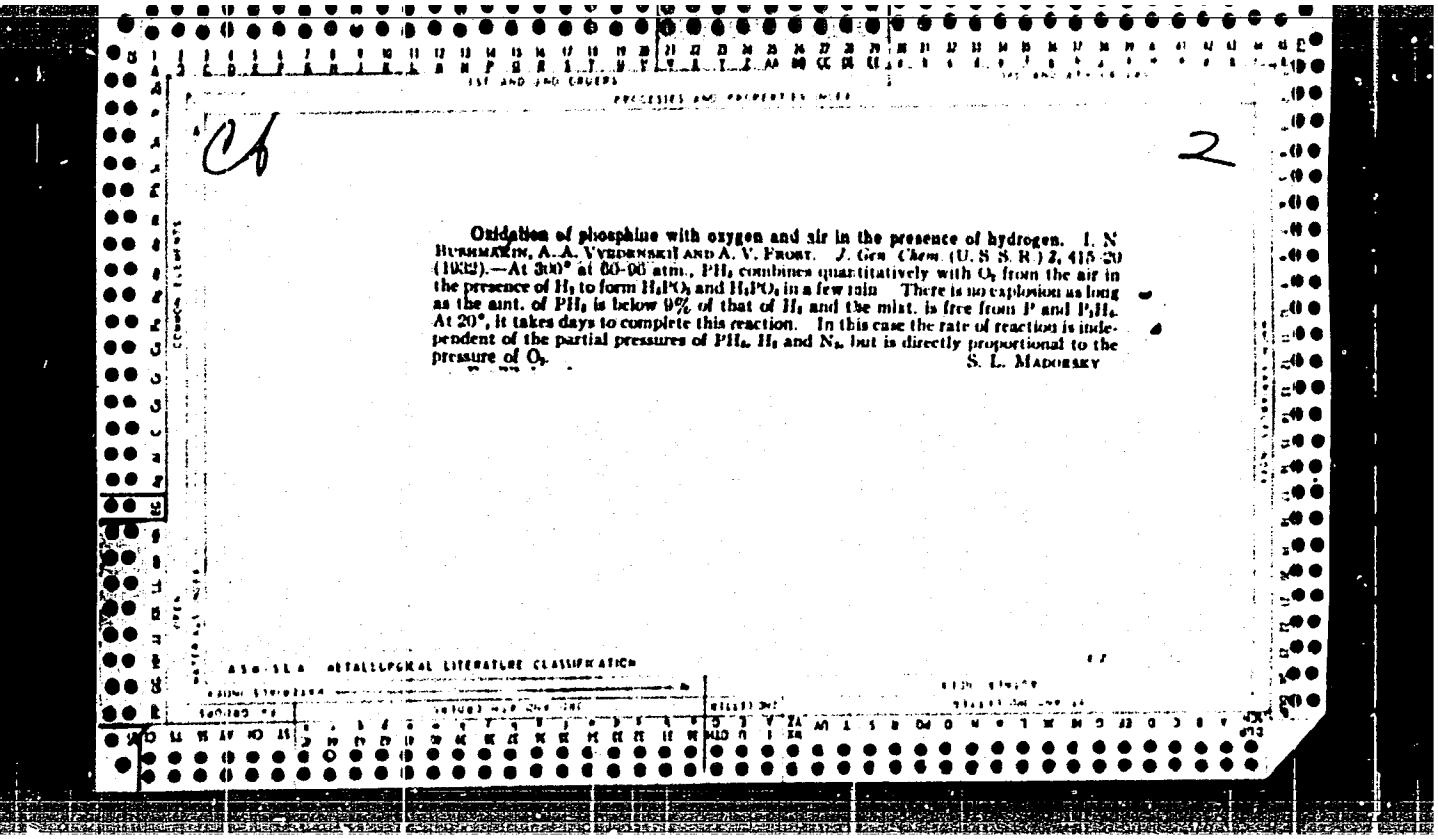
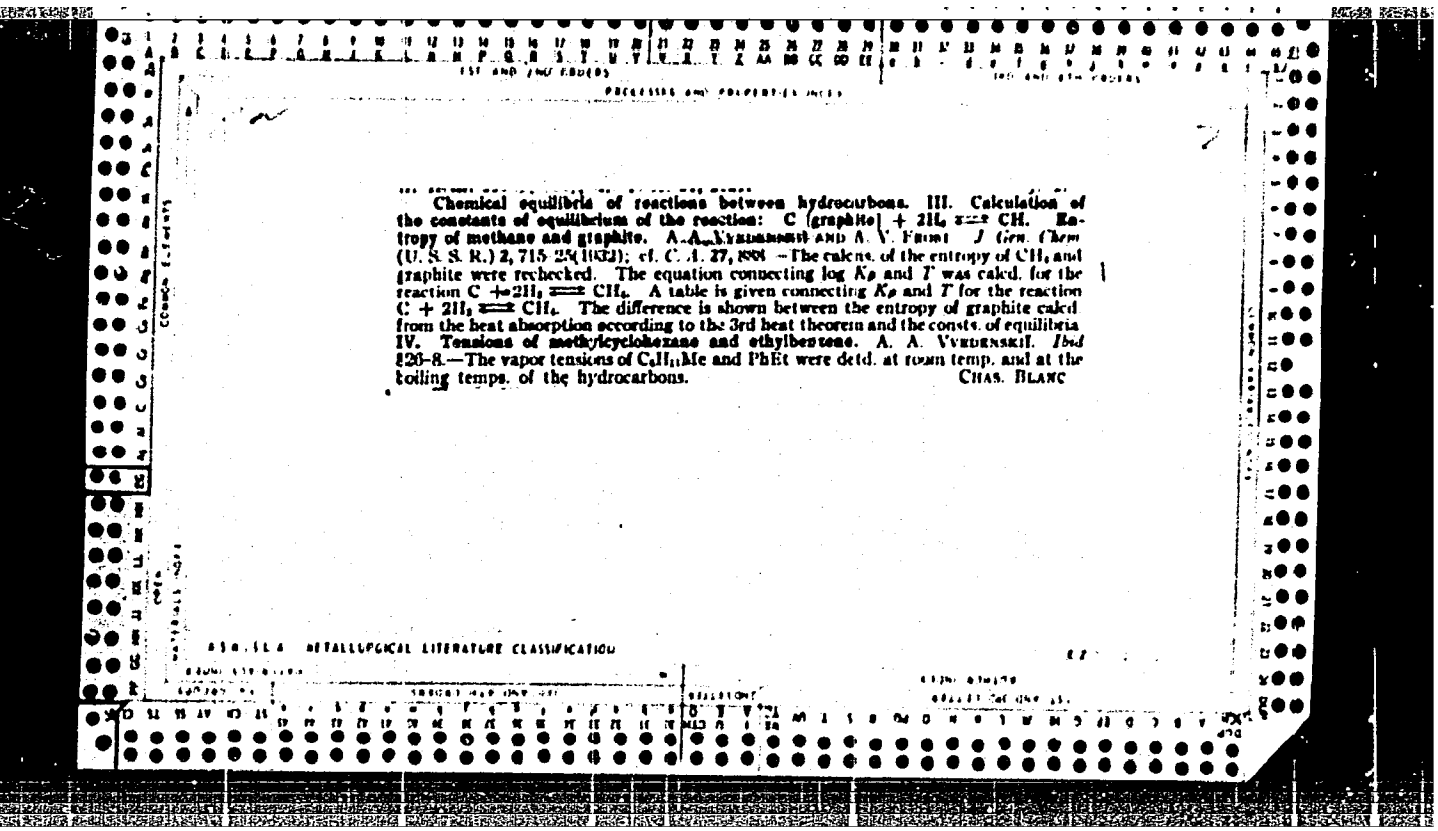
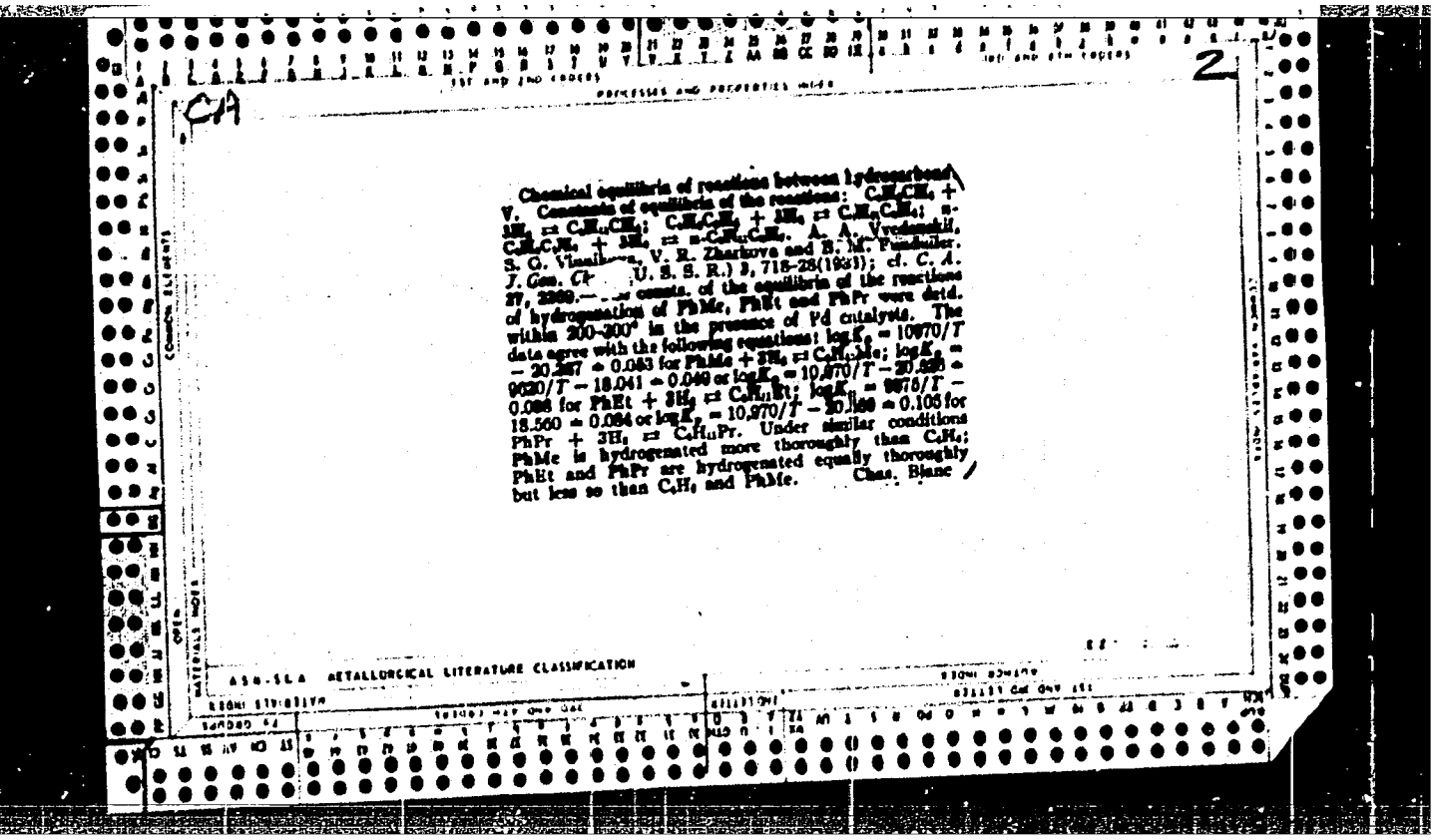


Oxidation of phosphine with oxygen and air in the presence of hydrogen. I. N. BUSHMAKIN, A. A. VVEDENSKII AND A. V. FROST. *J. Gen. Chem.* (U. S. S. R.) 2, 415-20 (1932).—At 300° at 60-90 atm., PH_3 combines quantitatively with O_2 from the air in the presence of H_2 to form H_3PO_3 and H_3PO_4 in a few min. There is no explosion as long as the amt. of PH_3 is below 9% of that of H_2 and the mixt. is free from P and P_2H_4. At 20°, it takes days to complete this reaction. In this case the rate of reaction is independent of the partial pressures of PH_3, H_2 and N_2, but is directly proportional to the pressure of O_2.

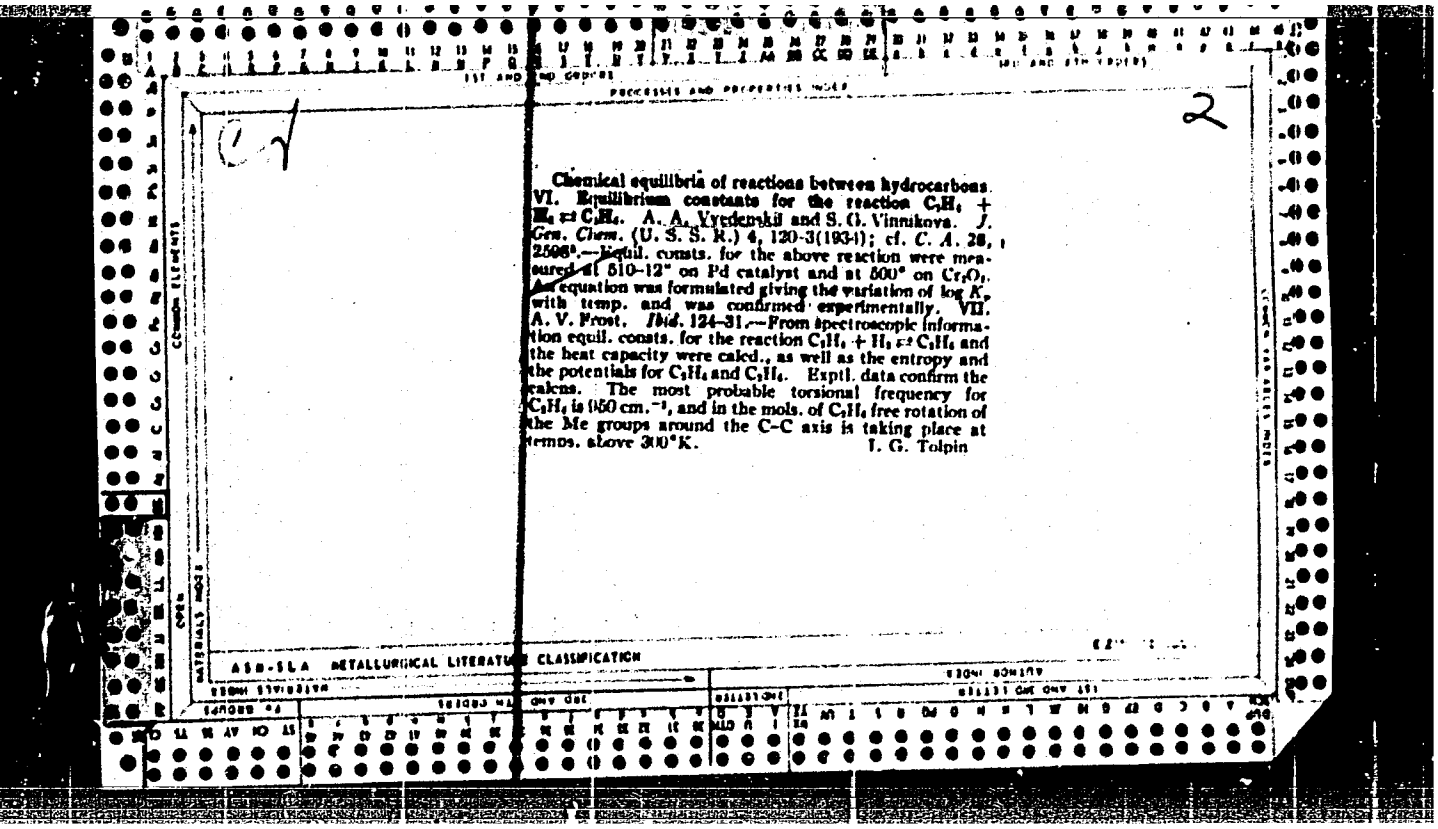
S. L. MADORSKY



Chemical equilibria of reactions between hydrocarbons. III. Calculation of the constants of equilibrium of the reaction: C (graphite) + 2H$_2$ ⇌ CH$_4$. Entropy of methane and graphite. A. A. Vyazmenskiĭ and A. V. Frost. *J Gen. Chem* (U. S. S. R.) 2, 715-25(1932); cf. *C. A.* 27, 888.—The calcns. of the entropy of CH$_4$ and graphite were rechecked. The equation connecting log K_p and T was calcd. for the reaction C + 2H$_2$ ⇌ CH$_4$. A table is given connecting K_p and T for the reaction C + 2H$_2$ ⇌ CH$_4$. The difference is shown between the entropy of graphite calcd from the heat absorption according to the 3rd heat theorem and the consts. of equilibria. **IV. Tensions of methylcyclohexane and ethylbenzene.** A. A. Vyazmenskiĭ. *Ibid* 826-8.—The vapor tensions of C$_6$H$_{11}$Me and PhEt were detd. at room temp. and at the boiling temps. of the hydrocarbons. Chas. Blanc

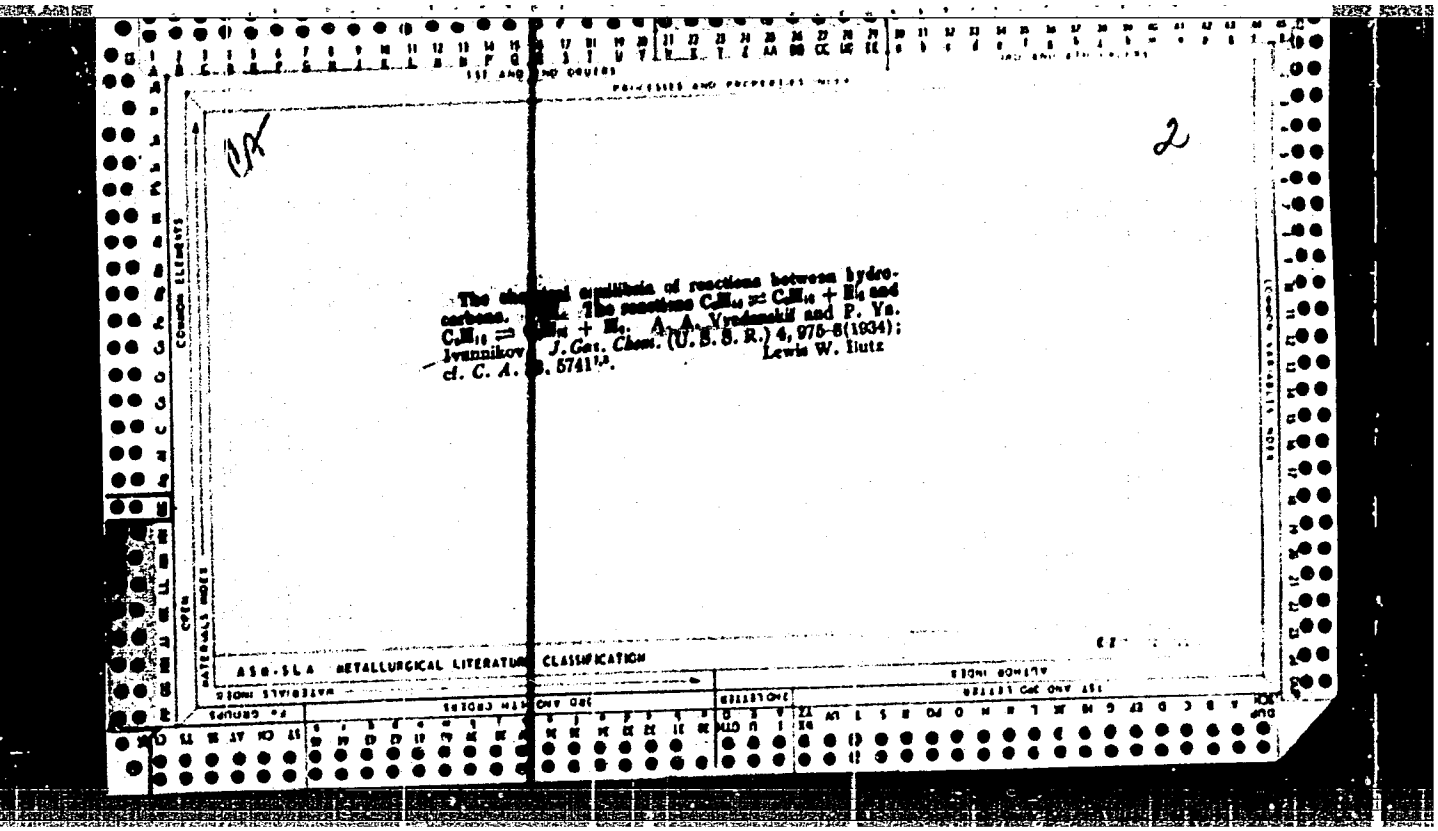


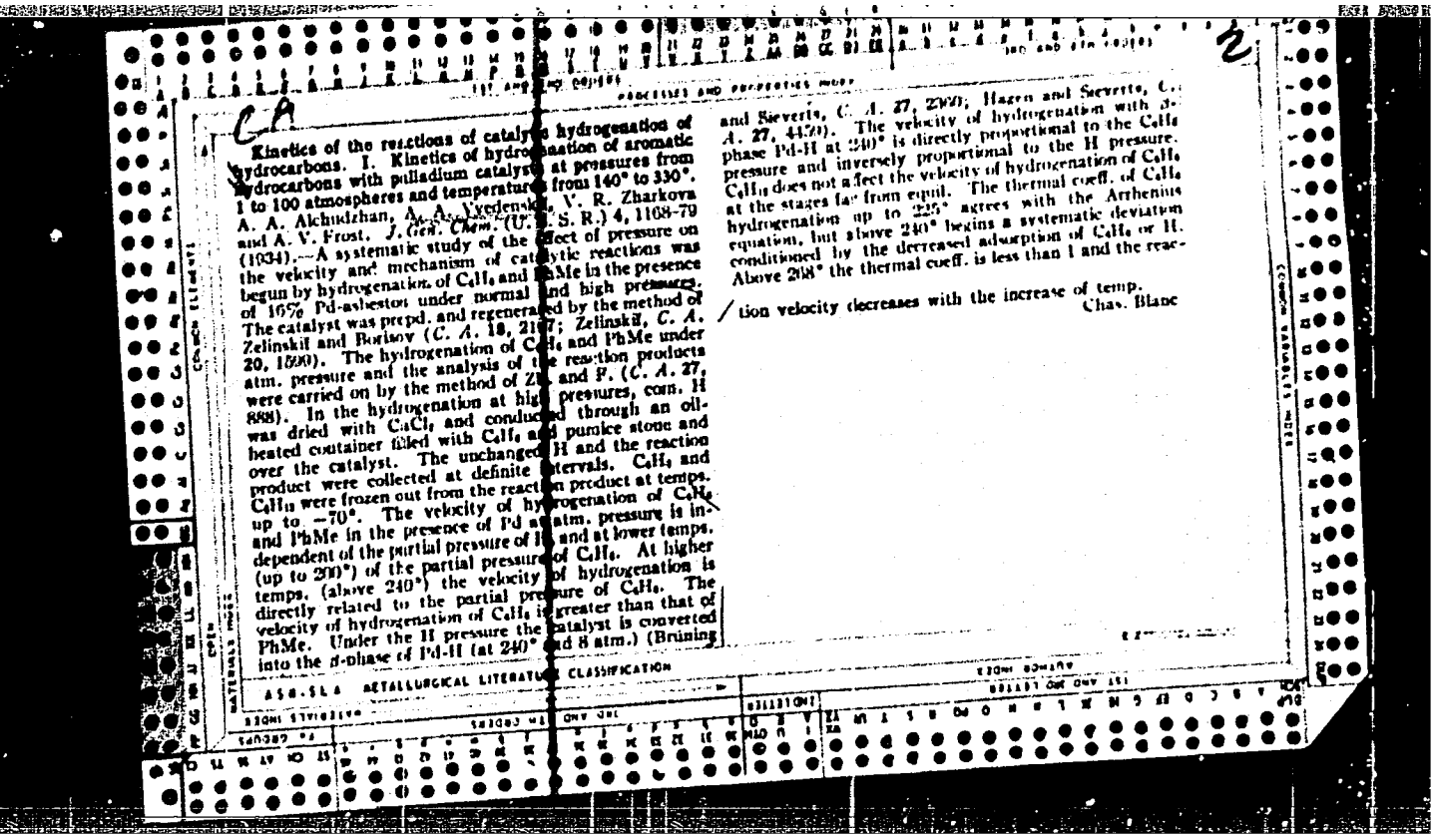
V. Constants of equilibria of the reactions: $C_6H_5CH_3 + 3H_2 \rightleftarrows C_6H_{11}CH_3$; $C_6H_5C_2H_5 + 3H_2 \rightleftarrows C_6H_{11}C_2H_5$; n-$C_6H_5C_3H_7 + 3H_2 \rightleftarrows$ n-$C_6H_{11}C_3H_7$. A. A. Vvedenskii, S. O. Vinnik, V. R. Zharkova and B. M. Fundyuller. *J. Gen. Ch.* U. S. S. R.) 3, 718-28(1933); cf. *C. A.* 27, 2000.— ... consts. of the equilibria of the reactions of hydrogenation of PhMe, PhEt and PhPr were detd. within 200-300° in the presence of Pd catalysts. The data agree with the following equations: $\log K_p = 10970/T - 20.287 \pm 0.043$ for $PhMe + 3H_2 \rightleftarrows C_6H_{11}Me$; $\log K_p = 9020/T - 18.041 \pm 0.049$ or $\log K_p = 10,970/T - 20.350 \pm 0.086$ for $PhEt + 3H_2 \rightleftarrows C_6H_{11}Et$; $\log K_p = 9976/T - 18.560 \pm 0.084$ or $\log K_p = 10,970/T - 20.160 \pm 0.105$ for $PhPr + 3H_2 \rightleftarrows C_6H_{11}Pr$. Under similar conditions PhMe is hydrogenated more thoroughly than C_6H_6; PhEt and PhPr are hydrogenated equally thoroughly but less so than C_6H_6 and PhMe. Chas. Blanc



Chemical equilibria of reactions between hydrocarbons. VI. Equilibrium constants for the reaction $C_2H_4 + H_2 \rightleftarrows C_2H_6$. A. A. Vredenskii and S. G. Vinnikova. *J. Gen. Chem.* (U. S. S. R.) 4, 120-3(1934); cf. *C. A.* 28, 2508°.—Equil. consts. for the above reaction were measured at 510–12° on Pd catalyst and at 500° on Cr_2O_3. An equation was formulated giving the variation of log K_p with temp. and was confirmed experimentally. VII. A. V. Frost. *Ibid.* 124–31.—From spectroscopic information equil. consts. for the reaction $C_2H_4 + H_2 \rightleftarrows C_2H_6$ and the heat capacity were calcd., as well as the entropy and the potentials for C_2H_6 and C_2H_4. Expti. data confirm the calcns. The most probable torsional frequency for C_2H_6 is 950 cm.$^{-1}$, and in the mols. of C_2H_6 free rotation of the Me groups around the C–C axis is taking place at temps. above 300°K.

I. G. Tolpin

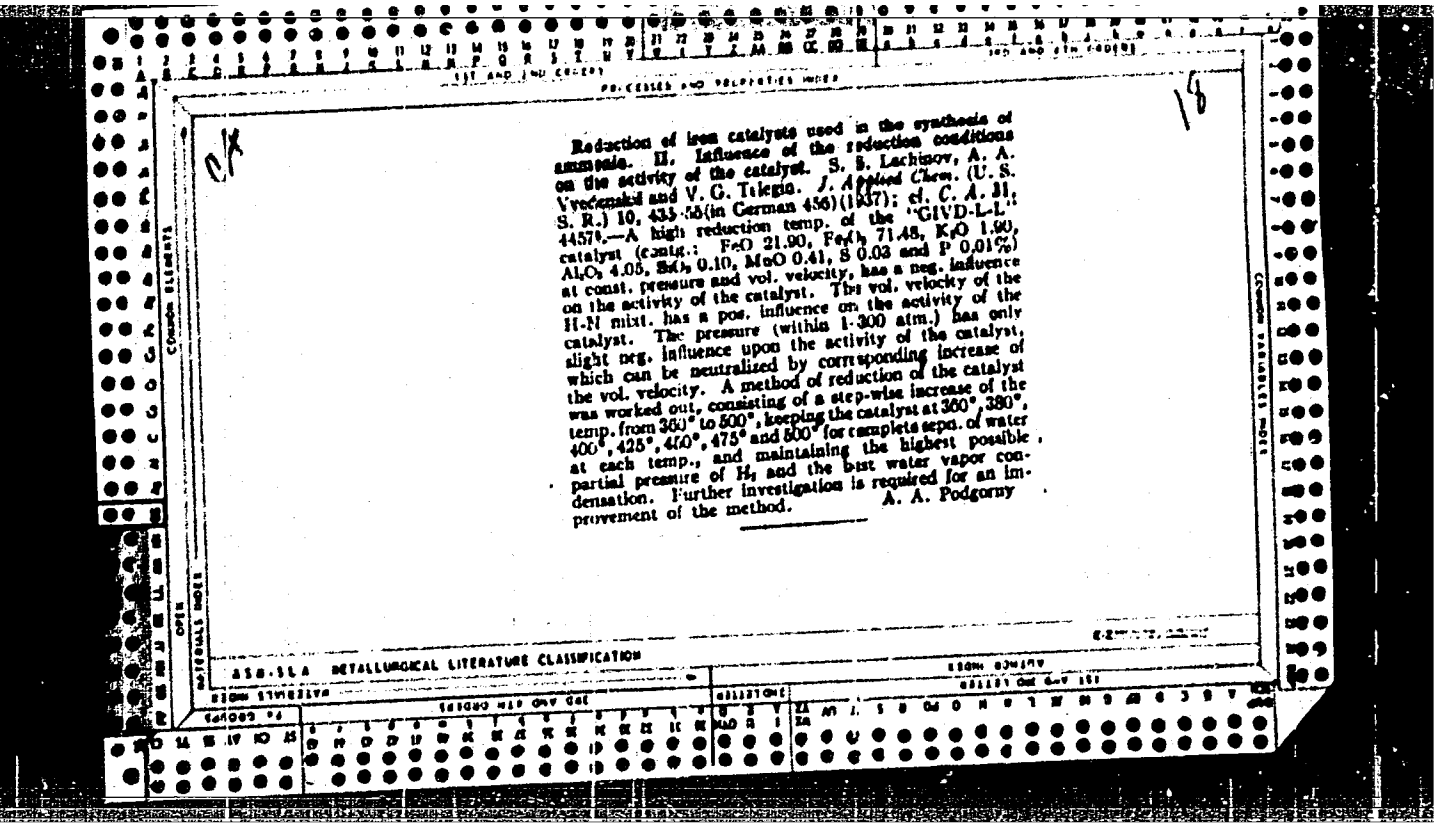




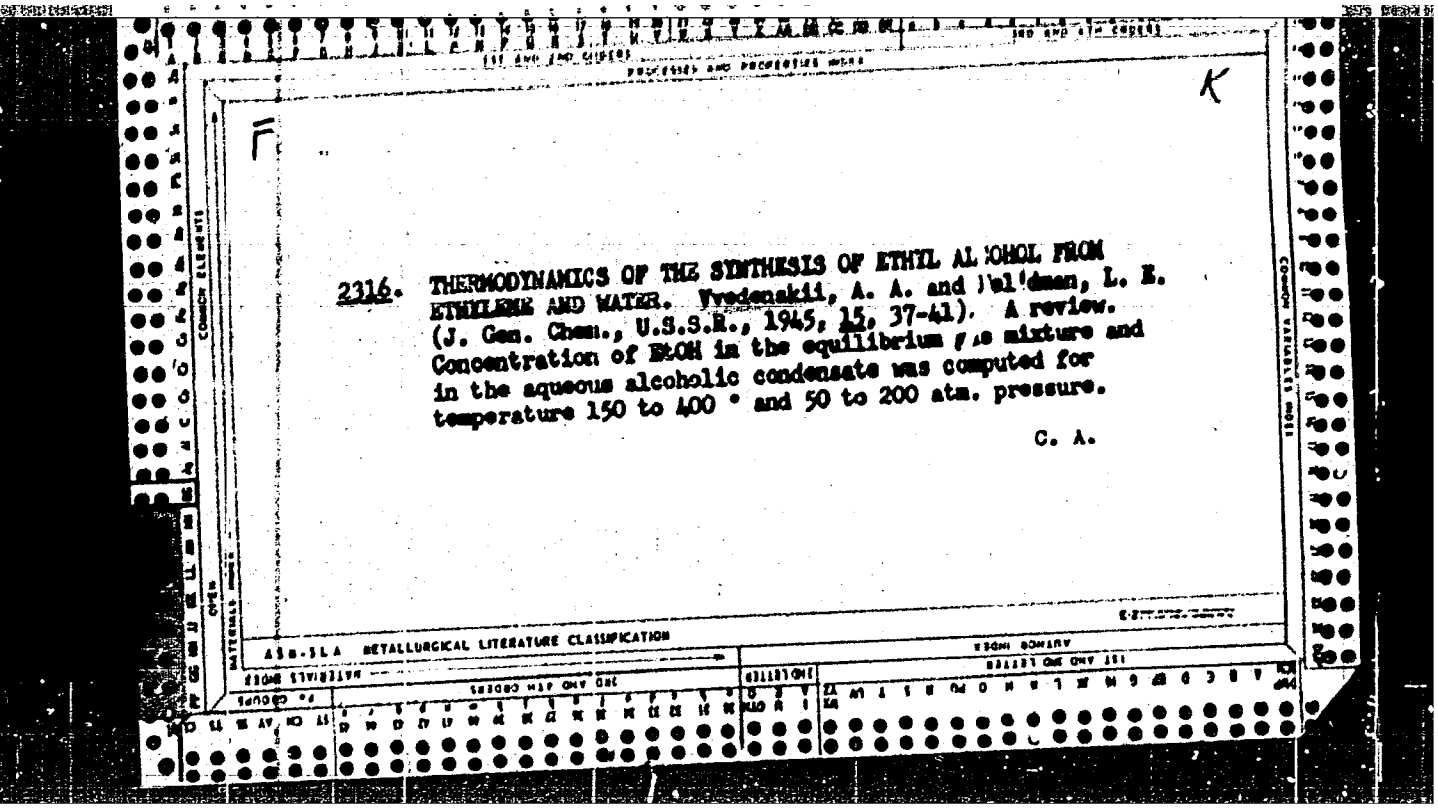
CA

Kinetics of the reactions of catalytic hydrogenation of hydrocarbons. I. Kinetics of hydrogenation of aromatic hydrocarbons with palladium catalysts at pressures from 1 to 100 atmospheres and temperatures from 140° to 330°. A. A. Alchudzhan, A. A. Vyerdenskaya, V. R. Zharkova and A. V. Frost. *J. Gen. Chem.* (U. S. S. R.) 4, 1168-79 (1934).—A systematic study of the effect of pressure on the velocity and mechanism of catalytic reactions was begun by hydrogenation of C_6H_6 and PhMe in the presence of 16% Pd-asbestos under normal and high pressures. The catalyst was prepd. and regenerated by the method of Zelinskii and Borisov (*C. A.* 18, 2107; Zelinskii, *C. A.* 20, 1500). The hydrogenation of C_6H_6 and PhMe under atm. pressure and the analysis of the reaction products were carried on by the method of Z. and F. (*C. A.* 27, 888). In the hydrogenation at high pressures, com. H was dried with $CaCl_2$ and conducted through an oil-heated container filled with C_6H_6 and pumice stone and over the catalyst. The unchanged H and the reaction product were collected at definite intervals. C_6H_6 and C_6H_{12} were frozen out from the reaction product at temps. up to −70°. The velocity of hydrogenation of C_6H_6 and PhMe in the presence of Pd at atm. pressure is independent of the partial pressure of H and at lower temps. (up to 200°) of the partial pressure of C_6H_6. At higher temps. (above 240°) the velocity of hydrogenation is directly related to the partial pressure of C_6H_6. The velocity of hydrogenation of C_6H_6 is greater than that of PhMe. Under the H pressure the catalyst is converted into the β-phase of Pd-H (at 240° and 8 atm.) (Brüning and Sieverts, *C. A.* 27, 2990; Hagen and Sieverts, *C. A.* 27, 4479). The velocity of hydrogenation with β-phase Pd-H at 240° is directly proportional to the H pressure. C_6H_{12} does not affect the velocity of hydrogenation of C_6H_6 at the stages far from equil. The thermal coeff. of C_6H_6 hydrogenation up to 225° agrees with the Arrhenius equation, but above 240° begins a systematic deviation conditioned by the decreased adsorption of C_6H_6 or H. Above 288° the thermal coeff. is less than 1 and the reaction velocity decreases with the increase of temp.

Chas. Blanc

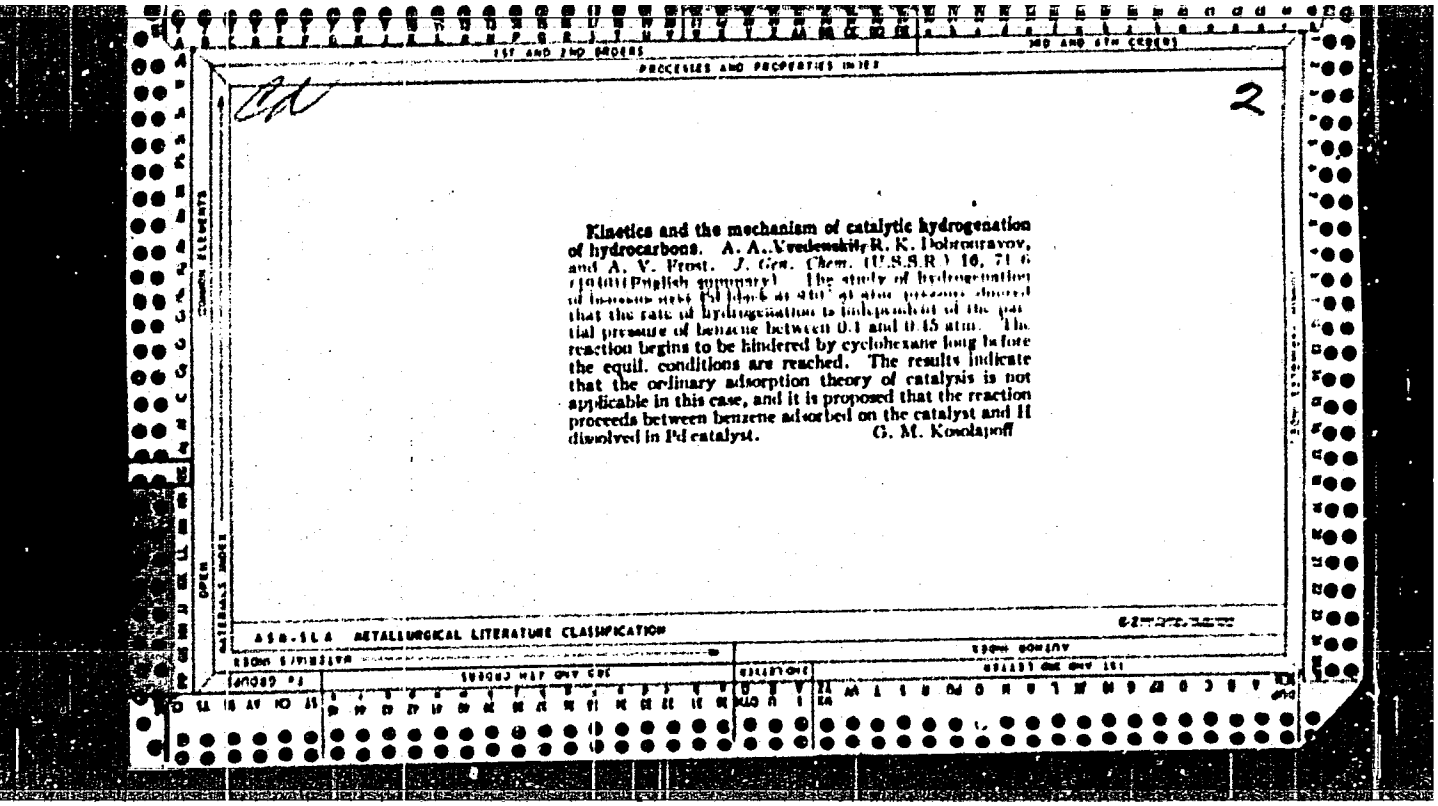


Reduction of iron catalysts used in the synthesis of ammonia. II. Influence of the reduction conditions on the activity of the catalyst. S. S. Lachinov, A. A. Vvedenskii and V. G. Telegin. *J. Applied Chem.* (U. S. S. R.) 10, 433-55(in German 456)(1937); cf. *C. A.* 31, 4457⁸.—A high reduction temp. of the "GIVD-L-L" catalyst (contg.: FeO 21.90, Fe_2O_3 71.48, K_2O 1.90, Al_2O_3 4.05, SiO_2 0.10, MnO 0.41, S 0.03 and P 0.01%) at const. pressure and vol. velocity, has a neg. influence on the activity of the catalyst. The vol. velocity of the H-N mixt. has a pos. influence on the activity of the catalyst. The pressure (within 1-300 atm.) has only slight neg. influence upon the activity of the catalyst, which can be neutralized by corresponding increase of the vol. velocity. A method of reduction of the catalyst was worked out, consisting of a step-wise increase of the temp. from 360° to 500°, keeping the catalyst at 360°, 380°, 400°, 425°, 450°, 475° and 500° for complete sepn. of water at each temp., and maintaining the highest possible partial pressure of H_2 and the best water vapor condensation. Further investigation is required for an improvement of the method. A. A. Podgorny

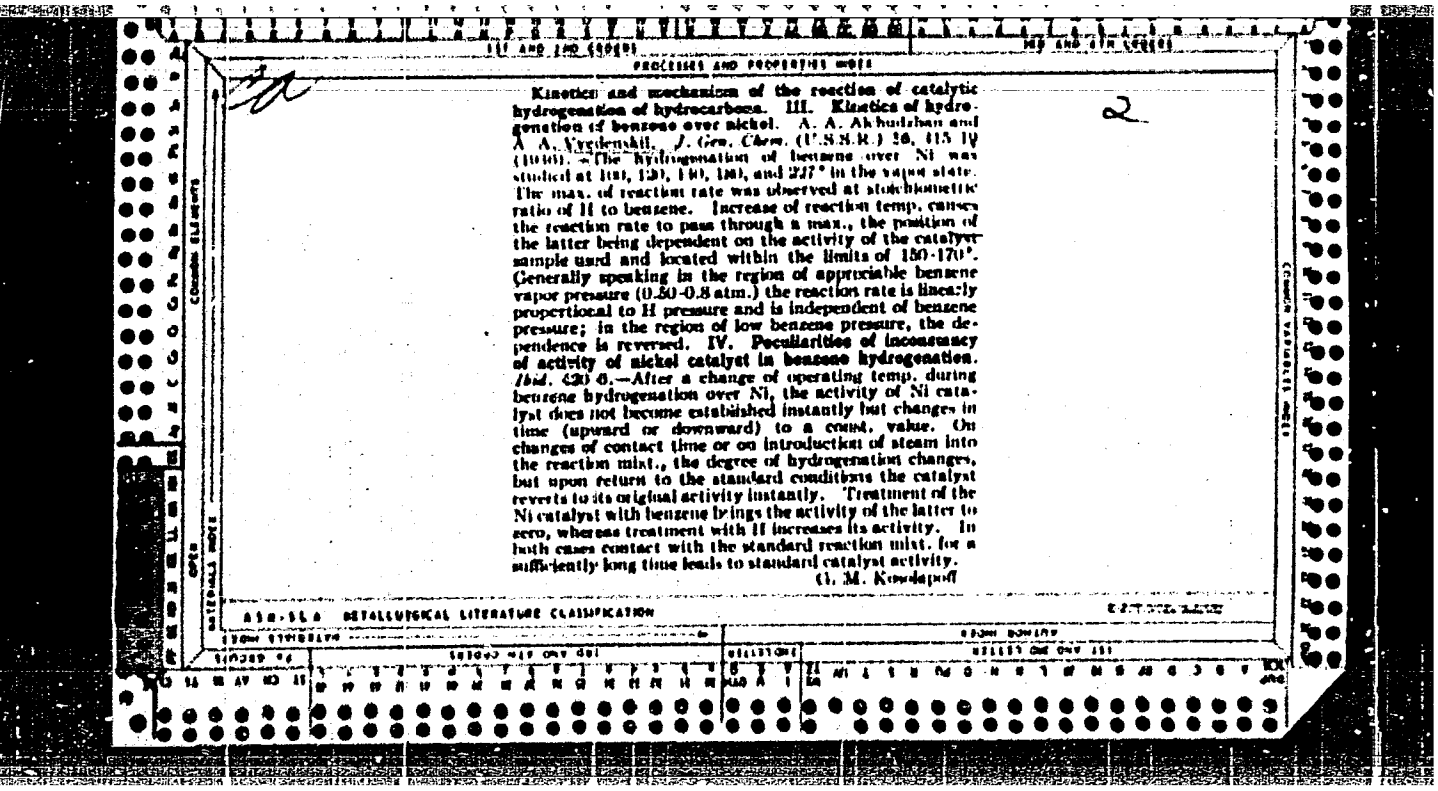


2316. THERMODYNAMICS OF THE SYNTHESIS OF ETHYL ALCOHOL FROM ETHYLENE AND WATER. Vvedenskii, A. A. and Val'dman, L. E. (J. Gen. Chem., U.S.S.R., 1945, 15, 37-41). A review. Concentration of EtOH in the equilibrium gas mixture and in the aqueous alcoholic condensate was computed for temperature 150 to 400 ° and 50 to 200 atm. pressure.

C. A.



Kinetics and the mechanism of catalytic hydrogenation of hydrocarbons. A. A. Vredenskiĭ, R. K. Dobrovarov, and A. V. Frost. *J. Gen. Chem.* (U.S.S.R.) 16, 71-6 (1946) (English summary). The study of hydrogenation of benzene over Pd black at atm. pressure showed that the rate of hydrogenation is independent of the partial pressure of benzene between 0.1 and 0.45 atm. The reaction begins to be hindered by cyclohexane long before the equil. conditions are reached. The results indicate that the ordinary adsorption theory of catalysis is not applicable in this case, and it is proposed that the reaction proceeds between benzene adsorbed on the catalyst and H dissolved in Pd catalyst. G. M. Kosolapoff



PROCESSES AND PROPERTIES INDEX

Kinetics and mechanism of the reaction of catalytic hydrogenation of hydrocarbons. III. Kinetics of hydrogenation of benzene over nickel. A. A. Akhudzhan and A. A. Yagodovskii. *J. Gen. Chem.* (U.S.S.R.) 20, 415 IV (1950). —The hydrogenation of benzene over Ni was studied at 101, 120, 140, 181, and 227° in the vapor state. The max. of reaction rate was observed at stoichiometric ratio of H to benzene. Increase of reaction temp. causes the reaction rate to pass through a max., the position of the latter being dependent on the activity of the catalyst sample used and located within the limits of 150-170°. Generally speaking in the region of appreciable benzene vapor pressure (0.50-0.8 atm.) the reaction rate is linearly proportional to H pressure and is independent of benzene pressure; in the region of low benzene pressure, the dependence is reversed. IV. **Peculiarities of inconstancy of activity of nickel catalyst in benzene hydrogenation.** *Ibid.* 630 6.—After a change of operating temp. during benzene hydrogenation over Ni, the activity of Ni catalyst does not become established instantly but changes in time (upward or downward) to a const. value. On changes of contact time or on introduction of steam into the reaction mixt., the degree of hydrogenation changes, but upon return to the standard conditions the catalyst reverts to its original activity instantly. Treatment of the Ni catalyst with benzene brings the activity of the latter to zero, whereas treatment with H increases its activity. In both cases contact with the standard reaction mixt. for a sufficiently long time leads to standard catalyst activity.

G. M. Kondakoff

A53-51A METALLURGICAL LITERATURE CLASSIFICATION

VVEDENSKIY, ALEKSEY ALEKSEEVICH

Termodinamicheskie raschety protsessov toplivnoi promyshlennosti. Leningrad, Gos. nauch. -tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1949. 490 p. diagrs.

Includes bibliographies.

Thermodynamic calculations of the processes of fuel industry.

DLC: TJ265.V9

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

VVEDENSKII, A. A.

Kinetics of the synthesis of ammonia under high pressure. I. The temperature conditions in the reaction zone. A. A. Vvedenskii and N. V. Sidorov (Leningrad High Pressure Inst.). *J. Applied Chem.* (U.S.S.R.) 19 1127–38(1946)(in Russian).—In conventional lab. columns, operating on the countercurrent heat-exchange principle, under pressures p up to 800 kg./sq. cm., the temp. distribution along the reaction zone is nonuniform; with a 5-ml. catalyst column, 13 mm. in diam., 40–45 mm. high, grain size 1.5–2 m.m., the temp. rose sharply from 500 to 600–650° over an initial segment of the catalyst zone equal approx. to 10% of its length and then fell to 520–500°. Because of this temp. gradient, the usual app. is unsuitable for kinetic studies of the process. Calcns. by the equation $\Delta Q - K(T - T_0)\pi D\Delta l - Gc\Delta T = 0$ (where ΔQ = heat of reaction evolved along the length Δl of the reaction zone; T and T_0 = temp. of the gas (510°) and of the wall (500°), resp.; K = total coeff. of heat transfer from the gas to the wall = 174,000 cal./sq. m./°C./hr.; D = diam. of the catalyst colm. = 0.002 m.; G = wt. of gas; c = sp. heat of the gas), dividing the catalyst column into 10 vol. elements of 0.5 ml. each, and computing for each element of length Δl, the amt. ΔG of NH_3 formed, by Vvedenskii's (unpublished) formula $\Delta G = W\gamma A/(100 + A)$ (where W = vol. rate of gas carrying the zone element; γ = d. of NH_3; A = percentage of NH_3 in the gas along Δl), for p = 100, 300, 500, 850 kg./sq. cm., yield data showing that in order to insure uniformity of temp. over the reaction zone, it is necessary and sufficient to distribute the catalyst nonuniformly. In particular, the catalyst must be dild. in the first segments of the reaction column. Practically, it was shown that it is enough to dil. the catalyst uniformly through admixt. of grains of an inert material; the thus enhanced heat exchange insures disappearance of the temp. gradient. With a mixt. of 5 ml. (12.5 g.) catalyst of grain size 1–2 mm., with 25 ml. (220 g.) of Cu of grain size 1–1.5 mm., total height about 180 mm., the temp. remained const. over the whole length within ±5°, except under p = 800 where an increase of the rate of flow r of the $H_2 + N_2$ mixt. from 150 to 1500 l./hr. caused the temp. of the gas to rise by 40°; under p = 100 to 500, at r = 150 to 1500, the temp. was practically uniform. Instead of Cu, corundum grains can be used as diluent with the same effectiveness. Diln. of the catalyst lowers the yield of NH_3 as against the conventional operation under conditions of temp. drop along the reaction column: with 5 ml. catalyst + 55 ml. corundum (grain size 1–1.5 mm.), at 500°, under p = 300, 500, 800 kg./sq. cm., at r = 150 and 750 l./hr., the amt. of NH_3 was 17.6, 22.2, 28.8 and 10.2, 12.6, 16.6 vol. %; under the same conditions, with 5 ml. undild. catalyst, 18.7, 23.4, 29.1 and 11.4, 15.8, 22.6 vol. %. N. T.

PA 4T15

VVEDENSKIY, A. A.

Feb 1947

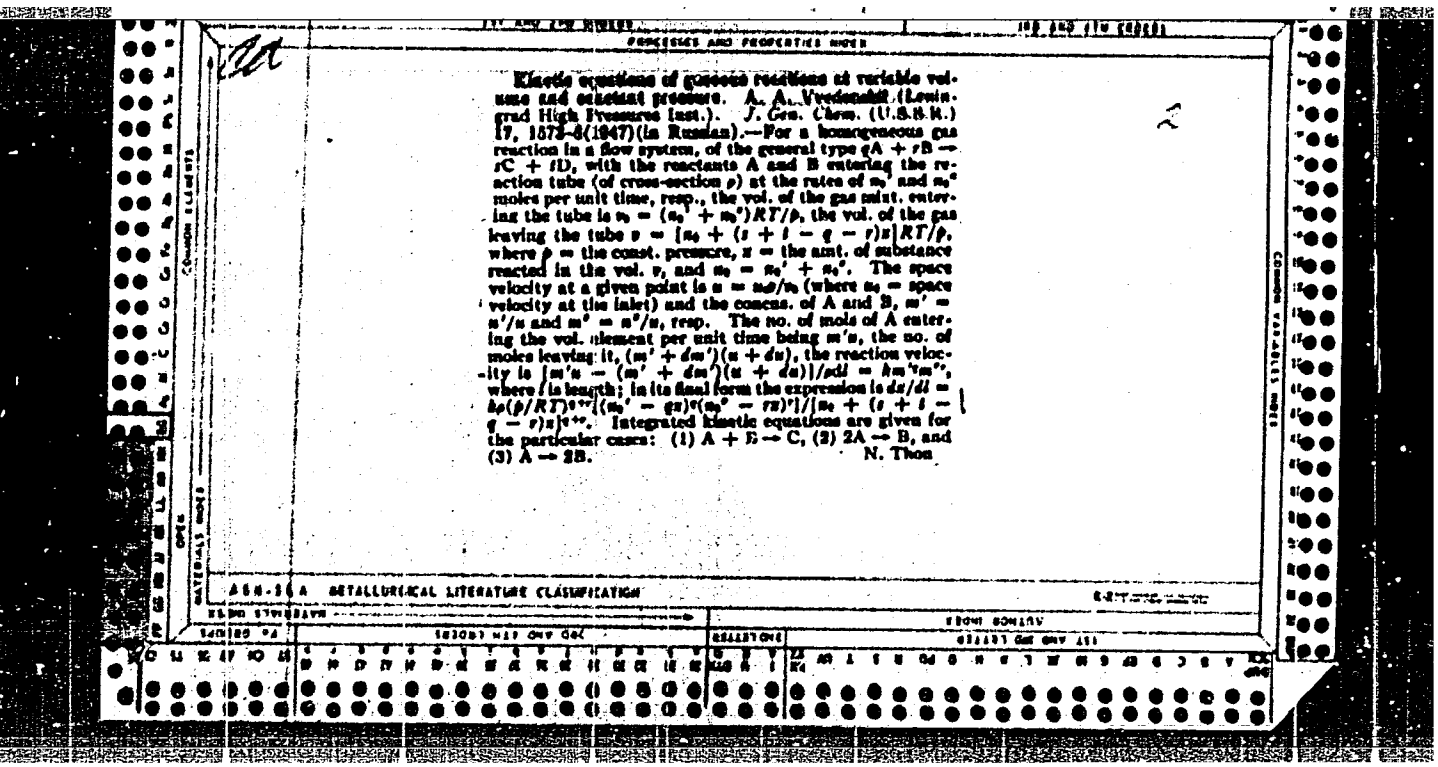
USSR/Fuels

"Thermal Capacity of Hydrocarbons," A. A. Vvedenskiy, 4 pp

"Neftyanoye Khozyaystvo" Vol XXV, No 2

Some mathematical discussion followed by two pages of tables

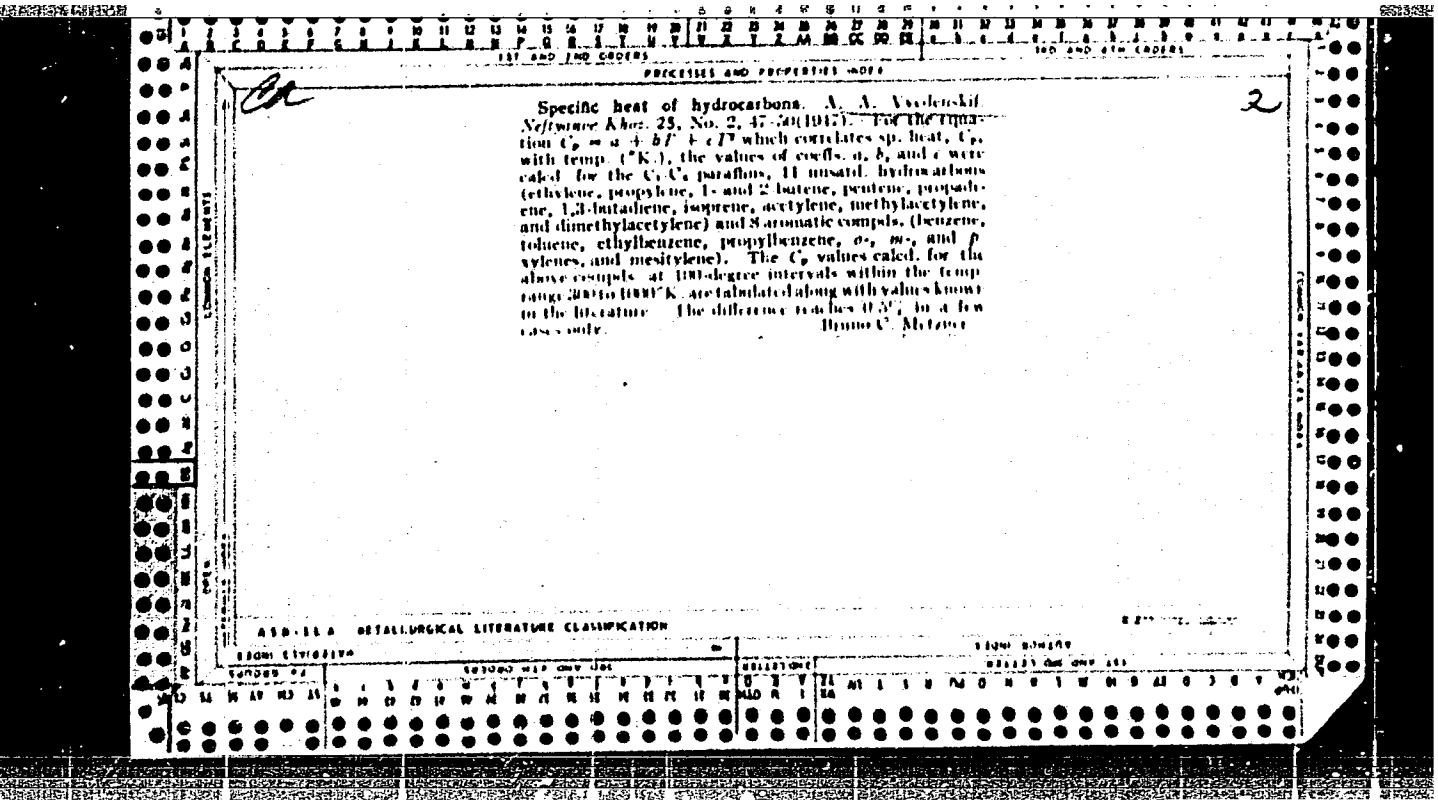
4T15



PROCESSES AND PROPERTIES INDEX

Kinetic equations of gaseous reactions at variable volume and constant pressure. A. A. Vredenskii (Leningrad High Pressures Inst.). *J. Gen. Chem.* (U.S.S.R.) 17, 1573-8(1947)(in Russian).—For a homogeneous gas reaction in a flow system, of the general type $qA + rB \rightarrow sC + tD$, with the reactants A and B entering the reaction tube (of cross-section ρ) at the rates of n_0' and n_0'' moles per unit time, resp., the vol. of the gas mixt. entering the tube is $v_0 = (n_0' + n_0'')RT/p$, the vol. of the gas leaving the tube $v = [n_0 + (s + t - q - r)x]RT/p$, where p = the const. pressure, x = the amt. of substance reacted in the vol. v, and $n_0 = n_0' + n_0''$. The space velocity at a given point is $u = w_0/v_0$ (where w_0 = space velocity at the inlet) and the concns. of A and B, $m' = n'/u$ and $m'' = n''/u$, resp. The no. of moles of A entering the vol. element per unit time being $m'u$, the no. of moles leaving it, $(m' + dm')(u + du)$, the reaction velocity is $|m'u - (m' + dm')(u + du)|/\rho dl = km'^p m''^q$, where l is length; in its final form the expression is $du/dl = k\rho(p/RT)^{p+q}[(n_0' - qx)^q(n_0'' - rx)^r]/[n_0 + (s + t - q - r)x]^{p+q}$. Integrated kinetic equations are given for the particular cases: (1) $A + B \rightarrow C$, (2) $2A \rightarrow B$, and (3) $A \rightarrow 2B$.

N. Thon



Specific heat of hydrocarbons. A. A. Vvedenskii. *Neftyanoe Khoz.* 25, No. 2, 47–50(1947). For the equation $C_p = a + bT + cT^2$ which correlates sp. heat, C_p, with temp. (°K.), the values of coeffs. *a*, *b*, and *c* were calcd. for the C_1-C_6 paraffins, 11 unsatd. hydrocarbons (ethylene, propylene, 1- and 2-butene, pentene, propadiene, 1,3-butadiene, isoprene, acetylene, methylacetylene, and dimethylacetylene) and 8 aromatic compds. (benzene, toluene, ethylbenzene, propylbenzene, *o*-, *m*-, and *p*-xylenes, and mesitylene). The C_p values calcd. for the above compds. at 100-degree intervals within the temp. range 300 to 1000°K. are tabulated along with values known in the literature. The difference reaches 0.5%, in a few cases only. Bruno C. Metzner

VVEDENSKIY, A. A.

USSR/Chemistry- Benzene Feb 1948
Chemistry- Hydration

"Studey of Kinetics and Mechanism of Reaction of the Hydration of Hydrocarbons. V. Effect of Benzene Cycloshexane and Nitrogen on the Variations of the Activity of a Nickel Catalyst During the Hydration of Benzene," A. A. Alchudzhan, A. A. Vvedenskiy, Leningrad Inst of High Pressures, 7 pp

"Zhur Obshch Khim" Vol XVIII (LXXX) , No 2

Prolonged treatment of a nickel catalyst with large amounts of benzene results in a loss of activity at 230°. Full activity can be restored by prolonged treatment of catalyst by hydrogen. Submitted 30 Jul 1946.

PA 68T39

VVEDENSKIY, A. A.

USSR/Chemistry- Hydrocarbons Feb 1948
Chemistry- Hydration

" Study of the Kinetics and Mechanism of Reaction of the Hydration of Hydrocarbons. VI. The Mechanism of the Catalytic Hydration on Nickel and Palladium," A. A. Alchudzhan, A. A. Vvedenskiy, A.V. Frost, Leningrad Inst of High Pressures, 7¼ pp

"Zhur Obshch Khim" Vol XVIII (LXXX), No 2

Studies of speed of hydration of benzene on nickel and changes of this speed with relation to various stages in process of evaporation. Shows that in spite of decreases in activity when catalyst is processed by benzene or cyclohexane, activity can be restored in both cases by treatment with hydrogen for long periods of time. Submitted 30 Jul 1946.

PA 68T40

VVEDENSKIY, A. A.

PA 64/49T26

USSR/Chemistry - Reactions, Equilibrium Jun 49

"Chemical Equilibrium of Reactions Between Hydrocarbons. The Equilibria of the Reactions: iso-$C_3H_7C_6H_5 + 3H_2 \rightleftarrows$ iso-$C_3H_7C_6H_{11}$, 1,3-$C_6H_4(CH_3)_2 + 3H_2 \rightleftarrows$ 1,3-$C_6H_{10}(CH_3)_2$," A. A. Vvedenskiy, N. K. Takhtareva, Leningrad Inst of High Pressures, 5 3/4 pp

"Zhur Obshch Khim" Vol XIX, No 6

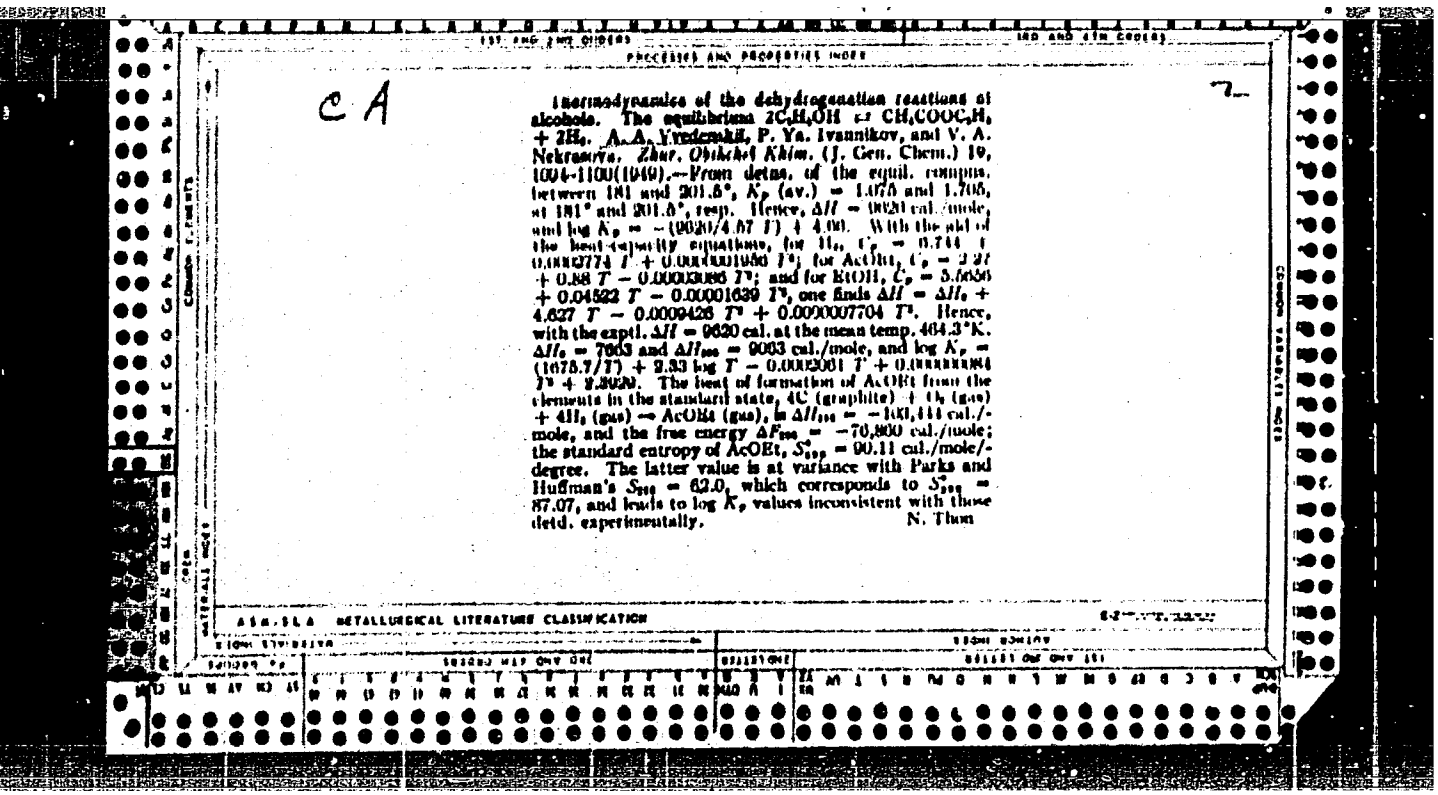
Measures the constants of equilibrium of the hydration of isopropylbenzene and gives a formula for the relation of lg K_p of the temperature. Measures the constants of equilibrium for the

64/49T26

USSR/Chemistry - Reactions, Equilibrium Jun 49
(Contd)

hydration of m-xylene and suggests an empirical formula for determining lg K_p. Submitted 19 Jan 48.

64/49T26



CA

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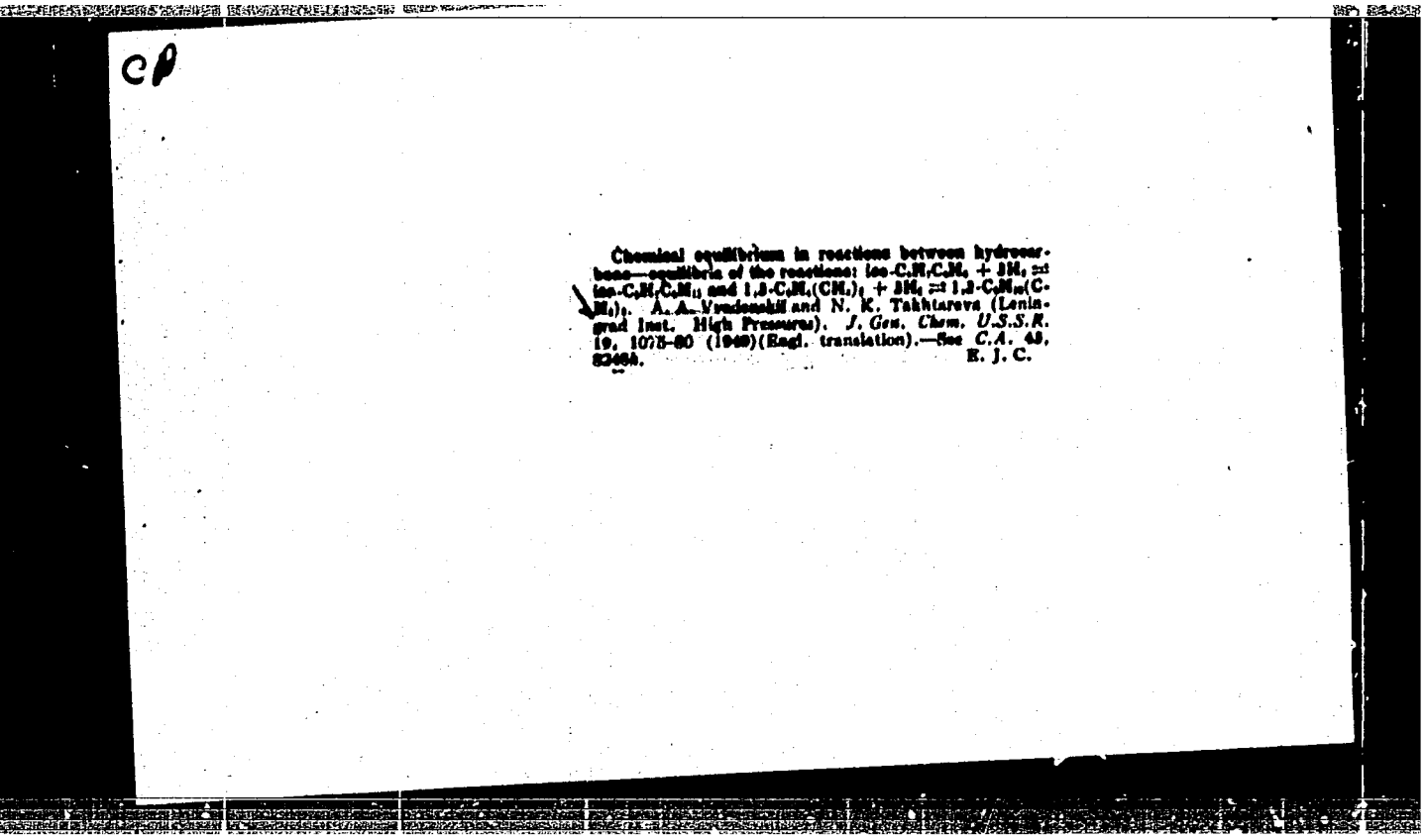
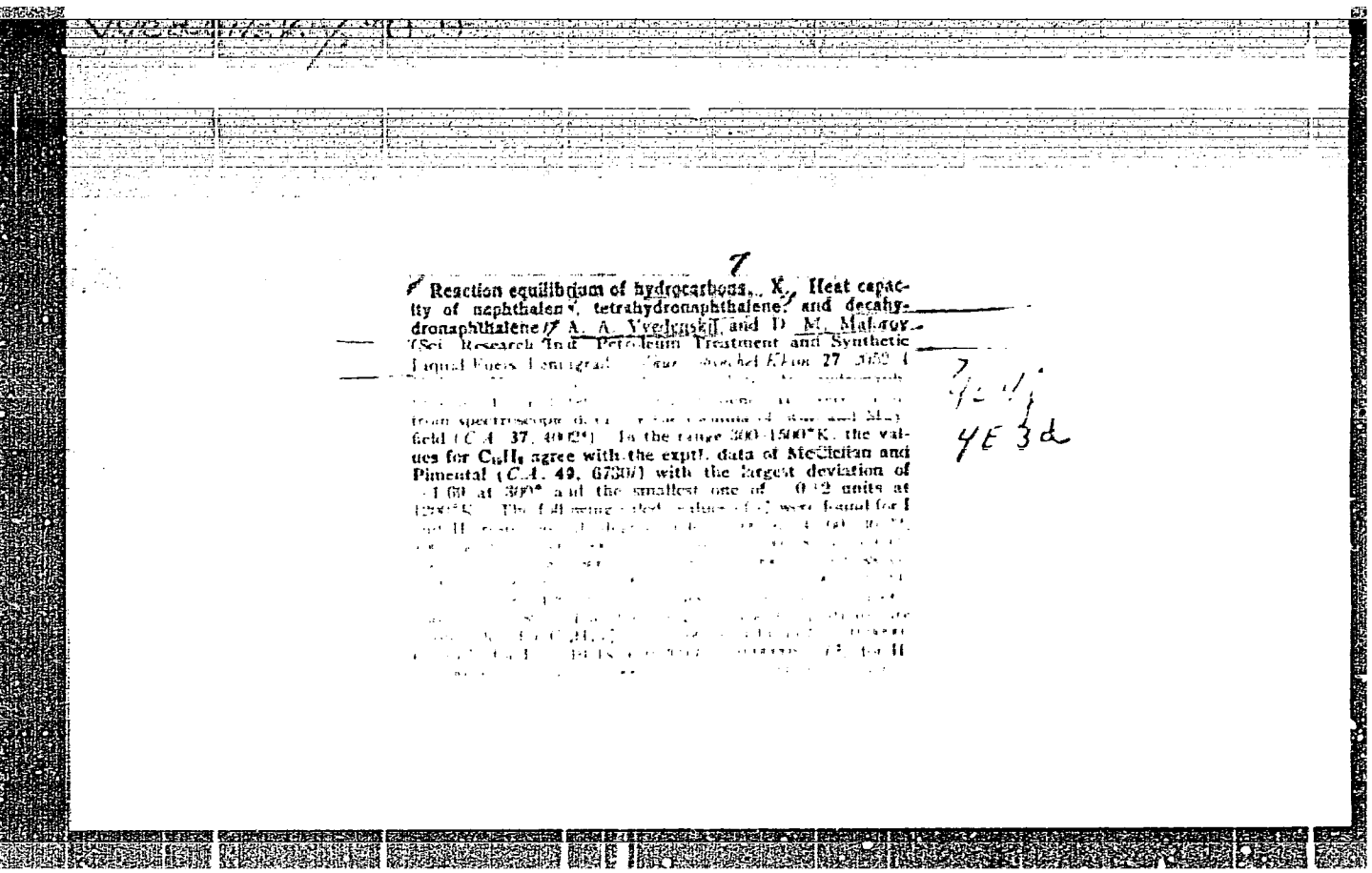
Thermodynamics of the dehydrogenation reactions of alcohols. The equilibrium $2C_2H_5OH \rightleftharpoons CH_3COOC_2H_5 + 2H_2$. A. A. Vredenskii, P. Ya. Ivannikov, and V. A. Nekrasova. *Zhur. Obshchei Khim.* (J. Gen. Chem.) 19, 1094-1100(1949).—From detns. of the equil. compns. between 181 and 201.8°, K_p (av.) = 1.076 and 1.705, at 181° and 201.8°, resp. Hence, ΔH = 9020 cal./mole, and log K_p = −(9020/4.57 T) + 4.00. With the aid of the heat-capacity equations, for H_2, C_p = 6.744 + 0.0003774 T + 0.0000001950 T^2; for AcOEt, C_p = 2.27 + 0.88 T − 0.0003086 T^2; and for EtOH, C_p = 5.6956 + 0.04522 T − 0.00001639 T^2, one finds ΔH = ΔH_0 + 4.627 T − 0.0009426 T^2 + 0.0000007704 T^3. Hence, with the exptl. ΔH = 9620 cal. at the mean temp. 464.3°K. ΔH_0 = 7663 and ΔH_{298} = 9083 cal./mole, and log K_p = (1675.7/T) + 2.33 log T − 0.0002081 T + 0.0000000184 T^2 + 2.3020. The heat of formation of AcOEt from the elements in the standard state, 4C (graphite) + $4H_2$ (gas) + $4H_2$ (gas) → AcOEt (gas), is ΔH_{298} = −103,411 cal./mole, and the free energy ΔF_{298} = −70,800 cal./mole; the standard entropy of AcOEt, S°_{298} = 90.11 cal./mole/degree. The latter value is at variance with Parks and Huffman's S_{298} = 82.0, which corresponds to S°_{298} = 87.07, and leads to log K_p values inconsistent with those detd. experimentally.

N. Thon



Chemical equilibrium in reactions between hydrocarbons—equilibria of the reactions: iso-$C_4H_{10} \rightleftarrows C_4H_8 + H_2$ and iso-$C_5H_{12} \rightleftarrows C_5H_{10} + H_2$ and 1,3-$C_6H_4(CH_3)_2 + 3H_2 \rightleftarrows$ 1,3-$C_6H_{10}(CH_3)_2$. A. A. Vredenskii and N. K. Takhtareva (Leningrad Inst. High Pressures). *J. Gen. Chem. U.S.S.R.* 19, 1075–80 (1949)(Engl. translation).—See *C.A.* 43, 8246h. E. J. C.



Reaction equilibrium of hydrocarbons. X. Heat capacity of naphthalene, tetrahydronaphthalene, and decahydronaphthalene. A. A. Yevgenskii and D. M. Malakov. (Sci. Research Inst. Petroleum Treatment and Synthetic Liquid Fuels, Leningrad) Zhur. Obshchei Khim. 27, 3052 (1957). From spectroscopic data [illegible] and Mayfield (C.A. 37, 4062[1]). In the range 300–1500°K. the values for $C_{10}H_8$ agree with the exptl. data of McClellan and Pimental (C.A. 49, 6730f) with the largest deviation of −1.60 at 300° and the smallest one of −0.12 units at [illegible]. The [illegible] were found for I [illegible] II [illegible]

VVEDENSKIY, A.A., otv.red.; MOLDAVSKIY, B.L., nauchnyy red.; BARKOVSKIY, I.V., vedushchiy red.; ALEKSEYEVA, K.A., red.; GADASKINA, N.D., red.; DEMENT'YEVA, M.I., red.; KAGANOVA, E.M., red.; KOBZLEV, V.A., red.; LEVIN, S.Z., red.; POKORSKIY, V.N., red.; TEODOROVICH, V.P., red.; SHMULYAKOVSKIY, Ya.E., red.; GENNAD'YEVA, I.M., tekhn.red.

[Collection of reports of scientific research carried out between 1950 and 1957] Sbornik referatov nauchno-issledovatel'skikh rabot, vypolnennykh v 1950-1957 gg. Leningrad, Gos.nauchno-tekhn. izd-vo neft. i gorno-toplivnoi lit-ry, leningr.otd-nie, 1958. 158 p. (MIRA 12:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti i polucheniyu iskusstvennogo zhidkogo topliva.
(Petroleum research)

5(4), 5(1)

AUTHOR: Vvedenskiy, A. A. SOV/64-59-1-7/24

TITLE: Thermodynamic Principles of the Synthesis of Monomers (Termodinamicheskiye osnovy sinteza monomerov)

PERIODICAL: Khimicheskaya promyshlennost', 1959, Nr 1, pp 28-36 (USSR)

ABSTRACT: The present paper contains detailed explanations of thermodynamic analyses of some important chemical reactions which can be regarded as a basis for the synthesis of monomers. The chapter on the production of olefin-diene and acetylene hydrocarbons contains, besides the corresponding considerations, tables on the degree of dehydrogenation in equilibrium (Table 1), on the temperature at which a given degree of the conversion paraffin $\rightleftarrows$ olefin + H_2 is attained at the establishment of equilibrium and atmospheric pressure (Table 2), and the minimum temperatures required to obtain this conversion (Table 3), as well as on the equilibrium between n-butane, n-butenene and 1.3-butadiene (Table 4) (Ref 13), temperatures which are required to obtain a conversion of ethanol to 1.3-butadiene (Table 5) (computed according to data by Brickwedde, Ref 15) and also for the

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conversion of cyclohexane in thermal cracking (Table 6) (Ref 15), as well as the equilibrium between hydrogen, methane, ethylene and acetylene at atmospheric pressure (Table 7). In the descriptions of the production processes and the first processing of aromatic hydrocarbons, which are divided into the chapters dehydrogenation of naphthene hydrocarbons, cyclization of paraffins and acetylene hydrocarbons, alkylation of benzene with olefins, dehydrogenation of alkyl benzenes and alkyl naphthalene, and isomerization of alkyl benzenes, the following tables are given: degree of the dehydrogenation of naphthene hydrocarbons at atmospheric pressure (Table 8), equilibrium concentrations of benzene and toluene at hydrogen partial pressures of 10, 50 and 100 atmospheres (Table 9) (Refs 4, 17), content of alkyl benzene in the equilibrium mixture (Table 10) (Ref 12), temperatures which are required for the conversion of ethyl benzene and isopropyl benzene (Table 11) (Ref 13), the conversion of the β-ethyl naphthalene to β-vinyl naphthalene (according to data from Ref 18) (Table 12),

the equilibrium concentrations in the isomerization of the alkyl benzenes C_8 (Table 13) (Refs 4, 19), as well as of the alkyl benzenes C_9 (Table 14) (Refs 4, 19), and on the content of isomers in the mixtures in equilibrium (Table 15) (Ref 20). The explanations of the isomerization itself contain data on the composition of the mixtures in equilibrium of butenene, pentenene and hexenene (Table 16) (Ref 12), of the mixture in the isomerization of allene into methyl acetate (Table 17) (Ref 21), and on the equilibrium concentration of the isomers of butine and pentine (Table 18) (Refs 4, 22). There are 1 figure, 18 tables, and 23 references, 14 of which are Soviet.

ASSOCIATION: VNIIneftekhim (VNIIneftekhim)
(All-Union Scientific Research Institute for Petroleum Chemistry)

FROST, Andrey Vladimirovich, prof. [deceased]. Prinimali uchastiye: BUSHMAKIN, I.N.; VVEDENSKIY, A.A.; GRYAZNOV, V.M.; DEMENT'YEVA, M.I.: DINTSES, A.I.; DOBRONRAVOV, R.K.; ZHARKOVA, V.R.; ZHERKO, A.V.; IPAT'YEV, V.N.; KVYATKOVSKIY, D.A.; KOROBOV, V.V.; MOOR, V.G.; NEMTSOV, M.S.; RAKOVSKIY, A.V.; REMIZ, Ye.K.; RUDKOVSKIY, D.M.; RYSAKOV, M.V.; SEREBRYAKOVA, Ye.K.; STEPUKHOVICH, A.D.; STRIGALEVA, N.V.; TATEVSKIY, V.M.; TILICHEYEV, M.D.; TRIFEL', A.G.: FROST, O.I.; SHILYAYEVA, L.V.; SHCHEKIN, V.V., DOLGOPOLOV, N.N., sostavitel'; GERASIMOV, Ya.I., otv.red.; SMIRNOVA, I.V., red.; TOPCHIYEVA, K.V.; YASTREBOV, V.V., red.; KONDRASHKOVA, S.F., red. izd-va; LAZAREVA, L.V., tekhn.red.

[Selected scientific works] Izbrannye nauchnye trudy. Moskva, Izd-vo Mosk.univ., 1960. 512 p. (MIRA 13:5)

1. Chlen-korrespondent AN SSSR (for Gerasimov).
(Chemistry, Physical and theoretical)

PHASE I BOOK EXPLOITATION SOV/5143

Vvedenskiy, Aleksandr Aleksandrovich

Termodinamicheskiye raschety neftekhimicheskikh protsessov (Thermodynamic Calculation of Petrochemical Processes) Leningrad, Gostoptekhizdat, 1960. 576 p. Errata slip inserted. 3,000 copies printed.

Executive Ed.: L. Ya. Rusakova; Tech. Ed.: A. B. Yashchurzhinskaya

PURPOSE: This book is intended for technical personnel in research and planning institutes, industrial plant workshops, and laboratories.

COVERAGE: The book presents the fundamentals of thermodynamic analysis and calculations of chemical processes. The first eight chapters describe the theory and practice of calculations for heat capacity, heat effects, heat content, and entropy, and provide illustrations of the techniques and methods used. Chs. IX-XVIII review Soviet and non-Soviet literature of experimental and theoretical research on equilibria in chemical reactions, and include thermodynamic analyses of the chemical reprocessing of petroleum and natural gases. This section also contains the results of calculations made by the author on the selection of optimum conditions for petrochemical processes producing semi-finished materials and monomers. A summary of the more reliable values of thermodynamic functions, required for equilibrium calculations of chemical

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Thermodynamic Calculation of Petrochemical Processes SOV/5143

reactions and for thermotechnical calculations of the apparatus, is included in Ch. XIX. This volume is the 2d edition of the work which was originally published in 1949 under the title "Termodinamicheskiye raschety protsessov toplivnoy promyshlennosti" (Thermodynamic Calculations of Processes of the Fuel Industry). The 2nd edition has been revised and enlarged, and contains six new chapters (VII, VIII, XI, XVII, XVIII, and XIX). The author thanks the Komissiya po khimicheskoy termodinamike (Commission on Chemical Thermodynamics), attached to the Presidium of the Academy of Sciences USSR, the Chairman of which is Academician Ya. I. Gerasimov. He also thanks M. S. Nemtsov, Professor, and Z. T. Vvedenskaya. Each chapter is accompanied by references.

TABLE OF CONTENTS:

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VVEDENSKIY, Aleksandr Aleksandrovich; POZDYSHEVA, V.A., red.; FOMKINA, T.A., tekhn. red.

[Physicochemical constants of organic compounds] Fiziko-khimicheskie konstanty organicheskikh soedinenii. Leningrad, Gos. nauchno-tekhn. izd-vo khim. lit-ry, 1961. 123 p. (MIRA 14:7)
(Organic compounds) (Thermodynamics)

L 47198-66

ACC NR: AR6023332 (A) SOURCE CODE: UR/0273/66/000/003/0002/0002

AUTHOR: Vvedenskiy, A. A.

TITLE: Heat balance of a tractor engine

SOURCE: Ref. zh. Dvigateli vnutrennego sgoraniya, Abs. 3.39.12

REF SOURCE: Dokl. Mosk. in-ta inzh. s.-kh proiz-va, v. 2, no. 2, 1965, 65-71

TOPIC TAGS: tractor engine, tractor engine heat balance, tractor internal combustion engine, engine heat balance

ABSTRACT: The internal combustion engine of a piston tractor uses 20—40% of the heat energy introduced into the cylinders with the fuel. The remainder is lost on friction, on driving auxiliary mechanism, etc. The energy expended for useful work and in heat losses is characterized by the external heat balance or the heat balance on end losses. In determining the distribution of heat energy for useful work and heat loss inside the cylinders, internal or partial engine heat balance is computed. An example is given of the computation of the heat balance of an air-cooled tractor diesel engine. [Translation of abstract] [SP]

SUB CODE: 13/

Card 1/1 pb UDC: 621.436.001.1

L 04051-67 FDN

ACC NR: AR6026474 SOURCE CODE: UR/0273/66/000/004/0003/0003

44
B

AUTHOR: Vvedenskiy, A. A.

TITLE: Heat balance characteristics of a diesel cooling system

SOURCE: Ref. zh. Dvigateli vnutrennego sgoraniya, 4.39.15

REF SOURCE: Dokl. Mosk. in-ta inzh. s.-kh. proiz-va, v. 2, no. 2, 1965, 73-81

TOPIC TAGS: engine cooling system, diesel engine, heat balance, air cooled engine

ABSTRACT: The author describes an investigation of heat balance in the cooling system of a 4-cycle 4-cylinder air-cooled diesel. Heat distribution diagrams are given for nominal and economic diesel operating conditions and quantities are tabulated which may be used as the basis for designing diesel air-cooling systems for engines operating under normal technical conditions and under optimum theoretical conditions. [Translation of abstract]

SUB CODE: 13, 21

kh

Card 1/1 UDC: 621.436-712

L 29975-66 EWT(d)/EWT(m)/EWP(f)/T-2 DJ/WE
ACC NR: AR5025468 SOURCE CODE: UR/0273/65/000/008/0024/0024

AUTHOR: Vvedenskiy, A. A.

TITLE: Heat balance characteristics of an air-cooled diesel engine

SOURCE: Ref zh. Dvigateli vnutrennego sgoraniya, Abs. 8.39.195

REF SOURCE: Dokl. Mosk. in-ta inzh. s.-kh. proiz-va, v. 1, no. 2, 1964, 47-55

TOPIC TAGS: internal combustion engine, diesel engine, air cooled engine, heat measurement, heat balance, engine test stand

ABSTRACT: An air-cooled diesel with a toroid combustion chamber in the piston, with N_e= 64.2 HP, $M_{rot.}$=30.5 kGm, P_e= 6.6 kG/cm^2, g_e= 180 g/HP/h, is studied. To measure the heat balance the diesel was placed in an isothermic chamber and connected to an electric recording stand. The thermo balance characteristic was compiled for the three variable parameters: the rpm of the crankshaft, the load, and the temperature of the surrounding air. Moreover, besides the regular measurement for determination of the diesel efficiency indices, the following characteristics were determined: degree of fume, air consumption, consumption of

Card 1/2

L 29975-66
ACC NR: AR5025468 O

air for cooling the oil radiator, and the amount of air for combustion. The exhaust gases were also analyzed.

SUB CODE: 21,20/SUBM DATE: none

Card 2/2 90

L 21540-66 EWT(l)/EWT(m)/EWP(j)/T/ETC(m)-6 DS/WW/JK/RM

ACC NR: AP6009544 SOURCE CODE: UR/0413/66/000/005/0077/0077

INVENTOR: Kogan, Ya. I.; Lunev, V. I.; Vvedenskiy, A. A.

ORG: none

TITLE: Apparatus for investigating and regulating aerosol parameters. Class 42, No. 179493

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 5, 1966, 77

TOPIC TAGS: aerosol nephelometer

ABSTRACT: An Author Certificate was issued for an apparatus, such as a nephelometer, for example, for studying and regulating the aerosol parameters and capable of photoelectric registration. This apparatus is provided with a cartridge containing a filter disk with a capillary

Card 1/2 UDC: 535.43.07

L 21540-66
ACC NR: AP6009544

D

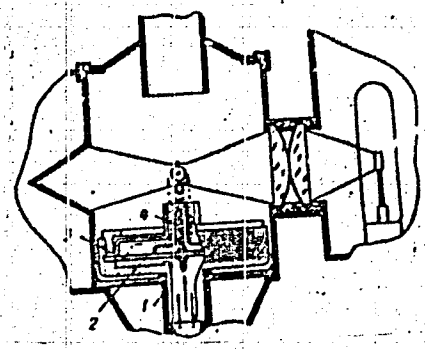

Fig. 1.

1 - Nephelometer central tube; 2 - cartridge; 3 - filter disc; 4 - capillary tube

tube and a lens in order to perform nephelometric and ultramicroscopic measurements. Orig. art. has: 1 figure. [AB]

SUB CODE: 13/ SUBM DATE: 15Mar63/ ATD PRESS: 4218

Card 2/2 BLG

VVEDENSKIY, A.A.; PETROV, V.M.

Thermodynamic functions of aliphatic amines. Part 1. Zhur. fiz. khim. 39 no.6:1526-1527 Je '65. (MIRA 18:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov. Submitted Sept. 21, 1964.

VASIL'YEV, [illegible]; VVEDENSKIY, A.A.

Thermodynamic functions of acetaldehyde and deuteroacetaldehyde. Zhur. fiz. khim. 39 no.8:2052-2053 Ag '65. (MIRA 18:9)

1. Institut neftekhimicheskikh protsessov, Leningrad.

DANILOV, S.N., glav. red.; ZAKHAROVA, A.I., red.; ARBUZOV, A.Ye., red.; VVEDENSKIY, A.A., red.; VENUS-DANILOVA, E.D., red.; IOFFE, I.S., red.; KAVERZNEVA, Ye.D., red.; LUTSENKO, I.F., red.; MISHCHENKO, K.P., red.; NEMTSEV, M.S., red.; PETROV, A.A., red.; FREYDLINA, R.Kh., red.; SHEMYAKIN, M.M., red.; SHCHUKAREV, S.A., red.; YUR'YEV, Yu.K., red.

[Problems of organic synthesis] Problemy organicheskogo sinteza. Moskva, Nauka, 1965. 323 p. (MIRA 18:8)

L 1862-66

ACCESSION NR: AR5019474 UR/0273/65/000/007/0026/0026
621.436:662.614

SOURCE: Ref. zh. Dvigateli vnutrennego sgoraniya. Otdel'nyy vypusk, Abs. 7.39.218

AUTHOR: Vvedenskiy, A.A.

TITLE: Heat balance characteristics of a diesel exhaust system

CITED SOURCE: Dokl. Mosk. in-ta inzh. s.-kh. proiz-va, v. 1, no. 2, 1964, 57-64

TOPIC TAGS: diesel engine, engine exhaust system, heat balance, carbon, carbon monoxide

TRANSLATION: The method presented for compiling a heat balance curve for the exhaust system of a diesel engine is simple, sufficiently accurate, and suitable for practical applications. It does not require complex and unusual instrumentation or laborious calculations. Formulas for defining the percentage content of CO in dry gaseous products of combustion and the fraction of unburned fuel carbon converting to carbon black are accurate and their use is recommended. Significant errors occur in compiling heat balances for a diesel when the chemical heat of incomplete combustion products is ignored, particularly carbon black, as well as the loss of heat into the manifold.

Card 1/2

L 1862-66

ACCESSION NR: AR5019474

SUB CODE: TD, PR ENCL: 00

Card 2/2

DANILOV, S.N., gl. red.; ARBUZOV, A.Ye., red.; VVEDENSKIY, A.A., red.; VENUS-DANILOVA, E.D., red.; ZAKHAROVA, A.I., red.; IOFFE, I.S., red.; KAVERZNEVA, Ye.D., red.; LUTSENKO, I.F., red.; MISHCHENKO, K.P., red.; NEMTSOV, M.S., red.; PETROV, A.A., red.; FREYDLINA, R.Kh., red.; SHEMYAKIN, M.M., red.; SHUKAREV, S.A., red.; YUR'YEV, Yu.K., red.

[Biologically active compounds] Biologicheski aktivnye soedineniia. Moskva, Nauka, 1965. 305 p.
(MIRA 18:7)

VVEDENSKIY, A.A., starshiy prepodavatel'

Investigating heat conductivity of the oil cooler of air cooled diesel engines. Izv. TSKhA no.6:184-194 '61. (MIRA 16:8)

(Diesel engines—Cooling)
(Oil coolers)

VVEDENSKIY, A.A., inzh.

Investigating the axial fan of an air-cooled tractor diesel.
Izv. TSKHA no.1:117-138 '63. (MIRA 16:7)

(Tractors--Cooling)

VVEDENSKIY, A.A., inzh.

Thermal condition of oils in air-cooled diesel engines.
Izv. TSKHA no.3:134-143 '62. (MIRA 15:9)
(Diesel engines--Lubrication)

VVEDENSKIY, A.A.; YAKUSHKIN, M.I.; GULYAKOVA, T.N.; KIRYAKINA, N.T.

Ammonolysis of caproic and caprylic acids to nitriles. Khim.prom. no.1:11-14 Ja '62. (MIRA 15:1)
(Hexanoic acid) (Heptanoic acid) (Nitriles)

L 06472-67 EWP(j)/EWT(m) RM/WW/JW/JWD/WE

ACC NR: AP6029214 SOURCE CODE: UR/0076/66/040/006/1372/1377

AUTHOR: Vvedenskiy, A. A.; Masalitinova, T. N.

ORG: Leningrad Institute of Applied Chemistry (Leningradskiy institut prikladnoy khimii)

TITLE: Thermodynamic functions of hydrazine and its methyl derivatives

SOURCE: Zhurnal fizicheskoy khimii, v. 40, no. 6, 1966, 1372-1377

TOPIC TAGS: hydrazine, unsymmetrical dimethylhydrazine, thermodynamic function

ABSTRACT: The paper gives values of the thermodynamic functions C_p, S^0, H^0-H_0/T and Φ in the 298-1500°K range for 1,1- and 1,2-dimethylhydrazines and trimethylhydrazines, calculated from reported molecular and spectroscopic data. Values of the functions ΔH_f, ΔZ^0 and log K_f for hydrazine, methylhydrazine and symmetrical and unsymmetrical dimethylhydrazine were calculated from experimental data on heats of combustion, obtained by the authors and other researchers. A preliminary estimate of the heat of combustion of trimethylhydrazine was made, and from this value, ΔH_f, ΔZ^0 and log K_f were calculated for this compound for the 298-1500°K range. Orig. art. has: 9 tables.

SUB CODE: 07/ SUBM DATE: 16Aug65/ ORIG REF: 002/ OTH REF: 011

Card 1/1 nle UDC: 541.11

VVEDENSKIY, A.I.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

Name	Title of Work	Nominated by
Nikitina, Ye.V. Rozhenits, R.Yu. Kashchenko, L.I. Protopopov, G.D. Popova, L.I. Shishkin, B.K. Vvedenskiy, A.I.	"Flora of the Kirgiz SSR"	Kirgiz Affiliate of the Academy of Sciences USSR

SO: W-30604, 7 July 1954

NIKITINA, Ye.V.; PROTOPOPOV, G.F.; ROZHEVITS, R.Yu. [deceased]; POPOVA, K.I., KASHCHENKO, L.I.; SMIRNOV, L.A.; TKACHENKO, V.I.; YAKUBOVA, P.A.; GOLOVKOVA, A.G.; AYDAROVA, P.A.; SHPOTA, Ye.I.; SHEVCHENKO, D.A.; SHISHKIN, Boris Konstantinovich, professor, doktor biologicheskikh nauk, nauchnyy redaktor; VVEDENSKIY, A.I., nauchnyy redaktor; YEVRUSHENKO, G.A., professor, otvetstvennyy redaktor; KOVALEV, V.N., otvetstvennyy redaktor; SEREBRYAKOV, V.I., tekhnicheskiy redaktor

[The flora of Kirghizistan; classification of the plants of Kirghizistan] Flora Kirgizskoi SSR; opredelitel' rastenii Kirgizskoi SSR. Gost. E.V.Nikitina i dr. Frunze, Izd-vo Akademii nauk Kirgizskoi SSR. Vol.1. [Pteridophyta, Gymnospers and Monocotyledons of the Angiosperms] Paporotnikoobraznye, golosemennye i odnodol'nye iz pokrytosemennykh. 1952. 103 p. Vol. 2. [Grasses and sedges] Zlaki i osokovye. 1950. 315 p. Vol.3. [Aroidae - Orchidaceae] Aroidnye - Orkhidnye. 1951. 148 p. Vol.4. [Salicaceae - Polygonaceae] Ivovye - Grechishnye. 1953. 153 p. Vol. 5. [Families: Chenopodiaceae, Amaranthaceae, Portulacaceae, Caryophyllaceae] Semeistva: Marevye, Amarantovye, Portulakovye, Gvozdichnye. 1955. 185 p. Vol. 6. [Families: Ceratophyllaceae, Ranunculaceae, Berberidaceae, Papaveraceae, Capparidaceae, Cruciferae] Semeistva: Rogolistnikovye, Liutikovye, Barbarisovye, Makovye, Kapersovye, Krestotsvetnye. 1955. 297 p. (MIRA 9:10)

1. Chlen-korrespondent Akademii nauk SSSR (for Shishkin)
(Kirghizistan--Botany)

BORISOVA, A.G.; BOCHANTSEV, V.P.; BUTKOV, A.Ya., dotsent; VASIL'KOVSKAYA, A.P.; VVEDENSKIY, A.I., dotsent; GOLODKOVSKIY, V.L.; GONCHAROV, N.F. [deceased]; GROMOV, V.P., professor; KOROTKOVA, Ye.Ye.; KOSTINA, K.F.; KUDRYASHEV, S.N. [deceased]; LAKHINA, M.M.; LINCHEVSKIY, I.A.; MIRONOV, B.A. [deceased]; PAZIY, V.K.; POYARKOVA, A.I.; PROTOPOPOV, G.F.; SUMNEVICH, G.P. [deceased]; KHAL'ZOVA, K.P.; YUZEPCHUK, S.V.; KOROVIN, Ye.P., professor, glavnyy redaktor; ZAKIROV, K.Z., professor, redaktor; SHIPUKHIN, A.Ya, redaktor izdatel'stva

[The flora of Uzbekistan] Flora Uzbekistana. Glav. red. E.P.Korovin. Tashkent, Izd-vo Akademii nauk UzSSR. Vol.3. 1955. 825 p. (MLRA 9:10)

1. Deystvitel'nyy chlen AN UzSSR (for Korovin)
(Uzbekistan--Botany)

VVEDENSKIY, A.I.

NIKITINA, Ye.V.; POPOVA, L.I.; AYDAROVA, R.A.; KASHCHENKO, L.I.; PROTOPOPOV, G.F.; UBUKEYEVA, A.U.; TKACHENKO, V.I.; KORNEVA, I.G.; OBOZOV, A.O.; GOLOVKOVA, A.G.; VVEDENSKIY, A.I., nauchnyy redaktor; TSYBINA, Ye.V., tekhnicheskiy redaktor

[Flora of the Kirghiz S.S.R.; guide to plants of the Kirghiz S.S.R.] Flora Kirgizskoi SSR; opredelitel' rastenii Kirgizskoi SSR. Frunze, Izd-vo AN Kirgizskoi SSR. Vol.7. 1957. 642 p. (MLRA 10:9)
(Kirghizistan--Botany)

VVEDENSKIY, A.I.

USSR/General Biology - Evolution. B-7

Abs Jour : Ref Zhur - Biol., No 7, 1958, 28615

Author : Vvedenskiy, A.I.
Inst :
Title : Discussion of Species.

Orig Pub : Izv. AN UzSSR, Ser. biol., 1957, No 2, 41-48

Abstract : In discussion of species (S) the main subject is the theory of S itself. The concept of S will be arbitrary if the relationship of S to evolution is not shown. In the author's opinion, it is incorrect to include in the concept of S such criteria as crosspollination ability or lack of it, methods of breeding and creation of intraspecies variations, duration of existence of S, or the concept of S as a form of existence of living matter. It is suggested that S be defined as a phenomenon of evolution, which :while being simultaneously the first and last link of the evolutionary process, consists of a conjunction of

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Abs Jour : Ref Zhur - Biol., No 7, 1958, 28615

generations, temporarily constant in their properties (features) due to internal or external isolation, while maintaining definite conditions of ontogenesis of individuums included in it."
It is emphasized that with the aid of a morphologo-ecologo- geographical method, concrete S may clearly be ascertained in nature.

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BOCHANTSEV, V.P.; BUTKOV, A.Ya.; VVEDENSKIY, A.I.; DROBOV, V.P. [deceased]; KOROVIN, Ye.P., akademik; KOROTKOVA, Ye.Ye.; KUDRYASHEV, S.N. [deceased]; LINCHEVSKIY, I.A.; MAUER, F.M.; PAZIY, V.K.; POPOV, M.G. [deceased]; RUSANOV, F.N.; SUMNEVICH, G.P. [deceased]; ZAKIROV, K.Z., glavnyy red.; MUZAFAROV, A.M., red.; CHERNYAVSKAYA, A.B., red.izd-va; SMOL'NIKOVA, B.Kh., red.izd-va; BARTSEVA, V.P., tekhn.red.

[Flora of Uzbekistan] Flora Uzbekistana. Tashkent, Izd-vo Akad. nauk Uzbekskoi SSR. Vol.4. Red.toma A.I.Vvedenskii. Sost.V.P. Bochantsev i dr. 1959. 506 p. (MIRA 13:8)

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Title tr.: The height gain factor and phase relations of ultra-short waves.

QC1.Z48 1941

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W.E.

Propagation of waves

621.396.11.029.64 : 551.51.053 [illegible]

On the Effect of Refraction in the Troposphere on the Propagation of Ultra-Short Radio Waves in a Diffraction Zone.—B. A. Vvedenski (Wwedensky). (*Bull. Acad. Sci. U.R.S.S.*, Sér. phys., 1942, Vol. 6, Nos. 1/2, pp. 41-55. In Russian.) Refraction and diffraction affect the propagation of radio waves of all wavelengths, but the relative importance of each of the two factors varies with the wavelength, and in the case of ultra-short waves refraction becomes predominantly important. A detailed mathematical investigation is presented in which both diffraction and refraction are taken into account, and a formula (6,1) is derived for determining the field due to a vertical elementary dipole radiating ultra-short waves, i.e. the case of vertical polarization only is considered, although with more mathematical adjustments the case of horizontal polarization could also be covered. In order to simplify the necessary calculations, curves published in a previous work by the author, dealing with the purely diffraction problem, could be used.

The following two main conclusions are reached: (a) owing to the presence of refraction the vertical component of the field beyond the horizon may be either smaller or greater than if refraction were absent. This contradicts the commonly accepted notion, due to the indiscriminate introduction of geometrical conceptions into the diffraction [illegible], that refraction always increases the field component. (b) fading undoubtedly occurs. See [illegible] of 1945.

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CtY CU MH DLC: Slavic unclass.

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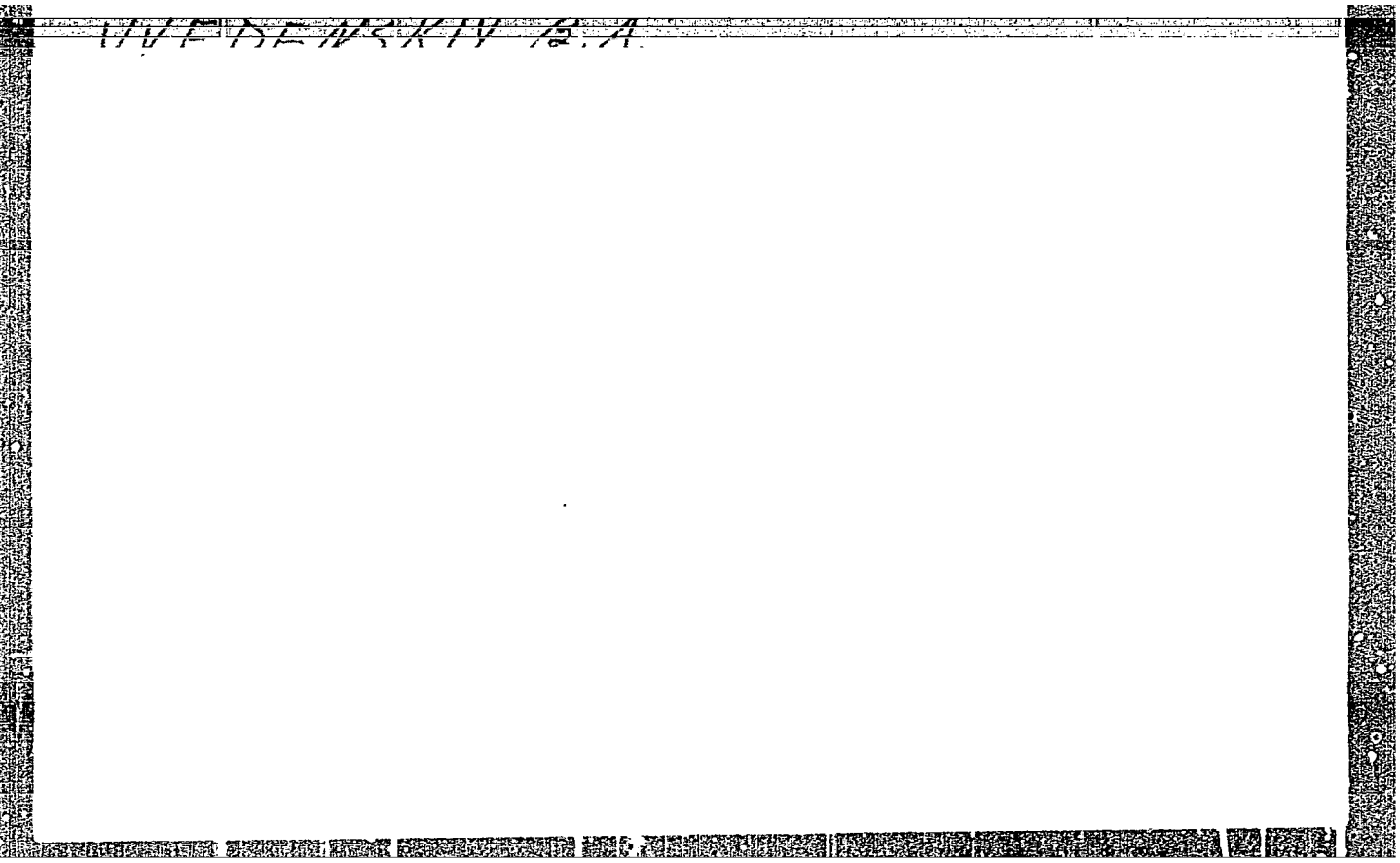

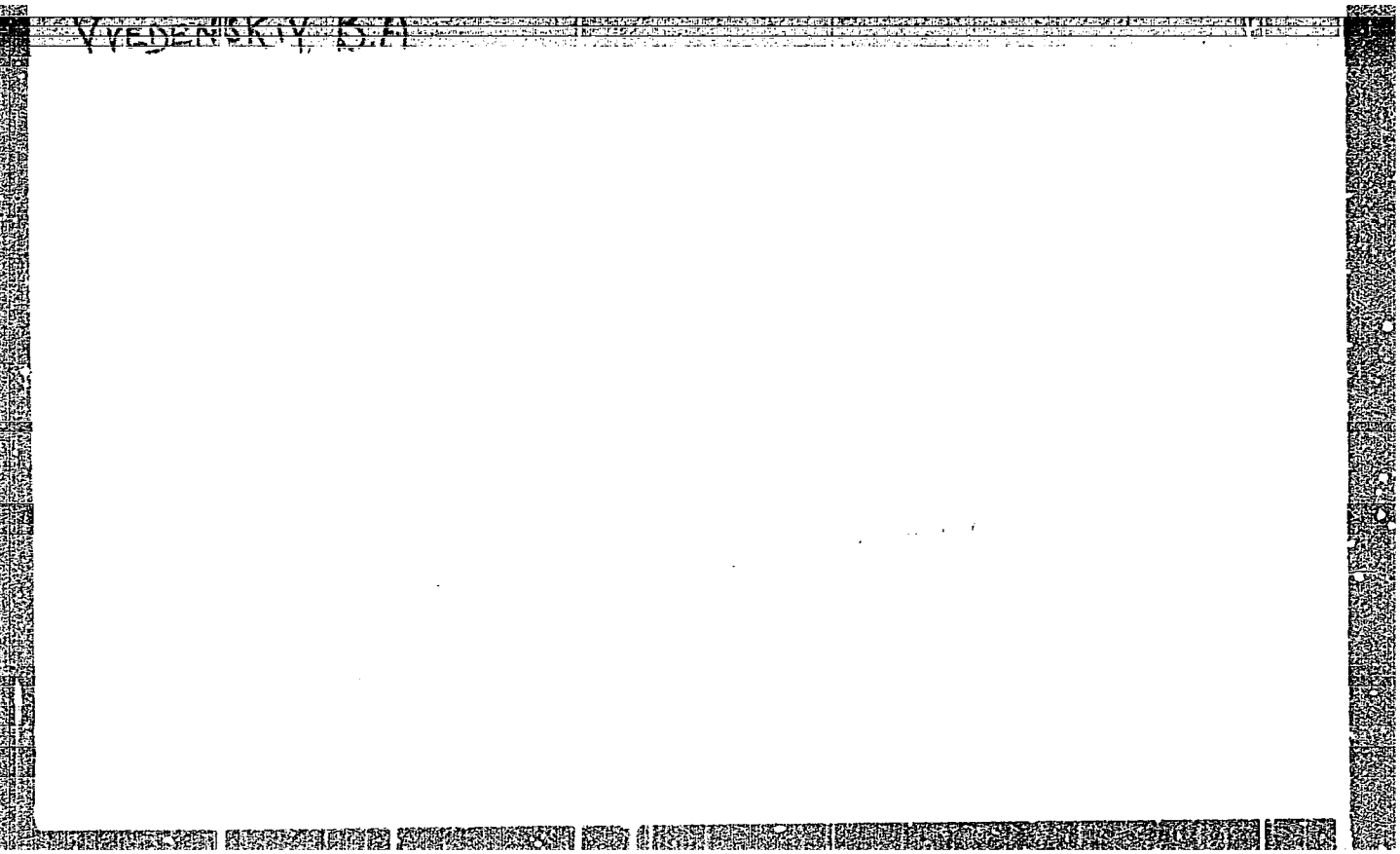

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DLC: TK504.Z3

SO: Soviet Transportation and Communications, A Bibliography, Library of Congress, Reference Department, Washington, 1952, Unclassified.

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"Radio Predictions and their Practical Application to the Calculation of Operating Frequencies," published in Russian periodical Izvestiya Akad. Nauk SSSR, Otdel. Tekh. Nauk, No. 9, Sep 46. (Vvedenskiy is with the Section on the Scientific Solution of Problems in Electrical Communications, Adad. Sci., USSR; submitted article 15 Jun 45)
SO: W-169, 15 Dec 47

VVEDENSKII, B A

VVEDENSKII, B. A.

Nashi raboty po rasprostraneniiu ultra-korotkikh voln. (In Akademiia Nauk SSSR. IUbileinyi sbornik posviashchennyi tridtsatiletiiu Velikoi oktaibr'skoi sotsialisticheskoi revoliutsii. Moskva, 1947. Part II. p. 598-619, bibliography)
Title tr.: Our research in ultrashort wave propagation.

Q111.A45

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

VVEDENSKIY, B. A.

Aug 1947

USSR/Acad Sci
Engin
Metals

"June Meeting of Department of Technical Sciences"
1½ pp

"Vest Akad Nauk SSSR" No 8

Academician B. A. Vvedenskiy presided over the Jun meeting of the Department of Technical Sciences. First article submitted for reading was by A. A. Bochvar on dependence of fire resistance of aluminum alloys upon their structure and composition. Other articles submitted by M. P. Kostenko, and S. V. Serensen, Ukrainian Academy of Sciences.

5TT7

PA 50T100

USSR/Radio - Development
Radio Waves - Propagation

Mar 1947

"Thirty Years of Soviet Radio Physics," B. A. Vvedenskiy, M. I. Ponomarev, 17 pp

"Uspekhi Fiz Nauk" Vol XXXIII, No 3

Gives historical account of development of radio techniques, particularly radio physics, in Soviet Union during past 30 years. Briefly discusses scientists who have been active in following fields: oscillations with lumped constants, with distributed constants, electromagnetic radiations, and propagation of radio waves. Note that these scientists have been working to meet Stalin's demands that "Soviet

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50T100

USSR/Radio - Development (Contd)

Mar 1947

technology should not only attain, but surpass that of other nations."

IC

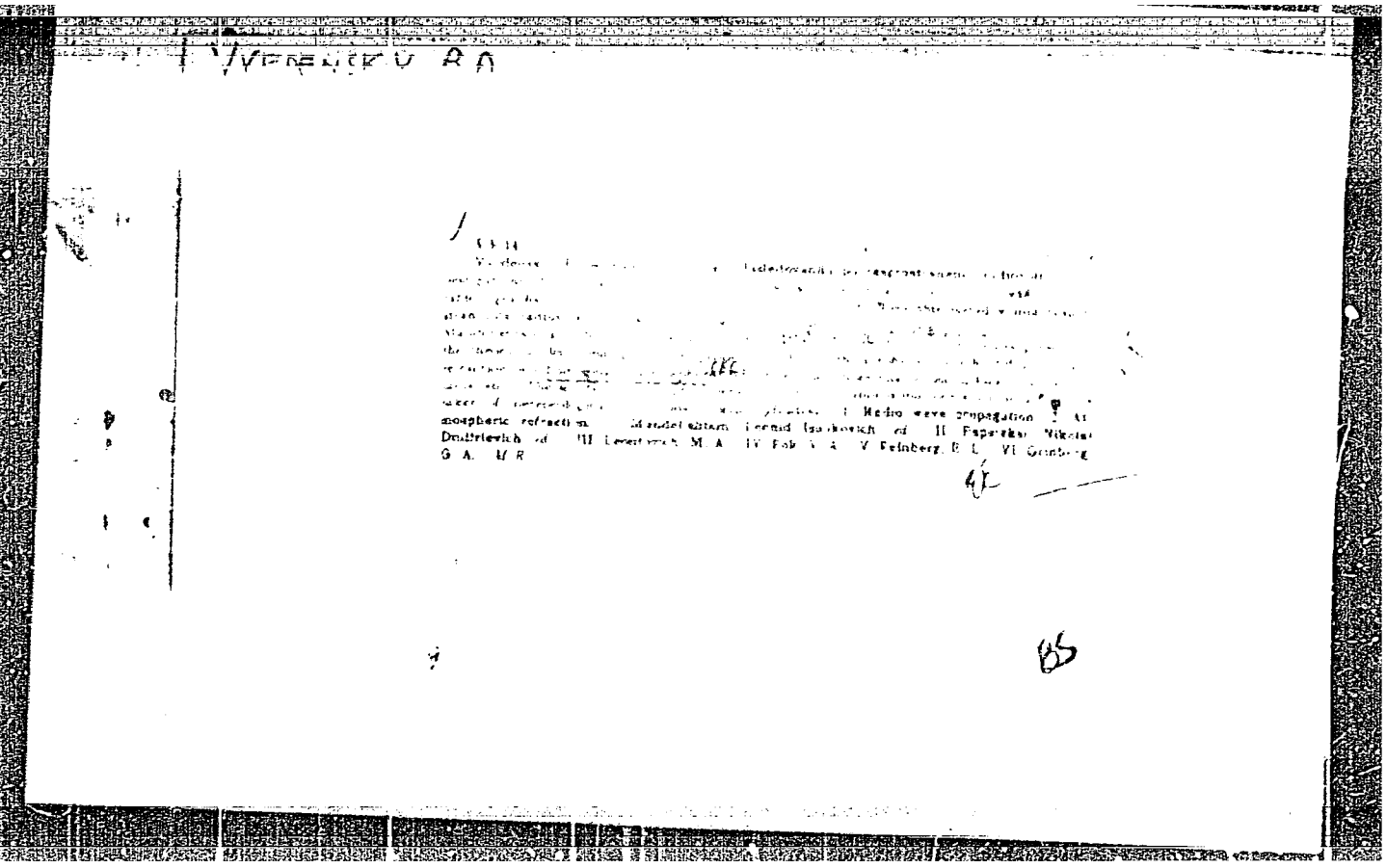
50T100

VVEDENSKIY, B.A., and AG.ARKH PUBG

Voprosy rasprostraneniia ul'trakorotkikh voln. Moskva, Sovetskoe radio, 1948. 444 p., illus., tables.
Title tr.: Problems of ultra short-wave propagation.

NCF

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.



VVEDENSKIY, Boris Alekseyevich and Arenberg, A. G.

"Problems of the Propagation of Ultrashort Waves," (Voprosy rasprostraneniya ul'trakorotkikh voln), Part I, Moscow, 1948.

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VVEDENSKIY, B. A.

PA 4/49T3

USSR/Academy of Sciences
Radio

May 48

"Soviet Scientists Continuing the Work of A. S. Popov," Acad B. A. Vvedenskiy, 2 pp

"Radio" No 5

Lists some of the more important Soviet scientists who are making great strides toward the advancement of radio technology in the USSR.

4/49T3

W. E.

Propagation of Waves

1166

621.396.11

Work of Soviet Scientists in the Field of Propagation of Ultra-Short Radio Waves. - [I. A. Vyshinskiy] (*Bull. Acad. Sci. U.R.S.S. Tech. Sci.*, June 1943, No. 6, pp. 345-352. Bibliography, pp. 852-854. In Russian.) A brief survey of investigations carried out by Soviet scientists during the last 25 years at m, dm and cm wavelengths.

1949

Vvedenskiy, B. A., "Radio in the USSR." Symposium, "To Iosif Vissarionovich Stalin From the Academy of Sciences USSR," Academy of Sciences USSR, 1949.

VVEDENSKIY, B. A.

USSR/Radio
Radio Waves, Shf
Condensers, Paper

Mar/Apr 49

"New Books" 3/4 p

"Radiotekh" No 2

Reviews six books, including "Radio Engineering Measurements of Centimeter Waves," by B.A. Dobrokhotov, "Problems of the Propagation of Ultra-short Waves" by B. A. Vvedenskiy and A. G. Arenberg, and "Modern Paper Condensers," by V. T. Reinne.

PA 50/49T102

USSR/Academy of Sciences Apr 49

"Session of the Department of Technical Sciences, Academy of Sciences, Leningrad" 2 pp

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 4

Conference was dedicated to history of Soviet science and engineering. Acad B. A. Vvedenskiy noted importance of compiling history of great accomplishments of Soviet science and engineering. A. A. Andronov submitted a report, "I. A. Vyshnegradskiy and His Role in Establishing the Theory of Automatic Regulation."

45/49T7

VVEDENSKIY B. A.

PA 44/49T104

USSR/Radio May 49
Radio Waves - Propagation
Oscillations, Nonlinear

"Progress of Soviet Radio Physics," Acad B. A. Vvedenskiy, 2 pp

"Radio" No 5

Most complete treatment of a number of problems in wave propagation was given by Acad V. A. Fok (1945). Soviet scholars (Academicians L. I. Mandel'shtam, N. D. Papaleksi, N. M. Krylov, A. A. Andronov, Corr Mem N. N. Bogolyubov, and others) established a new region in theory of

[redacted] 44/49T104

USSR/Radio (Contd) May 49

oscillations, so-called theory of nonlinear oscillations. G. A. Grinberg's work, "Selected Problems in the Mathematical Theory of Electric and Magnetic Phenomena," is an example of the use of theoretical physics in solving problems arising in radio engineering and related fields.

[redacted] 44/49T104

USSR/Academy of Sciences
Engineering Sciences May 49

"In the Department of Technical Sciences, Academy of Sciences USSR" 2 pp

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 5

At a 9 Feb 49 meeting of the Dept of Tech Sci, following reports were submitted: B. A. Vvedenskiy's "Results of the Scientific Research Activity of the Department for 1948," L. D. Sheyyakov's "A New Method for Determining the Best Dimensions for Bridge Spans," P. Ya. Kochina's "Irregular Motions in the Theory of Filtration," and V. Z. [redacted]

51/49T2

EA 51/49T2

USSR/Academy of Sciences (Contd) May 49

Vlasov's "Contact Problems in the Theory of Thin-Walled Rods and Shells."

51/49T2

VVEDENSKIY, B. A.

VVEDENSKIY, B.A.

PA 52/49T12

USSR/Academy of Sciences
Science

Jun 49

"Works Published in 1948 by Academicians, Corresponding Members, and Other Scientific Collaborators of the Department of Technical Sciences (Complete List)" 12 pp

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 6

Includes the books: S. A. Khristianovich, V. G. Gal'perin, M. D. Millionshchikov, and L. A. Simonov's "Applied Gas Dynamics," published by Cen Aerohydrodynamics Inst; I. A. Charnyy's "Subsurface Hydromechanics"; B. N. Yur'yev's "Vortex Theory of Propellers," published by Mil Aeronaut Eng Acad imeni Zhukovskiy; and B. A. Vvedenskiy and A. G. Arenberg's "Problems in Ultrashort-Wave Propagation." Also includes G. L. Polisar's article, "New Electrical Integrators Used in Solving Shipbuilding Problems" ("Sudostroyeniye," No 1, 1948).

VVEDENSKIY, Boris Alekseevich

Radiotekhnika v SSSR. [Radio engineering in the USSR]. (Radio, 1950, no. 5, p. 4-5).
DLC: TK540.R76

SO: Soviet Transportation and Communications, A Bibliography, Library of Congress, Reference Department, Washington, 1952, Unclassified.

VVEDENSKII, B. A.

B. A. Vvedenskii, academician. In memory of Sergei Ivanovich Vavilov, the outstanding scientist of the Stalin epoch. P. 324

SO: Bulletin of the Acad. of Sciences, Izvestia (USSR) Section on Technical Sciences, No. 3 (March 1951)