"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKHTER, A.B.; RAPP. Yu.V.; FILOSOFOVA, T.G.

Production of purified streptococcal anatoxin and experimental study. Zhur.mikrobiol.epid. i immun.,supplement for 1956:24 '57 (MIRA 11:3)

1. Iz Kiyevskogo instituta epidemiologii i mikrobiologii.
(TOXINS AND ANTITOXINS) (SCARLET FEVER)

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FILOSOFOVA, T.G.; SHEKHTER, A.B.; ZAVOYSKAYA, A.K.; GRUSHETSKAYA, Z.I.

Role of convalescents in the epidemiology of scarlet fever. Zhur. mikrobiol.,epid. i immun.,supplement for 1956:28 '57 (MIRA 11:3)

1. Iz Kiyevskogo instituta epidemiologii i mikrobiologii.
(SCARLET FEVER)

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Specific Prevention of Pertussis, published by MEDGIZ, MOSCOW, 1958
ed. by M. S. Zakharova, Dir. Lab. of Specific Prophylaxis of Pertussis, Inst. Epidem. and Microbiol. in N.F.Gamaleya, Acad. Medical Sci. USSR

At the scientific conference on the specific prophylaxis of pertussis conducted by the Institute of Epidemiology and Microbiology im. N. F. Gamaleya, Acad. Medical Sci. USSR, together with other Institutes and medical establishments, papers were read by the following: (See Table of Contents)

N. N. Shlyarova (Leningrad Institute of Epidemiology Microbiology and Hygiene im. Pasteur): Immunologic effectiveness of pertussis vaccinations 116

N A Badash'yan (see above for page 29): Indices of immunity in children vaccinated with pertussis and pertussis-diphtheria vaccines 123

A N Shakhter et al. (Kiev Inst of Epidemiology and Microbiol.): Serologic indices in children vaccinated with pertussis vaccine 132

B. L. Polent et al (Kharkov etc see above, page 59): Immunizing effectiveness of soluble antigens of the pertussis organism under experimental conditions 136

M. S. Zakharova et al. (see above and Lab. of Anisotropic structures of the Academy of Sciences USSR): Methods for preparation and experimental study of the fundamental biological properties of protective antigens of the pertussis organism 144

L. P. Koptytovskaya (Inst of Exper Med. of the Acad. of Med. Sciences USSR): Effect of pertussis immunization on the course of an anaphylactic reaction 155

P.V. Osipova (see directly above Koptytovskaya p 155 etc.): Comparative immunologic characteristics of the endotoxins of the pertussis organism and of the causative agent of bronchysepticosis 161

S. A. Anatoliy (see Kopt etc above): The yield and germination of pertussis organisms on various media 171

V. I Ioffe (see Kpt. etc above): Some specific and general problems of the pathology of infection with respect to pertussis 178

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

FILOSOFOVA, T.G.; SHEKHTER, A.B.

Scientific conference on problems in lowering and eliminating children's infections. Zhur. mikrobiol., epid. i immun. 33 no.1:155-158 Ja '62. (MIRA 15:3)

(CHILDREN--DISEASES)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHATALOVA, L.I.; SHEKHTER, A.B.

Pheochromocytoma of the adrenal gland with fatal outcome in pregnancy. Akush.i gin. 37 no.1:105-106 '61. (MIRA 14:6)

1. Iz rodil'nogo otdeleniya (zav. L.I. Shatalova) i patologoanatomicheskogo otdeleniya (zav. A.B. Shekhter) Shchekinskoy gorodskoy bol'nitsy No.1 (glavnyy vrach N.I. Nesterov).
(PREGNANCY, COMPLICATIONS OF) (ADRENAL GLANDS--TUMORS)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

MALINOVSKIY, N.N.; SHEKHTER, A.B.

Endocardial fibroelastosis with cardiac hypertrophy in children. Kardiologiia 2 no.2:80-85 Mr-Ap '62. (MI A 15:4)

1. Iz kliniki gospital'noy khirurgii (dir. - prof. B.V.Petrovskiy) i kafedry patologicheskoy anatomii (zav. - prof. A.I.Strukov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova.
(HEART--DISEASES)
(HEART--HYPERTROPHY AND DILATATION)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKHTER, A.F., aspirant

Histochemical study of the connective tissue of joints in rheumatic fever. Trudy 1-go MMI 22:109-120 '63 (MIRA 18:[illegible])

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKHTER, A.B. (Moskva)

Changes in the large joints in rheumatism; a histological and histochemical study. Arkh. pat. 25 no.8:14-23 '63 (MIRA 17:4)

1. Iz kafedry patologicheskoy anatomii (zav. - chlen-korrespondent AMN SSSR prof. A.I.Strakov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova.

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The recombination of oxygen and hydrogen atoms on metallic surfaces. S. Z. Roginskii and A. B. Shekhter. *Compt. rend. acad. sci.* (U. R. S. S.) [N. S.], 1, 310-11 (in English 311-12)(1934).—The recombination of atoms on solid surfaces is generally held to be a very sp. reaction the rate of which varies widely in transitions from one system to another and is sometimes considered to run parallel to the catalytic properties of the surfaces. In the present work the process of recombination of atoms on metallic filaments (Pt and Pd) was studied over a large temp. interval (150-900°). The proof of the recombination was the self-heating of the filaments in the at. stream. The concn. of atoms was detd. by Wrede's diffusion method. The results showed that in all cases there was one stage in the process of recombination involving an energy of activation of 2000 cal. Some of the results did not agree with the Bonhoeffer series. At temps. of 700° practically every atom striking a filament recombines and gives its energy to the filament. Therefore, the heating of the filaments may be used for abs. measurements of the concn. of atoms. J. E. M.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

Chemical reactions in electric discharges. I. Reactions of free atoms. Recombination of atomic oxygen and hydrogen on metallic wires. S. Roginski and A. Shekhter. *Acta Physicochim. U. R. S. S.* 1, 318-32(1934)(in German); cf. *C. A.* 28, 4268[1].—The amt. of recombination was measured by the current input necessary to maintain the wire at a given temp. Ag, Pt, Fe and Pd wires were used. At higher temps. all atoms striking the wire undergo recombination. The activation energy of recombination is 2500-3000 cal. for all of the wires, and the data are easily reproducible. Conclusion: The velocity-limiting factor in the heterogeneous recombination of O or H atoms is the union of an atom in the gas phase with an atom adsorbed on the metal. The different results obtained by Bonhoeffer (cf. *C. A.* 19, 915) are ascribed to low heat cond. effects. F. H. Rathmann

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4

Chemical reactions taking place in the electrical dis-
ch[illegible]. A. B. Shekhter. *Trans. VI Mendeleev Congr. Theor. Applied Chem.* 1932 2, Pt. 1, 122-9(1935). A review. E. F. Stefanowsky

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1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3

Reaction of atomic oxygen with mercury halides. S. Roginski and A. Shekhter. *Acta Physicochim. U. R. S. S.* 3, 219-22(1935)(in German); *J. Phys. Chem.* (U. S. S. R.) 7, No. 2(1936)(in Russian); cf. *C. A.* 29, 6513[9].—Oxygen atoms produced by elec. discharge in pure O react with gaseous HgI_2, $HgBr_2$ and $HgCl_2$ at 5 mm. pressure with liberation of I_2, Br_2 and Cl_2 and formation of HgO. No evidence of Hg_2X_2 formation was observed. The energy of activation decreases from 6000 cal. for HgI_2 to 3[illegible]00 cal. for $HgCl_2$. The yield is 3% based on O atoms produced in the discharge. F. H. Rathmann

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

The mechanism of nitriding steel. A. Slichter. *Acta Physicochim. U. R. S. S.* 4, 767-74(1936)(in German).
The high dissocn. pressure of the Fe nitrides is discussed in the light of the "energy supersatn." theory of Roginskii (cf. *C. A.* 31, 25[9]). Failure to produce a nitrided surface by bombardment with at. N from an elec. discharge is attributed to recombination of the atoms at the Fe surface. J. W. Elder

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7

Determining foreign admixtures in noble and inert gases A. B. Shekhter and S. Z. Roginskii Russ. 51,301, July 31, 1937. The gas is passed through an elec discharge and brought into contact with a wire heated electrically. The change in the resistance of the wire caused by the presence of the admixtures which combine with the gas with addal. heating of the gas mixt is then determined.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

Acetylene. S. Z. Roginskii and A. B. Shekhter. Russ. 54,456, July 31, 1937. Acetylene is prepd. by the action of elec. impulse discharge on crude oils, tars and similar products conig. much hydrocarbon.

METALLURGICAL LITERATURE CLASSIFICATION

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1ST AND 2ND ORDERS

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3RD AND 4TH ORDERS

BC

a-1

Chemical reactions in electric discharges. III. Heterogeneous recombination of atoms. S. Rogiński and A. Schechter (Acta Physicochim. U.R.S.S., 1937, 6, 401—418; cf. A., 1935, 1087).—The recombination coeffs. of H and N atoms at a Pt surface have been determined at high temp. Similar experiments with a W surface gave no evidence of recombination. The recombination of O atoms on the surface of easily and difficultly oxidisable metals is also described. Admixture of A with N or O atoms has a stabilising influence on their recombination. The data are discussed.

C. R. H.

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3RD AND 4TH ORDERS

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

Chemical reactions in electric discharges. III. Investigation of the heterogeneous recombination of atomic gases. S. Roginskii and A. Shekhter. *J. Phys. Chem.* (U. S. S. R.) 9, 780 (1937). A study of the recombinations of H atoms and of N atoms on W and Pt surfaces was made. At all temps. from 298° to 2000° abs. the H atom recombination has a pos. temp. coeff. corresponding to $E = 3000$ cal. on both Pt and W. On Pt, the recombination coeff. for N atoms is approx. unity over the temp. range 1000-2000° abs. while on W, no recombination whatever took place. O atoms on W, Cu, Ni and Fe form a firm protective oxide coating. On W recombination of O atoms does not occur much, but CuO and NiO strongly catalyze recombination. Argon stabilizes the at. states of N and of O atoms. F. H. Rathmann

AVAILABLE METALLURGICAL LITERATURE CLASSIFICATION

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Ca

22

Cracking oil by means of the condenser discharge S. Roginskii, A. Shekhter and M. Ya. Kushnerev. *Applied Chem.* (U. S. S. R.) 10, 473-85(in French 486) (1937).—Topped crude oil and anthracenic oils were cracked by means of an elec. discharge (pulsating), yielding a gas with 20-25% C_2H_2. The energy consumption per unit of C_2H_2 depends upon the capacity of the condenser; it can be reduced below 8 kw. hrs. per 1000 l. of C_2H_2 by using a condenser of small capacity, because of the more rapid discharge. The actual consumption of energy must exceed the consumption calcd. thermochemically without accounting for the heat loss in stabilization (tempering) of the reaction. The scheme of the app. used is given. Fifteen literature and six patent references.

A. A. Podgorny

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

Chemical Reactions in Electric Discharge. IV. Recombination of Nitrogen Atoms on Metals. N. Buben and A. Schechter (*Acta Physicochim. U.R.S.S.*, 1939, **10**, (3), 371–378). [In German]. The reaction $2N \rightarrow N_2$ is catalysed by surfaces of gold, silver, copper, and iron at room temp. On nickel surfaces above 300° K. the rate of recombination increases with rise in temp. and the activation energy is ~2500 cal./mol. The recombination rate is a maximum between 1200° and 1350° K. (1170° ± 25° K. and 1320° ± 25° K. under pressures of 0·086 and 0·02 mm. of mercury, respectively), after which it decreases rapidly owing, probably, to the fact that at high temp. the adsorption of nitrogen atoms is so small that the probability of a collision between free and adsorbed atoms of the gas is negligible. From the results the calculated heat of adsorption of nitrogen atoms on nickel is ~55,000 ± 2000 cal./mol. E. N.

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PROCESSES AND PROPERTIES INDEX

BC

A-1

Heterogeneous recombination of atoms and calculation of the heat of adsorption of atoms on metallic surfaces. A. SCHECHTER (Acta Physicochim. U.R.S.S., 1939, **10**, 379—388).—The heterogeneous recombination of atoms is discussed generally, and the dependence of the coeff. of recombination on temp. for different mechanisms of recombination is considered. Experimental data on the temp. influence of the coeff. for N atoms on Ni agree with those given by theory. The heat of adsorption of N atoms on Ni and the min. val. of heat of adsorption of N atoms on Pt and of H atoms on Pt and W are calc., and indicate that for pressures of $< \sim 0{\cdot}05$ mm. Hg the recombination of these atoms is due chiefly to collisions between free and adsorbed atoms.

W. R. A.

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1ST AND 2ND ORDERS

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BC

A-1

Preparation of acetylene in the interrupted discharge. M. J. KUSCHNERRV and A. B. SCHECHTER. (J. Phys. Chem. Russ., 1939, **13**, 259—266).—When a condenser was repeatedly discharged through anthracene oil the gas above the oil contained >30% of C_2H_2. The expenditure of electric energy per mol. of C_2H_2 increases with increasing capacity of the condenser and increasing resistance of the circuit.

J. J. B.

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A-1

Chemical reactions in electric discharge. IV. Recombination of nitrogen atoms on metals. N. J. Buben and A. B. Schechter (J. Phys. Chem. Russ., 1939, 13, 267—271).—The reaction $2N \rightarrow N_2$ is strongly accelerated by Cu, Fe, Ag, and Ni at room temp.; its rate can be measured by observing the rise of temp. of the metal. The catalytic activity of Ni is max. at 1200—1350° and becomes small above 1400—1500°. Presumably the adsorption of N by Ni at high temp. is so small that the probability of a collision between a N atom from the gas and an adsorbed N atom becomes negligible. J. J. B.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

The mechanism of chemical reactions in the silent discharge. A. Shekhter. *Acta Physicochim. U. R. S. S.* 12, 357-70(1940)(in German). A theoretical discussion of data from the literature, with special reference to ammonia synthesis. F. H. Rathmann

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8c

Polymerisation process in electrical discharges. A. SCHECHTER and K. SIRKINA (Compt. rend. Acad. Sci. U.R.S.S., 1940, **28**, 446—449).—$(CN)_2$ is decomposed rapidly in a condensed spark or silent discharge, yielding N_2 and C, whilst a solid deposit of the composition $C_{2n}N_n$ is formed on the walls of the tube. Formation of this deposit is favoured by a low c.d., and subsequent passage of a discharge through O_2 contained in the vessel coated with the deposit causes its decomp. with production of CO and N_2. The velocity of decomp. of $(CN)_2$ is independent of pressure over the range investigated (0·01—0·6 mm.).

J. W. S.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

MECHANISM OF CHEMICAL REACTIONS IN A GLOW DISCHARGE. A. B. SCHEKTER (BULL. ACAD. SCI. U.R.S.S., CL. SCI. CHIM., 1940, 493-500) Reactions in a glow discharge take place in two steps; liberation of free atoms and radicals in the vol. of the gas, followed by adsorption on the walls of the vessel, where the reaction proceeds to completion. Ions and vibrationally excited mols. do not play a fundamental part in the processes. RT

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BC

a-3

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CA

PROCESSES AND PROPERTIES INDEX

Electron-microscopical investigation of catalyst. I. Asbestos as carrier. A. Shekhter, S. Roginskii, and B. Isaev (Acad. Sci. U.S.S.R., Moscow). *Acta Physicochim. U.R.S.S.* 20, 217-20(1945).—Metallic and oxide catalysts, deposited on asbestos and used in oxidation and dehydrogenation reactions, were examd. with an R.C.A. type-II electron microscope. Chrysotile asbestos appears in fibers of the order of several tens of A. Heating causes a disintegration of fibers starting at 500° and completed at 1250°. Anthophyllite-asbestos fibers do not begin to deteriorate under 1250°. The catalysts adhere to the fiber as isolated, nonhomogeneous crystalline grains.

S. Pakswer

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2

Electron-microscopic investigation of smoke deposits
A. B. Shekhter, S. Z. Roginskii, and S. V. Sakharova (Inst. Phys. Chem., Acad. Sci. U.S.S.R., Moscow). *Bull acad sci. U.R.S.S., Classe sci. chim.* 1940, 491-5; *C.A.* 41, 6462*a*.—Pictures obtained with an RCA electron microscope, model 1940, resolving power a few tens of A., are reproduced. Smokes were produced by one of the 3 methods, (I) evapn. in a carbon arc, (II) evapn. in an arc between electrodes of the given material, (III) combustion of the metal to oxide. Ag (method II) aerosols show both round and cryst. forms and dendrites, particle size 100-2000 A. Au (II), finest spheres, 100-1000 A., by far the most frequent size 500 A.; this smoke is particularly monodisperse. Pd (or oxide ?) (II), distinctly cryst., highly disperse, most frequent size 40 A. and less. Al (or Al_2O_3) (II), spherical, 100-2000 A., mostly 1000 A. MgO (III), conglomerates of cubes from 100 A. to 1 μ. ZnO (I, III) polydisperse, secondary needle-shaped forms. Cu oxide (II), preponderantly oval forms but often with linear contours, many fine particles of 100 A. Cr oxide (I), polydisperse, amorphous. KCl (I), fine spherical particles mostly about 50 A. NaCl (I), course round grains with saw-like contours, 1000-3000 A., projecting teeth 300-500 A. The spherical shapes rept ent, no doubt, unstable forms.
N. Thon

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1ST AND 2ND ORDERS — PROCESSES AND PROPERTIES INDEX — 3RD AND 4TH ORDERS

Ca

2

An electron microscopic investigation of smoke deposits. A. Shakhtar, S. Z. Roginskii, and S. Zakharova (Inst. of Phys. Chemistry, Moscow). *Acta Physicochim. U.R.S.S.* 21, 483-8(1946)(in English).—In a study of the submicroscopic structure of catalysts, smoke deposits of some solids used as catalysts were investigated with the electron microscope. Smokes were formed by vaporization in an arc, or by burning in a gas flame or in an arc, and collected directly on the screen of the specimen holder. Photographs are reproduced of Ag, Au, Pd, Al, Mg, Zn, Cu, Cr, KCl, and NaCl. Structures built up of spheres occurred repeatedly. Cr and Pd were amorphous, up to the resolving power of the method. The nature and mode of formation of the spheres is discussed. H. P. Knauss

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3RD AND 4TH ORDERS

SA

A53

539.215 1673

An electron microscopic study of the ageing of smoke deposits. ROGINSKY, S. Z., SHEKHTER, A. B., AND SAKHAROVA, S. V. *C.R. Acad. Sci. URSS*, 52 (*No.* 8) 687–9 (1946).—Smoke deposits of Au and Ag, before and after heating, were examined. In the early stages of ageing of Au there was a differentiation of particles according to dimensions: the number of biggest and smallest particles increased, and the distribution according to dimensions [illegible], the middle part being decreased. Ag [illegible] easily than Au, but smoke deposits of ZnO and MgO withstand much higher temperatures without change.

L. S. G.

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Shekhter, A.B.

2

Electron microscopic study of catalysts. A. B. Shekhter. *Problemy Kinetiki i Kataliza, Akad. Nauk S.S.S.R., Inst. Fiz. Khim.* 5, *Metody Izucheniya Katalizator* 68–74(1948). —A report of the use of the electron microscope in studying catalysts. The method offers the possibility of seeing directly the microstructure of catalysts and observing the actual changes of structure of catalysts occurring during their genesis and during their operation. G. S. M.

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B

Electron-Microscopic Structure of Freshly Deposited Precipitates from Solutions. (In Russian) A. B. Shekhter, S. Z. Roginskii, and S. V. Sakharova (Izvestiya Akademii Nauk SSSR, Otdelenie Khimicheskikh Nauk (Bulletin of the Academy of Sciences of the USSR, Section of Chemical Sciences), Mar.-Apr. 1948, p. 205-207.

It is shown that in case of rapid formation of difficultly soluble precipitates, the first particles have a rounded shape and form a porous network. It seems that such structure is intermediate and thermodynamically unstable. Electron micrographs are presented.

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SHEKHTER, A. B.

PA 27/49T30

USSR/Chemistry - Analysis, Electron Microscopic
Chemistry - Zinc Oxide

Jan/Feb 49

"Electron Microscope Study of the Structural Changes of Highly Dispersed Solids Due to Heating," A. I. Yechenstova, A. B. Shekhter, Inst Physicochem, Acad Sci USSR, 5 pp

"Iz Ak Nauk SSSR, Otdel Khim Nauk" No 1

Studies structural changes of smoky deposits of zinc oxide, magnesium oxide, metallic gold, and metallic silver under heating. Submitted 3 Mar 48.

27/49T30

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

Changes produced in solids by the impact of electrons in the electron microscope. A. I. Ichenova and A. B. Shekhter (Inst. Phys. Chem., Acad. Sci. U.S.S.R., Moscow). *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* **1949**, 238-41.—Smoke particles observed in the electron microscope present a peculiar phenomenon of "thickening" as if a sheath of some foreign matter were growing around the contours of the particles. This thickening is due directly to the prolonged electron bombardment, as it does not take place on areas screened against the electrons. The sheath disappears completely on heating in air at 600°. This fact invalidates the interpretation, put forward by Cosslet (C.A. 42, 1491g) of the effect as consisting in a condensation of metal atoms, and is consistent only with a carbonaceous nature of the sheaths; actually, treatment of MgO smoke films with C_6H_6 at 770° gave rise to the same thickening effect, also disappearing on oxidation at 600°. The source of the carbonaceous sheath can only be the residual org. matter (grease) present in the electron microscope. However, contrary to Watson (C.A. 41, 2986i), simple kinetic calcn. shows that the sheaths cannot possibly be produced by cracking of org. matter in the gas phase under the prevailing pressure of 10^{-6} mm. Hg. It can be formed only by cracking of org. matter adsorbed on the surface of the particles; with a heat of adsorption of ~ 30 kcal/mole, a monolayer can well be formed under 10^{-6} mm. Hg even at 600°K. N. Thon

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CA

d

Catalytic properties and structure of active zinc oxide.

I. A. B. Shekhter and Yu. Sh. Moshkovskii. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* **1949**, 354-63.

Two prepns. of ZnO, one (I) obtained by thermal decompn. of $ZnCO_3$ at 350°, the other (II) by combustion of Zn in an elec. arc (120 v., 5 amp.) in an air stream, were investigated. In the electron microscope, I appears composed of aggregates of extremely fine crystallites, forming a finely porous secondary structure, II consists of relatively coarse needle-shaped well-formed crystals. By debyograms, I has a much higher dispersity than II. The sp. surface area of I, detd. by N_2 adsorption isotherms, is not less than 80 sq. m./g., that of II approx. 12 sq.m./g.; by the electron-microscopic particle-size distribution curve, the latter sp. surface area is found ~ 17 sq.m./g. The catalytic activities A in the decompn. of MeOH adsorbed on the outgassed catalysts, detd. by the vol. v (cc. (NTP)/g. catalyst) of gas evolved, at 180°, and conventionally expressed by the initial v (during 1st min., after deduction of the "zero" pressure reading taken immediately after evacuation), were, for I, $A = 8.6 \times 10^{-3}$, for II, $A = 3.5 \times 10^{-3}$. The kinetic curves are fairly well represented by $v = At^{0.6}$ (t = time in min.). The activity referred to unit surface area (1 sq.m.) is higher for II than for I. Accurate expts. in a flow system, at 328°, proved the reaction to be of the zero order, i.e. independent of the rate of flow (0.04-0.00 cc./min.) on both types of ZnO. The activity, defined by k = cc. (NTP) gas evolved/min./g. catalyst, was somewhat higher for I, but the activity per unit surface area was about 3 times as great for II. Examples of data at different temps. are: I, 322, 300, 290°, k = 153, 61, 41; II, 339, 328, 319, 300°, k = 152, 101, 36, 10.5. Hence, the activation energies E = 28 and 51 kcal./mole, for I and II, resp., and the log of the preexponential factors, 10.5 and 18.2, resp. The much higher surface activity of II is expressed by its 10^8 greater preexponential factor. These data contradict the commonly made assumption that greater catalytic activity should be accompanied by a smaller value of E. On the basis of the possibility, pointed out by Roginskii (*C.A.* 41, 2501*i*), of changing both E and the preexponential factor in the same direction (by appropriate modifying addns. to the catalyst), it can be expected that, whereas at 328°, II is more active than I (per unit surface area), the order will be reversed at a sufficiently low temp. The ZnO catalysts behave like "modified" catalysts, the different modes of prepn. playing the same role as added modifiers.

N. Thon

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKNTER, A. B.

20105 SHEKNTER, A. B. Sravnytel'noye izucheniye antibiotikov v profilatiny. Vracheb. delo, 1949, No. 6, stb. 549-50.

SO: LETOPIS ZHURNAL STATEY, Vol. 27, Moskva, 1949.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKHTER, A. B.

USSR/Chemistry - Catalysis
Chemistry - Electron Microscope

Jan 49

"Study of the Surface of Working Contacts by Electron Microscope: I. Applying the Method of Shaded Replicas to the Study of Variations in Contacts Under the Influence of a Catalyzable Reaction," S. Z. Roginskiy, I. I. Tret'yakov, A. B. Shekhter, Inst of Physicochem, Acad Sci USSR, Moscow, 7 pp

"Zhur Fiz Khim" Vol XXIII, No 1

Analyzes possible mechanisms of changes of surface of catalyzer during the heterogeneous catalysis. Studies of such changes enable clarification of working mechanism of catalyzer and structure of active surface. Method of "shaded replicas" is used to study these changes. Abrupt change is noticed in structure of palladic catalyzer during formation of water from detonating gas. Gives 13 microscopic photos of surface changes, table of ridges and depressions of surface, and diagram of a device for hydrogen oxidation. Submitted 18 May 48.

PA 46/49T15

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

B

16

COMMON ELEMENTS

COMMON VARIABLES INDEX

OPEN

MATERIALS INDEX

Method of Production of Replicas of Definite Submicroscopic Areas of Solid Surfaces. (In Russian.) I. I. Tret'yakov and A. B. Shekhter, *Doklady Akademii Nauk SSSR* (Reports of the Academy of Sciences of the USSR), new ser., v. 66, May 11, 1949, p. 231-233.

Thoroughly describes method for the above, particularly important in electron microscopy. Illustrated.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

MATERIALS INDEX

AUTHOR INDEX

1ST AND 2ND LETTER

2ND LETTER

3RD AND 4TH ORDERS

FE GROUPS

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

Electron microscopic observation of the mechanism of dehydration of crystallohydrates. S. Z. Roginskii, A. B. Shekhter, A. I. Echeistova, N. N. Kavtaradze, and M. Ya. Kushnerev. *Doklady Akad. Nauk S.S.S.R.* 69, 879-80(1949).—Crystals of $Na_2SO_4 \cdot 10H_2O$, which lose their H_2O of crystn. very rapidly on evacuation at room temp., show no change of shape at the beginning of the examn. under an electron microscope, although dehydration is already complete. Changes, in the form of increasing cavities and hollows, do appear, however, on continued irradiation by electrons, resulting, on prolonged irradiation, in a skeleton-like structure. Similar phenomena are observed with initially hydrated $MgSO_4$, $Sr(IO_3)_2$, and $CaSO_4$ crystals. The same structures develop also on heating at 100-200°, but to a lesser extent. In x-rays, crystals of $MgSO_4$, dehydrated at room temp., appear amorphous or cryptocryst., but lines corresponding to the lattice of the dehydrated salt appear on heating at 100-200°.

N. Thon

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

CA

2

Role of the surface mobility of metal atoms in the preparation of contact catalysts supported by carriers.

A. B. Shekhter, A. I. Rebeistova, and I. I. Tret'yakov. *Doklady Akad. Nauk S.S.S.R.* 68, 1069-72(1949).

Electron microscope photographs of asbestos fibers impregnated with a chloroplatinate soln. show a sheath of nonuniform thickness, with occasional coarser aggregates. The picture changes very markedly after heating at 100°. Similar shifts of distribution of the metal are observed after heating of Ag, Au, or Pd, deposited on asbestos, ZnO, or lamp black by vacuum evapn. Thus, heating at 340° of a 100-A.-thick Ag layer on asbestos results in fusion of the finer particle with the coarser grains of metals. These observations confirm the mobility of metal atoms well below the melting temp. Roughly, the abs. temp. T of beginning creep of the atoms of a metal on the carrier surface, is related to its abs. melting temp. T_f by $T/T_f = 0.4$-0.5. The intensity of the creep over the surface increases with the temp. At const. temp., the rate of the motions remains relatively const. for some time, then slows down and comes to a halt even though the prepn. is maintained at the given temp. The distribution of the metal is very heterogeneous, grains up to 1000 A. diam., fairly distant from each other, being observed along with close fine grains unresolvable under the electron microscope (less than 50 A.). The shape of the grains of the same metal, at the same temp., varies from carrier to carrier. Without heating, individual grains of Ag or Au, visible under the electron microscope, are formed on asbestos at thicknesses above 125 A., on ZnO above 25 A. In thinner layers, e.g. 2.5 A. of Ag, crystal structure can be detected only by electron diffraction. After heating, crystals of Ag or Au on ZnO could be seen under the electron microscope even at a thickness of 10 A. The distribution pattern of a catalytically active metal on a given carrier, and its behavior on heating, should be taken into account in the choice of a suitable carrier. The same applies to the choice of the method of deposition of the metal.

N. Thon

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CA

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Creep of atoms of gold and of palladium on the surface of crystals of zinc oxide. A. B. Shekhter, A. I. Echeistova, and I. I. Tret'yakov (Inst. Phys. Chem., Acad. Sci. U.S.S.R., Moscow). *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1950, 405-8.—Electron-microscopic examn. of evapd. films of Au, of an estd. thickness of ~25 at. layers, on ZnO shows under ×60,000 magnification individual crystallites of Au on needles of ZnO, at about 400-500 A. distance from one another. Prolonged heating at up to 320° produces no change, but from 320 to 340° upwards there is progressive coarsening of the Au crystallites, due to disappearance of the smaller ones, and a progressive increase of the distance between crystallites. Pd films on ZnO, viewed under a magnification of ×40,000, show no sep. crystallites, owing to their closeness (distance <50 A.), but the ZnO needles appear distinctly thickened and serrated. Coarsening is observed only on heating from 700° upwards; after 1.5 hrs. at 700° followed by 20 min. at 800°, the distance between crystallites grows to ~400 A. On gradual increase of the thickness of the Au films, the 1st Au crystallites become visible when the amt. of Au deposited on ZnO corresponds to ~10 at. layers; with 25 layers, the size of the crystallites already attains ~200 A., and the distance between them ~180 A., growing to 3000-4000 A. after 1 hr heating at 400°. If the Au film is heated above 320°, the 1st crystallites are visible at much earlier stages of the deposition. Thus, individual crystallites of Au, of sizes varying from 60 to 600 A., sepd. by distances attaining 800 A., are observable, after 1 hr. heating at 400°, with Au amts. corresponding to only 3 at. layers. Electron diffraction patterns could not be obtained from films on ZnO, but on collodion evapd. films of Ag gave the characteristic lines of the Ag lattice even with amts. corresponding to about 1 at. layer. For Ag, Au, and Pd, the abs. temp. of beginning significant creep of the atoms on ZnO varies between 0.4 and 0.5°; the abs. temp. of fusion, i.e., is very close to the sintering temp. The min. size of a crystallite visible under the electron microscope can be estd. to ~10^6 atoms, or a cube of 120 A. side. On a ZnO needle 1 μ long and ~100 A. thick, an amt. of metal corresponding to 1 at. layer should form about 5 such min.-size crystallites, if the atoms could creep over a distance of 2000 A. which they evidently cannot. With an amt. of metal corresponding to 10 at. layers, appearance of visible crystallites of 10^6 atoms each requires, under the same conditions, a displacement of atoms over a distance of ~200 A., and this evidently takes place rapidly enough without heating. N. Thon

1951

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MA

Structure - 3

Migration of Silver Atoms on the Surface of Zinc Oxide Crystals. A. B. Shekhter, A. I. Echeistova, and I. I. Tret'yakov (*Zhur. Fiz. Khim.*, 1950, **24**, (2), 202-206). [In Russian]. Electron micrographs were taken of ZnO smoke deposits at magnifications of ×35,000 and ×110,000, before and after deposition of Ag by vacuum evaporation. The "conventional number of atomic layers" of Ag, calculated on the assumption that all the evaporated metal condensed on the specimen in a uniform film, varied from 25 to 60. The Ag deposits were found initially to consist of discrete particles, with dia. from <50 (resolution limit of microscope) to 1300 Å. Heating in air for 15 hr. at 150° C., followed by re-examination of the same field, produced no significant change in the structure of the deposits. At 220-230° C., however, the coarser particles began to grow at the expense of the finer ones after 2 hr., and the process continued on further heating for 10 hr.; at 300° C. coarsening of the particles began after 1 hr. When a fresh Ag deposit was evaporated on to a specimen with coarse particles, it formed a fairly uniform film, which broke up into coarse particles on heating at 280° C. Sh., E., and T. attribute these phenomena to the high mobility of Ag atoms on Ag, and the comparatively low mobility of Ag on ZnO, so that a uniform Ag layer rapidly breaks up into discrete particles, but the particles undergo "grain growth" only on prolonged annealing.—G. B. H.

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Shekhter, A. B.

PA 160T85

USSR/Physics - Zinc Oxide Catalysts 11 May 50

"Physical Structure and Catalytic Properties of Zinc Oxide," A. B. Shekhter, Yu. Sh. Moshkovskiy, Inst of Phys Chem, Acad Sci USSR, 4 pp

"Dok Ak Nauk SSSR" Vol LXXII, No 2

Conducted complex study of physical structure and catalytic properties of pure zinc oxide, prepared by various methods, with aid of X-ray, electron-microscope, and adsorption methods of investigation. States that relation between structural features of catalysts and their catalytic qualities has never been properly described in technical literature.

160T85

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CH

2

The "zonal" character of the changes in a palladium catalyst in the course of the oxidation of hydrogen. A. B. Shekhter and I. I. Tret'yakov. *Doklady Akad. Nauk S.S.S.R.* 72, 551-4(1950).—A polished Pd plate placed in a stream of undilt. $2H_2 + O_2$ attains high catalytic activity much faster than an unpolished plate, and its temp. (measured with the aid of a thermocouple soldered to the plate) attains 700° at a furnace temp. of 100°. On dilu. of the gas mixt. with 40% N_2 the temp. of the plate does not exceed 450° and the plate shows distinct structural changes after 3 hrs.' service. With 70% N_2 the temp. does not rise beyond 350° and no structural changes are noticeable even after 20 hrs. Heating of the Pd to 300-400° either in vacuo or in H_2, O_2, or H_2O alone caused no structural changes; these, consequently, are due to actual operation as catalyst. Electron-microscopic examn. of a Pd plate operated as catalyst in a gas mixt. dild. with 40% N_2 revealed far-reaching heterogeneity of the surface; examn. of submicroscopic areas of about 50 sq. μ each showed changes of aspect with the length of time of catalytic operation. The distribution of the various types of structural changes was revealed by an ordinary microscope under a magnification of ~ 250. Photomicrographs show "zones" of ~ 0.05 mm. in diam., sharply distinct from each other and with polygonal orientations. The boundaries of the zones remain unchanged with the time of operation, but within each zone the structure changes gradually in the direction of increasing cryst. character. The similarity of the boundaries of the "zones" with the grain boundaries revealed by etching suggests their identity. It follows that, during the catalysis, each given crystal face undergoes a distinct type of structural change. A similar "zonal" picture is obtained with massive Pt catalysts.

N. Thon

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SHEKHTER, A. B.

PA 192T19

USSR/Chemistry - Catalysts Jul/Aug 51

"Catalytic Activity and Structure of Active Zinc Oxide. Communication III. Effect of Method of Preparation of Zinc Oxide Catalysts on Their X-Ray Structure," A. B. Shekhter, M. Ya. Kusherev, Yu. Sh. Moshkovskiy, Inst of Phys Chem, Acad Sci USSR

"Iz Ak Nauk SSSR, Otdel Khim Nauk" No 4, pp 388-394

X-ray investigation of ZnO specimens K (prepd by topochem decompn of $ZnCO_3$ in vacuum at 350°C) and D (prepd by oxidation of Zn vapors at high temp in elec arc) revealed that K had higher deg

192T19

USSR/Chemistry - Catalysts (Contd) Jul/Aug 51

of dispersion, less perfect lattice. D was thermally stable up to 1,000°; heating of K caused crystallites to enlarge and lattice to approach ideal. K heated to 700° had same X-ray structure as D.

192T19

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

USSR/Chemistry - Catalysts Sep/Oct 51

"Catalytic Properties and Structure of Active Zinc Oxide. Communication 4. Effect of Method of Preparation on Electron-Microscopic Structure of Zinc Oxide," A. B. Shekhter, G. M. Zhabrova, Inst of Phys Chem, Acad Sci USSR

"Iz Ak Nauk SSSR, Otdel Khim Nauk" No 5, pp 500-504

Electron-microscopic investigation of Zn oxide specimens prepd by thermal decompn of different Zn salts and by oxidation of Zn vapors in elec arc showed that method of prepn greatly affects structure of oxide. Found electron microscope method satisfactory

195T4

USSR/Chemistry - Catalysts (Contd) Sep/Oct 51

for Zn oxide specimens with pores as small as 200-1,000 A in diam. Discusses formation of oxides.

195T4

SHEKHTER, A. B.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKHTER, A. B.; TRET'YAKOVA, I. I.; YECHEYSTOVA, A. I.

Electron Miscroscope

Method for relocating a given visual field in the electron miscroscope. Trudy Inst. fiz. khimii AN SSSR no. 1, 1952.

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

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

USSR/Chemistry - Fuels, Catalysts 1 Mar 52

234T6

"Electron Microscopic Investigation of Carbon Formed on Aluminosilicate Catalysts During Hydrocarbon Cracking," B. V. Klimenok, A. B. Shekh ter, Inst of Phys Chem, Acad Sci SSSR

"Dok Ak Nauk SSSR" Vol 83, No 1, pp 109, 110

Repeated electron microscopic exposures of the same particle of aluminosilicate catalyst before and after cracking shows the amt of carbon deposited. After 20 min of cracking of hexane, a uniform layer of carbon 100 Å thick is formed;

234T6

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after 2 hrs of cracking of isooctane, a layer of carbon 300 Å thick is deposited. The carbon deposits in a polymol layer on comparatively small surfaces of easily reached macropores. Presented by Acad P. A. Rebinder 16 Jan 52.

234T6

SHEKHTER, A. B.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKHTER, A. B.

USSR.

The electron-microscopic study of natural phosphates, S. I. Vol'kovich, L. B. Grinshpan, and A. B. Shekhter, *Doklady Akad. Nauk S.S.S.R.* 85, 137-9(1952). The surface structures of natural apatite and phosphorites were studied. The photomicrographs show the great range of particle sizes, from large particles to particles of several hundred A. in diam. The principal characteristics of the phosphorites are their porosity and fine-crystal structure. These characteristics are used to compare the chem. reactions of phosphorites and apatite, which has a smaller sp. surface. J. Roytar Leach

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKHTER, A.B.

USSR

Electron-microscopic study of the surface changes of massive catalysts at work. A. B. Shekhter and I. I. Tret'yakov. Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci. 1953, 397–402 (Engl. translation).—See C.A. 48, 13382b. H. L. H.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

Journal of Applied Chemistry
June 1954
Industrial Inorganic Chemistry

Electron microscopical study of changes in the surface of massive catalysts during use. A. B. Shekhter and I. I. Tret'yakov (*Izvestia*, 1953, No. 3, 442—447).—Electron micrographs (×16,000) of the surfaces of polished Pt, Pd, Cu, Fe, and Pt/Rh alloys catalysing the $H_2+\frac{1}{2}O_2$ reaction (N_2 as diluent) show them to undergo continuous and complicated changes and indicate qualitative differences in the behaviour of faces of crystals projecting from the surface. There is no simple relation between the catalytic activity and degree of development during catalysis of the different faces of Cu monocrystals.

R. C. MURRAY.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKHTER, A. B.

Electron microscope study of the effect of surfactant on the crystallization of mineral hydrates of cement clinker. A. B. SHEKHTER, N. N. SERB-SERBINA, AND P. A. REBINDER. *Doklady Akad. Nauk S.S.S.R.*, 89 [1] 129-32 (1953).—The electron microscope was used to study the hydration of tricalcium aluminate with and without the addition of sulfite alcohol wash water. After hydration for several minutes in water only, the gel consisted of thin platelike hexagons; this structure underwent no noticeable change after 7 days' hydration. In the presence of sulfite alcohol wash water, there were no hexagonal crystals but only elongated crystals (rods) which increased in length with time and formed a skeletal cellular structure. As concentration of surfactant increased from 0.1 to 0.5%, the rate of growth of crystals (lengthwise) and of cellular structure increased. Debyegrams showed that crystalline lattices of the hydrates in water, with and without the addition of the surfactant, were alike. B.Z.K.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKHTER, A. B.

USSR

The thermal modification of zinc oxide. A. B. Shekhter and Yu. Sh. Moshkovskii. *Doklady Akad. Nauk S.S.S.R.* 89, 1075-7(1953); cf. *C.A.* 44, 7132i.—The effect of heating ZnO from 500 to 1000° on its structure and catalytic activity was studied. On heating above 500° there occurred a gradual increase in the size of the elementary crystals, a decrease in the porosity, and the formation of large, compact aggregates. The change in the catalytic properties was studied on the decompn. of $MeOH(CH_3OH \rightarrow 2H_2 + CO +$ 18.8 kcal.). As the temp. of the calcining increased there was a continuous decrease in the activation energy E (no calcining, E = 28 kcal./mole; calcining at 700° for 2 hrs., E = 11 kcal./mole). J. Rovtar Leach

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKHTER, A. B.

USSR.

10187 **Causes of Catalytic Corrosion.** (Digest of "Catalytic Corrosion", by S. Z. Roginskii, I. I. Tret'akov, and A. B. Shekhter; *Doklady Akademii Nauk SSSR*, v. 91, 1953, p. 881-884.) *Metal Progress*, v. 67, May 1955, p. 177-178, 180.

Investigators concluded that compound formation was the most probable cause of a high rate of catalytic corrosion and also that it would cause the metal to become a catalyst.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

Shekhter, G. B.

Changes in metallic surfaces produced by chemical processes and by heating. S. Z. Fogiuskii, I. I. Tret'yakov, and A. B. Shekhter. *Doklady Akad. Nauk S.S.S.R.* 91, 1167-9(1953). Structures similar to those produced by thermal etching were produced at much lower temps. by reactions catalyzed by the metal being studied. Pt that had been used to catalyze the reaction $H_2 + O_2$ for 24 hrs. at 600° was observed with the electron microscope to have a "stepped-terrace" structure with terraces about 1 μ wide. Terraces only about 500 A. wide were observed on Pd heated in vacuum at 1000°. A lamellar structure with a spacing of 200 to 300 A. was observed on Pt [treatment not described]. The observed structures were not caused by local overheating, since a "crater" structure was observed with rapid rates of reaction. At rates that led to the usual terraces, the initial structure was rounded "hills and valleys" of about the same dimensions. The thermodynamic free energy is minimized by structural changes involving the elimination of worked surface metal, the replacement of crystal faces of high energy by those of lower energy, and the coarsening of grains by recrystn. Specific chem. adsorption can lower the surface energy so that the equil. structure may be different in the presence and in the absence of a given substance. Chem. impurities may form an interfering film at cryst. boundaries. A. G. Guy

CH

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SHEKHTER, A.B.

USSR/ Chemistry - Physical chemistry

Card 1/1 Pub. 147 - 20/21

Authors : Roginskiy, S. Z.; Tret'yakov, I. I.,; and Shekhter, A. B.

Title : Discussion on catalytic corrosion

Periodical : Zhur. fiz. khim. 29/10, 1921-1923, Oct 1955

Abstract : In connection with a report by G. Carton and J. Turkevich in the "Journ de chim. phys." 1954, the authors conducted a lengthy discussion and quoted numerous experimental data on catalytic corrosion. Twenty references: 16 USSR, 2 USA, 1 French and 1 Germ. (1934-1954). Illustrations.

Institution : Acad. of Sc., USSR, Inst. of Phys. Chem., Moscow

Submitted : May 16, 1955

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKHTER, A.B

USSR/ Chemistry - Catalysis

Card 1/1 Pub. 22 - 23/54

Authors : Roginskiy, S. Z. Memb. Corresp. of Acad. of Sc. USSR,; Tretyakov, I. I.; and Shekhter, A. B.

Title : Catalysis over monocrystals

Periodical : Dok. AN SSSR 100/3, 487-490, Jan 21, 1955

Abstract : The oxidation of hydrogen, methanol and the decomposition of isopropyl alcohol and methanol were investigated to compare the activity of Cu-crystal facets of various indices. The conversion percentage in all investigated cases was found to be insignificant. According to electron microscopic observations the catalytic corrosion was very low and has no effect on the catalytic activity of the nonocrystals. The results obtained for various reactions are tabulated. Seven references: 5 USA and 2 USSR (1947-1953). Table, drawing.

Institution : Academy of Sciences USSR, Institute of Physical Chemistry

Submitted : August 7, 1954

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKHTER, A.B.

Determining water-saturated fissured rocks in wells. Izv.AN Kazakh. SSR.Ser.geol.no.23:159-166 '56. (MLRA 10:1)
(Water, Underground) (Oil well logging, Electric)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKHTER, A.B.

The Chemical Society of the GDR held its annual meeting 28 Oct.-1 Nov. 1956 in Leipzig. The following papers were presented by the USSR delegation

F. Vilesov and A. Terenin - Physics Inst., LGU "Photoelektronische Emission der Oberflaeche von Halbleiterkatalysatoren".

Ye. Shilov and A. Yasnikov - Inst. Organic Chemistry, AS USSR "Ueber den Mechanismus der katalytischen Wirkung von Aminosaeuren in den Reaktionen der Carbonylverbindungen."

A. Shekhter - Inst. Scientific Information, AS USSR "Zur Elektronenmikroskopie heterogener Katalysatoren."

N. M. Emanuel - Inst. Chemical Physics, AS USSR "Homogene Katalyse und Chemische Induktion bei langsamen Oxydations-Kettenreaktionen."

A. Ye. Braunshteyn - Inst. Biological & Medical Chemistry, AMS USSR "Allgemeine Fragen der biologischen Katalyse im Licht der Wirkungsweise der Pyridoxalenzyme."

T. Vol'kenshteyn - Inst. Physical Chemistry, AS USSR "Zur Elektronentheorie der Chemisorption und Katalyse an Halbleitern."

V. Karmskiy and V. Voyevodskiy - Inst. Chemical Physics, AS USSR "Ueber den Mechanismus einiger katalytischer Reaktionen die an Palladiummetall unter Beteiligung von Wasserstoff verlaufen."

G. K. Boreskov - Karpov Physical-Chemical Inst., Moscow "Wechselwirkung zwischen Katalysator und Reaktionssystem."

A. A. Balandin - AS USSR "Zum Aufbau einheitstheorie der Katalyse."

SO: Mitteilungsblatt der Chemische Gesellschaft in der DDR, Sonderheft, 1959, Uncl.

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

Shekhter, A. B., Milovanova, L. F., Berznitskaya, S. A., Butskaya, L. K., Kosterko, [illegible] R., Rishchaya, S. YA. and Filosofova, T. [illegible].

Study of the effectiveness of active immunization in whooping cough.

Materialy nauchnykh knoferentsii, Kiev, 1959. 2[illegible]pp
(Kievskiy Nauchno-issledovatel'skiy Institut Epidemiologii i Mikrobiologii)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

Shekhter, A. B., Filosofova, [illegible], and Lil'vanova, L. P.

Immunological changes in persons, vaccinated with the whooping cough vaccine.

Materialy nauchnykh konferentsii, Kiev, 1959. 28[illegible]p.
(Kievskiy Nauchno-issledovatel'skiy Institut Epidemiologii i Mikrobiologii)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

LANZHEVEN, Pol' [Langevin, Paul] [deceased (1872-1946)]; SHEKHTER, A.B. [translator]; STAROSEL'SKAYA-NIKITINA, O.A. [translator]; DORFMAN, Ya.G., prof., red.; PETROVSKIY, I.G., akademik, red.; ANDREYEV, N.N., akademik, red.; KAZANSKIY, B.A., akademik, red.; SHCHERBAKOV, D.I., akademik, red.; YUDIN, P.F., akademik, red.; DELONE, B.N., red.; KOSHTOYANTS, Kh.S., red.; SAMARIN, A.M., red.; LEBEDEV, D.M., prof., red.; FIGUROVSKIY, N.A., prof., red.; KUZNETSOV, I.V., kand.filos.nauk, red.; NIKOLAYEVA, L.K., red. izd-va; POLENOVA, T.P., tekhn.red.

[Selected works] Izbrannye trudy. Obshchaia red., stat'ia i primechaniia IA.G.Dorfmana. Izd.podgotovila O.A.Starosel'skaia-Nikitina. Moskva, Izd-vo Akad.nauk SSSR, 1960. 754 p. (MIRA 13:11)

1. Chleny-korrespondenty Akademii nauk SSSR (for Delone, Koshtoyants, Samarin).
(Physics)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

FILOSOFOVA, T.G.; SHEKHTER, A.B.

Conference on problems in controlling children's diseases. Zhur. mikrobiol.epid.i immun. 31 no.8:153-154 Ag '60. (MIRA 14:6)
(PEDIATRICS)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

KHIL'KIN, A.M.; DRONOV, A.F.; SHEKHTER, A.B.; KUT'IN, V.A.; ISTRANOV, L.P.; KASPARYANTS, S.A.

Use of semibiologic prostheses in vascular surgery. Report No.1. Eksper. khir. i anest. no.1:26-30 '65. (MIRA 18:11)

1. I Moskovskiy ordena Lenina meditsinskiy institut imeni I.M. Sechenova (direktor - deystvitel'nyy chlen AMN SSSR prof. V.V. Kovanov), Tekhnologicheskiy institut legkoy promyshlennosti (direktor - prof. I.P. Strakhov), Vsesoyuznyy nauchno-issledovatel'skiy institut kozhevennoy promyshlennosti (direktor - B.D. Breyev), Moskva.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

KURASHOVA, M.V., kand.med.nauk; SHEKHTER, A.I. (Moskva)

Primary pulmonary hypertension. Klin.med. no.7:136-140 '61. (MIRA 14:8)

1. Iz kafedry fakul'teskoy terapii lechebnogo fakul'teta (zav. - deystvitel'nyy chlen AMN SSSR prof. A.I. Nesterov) II Moskovskogo meditsinskogo instituta imeni N.I. Pirogova (dir. - dotsent M.G. Sirotkina).

(HYPERTENSION)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKHTER, A. I. (Moskva, A-57, Novopeschanaya ul., 3, kv. 46)

Diagnosis of cancer of the middle lobe of the right lung. Vop. onk. 8 no.3:17-26 '62. (MIRA 15:4)

1. Iz kafedry rentgenologii i radiologii (zav. - prof. V. A. D'yachenko) II Moskovskogo meditsinskogo instituta (dir. - dots. M. G. Sirotkina) i rentgenovskogo otdeleniya Instituta grudnoy khirurgii AMN SSSR (dir. - prof. S. A. Kolesnikov, nauchn. rukov. - akad. A. N. Bakulev)

(LUNGS—CANCER)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKHTER, A.I. (Moskva,A-57, Novopeschanaya ul.,d.3,kv.46);
SOLOV'YEVA, I.P., kand.med.nauk

Isolated adenomatosis of the middle lobe of the lung. Vest. rent. i rad. 37 no.1:39-43 Ja-F '62. (MIRA 15:3)

1. Iz rentgenologicheskogo otdeleniya (zav. - kand.med.nauk M.A. Ivanitskaya) i patomorfologicheskoy laboratorii (zav. - prof. Ya.L. Rapoport) Instituta grudnoy khirurgii AMN SSSR (dir. - prof. S.A. Kolesnikov, nauchnyy rukovoditel' - akademik A.N. Bakulev), kafedry rentgenologii i radiologii (zav. - prof. V.A. D'yachenko) II Moskovskogo meditsinskogo instituta (rektor - dotsent M.G. Sirotkina).
(LUNGS--TUMORS)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKHTER, B.A., kand. fiz.-mat. nauk, dotsent,; SIMSON, A.E., kand. tekhn. nauk,; FAVOROV, Yu.L., inzh.

Elastic deformations in the shaft of the D100 diesel generator resulting from a short circuit in the main generator. Trudy KHIIT no. 29:5-18 '58. (MIRA 11:8)

(Electric generators)
(Shafting)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKHTER, B.A., kand.f.-matem.nauk, dotsent

Derivation of projective metrics in the Lobachevskii three-dimensional space. Trudy KHIIT no.41:5-10 '61. (MIRA 15:2)
(Distance geometry)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKHTER, B.I.

PHASE I BOOK EXPLOITATION SOV/3793

Baum, Filipp Abramovich, Kirill Petrovich Stanyukovich, and Boris Isaakovich Shekhter

Fizika vzryva (Physics of Explosion) Moscow, Fizmatgiz, 1959. 800 p. 6,500 copies printed.

Eds.: I.Ya. Petrovskiy and Ye.B. Kuznetsova; Tech. Ed.: N.Ya. Murashova.

PURPOSE: This monograph is intended for specialists in the theory and use of explosives, and may prove useful to students and aspirants specializing in this field.

COVERAGE: The authors present a systematic up-to-date examination of the complex of problems concerning regularities of the transformations of explosives and explosive effect in various media. The overall properties of explosives and the conditions of their transformation as a function of various physical and chemical factors, detonation, and combustion processes are discussed. Problems of brisance are treated, and the theory of cumulation is examined in detail. Great attention is given to applied gas dynamics of unsteady flows.

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The present work is intended to fill a lacuna in the literature on explosion physics and processes taking place in the ambient medium during an explosion. The authors point out that the only authoritative textbooks on the subject, those of K.K. Snitko (1934 and 1936) and N.A. Sokolov, are out of date. Problems of nuclear explosions are not treated at all. Chapters I, II, IV, V, VI, VII, VIII were written by F.A. Baum; chapters XIII and XIV were written by K.P. Stanyukovich; chapters III, IX and XV were written by B.I. Shekhter. Chapters XI and XII were written jointly by Baum and Stanyukovich, section 46 by Shekhter, section 86 by Baum and Stanyukovich, and sections 98 and 87 by Baum and Shekhter. The supplement was written by Stanyukovich. The authors express thanks to M.A.Sadovskiy, A.S. Kompaneyts, and G.I. Pokrovskiy. References for each chapter appear at the end of the book.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

RAMENSKAYA, Marianna Leont'yevna,; NITSENKO, A.A., doktor biologicheskikh nauk, nauchnyy red.; SHEKHTER, D.I., red.; SHEVCHENKO, L.V., tekhn. red.

[Meadow vegetation of Karelia] Lugovaia rastitel'nost' Karelii. Petrozavodsk, Gos. izd-vo Karel'skoi ASSR, 1958. 399 p.(MIRA 11:12)
(Karelia--Pastures and meadows)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

MENDELEYEV, Iridiy Mikhaylovich; SHEKHTER, D.I., red.; SHEVCHENKO, L.V., tekhn. red.

[Essays on clinical helminthology] Ocherki klinicheskoi gematologii. Petrozavodsk, Gos. izd-vo Karel'skoi ASSR, 1961. 244 p. (MIRA 15:6)

(MEDICAL HELMINTHOLOGY)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

ZIL'BER, Anatoliy Petrovich; VANEVSKIY, V.L., nauchnyy red.; SHEKHTER, D.I., red.; POD"EL'SKAYA, K.M., tekhn. red.

[Surgical position and anesthesia; circulatory and respiratory reactions to posture in anesthesiology] Operatsionnoe polozhenie i obezbolivanie; postural'nye reaktsii krovoobrashcheniia i dykhaniia v anesteziologii. Petrozavodsk, Gos. izd-vo Karel'skoi ASSR, 1961. 250 p. (MIRA 15:3)

(ANESTHESIOLOGY) (SURGERY, OPERATIVE)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

YAKOVLEV, Boris Petrovich; SHEKHTER, D.I., red.; SHEVCHENKO, L.V., tekhn. red.

[Pests of spruce cones and seeds] Vrediteli shishek i semian eli. Petrozavodsk, Gos.izd-vo Karel'skoi ASSR, 1961. 46 p. (MIRA 16:7)

(Karelia--Spruce--Diseases and pests)
(Karelia--Seed production)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

KUKKOV, Ivan Ivanovich; [illegible], L.I., red.

[Build logging roads faster and less expensive] Stroit' lesovozny dorogi bystree i deshevle. Petrozavodsk, Karel'-skoe knizhnoe izd-vo, 1963. 113 p. (MIRA 17:7)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

BORISOV, Petr Alekseyevich; SHEKHTER, D.I., red.

[Stone building materials in Karelia] Kamennye stroitel'nye materialy Karelii. Petrozavodsk, Karel'skoe knizhnoe izd-vo, 1963. 366 p. (MIRA 17:6)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

LANTRATOVA, Antonina Stepanovna; OVCHINNIKOVA, Yevgeniya Aleksandrovna; SHEKHTER, B.I., red.

[Key to trees and shrubs] Opredelitel' derev'ev i kustarnikov. Petrozavodsk, Karel'skoe knizhnoe izd-vo, 1965. 153 p. (MIRA 18:9)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2"

"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

LEYBOSHITS, Leonid Mikhaylovich; SHEKHTER, D.I., red.

[Leningrad - Karelia; a guidebook on the tourist routes: Leningrad - Kizhi, Lake Ladoga and Lake Onega, to Vallam Island] Leningrad - Kareliia; putevoditel' po turistskim marshrutam: Leningrad - Kizhi, po Ladoge i Onege na ostrov Valaam. Petrozavodsk, Karel'skoe knizhnoe izd-vo, 1965. 74 p. (MIRA 19:1)

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ACC NR: AP6034271 EWP(k) SOURCE CODE: UR/0386/66/004/007/0258/0262

51
50

AUTHOR: Indenbom, V. L.; Shekhter, E. M.

ORG: Institute of Crystallography, Academy of Sciences SSSR (Institut kristallografii Akademii nauk SSSR)

TITLE: Resonant phenomena in the excitation of internal-stress waves

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 4, no. 7, 1966, 258-262

TOPIC TAGS: elastic modulus, elastic wave, acoustic resonance, laser effect, stress concentration

ABSTRACT: Since an analysis of the equation for the internal-stress field shows that upon suitable choice of even weak sources, the amplitude of the internal-stress waves can be made arbitrarily large by resonance, the authors indicate several examples of resonant excitation of the internal-stress field, which can be realized, in particular, with modern methods of irradiating bodies with electromagnetic waves. These are: a) motion of sources with sonic and supersonic speed, where the amplitude of the stresses increases without limit on approaching the generatrix of the radiation cone, b) cumulation of waves following instantaneous application of the field, where two waves can propagate in opposite sides of the boundary of the irradiated region and if the shape of the region is suitably chosen, cumulative compression of the elastic field can take place with unlimited growth of the stress amplitude, and c) motion of a wave

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ACC NR: AP6034271

packet, where cumulation of the relaxation wave can occur in analogy with the preceding case. It is suggested that relaxation wave cumulation may be the cause of destruction of bodies by laser radiation, where formation of cracks on the axis of a relatively broad beam, which (on the average) does not produce large stresses, is frequently observed. Orig. art. has: 10 formulas.

SUB CODE: 20/ SUBM DATE: 06Jul66/ ORIG REF: 003

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RADIATION AND HEAT TRANSFER

AMS

551.521.3:551.521.61

3.5-184

Chekhter, F.N., " vychislenii luchistykh potokov tepla v atmosfere. (The calculation of radiational heat flux in the atmosphere.) Leningrad, Glavnaia Geofizicheskaia Observatoriia, Trudy, No. 22(84):38-51, 1950 5 figs., 3 tables, 15 refs., 26 equations. DLC- The author discusses briefly the various principal methods for calculating radiational flux, and then discusses in detail the absorption of infrared radiation in the atmosphere by H_2O and CO_2 and the calculation of the flow of radiant energy. On the basis of his theoretical analysis of the measurement of radiational flux he constructs a diagram for calculating the flux of radiant energy. Calculations of counter radiation made with this diagram are compared with those obtained by other methods to the advantage of the former. Subject headings: 1. Radiation flux 2. Atmospheric absorption 3. Radiant energy transfer.- I.L.D.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKHTER, F.N.

Altitude distribution of average temperatures in a selectively absorbing atmosphere. Trudy GGO no.37:28-39 '52. (MIRA 11:1)
(Atmospheric temperature)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKHTER, F.N.; TSEYTIN, G.Kh.

A more precise method for precalculating. Trudy GGO no.53:26-35 '55. (MLRA 9:8)
(Atmospheric temperature)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKHTER, F.N.; TSEYTIN, G.Kh.

Soil temperature and depth of soil freezing during the winter. (MLRA 9:8)
Trudy GGO no.53:44-65 '55.
(Frozen ground) (Soil temperature)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

SHEKHTER, F. N.

Call Nr: QC 901.R3

AUTHOR: Rakipova, Larisa R.

TITLE: Thermal Conditions in the Atmosphere (Teplovoy rezhim atmosfery)

PUB. DATA: Gidrometeorologicheskoye izdatel'stvo, Leningrad, 1957, 184 pp., 1700 copies

ORIG. AGENCY: None given

EDITORS: Responsible Editor: Shekhter, F.N.; Editor: Yasnogorodskaya, M.M.; Tech. Ed.: Shumikhin, K.F.; Correctors: Mamedova, V.V., and Mints, B.A.

PURPOSE: This monograph is designed for scientific workers, physicists, meteorologists, climatologists, as well as foraspirants and senior students in hydrometeorological institutes and geography and physics faculties of universities.

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

Call Nr: QC 901.R3

Thermal Conditions in the Atmosphere (Cont.)

COVERAGE: The book covers the results of experimental and theoretical studies in the common tendencies of thermal conditions in the atmosphere in a basic investigation of total and zonal atmospheric fields. It includes consideration and analysis of the horizontal macro-transfer (orderly and turbulent) of heat in basic types of climate. Modern concepts of thermal conditions in the stratosphere and the relationship between the upper layers of the atmosphere and the troposphere are covered in detail. The annotation says that the mathematical part of the study may be omitted by the general reader. Personalities mentioned are: Kondrat'yev, K.Ya., Shvets, M.Ye. and Yudin, M.I. There are 86 bibliographic references, 41 of which are USSR, 28 English, 14 German, 1 French, 1 Chinese, and 1 Indian.

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Thermal Conditions in the Atmosphere (Cont.)

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

Call Nr: QC 901.R3

Thermal Conditions in the Atmosphere (Cont.)

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AVAILABLE: Library of Congress

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"APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001549010009-2

36-57-69-13/16

AUTHOR: Shekhter, F. N.

TITLE: Computing the Mean Coefficient of Temperature Conductivity (O raschete srednego koeffitsiyenta temperaturoprovodnosti)

PERIODICAL: Trudy Glavnoy geofizicheskoy observatorii, 1957, Nr 69, pp. 87-93 (USSR)

ABSTRACT: In the introduction, the author refers to G. A. Voloshinova who in 1950 offered a critical analysis of various mathematical studies in computing the mean coefficient of temperature conductivity. In 1956, G. Kh. Tseytin offered an improved formula for this purpose. The present article analyzes this formula. The advantage of Tseytin's formula is that it allows computing the mean coefficient of thermal conductivity also for snow and frozen soil which is not possible with other formulas. The author of the present article is nevertheless critical of Tseytin's formula. First of all, the coefficient deduced by this formula is not a real coefficient, but a derivative coefficient only. The latter differs considerably from the real coefficient as soon as the temperature approaches the zero point (Centigrade). The author suggests a mathematical method for calculating the real coefficient from the derived one. The coefficient is expressed in square centimeters per second. The author compares his results with data obtained by using older and less accurate formulas. There are 4 tables, 8 figures, and 4 Soviet references.

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SHEKHTER, F.N.

Calculating the freezing depth of soil and the temperature of frozen soil. Trudy GGO no.77:7-19 '58. (MIRA 12:4)
(Frozen ground)

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Leningrad. Glavnaya geofizicheskaya observatoriya

Voprosy fiziki prizemnogo slova vozdukha (Problems in the Physics of the Near-Surface Air Layer) Leningrad, Gidrometeoizdat, 1960. 161 p. (Series: Its: Trudy, vyp. 94) Errata slip inserted. 850 copies printed.

Sponsoring Agencies: Glavnaya geofizicheskaya observatoriya imeni A.I. Voyeykova; Glavnoye upravleniye gidrometeorologicheskoy sluzhby pri Sovete Ministrov SSSR.

Ed. (Title page): D.L. Laykhtman, Doctor of Physics and Mathematics; Ed. (Inside book): Ts.V. Vlasova; Tech. Ed.: N.V. Volkov.

PURPOSE: This publication is intended for meteorologists specializing in the lower layers of the atmosphere. It may also be of interest to agronomists, construction engineers, and other specialists whose activities are influenced by atmospheric conditions.

COVERAGE: This issue of the Transactions of the Main Geophysical Observatory contains 15 articles dealing mainly with problems of the physics of the near-surface air layer. Correlations between the surface wind and geostrophic wind are examined and the results of both theoretical calculations and experimental investigations given. Individual articles analyze the temperature regime of the active surface of soil and the factors determining the thermal conditions of the boundary layer. Results of fog investigation are presented in two articles. In addition, some problems of methods in the experimental investigation of the near-surface layer are elucidated. No personalities are mentioned. References follow each article.

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KLYUCHNIKOVA, L.A.; SHEKHTMAN, F.N.

Role of radiant and turbulent heat exchange in the formation of temperature stratification in the atmospheric boundary layer. Trudy GGO no.94:33-38 '60. (MIRA 13:6)
(Atmospheric temperature)

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SHEKHTER, F.N.

Freezing of ground at a given temperature of the active surface.
Trudy GGO no.94:42-61 '60. (MIRA 13:5)
(Soil freezing)

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SHEKHTER, F.N.

Methods for derermining radiative heat fluxes. Trudy GGO no.127:14-15 '62. (MIRA 15:7)
(Atmospheric temperature)(Heat--Radiation and absorption)

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I053/I242

AUTHORS: Kazhdan, R.M., Shokhter, F.M.

TITLE: Some results of computation of the radiation changes of temperature in the boundary layer of the atmosphere

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy. no. 127. 1962. Fizika prizemnogo sloya vozdukha, 26-34

TEXT: The role of thermal exchange for radiation in transient processes has been studied by examining the following temperature strata: a) N profile - the linear decrease of temperature with a 0.6°C/100 m gradient, from the ground (T_0 = 11.2°C) up to 12 km over the isotherm; b) profile 1 - the logarithmic decrease of temperature up to 50 m ($T(z) = 17° - 0.71 \log 10^6 z$); c) profile 4 - the inversion from the ground (T_0 = 3°C) up to 10 m (T = 12.1°C); d) profile M - the inversion from the ground (T_0 = 12.3°C) up to 400 m. The following results were obtained: 1) for a linear decrease of temperature with altitude, the values of the derivatives of radiative air flux in the lower 5-10 m are nearly constant; 2) the

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Some results of computation...

existence of a large temperature gradient near the ground (T_0 = 17°C; T_{1cm} = 14.2°C) considerably increases the values of flows in the air layer adjacent to the ground; 3) the presence of an inversion in the proximity of the ground leads to important heating near the earth's surface; 4) the presence of superadiabatic gradients of the temperature determines the cooling of the air adjacent to the ground and the heating of higher layers; 5) the absolute value of the derivative $\frac{dA}{dm}$ (A - the flux of a long-wave radiation and m - the effective absorbing mass,) of air flows increases with temperature; 6) the value $\frac{dF}{dm}$ (F - the resulting radiative flux at height z) is greater in the four stratification at 2 km than at 1 km. There are 3 figures and 1 table.

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