ALBU, Toma

Monotonous applications between topologic spaces. Studii cerc
rat 16 no. 7:915-925 '64.

ALBU, Toma

On a class of rational numbers. Gaz mat fiz 70 no.4 129-131 Ap '65.

ALBu Th.

PHASE I BOOK EXPLOITATION RUM/5783

Cluj, Transylvania. Institutul Politehnic

Lucrări ştiinţifice (Scientific Works) Cluj, Intreprinderea Poligrafica, 1959. 637 p. Errata slip inserted. No. of copies printed not given. No contributors mentioned.

PURPOSE: This book is intended for mathematicians, physicists, chemists, and civil and mechanical engineers.

COVERAGE: The book consists of 59 papers by Rumanian specialists on problems in science and technology, particularly mathematics, physics, chemistry, metallurgy, civil and mechanical engineering. Summaries in Russian and French or German are given at the end of each article. Some of the articles are accompanied by references. No personalities are mentioned. At the back of the book there are 23 references, all Rumanian.

TABLE OF CONTENTS:

PART II. CONSTRUCTION

PART III. MECHANICS

3/6

RUM/9-11-4-6/43

25(5)

AUTHORS: Chişu, Al., Engineer, Albu, T. and Pop, Ştefan, Engineers

TITLE: Some Aspects of the Wear and Limit-Lubrication in Zinal Journal Bearings

PERIODICAL: Metalurgia şi Construcţia de Maşini, 1959, Vol 11, Nr 4, pp 287-290 (RUMANIA)

ABSTRACT: The sliding bushings made from zinal, cast and processed at the factory "1 Mai", Ploeşti, Rumania, have been tested in heavy-duty operating conditions, at high specific pressures of 40 to 150 kilograms per sq.centimeter (569 to 2133.5 psi), and low speeds of 315 rpm. The plotting of the temperature and friction coefficient against the time gives picture of wear in various tests, figures 1 to 5. It is noted that after a smooth increase there is a sudden variation to a maximum temperature and friction coefficient, followed by a decrease to a stable value. The maximum temperature observed was 59°C (138.2 F) which indicates no danger of jamming. The authors also tested the journal bearings of zinal under limit-lubrication conditions. They explain the formation of

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RUM/9-11-4-6/43

Some Aspects of the Wear and Limit-Lubrication in Zinal Journal Bearings

the limit layer qualitatively. The experiments were made with a lubricant corresponding to Rumanian standard 413STAS 751-49, of 13° Engler. The authors conclude that under the heavy-duty operating conditions (2130 psi) the bearings tested had remarkable qualities. They affirm that zinal is as good as bronze or other antifriction materials, and it has the advantage of being cheaper. Limitations for zinal (zinc-aluminum alloys) are imposed by acid mediums and temperatures over 120°C (248 F). There are 7 graphs, 1 diagram and 1 table.

Card 2/2

✓

CHISU, A.; MAROS, D.; ALBU, T.; HULPE, G.; MATIESANU, D.; DALY, A.;
VERES, A.; SZABO, A.

Determining the wear and tear on cogwheels by radioactive isotopes. Bul stiint polit Cluj no.5:217-223 '62.

1. Institutul de fizica atomica Cluj (for Szabo).

R/008/62/013/006/005/C08
A065/A126

AUTHORS: Chişu, A., Maroş, D., Albu, T., Hulpe, G., Mateişanu, D., Daly, A., Szabo, A.

TITLE: Contributions to the investigation of the wear of gears by means of radioactive isotopes

PERIODICAL: Studii şi cercetări de mecanică aplicată, v. 13, no. 6, 1962, 1,549 - 1,555

TEXT: A Co^{60} bolt, 3 mm long and 1 mm in diameter, was introduced into the tooth-face of a gear of globular pearlite cast iron, while the gear was then subjected to a long-period test in a universal gear testing machine provided with a closed circuit lubrication and a Geiger-Müller·counter. The radioactive particles, retained together with the wear dust by the oil filter, were detected by the Geiger-Müller counter, whereas the impulses were counted in 1/2-hour intervals. The qualitative wear curves, traced on the basis of this method, show the evolution of the wear depending on time and load. Presented are then the calibration process used for the qualitative estimation of the wear, as well as the

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R/008/62/013/006/005/008
A065/A126

Contributions to the investigation of ....

calculation of the wear of the tested gear. The precision of these measurements is limited by the statistic character of the radioactive disintegration. In the case of the conducted experiments, the statistic error varied between ± 2% and ± 5%. These preliminary experiments compiled in a table present the result of the wear test, depending on time and load. The tests conducted by the Institutul politehnic (Polytechnical Institute) in Cluj, the Laboratorul de radioizotopi, Institutul de fizică atomică (Laboratory of Radioisotopes, Institute of Nuclear Physics) in Cluj, and the Uzinele "1 Mai" ("1 Mai" Plant) in Ploieşti, will be continued. There are 4 figures.

ASSOCIATIONS: Institutul politehnic (Polytechnical Institute) in Cluj (Chişu, Maroş, Albu, Hulpe, Mateişanu, and Daly); Institutul de fizică atomică (Institute of Nuclear Physics) in Cluj (Szabo)

SUBMITTED: June 16, 1962

Card 2/2

USSR / General Biology. Individual Development. B-4

Abs Jour: Ref Zhur-Biol., No 10, 1958, 42817.

Author : Parkhon, K. I.; Laurian, Lidiya; Belechanu, Marianna; Albu-Aderka, Nataliya.

Inst : Not given.

Title : Controlled Embryogenesis. Report 5. Effect of Insulin on Hen Embryonic Development (Congenital Cataract and Achondroplasia).

Orig Pub: Zh. med. nauk. Akad. RNR, 1956, 1, No 2, 5-47.

Abstract: Studies were conducted on eggs of White Leghorn and Rhode Island varieties. All told, 1000 eggs were used. Insulin (I) was introduced either by drops on the chorioallantois, or by injection through the shell. The eggs were treated daily or every other day, beginning with the 7th and up to the 14th day of incubation. In each injection

Card 1/3 13

USSR / General Biology. Individual Development. B-4

Abs Jour: Ref Zhur-Biol., No 10, 1958, 42817.

Abstract: plasia one injection is sufficient, while the formation of a cataract requires at least 5 injections. Introduction of I starting with the 11th day of incubation causes no defects. In the authors' opinion, the mechanism of anomalous generation is related to disruption of carbohydrate metabolism. Bibl. 104 refs.

Card 3/3

14

ALBUL, S.P.

Comparative evaluation of existing formulas used for computing the yield of uncompleted wells in water formations under pressure. Zap.Len.gor.inst.32 no.2:126-135 '56. (MLRA 10:2)
(Wells)

ALBUL, S.P.

[redacted]

Rapid method for calculating the yield of uncompleted wells in water formations under pressure. Zap.Len.gor.inst.32 no.2:136-139 '56.
(MLRA 10:2)
(Wells)

MAKSIMOV, Vasiliy Mikhaylovich, dotsent, kand.geologo-miner.nauk; ASATUR, K.G., dotsent, kand.tekhn.nauk; DAVIDOVICH, V.I., dotsent, kand. tekhn.nauk; ALBUL, S.P., kand.geologo-miner.nauk; PAUKER, N.G., inzh.-gidrogeolog; OSTROUMOV, B.P., gidrotekhnik; ZAYTSEV, I.K., doktor geologo-miner.nauk; TOLSTIKHIN, N.I., prof., doktor geologo-mineral.nauk; REZNIKOV, A.A., kand.khim.nauk, starshiy nauchnyy sotrudnik; MERSHALOV, A.F., assistent; VOROTYNTSEV, V.T., dotsent, kand.tekhn.nauk; MARKOV, I.A., dotsent, kand.geologo-miner.nauk; KERKIS, Ye.Ye., dotsent, kand.geologo-miner.nauk; KHITROV, I.N., inzh.-geolog; BOROVITSKIY, V.P., kand.geologo-miner.nauk; RAVDONIKAS, O.V., kand.geologo-miner.nauk; ONIN, N.M., kand.geologo-miner.nauk; BASKOV, Ye.A., inzh.-gidrogeolog; NOVOZHILOV, V.N., dotsent, kand. geologo-miner.nauk; PEKEL'NYY, I.S., inzh.-gidrogeolog; NEVEL'SHTEYN, Yu.G., inzh.-gidrogeolog; BOSKIS, S.G., inzh.-gidrotekhnik; NIKIFOROV, Ye.M., inzh.-gidrogeolog; GATAL'SKIY, M.A., prof., doktor geologo-miner.nauk, nauchnyy red.; DOLMATOV, P.S., vedushchiy red.; GENNAD'YEVA, I.M., tekhn.red.

[Hydrologist's handbook] Spravochnoe rukovodstvo gidrogeologa. Leningrad, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, Leningr.otd-nie, 1959. 836 p. (MIRA 12:4)

1. Vsesoyuznyy geologicheskiy nauchno-issledovatel'skiy institut (for Reznikov).

(Hydrology)

ALBUL, S.P.

Hydrochemical ore prospecting method. Razved. i okh. nedr. 27 no.4: 7-12 Ap '61. (MIRA 14:5)

1. Universitet druzhby narodov imeni Patrisa Lumumby.
(Geochemical prospecting)

ALBUL, S.P.

Physicomathematical theory of the field of dissemination in
hydrochemical ore prospecting. Biul. MOIP. Otd. geol. 36
no.2:134-135 Mr-Ap '61 (MIRA 14:7)
(Water, Underground--Analysis)

ALBUL, S.P.; PETERSEL', L.Kh.

Results of geochemical studies of fluvial sediments in a drainage network in the regions of complex metal occurrences in the Estonian S.S.R. Trudy VITR no.3:304-316 '61. (MIRA 15:7)
(Estonia—Geochemical prospecting)

ALBUL, S.P.; ZVONKOVA, M.B.; KAS'YANOVA, I.V.; SUDOV, B.A.

Using hydrochemical methods in prospecting for ore deposits in the Budyumkan Basin (eastern Transbaikalia). Trudy VITR no.3:295-303 '61. (MIRA 15:7)
(Budyumkan Valley--Geochemical prospecting)

ALBU, T.

MIHAITA, S.; GHEORGHIU, I.; ONCIOIU, P.; POPA, M.; ALBU, T.; MARINESCU, I.

Notes on the duration of immunity induced with swine-pest vaccine treated with formol and adsorbed on aluminum hydroxide. Stud. cercet. inframicrobiol., Bucur. 8 no.2:221-227 1957.

1. Comunicare prezentata la Institutul de inframicrobiologie al Academiei R.P.R. in sedinta din 20 decembrie 1955.

(VIRUS DISEASES, immunology
hog cholera, duration of immunity after vacc. with formol-treated vaccine adsorbed on aluminum hydroxide)

(SWINE, diseases
same)

(VACCINES AND VACCINATION
hog cholera vaccine treated with formol & adsorbed on aluminum hydroxide, duration of immunity)

ALBUL, T.I.

CONSTANTINESCU, E.; ALBULESCU, D.

Isolation of an alkamine from Senecio doria L. Rev. sci. med. 6 no. 1/2:25-28 '61.

(SENECIO) (AMINO ALCOHOLS)

Albulescu, Doina

7. Copies

CONSTANTINESCU, E. RUMANIA

Lecturer

School of Pharmacy, Bucharest (Facultatea de Farmacie).

Bucharest, Farmacia, Revista a Uniunii Societatilor de Stiinte Medicale din RPR, No 10, Vol X, Oct 62, pp 613-616.

"Study of the Distribution of Saponosides in Various Native Plants Belonging to the Scrophulariaceae Family." (Paper Compiled in the Laboratory for Pharmacognosy of the School of Pharmacy, Bucharest.)

Co-authors:

ALBULESCU, Doina, Pharmacist, School of Pharmacy, Bucharest.

BALTA, Elena, Student, School of Pharmacy, Bucharest.

~~Feb~~ 2

ALBULET R.

ROIBASU, P.; PECURARIU, O.; ALBULET, R.

Clinical aspects of a case of pulseless disease. Med. int., Bucur. 9 no.12:1879-1881 Dec 57.

(AORTA, diseases
aortic arch synd., case report)
(ARTERITIS, case reports
aortic arch synd., Takayasu type)

ALBULET, Toma; DUMITRU, Ivan

Reserves of increasing the labor productivity in socialist trade. Probleme econ 17 no.9:163 S '64.

1. Director, Commercial Directorate, Bucharest People's Council (for Albulet). 2. Head of Office, Commercial Directorate, Bucharest People's Council (for Dumitru).

ALBUTOV, N.A., sanitarnyy fel'dsher (derevnya Tyumerovo, Chuvashskoy SSSR)

Health school. Fel'd. i akush. 26 no.7:50-53 Jl '61. (MIRA 14:7)
(TYUMEROVO-HEALTH EDUCATION)

ALBUTOV, N.A., sanitarnyy fel'dsher

Publication by nurses of health bulletins. Med. sestra 20 no.11:42-45 N '61. (MIRA 15:2)

1. Iz Tyumerevskoy uchastkovoy bol'nitsy Yantikovskogo rayona Chuvashskoy ASSR.

(HEALTH EDUCATION)

IOZHITSA, N.A. (Odessa); ALBUTOV, N.A. fel'dsher

Means of the further development of public health in rural localities. Fel'd. i akush. 28 no.8:42-45 Ag'63 (MIRA 16:12)

1. Zaveduyushchiy organizatsionno-metodicheskim otdelom Odesskoy oblastnoy klinicheskoy bol'nitsy (for Iozhitsa)
2. Tyumerevskaya uchastkovaya bol'nitsa, Chucashskaya ASSR (for Albutov).

AL'BUTSKAYA, YE. F., [illegible], M. S., [illegible], YE. S., [illegible], Z. D.

"Physiological hygienic principles of industrial training in the trade schools of machine building."

report submitted at the 13th All-Union Congress of Hygienists, Epidemiologists and Infectionists, 1959.

L 35487-65

ACCESSION NR: AP5007836 S/0288/64/000/003/0061/0066

10
9
B

AUTHOR: Albuzhev, P.M.; Kopeykin, G.F.; Kuz'menko, Yu. P.; Cheshev, V.F.; Yarunov, A.M.

TITLE: A study of torque meters

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya tekhnicheskikh nauk, no. 3, 1964, 61-66

TOPIC TAGS: spring potentiometer, torque meter, capacitance torque meter, tensometric torque meter

10

ABSTRACT: Modern technology usually employs three methods for the measurement of torque: a. breaking, b. reactive moments transmitted to the stator of the motor, and c. deformations of links which transmit the moment. Many practical devices utilize electrical elements. The authors concentrated their study on the tensometric and capacitative meters (with appropriate amplifiers) for the registration of torques on the shaft of the impact unit of an electromechanical hammer. Tests showed that the tensometric meters did not supply satisfactory records of either the active or the reactive moments (the vibrations of the electric motor, hammer recoil, and the passage of shock waves through the shaft cause distortions in the oscillograms). Capacitative meters yield poor

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ACCESSION NR: AP5007856

results for the same reasons. However, a four-contact spring-potentiometric meter developed by the authors at the Laboratoriya teoreticheskoy mekhaniki (Laboratory of theoretical mechanics) of the Novosibirskiy elektrotekhnicheskiy institut [Novosibirsk electrical engineering institute] and described earlier (Patent No. 37227 of 13 May 1963, issued by the Komitet po delam izobreteniy i otkrytiy pri sovete Ministrov SSSR [Committee for Inventions and Discoveries, Council of Ministers, SSSR]) supplies satisfactory results since it actually reacts to the recoil of the impact unit and to the passage of shock waves through the shaft. This meter does not need any amplifiers and may be used for the study of other mechanisms and machines operating with vibrational and pulsed loads. Orig. art. has: 9 formulas and 3 figures.

ASSOCIATION: Novosibirskiy elektrotekhnicheskiy institut (Novosibirsk Electrical Engineering Institute)

SUBMITTED: 10Dec63 ENCL: 00 SUB CODE: EE

NO REF SOV: 015 OTHER: 001

Card 2/2

YELPAT'YEVSKIY, M. P., ALB'YAKOV, M. P.

Forestry Engineering

Mechanizing forest drainage work, Les. khoz., 5 No. 3 (42), 1952

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

1. ALBYAKOV, M. P.: YELPAT'YEVSKIY, M.P.
2. USSR (600)
4. Excavating Machinery
7. Forest ditching machine. Les. khoz. 5 No. 10, 1952.

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

ALBYAKOV, M.P., kandidat tekhnicheskikh nauk.

[redacted] K-1A stump puller. Sel'khozmashina no.3:14-17 Mr '57. (MLRA 10:5)

(Agricultural machinery) (Clearing of land)

ALBYAKOV, M.P., kand.tekhn.nauk; ALBYAKOVA, Ye.V., mladshiy nauchnyy sotrudnik; AFONIN, I.S., starshiy inzh.-instruktor

SLK-1A horse-drawn combined forest plow and planter. Trakt.i sel'khozmash. no.6:37-38 Je '59. (MIRA 12:9)
(Forests and forestry--Equipment and supplies)

ALBYAKOV, M.P., kand.tekhn.nauk; ALBYAKOVA, Ye.V., mladshiy nauchnyy sotrudnik; AFONIN, I.S., starshiy inzh.-instruktor

SLK-1A horse-drawn combined forest plow and planter. Trakt.i sel'khozmash. no.6:37-38 Je '59. (MIRA 12:9)
(Forests and forestry--Equipment and supplies)

ALBYAKOV, M.P., kand.tekhn.nauk; CHERNIKOV, I.P., inzh.

K-2A stump grubber. Trakt. i sel'khozmash. 31 no.6:39 Je '61.
(MIRA 14:6)

(Clearing of land)

ALBYCHEV, P. V.

Handmade apparatus for the study of physics; a guide for teachers Moskva, Gos. uchebno-pedagog. izd-vo, 1950- (51-21759)

ALCHANGYAN, L.V.

Use of artificial fever in the treatment of some derma oses. Sov.med. 28 no.7:120-124 Jl '65. (MIRA 18:8)

1. TSentral'nyy nauchno-issledovatel'skiy kozhno-venerologicheskiy institut (direktor - kand.med.nauk N.M.Turanov) Ministerstva zdravookhraneniya SSSR, Moskva.

STUDNITSIN, A.A., prof.; ALCHANGYAN, L.V.

Use of pyrogenal in the treatment of psoriasis. Vest. derm. i ven. 38 no.7:47-48 Jl '64. (MIRA 18:4)

1. TSentral'nyy kozhno-venerologicheskiy institut (dir. - dotsent N.M.Turanov, zamestitel' direktora po nauchnoy chasti - prof. A.A. Studnitsin) Ministerstva zdravookhraneniya SSSR, Moskva.

ALCHEV, Traiko

Central control of the technological process in the primary treatment of cotton. Tekstilna prom 12 no.2:35 '62.

1. Ikonomist pri NIPKI po priborostroene.

AL'CHIBAYEV, P.A.

SOKHRANOV, N.N.; PIGROV, V.M.; AL'CHIBAYEV, P.A.

Operation of automatic logging station laboratories. Razved. i prom. geofiz. no.16:11-16 '56. (MLRA 10:8)
(Oil well logging)

ALCHIYEV, I.A. (Voroshilovgrad)

Changes in oscillographic indicators during orthostatic tests in patients with gastric and duodenal ulcers. Vrach. delo no.3:309 Mr '57 (MLRA 10:5)

(STOMACH--ULCERS) (DUODENUM--ULCERS) (OSCILLOGRAPH)

AKHUDZHAN, A. A.

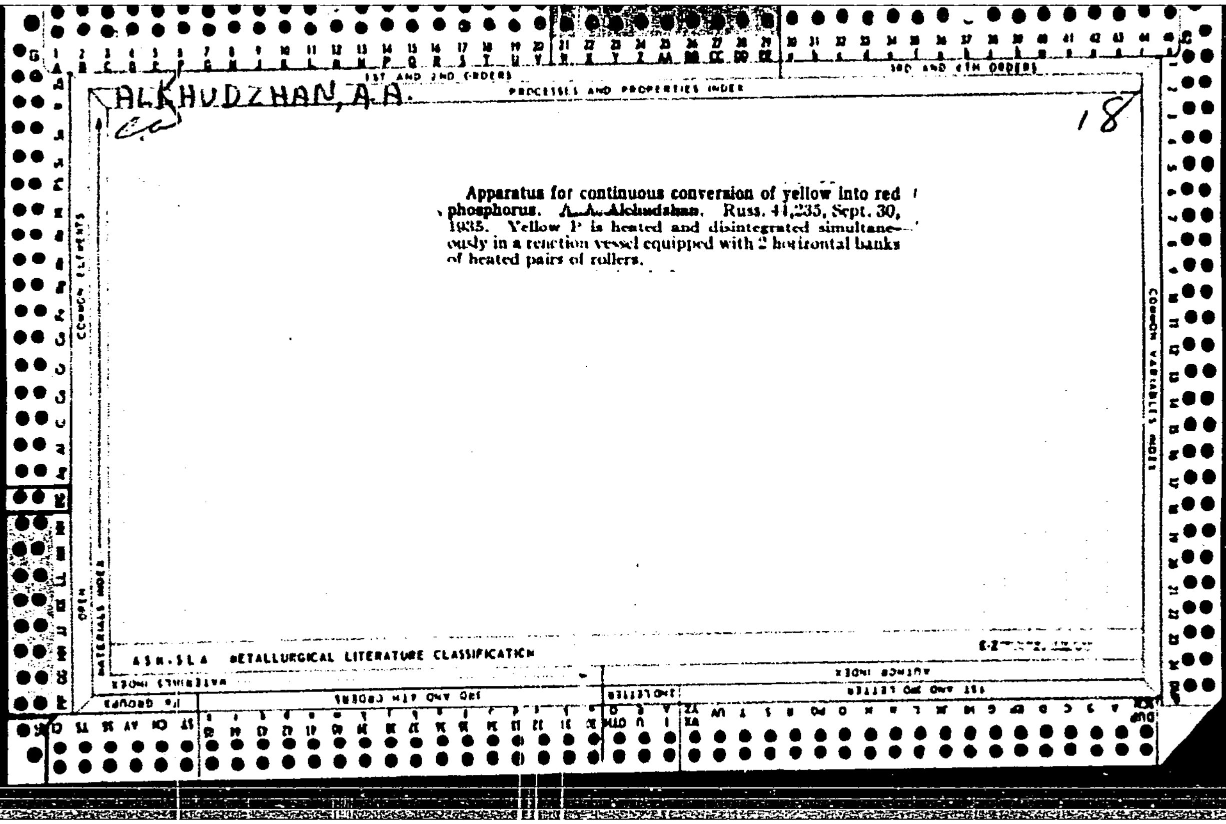
2

PROCESSES AND PROPERTIES INDEX

Kinetics of the reactions of catalyt hydrogenation of hydrocarbons. I. Kinetics of hydro nation of aromatic hydrocarbons with palladium catalys at pressures from 1 to 100 atmospheres and temperatur from 140° to 330°. A. A. Alchudzhan, A. A. Vvedensk , V. R. Zharkova and A. V. Frost. *J. Gen. Chem.* (U. S. R.) **4,** 1108-79 (1934).—A systematic study of the ect of pressure on the velocity and mechanism of cat ytic reactions was begun by hydrogenation of C_6H_6 and Me in the presence of 10% Pd-asbestos under normal nd high pressures. The catalyst was prepd. and regenera d by the method of Zelinskii and Borisov (*C. A.* **18,** 21 7; Zelinskii, *C. A.* **20,** 1599). The hydrogenation of C H_6 and PhMe under atm. pressure and the analysis of t e reaction products were carried on by the method of Z and P. (*C. A.* **27,** 888). In the hydrogenation at hig pressures, com. H was dried with $CaCl_2$ and conduc d through an oil-heated container filled with C_6H_6 a d pumice stone and over the catalyst. The unchanged H and the reaction product were collected at definite tervals. C_6H_6 and C_6H_{12} were frozen out from the react n product at temps. up to −70°. The velocity of hy rogenation of C_6H_6 and PhMe in the presence of Pd a atm. pressure is independent of the partial pressure of H and at lower temps. (up to 200°) of the partial pressur of C_6H_6. At higher temps. (above 240°) the velocity of hydrogenation is directly related to the partial pre ure of C_6H_6. The velocity of hydrogenation of C_6H_6 i greater than that of PhMe. Under the H pressure the atalyst is converted into the β-phase of Pd-H (at 240° d 8 atm.) (Bruning and Sieverts, *C. A.* **27,** 2300; Hagen and Sieverts, *C. A.* **27,** 4459). The velocity of hydrogenation with β-phase Pd-H at 240° is directly proportional to the C_6H_6 pressure and inversely 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 208° the thermal coeff. is less than 1 and the reaction velocity decreases with the increase of temp.

Chas. Blanc

ASM-SLA METALLURGICAL LITERATU CLASSIFICATION



1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

ALKHUDZHAN, A.A.

18

Apparatus for continuous conversion of yellow into red phosphorus. A. A. Alkhudzhan. Russ. 41,235, Sept. 30, 1935. Yellow P is heated and disintegrated simultaneously in a reaction vessel equipped with 2 horizontal banks of heated pairs of rollers.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

AKHUDZHAN, A.A.

PROCESSES AND PROPERTIES INDEX

2

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. Vvedenskii. *J. Gen. Chem.* (U.S.S.R.) 16, 415-19 (1946).—The hydrogenation of benzene over Ni was studied at 100, 120, 140, 180, 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.* 420-6.—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. Kosolapoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

ALCHUDJAN, A. A.

"A study of the kinetics and the mechanism of reactions of hydrogenation of hydrocarbons. IV. A study of the peculiarities in the inconstancy of the activity of the nickel catalyst in the hydrogenation of benzene." by A.A. Alchudjan and A. A. Vvdensky (p. 426.)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1946, Volume 16, No. 3

PROCESSES AND PROPERTIES INDEX

ALKHUDZHAN A.A.

Kinetics and mechanism of the hydrogenation of hydrocarbons. V. Effect of benzene, cyclohexane, and nitrogen on the change of the activity of nickel catalysts in the hydrogenation of benzene. A. A. Alchudzhan and A. A. Vvedenskii (Leningrad High Pressures Inst., U.S.S.R.). *Zhur. Obshchei Khim.* (J. Gen. Chem.) 18, 261–7(1948); cf. *C.A.* 41, 644g.—Upon treatment with 0.33 mole C_6H_6 during 90 min. at 230°, the hydrogenating activity, a, of the Ni catalyst fell from about 10 (% hydrogenation of C_6H_6 at 230°) to zero; in subsequent operation in $C_6H_6 + H_2$, a rose slowly but attained a stationary value of only about 6% in 180 min. Treatment at this stage with H_2, for 5 days, resulted in a slight rise of a which, in subsequent operation, fell somewhat and became stationary at about 7%. On another batch of Ni catalyst, a very slow attainment of a in operation in $C_6H_6 + H_2$ was observed after a 48-hr. treatment with H_2, the stationary a (~11%) being attained only after 180 min. Subsequent treatment with N_2, 1 l./hr., 85 min., caused the initial a to drop to about 8%; in operation, a rose rapidly to a stationary 8%. On renewed (14 hrs.) treatment with H_2, a shot up to about 37%, in the subsequent reaction falling slowly to about 10–11%, i.e. to very nearly the stationary value of a after the 1st treatment with H_2. Treatment, at this stage, with 40 ml. C_6H_6 contg. 0.06 atm. H resulted in a depression of a to zero, followed by rapid recovery in the course of the subsequent reaction, again to about 10%. In other words, although deactivation with H_2-free C_6H_6 is followed only by partial recovery of a, the recovery is complete after deactivation by C_6H_6 contg. a small amt. of H_2. The behavior of the catalyst upon treatment with pure H_2, showing, reproducibly, a rise of a to a high value, followed by its gradual decrease in the subsequent reaction (all at the const. temp. 230°), down to a reproducible stationary value, was further ascertained under somewhat modified exptl. conditions, ensuring a stream of pure H_2 without traces of C_6H_6. In this series, with consecutive treatments with H_2 of 100, 50, 15, and 960 min. inserted between runs with $C_6H_6 + H_2$, it was observed that the shorter the time of the treatment, the lower the resulting initial a and the faster its fall to the reproducible stationary value. The same catalyst, activated with H_2 and having attained a const. a approx. 12% in the subsequent reaction, again fell to $a = 0$ after a 40-min. treatment with pure C_6H_6. In the following reaction, a attained a stationary value of only about 6%; to reëstablish the previous stationary a of 11–12%, it was necessary to insert an 18-hr. treatment with H_2. Cyclohexane lowers a in the same way as C_6H_6; complete restoration of the former a requires very prolonged treatment with H_2, of the order of hundreds of hrs. **VI. Mechanism of the catalytic hydrogenation on nickel and palladium.** A. A. Alchudzhan, A. A. Vvedenskii, and A. V. Frost (Leningrad High Pressures Inst., U.S.S.R.). *Ibid.* 268–75.—The foregoing facts can be interpreted either by assuming that hydrogenation on Ni proceeds through dissolved H_2, in analogy with the soln. of H_2 in Pd, and that establishment of a stationary concn. of H_2 requires time, or by ascribing slow rates to the establishment of stationary concns. of C_6H_6 and of cyclohexane through adsorption

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

and desorption on Ni. The fact that, notwithstanding repeated poisoning with C_6H_6 or cyclohexane, the activity of ⌐ catalyst can be restored to its original value by pro- [illegible]d reactivation with H_2, demonstrates the phys. [illegible]ancy of the adsorptive properties of the catalyst ace.

N. Thon

ALCHUDZHAN, A. A.

USSR/Chemistry - Hydrocarbons
Chemistry - Hydration

Feb 1948

"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, $7\frac{1}{4}$ 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.

68T40

ALCHUDZHAN, A. A.

ALCHUDZHAN, A. A. -- "Study of Metals: Palladium, Cobalt, Nickel and Nickel on Aluminum Oxide as Hydrogenation Catalysts." Sub 19 Sep 52, Moscow Order of Lenin State U imeni M. V. Lomonosov. (Dissertation for the Degree of Doctorate in Chemical Sciences).

SO: Vechernaya Moskva January-December 1952

ALCHUDZHAN, A. A.

PA 248T11

USSR/Chemistry - Catalysts Jul 52

"Investigation of the Kinetics and Mechanism of the Reactions of Catalytic Hydrogenation of Hydrocarbons: (VII. Study of the System Pd-H as a Hydrogenation Catalyst," A. A. Alchudzhan, A. V. Frost; Inst of Petroleum, Acad Sci USSR; Moscow State U imeni M. V. Lomonosov

Zhur Fiz Khim, Vol 26, No 7, pp 1007-1013

The performance of metallic Pd as a hydrogenation catalyst was studied in the case of hydrogenation of benzene. After keeping Pd in an atmosphere of H,

(1) 248T11

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and after its brief conditioning by a H flow at 200° C, the rate of hydrogenation, during a brief initial period of hydrogenation at 200° C, first grew and then became stabilized. During the transition from one temp to another, the rate of hydrogenation corresponding to the new temp was established quickly, if no "anomaly" intervened. It was detd that the rates of hydrogenation corresponding to different temps, both for the pos and neg temp coeff, conform to Arrhenius' eq. The authors surmised that the solid system, Pd-H, formed by the reaction of H and Pd, acts as a catalyst during the hydrogenation of benzene over Pd. They believe that the "anomalies" observed in the modification of the

rates of hydrogenation resulted from a modification in the condition of the system, Pd-H, during hydrogenation, and from modifications in the conditions of existence of this system.

(3) 248T11

ALCHUDZHAN, A. A.

USSR/Chemistry - Catalysts Jul 52

"Investigations of the Kinetics and Mechanism of the Reactions of Catalytic Hydrogenation of Hydrocarbons: VIII. Study of the Solid System Pd-H, as a Hydrogenation Catalyst," A. A. Alchudzhan and A. V. Frost, Inst of Petroleum, Acad Sci USSR; Moscow State U imeni M. V. Lomonsov

Zhur Fiz Khim, Vol 26, No 7, pp 1015-1023

During the hydrogenation of benzene on highly-active porous Pd, and during the transition from one temp to another, the rate of hydrogenation was found

(1) 248T12

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to drop without interruption over a long period of time. During hydrogenation on one sample of porous Pd, at a temp range of 220°-168° C, the rate of hydrogenation was practically unvarying. It was calcd that the energy of activation, over a wide range of temps, was equal to zero. The authors surmised that the sudden change in the rate of hydrogenation resulted from a marked transformation in the system Pd-H. During the hydrogenation of benzene on Pd-G, it was observed that the rates of hydrogenation, either higher of lower, were tied to changes occurring in Pd-H. In the same hydrogenation at const conditions, the rate of hydrogenation was sometimes altered in a very complicated way.

(2) 248T12

PA 248T12

It was presumed that this effect could be attributed both to a change in the system, Pd-H, occurring during hydrogenation, and to acceleration of hydrogenation by H.

(3) 248T12

ALCHU[illegible]AN, A. A.

IA 242T6

USSR/Chemistry - Hydrogenation Nov 52

"Research into the Kinetics and Mechanism of Reactions of the Catalytic Hydrogenation of Hydrocarbons: IX. Study of the Solid System, Pd-H, as a Hydrogenation Catalyst," A. A. Alchudzhan, Inst of Petroleum, Acad Sci USSR; Moscow State U

"Zhur Fiz Khim " Vol 26, No 11, pp 1591-1599

The author shows that after Pd-H is kept for a long time in an atm of H, at room temp, its catalytic action is abruptly reduced, sometimes to zero. But from the very beginning of the hydrogenation of benzene on this deactivated Pd-H catalyst, the rate

242T6

of hydrogenation gradually increases and then becomes const (at 200°C), or goes on to the max and then becomes const (at 224°C). This deactivation of the system and its increased activity during the benzene hydrogenation are explained by the formation, (while Pd-H remains in an atm of H), of a β-phase of Pd-H which is inactive with respect to the catalytic hydrogenation of benzene; the increase in Pd-H activity during benzene hydrogenation is explained by the breakdowns of this β— phase of Pd-H. After treatment with air at room temp or 200°C, Pd-H activity increases, but the rate of benzene hydrogenation remains const. This increase in the catalyst's activity is also explained by the breakdown of the inactive β— phase of Pd-H.

242T6

PA 242T7

ALCHUDZHAN, A. A.

USSR/Chemistry - Petroleum Catalysts Nov 52

"Research Into the Kinetics and Mechanism of the Reactions of the Catalytic Hydrogenation of Hydrocarbons: X. Study of the Solid System, Pd-H, as a Hydrogenation Catalyst. Study of the Action of Hydrogen and Nitrogen on the Catalytic Activity of Pd-H at 300-350°C," A. A. Alchudzhan, Inst of Petroleum, Acad Sci USSR; Moscow State U

"Zhur Fiz Khim" Vol 26, No 11, pp 1600-1609

The author declares that in an atm of H and at temps of 300-350°C, the activity of the Pd-H system is abruptly but reversibly (not completely) reduced. The degree to which this activity is decreased depends on the length of time the Pd-H system is treated with H. At lower temps, in H the activity of Pd-H gradually increases. The degree to which this activity is restored is a function symbatic with the time which has elapsed since the deactivated catalyst has been exposed to lowered temps, and is independent of the hydrogenation or absence of hydrogenation of benzene. The decrease in the activity of the catalyst, at higher temps, results from the formation of an inactive phase of Pd-H, whereas the subsequent increase in activity, at lowered temps, results from the gradual breakdown of this inactive

phase. When the Pd-H catalyst has been deactivated by treatment with hydrogen at 350°C, the hydrogenation of benzene on Pd-H accelerates the restoration of the catalyst's activity. Treatment of the Pd-H system with a current of N at 350° does not deactivate the catalyst, as does H but actually increases the catalyst's activity. The author finally observes that the activity of black decreases abruptly when heated for one hour at 350°C.

(3) 242T7

ALCHUDZHAN, A.A.

Kinetics and mechanism of catalytic hydrogenation of hydrocarbons.
XI. Palladium black. Zhur. Fiz. Khim. 26, 1730-5 '52. (MLRA 6:2)
(CA 47 no.13:6236 '53)

1. Gosudarstvennyy universitet imeni M.V. Lomonosova, Moscow.

ALCHUZHDAN, A.A.

ALCHUZHDAN, A.A.; KRISTOSTRYAN, Ye.T.

Study of mixed catalysts Pd - Ag, Pd - Cu and Pd - Au in hydration of benzene. Report No.2: Study of mixed Pd - Cu catalysts. Izv. AN Arm. SSR. Ser. khim. nauk v.10 no.5:333-340 '57. (MIRA 11:1)

1. Yerivanskiy politekhnicheskiy institut im. K. Marksa.
(Catalysts) (Palladium-copper alloys)

ALCHUDZHAN, A.A.

Metallic nickel and nickel on aluminum oxide as hydrogenation catalysts. Report No.1: Study of the characteristics of the reversible change in the activity of metallic nickel catalyst at constant conditions of benzene hydrogenation. Izv.AN Arm.SSR.Khim.nauki 12 no.6:377-388 '59.
(MIRA 13:7)

1. Yerevanskiy politekhnicheskiy institut im. K.Marksa, Kafedra obshchey i analiticheskoy khimii.
(Catalysts, Nickel) (Hydrogenation)

5(4)

AUTHORS: Alohudzhan, A. A. Mantikyan, M. A. SOV/76-33-4-5/32

TITLE: Investigation of Mixed Adsorption Catalysts for Hydrogenation (Issledovaniye smeshannykh adsorptsionnykh katalizatorov gidrirovaniya).
I. Pd-Ag Catalysts on Silica Gel (I. Pd - Ag-katalizatory na silikagele)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 4, pp 780 - 789 (USSR)

ABSTRACT: If Ag, Cu, and Au, in analogy to hydrogen, are introduced into palladium they destroy its paramagnetism. Therefore it was assumed that this is also bound to lead to a destruction of the catalytic activity of Pd in benzene hydrogenation (Ref 2) which was partly confirmed (except for Au) (Ref 3). The strong influence exercised by hydrogen on the activity of palladium sponge (in the case of Pd-black very low influence) (Ref 4) led to the assumption that benzene hydrogenation takes place at different active places of Pd. For this reason the influence exercised by Au, Ag, and Cu on the Pd-adsorption catalysts in benzene hydrogenation was investigated in the present case. The activity of the catalyst (C) was determined

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Investigation of Mixed Adsorption Catalysts for SOV/76-33-4-5/32
Hydrogenation. I. Pd-Ag Catalysts on Silica Gel

from the rate of benzene hydrogenation. Silica gel (SC) the surface of which was determined by Ye. V. Khrapova at the laboratoriya adsorptsii prof. A. V. Kiselev v MGU (Laboratory for Adsorption, Professor A. V. Kiselev at the MSU), was used as catalyst carrier. Pd-Ag adsorption catalysts (and for the purpose of comparison also pure Pd-(K)) which were produced according to the method of a simultaneous palladium-"ammoniate"-and silver adsorption were investigated. The (C) contained 1.0, 0.2 and 0.1% Pd of the weight of (SC) while the ratio Pd: Ag was varied from 49:1 to 1:9 at a degree of surface filling of (SC) within the limits of from 0.00087 to 0.0909. It was observed that with increasing Ag-content the activity of (C) increases to a maximum and then decreases. This effect of Ag depends on the degree of filling of the (SC)-surface. Under the conditions investigated benzene hydrogenation with respect to benzene and hydrogen takes place as reaction of the zero order with the apparent activation energy of benzene hydrogenation being practically

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Investigation of Mixed Adsorption Catalysts for Hydrogenation. I, Pd-Ag Catalysts on Silica Gel SOV/76-33-4-5/32

equal for all (C) investigated. It is assumed that the effect of Ag on the Pd-SiO_2 (K) consists in the change of the active catalyst surface. The function of the rate of benzene hydrogenation as dependent on the contact time and the ratio $H_2 : C_6H_6$ (Tables 2,3) are tabulated. There are 3 figures, 4 tables, and 15 references, 13 of which are Soviet.

ASSOCIATION: Yerevanskiy politekhnicheskiy institut im. K. Marksa
(Yerevan Polytechnic Institute imeni K. Marx)

SUBMITTED: September 19, 1957

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5 (4), 5 (2)

AUTHORS: Alchudzhan, A. A., Indzhikyan, M. A. (Yerevan) SOV/76-33-5-4/33

TITLE: On the Catalytic Properties of the System Pt - Au (O kataliticheskikh svoystvakh sistemy Pt - Au)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 5, pp 983-987 (USSR)

ABSTRACT: The data by publications on the system mentioned in the title (Refs 4-11) are discussed, and it is referred to the X-ray investigations by K. A. Lapteva, T. I. Borisova, and M. G. Slin'ko (Ref 11). According to these investigations, platinum-gold alloys with 5.04 and 9.5 atm% Au are one-phase, and alloys with 20, 30, 39, 59, 63, and 87 atm% Au are two-phase. The measuring apparatus for the catalytic hydration process is described in reference 2. 0.01 g Pt or Au were used in the investigation of catalytic activity, and quantities with a Pt content of 0.01 g were used in the case of Au and Pt catalysts. The ratio platinum : gold in the catalysts was varied from 99:1 to 1:3. Hydrogen and benzene in the ratio of 1:4 were used in hydrogenation at a temperature of 200°C and a throughput of 1.5 l H/h. Figure 1 shows the temporal variation

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of the Pt and Pt-Au catalysts investigated. Hence it appears that the activity decreases in the beginning but then remains constant. Figure 2 shows the variation of the activity of Pt and Pt-Au catalysts depending on the gold content. The activity increases with small gold additions, reaches a maximum with 5 % Au ($2\frac{1}{2}$ times the activity of pure Pt), and then decreases continuously. A catalyst with 75 % Au is completely inactive. It might be that the activity increase observed with an addition of up to 5 % Au is related to the increase of the active surface which covers the actual activity decrease. Otherwise it would be inexplicable why a catalyst with only 25 % Pt is completely inactive. The authors had already earlier assumed (Refs 1 and 2) that there is a relation between the magnetic properties of the catalysts investigated by them, and the catalytic activity of the catalysts. They point out that according to data from publications (Ref 6) the paramagnetism of the Pt-Au alloy with 68-70 % Au content equals zero. If gold is added, the amount of holes in the d-zone of the alloy and together with it the catalytic activity must decrease. The authors found similar relations in connection with the other catalysts investigated by them. The fact that Pt-Au catalysts react differently on oxydation of SO_2 (Ref 13) can be thus explained that platinum as well as gold are active towards SO_2 which is not true for the hydrogenation of benzene. The solubility of hydrogen in the system varies if gold is added and, there seems to be a direct relation between this solubility and the catalytic activity. There are 2 figures and 16 references, 9 of which are Soviet.

ASSOCIATION: Yerevanskiy politekhnicheskiy institut im. K. Marksa (Yerevan Polytechnic Institute imeni K. Marx)

SUBMITTED: October 12, 1957

5(4)

AUTHORS: Alchudzhan, A. A., Indzhikyan, M. A. SOV/76-33-7-4/40

TITLE: On the Catalytic Properties of the System Pd + Pt

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 7, pp 1467 - 1472 (USSR)

ABSTRACT: It was already found (Refs 1-5) that there is a certain relationship between the catalytic and magnetic properties of catalysts (C). In the present paper, the authors investigated the catalytic activity of mixed Pd + Pt (C) with respect to benzene hydrogenation, and compared the experimental results with data available in publications on the magnetic properties of these systems. The activity of the (C) was determined from the rate of benzene (I) hydrogenation to cyclohexane (II). The apparatus used is similar to that of (Refs 15 and 16). The catalysts were prepared by the method (Ref 17). The ratio of Pd to Pt was modified within the range 1 : 10 - 10 : 1. The experimental results (Table 1) indicate that with increasing Pt content the activity of the (C) attains a minimum and then rises again. A small content of Pt in Pd or of Pd in Pt causes mutual activation of Pd and Pt, respectively. It was observed that the catalytic activity at the Pd - Pt ratios investigated never drops

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to zero. This is ascribed to the fact that the magnetic susceptibility does not attain zero either at none of the above ratios. The minimum catalytic activity, determined at the ratios of Pd: Pt = 1:1 - 1:2, coincides with the minimum value of magnetic susceptibility of the alloy. Hydrogen, silver, and copper cause Pd to act in a similar way upon the magnetic and catalytic properties, i. e. the paramagnetism (P) of Pd as well as its catalytic activity with respect to (I)-hydrogenation are eliminated. Additions of Pt to Pd, however, do not destroy (as mentioned above) (P) and the catalytic activity. Additions of gold destroy (P) in Pd, but do not effect the catalytic activity. This is ascribed to excitation and splitting of the electron spin by the reaction heat. The catalytic activity is thus maintained. There are 3 figures, 2 tables, and 19 references, 10 of which are Soviet.

ASSOCIATION: Yerevanskiy politekhnicheskiy institut im. K. Marksa (Yerevan Polytechnic Institute imeni K. Marx)

SUBMITTED: July 31, 1957

Card 2/2

5 (4)

AUTHORS: Alchudzhan, A. A., Mantikyan, M. A. SOV/76-33-8-3/39

TITLE: Investigation of Mixed Hydrogenating Adsorption Catalysts. II. Activity of Mixed Pd-Ag Catalysts Adsorbed on SiO_2 as a Function of the Order of Adsorption of Pd and Ag

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 8, pp 1691-1694 (USSR)

ABSTRACT: In a previous paper (Ref 1) it was stated that at the transition of $Pt-SiO_2$ catalysts (C) into Pd + Ag + SiO_2 (C) the same dependence of the reaction velocity on the hydrogen and benzene concentrations in the hydrogenation of benzene, as well as the same apparent activation energy, remain preserved. It was therefore assumed that Ag can effect a change in the size of the active surface without changing its energetic state. For this reason, the order of application of Pd and Ag, respectively, on SiO_2 was studied in the present case. The (C) were produced as in (Ref 1) and examined at the benzene hydrogenation by the same working technique. The (C) obtained by an adsorption (A) and subsequent reduction of palladium salt and then silver salt proved completely inactive. In the course of this investigation, (C) were studied the Pd-content of which was 1.0 % of the SiO_2-weight and

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Investigation of Mixed Hydrogenating Adsorption Catalysts. II. Activity of Mixed Pd-Ag Catalysts Adsorbed on SiO_2 as a Function of the Order of Adsorption of Pd and Ag SOV/76-33-8-3/39

which contained a Pd : Ag ratio of 4:1, and (C) with 0.2 % Pd and Pd : Ag = 32:1, 4:1, and 2:1. (C), in which the Ag-salt was adsorbed and reduced before the Pd-salt, exhibited an (A) analogous to that observed at a joint (A) of Pd and Ag on SiO_2, which means that as the Ag-content increases in case of a constant Pd-content, the (A) of (C) increases to a maximum and then falls (Table). The absence of an activity in the first-mentioned experiments is traced back to the deactivating effect of a higher Ag-concentration on Pd. There are 1 figure, 1 table and 2 Soviet references.

ASSOCIATION: Yerevanskiy politekhnicheskiy institut im. K. Marksa (Yerevan Polytechnic Institute imeni K. Marx)

SUBMITTED: August 1, 1957

Card 2/2

S/171/60/013/001/001/005
E193/E483

AUTHOR: Alchudzhan, A.A.

TITLE: Investigation of Metallic Nickel and Alumina-Supported Nickel as Hydrogenation Catalysts. II. Preparation and Activity of Catalysts Obtained From Nickel Acetate

PERIODICAL: Izvestiya Akademii nauk Armyanskoy SSR, Khimicheskiye nauki, 1960, Vol. 13, No.1, pp.3-15

TEXT: The object of the investigation, described in the present paper, was to study the preparation of metallic nickel by hydrogen reduction of nickel acetate and to establish to what extent the catalytic activity of the product is affected by the temperature of the reduction process. The experiments consisted in heating a small quantity (2.7 g) of nickel acetate in a stream of hydrogen (at a rate of flow $V_H = 1.5$ litre/h) for 4 h at 240, 262, 282 or 303°C (4 h being sufficient to complete the reaction) after which the temperature was reduced to 200°C (or lower) and hydrogenation of benzene was carried out at $V_H = 1.0$ litre/h with $H_2 : C_6H_6 = 4 : 1$. The following conclusions were reached. (1) Hydrogen reduces nickel acetate to metallic nickel according

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Investigation of Metallic Nickel and Alumina-Supported Nickel as Hydrogenation Catalysts. II. Preparation and Activity of Catalysts Obtained From Nickel Acetate

to the reaction

$$(CH_3COO)_2NI + H_2 = Ni + 2CH_3COOH$$

(2) According to theoretical calculations, the change in the free energy for this reaction increases with increasing rate of hydrogen flow and rising temperature which, according to the theory of super-saturation due to Roginskiy (Ref.2), should be accompanied by an increase in the catalytic activity of nickel obtained under these conditions. This, however, has not been confirmed by the experimental results which show that the higher the temperature of the reducing reaction, the lower is the catalytic activity of the product. (3) Activity of nickel catalysts, obtained by reduction of nickel acetate, decreases in the course of hydrogenation of benzene, the process of de-activation being irreversible. The higher the reduction temperature the higher is the maximum activity

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Investigation of Metallic Nickel and Alumina-Supported Nickel as Hydrogenation Catalysts. II. Preparation and Activity of Catalysts Obtained From Nickel Acetate

of the product and the lower is its minimum (steady) value attained after de-activation. This seems to indicate that with rising temperature of the reduction process, a product with a higher free surface energy is obtained; however, its catalytic activity in hydrogenation of benzene is adversely affected owing to the "blocking" effect of cyclohexane. (4) Activity of the freshly prepared nickel catalysts, used for hydrogenation of benzene under a given set of conditions, initially increases, passes through a maximum and then decreases again to reach a steady value, lower than the original. The initial increase in the activity (which is not observed in subsequent applications) has been attributed to the fact that a certain quantity of hydrogen is absorbed by nickel during the reduction process, as a result of which an Ni-H solid solution is formed which is characterized by low catalytic activity. This solid solution decomposes during the hydrogenation process

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Investigation of Metallic Nickel and Alumina-Supported Nickel as Hydrogenation Catalysts. II. Preparation and Activity of Catalysts Obtained From Nickel Acetate

(or in storage) as a result of which the activity of the nickel catalyst increases. (5) It has been revealed by X-ray diffraction and electron-microscopic investigation of nickel catalysts, prepared in the course of the present investigation, that the size of the crystallites is practically independent of the temperature of the reduction process. This has been taken to indicate that the effect of the reduction temperature on the activity of the product is not directly associated with the size of the crystallites if they are relatively large (700 to 800 A). There are 3 figures, 5 tables and 11 references: 9 Soviet and 2 non-Soviet.

ASSOCIATION: Yerevanskiy politekhnicheskiy institut im. K.Marksa Kafedra obshchey i analiticheskoy khimii (Yerevan Polytechnical Institute imeni K.Marx, Department of General and Analytical Chemistry)

SUBMITTED: June 14, 1959

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S/171/60/013/005/001/001
E142/E235

AUTHORS: Alchudzhan, A. A. and Mantikyan, M. A.

TITLE: Investigations on Mixed Adsorption Hydrogenation Catalysts: Part V: Investigations on Mixed Pd - Pt Catalysts on Silicagel

PERIODICAL: Izvestiya Akademii nauk Armyanskoy SSR, Khimicheskiye nauki, 1960, Vol. 13, No. 5, pp. 307-314

TEXT: The catalytic activity of mixed Pd - Pt adsorption catalysts as well as of Pd - Sio$_2$ catalysts was tested by ascertaining the degree of hydrogenation of benzene to cyclohexane. The apparatus, starting materials, carrier and preparation of the catalysts, by simultaneous and subsequent adsorption of palladium and platinum onto silicagel, were similar to those described by A. A. Alchudzhan and M. A. Mantikyan (Ref. 15). The Pd + Pt - SiO$_2$ catalysts, containing varying quantities of Pd and Pt, were prepared by washing 10 g chemically pure Pd-chloride repeatedly with distilled water, dissolving it in 1 litre of water and acidifying the solution with hydrochloric acid (to prevent hydrolysis). The concentration of palladium in the palladium chloride solution

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was determined gravimetrically; the titre of the solution was T_{Pd} = 0.00570 g/ml. The titre of the chloroplatinic acid, T_{Pt} = 0.004556 g/ml; the acid itself was prepared by the method described by A. A. Alchudzhan and M. A. Indzhikyan (Ref. 19). The activity of the Pd - SiO_2, Pt - SiO_2, and Pd+Pt-SiO_2-catalysts was tested under identical conditions, by hydrogenating benzene at a temperature of 175°C, when the ratio of $H_2 : C_6H_6 = 4 : 1$ and the rate of the hydrogen current was $V_{H_2} = 2.04$ litre/hour. The total pressure of hydrogen, benzene vapours and cyclohexane was 680 mm. In every test the catalysts contained the same quantity of palladium and platinum, i.e. Pd + Pt = 6.15×10^{-5} g.at. and they contained the two elements in the following ratios: 10:1; 3:1; 2:1; 1:1; 1:2. In this case palladium and platinum were applied simultaneously onto the silicagel. Two samples, containing the ratio Pd:Pt = 2:1, prepared by subsequent application of Pd and Pt - and vice versa, were also tested, as well as 3 samples of Pd-SiO_2-catalysts and 3 samples of Pt-SiO_2-catalysts, containing varying quantities of palladium and

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Investigations on Mixed Adsorption Hydrogenation Catalysts: Part V: Investigations on Mixed Pd - Pt Catalysts on Silicagel

platinum. Each time the weighed portions of the catalysts were taken in relation to 3 g of silica gel. Both components were found to act as catalysts during the hydrogenation of benzene. The surface of the silica gel was covered to a degree within the limits 0.000634 and 0.001950. It was observed that the catalytic activity decreased on increasing the Pt-content in the Pd+Pt-SiO_2 catalysts and, after reaching a minimum, it increased when the concentration of the platinum was relatively high. The catalytic activity of the Pd-SiO_2 catalysts decreased in relation to the degree of hydrogenation of benzene by the catalytically active platinum. The largest decrease in activity occurred when the ratio of Pd:Pt = 2:1. The authors suggest that, at such small ratios of the two elements, intermetallic compounds are formed which possess negligible catalytic activity. The formation of the Pd-Pt-phase is hampered when the ratio of the two elements is 2:1, at subsequent application of palladium and platinum onto the carrier; the catalysts show, therefore, a very high degree of activity. At simultaneous appli-

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S/171/60/013/005/001/001
E142/E235

Investigations on Mixed Adsorption Hydrogenation Catalysts: Part V: Investigations on Mixed Pd - Pt Catalysts on Silicagel

cation of the two elements onto the carrier the catalytic activity decreases more sharply than in Pt-Pd-catalysts without a carrier. Acknowledgments are expressed to the students A. Akopyan and S. Gukasyan for their assistance. There are 2 tables, 1 figure and 19 references: 13 Soviet and 6 non-Soviet.

ASSOCIATION: Yerevanskiy politekhnicheskiy institut imeni K. Marksa, Kafedra obshchey i analiticheskoy khimii (Department of General and Analytical Chemistry, Yerevan Polytechnical Institute imeni K. Marx.)

SUBMITTED: July 7, 1960

Card 4/4

ALCHUDZHAN, A.A.; MANTIKYAN, M.A.; AYKAZYAN, A.M.

Mixed adsorption catalysts of dehydrogenation. Report No.1: Pd/SiO_2 as a catalyst of cyclohexane dehydrogenation. Izv.AN Arm.SSR. Khim.nauki 16 no.4:303-314 '63.

Mixed adsorption catalysts of dehydrogenation. Report No.2: Pd-Ag/SiO as a catalyst of cyclohexane dehydrogenation. 315-325 (MIRA 16:9)

1. Yerevanskiy politekhnicheskiy institut imeni Karla Marksa, kafedra obshchey i analiticheskoy khimii.

ALCHUDZHAN, A.A.; MANTIKYAN, M.A.; AYKAZYAN, A.M.

Mixed adsorption catalysts of dehydrogenation. Part 3: Pd-Au/SiO_2 as a catalyst for cyclohexane dehydrogenation. Izv. AN Arm.SSR.Khim. nauki 17 no.4:368-374 '64. (MIRA 18:6)

1. Yerevanskiy politekhnicheskiy institut im. K.Marksa, kafedra obshchey i analiticheskoy khimii.

ALCHUDZHAN, A.A.; GYUL'ZADYAN, A.A.; MESROPYAN, K.G.; ASHIKYAN, M.A.

Chemical treatment of tailings of Svarantsk iron-olivinite ores obtained by the concentration by magnetic separation. Part 2: Solubility of tailings in sulfuric and nitric acids. Izv. AN Arm.SSR. Khim.nauki 18 no.1:96-103 '65. (MIRA 18:5)

1. Yerevanskiy politekhnicheskiy institut imeni Karla Marksa, kafedra obshchey khimii.

ALCHUDZHAN, A.A.; MANTIKYAN, M.A.; AKHVERDYAN, M.M.

Mixed adsorption hydrogenation catalysts. Part 6; Mixed Pd-Ni catalysts on silica gel. Izv. AN Arm. SSR. Khim. nauki 18 no.3:244-247 '65. (MIRA 18:11)

1. Yerevanskiy politekhnicheskiy institut imeni Karla Marksa, kafedra obshchey i analiticheskoy khimii. Submitted June 6, 1964.

ALCHUDZHAN, A.A.; GYUL'ZADYAN, A.A.; MESROPYAN, K.G.; ASHIKYAN, M.A.

Chemical treatment of the tailings of Svara iron-olivinite ore obtained by magnetic separation dressing. Part 3: Treatment of hydrochloric solutions of ammonium magnesium tailings by the carbonate method. Izv. AN Arm. SSR. Khim. nauki 18 no.3: 313-324 '65. (MIRA 18:11)

1. Yerevanskiy politekhnicheskiy institut imeni Karla Marksa, kafedra obshchey i analiticheskoy khimii. Submitted May 9, 1964.

FOMENKO, Yu.I.; ALCHUDZHAN, G.A.

Propulsive speed and maneuvering trials of the standardized "Inzhener Belov"-type cotton and lumber carriers. Inform. sbor. TSNIIMF no.59. Tekh. ekspl.mor.flota no.7:22-37 '61. (MIRA 16:6)
(Ship trials) (Freighters)

FOMENKO, Yu.I.; ALCHUDZHAN, G.A.

Propulsive and manoeuvring trials of the passenger motorship "Grigorii Ordzhonikidze." Inform. sbor. TSNIIMF no.75. Tekh. ekspl. mor. flota no.14:3-19 '62. (MIRA 16:3)

(Ship trials) (Ship propulsion)

BLAGOVESHCHENSKIY, S., doktor tekhn.nauk, prof.; ALCHUDZHAN, G., inzh.

New information for captains on ship stability. Mor. flot 20 no.11: 4-7 N '60. (MIRA 13:11)

1. TSentral'nyy nauchno-issledovatel'skiy institut morskogo flota. (Stability of ships)

L 5370-66 EWT(m)/EPF(c)/EWP(v)/EWP(j)/T WW/RM

ACC NR: AP5024576 SOURCE CODE: UR/0292/65/000/009/0010/0013

AUTHOR: Alekseyevskiy, V. V. 44,55 (Corresponding member AN ArmSSR); Chatinyan, Yu. S. 44,55 (Candidate of technical sciences); Gastyan, L. K. 44,55 (Engr.); Alchudzhyan, L. V. 44,55 (Engr.)

ORG: none

33

TITLE: Electrical machinery up to 100 kw with open slots and magnetic wedges

SOURCE: Elektrotekhnika, no. 9, 1965, 10-13

TOPIC TAGS: synchronous machine 44,55

ABSTRACT: Heretofore, synchronous generators up to 100 kw capacity have had "soft" coils embedded in semiclosed slots, which has required much labor for building generators. A possibility has been investigated to build these machines with prefabricated thermosetting-plastic-bonded coils placed in open slots and covered with magnetic wedges. Of many combinations tested, a 90%-iron 10%-bakelite-powder press composition is reported as the best material for the magnetic wedges. Three synchronous generators, 6.75, 75, and 125 kva, remodeled for the magnetic-

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UDC: 621.313.042.1.001.8

L 5370-66

ACC NR: AP5024576

wedge construction, were tested (numerical results tabulated). It is found that: (1) The use of magnetic wedges, instead of glass-textolite ones, results in a lower weight of copper and a higher efficiency thanks to lower excitation current and lower no-load losses; (2) The reactances x_p, x_s, x''_d, x''_q increase, when the magnetic wedges are used, within a permissible range; (3) Practical adoption of magnetic wedges would require better press molds and a more suitable (than bakelite) bond material. Orig. art. has: 4 figures and 4 tables.

SUB CODE: EE/ SUBM DATE: 00/ ORIG REF: 000/ OTH REF: 000

PC

Card 2/2

ALCSER, J.

Irrigation doubles production; significance and economic character of our irrigation.
p. 200.

Vol. 1115, no. 4, Apr. 1956
TERMESZET ES TARSADALOM
Budapest, Hungary

Source: East European Accession List. Library of Congress
Vol. 5, No. 3, August 1956

ALCSER, Jeno, okl.gazda; PERENYI, Karoly,okl.mernok

Irrigation development in Hungary from 1957 to 1960.
Vizugyi kozl no.1:3-22 '62.

1.Az Orszagos Vizugyi Foigazgatosag foagronomusa (for Alcser). 2. A Vizgazdalkodasi Tudomanyos Kutato intezet tudomanyos munkatarsa (for Perenyi).

ALCSER, Jeno; GABRI, Mihaly

The irrigation system of Hungary and basic principles for its development. Vizugyi kozl no.4:422-451 '58.

Alda, Václav

Alda, Václav Sur les propriétés affines des correspondances ~~analytiques~~. Časopis Pěst. Mat. Fys. 75, 51–67 (1950).

[illegible]

[illegible] K denote a curve passing through A. Because of the above inequality the curves K and $T^{-1}CK$ usually make contact of only the first order. If these curves are projected in the direction $V=T^{-1}d^2B-d^2A$ onto a hyperplane through A, the hyperplane sections have second order contact at A. In the case of a plane ($n=2$) there exists an affinity H such that $HA=B$, [illegible] such that the curves CK and HK have contact of second order.

A characteristic direction of the correspondence C is a direction such that to each curve passing through A [illegible]

characteristic [illegible] A, and [illegible] (and in (B)), (b) form pencils of lines in (A) and (B), (c) form a pencil of lines in one plane (A) (or (B)) and envelop a curve in the other plane, (d) envelop curves in both planes. The correspondences for plane and space are [illegible] the affinities T [illegible] line in space K_n [illegible] through the [illegible]

Source: Mathematical Reviews, Vol [illegible]

5

R'_{12} also envelop a curve. The correspondences of the types (B) and (C) for which [illegible] respectively are studied. Correspondences of type (B) depend upon five functions of one variable, those of type (C) depend upon five functions of two variables. Constructions for the various cases of these types are given. The spaces R_{12} for a case of type (C) are the generators of a congruence.

P. O. Bell (Lawrence, Kans.).

Source: Mathematical Reviews, Vol 12 No. 1

ALDA, Vaclav

2
0
0
0

①

Alda, Václav. A note on Poisson's distribution. Čechoslovack. Mat. Ž. 2(77), 243–246 (1952). (Russian. English summary)

For each n let $x_n = \sum_j x_{nj}$ be a sum of mutually independent random variables with means 0, and variances which approach 0 uniformly when $n \to \infty$ and have sum 1. Then the author proves that x_n has the Poisson distribution with mean value 1 as limiting distribution when $n \to \infty$ if and only if $\sum_j (x^2_{nj} - x_{nj}) \to 1$ in probability. *J. L. Doob.*

10-28-54

LL

ALDA, V

Alda, Václav. **Completeness of polynomials for Poisson's distribution.** Čehoslovack. Mat. Ž. 3(78), 83–85 (1953). (Russian. English summary)

Let λ be a positive constant. If

$$\sum_{n=0}^{\infty} |a_n|^2\lambda^n/n! < \infty, \quad F(x^p) = \sum_{n=0}^{\infty} a_n n^p \lambda^n/n! = 0 \qquad (p = 0, 1, 2, \cdots),$$

then $a_n = 0$ $(n = 0, 1, 2, \cdots)$. Method of proof: Let

$$s_n(x) = (1-x)(2-x)\cdots(n-x)/n!.$$

It is shown in turn by elementary estimates that

$$0 = F(s_n(x)) = a_0 + o(1), \quad 0 = F(s_n(x-1)) = a_1 + o(1) \cdots.$$

W. H. J. Fuchs (Ithaca, N. Y.).

ALDA, Václav (Praga)

[redacted]

Surfaces without tangent planes [with summary in English]. Chekh. mat.zhur. 3 no.2:154-157 Je '53. (MLRA 7:5)

(Surfaces)

ALDA, VACLAV

Alda, Václav. On condition[illegible] expectation [illegible]
[illegible] 5 59 [illegible]

[illegible]

Let $F_1 \subset F_2 \subset \cdots$ be a monotone sequence of Borel fields of measurable sets of a probability measure space, and let f be a function measurable with respect to the least Borel field containing every F_n [illegible] integral, the conditional expectation of f with respect to F_n converges to f almost [illegible] [illegible] coordinate functions [illegible] direct proof of this known theorem. The theorem goes back in a somewhat similar form [illegible] Paris, 1937.

Vaclav, Alda

3

1-FW

Alda, Václav. Les transformations isométriques d'un système de hypersurfaces. Czechoslovak Math. J. 6(81) (1956), 195–211. (Russian. French summary)

A one parameter system 𝔖 of hypersurfaces in n-dimensional euclidean space Σ is mapped onto a similar system 𝔖′ of Σ' in such a way that each hypersurface is transformed isometrically and the orthogonal trajectories are preserved. The author finds two cases can occur: 1) 𝔖 is a system of hyperplanes and the correspondence a one-parameter family of orthogonal transformations; 2) the map is composed of a fixed orthogonal transformation of $n-2$ dimensions together with a map of a two dimensional space depending on one function of two variables. The Pfaffian systems are examined in great detail for $n=3$ and a finer description arrived at.

L. W. Green (Minneapolis, Minn.).

1/1

ALDA, VACLAV

2

1-FW

Alda, Václav. Les réseaux de coniques. Czechoslovak Math. J. 7(82) (1957), 48–56. (Russian summary)

Le théorème, que tout réseau de coniques est un réseau de courbes polaires d'une cubique, n'est valable qu'"en général". Dans cet article les conditions nécessaires et suffisantes pour la validité de ce théorème sont précisées et démontrées.

Résumé de l'auteur.

1/1

ALDA, Vaclav

On eigenvalues of differential equations $Mf = \lambda Nf$. Cas pro pes mat 87 no.4:399-403 0 '62.

1. Vysoka skola strojni, Liberec, Halkova 6.

ALDA, Vaclav.

"Recent developments in general relativity." Reviewed by Vaclav Alda. Aplikace mat 8 no.2:160-161 '63.

ALDA, Vaclav

"Introduction in the theory of special functions of mathematical physics" by F.W.Schafke. Reviewed by Vaclav Alda. Aplikace mat 9 no.3:237-238 '64.

L 10600-66

ACC NR: AP6004051 SOURCE CODE: CZ/0081/65/090/002/0134/0142

AUTHOR: Al'da, Vatslav--Alda, V. (Prague)

44,55

32

B

ORG: none

TITLE: Eigenvalues of differential equations Mf equals lambda Nf. II.

SOURCE: Casopis pro pestovani matematiky, v. 90, no. 2, 1965, 134-142

TOPIC TAGS: differential equation, operational calculus, Hilbert space, eigenvalue

ABSTRACT: In this article a solution is given for the problem of finding the eigenvalues of the differential equation $Mf = \lambda Nf$ by reducing it to the problem concerning the eigenvalues of a compact symmetric operator in Hilbert space. The major assumptions are: M is a formally selfadjoint positive operator whose order exceeds the order of the formally selfadjoint operator N by at least 2. Orig. art. has: 16 formulas. [JPRS]

16

44,55

16,44,55

SUB CODE: 12 / SUBM DATE: 29Dec62 / OTH REF: 004 / SOV REF: 003

Card 1/1

2

L 10606-66 EWT(d) IJP(c)

ACC NR: AP6004052 SOURCE CODE: CZ/0081/65/090/002/0143/0146

AUTHOR: Al'da, Vatslav--Alda, V. (Prague)

34

B

ORG: none

TITLE: Eigenvalues of differential equations Mf equals lambda NF. III.

SOURCE: Casopis pro pestovani matematiky, v. 90, no. 2, 1965, 143-146

TOPIC TAGS: eigenvalue, differential equation, operational calculus, Hilbert space

ABSTRACT: In this article a solution is given for the problem of finding eigenvalues of the differential equation $Mf = \lambda Nf$ in the case that the positive operator N has a lower order than the operator M. The problem may be reduced to the problem concerning the eigenvalues of a symmetric compact operator in Hilbert space provided the order of the differential operator M exceeds the order of the operator N by at least 2. Orig. art. has: 3 formulas. [JPRS]

SUB CODE: 12 / SUBM DATE: 02Jan63 / ORIG REF: 001 / OTH REF: 003

HW

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