution over the span of a hydrofoil

SOURCE: Pry*kladna mekhanika, v. 10, no. 2, 1964, 173-180

TOPIC TAGS: hydrodynamics, hydrofoil, load distribution, hydrofoil loading, lift

ABSTRACT: The problem of the load distribution along the span of a hydrofoil is reduced to the solution of a basic, singular, integro-differential equation by an iteration method with a very small number of approximations. An airfoil with elliptical distribution of circulation in an infinite flow is investigated and a closed solution is obtained with the assumption that this circulation exists under a free surface. Practical formulas for determining the hydromechanical coefficients of the hydrofoil are presented. "The authors express their gratitude to Engineers A.I. Yukhy*menko and A.V. Miodusheva'ka, who carried out all of the difficult numerical computations." Orig. art. has: 1 table, 1 figure and 15 formulas.

Card 1/2

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

L 5994-65

ACCESSION NR: AP4023367

ASSOCIATION: Insty*tut mekhaniky* AN URSR (Institute of Mechanics AN URSR)

SUBMITTED: 07Dec62 ENCL 00 SUB CODE: AR, ME

NO REF SOV: 003 OTHER: 001

Card 2/2

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PANCHENKOV, A.N.

Approximate calculation of the lifting power of blade near the free surface. PMTF no.4:67-68 N-D '60. (MIRA 14:7)
(Lift(Aerodynamics))

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PANCHENKOV, A.N. [Panchenkov, A.M.]

Practical method of distribution weights and water support in the movement of vessels on underwater wings. Visti Inst. hidrol. i hidr. AN URSR 19:51-61 '61. (MIRA 15:7)

(Planing hulls) (Naval architecture)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PANCHENKOV, A.N. [Panchenkov, A.M.]

Determining the coefficient of lifting power of a slightly submerged underwater wing. Visti Inst. hidrol. i hidr. AN URSR 19:117-119 '61. (MIRA 15:7)

(Planing hulls)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

S/021/62/000/004/006/012
D299/D302

AUTHOR: Panchenkov, A.N.

TITLE: Recalculation of results of hydrofoil tests under various conditions of motion

PERIODICAL: Akademiya nauk UkrRSR. Dopovidi, no. 4, 1962, 452-455

TEXT: The formulas are given for recalculating results of tests with hydrofoils of finite span to infinite span and from one span to another. The working formula for the lift coefficient of a hydrofoil, submerged to a depth h, with $Fr_{rb} = \frac{v}{\sqrt{gb}} \to \infty$ (where b is the chord), is

$$C_{y\tilde{n}\lambda} = \frac{\psi_0 a_\infty}{1 + \frac{\psi_0 a_\infty}{\pi\lambda}(1+\tau_1)\zeta}(\alpha_0 + \alpha_k - \Delta\alpha_i). \qquad (1)$$

where α_0 - the angle of zero lift in an infinite stream; α_k - the angle of attack; Ψ_0 - a function (experimentally determined) which

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Recalculation of results of ...

takes into account the influence of the surface on a_∞ (the angular coefficient of function $C_y = f(\alpha)$); τ_1 and ζ are correction terms; $\Delta\alpha_i$ is the change in the zero lift angle due to the free surface. In the processing of results, it is simpler to use the formula

$$C_{y\bar{\psi}\lambda} = \frac{\bar{\psi} a_\infty}{1 + \frac{a_\infty}{\pi\lambda}(1+\tau_1)}(\alpha + \alpha_k - \Delta\alpha_i), \qquad (2)$$

(where $\bar{\psi}$ is given by a formula involving $\bar{\psi}_0$, a_∞, τ_1 and λ). Recalculation from one span to another, can be effected by formula

$$\bar{\psi}_2 = \bar{\psi}_1 \frac{1 + \frac{a_\infty}{\pi\lambda_2}(1+\tau_2)}{1 + \frac{a_\infty}{\pi\lambda_1}(1+\tau_1)(1-\bar{\psi}_1\zeta_1) + \bar{\psi}_1\zeta_2\frac{a_\infty}{\pi\lambda_2}(1+\tau_2)}. \qquad (3)$$

Experiment has shown that the influence of F_{rb} on the lift force becomes insignificant with $F_{rb} > 4.5$, which characterizes actual conditions of motion of airfoils. In many cases, the tests in experi-

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Recalculation of results of ... S/021/62/000/004/006/012
D299/D302

PRESENTED: by Academician H.Ye. Pavlenko, AS UkrRSR

SUBMITTED: August 15, 1961

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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PANCHENKOV, A., kand.fiz.-matem.nauk

Across the water on wings. Nauka i zhyttia 12 no.11:36-37 N '62. (MIRA 16:1)
(Hydroplane boats)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PANCHENKOV, A.N. [Panchenkov, A.M.] (Kiyev)

Motion of a thin wing near the free surface of a liquid.
Prykl.mekh. 8 no.4:433-442 '62. (MIRA 15:9)

1. Institut gidrologii i gidrotekhniki AN USSR.
(Hydrodynamics)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

L 55917-65 EWT(1) EWP(m) EWA(d)/FCS(k)/EWA(1) Pe-5

ACCESSION NR: AP5016261

AUTHOR: Laichenk[illegible] (Kiev)

TITLE: The motion of a submerged hydrofoil in a tridimensional fluid flow of finite depth

SOURCE: Inzhenernyy zhurnal, v. 5, no. 3, 1965, 407-415

TOPIC TAGS: hydrofoil craft, marine equipment

ABSTRACT: The motion of a submerged hydrofoil of finite span in a tridimensional fluid flow of finite depth h is analyzed, assuming a steady flow relative to the hydrofoil. In determining the velocity potential $\varphi(x,y,z)$, it is assumed that linear boundary conditions exist on the free surface ($z = 0$), the bottom ($z = h_0$), the surface s of the hydrofoil, and at infinity ahead of the hydrofoil, and that $\partial\varphi/\partial x$ = constant in a flow outside of s at v_0 = constant, but that $\partial\varphi/\partial y$ is possibly discontinued behind the hydrofoil. Integrating $\partial\varphi/\partial x$, and introducing a simplification permitted by the lifting-line theory, expressions for φ on the free surface ($F_r \to \infty$, $\nu \to 0$, $d\varphi/dx = 0$) and at infinite depth ($h \to \infty$), in motion between two solid walls ($F_r \to 0$, $\nu \to \infty$), are derived. Proceeding from the

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

L 5693?-65
ACCESSION NR: AP5016261

expression for the derivative of the flow velocity $\partial\varphi/\partial x$, a singular integro-differential equation for circulation in nondimensional form is found for $l/h \to \infty$, $\omega \to 0$ ($\omega = \nu l/2$, $\nu = g/v_0^2$, $l = 1/2$ span), and $\bar{\omega} \to 0$. The latter two correspond to boundary conditions on the free surface $\partial\varphi/\partial z = 0$ and $\partial\varphi/\partial x = 0$. A final formula gives an accurate value for the circulation around a hydrofoil with an elliptical distribution of circulation along its span and moving in an infinite flow. The elliptical distribution is not the optimum distribution of circulation in the case of a hydrofoil moving in a restricted flow. When moving in shallow water with $\bar{\omega} \to 0$, the resistance of the hydrofoil decreases considerably. Orig. art. has: 4 formulas and 1 figure. [GE]

ASSOCIATION: none

SUBMITTED: 15Oct62 ENCL: 00 SUB CODE: ME, MS

NO REF SOV: 005 OTHER: 002 ATD PRESS: 4032

Card 2/2

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

L 36472-66 EWP(m)/EWT(d)/EWT(1)/EWT(m)/EWP(h)/T/EWP(1) WW/DJ/GD

ACC NR: AT6016714 (N) SOURCE CODE: UR/0000/65/000/000/0007/0020

AUTHOR: Panchenkov, A. N.

47

ORG: Institute of Hydromechanics AN UkrSSR (Institut gidromekhaniki AN USSR) B+1

TITLE: Linear problems in the hydrodynamics of a hydrofoil on the boundary surface of fluids with different densities

SOURCE: AN UkrSSR. Gidrodinamika bol'shikh skorostey (High speed hydrodynamics), no. 1, Kiev, Izd-vo Naukova dumka, 1965, 7-20

TOPIC TAGS: hydrodynamic theory, hydrofoil, boundary layer theory

ABSTRACT: For a bearing surface with a curvilinear axis, the potentials Θ_j and Φ_j (subscript 1 refers to the upper half space and subscript 2 to the lower half space) are determined by the operators

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

ACC NR: AT6004256 (N) SOURCE CODE: UR/0000/65/000/000/0020/0032

AUTHOR: Panchenkov, A.N. (Candidate of physico-mathematical sciences)

ORG: Hydromechanical Institute of the AN UkrSSR (Institut gidromekhaniki AN UkrSSR)

TITLE: A submerged vane with small elongation

SOURCE: AN UkrSSR. Issledovaniya po prikladnoy gidrodinamike (Research in applied hydrodynamics). Kiev, Izd-vo Naukova dumka, 1965, 20-32

TOPIC TAGS: hydrodynamic theory, Froude number, Prandtl boundary layer

ABSTRACT: In the case of large and small Froude numbers, the theory of a vane with small elongation has been successfully generalized to include the case of a submerged vane. However, difficulties are encountered in extending this theory to the case of arbitrary Froude numbers. These difficulties are connected with determination of the assumptions which must be introduced into the theory of a submerged supporting surface at arbitrary Froude numbers. The present article is a mathematical development of the theory of a submerged vane with small elongation. As approximations for a vane with small elongation, the theory takes the values of the hydromechanical operators (the potentials of the velocities, φ, and of the accelerations, θ, and the

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

ACC NR: AT6004256

derivatives of the potential of the velocities) at infinity. The article also considers the question of the correctness of the Prandtl theory. Orig. art. has: 38 formulas.

SUB CODE: 20/ SUBM DATE: 26Aug65/ ORIG REF: 003/ SOV REF: 000/

OTH REF: 002

Card 2/2

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

L 9232-66 EWT(1)/EWP(m)/EPF(n)-2/EWA(d)/ETC(m) WW

ACC NR: AP6000242 SOURCE CODE: UR/0198/65/001/010/0115/0123

AUTHORS: Belinskiy, V. G. (Kiev); Panchenkov, A. N. (Kiev)

ORG: Institute of Hydromechanics, AN UkrSSR (Institut gidromekhaniki, AN UkrSSR)

TITLE: Motion of a vertical airfoil in liquid of finite depth

SOURCE: Prikladnaya mekhanika, v. 1, no. 10, 1965, 115-123

TOPIC TAGS: airfoil, singular integral, integral equation, hydrodynamics, incompressible flow

ABSTRACT: The method of acceleration potential is used to solve the linear problem of a thin airfoil moving in an incompressible fluid of finite depth H with an arbitrary Froude number. The airfoil is immersed in the fluid vertically at a small angle of attack α and moves with a constant horizontal velocity v_0. A moving coordinate system is adopted with the plane xy coinciding with the undisturbed level of the fluid. The acceleration potential is defined by

$$\Theta = -v_0\varphi_x,$$

the linear boundary conditions at the free liquid surface by

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

$$\varphi_{xx} - \frac{\mu}{v_0}\varphi_x + \nu\varphi_z = 0; \qquad \Theta_{xx} - \frac{\mu}{v_0}\Theta_x + \nu\Theta_z = 0,$$

and at the airfoil surface S by

$$\varphi_y = -v_0 a.$$

The problem consists of finding a solution to the Laplace equation in the domain bounded by the planes x, y, 0, and x, y, -H, excluding the surface S. The solution should also satisfy the above boundary conditions with the following integral relation

$$\varphi = -\frac{1}{v_0}\int_{\infty}^{z}\Theta(\tau, y, z)\,d\tau.$$

This leads to the singular integral equation for $\Theta(x,y,z)$ given by

$$\Theta(x, y, z) = \frac{v_0}{4\pi}\iint_S \gamma(\Theta)\frac{\partial}{\partial n}\left[\frac{1}{r} + \frac{1}{r_1} + \right.$$

$$\left. + \frac{4}{\pi}\mathrm{Re}\int_{-\frac{\pi}{2}}^{+\frac{\pi}{2}}\int_0^{\infty}\frac{e^{-\lambda H}e^{i\lambda\eta}\operatorname{ch}\lambda(z+H)\operatorname{ch}\lambda(\zeta+H)(\lambda\cos^2\theta+\nu)}{(\nu\operatorname{th}\lambda H - \lambda\cos^2\theta)\operatorname{ch}\lambda H}d\lambda d\theta\right] -.$$

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

$$-\mathrm{Re}\,4i\nu\int_{-\frac{\pi}{2}}^{+\frac{\pi}{2}}\frac{e^{i\lambda_0 x}\operatorname{ch}\lambda_0(z+H)\operatorname{ch}\lambda_0(\zeta+H)}{\cos^2\theta\operatorname{ch}^2\lambda_0 H-\nu H}\,d\theta\Bigg]\,dS.$$

For the case $H \to \infty$, a fluid of infinite depth, the above equation leads to the known solution of G. V. Sobolev (Zadachi o rule, dvizhushchemsya vblizi svobodnoy poverkhnosti zhidkosti, Trudy LKI, v. XXXIX, 1962). Orig. art. has: 23 equations.

SUB CODE: 20/ SUBM DATE: 16Feb65/ ORIG REF: 008

Card 3/3

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

L 24787-66 EWT(l)/EWP(m)/EPF(n)-2/EWA(d)/ETC(m)-6 JKT/WW

ACC NR: AP6014221 (N) SOURCE CODE: UR/0198/66/002/004/0142/0143

AUTHOR: Panchenkov, A. N.; Lukashenko, A. N.; Shaybo, N. V.

ORG: None

96
85
B

TITLE: Scientific conference on the hydrodynamics of a submerged foil

SOURCE: Prikladnaya mekhanika, v. 2, no. 4, 1966, 142-143

TOPIC TAGS: hydrodynamics, fluid dynamics, flow analysis, cavitation, cavity flow, boundary layer flow

ABSTRACT: A scientific conference on the aerohydrodynamics of a foil near a free surface and a solid surface was held at the Kiev Institute of Hydromechanics of the USSR Academy of Sciences from 28—30 October 1965, with 106 delegates from 45 Soviet institutions participating. The following scientific institutions were represented: Central Scientific-Research Institute im. Academician A. N. Krylov; Central Institute of Aerohydrodynamics; Institute of Hydrodynamics, Siberian Branch, USSR Academy of Sciences ; Leningrad Shipbuilding Institute; Leningrad Institute of Water Transportation Engineers; Central Scientific Research Institute of the Maritime Fleet; Novosibirsk and Gor'kiy Institutes of Water Transportation Engineers; Kazan' and Kiyev State Universities; Institute of Mechanics, Moscow State University; Kiyev Institute of the Civil Air Fleet; and Khar'kov Aviation Institute. Forty-one papers were presented which dealt with actual aerohydrodynamic problems of high-speed objects, among

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which were the following: A. N. Panchenkov discussed problems of the unsteady motion of a foil at a variable distance from a surface, and the hydrodynamic boundary-value problem of a cavitating submerged foil. K. K. Fedyayevskiy presented an approximate nonlinear theory of a rectangular low-aspect-ratio foil moving near a fluid surface at high Froude numbers. V. I. Rudomanov reported on takeoff (lift) and landing (settling) dynamics of craft utilizing surface effect. V. M. Ivchenko reported on unsteady hydrodynamic problems of supercavitating bodies and the use of electronic digital computers in propeller design. G. A. Ryazanov's paper dealt with electric flow simulation around foils of infinite span, and magnetic flow simulation around foils of finite span. V. V. Kopeyetskiy reported on the use of a magnetic simulation method for estimating the effect of blade thickness in the design of a propeller with a given blade pressure differential. V. A. Kas'yanov and G. N. Boyarskiy reported on investigations made on electrohydrodynamic flows and on boundary-layer control along a foil profile. Ye. D. Udartsev reviewed methods for the laminarization of the boundary layer of electrohydrodynamic flows. Yu. K. Biktimirov reported on specific features in plotting the potential of velocities caused by a source moving in a fluid. R. B. Nudel'man discussed bodies moving in a multilayer fluid, and V. T. Tokarev reported on a quantum-hydrodynamical analogy and its application in hydrodynamics problems. In a final statement, it is mentioned that the conference emphasized the importance and urgency of problems in aerohydrodynamics of a foil near a surface. The lag of Soviet science in the study of supercavitating foils was also mentioned, and a more intense study of three-dimensional cavitation problems was recommended. It was agreed that the proceedings of this conference be published. [GE]

SUB CODE: 13, 01, 20/ SUBM DATE: none/ ATD Press: 4250
Card 2/2 90

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

ACC NR: AM5013210 MONOGRAPH UR

Panchenkov, Anatoliy Nikolayevich

Hydrofoil hydrodynamics (Gidrodinamika podvodnogo kryla) Kiev, Naukova dumka, 1965. 551 p. illus., biblio. 1,000 copies printed. (At head of title: Akademiya nauk Ukrainskoy SSR. Institut gidrodinamiki)

TOPIC TAGS: hydrodynamic theory, hydrofoil, motion mechanics, unsteady flow, dimensional flow, liquid flow, fluid mechanics, plane flow, fluid dynamics, hydrodynamics

PURPOSE AND COVERAGE: This book presents the results of research on the theory of hydrofoils, paying much attention to the mechanical and mathematical aspect, and to the development of effective methods for solving the basic problems. The theory of steady motion of a hydrofoil of arbitrary profile in plane parallel flow, the linearized theory of a thin hydrofoil in plane and in three-dimensional flow, and the theory of a hydrofoil in unsteady flow are considered. Problems of interaction of hydrofoils and of their motion near the interface of liquids of various density are discussed in detail. The research results incorporated in Ch. VII were obtained by the author in cooperation with A. I. Yukhimenko, S. V. Koval'chuk, A.V. Miodushevskiy, I. P. Tkachenko, P. I. Zinchuk, and V. A. Stepanov. The author thanks N. A. Kil'chevskiy (Corresponding Member AN UkrSSR), P. F. Fil'chakov (Corresponding Member

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APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

ACC NR: AM5013210

AN UkrSSR), I. T. Yegorov (Dr. of Technical Sciences), M. YA. Alfer'yev (Dr. of Technical Sciences), M. M. Sidlyar (Candidate of Physics and Mathematics), V. I. Merkulov (Candidate of Physics and Mathematics), A. V. Vasil'yev (Candidate of Technical Sciences), M. G. Starostin (Candidate of Technical Sciences), V. I. Putyate (Candidate of Technical Sciences), and D. V. Rode, A. G. Gubin, and V. M. Roman for their discussions.

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

ACC NR: AM5013210

SUB CODE: 20,13/ SUBM DATE: 25Dec64/ SOV REF: 175/ OTH REF: 060

Card 3/3

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PA76T68

PANCHENKOV, M. M.

USSR/Medicine - Heart, Diseases May 1948
Medicine - Drugs

"Erysid [Erizid], New Preparation for the Treatment of Decompensation of the Ventricles of the Heart," M. M. Panchenkov, Hosp Therapeutics Clinic, First Moscow Ord of Lenin Med Inst, 2 pp

"Sov Meditsina" No 5

Erysid is prepared from the celandine plant (Erysimum). Resembles strophantine, but its therapeutic effect is considerably greater. It eliminates left ventricular decompensation.

76T68

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PANCHENKOV, M.M.

Combination therapy of peptic ulcer with Gnaphalium and Polemonium. Klin.med., Moskva no.3:92-93 Mr '50. (CLML 19:2)

1. Of the Hospital Therapeutic Clinic (Director - Honored Worker in Science Prof. D.A.Burmin), First Moscow Order of Lenin Medical Institute and of the Department of Pharmacology (Head -- Honored Worker in Science Prof. V.V.Nikolayev) of the All-Union Institute of Medicinal and Aromatic Plants, Moscow.

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PANCHENKOV, M.M., dotsent

Professor L.A. Burmin, student of A.A. Ostroumov; anniversary of his death. Terap.arkh.27 no.3:84-85 '55. (MLRA 8:9)
(BIOGRAPHIES,
Burmin, D.M.)

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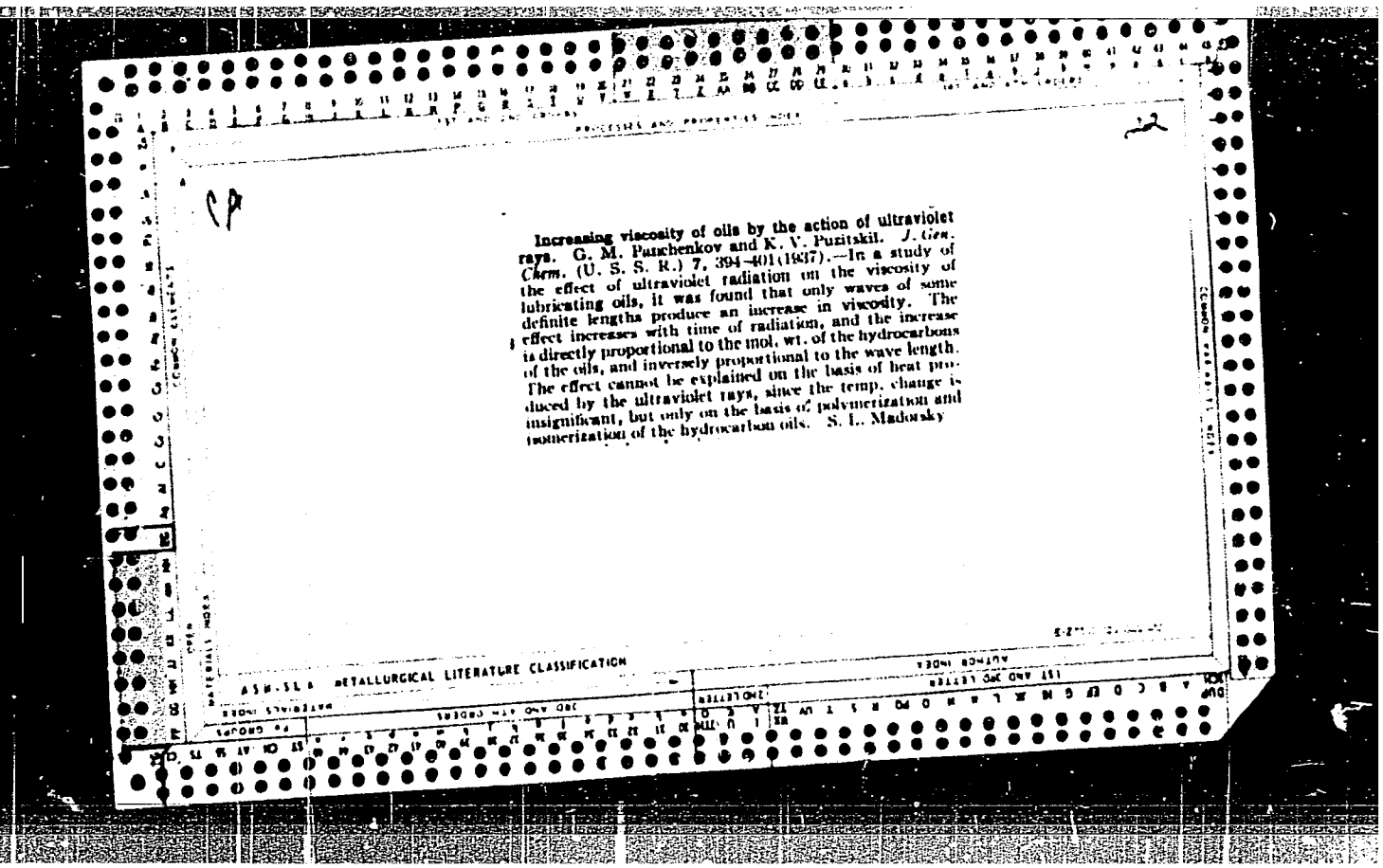

Increasing viscosity of oils by the action of ultraviolet rays. G. M. Panchenkov and K. V. Puzitskii. *J. Gen. Chem.* (U. S. S. R.) 7, 394–401 (1937).—In a study of the effect of ultraviolet radiation on the viscosity of lubricating oils, it was found that only waves of some definite lengths produce an increase in viscosity. The effect increases with time of radiation, and the increase is directly proportional to the mol. wt. of the hydrocarbons of the oils, and inversely proportional to the wave length. The effect cannot be explained on the basis of heat produced by the ultraviolet rays, since the temp. change is insignificant, but only on the basis of polymerization and isomerization of the hydrocarbon oils. S. L. Madorsky

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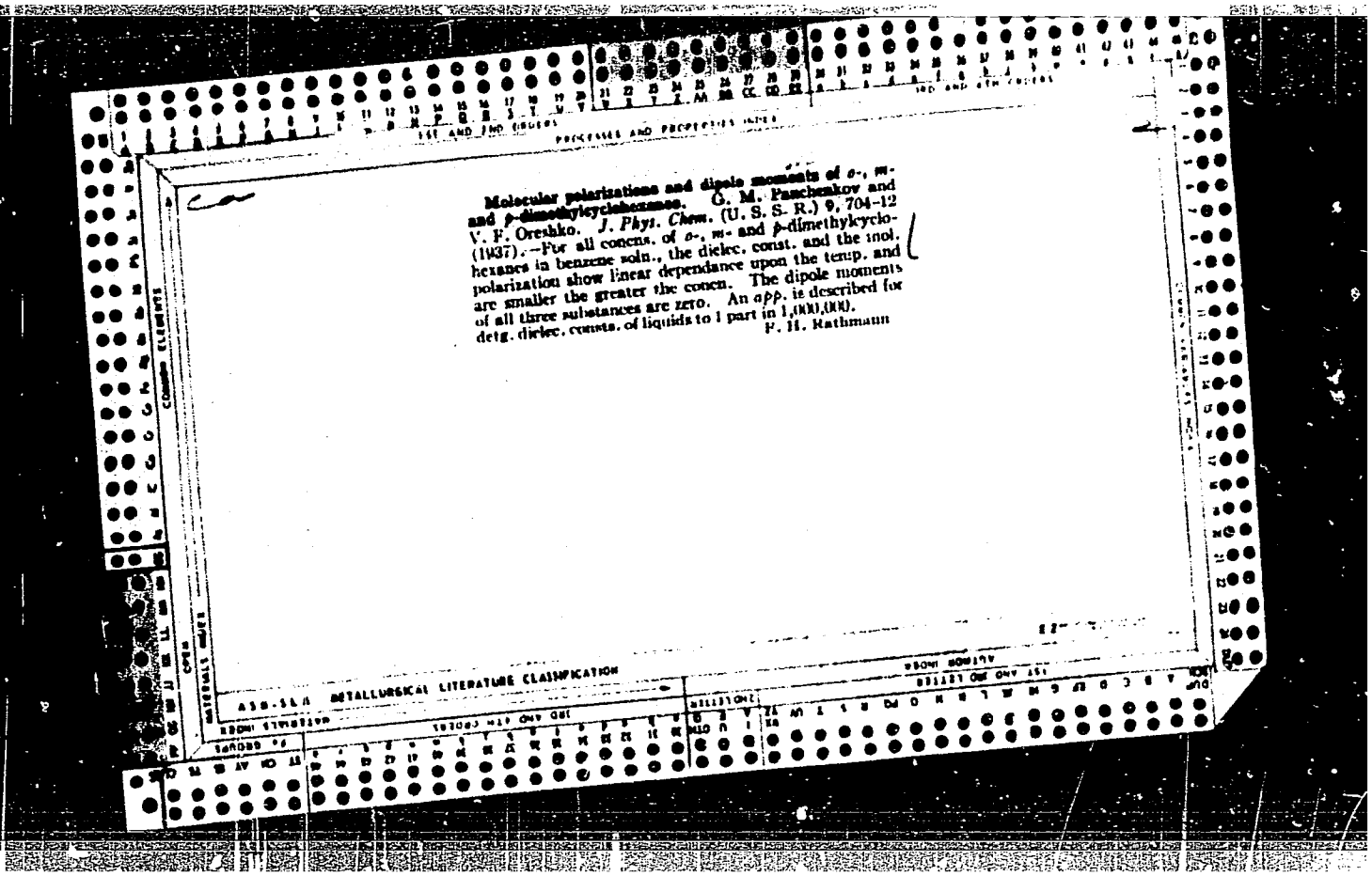

Molecular polarizations and dipole moments of *o*-, *m*- and *p*-dimethylcyclohexanes. G. M. Panchenkov and V. F. Oreshko. *J. Phys. Chem.* (U. S. S. R.) 9, 704–12 (1937).—For all concns. of *o*-, *m*- and *p*-dimethylcyclohexanes in benzene soln., the dielec. const. and the mol. polarization show linear dependance upon the temp. and are smaller the greater the concn. The dipole moments of all three substances are zero. An *app.* is described for detg. dielec. consts. of liquids to 1 part in 1,000,000.
F. H. Rathmann

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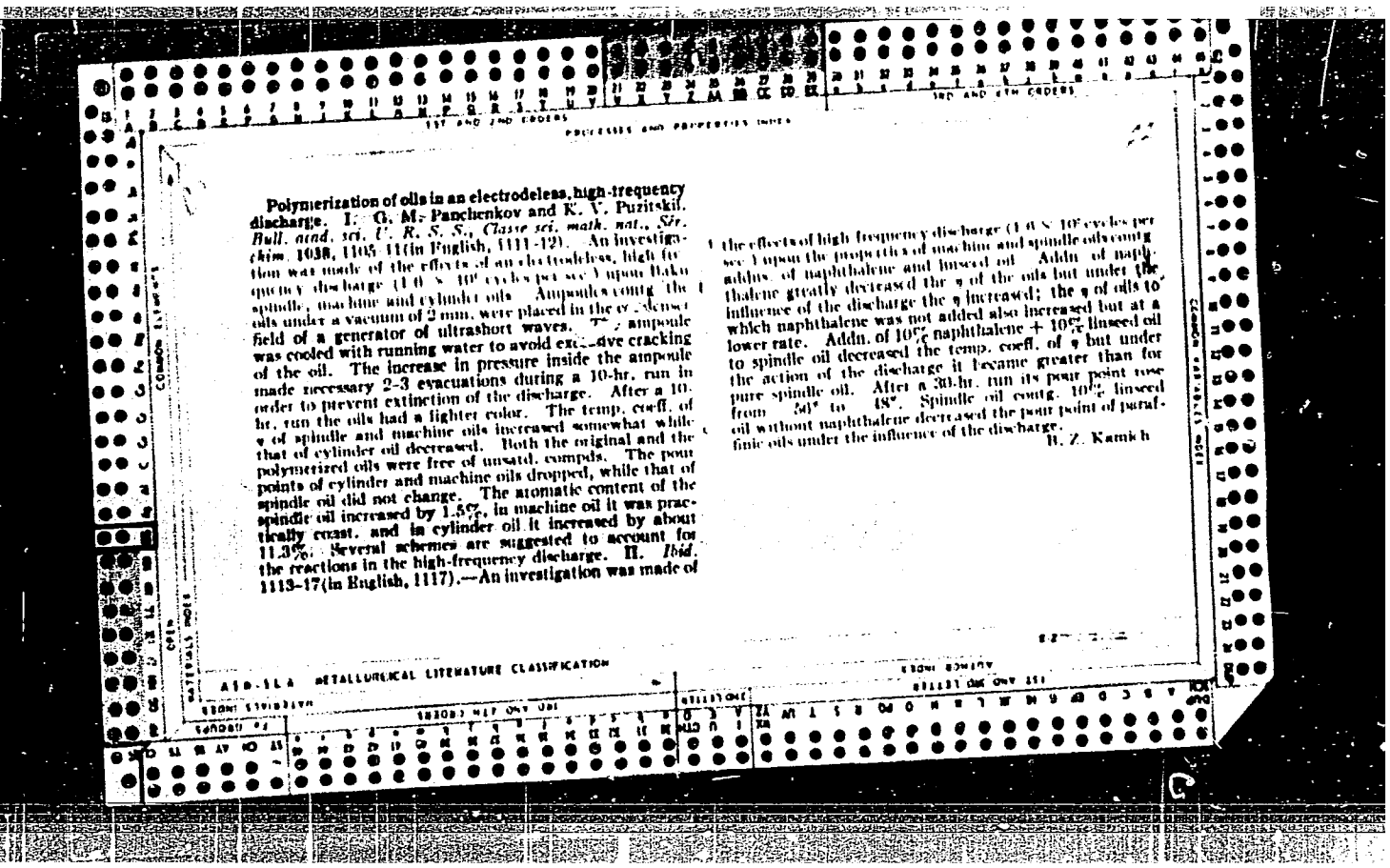

Polymerization of oils in an electrodeless, high-frequency discharge. I. G. M. Panchenkov and K. V. Puzitskii. *Bull. acad. sci. U. R. S. S., Classe sci. math. nat., Sér. chim.* 1938, 1105-11(in English, 1111-12). An investigation was made of the effects of an electrodeless, high frequency discharge (1.0×10^7 cycles per sec.) upon Baku spindle, machine and cylinder oils. Ampoules contg. the oils under a vacuum of 2 mm. were placed in the condenser field of a generator of ultrashort waves. The ampoule was cooled with running water to avoid excessive cracking of the oil. The increase in pressure inside the ampoule made necessary 2-3 evacuations during a 10-hr. run in order to prevent extinction of the discharge. After a 10-hr. run the oils had a lighter color. The temp. coeff. of η of spindle and machine oils increased somewhat while that of cylinder oil decreased. Both the original and the polymerized oils were free of unsatd. compds. The pour points of cylinder and machine oils dropped, while that of spindle oil did not change. The aromatic content of the spindle oil increased by 1.5%, in machine oil it was practically const. and in cylinder oil it increased by about 11.3%. Several schemes are suggested to account for the reactions in the high-frequency discharge. II. *Ibid.* 1113-17(in English, 1117).—An investigation was made of the effects of high frequency discharge (1.0×10^7 cycles per sec.) upon the properties of machine and spindle oils contg. additions of naphthalene and linseed oil. Addn. of naphthalene greatly decreased the η of the oils but under the influence of the discharge the η increased; the η of oils to which naphthalene was not added also increased but at a lower rate. Addn. of 10% naphthalene + 10% linseed oil to spindle oil decreased the temp. coeff. of η but under the action of the discharge it became greater than for pure spindle oil. After a 30-hr. run its pour point rose from 50° to 48°. Spindle oil contg. 10% linseed oil without naphthalene decreased the pour point of paraffinic oils under the influence of the discharge.

B. Z. Kamish

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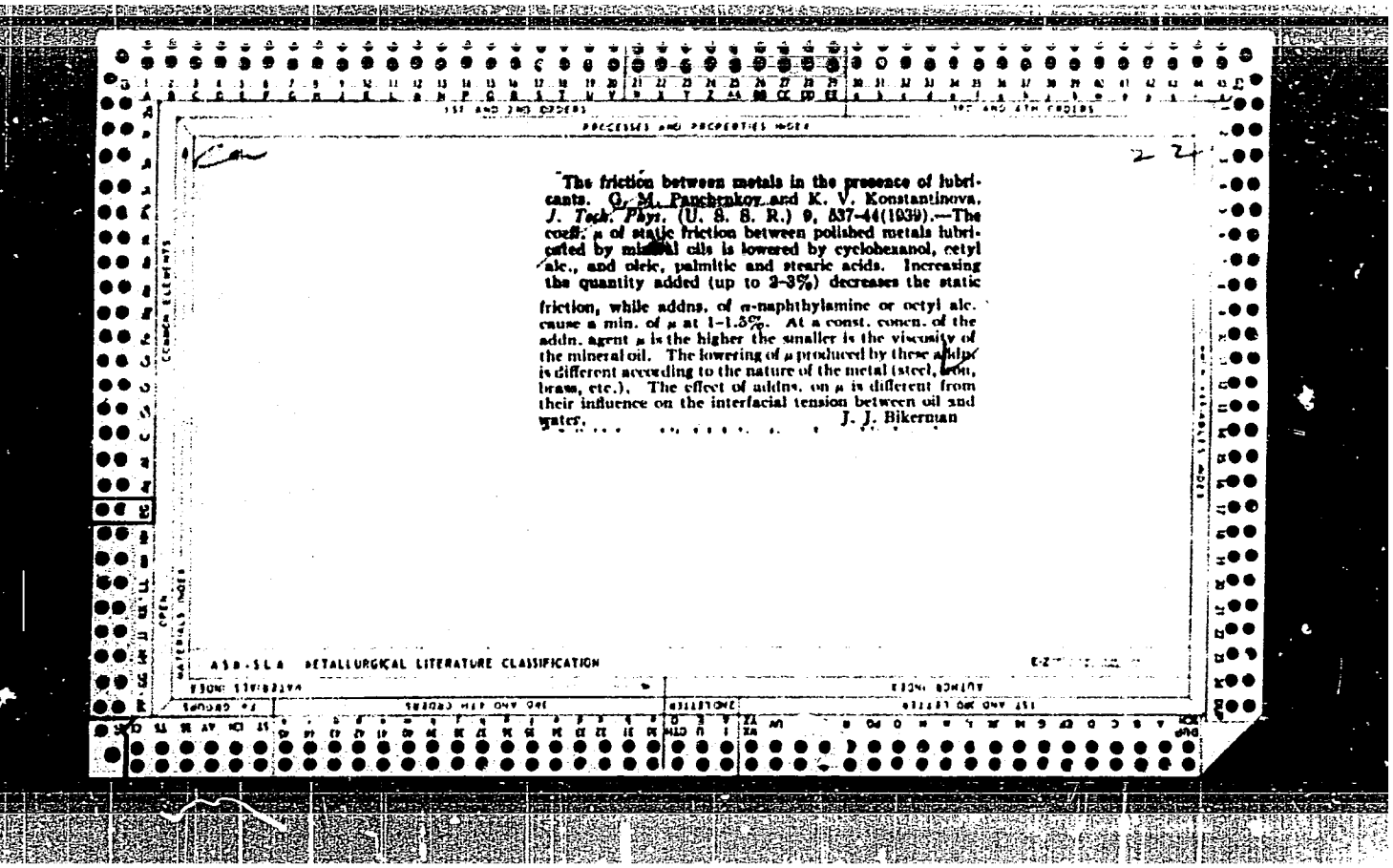

The friction between metals in the presence of lubricants. G. M. Panchenkov and K. V. Konstantinova. *J. Tech. Phys.* (U. S. S. R.) 9, 837-44(1939).—The coeff. μ of static friction between polished metals lubricated by mineral oils is lowered by cyclohexanol, cetyl alc., and oleic, palmitic and stearic acids. Increasing the quantity added (up to 2-3%) decreases the static friction, while addns. of α-naphthylamine or octyl alc. cause a min. of μ at 1-1.5%. At a const. concn. of the addn. agent μ is the higher the smaller is the viscosity of the mineral oil. The lowering of μ produced by these addns is different according to the nature of the metal (steel, iron, brass, etc.). The effect of addns. on μ is different from their influence on the interfacial tension between oil and water.

J. J. Bikerman

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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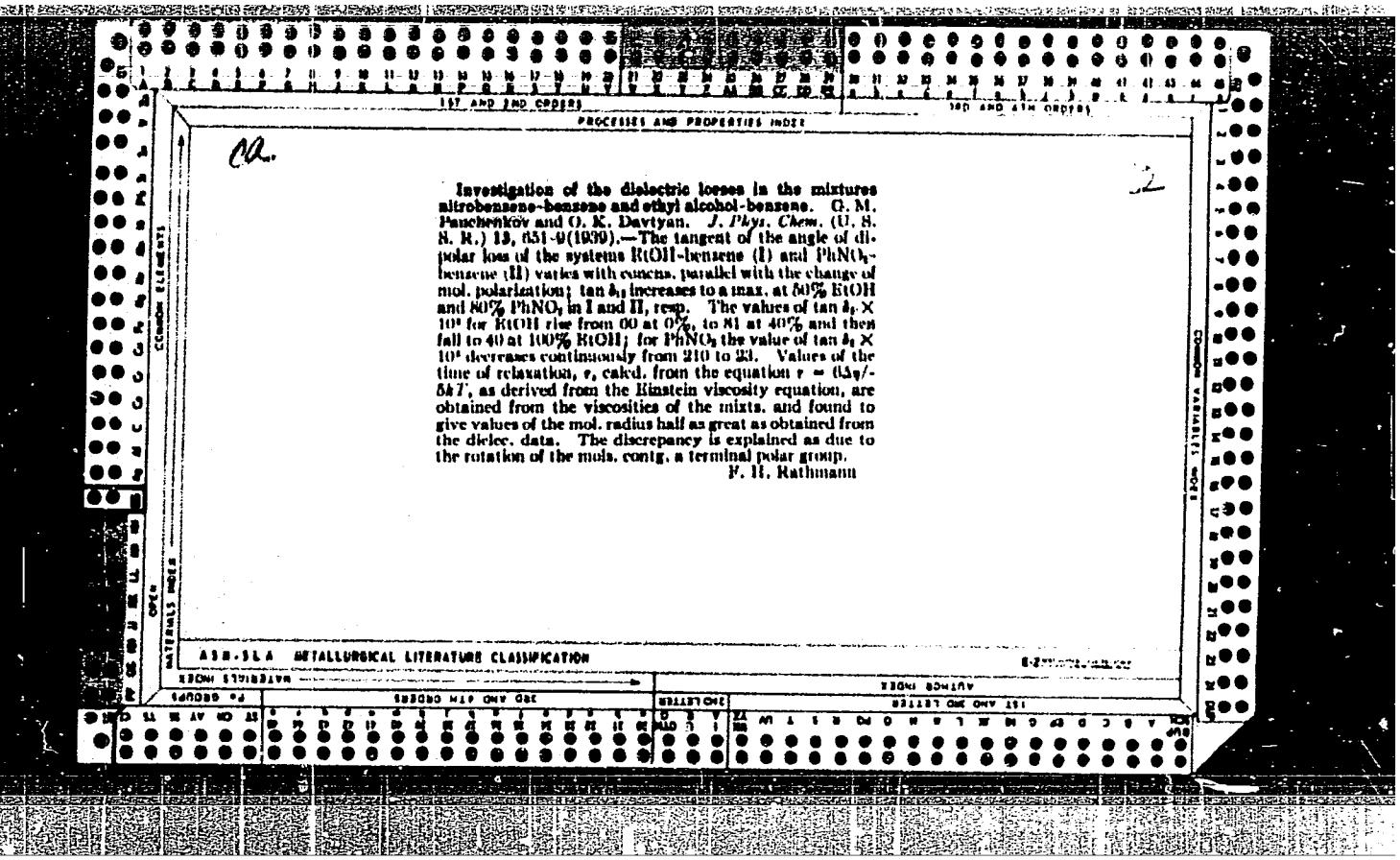

PROCESSES AND PROPERTIES INDEX

Ca.

Investigation of the dielectric losses in the mixtures nitrobenzene-benzene and ethyl alcohol-benzene. G. M. Panchenkov and O. K. Davtyan. *J. Phys. Chem.* (U. S. S. R.) 13, 651-9(1939).—The tangent of the angle of dipolar loss of the systems EtOH-benzene (I) and $PhNO_2$-benzene (II) varies with concn. parallel with the change of mol. polarization; $\tan \delta_1$ increases to a max. at 50% EtOH and 80% $PhNO_2$ in I and II, resp. The values of $\tan \delta_1 \times 10^3$ for EtOH rise from 00 at 0%, to 81 at 40% and then fall to 40 at 100% EtOH; for $PhNO_2$ the value of $\tan \delta_1 \times 10^3$ decreases continuously from 210 to 23. Values of the time of relaxation, τ, calcd. from the equation $\tau = (3\eta/-5kT$, as derived from the Einstein viscosity equation, are obtained from the viscosities of the mixts. and found to give values of the mol. radius half as great as obtained from the dielec. data. The discrepancy is explained as due to the rotation of the mols. contg. a terminal polar group.

F. H. Rathmann

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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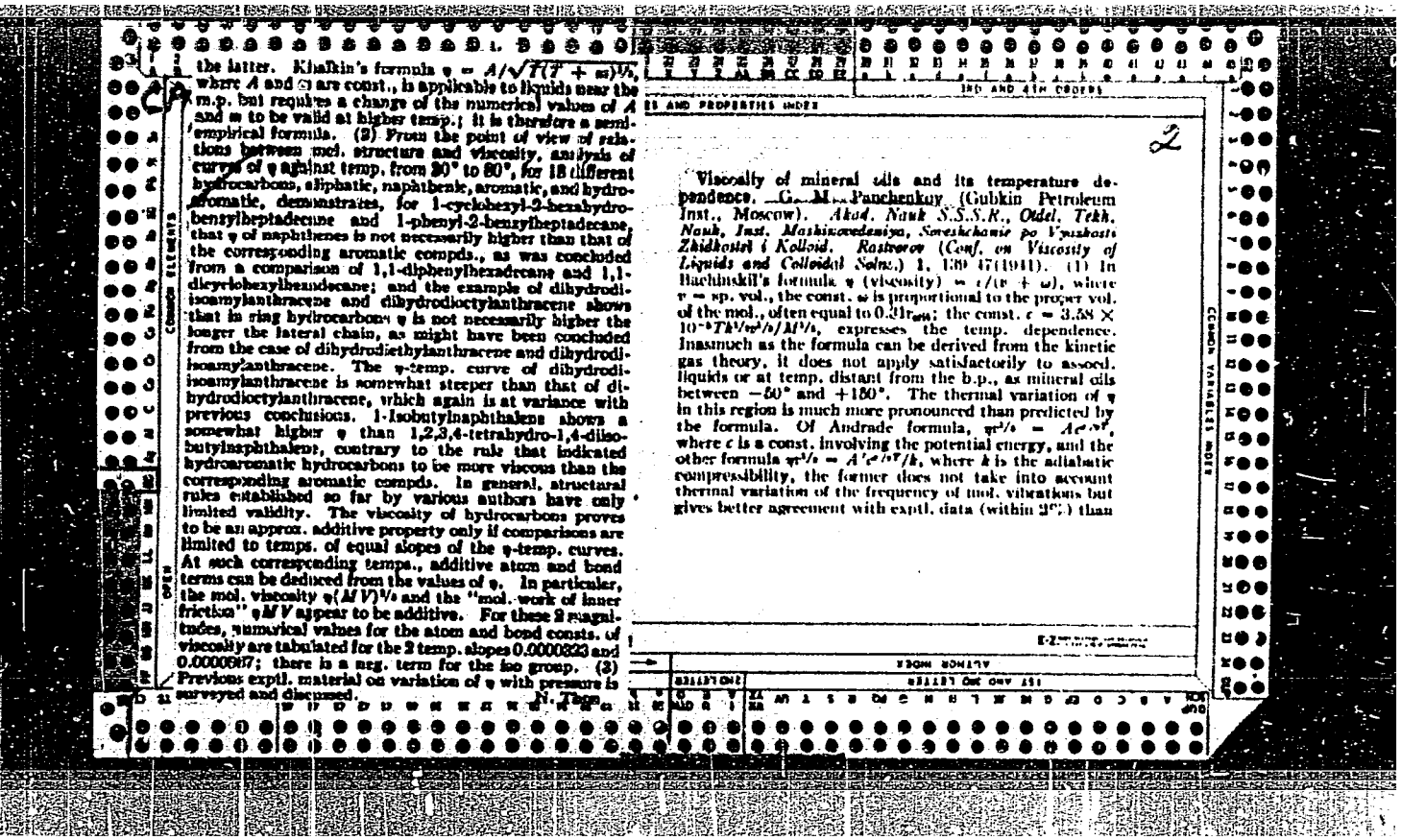

the latter. Khaikin's formula $\eta = A/\sqrt{T(T+\omega)}V$, where A and ω are const., is applicable to liquids near the m.p. but requires a change of the numerical values of A and ω to be valid at higher temp.; it is therefore a semi-empirical formula. (2) From the point of view of relations between mol. structure and viscosity, analysis of curves of η against temp. from 20° to 80°, for 18 different hydrocarbons, aliphatic, naphthenic, aromatic, and hydroaromatic, demonstrates, for 1-cyclohexyl-2-hexahydrobenzylheptadecane and 1-phenyl-2-benzylheptadecane, that η of naphthenes is not necessarily higher than that of the corresponding aromatic compds., as was concluded from a comparison of 1,1-diphenylhexadecane and 1,1-dicyclohexylhexadecane; and the example of dihydrodiisoamylanthracene and dihydrodioctylanthracene shows that in ring hydrocarbons η is not necessarily higher the longer the lateral chain, as might have been concluded from the case of dihydrodiethylanthracene and dihydrodiisoamylanthracene. The η-temp. curve of dihydrodiisoamylanthracene is somewhat steeper than that of dihydrodioctylanthracene, which again is at variance with previous conclusions. 1-Isobutylnaphthalene shows a somewhat higher η than 1,2,3,4-tetrahydro-1,4-diisobutylnaphthalene, contrary to the rule that indicated hydroaromatic hydrocarbons to be more viscous than the corresponding aromatic compds. In general, structural rules established so far by various authors have only limited validity. The viscosity of hydrocarbons proves to be an approx. additive property only if comparisons are limited to temps. of equal slopes of the η-temp. curves. At such corresponding temps., additive atom and bond terms can be deduced from the values of η. In particular, the mol. viscosity $\eta(MV)^{1/3}$ and the "mol.-work of inner friction" ηMV appear to be additive. For these 2 magnitudes, numerical values for the atom and bond consts. of viscosity are tabulated for the 2 temp. slopes 0.0000323 and 0.0000917; there is a neg. term for the iso group. (3) Previous exptl. material on variation of η with pressure is surveyed and discussed. N. Tags

Viscosity of mineral oils and its temperature dependence. G. M. Panchenkov. (Gubkin Petroleum Inst., Moscow). *Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk, Inst. Mashinovedeniya, Soveshchanie po Vyazkosti Zhidkostei i Kolloid. Rastvorov* (*Conf. on Viscosity of Liquids and Colloidal Solns.*) 1, 139-47(1941). (1) In Bachinskii's formula η (viscosity) $= c/(v - \omega)$, where v = sp. vol., the const. ω is proportional to the proper vol. of the mol., often equal to $0.2v_{abs}$; the const. $c = 3.58 \times 10^{-8}Th^{1/6}\sigma^{2/3}/M^{1/6}$, expresses the temp. dependence. Inasmuch as the formula can be derived from the kinetic gas theory, it does not apply satisfactorily to assocd. liquids or at temp. distant from the b.p., as mineral oils between −50° and +150°. The thermal variation of η in this region is much more pronounced than predicted by the formula. Of Andrade formula, $\eta\sigma^{2/3} = Ae^{c/vT}$, where c is a const. involving the potential energy, and the other formula $\eta\sigma^{2/3} = A'e^{c/vT}/k$, where k is the adiabatic compressibility, the former does not take into account thermal variation of the frequency of mol. vibrations but gives better agreement with exptl. data (within 2%) than

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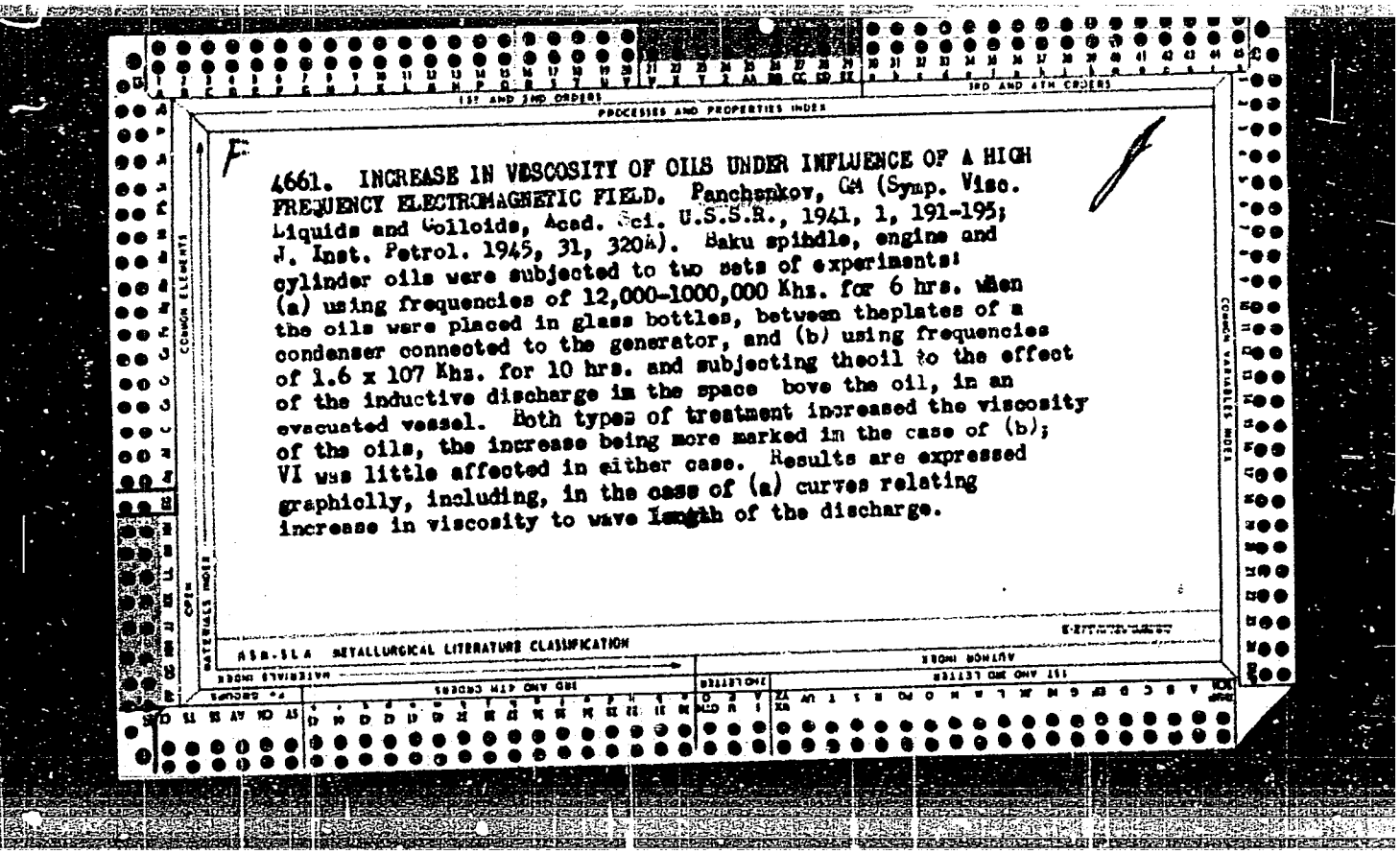

4661. INCREASE IN VISCOSITY OF OILS UNDER INFLUENCE OF A HIGH FREQUENCY ELECTROMAGNETIC FIELD. Panchenkov, GM (Symp. Visc. Liquids and Colloids, Acad. Sci. U.S.S.R., 1941, 1, 191-195; J. Inst. Petrol. 1945, 31, 320A). Baku spindle, engine and cylinder oils were subjected to two sets of experiments: (a) using frequencies of 12,000-1000,000 Khs. for 6 hrs. when the oils were placed in glass bottles, between theplates of a condenser connected to the generator, and (b) using frequencies of 1.6 x 107 Khs. for 10 hrs. and subjecting theoil to the effect of the inductive discharge im the space bove the oil, in an evacuated vessel. Both types of treatment increased the viscosity of the oils, the increase being more marked in the case of (b); VI was little affected in either case. Results are expressed graphiclly, including, in the case of (a) curves relating increase in viscosity to wave length of the discharge.

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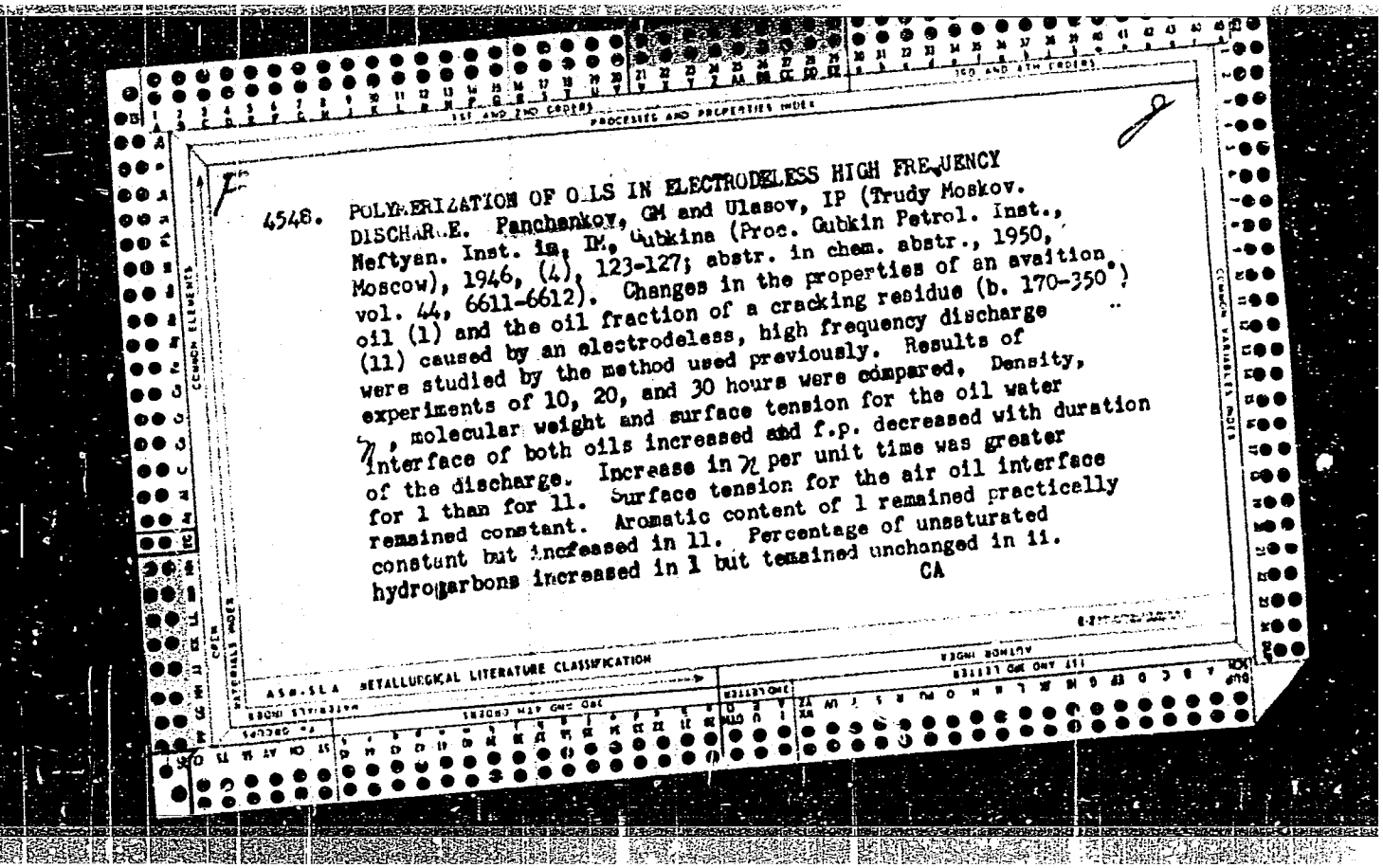

4548. POLYMERIZATION OF OILS IN ELECTRODELESS HIGH FREQUENCY DISCHARGE. Panchenkov, GM and Ulasov, IP (Trudy Moskov. Neftyan. Inst. im. IM. Gubkina (Proc. Gubkin Petrol. Inst., Moscow), 1946, (4), 123-127; abstr. in chem. abstr., 1950, vol. 44, 6611-6612). Changes in the properties of an aviation oil (I) and the oil fraction of a cracking residue (b. 170-350°) (II) caused by an electrodeless, high frequency discharge were studied by the method used previously. Results of experiments of 10, 20, and 30 hours were compared. Density, η, molecular weight and surface tension for the oil water interface of both oils increased and f.p. decreased with duration of the discharge. Increase in η per unit time was greater for I than for II. Surface tension for the air oil interface remained constant. Aromatic content of I remained practically constant but increased in II. Percentage of unsaturated hydrocarbons increased in I but remained unchanged in II.
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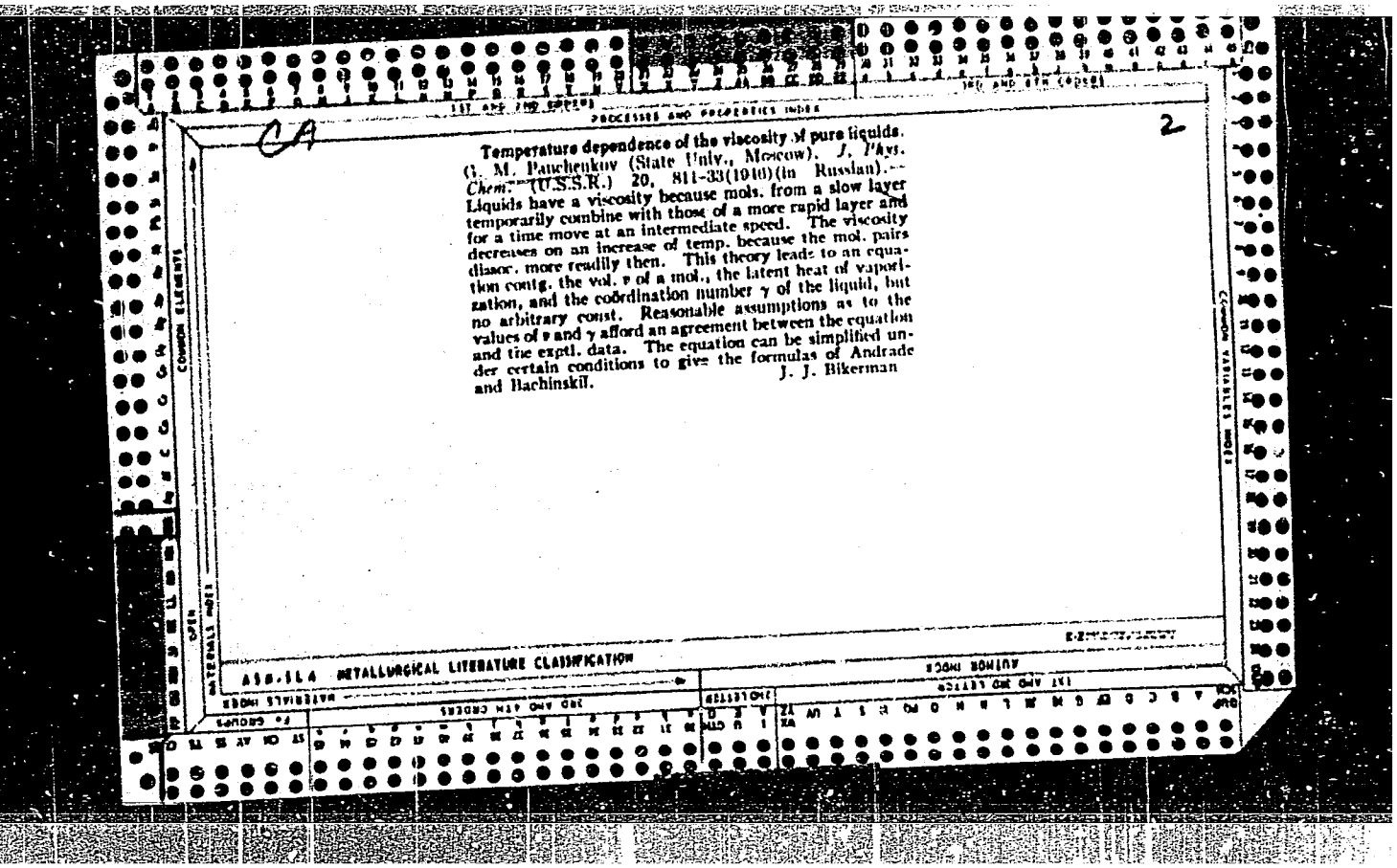

CA

2

Temperature dependence of the viscosity of pure liquids. G. M. Panchenkov (State Univ., Moscow). *J. Phys. Chem.* (U.S.S.R.) 20, 811-33(1946)(In Russian).—Liquids have a viscosity because mols. from a slow layer temporarily combine with those of a more rapid layer and for a time move at an intermediate speed. The viscosity decreases on an increase of temp. because the mol. pairs dissoc. more readily then. This theory leads to an equation contg. the vol. v of a mol., the latent heat of vaporization, and the coördination number γ of the liquid, but no arbitrary const. Reasonable assumptions as to the values of v and γ afford an agreement between the equation and the exptl. data. The equation can be simplified under certain conditions to give the formulas of Andrade and Bachinskii. J. J. Bikerman

A59-5L4 METALLURGICAL LITERATURE CLASSIFICATION

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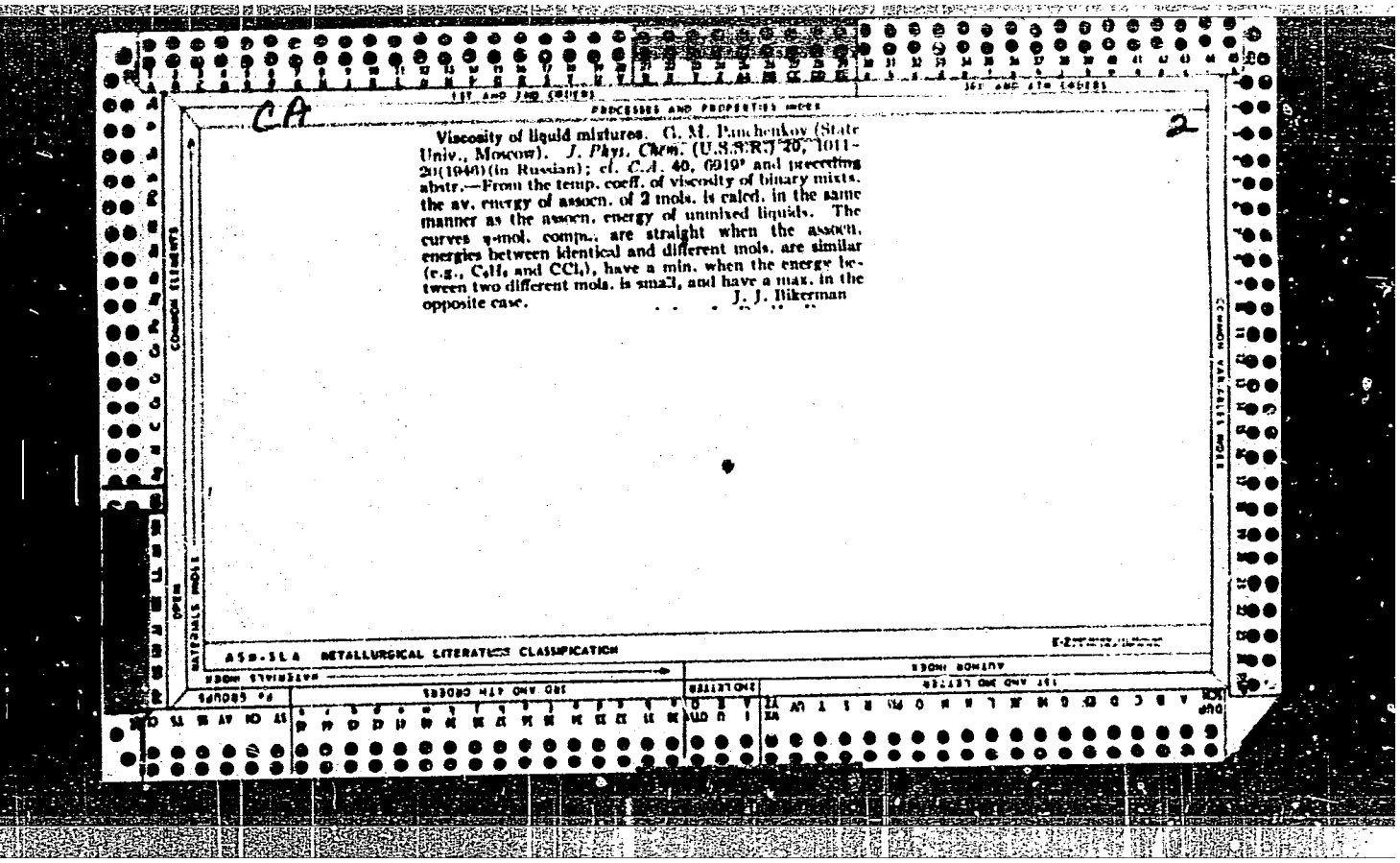

CA

2

Viscosity of liquid mixtures. G. M. Panchenkov (State Univ., Moscow). *J. Phys. Chem.* (U.S.S.R.) 20, 1011–20(1946)(in Russian); cf. *C.A.* 40, 6919⁹ and preceding abstr.—From the temp. coeff. of viscosity of binary mixts. the av. energy of assocn. of 2 mols. is calcd. in the same manner as the assocn. energy of unmixed liquids. The curves η-mol. compn., are straight when the assocn. energies between identical and different mols. are similar (e.g., C_6H_6 and CCl_4), have a min. when the energy between two different mols. is small, and have a max. in the opposite case.

J. J. Bikerman

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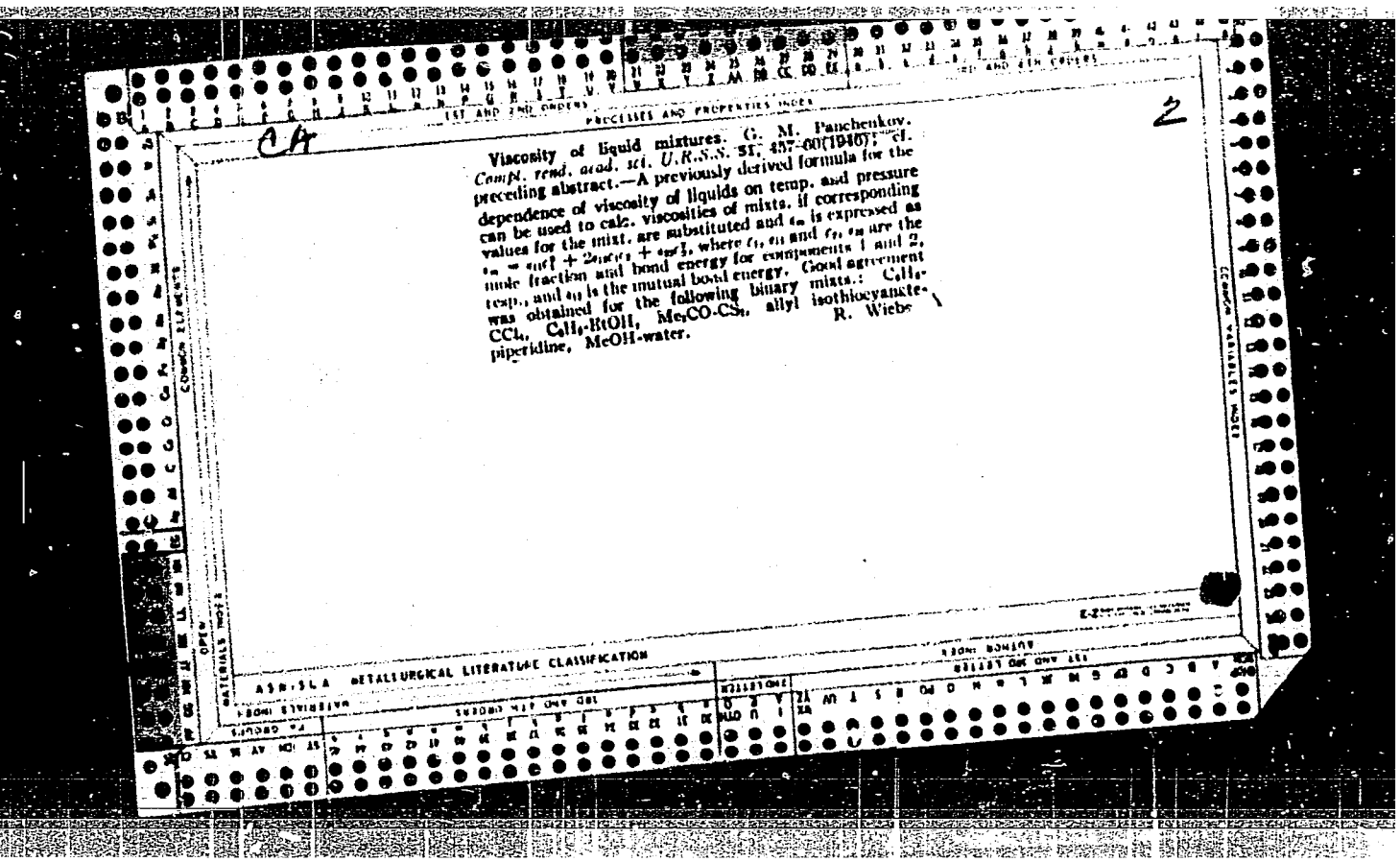

CA

2

Viscosity of liquid mixtures. G. M. Panchenkov. *Compt. rend. acad. sci. U.R.S.S.* 51, 487-90(1946); cf. preceding abstract.—A previously derived formula for the dependence of viscosity of liquids on temp. and pressure can be used to calc. viscosities of mixts. If corresponding values for the mixt. are substituted and ϵ_m is expressed as $\epsilon_m = \epsilon_1 c_1^2 + 2\epsilon_{12} c_1 c_2 + \epsilon_2 c_2^2$, where c_1, c_2 and ϵ_1, ϵ_2 are the mole fraction and bond energy for components 1 and 2, resp., and ϵ_{12} is the mutual bond energy. Good agreement was obtained for the following binary mixts.: C_6H_6-CCl_4, C_6H_6-EtOH, Me_2CO-CS_2, allyl isothiocyanate-piperidine, MeOH-water.

R. Wiebe

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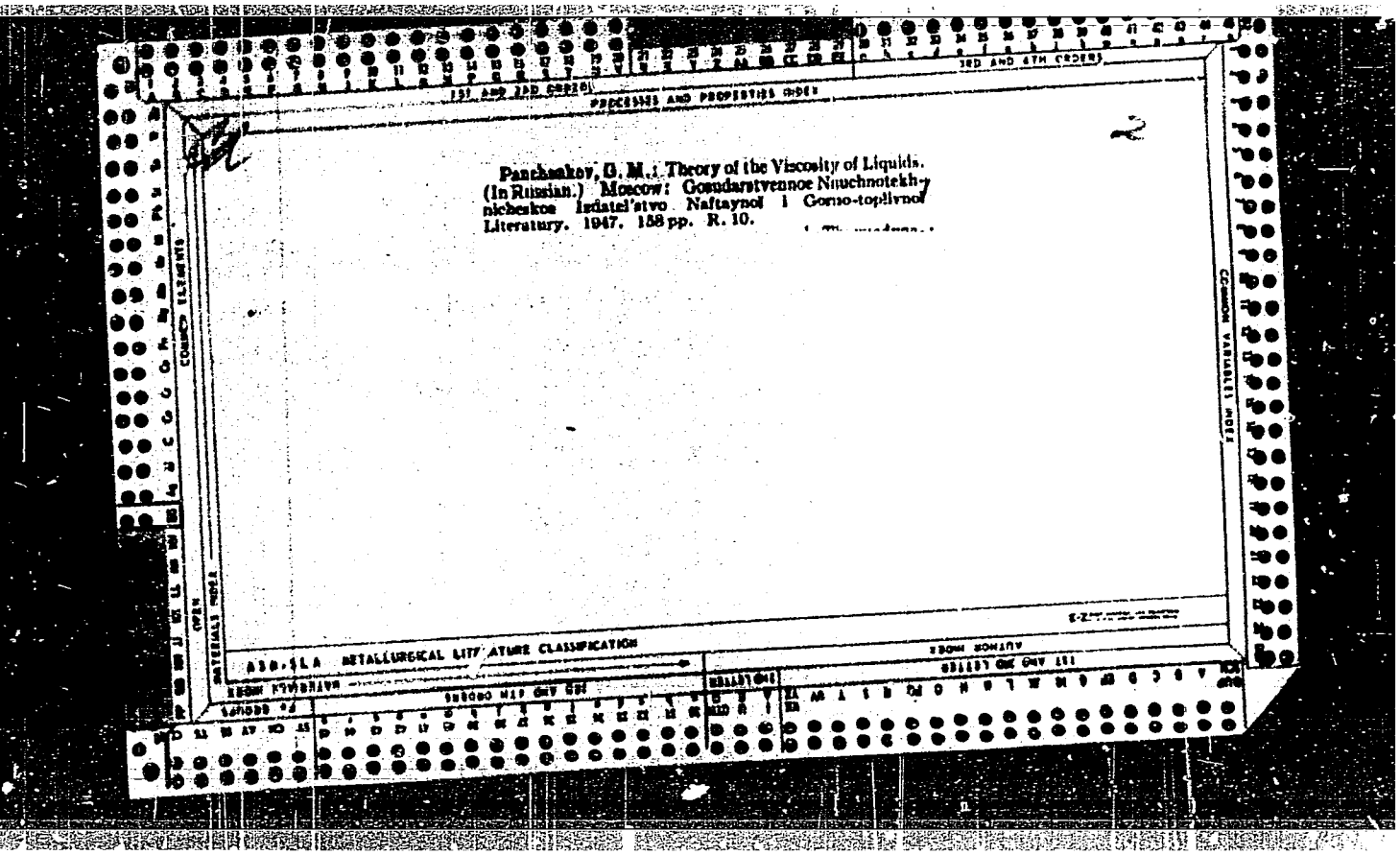

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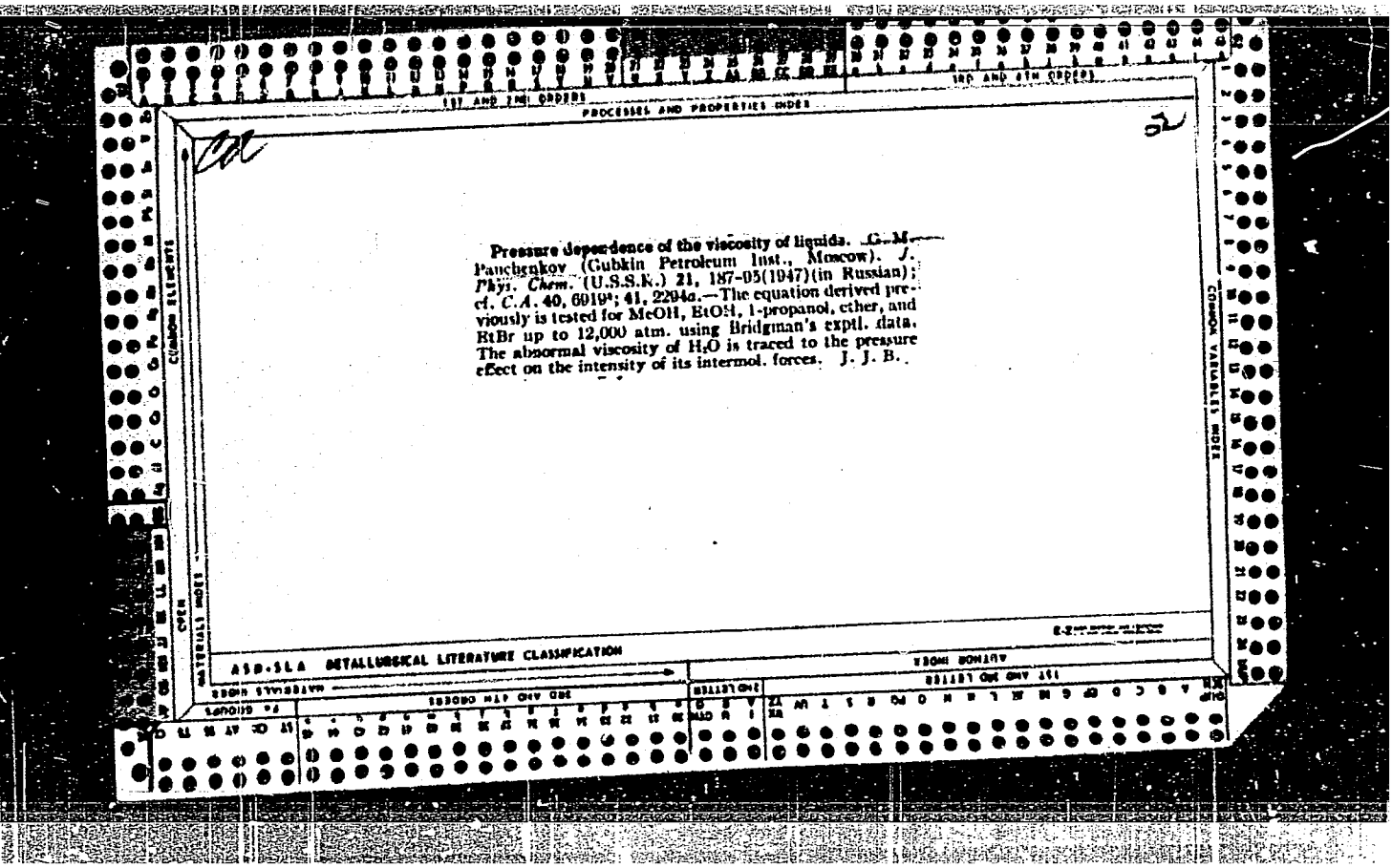

Pressure dependence of the viscosity of liquids. G. M. Panchenkov (Gubkin Petroleum Inst., Moscow). *J. Phys. Chem.* (U.S.S.R.) 21, 187-95(1947)(in Russian); cf. *C.A.* 40, 6019[9]; 41, 2294a.—The equation derived previously is tested for MeOH, EtOH, 1-propanol, ether, and EtBr up to 12,000 atm. using Bridgman's exptl. data. The abnormal viscosity of H_2O is traced to the pressure effect on the intensity of its intermol. forces. J. J. B.

ASD-SLA METALLURGICAL LITERATURE CLASSIFICATION

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PANCHENKOV, G. M. PA 8T37

USSR/Gasoline - Production Feb 1947
Catalysts, Fuel

"An Investigation of the Kinetics of the Disproportionate of Hydrogen in Gasolines as Factors of the Composition of Aluminum Silicate Catalysts," K. V. Topchieva, G. M. Panchenkov, 4 pp

"CR Acad Sci" Vol LV, No 6

Study of the decrease in the content of unsaturated hydrocarbons due to the redistribution of hydrogen in a mixture of hydrocarbons in the presence of sulphuric acid, a phenomenon also occurring in the presence of synthetic aluminum silicates.

8T37

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

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PANCHENKOV, G. M.

Panchenkov, G. M. - "Kinetic cracking of cumene over aluminosilicate catalysts," Vestnik Mosk. un-ta, 1948, No. 11, p. 133-36

So: U-3566, 15 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 13, 1949)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

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PANCHENKOV, G. M.

USSR/Chemistry - Gases, Reactions of Chemistry - Kinetics

Feb 1948

"Kinetics of Gas Chemical Reactions in a Current," G. M. Panchenkov, Petroleum Inst imeni Academician Gubkin, Moscow, $7\frac{1}{2}$ pp

"Zhur Fiz Khim" Vol XXII, No 2

Gives general method for setting up differential equations for rapid reactions occurring in current, of homogeneous as well as heterogeneou... ...ture, in the kinetic field of their activity. Examples show the basis for the differential equations for reaction speeds and their integration with the intent to determine the speed constant. Submitted 26 May 1947.

moments. In all cases there was noted a similarity. Only results obtained from $Ba(ClO_4)$ did not agree with the others. Submitted 17 Jun 1947.

64T16

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PA 35/49T91

PANCHENKOV, G. M.

Dec 48

USSR/Physics
Liquids - Viscosity
Mathematics - Applied

"The Problem of Computing Absolute Values of Viscosity for Liquids," G. M. Panchenkov, 3 pp 613.21 611

"Dok Ak Nauk SSSR" Vol LXIII, No 6 (4)

Gives mathematical theory, formulas, and determination of constants forcomputing absolute values of viscosity for liquids. Computes the absolute values for carbon tetrachloride and benzene, and the necessary steric multiple. Submitted by Acad P. A. Rebinder, 30 Oct 48.

35/49T91

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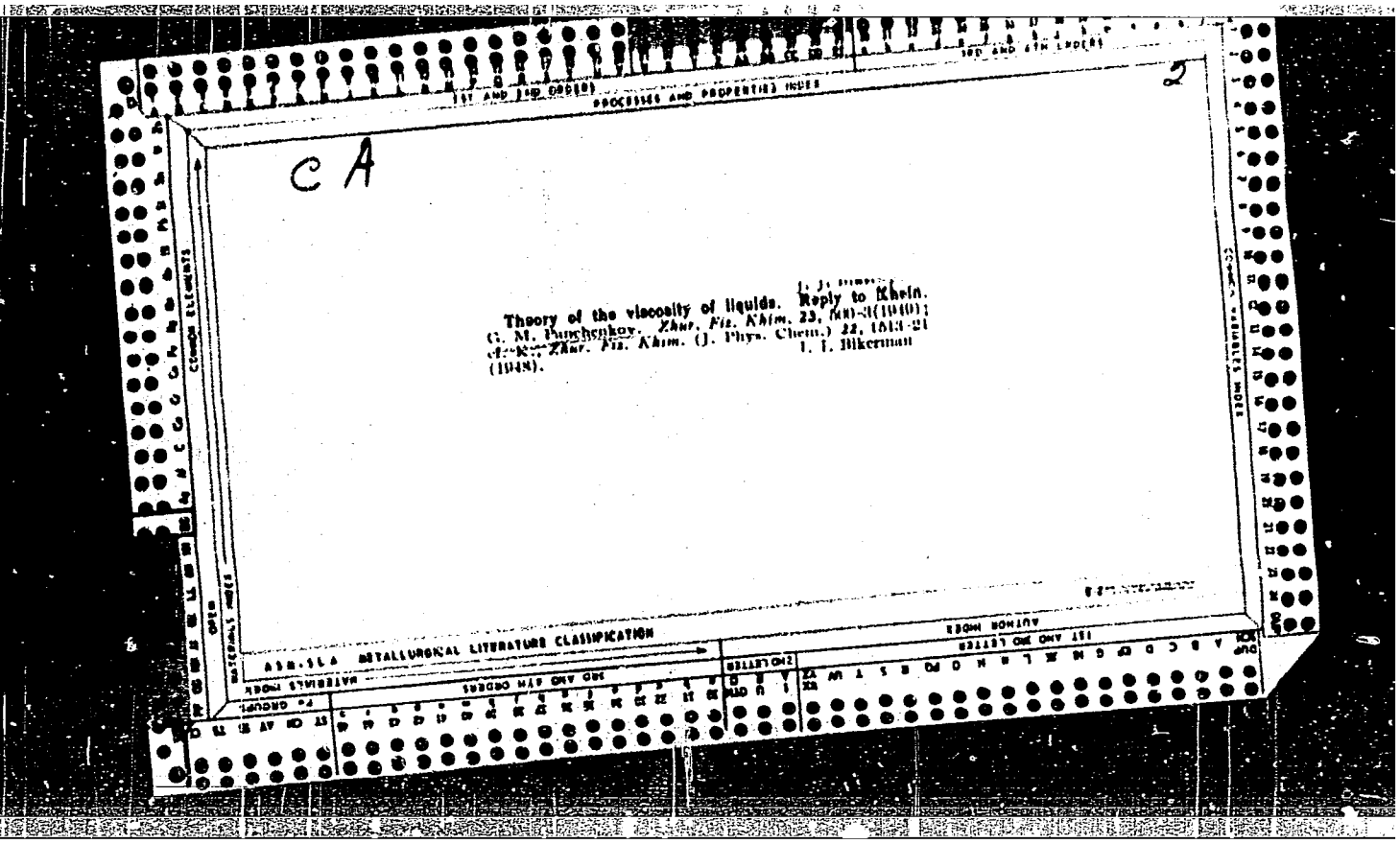

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2

Calculation of absolute values of the viscosity of liquids. G. M. Panchenkov (Petroleum Inst., Moscow). *Zhur. Fiz. Khim.* 24, 1390-1402(1950); cf. *C.A.* 44, 975*d*. By a theoretical analysis of momentum exchange between mols. of a liquid, a new formula for viscosity is proposed: $\eta = A\rho^{1/6}T^{1/2}[\exp.(\omega/RT)][1 - \exp.(-\omega/RT)]$ with $A = 12(R/\omega)^{1/6}(N)^{-1/6}\omega^{1/6}M^{-1/6}\exp.(\Delta S/R)$, where ρ = density, T = abs. temp., N = Avogadro's no., M = mol. wt., R = gas const., v = mol. vol., ω = bond energy for the mol. in the liquid, calcd. from the internal latent heat of vaporization *in vacuo*. The novel feature of the formula is the inclusion of a steric factor, $\exp.(\Delta S/R)$, where ΔS is the entropy change on formation of a bond in the liquid. Since mol. data are lacking for a direct check of the formula, an indirect verification is made: A and ω are detd. by exptl. values for η at two temps.; η is then calcd. for the entire temp. interval. There is good agreement between calcd. and exptl. values for the following liquids: H_2, N_2, O_2, CO, Cl_2, Br_2, I, SO_2, $SnCl_4$, CdI_2, $CdBr_2$, CCl_4, and heptane. For heptane, the agreement is good between 293 and 553°K. Mol. consts. are also calcd. from the formula for the liquids cited. The steric factor varies between 0.4 (for H_2) and 0.02 *g.* for CCl_4. Calcd. values of ω correspond to mol. dimensions known from other sources. *Michel Boudart*

1951

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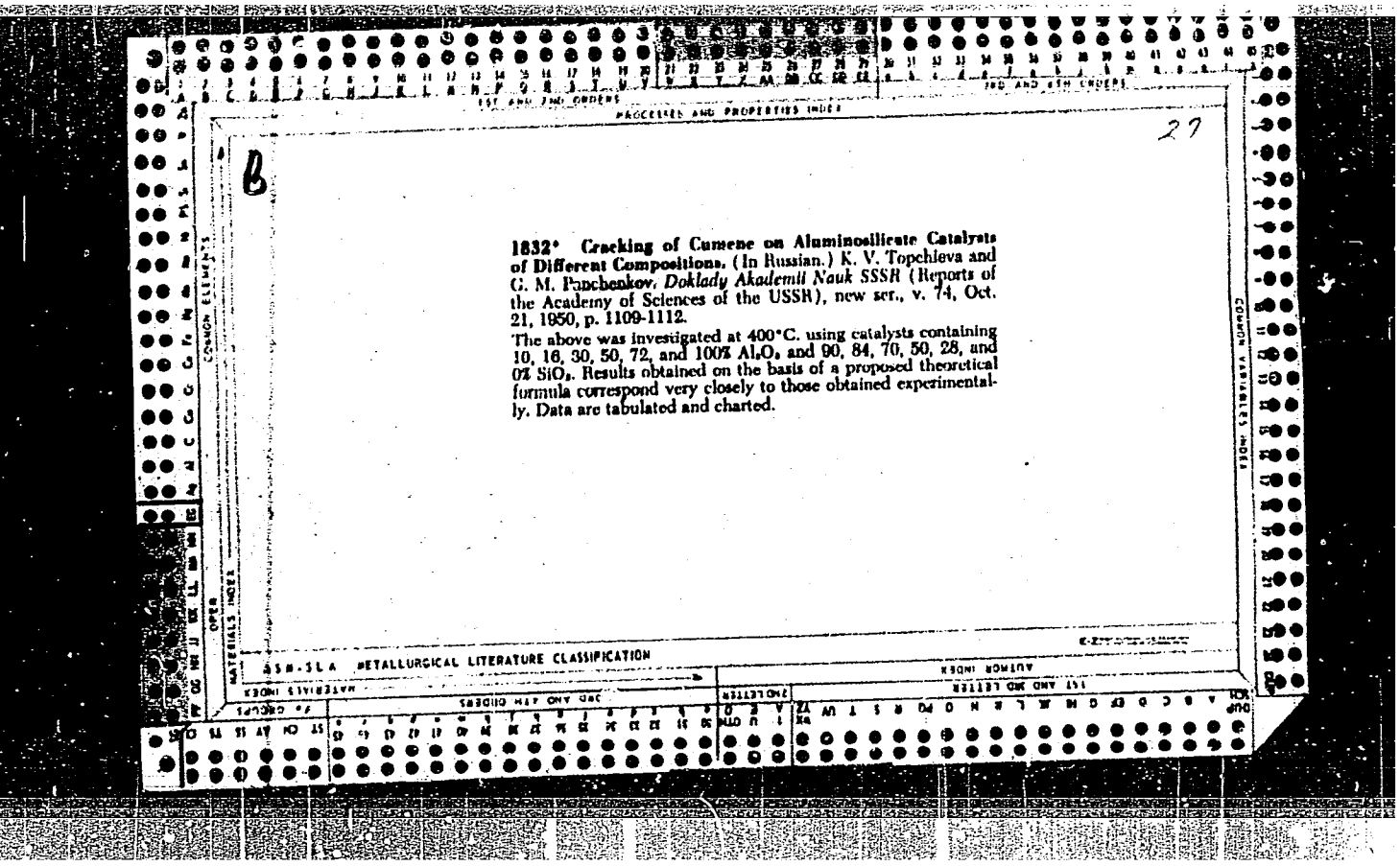

1832* **Cracking of Cumene on Aluminosilicate Catalysts of Different Compositions.** (In Russian.) K. V. Topchieva and G. M. Panchenkov, *Doklady Akademii Nauk SSSR* (Reports of the Academy of Sciences of the USSR), new ser., v. 74, Oct. 21, 1950, p. 1109-1112.

The above was investigated at 400°C. using catalysts containing 10, 16, 30, 50, 72, and 100% Al_2O_3 and 90, 84, 70, 50, 28, and 0% SiO_2. Results obtained on the basis of a proposed theoretical formula correspond very closely to those obtained experimentally. Data are tabulated and charted.

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PANCHENKOV, G. M.

Fuel (2)

Journ. of Inst. of Petroleum. V. 38 No. 339 Mar. 1952 Cracking

723. **Kinetics of regeneration of alumino-silicate catalysts.** G. M. Panchenkov and N. V. Golovanov. *Izvest. Akad. Nauk S.S.S.R., Otdel. Tekh. Nauk*, 1951, 1613–21.— Description and diagram are given of laboratory equipment used for studying heterogeneous reaction of oxidn of cat coke. Cat particles, coated with coke (approx 5%), are suspended in reaction tube from spring balance (sensitivity 2×10^{-4} g); average weight of granules was 6×10^{-1} g. Cat is heated in stream of inert gas to remove volatiles and air introduced when test temp is attained. Five different synthetic Al–Si cat were studied. Coking was by cracking of gas oil (d_4^{20}, 0·863, I.B.P. 245° C, 90% vol at 360° C, paraffins 91·6%, aromatics 8·4%) at 475° C. Separate test showed absence of coke migration on cat surface. Rate of oxidn (as shown by loss in wt of cat particle) increases with air flow up to limiting value of latter, difference between oxidn rate at various temp is less marked at low air flow. Up to approx 470° C oxidn rate is slow and similar for all cat, above this temp individual differences appear. Difference in oxidn rate with cat particle size is evident only at temp >500° C. Most tests were carried out with hourly air-flow rate of 300,000 vol air/vol cat. At high temp (>520° C) relative rate of oxidn decreases with increasing coke content of cat. Plot of log relative reaction rate against reciprocal of abs temp is for most cat linear below approx 540° C. Kinetic aspects of the experimental results are discussed; at oxidn <520° C process is within inner kinetic region and has an activation energy (for four of the cat) of 31,000 cal/mol, above this temp oxidn proceeds in inner diffusion region. Limiting values of temp and coke content at which change from kinetic to diffusion region occurs are of same order for all cat.

V. B.

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PANCHENKOV, G. M.

KONSTANTINOVA, K.V.; PANCHENKOV, G.M., doktor khimicheskikh nauk, professor; SHINDEL', Yu. Ya.

Polymerization of oils in an electrodeless high-frequency discharge. Trudy MEI no.11:210-220 '51. (MLRA 10:3)
(Polymerization)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PANCHENKOV, G. M.

USSR/Chemistry - Petroleum

21 May 51

"Conversion of Hydrocarbons on Aluminum Silicate Catalysts of Varying Composition," K. V. Topchieva, Sh. Battalova, G. M. Panchenkov, Moscow State U imeni M. V. Lomonosov

" Dok Ak Nauk SSSR" Vol LXXVIII, No 3, pp 501-504

Al silicate has effect similar to that of acidic catalysts (sulfuric acid, phosphoric acid, H_2F_2, BF_3, $AlCl_3$) and dissociates under formation of H-ions. Its catalytic effect is produced by compd similar in compn to montmorillonite: Kinetic investigations on cracking of decalin, cetane, and gas oil over Al silicates of various compn, but with same sp surface, showed that effect is proportional to content of this compd in the catalyst.

186T13

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PANCHENKOV, G.M.

*Viscosity of Molten Met[illegible] Panchenkov (Doklady Akad. Nauk S.S.S.R., 1951 [illegible] 988).—(In Russian).
According to the theory de[illegible] the dependence of the abs. viscosity (η) of a li[illegible] abs. temp. T is given by the expression:

$\eta = A' \rho^{4/3} T^{1/2}$ [illegible] RT),

where $A' = \frac{12\sqrt{R}}{\sqrt{\pi}\sqrt[3]{N_0}}$ [illegible] M [illegible] these equations, R is the universal ga[illegible] N [illegible] number, [illegible] the natural vol. of 1 g.-mol., ρ the d. of [illegible] the mol. weight, ΔS the change in entropy [illegible] ation (per mole), and ε the bond energy of a [illegible] A' can be considered const. especially over [illegible] range since ΔS changes little with temp. T[illegible] application of this relation to molten metals, for [illegible] experimentally determined viscosities at any [illegible] used to calculate ε and A'. These values ar[illegible] to calculate the viscosities at other temp.; [illegible] lated values are compared with the experimen[illegible] has been done for Na at 371.2°–628.2° K. ([illegible] mole, log A' = 4.00200), K at 337.4°–625[illegible] 887.5 cal./mole, log A' = 3.15400), Ag at 1[illegible] K. ([illegible] 4660 cal./mole, log A' = 5.02170), [illegible] 873.2° K. (ε = 1150 cal./mole, log A' = 3.58[illegible] 263.2°–[illegible]3.2° K (ε = 286.3 cal./mole, log A [illegible] Sn at 533.2°–1073.2° K. (ε = 1210 cal./mo[illegible] 3.44180), Pb at 623.2°–873.2° K. (ε = 3303 [illegible] (A' = 3.02237), Sb at 873.2°–1373.2° K. (ε [illegible] mole, log A' = 5.08854), and Bi at 577.2°–87[illegible] 1447, log A' = 5.10266). Calculated and exp[illegible] and agr[illegible] satisfactorily. The small values of ε [illegible] with vaporization energies are noted.—G. [illegible] F. T

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

USSR/Chemistry - Viscosity of Hydro-carbons 21 Oct 51

"Viscosity and Molecular Structure," G. M. Panchenkov, Moscow Petroleum Inst imeni I. M. Gubkin

"Dok Ak Nauk SSSR" Vol LXXX, No 6, pp 899-902

Studied the relationship between the viscosity of liquids and their mol structure. Gives an exact eq for this relationship as well as an approx one. The relationship in question was found to apply fairly well to the homologous series of normal

217T9

straight-chain hydrocarbons. Long chains curl up with a consequent reduction of viscosity. The eq expressing the temp dependence of viscosity is valid for molten salts and metals as well as org liquids.

217T9

PANCHENKOV, G. M.

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PANCHENKO, G. M.

PA 244T57

USSR/Engineering - Fuel, Combustion Mar 52

"Kinetics of the Regeneration of Aluminosilicate Catalysts: On the Mechanism of the Reaction of Coke Oxidation on Aluminosilicate Catalysts," G. M. Panchenko, N. V. Golovanov

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 3, pp 384-394

Stating that technical literature gives no information concerning coke oxidation on porous catalysts, describes experiments for establishing possibility for formation, under regeneration conditions, of surface intermediate compounds of O with coke and

244T57

for studying formation kinetics of this complex. Develops equation for oxidation rate of coals and cokes in kinetic region under condition of constant O concentration along entire layer of catalyst. Submitted by Acad A. V. Topchiyev, 30 Jan 51

244T57

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PANCHENKOV, G. M.

PA 228T85

USSR/Engineering - Fuels, Catalysis Jul 52

"Kinetics of the Regeneration of Aluminosilicate Catalysts: Oxidation of Coke on Catalyst in Tubes With Variable Oxygen Concentration Along the catalyst Layer," G. M. Panchenkov, N. V. Golovanov

"Iz Ak Nauk, Otdel Tekh Nauk" No 7, pp 1031-1036

Develops method for calcg time period, within which required O concn in regenerating gas is attained at given section of reactor, and O concn in regenerating gas at definite moment from beginning of regeneration for case of stationary catalyst and isothermal conditions. Also method is developed for calcg O distribution along reaction zone for case of countercurrent motion of regenerating gas and catalyst for isothermal conditions. Submitted by Acad A. V. Topchiev.

228T85

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

BATTALOVA, Sh., PANCHENKO, G. M., TOPCHIYEVA, K. V.

Cetane

Kinetics of cracking cetane with various aluminosilicate catalysts. Zhur.fiz.khim., 16, No. 6, 1952.

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

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PANCHENKOV, G. M.

Gases, Kinetic Theory Of

Calculation of rates of chemical reactions in flowing gases. Zhur. fiz. khim. 26, No. 3, 1952.

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

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PANCHENKOV, G. M.

USSR/Chemistry - Hydrocarbons, Cracking Process, Catalysts   Jun 52

"Kinetics of the Cracking of Cetane on Aluminosilicate Catalysts of Various Composition," Sh. Battalova, G.M. Panchenkov, K.V. Topchieva, Moscow State U imeni M. V. Lomonosov

"Zhur Fiz Khim" Vol XXVI, No 6, pp 903-909

The catalysts investigated had an identical magnitude of the surface accessible to cetane mols. Catalysts of the compn 30% Al_2O_3, 70% SiO_2 and Al_2O_3: 50% SiO_2, which are the most acidic, were found to be more effective than the others. The energy of

220T34

activation and the compn of the light fraction of the catalyzate do not depend on the catalyst's compn, which proves that the active centers are of the same type. The results in question confirm the original assumption by the authors that the catalytic activity of aluminosilicates is due to the chem properties of acidic hydroaluminosilicates.

220T34

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PANCHENKOV, G. M., LEVINA, I. I.

Diffusion

Using I. V. Obreimov's diffraction micrometer in determining diffusion coefficients in liquids. Dokl. AN SSSR 86, No. 3, 1952.

Monthly List of Russian Accessions, Library of Congress December 1952. UNCLASSIFIED.

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

C3o.R

GANCHENKOV, G. M. & LEVINA, I. I.

Date: June 30, 1952

Public.: Primeneniye diffrakteionnogo mikrometoda I. V. Obreimova k opredeleniyu koeffitsiyentov diffuzii v zhidkostyakh

Source: Doklady Akademii Nauk 86, 3, 1952, pp. 585-588

Note: Presented by the member of the Acad. of Sciences A. V. Topchiyev on July 26, 1952

T-3897

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

1. DANCHENKOV, G. M.; KUZNETSOVA, Ye. I.

2. USSR (600)

4. Cracking Process

7. Kinetics of catalytic cracking of gasoil, Dokl. AN SSSR, 87, No. 1, 1952.

The kinetics of cracking gas oil to gasoline with the aid of a specially constructed apparatus. Two catalysts were used: (1) 5% Al_2O_3, 95% SiO_2; (2) 30% Al_2O_3, 70% SiO_2. The catalytic cracking of hydrocarbons in the presence of an aluminosilicate catalyst can be assumed to be a first-order reaction. Some of the starting materials have a low adsorption capacity while some of the condensation products have a high adsorption capacity. An equation is given for the calcn of the rate constant, which describes the process for both catalysts used. Presented by Acad. A. V. Topchiyev 13 Sep 52.

252T12

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

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

USSR/Chemistry - Fuels, Propellents 11 Nov 52

"Catalytic Cracking as a Consecutive Chemical Reaction," G. M. Panchenkov and V. S. Tret'yakova, Moscow Petroleum Inst imeni I. M. Gubkina

"Dok Ak Nauk SSSR" Vol 87, No 2, pp 237-240

The reaction of catalytic cracking of hydrocarbons is considered in the light of its kinetics as an irreversible consecutive first-order reaction. A mathematical treatment of the subject is given. Presented by Acad A. V. Topchiyev 13 Sep 52.

245T9

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PANCHENKOV, G.M.

USSR

Further remarks on the calculation of the rates of gaseous chemical reactions proceeding in a gas current. G. M. Panchenkov (I. M. Gubkin Petroleum Inst., Moscow). *Zhur. Fiz. Khim.* 27, 590–8(1953); cf. Nagiev, *C.A.* 46, 326g; 47, 4718c; Orochko, *C.A.* 49, 2100d.—Panchenkov defends his generalized and rigid hydrostatic type of treatment for both homogeneous and heterogeneous, stationary and nonstationary, reversible and nonreversible, chem. reactions in a streaming gas. F. H. Rathmann

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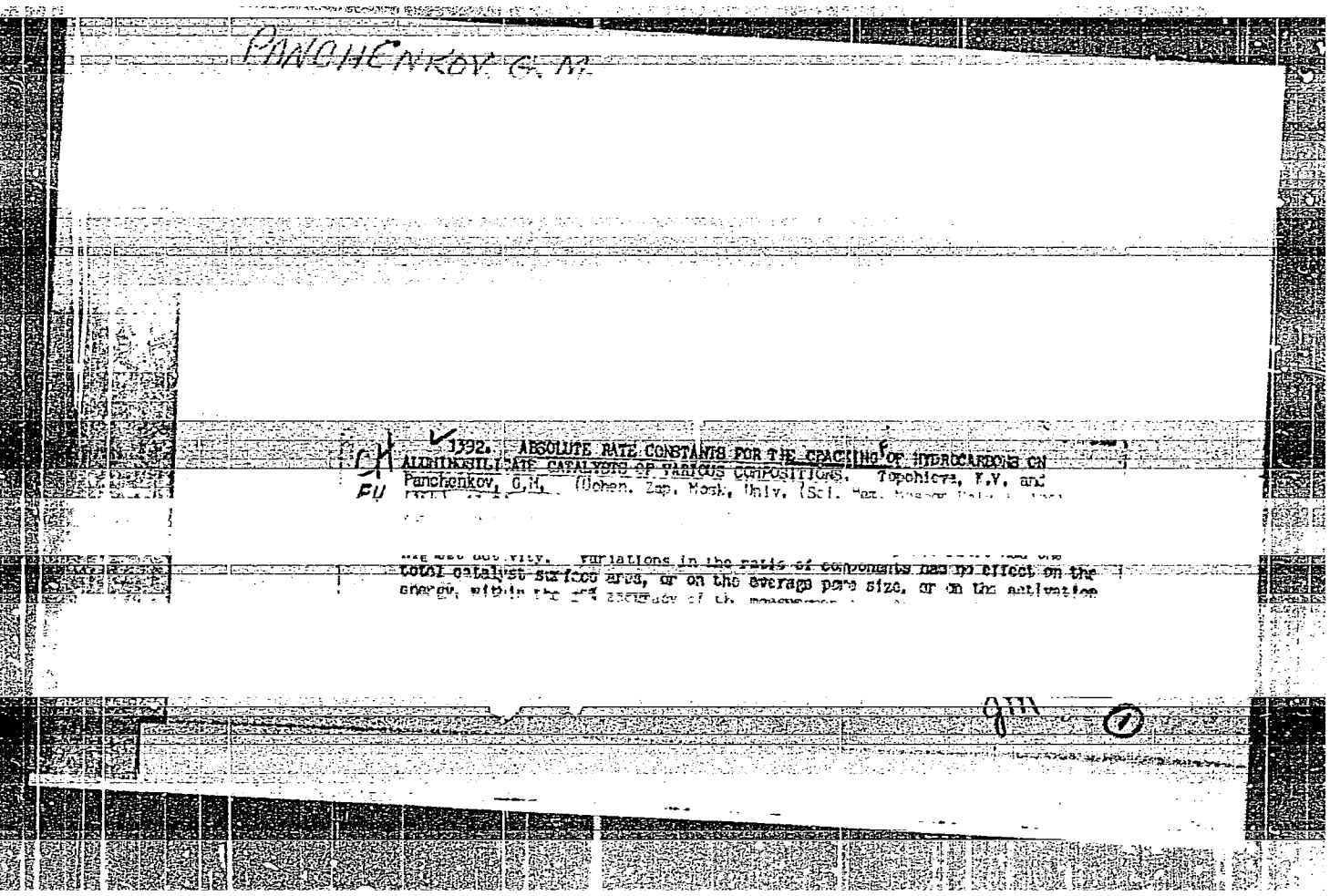

PANCHENKOV G. M.

1392. ABSOLUTE RATE CONSTANTS FOR THE CRACKING OF HYDROCARBONS ON ALUMINOSILICATE CATALYSTS OF VARIOUS COMPOSITIONS. Topchieva, K.V., and Panchenkov, G.M. (Mosk. Gos. Univ. (Sci. Res. Inst. ...

... activity. Variations in the ratio of components may affect only the total catalyst surface area, or only the average pore size, or only the activation energy, within the ... of the ...

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PANCHENKOV, G.M.

Kinetics of chain reactions. Uch.zap.Mosk.un. no.164:53-72 '53.
(Chemical reaction--Rate of) (MIRA 8:7)

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PANCHENKOV, G. M.

10

(3)

Kinetics of catalytic cracking of geometric isomers of decahydronaphthalene. G. M. Panchenkov and V. V. Kravchenko (V. I. Gubkin Petroleum Inst., Moscow), *Doklady Akad. Nauk S.S.S.R.* 94, 691–3(1954).—Cracking of cis and trans forms of decahydronaphthalene over com. alumosilicate catalyst was studied at 450–90°. Under the same conditions the cis isomer is affected by the treatment to a greater extent than is the trans form, and an equil. mixt. of the isomers gives an intermediate value. The apparent rate of reaction k is well represented by: $k = n_0(B/lb)[-\log(1-x) - x]$, where n_0 is the no. of moles entering the reaction zone, b is the adsorption coeff. of decahydronaphthalene, B is the sum of products of stokhiometric coeffs. and adsorption coeffs. of products which hinder the reaction, l is the length of the path, and x the amt. of converted material. The following apparent k values are found: cis 450° —, 460° 0.0308, 470° 0.0354, 480° 0.04, 490° 0.0458; trans 0.015, 0.0185, 0.0225, 0.0274, 0.0332. Activation energy for the cis form is 14,700 cal./mole that for the trans form is 22,200 cal./mole. The equil. mixt. has the value of 18,400 cal./mole. G. M. Kosolapoff

9-28-54 gyp

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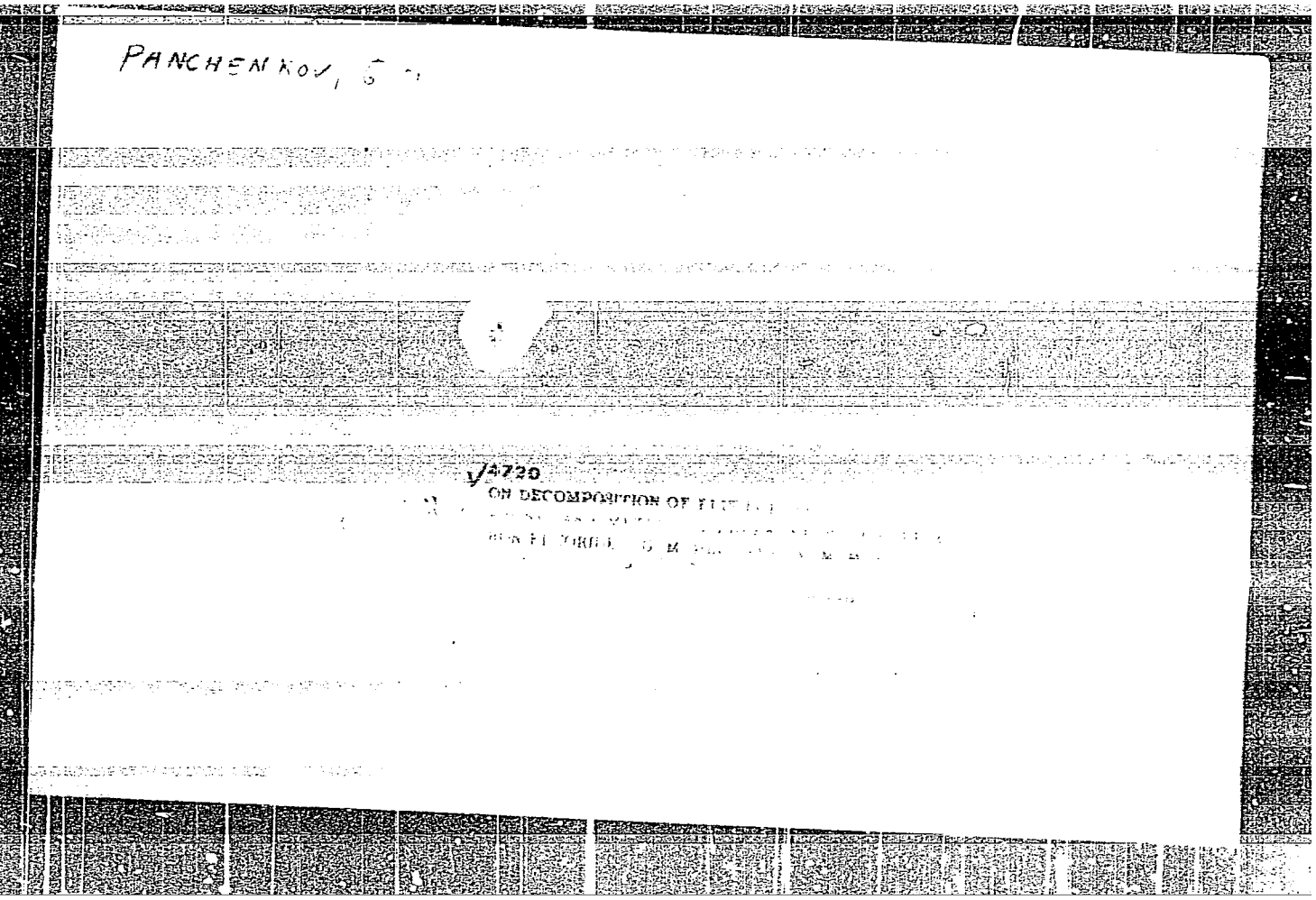

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PANCHENKOV, G M.

USSR/Electronics - Photoeffect. Electron and Ion Emission, H-2

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35105

Author: Panchenkov, G. M., Akishin, P. A., Vasil'yev, N. N.

Institution: None

Title: On the Thermionic Emission of Silicate and Alumo-Silicate Ion Exchangers

Original Periodical: Dokl. AN SSSR, 1955, No 4, 571-574

Abstract: See Abstract 35104

Card 1/1

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PANCHENKOV, G.M.

USSR/Electronics - Photoeffect. Electron and Ion Emission, H-2

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35104

Author: Panchenkov, G. M., Akishin, P. A., Vasil'yev, N. N.

Institution: None

Title: On the Thermionic Emission of Silicate and Alumo-Silicate Ion Exchangers

Original Periodical: Vestn. Mosk. un-ta., 1955, No 8, 3-15

Abstract: The authors remark that to obtain ions for the analysis of specimens in the solid phase in mass spectrometers one usually employs either the ionization surfaces, or else thermionic emission from heated salts. This work is devoted to experimental investigation of ion emission of certain substances for the purpose of finding a suitable emitter of ions for mass spectrometers. The objects studied were combination products of ions of alkali metals with alumo-silicates of various compositions. According to chemical and x-ray diffraction data, the alkali ions do not enter into the composition of the

Card 1/2

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

MAMEDOV, A.A.; PANCHENKOV, G.M.

Temperature and concentration dependance of the density and viscosity of binary systems of certain aromatic hydrocarbons. Zhur.fiz.khim. 29 no.7:1204-1220 Jl '55. (MLRA 9:3)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
(Aromatic compounds)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PANCHENKOV, G. M.

USSR/ Chemistry

Card 1/2 Pub. 22 - 19/47

Authors : Panchenkov, G. M; Moyseyev, V. M.; and Lebedev, Yu. A.

Title : The decomposition of aryldiazonium fluoroborates as a method of obtaining pure boron fluoride

Periodical : Dok. AN SSSR 100/6, 1103-1106, Feb 21, 1955

Abstract : The content of SiF_4 in BF_3 obtained through the decomposition of phenyldiazonium fluoroborates was determined by the mass-spectrometric method. It was found that BF_3 contains less SiF_4 than BF_3 obtained by conventional methods from ordinary reagents.

Institution : The M. V. Lomonosov State University, Moscow

Presented by: Academician A. V. Topchiev, September 25, 1954

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

Periodical : Dok. AN SSSR 100/6, 1103-1106, Feb 21, 1955

Card 2/2 Pub. 22 - 19/47

Abstract : The BF_3 obtained through decomposition of fluoroborates can be used in many cases in the form of a pure gas but for some purposes its purity was found to be insufficient. Four references: 1 USSR, 1 English, 1 USA and 1 German (1937-1953).

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PANCHENKOV, G. M.

Silicate mixes of the series ... 104, 571-4(1955). ... Data by calcination at 850° for 2 hr. ... $Al_2O_3 \cdot nSiO_2$ (n = 1-8) ... Alumino- 10% soln. of LiCl ...

... the ... ions can be emitted from ... optimum calcination ... in the cates prepd. under optimum ... calcination temp. metric ... of the salt solns. ... isotope analysis ... for mass-spectro- It is possible to introduce different ions into the aluminosilicates ... impregnated in the ... By varying the ... For Li+ one could a ... concn. ... $5 \times 10^{-}$ ... the exchanger. ficient. For elements of the ... of the ... havior of pure ... and Co was observed ... an exceptional be- emitted from the exchanger ... celerators for the ... ... emission. Also ... however, are sufficient ... of ac- etc. can act as thermionic ... silicates, acid-treated ... being mass spectr...

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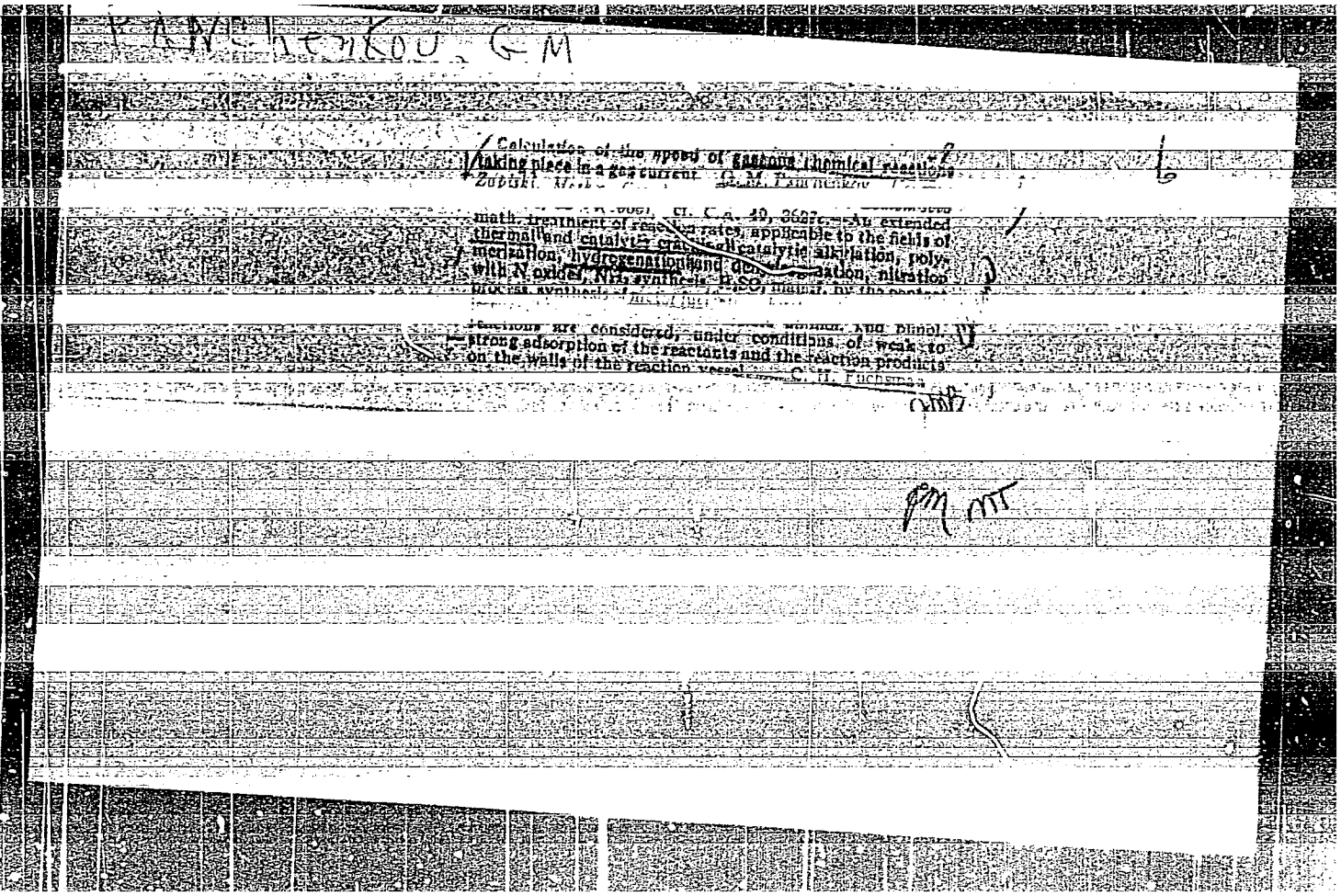
"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239



Calculation of the speed of gaseous chemical reactions
taking place in a gas current

math. treatment of reaction rates, applicable to the fields of thermal and catalytic cracking, catalytic alkylation, polymerization, hydrogenation and dehydrogenation, nitration with N oxides, NH3 synthesis, H2SO4 manuf. by the contact

reactions are considered, under conditions of weak to strong adsorption of the reactants and the reaction products on the walls of the reaction vessel.

H. Fuchsman

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ZHIGACH, K.F., professor, otvetstvennyy redaktor; MURAV'YEV, I.M., professor, redaktor; TIKHOMIROV, A.A., kandidat ekonomicheskikh nauk, redaktor; YEGOROV, V.I., kandidat ekonomicheskikh nauk, redaktor; CHARYGIN, M.M., professor, redaktor; DUNAYEV, F.F., professor, redaktor; NAMETKIN, N.S., dotsent, redaktor; BIRYUKOV, V.I., dotsent, redaktor; YEGOROV, A.F., dotsent, redaktor; CHARNYY, I.A., professor, redaktor; CHERNOZHUKOV, P.I., professor, redaktor; KUZMAK, Ye.M., professor, redaktor; DOKHNOV, V.N., professor, redaktor; PANCHENKOV, G.M., professor, redaktor; ALMAZOV, N.A., dotsent, redaktor; TAGIYEV, E.I., redaktor; GUREVICH, redaktor; ZHIGACH, K.F., redaktor; DAYEV, G.A., vedushchiy redaktor; GENNAD'YEVA, I.M., tekhnicheskiy redaktor

[The tenth scientific and technical conference, 1955] Desiataia nauchno-tekhnicheskaia konferentsiia, 1955 g. Leningrad, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, Leningradskoe otd-nie, 1956. 167 p. (MIRA 9:7)

1. Moscow. Moskovskiy neftyanoy institut. Nauchnoye studencheskoye obshchestvo
(Petroleum engineering) (Petroleum geology)

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Panchenkov, G. M.

Distr: 4E4j/4E3d/4E2c(j)

Verification of the viscosity formula of G. M. Panchenkov. Kh. M. Khalilov and F. P. Kesamanly. *Trudy Inst. Fiz. i Mat., Akad. Nauk Azerbaidzhan. S.S.R., Ser. Fiz.* 8, 65-70(1956)(in Russian). The Panchenkov viscosity formula (*C.A.* 46, 6919; 44, 9755d) $\eta = (12R^{1/2}c^{1/2}N_A^{2/3})\,\omega^{1/2}\ldots T^{1/2}\exp(\Delta S/R)[\exp(\epsilon/RT) - 1]$, holds well (±5%) for the liquids pentane, hexane, heptane, benzene, Et formate, Pr formate, MeOH, EtOH, and PrOH over the temp. interval ~0-250°. The values of η tend to be too high at around 0° and below, and too low near the crit. region.

Franz H. Rathmann

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[illegible]ICHENKOV, G. M.

Nature of the active centers of aluminum silicate catalysts and the catalytic cracking of hydrocarbons. G. M. Pan[illegible]chenkov. Trudy Neft. Inst. im. I. M. Gubk[illegible] 165-212 [illegible]

[illegible] the 4th annual session of the French Phys. Chem. Soc. [illegible] presented

H. L. Olin

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PANCHENKOV, G. M.

USSR/ Physical Chemistry - Thermodynamics. Thermochemistry. Equilibrium. Physicochemical analysis. Phase transitions B-8

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11189

Author : Levina I.I., Panchenkov G.M.
Title : Empirical Equations for Calculating the Densities of the System Ethyl Alcohol - Water at Different Temperatures

Orig Pub : Zh. prikl. khimii, 1956, 29, No 1, 132-133

Abstract : For the calculation of densities (d) of aqueous solutions of ethyl alcohol in the temperature interval 10 - 40° there is proposed the equation $d_t = a - bt - ct^2$. Constants a, b, c have been computed and tabulated for mixtures containing 10 - 90% by weight of alcohol (at intervals of 10%). Deviation of calculated values of d from experimental values $\leq \pm$ 0.005%.

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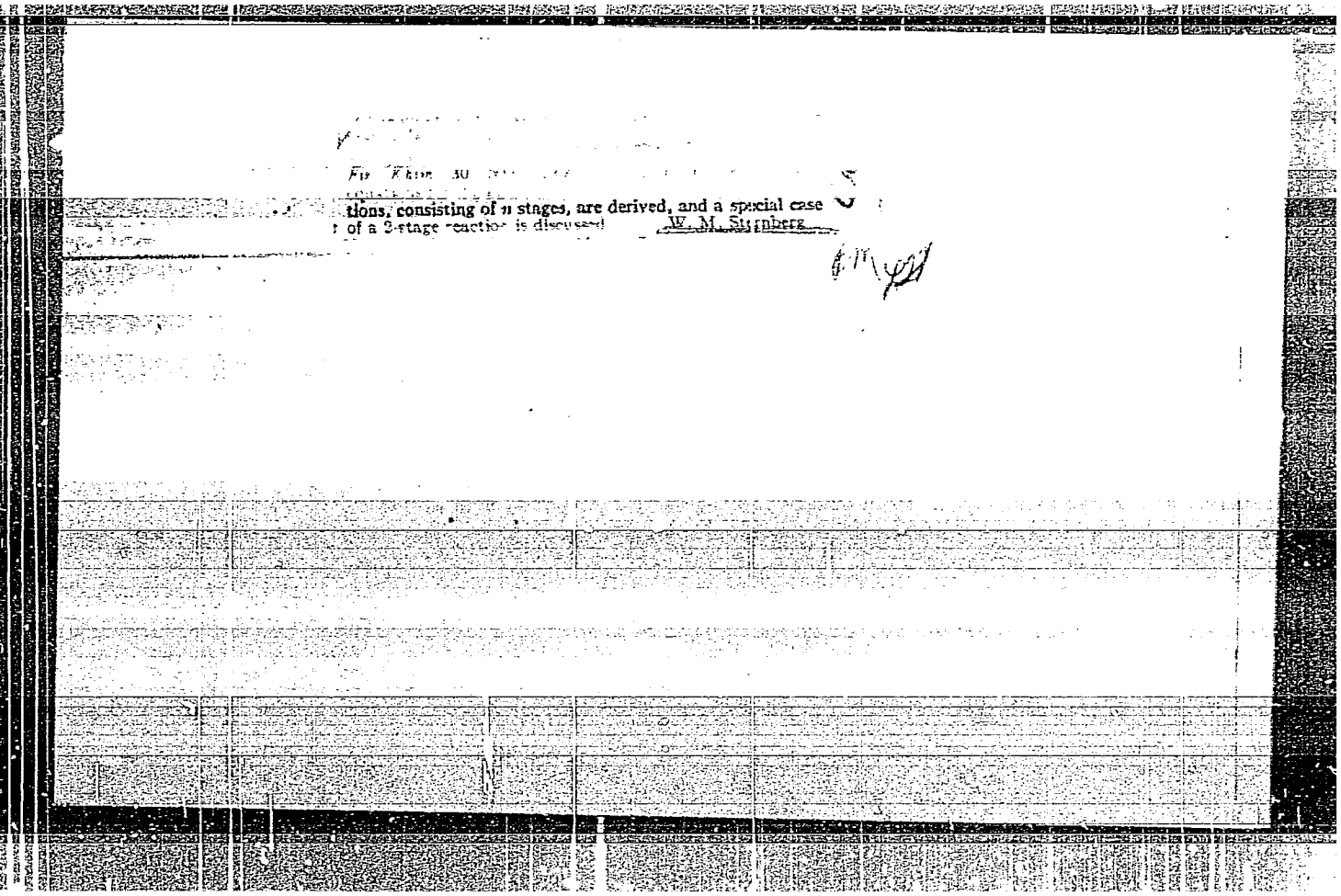

tions, consisting of n stages, are derived, and a special case
of a 3-stage reaction is discussed. W. M. Stigler

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PANCHENKOV, G.M.

USSR/Nuclear Physics C-2

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 10995

Author : Panchenkov, G.M., Moiseyev, B.D.

Inst : Moscow State University, USSR

Title : Mass-Spectrometric Isotopic Analysis of Boron Fluoride

Orig Pub : Zh. fiz. khimii, 1956, 30, No 5, 1118-1125

Abstract : Description of a method for measuring small differences in the isotopic composition of specimens of boron (BF_3) by comparing their mass spectrum with the spectrum of a standard. By way of a standard one employs BF_3 with natural concentration of B^{10}. It is shown in the work that the fundamental cause of the great dispersion in the mass-spectroscopic data observed in the analysis of BF_3 is the strong adsorption of this gas in the walls of the chamber of the mass spectrometer and the associated effect of

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USSR/Nuclear Physics

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 10995

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isotopic fractionization during the desorption of this gas during the pumping-out process. The value of the ratio B^{10}/B^{11} measured in this work in the standard specimen turned out to be 4.44 ± 0.05.

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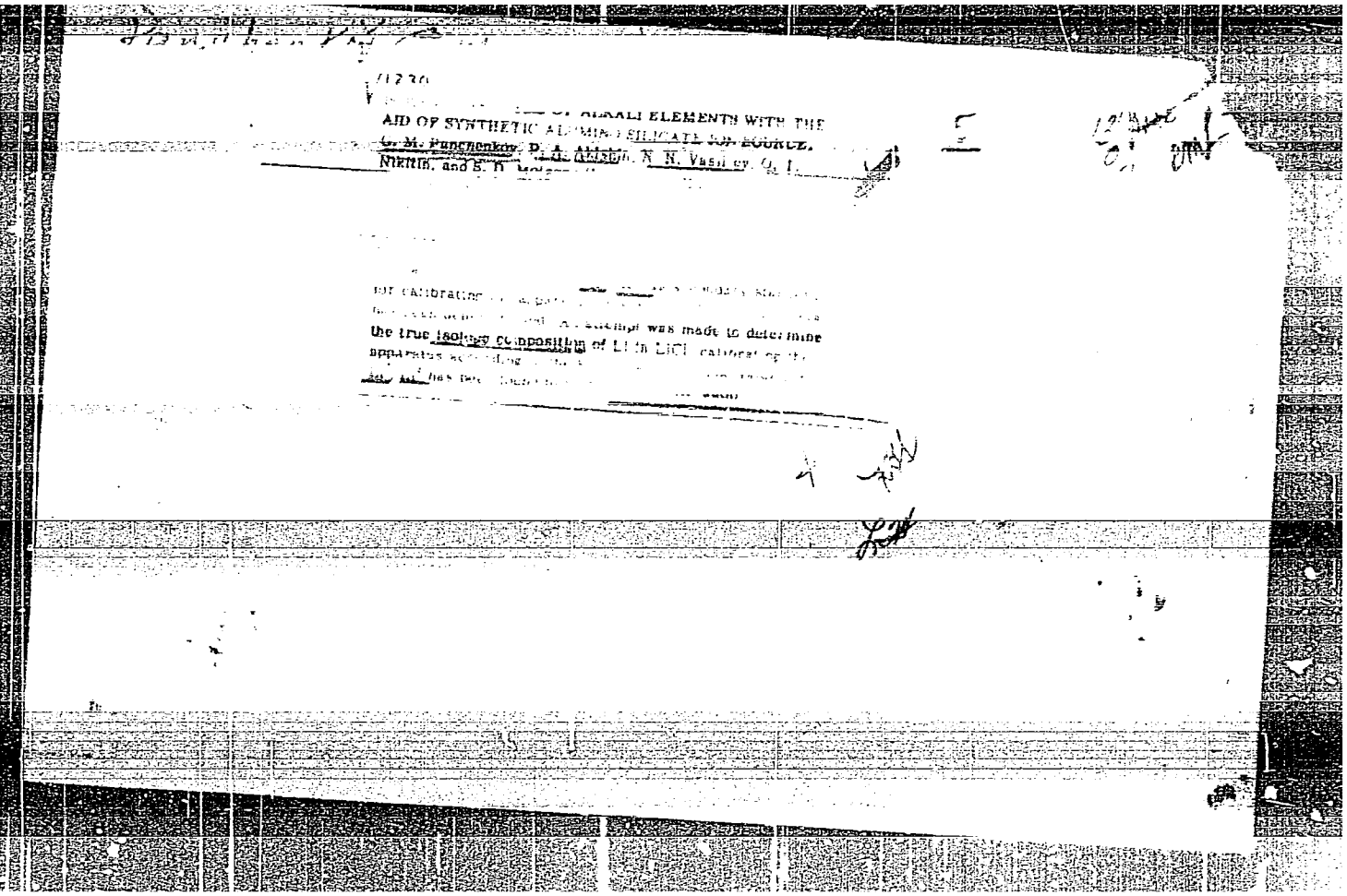

AID OF SYNTHETIC ALUMINO-SILICATE ION-EXCHANGE.

G. M. Panchenkov, P. A. Akishin, N. N. Vasil'ev, Q. I.

Nikitin, and S. D.

for calibration

The true isotopic composition of Li in LiCl calibrated

apparatus

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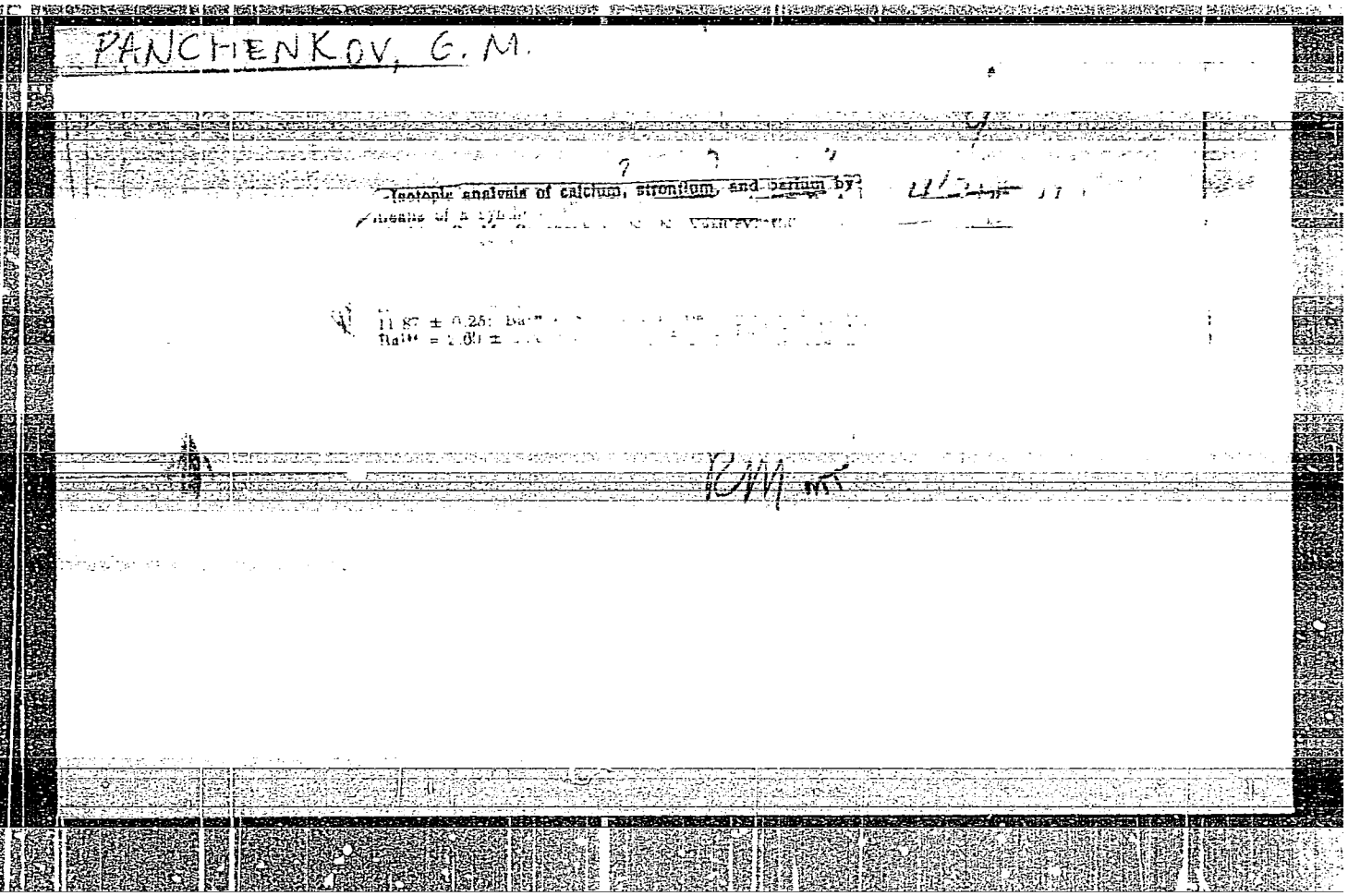

PANCHENKOV, G. M.

Isotopic analysis of calcium, strontium, and barium by

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PANCHENKOV, G.M.

USSR/Isotopes. B-7

Abs Jour : Referat Zhur - Khimiya, No 6, 1957, 18415

Author : G.M. Panchenkov, V.D. Moiseyev.
Title : Concentration of Isotopes C^{13} and O^{18} in Carbon Dioxide by Thermo-diffusion Method.

Orig Pub : Zh. fiz. Khimii, 1956, 30, No 7, 1662-1667

Abstract : The concentration of isotopes C^{13} and O^{18} in a molybdenum glass tube by the thermodiffusion method was studied. The inside radius of the tube was 0.40 cm, the top and the bottom of the tube were connected with receivers, the capacity of which was 2.5 l and 60 ml respectively, and a Pt filament (287 cm long, radius 0.015 cm) was stretched along the tube axis. Co prepared by gradual addition of HCOOH to concentrated H_2SO_4 and purified by $KMnO_4$, KOH and concentrated H_2SO_4 was fed into the tube previously evacuated to 10^{-2} - 10^{-3} mm of mercury column; the Pt filament was heated to 730°; samples

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PANCHENKOV, G.M.; SEMIOKHIN, I.A.; MAURINA, A.G.; YERSHOVA, Z.P.

Separation of the stable hydrocarbon isotopes by counter current chemical exchange in the gaseous phase. Part.1 [with English summary in insert]. Zhur.fiz.khim. 30 no.9:2070-2076 S '56. (MLRA 9:12)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
(Carbon--Isotopes)

APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R0012390

"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PANCHENKOV, G.M.; MOISEYEV, V.D.; LEBEDEV, Yu.A.

Separation of boron isotopes by thermal diffusion. Zhur. fiz. khim. 30 no.10:2348-2352 O '56. (MLRA 10:4)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova
(Boron--Isotopes)

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PANCHENKOV, G.M.

USSR/Kinetics - Combustion. Explosions. Topochemistry. Catalysis. B-9

Abs Jour : Referat Zhur - Khimiya, No 6, 1957, 18637

Author : G.M. Panchenkov, Z.V. Gryaznova, V.M. Yemel'yanova.
Inst : Academy of Sciences of USSR.
Title : Study of Cumene Cracking on Deuteronized Alumosilicate Catalysts.

Orig Pub : Dokl. AN SSSR, 1956, 109, No 2, 325-328

Abstract : Cumene cracking was investigated in a flow system at 450° on three deuteronized catalysts: Al_2O_3 (I), SiO_2 (II) and an alumosilicate catalyst (III) of the composition 32.75% of Al_2O_3 and 67.25% of SiO_2 prepared of the same gels as I and II. The determination of the quantitative composition of the reaction products and their contents of deuterium was carried out. It was found that the speed of hydrogen interchange between the catalyst III and cumene at 350 to 500° did not depend much on the temperature and that it was very close to the interchange

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Abs Jour : Referat Zhur - Khimiya, No 6, 1957, 18637

speed of the reaction products - benzene, propylene and their equimolecular mixtures - under analogous conditions. The authors assume that the deuterium interchange reaction on the catalyst III was independent and proceeded independently of the cracking reaction. The interchange reaction was observed on I under corresponding conditions, but the cracking reaction did not take place; none of these reactions occurred on II.

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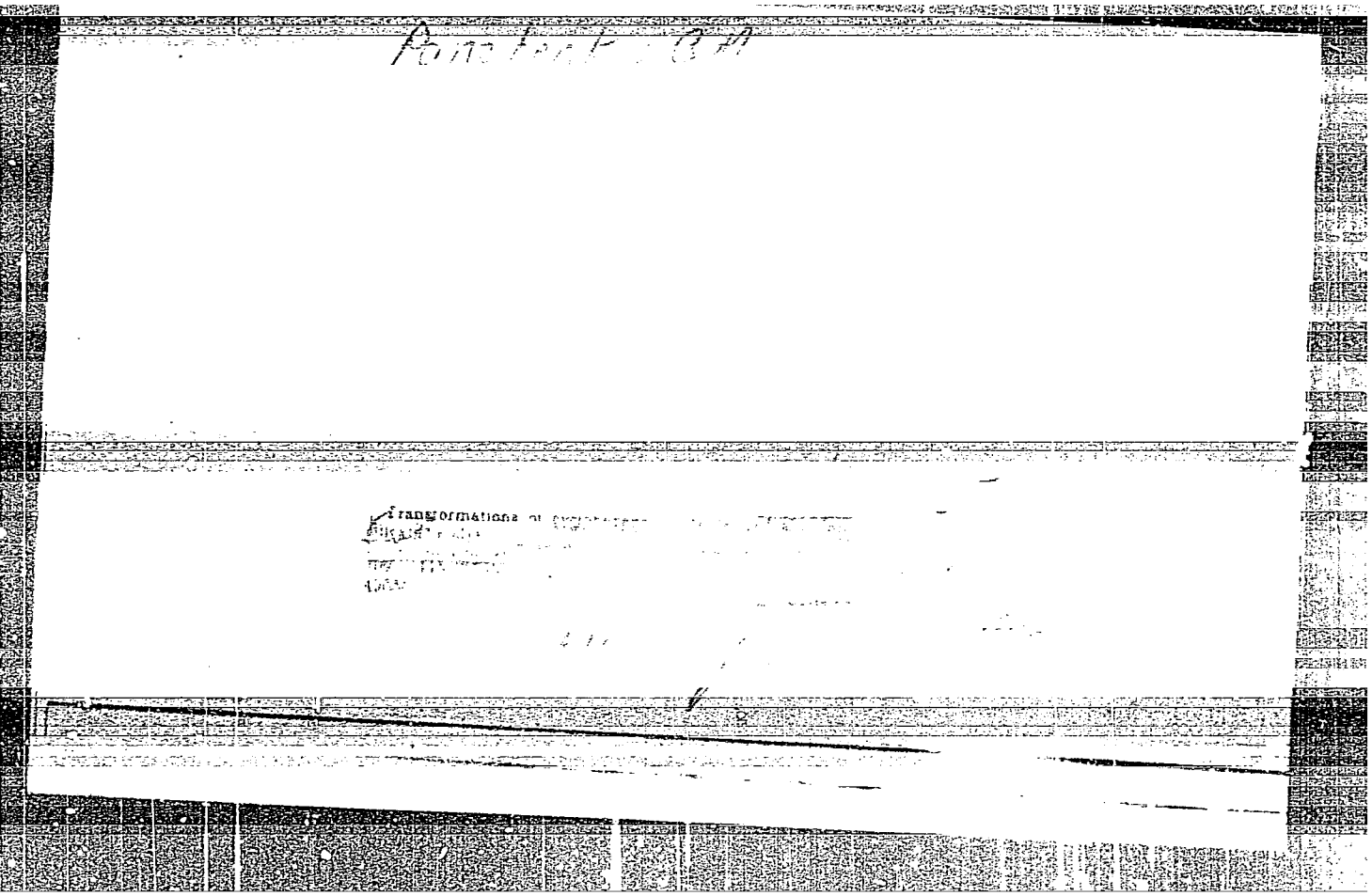

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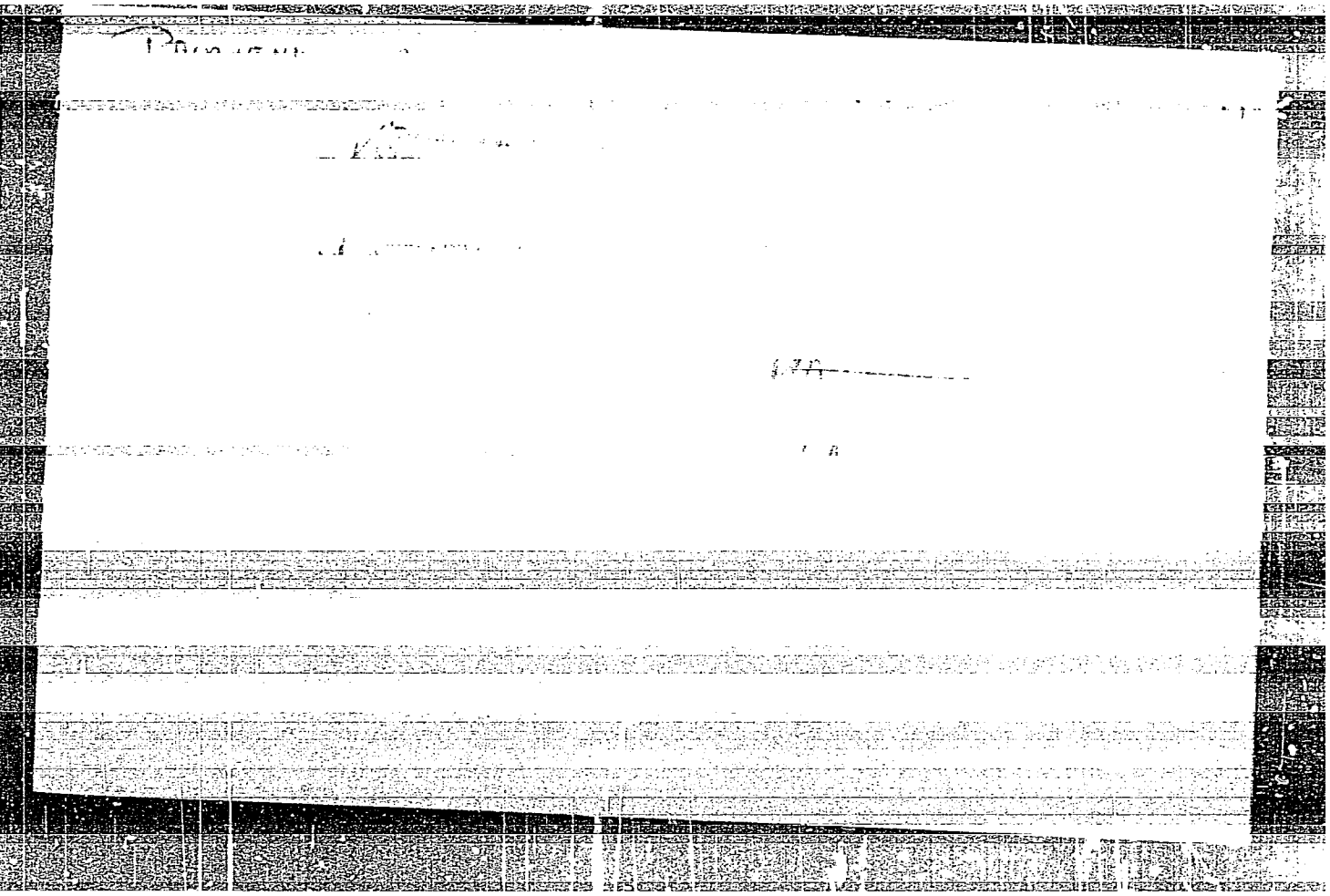

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PANCHENKOV, G. M.

PANCHENKOV, G. M.

"Nuclear Energy in Various Petroleum Refining Processes," Utilization of Radioactive Isotopes, & Emanations in the Petroleum Industry (Symposium), Min. Petroleum Industry USSR, 1957.

Results of the Joint Session of the Technical Council of Min. of the Petroleum Industry USSR and Soviet Sci. and Technical Association, Moscow 14-19 Mar 1956.

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PANCHENKOV, G.

Moscow State U.

"Etude de la diffusion dans les liquides par la micromethode diffractionnelle," paper submitted at 16th. International Congress of Pure and Applied Chemistry, Paris, 18-24 July 1957

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PANCHENKOV, G. M., GRYAZNOVA, Z. V., YEMEL'YANOVA, V. M., GANICHENKO, L. G.

"Conversion of Hydrocarbons on Deuterated Aluminosilicate Catalysts."

Problemy Kinetics and Catalysis, 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 5, 1956.

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

PANCHENKOV, G. M., AKISHIN, P. A., VASIL'YEV, N. N.

"Mass Spectrometric Study of Aluminosilicate Catalysts."

Problemy Kinetics and Catalysis, 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 5, 1956.

use of tagged atoms in the study of the mechanism of the conversion of hydrocarbons.

Bibliography 14 references.

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"APPROVED FOR RELEASE: Tuesday, August 01, 2000 CIA-RDP86-00513R001239

AKISHIN, P.A.; NIKITIN, O.T.; PANCHENKOV, G.M.

A new effective ion emitter for the isotopic analysis of lead.
Geokhimiia no.5:425-429 ' 57. (MIRA 12:3)

1. Chemical Faculty of the Moscow State University bearing the name of Lomonosov.

(Lead--Analysis)

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