[illegible] the noise factor of [illegible]

[illegible] kovyye pribory i ikh primenenie [illegible]

[illegible] TAGS. transistor, noise factor

[illegible] formula is derived for the frequency at which the transistor-noise [illegible] The formula was verified [illegible]

Card [illegible] 2

ACCESSION NR: AT5004892

[illegible] with emitter currents of 0.5—5 ma at [illegible] the [illegible] frequencies of 600 kc—20 Mc [illegible] noise were [illegible] has: 11 figures, 24 [illegible]

[illegible] ON: none

[illegible] ENCL: 00 SUB CODE: EC

[illegible] 3 OTHER: 0[illegible]

Card 2/2

FOKINA, Ye. A.

USSR/Physics of the Atmosphere - Dynamic Meteorology, M-2

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 36093

Author: Fokina, Ye. A.

Institution: None

Title: Types of Monthly Negative Temperature Anomalies in Tashkent

Original Periodical: In book: Meteorol. i gidrol. v Uzbekistane, Tashkent, AN UzSSR, 1955, 179-186

Abstract: None

Card 1/1

AF701597 TREASURE ISLAND BOOK REVIEW AID 842 - S

FOKINA, Ye. A. and KRYLOV, O. V. (Institute of Physical Chemistry, Academy of Sciences, USSR).
OB ISMERENII KISLOTNO-SHCHELOCHNYKH SVOYSTV POVERKHNOSTI (Determination of oxidation-reduction properties of surfaces). In Problemy kinetiki i kataliza (Problems of Kinetics and Catalysis), vol. 8. Izdatel'stvo Akademii Nauk SSSR, 1955. Section V: New experimental methods. p. 248-255.

The adsorption of phenol was studied in order to develop a method for the determination of the number and nature of acid and alkaline centers on the surface. It was determined gravimetrically on a quartz spring balance connected with an ampule containing phenol. The adsorption of phenol was conducted at 23-25°C; desorption, at 25, 100, 200, 300, and 380°C; adsorption at 100°C; desorption at 100, 200, 300, and 380°C; adsorption at 200°C, desorption at 200, 300 and 380°C. A study of the kinetics of adsorption and desorption of phenol was carried out on acidic, alkaline and amphoteric adsorbents. BeO, MgO, ZnO, CdO, CaO, $Ca(OH)_2$, Al_2O_3, silica gel, and the aluminosilicate cracking catalyst. The catalytic activity of the above catalyst were also studied in the decompositon of isopropyl alcohol. The experimental data are compiled in Table i (p. 250). The adsorption of phenol by all the catalysts except SiO_2 and Al_2O_3-SiO_2, is very stable (chemisorption).

The curve in Fig. 1 (p. 251) shows the quasi-isobars of sbsorption (calculated from the saturation points of the kinetic adsorptiom isotherms). The amount of phenol adsorbed at 25°C on $1m^2$ catalytic surface is approximately the same (5-8mm) on different catalysts while the stability of the bond between phenol and catalyst differs for different catalyst. Data on the desorption of phenol from BeO and MgO at various temperatures are compiled in Table 2 (p. 252).

Kinetic isotherms of adsorption of phenol on BeO are shown in Fig 2 (p. 253). Analogous isotherms were found for ZnO, MgO, Al_2O_3, etc., with the exception of CaO, $Ca(OH)_2$, silica gel and aluminosilicate. Kinetic isotherms of adsorption of phenol on aluminosilicate at various temoeratures are shown in Fig. 3 (p. 253).

To establish the acidic nature of the catalytic surface, adsorption of pyridine was conducted in the same manner as the adsorption of phenol. The experimental data are compiled in Table 3 (p. 254). Study of the decomposition of isopropyl alcohol showed that the dehydration ability of the catalyst changes as in the adsorption of pyridine, and the dehydrogenation ability of the catalyst as in the adsorption of phenol.

Adsorption of pyridine may be used for determination of the acidic properties of the surface. It is advisable to determine also the heat of adsorption and the energy of activation. A similar method may be used for determination of the electronic nature of the catalytic surface.

The effect of the adsorption of mercury, an electron-donor, and oxygen, an electron-acceptor on the catalytic nature of oxides of Be, Zn and Cd was studied. Mercury and oxygen were supplied to the catalyst simultaneously with the vapors of isopropyl alcohol. Oxygen decreases the rate of decompositon of half of the initial value - see ref. 19. Three tables, 3 diagrams. 19 references, 12 Russian (1946-1954).

ZHABROVA, G.M.; FOKINA, Ye.A.

Effect of the method of introducing modifying additives on the properties of oxide catalysts. Izv.AN SSSR.Otd.khim.nauk 86 no.6:963-971 My '55. (MLRA 9:4)

1.Institut fizicheskoy khimii Akademii nauk SSSR.
(Catalysts)

FOKINA, Ye. A.

USSR/ Physical Chemisty - Kinetics. Combustion. Explosives. Topochemistry. Catalysis B-9

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11284

Author : Krylov O.V., Roginskiy S.Z., Fokina Ye. A.
Inst : Department of Chemical Sciences, Academy of Sciences USSR
Title : Study of the Dependence of Catalytic Activity of Binary Compounds of Metals of the Second Group with Non-Metals Upon the Position of Elements in the Periodic System of Mendeleyev. Communication 1. Catalytic Decomposition of Isopropyl Alcohol over Oxides of Alkaline-Earth Metals.

Orig Pub : Izv. AN SSSR, Otd. khim. n., 1956, No 6, 668-675

Abstract : In a flow-unit, at 314-460°, a study was made of decomposition of isopropyl alcohol in the presence of the catalysts CaO (I), SrO (II), BaO (III), $CaCO_3$ (IV), $BaCO_3$ (V) or $Ca(OH)_2$ (VI). In the I-III series catalytic activity of the oxides increases. Over all the oxides dehydrogenation of alcohol predominates over the dehydration. Energies of activation E of dehydrogenation (in cal/mole), I 12000-16000, on II 11000, on III 6000. Values of E of dehydration are higher (in cal/mole): on I 22000-26000, on II 25000, on III 12000. At the same time E values of dehydration

1/2

USSR/ Physical Chemistry - Kinetics. Combustion. Explosives. Topochemistry. Catalysis B-9

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11284

over carbonates (24000 on IV, 17000 on V) are lower than dehydrogenation E values (39000 on IV, 26000 on V) and approximate the dehydrogenation E over oxides. On the basis of these data the assumption is made concerning the presence in oxides of carbonate admixtures which cause the dehydration. Dehydrogenation E over VI, of 16000 cal/mole, is close to dehydrogenation E over I. Literature data concerning catalytic properties of solid alkalies indicate widespread use of alkaline catalysis.

2/2

Fokina, Ye. A.

KRYLOV, O.V.; ROGINSKIY, S.Z.; FOKINA, Ye.A.

Investigating the dependence of catalytic activity of binary metal compounds of the second group with nonmetals on the position of the elements in M.I.Mendeleev's periodic table. Report No.2: Catalytic decomposition of siopropyl alcohol on oxides of metals from the side subgroup of the second group. Izv.AN SSSR Otd.khim. nauk no.4:421-430 Ap '57. (MIRA 10:11)

1. Institut fizicheskoy khimii AN SSSR
(Catalysis) (Isopropyl alcohol) (Oxides)

FOKINA, YE. A.

KRYLOV, O.V.; FOKINA, Ye.A.

Study of sulfide stability with the aid of S^{35} during catalytic decomposition of isopropyl alcohol. Probl. kin. i kat. 9:294-303 '57. (MIRA 11:3)

(Sulfides) (Catalysis) (Sulfur--Isotopes)

KRYLOV, O.V.; FOKINA, Ye.A.

Study of acid-base properties of catalytic surface by the differential isotope method. Probl. kin. i kat. 9:304-313 '57. (MIRA 11:3)
(Adsorption) (Cresol) (Carbon--Isotopes)

AUTHORS: Krylov, O. V., Fokina, Ye. A. 62-58-3-2/30

TITLE: The Investigation of the Catalytic Activity of the Binary Compounds of Metals of the Second Group With Nonmetals as Dependent on the Position of the Elements in the Mendeleyev Periodic System (Izucheniye zavisimosti kataliticheskoy aktivnosti binarnykh soyedineniy metallov vtoroy gruppy s nemetallami ot polozheniya elementov v periodicheskoy sisteme Mendeleyeva). Communication 3. The Catalytic Decomposition of Isopropyl Alcohol on the Sulfides of Metals of the Second Group (Soobshcheniye 3. Kataliticheskoye razlozheniye izopropilovogo spirta na sul'fidakh metallov vtoroy gruppy)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Khimicheskikh Nauk, 1958, Nr 3, pp. 266-276 (USSR)

ABSTRACT: This paper represents part of the systematic investigations of the catalytic properties of binary metallic compounds (metals of the 2nd group) with metalloids of the 6th group. Beside the sulfides of the 2nd metal group some sulfide samples (of Pb and Bi) were also investigated. The present paper describes the investigation of sulfurous zinc ZnS and

Card 1/ 2

The Investigation of the Catalytic Activity of the Binary Compounds of Metals of the Second Group With Nonmetals as Dependent on the Position of the Elements in the Mendeleyev Periodic System. Communication 3. The Catalytic Decomposition of Isopropyl Alcohol on the Sulfides of Metals of the Second Group

62-58-3-2/30

similar types of zinc. Table 1 shows the results of the performed experiment. The dehydrogenation and dehydration of isopropyl alcohol on the sulfides were also investigated (see tables 3-6). It became evident that all investigated sulfides except PbS are dehydrogenizing catalysts. The catalytic activity of the sulfides Zn and Cd is higher than that of ZnO and CdO. It was further found that a modification of the method of synthesis of the sulfide causes a modification of its catalytic properties. Under the conditions of the decomposition of isopropyl alcohol (in the layer) the activity of ZnS is higher than of ZnO. The activation energy of the dehydrogenation (in the layer) increases with an increasing filling of the surface. There are 8 figures, 6 tables, and 17 references, 16 of which are Soviet.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR
(Institute for Physical Chemistry, AS USSR)

SUBMITTED: January 8, 1957

Card 2/2

5(4) SOV/62-58-12-3/22

AUTHORS: Krylov, O. V., Kushnerev, M. Ya., Fokina, Ye. A.

TITLE: Investigation of the Dependence of the Catalytic Activity of Binary Compounds of Metals of the Second Group With Non-Metals Upon the Position of the Elements in the Mendeleyev Periodic System (Izucheniya zavisimosti kataliticheskoy aktivnosti binarnykh soyedineniy metallov vtoroy gruppy s nemetallami ot polozheniya elementov v periodicheskoy sisteme Mendeleyeva) Communication 4: Catalytic Decomposition of Isopropyl Alcohol on Zinc Selenide and Telluride (Soobshcheniye 4. Kataliticheskoye razlozheniye izopropilovogo spirta na selenide i telluride tsinka)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1958, Nr 12, pp 1413-1421 (USSR)

ABSTRACT: The present paper deals with the investigation of the catalytic activity of selenides and tellurides of metals of the second group with respect to the dehydration and dehydrogenation of isopropyl alcohol. It is a continuation of the investigations carried out with the oxides and sulfides of metals of the same group (Refs 1-3). The investigation methods employed are de-

Card 1/3

SOV/62-58-12-3/22

Investigation of the Dependence of the Catalytic Activity of Binary Compounds of Metals of the Second Group With Non-Metals Upon the Position of the Elements in the Mendeleyev Periodic System. Communication 4: Catalytic Decomposition of Isopropyl Alcohol on Zinc Selenide and Telluride

scribed (Refs 1-3). The ZnSe preparation was supplied by M. S. Belen'kiy, the ZnTe preparation by N. A. Goryunova, and chemically pure tellurium by A. V. Novoselova. The decomposition of isopropyl alcohol on ZnSe and ZnTe within the temperature range 20-140° was investigated. It was found that the reaction in principle develops in the direction of dehydrogenation. In the reaction a decrease of the catalytic activity of ZnSe and ZnTe is observed. The activation energy of the dehydrogenation of alcohol on ZnSe increases from 15 to 21 kcal/mol. The ZnSe sample annealed in air at 600° was less active than that not annealed. Elementary tellurium has a low catalytic activity. Radiographic and electronographic investigations as a result of comparison of thermodynamic characteristics showed that the phase changes of the catalyst are due to impurities in the basic sample and on temperature effects, but in no case on the course of catalysis. There are 11 figures, 3 tables, and 10 references, 7 of which are Soviet.

Card 2/3

SOV/62-58-12-3/22

Investigation of the Dependence of the Catalytic Activity of Binary Compounds of Metals of the Second Group With Non-Metals Upon the Position of the Elements in the Mendeleyev Periodic System. Communication 4: Catalytic Decomposition of Isopropyl Alcohol on Zinc Selenide and Telluride

ASSOCIATION:	Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry, Academy of Sciences, USSR)
SUBMITTED:	June 1, 1957

Card 3/3

SOV/20-120-2-30/63

AUTHORS: Krylov, O. V., Fokina, Ye. A.

TITLE: On the Catalytic Properties of Calcium Oxide (O kataliticheskikh svoystvakh okisi kal'tsiya)

PERIODICAL: Doklady Akademii nauk SSSR, Vol. 120, Nr 2, 1958 pp. 333 - 335 (USSR)

ABSTRACT: First, reference is made to various pertinent papers published previously. The investigation of the rules governing the basic catalysis as against the acid catalysis and the oxidation-reduction catalysis is very interesting. The dehydration of cyclohexane, the decomposition of isobutyl alcohol and of hydrazines on calcium oxide is investigated. The calcium oxide was produced by a dehydration of $Ca(OH)_2$ at 600° in a vacuum in the same container, in which the catalytic reaction was investigated. The reaction products were analyzed by freezing out. Besides, an additional analysis for H_2 was carried out. The hydrogen was made to pass through a palladium capillary. The kinetic curves of the dehydration of isopropyl alcohol in the adsorbed layer at 100-200° are given in a diagram. The amount

Card 1/3

of desorbed hydrogen at 180-200° is equal to the amount of acetone. At lower temperatures a 10-20% excess of hydrogen is found. This is explained by the more pronounced adsorption of acetone on CaO. With an initial pressure of C_6H_{12} amounting to 0,2 mm the dehydration of cyclohexane proceeds at 300-450° with a satisfactory velocity. Further details are given. These results are well reproducible. The activation energy of dehydration is 30,5 Kcal/ mol. A stoichometric decomposition of C_6H_{12} into $C_6H_6 + 3H_2$ was not observed. In another diagram the kinetic curves of the decomposition of hydrazine upon the absorbed layer at 50-200° are given. This investigation proves that it is possible to carry out three reactions of hydrogen separation upon CaO. Two of these reactions, the dehydration of alcohol and of cyclohexane proceed in the same direction as upon electron semiconductors. The direction of the third reaction, the decomposition of hydrazine differs from the direction taken by the reaction upon metals and semiconductors. The authors express their gratitude to the Corresponding Member AS USSR, S.Z.Roginskiy for his advice and a number of valuable suggestions. There are 4 figures and 13 references, 9 of which

On the Catalytic Properties of Calcium Oxide SOV/20-120-2-30/63

are Soviet.

PRESENTED: January 2, 1958, by S.I.Vol'fkovich, Member, Academy of Sciences, USSR

SUBMITTED: December 31, 1957

1. Calcium oxide--Catalytic properties

Card 3/3

5.3200

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66869
SOV/76-33-11-31/47

AUTHORS: Krylov, O.V., Fokina, Ye.A.

TITLE: Investigation of Some Catalytic Reactions on the Surface of Calcium Oxide

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 11, pp 2555-2558 (USSR)

ABSTRACT: In continuation of a previous paper (Ref 1) the authors investigated the decomposition of isopropanol and hydrazine as well as the dehydration of ethane and cyclohexane on calcium oxide. The decomposition of isopropanol was carried out in an adsorbed layer according to a method described earlier (Ref 2). The curves (Fig 1) are given of the decomposition of isopropanol at freezing out (-116°C) of the reaction products (acetone), in which case in the gas remained ? mainly hydrogen and the product of dehydrogenation,? propylene.? The hydrogen content was at 100°C - 64.3%, at 150°C - 74.6%, at 180°C - 78.8% and at 200°C - 84.0 -86.3%. The activation energy varied at 100-150°C in dependence on the degree of filling in the range, 21-30 kcal/mol and at 180-200°C from 32 to 36 kcal/mol. Ethane did not show any change on calcium at 0.4 mm Hg up to 600°C, above 600°C a small degree of pressure

4

Card 1/2

66869

SOV/76-33-11-31/47

Investigation of Some Catalytic Reactions on the Surface of Calcium Oxide

increase could be observed and hydrogen was found in the reaction products. The dehydrogenation experiments carried out with a cyclohexane put at disposal by G.V.Isagulyants, showed (Fig 3 kinetic decomposition curve at 400°C and varied initial pressure) that the dependence of the initial reaction rate is linear with the pressure of the cyclohexane (Fig 4). The activation energy of the dehydrogenation is 30.5 kcal/mol at 300-450°C which is in accordance with data by A.A.Balandin and I.I.Brusov (Ref 4), and M.Ya.Kagan and R.M.Flid (Ref 5). Hydrogen was determined as the dehydrogenation product. The hydrazine decomposition was also investigated in the adsorbed layer of the calcium oxide and it was established that at 50-200°C the main reaction products are hydrogen and nitrogen. There are 6 figures and 7 references, 6 of which are Soviet. 4

ASSOCIATION: Akademiya nauk SSSR, Institut fizicheskoy khimii, Moskva (Academy of Sciences, USSR, Institute of Physical Chemistry, Moscow)

Card 2/2

Fokina Ye. A.

PHASE I BOOK EXPLOITATION SOV/3921

Akademiya nauk SSSR. Institut fizicheskoy khimii

Problemy kinetiki i kataliza. [t] 10: Fizika i fiziko-khimiya kataliza (Problems of Kinetics and Catalysis. [vol.] 10: Physics and Physico-Chemistry of Catalysis) Moscow, Izd-vo AN SSSR, 1960. 461 p. Errata slip inserted. 2,600 copies printed.

Eds.: S.Z. Roginskiy, Corresponding Member of the Academy of Sciences USSR, and O.V. Krylov, Candidate of Chemistry; Ed. of Publishing House: A.L. Bankvitser; Tech. Ed.: G.A. Astaf'yeva.

PURPOSE: This collection of articles is addressed to physicists and chemists and to the community of scientists in general interested in recent research on the physics and physical chemistry of catalysis.

COVERAGE: The articles in this collection were read at the conference on the Physics and Physical Chemistry of Catalysis organized by the Otdel khimicheskikh nauk AN SSSR (Section of Chemical Sciences, Academy of Sciences USSR) and by the Academic Council on the problem of "the scientific bases for the selection of catalysts." The Conference was held at the Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry of the AS USSR) in Moscow, March 20-23, 1958. Of the great volume of material presented at the conference, only papers not published elsewhere were included in this collection.

II. CATALYSIS OVER METALS

(2)

KRYLOV, O.V.; FOKINA, Ye.A.

Isotopic study of the heterogeneous surfaces of oxide catalysts used in the decomposition of isopropyl alcohol. Part 1: Calcium oxide. Kin. i kat. 1 no. 3:421-430 S-O '60. (MIRA 13:11)

1. Institut fizicheskoy khimii AN SSSR.

(Isopropyl alcohol) (Catalysts) (Carbon--Isotopes)

S/195/60/001/004/006/015
B017/B055

AUTHORS: Krylov, O. V., Fokina, Ye. A.

TITLE: Application of the Isotopic Exchange Method for the Investigation of Surface Inhomogeneity of Oxide Catalysts by Decomposition of Isopropyl Alcohol. II. Aluminum Oxide and Zinc Oxide

PERIODICAL: Kinetika i kataliz, 1960, Vol. 1, No. 4, pp. 542-547

TEXT: Studies on the nature of active centers on the surface of Al_2O_3 were carried out by N. P. Keyyer (Ref. 2), A. A. Babushkin and A. V. Uvarov (Ref. 3), and V. E. Vasserberg and A. A. Balandin (Ref. 4). By examining the decomposition of isopropyl alcohol on the layer adsorbed on aluminum oxide by the differential isotope method, they found that the aluminum-oxide surface was inhomogeneous. Dehydration of isopropyl alcohol occurs on only 4-6% of the aluminum-oxide surface. The results obtained by studying the dehydration of isopropyl alcohol on aluminum oxide appear in Figs. 1 and 2. The specific activity of all reaction

Card 1/3

Application of the Isotopic Exchange Method for the Investigation of Surface Inhomogeneity of Oxide Catalysts by Decomposition of Isopropyl Alcohol. II. Aluminum Oxide and Zinc Oxide

S/195/60/001/004/006/015
B017/B055

products desorbed during isopropyl-alcohol dehydration was found to be constant. Desorption and dehydration of isopropyl alcohol on Al_2O_3 is illustrated in Fig. 4. The kinetics of isotopic exchange between isopropyl alcohol adsorbed on Al_2O_3 and isopropyl alcohol in the gaseous phase is graphically shown in Fig. 3. The decomposition of isopropyl alcohol on zinc oxide was investigated by the differential isotope exchange method whereby both dehydrogenation and dehydration products of isopropyl alcohol were found to have constant but different specific activity levels. Fig. 5 gives a graphic representation of the results obtained at decomposition of isopropyl alcohol on ZnO. Dehydrogenation and dehydration of isopropyl alcohol occur at different active centers of the zinc oxide surface. Dehydration occurs mainly at active centers having a lower activation energy. The kinetics of isotopic exchange between isopropyl alcohol adsorbed on ZnO and isopropyl alcohol in the gaseous phase is shown in Fig. 6. Isotopic exchange reactions of isopropyl alcohol adsorbed on ZnO and Al_2O_3 are much delayed, thus indicating the

Card 2/3

Application of the Isotopic Exchange Method for the Investigation of Surface Inhomogeneity of Oxide Catalysts by Decomposition of Isopropyl Alcohol. II. Aluminum Oxide and Zinc Oxide.

S/195/60/001/004/006/015
B017/B055

inhomogeneity of the active surface of the catalyst. There are 7 figures and 6 Soviet references.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry of the AS USSR)

SUBMITTED: March 23, 1960

Card 3/3

S/076/61/035/003/019/023
B121/B206

5 1190 2209, 1274, also 1160, 1164

AUTHORS: Krylov, O. V. and Fokina, Ye. A.

TITLE: Catalytic properties of new semiconductors with the structure of zincblende

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 3, 1961, 651-659

TEXT: The decomposition of isopropyl alcohol and hydrazine in the adsorption layer of the catalysts GaAs, Ga_2Se_3, $GaAs \cdot Ga_2Se_3$, $3GaAs \cdot Ga_2Se_3$, Ga_2Te_3, and CuBr was studied. These compounds of the types $A^{III}B^{V}$ and $A_2^{III}B_3^{VI}$ were prepared by N. A. Goryunova and placed at the authors' disposal. According to N. A. Goryunova, V. S. Grigor'yeva et al. (Ref. 13: Zh. tekhn. fiziki, 25, 1675, 1955), compounds of the $A_2^{III}B_3^{VI}$ type form solid solutions with compounds of the $A^{III}B^{V}$ type. The kinetic curves of the decomposition of isopropyl alcohol and hydrazine on these catalysts were recorded. From their course it may be seen that the decomposition of isopropyl alcohol at 130-270°C mainly proceeds in the form of dehydrogenation. The main decom-

Card 1/4

position products of hydrazine (90-250°C) are ammonia and nitrogen. The catalyst GaAs is not poisoned during the decomposition of isopropyl alcohol. The activation energy at temperatures below 220°C is ≈13-15 kcal/mole, and at temperatures above 225°C, ≈20-25 kcal/mole. The activation energy of the decomposition of N_2H_4 on GaAs at 100-200°C is approximately 16.5 kcal/mole. Besides dehydrogenation, other reactions occur on Ga_2Se_3. The activation energy of dehydrogenation amounts here to 14-19.5 kcal/mole. At 125-200°C, the decomposition of hydrazine on Ga_2Se_3 proceeds at a satisfactory rate. The decomposition of isopropyl alcohol on Ga_2Te_3 proceeds slowly at low temperatures, and 100% dehydrogenation sets in at elevated temperatures. A transition point lies at 145°C. At temperatures below 145°C, the activation energy of the decomposition of isopropyl alcohol is 2-3 kcal/mole, and at temperatures above 145°C, it is 11-19 kcal/mole. The decomposition of hydrazine on Ga_2Te_3 takes place at temperatures of 100-200°C. The catalytic activity of the compounds $GaAs \cdot Ga_2Se_3$ and $3GaAs \cdot Ga_2Se_3$ was only studied from the hydrazine decomposition, and it was established that the rate of reaction is slightly higher than on the catalysts GaAs and Ga_2Se_3. On CuBr, isopropyl alcohol decomposes at 200-270°C at a considerable rate. At 200°C, a 61% dehydrogenation takes place, and up to 270°C this proportion decreases to 36%. The activation energy of the reaction varies from 26 to 31 kcal/mole. Hydrazine on CuBr starts decomposing at 250°C, accompanied by side reactions and simultaneous chemical change of the catalyst under the formation of metallic copper. It was further established that in the series Ge, GeAs, ZnSe, CuBr and during the conversion of ZnTe to ZnSe and ZnS, and of Ga_2Te_3 to Ga_2Se_3, which groups of compounds show identical crystalline structure and similar lattice parameters, a decrease of the catalytic action sets in with simultaneous increase of the activation energy of the catalytic reaction, with an increase of the width of the forbidden band (i. e., with increasing ionic character of the bond). Semiconductors with bonds of highly ionic character have therefore poor catalytic properties. The authors thank S. Z. Roginskiy, Corresponding Member AS USSR, for advice. V. M. Frolov and Yu. N. Rufov are mentioned in connection with the study of the catalytic properties of pure germanium. There are 8 figures, 2 tables, and 19 references: 12 Soviet-bloc and 7 non-Soviet-bloc. The four most recent refer-

X

S/076/61/035/003/019/023
B121/B206

Catalytic properties ...

ences to English-language publications read as follows: G. -M. Schwab, Semiconductors surface physics, Philadelphia, p. 283, 1957; G. -M. Schwab, Advances in Catalysis, N. Y., 9, 229, 1957; G. -M. Schwab, G. Greger, S. Krawczynski, J. Penzkofer, Z. phys. Chem. (N. F.), 15, 363, 1958; W. E. Garner, Advances in Catalysis, N. Y., 9, 169, 1957.

ASSOCIATION: Institut fizicheskoy khimii Akademiya nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences USSR)

PRESENTED: May 19, 1959

SUBMITTED: July 15, 1959

Card 4/4

GAZIYEV, G.A.; KRYLOV, O.V.; ROGINSKIY, S.Z.; SAMSONOV, G.V.; FOKINA, Ye.A.;
YANOVSKIY, M.I.

Dehydrogenation of cyclohexane on certain carbides, borides, and silicides. Dokl. AN SSSR 140 no.4:863-866 O '61. (MIRA 14:9)

1. Chlen-korrespondent AN SSSR (for Roginskiy).
(Cyclohexane) (Dehydrogenation) (Catalysts)

S/204/62/002/005/003/007
E075/E136

AUTHORS: Krylov, O.V., Kushnerev, M.Ya., and Fokina, Ye.A.

TITLE: Formation of active surface in the catalysts for the polymerization of ethylene oxide

PERIODICAL: Neftekhimiya, v.2, no.5, 1962, 697-704

TEXT: In view of the low activity of technical BeO and MgO, the authors studied the preparation of the active oxide catalysts by decomposing Be and Mg hydroxides and carbonates. The action of catalytic poisons (H_2O and CO_2) was also investigated. A MacBain balance was used to follow the decomposition and the adsorption kinetics of ethylene oxide (related to polymerization kinetics), CO_2 and H_2O. Adsorption of ethylene oxide occurs before polymerization, the rate of adsorption being proportional to log t (t = time). Subsequent polymerization takes place at a constant rate which depends on the number of active polymerization centres on the catalyst surface. The catalytic activity grows with the degree of decomposition of the hydroxides. The most active MgO has 30-50% of its surface covered by water. For $Be(OH)_2$ the most active catalyst results after its complete dehydration.

Card 1/2

Formation of active surface in the ... S/204/62/002/005/003/007
E075/E136

Freshly prepared MgO and BeO reduce their high activity on exposure to air, whilst their surface areas decrease by only 10-20%. This is explained by the preferential adsorption of water on the active centres, which lowers the adsorption and polymerization of ethylene oxide. Initial adsorption of CO_2 leads to the increase of ethylene oxide adsorption, but decreases the polymerization rate by a factor of 4-5. Further CO_2 adsorption has no effect. It is inferred from the adsorption kinetics that the active centres are Mg^{2+} or Be^{2+} ions interacting with the oxygen in ethylene oxide molecules.
There are 9 figures and 1 table.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR
(Institute of Chemical Physics, AS USSR)

SUBMITTED: May 5, 1962

Card 2/2

FOKINA, Ye.A.; TRETYAKOV, I.I.; KRYLOV, O.V.; MARKOVA, S.A.

"Untersuching des Mechanismus der Adsorption und des Isotopenaustausches von CO2 an MgO und Mg(OH)2."

Third Working Conference on Stable Isotopes, 28 October to 2 November 1963, Leipzig.

FOKINA, Ye.A.; ZAVADSKIY, E.A.

Effect of magnetic fields on martensite transformation in steel. Fiz. met. i metalloved. 16 no.2:311-313 Ag '63. (MIRA 16:8)

1. Institut fiziki metallov AN SSSR.
(Steel—Metallography)
(Magnetic fields)

KRYLOV, O. V.; KUSHNEREV, M. Ya.; FOKINA, Ye. A.; MARKOVA, Z. A. 3

"Elementary mechanism of heterogeneous catalytic polymerization of ethylene oxide."

report submitted to 3rd Intl Cong on Catalysis, Amsterdam, 20-25 Jul 64.

ACCESSION NR: AP4035152 S/0195/64/005/002/0284/0292

AUTHOR: Kry*lov, O. V.; Fokina, Ye. A.

TITLE: Relationship between the catalytic activity of some semiconductors and the forbidden zone width

SOURCE: Kinetika i kataliz, v. 5, no. 2, 1964, 284-292

TOPIC TAGS: semiconductor catalysts, forbidden zone, forbidden zone width, catalysis, gadolinium semiconductor, germanium semiconductor, indium semiconductor, zinc semiconductor, copper semiconductor

ABSTRACT: Having found earlier that the catalytic activity of the isoelectronic series of germanium semiconductors (Ge, GaAs, ZnSe, CuBr) in the decomposition of isopropyl alcohol and hydrazine decreases from Ge to CuBr, the authors carried out a study to correlate the catalytic activity with the width of the forbidden zone. They studied decomposition of isopropyl alcohol in the adsorption layer'(in steady-state conditions) at low pressure on the surface of the following semiconductors: BAs, BP, GaAs, $GaAs \cdot Ga_2Se_3$ $GaAs \cdot 3Ga_2Se_3$, GaSb, , GaSe, GaTe, InAs, InSb, In_2Te_3 in the temperature interval of 50-320C. Over most of these semiconductors,

Card 1/2

ACCESSION NR: AP4035152

alcohol is dehydrogenated. The above data were compared with those obtained by the authors when decomposing alcohol over GdS, CuBr, Ga_2Se_3, Ga_2Te_3, Ge, ZnO, ZnS, ZnSe and ZnTe. It is shown that catalytic activity declines with the increasing width of the forbidden zone. With that, the decline of the rate constant may be caused by the decline of k_0 rather than the increase in E. This fact may be explained by catalysis near the transition point from the impurity band to the conductivity band. It is shown in which cases the compensation effect is observed: symbatic change of E and log k_0. "Gratitude is expressed to S. Z. Roginskiy and V. M. Frolov for valuable discussions." Orig. art. has: 10 figures, 3 formulas, 1 table.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics AN SSSR)

SUBMITTED: 25Jul62 DATE ACQ: 20May64 ENCL: 00

SUB CODE: SS, GC NO REF SOV: 020 OTHER: 002

Card 2/2

KRYLOV, O.V.; MARKOVA, Z.A.; TRET'YAKOV, I.I.; FOKINA, Ye.A.

Mechanism of adsorption and isotope exchange of CO_2 on MgO and $Mg(OH)_2$. Kin. i kat. 6 no.1:128-136 Ja-F '65. (MIRA 18:6)

1. Institut khimicheskoy fiziki AN SSSR.

L 61052-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RM

ACCESSION NR: AP5016500 UR/0190/65/007/006/0984/0991

66.095.264:678.55 4/

AUTHORS: Krylov, O. V.;44,55 Kushnerev, M. Ya.;44,55 Markova, Z. A.;44,55 Fokina, Ye. A.44,55 0

TITLE: Mechanism of the heterogeneous catalytic polymerization of ethylene oxide

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 6, 1965, 984-991

TOPIC TAGS: polymer, resin, ethylene oxide, heterogeneous catalysis, reaction mechanism

ABSTRACT: The investigation was carried out with the view of establishing criteria for the selection of ethylene oxide polymerization catalysts. The work is an extension of the work of O. V. Krylov, Ye. A. Fokina (Sb. Kataliticheskiye reaktsii v zhidkoy faze, Izd. AN. KazSSR, Alma-Ata, 1963, str. 389). Experiments were performed at 25C. The experimental results are summarized in Fig. on the Enclosure. A reaction mechanism for the reaction is proposed. Orig. art. has: 4 graphs, 1 equation, and 3 illustrations.

ASSOCIATION: Institut khimicheskoy fiziki, AN SSSR (Institute for Chemical Physics, AN SSSR) 44,55

Card 1/3

L 61052-65

ACCESSION NR: AP5016500

SUBMITTED: 26Jun64 ENCL: 01 SUB CODE: OC, GC

NO REF SOV: 008 OTHER: 006

Card 2/3

L 61052-65

ACCESSION NR: AP5016500 **ENCLOSURE: 01**

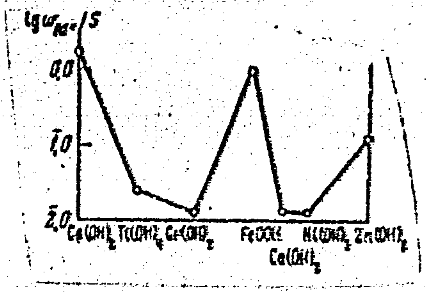

Fig. 1. Change in the specific catalytic activity of IV period metal hydroxides

282
Card 3/3

L 62542-65 EWP(z)/EWP(c)/EWT(m)/EWP(b)/T/EWA(d)/EWP(t) MJW/JD

ACCESSION NR: AP5011754 UR/0126/65/019/004/0592/0595
669.112.227.34:538.69. 44
32
B

AUTHOR: Fokina, Ye. A.; Smirnov, L. V.; Sadovskiy, V. D.

TITLE: Effect of a pulsed magnetic field on the temperature interval of martensitic transformation in steel

SOURCE: Fizika metallov i metallovedeniye, v. 19, no. 4, 1965, 592-595 14

TOPIC TAGS: martensitic transformation, steel, magnetic treatment 4

ABSTRACT: Several grades of steel were studied in an attempt to determine the effect which an applied pulsed magnetic field has on the position of the martensitic transformation temperature range. The chemical compositions of the steels studied are given in table 1 of the Enclosure. The magnetometric method was used to determine the martensite points and the quantity of ferromagnetic phase. The amplitude of the field was 400,000 oersteds at a frequency of 5 kc. It was found that the temperature of martensitic transformation in steels and iron-base carbon-free alloys is shifted toward the higher temperature side under the action of a pulsed magnetic field. The amount of this shift at a given supercooling value increases with

Card 1/3

L 62542-65

ACCESSION NR: AP5011754

3

the field strength as does the degree of transformation. In some cases, a strong field causes additional dissociation of residual austenite, however this effect is small and can hardly have any practical significance. "The authors express their gratitude to I. G. Fakindov and E. A. Zavadskiy for help in carrying out the experiments where superstrong pulsed magnetic fields were used." Orig. art. has: 4 figures, 2 tables.

ASSOCIATION: Institut fiziki metallov AN SSSR (Institute of Physics of Metals, AN SSSR)

SUBMITTED: 16Jul64 ENCL: 01 SUB CODE: MM, EM

NO REF SOV: 004 OTHER: 000

Card 2/3

L 62542-65

ACCESSION NR: AP5011754 ENCLOSURE: 01 9

TABLE 1

Grade of steel	Chemical Composition, %						
	C	Ni	Cr	Mn	Si	Mo	V
50Kh2N22 18	0.49	21.9	2.04	0.26	0.63	-	-
50KhN23 18	0.52	22.8	1.49	0.19	0.30	-	-
50Kh2N16 18	0.52	16.44	2.01	0.47	0.63	-	-
50Kh2N3 18	0.51	3.21	2.00	0.35	0.11	-	-
25N24M2 18	0.21	24.10	-	0.22	0.06	2.16	-
N30 18	0.06	29.72	-	0.15	-	-	-
Kh12F 18	1.35	-	12.3	0.19	-	-	0.92
ShKh15 18	1.09	-	1.37	0.30	0.26	-	-
U12 18	1.25	-	0.2	0.33	0.26	-	-

KC

Card 3/3

L 56075-65 EWT(d)/EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c)
Pf-4/Pad IJP(c) MJW/JD/HW/JG/EM

ACCESSION NR: AP5013810 UR/0126/65/019/005/0722/0725
669.112.227.34 : 538.69

60
54
B

AUTHOR: Fokina, Ye. A.; Smirnov, L. V.; Sadovskiy, V. D.

TITLE: Destabilization of austenite by a powerful pulsed magnetic field

SOURCE: Fizika metallov i metallovedeniye, v. 19, no. 5, 1965, 722-725

TOPIC TAGS: destabilized austenite, stabilized austenite, martensite transformation, pulsed magnetic field, plastic deformation, supercooled austenite, kinetic maximum

26

ABSTRACT: The authors investigated the effect of a pulsed magnetic field on: austenite stabilized by plastic deformation in 50KhN22 steel (0.49% C, 21.9% Ni, 2.04% Cr, 0.26% Mn, 0.63% Si); austenite stabilized by isothermal [illegible] to temperatures above the martensite point in N14Kh10 steel [illegible] 13.73% Ni, 9.70% Cr, 0.33% Mn, 0.48% Si); martensite transformation in austenite supercooled to the temperature range below the kinetic maximum in N24G4 steel (0.03% C, 23.6% Ni, 3.6% Mn) (0 to -196°C). The amount of martensite in the specimens was controlled by the magnetometric method.

4

Card 1/3

L 56075-65

ACCESSION NR: AP5013810

4

The pulsed magnetization of the specimens was accomplished in an installation for generating superpowerful pulsed magnetic fields, described by Fakidov and Zavadskiy (Fizika metallov i metallovedeniye, 1958, 6, 569). The field amplitude in the expetiments reached 500 k-oersteds and the frequency, approximately 5000 cps. It was established that the application of the pulsed magnetic field in all cases leads to the destabilization of austenite, the degree of martensite transformation being then a function of the intensity of the field applied. The increase in the degree of plastic deformation leads to an increase in the magnitude of the threshold field. The pulsed magnetic field destabilizes austenite following the latter's thermal stabilization. In alloys with isothermal martensite transformation, supercooled to a temperature range below the kinetic maximum (to the temperature of liquid nitrogen) the pulsed magnetic field induces a martensite transformation, the degree of this transformation also being a function of the intensity of the field applied. "The authors consider it their pleasant duty to express their appreciation to I.G. Fakidov and E. A. Zavadskiy for technical assistance in conducting the experiments employing superpowerful pulsed magnetic fields, and to N. A. Borodina and E. I. Estrin for their kindness in providing alloy specimens."

Card 2/3

L 56075-65

2

ACCESSION NR: AP5013810

Orig. art. has: 4 figures, 1 table.

ASSOCIATION: Institut fiziki metallov AN SSSR (Institute of Metal Physics, AN SSSR)

SUBMITTED: 28Jul64

ENCL: 00

SUB CODE: MM, EM

NO REF SOV: 007

OTHER: 000

Heat Treatment 14

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Card 3/3

L 4186-66 EWT(m)/EPF(c)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b)/EWA(c) IJP(c)

ACCESSION NR: AP5016535 MJW/JD UR/0126/65/019/006/0932/0933 81/72 B

AUTHOR: Fokina, Ye. A.; 44,55 Smirnov, L. V.; 44,55 Sadovskiy, V. D.; 44,55 Prekul, A. F. 44,55

TITLE: On the problem of the effect of a constant magnetic field on the martensite transformation in steel 14,44,55

SOURCE: Fizika metallov i metallovedeniye, v. 19, no. 6, 1965, 932-933

TOPIC TAGS: martensitic transformation, constant magnetic field, strong magnetic field, liquid helium, steel

ABSTRACT: At the Institute of Physics of Metals 21 experiments were performed on 50KhN23 steel in a slowly increasing then constant (for 6 min) magnetic field of 40 kOe in a solenoid with a superconducting winding at liquid helium temperature. Without the magnetic field, this steel does not undergo a martensite transformation on cooling to -196°C, but cooling to the liquid helium temperature causes the formation of 8-9% martensite. When the field was applied, an additional 12% martensite was formed. Similar experiments with the same steel carried out at the Physics Institute gave analogous results. In another steel, 50Kh2N22, in which no martensite is formed on cooling in liquid helium, the application of a constant magnetic

Card 1/2

L 4186-66

ACCESSION NR: AP5016535

9

field of 43.5 kOe caused the formation of 8% martensite. It is concluded that the action of the magnetic field on the martensite transformation should not be attributed to the influence of the mechanical forces arising during pulsed magnetization, since the field used was constant, not pulsed. "The authors thank N. V. Volkenshteyn and V. R. Karasik for affording them the opportunity to carry out the experiments."44,55 44,55

ASSOCIATION: Institut fiziki metallov AN SSSR (Institute of Physics of Metals, AN SSSR) 44,55

SUBMITTED: 26Feb65 ENCL: 00 SUB CODE: MM

NO REF SOV: 004 OTHER: 000

Card 2/2 Md

ADONIN, A.N., kand.tekhn.nauk; ALIVERDIZADE, K.S., kand.tekhn.nauk; AMIYAN, V.A., kand.tekhn.nauk; ANISIMOV, Ye.P., inzh.; APRESOV, K.A., dotsent; BELEN'KIY, V.N., inzh.; BOGDANOV, A.A., kand. tekhn.nauk; GORBENKO, L.A., inzh.; DANIELYAN, A.A., inzh.; DAKHNOV, V.N., prof.; IVANKOV, R.A., inzh.; KORNEYEV, M.I., inzh.; LAVRUSHKO, P.N., inzh.; LESIK, N.P., inzh.; LOVLYA, S.A., kand. tekhn.nauk; LOGINOV, B.G., kand.tekhn.nauk; MININZON, G.M., kand. tekhn.nauk; MOLCHANOV, G.V., kand.tekhn.nauk; MURAV'YEV, I.M., prof.; MUSHIN, A.Z., inzh.; OL'SHVANG, D.Ye., inzh.; PODGORNOV, M.I., inzh.; FAYERMAN, I.L., kand.tekhn.nauk; FOKINA, Ye.D., inzh.; EFISHEV, A.M., inzh. [deceased]; YERSHOV, P.R., vedushchiy red.; MUKHINA, E.A., tekhn.red.

[Reference book on petroleum production] Spravochnik po dobyche nefti. Moskva, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry. Vol.2. 1959. 589 p. (MIRA 13:2)
(Oil fields--Production methods)

PAVLOV, A.V.; FOKINA, Ye.I.

Distribution of germanium in the cross section of a simple coal seam. Inform. sbor. NIIGA no.30:42-51 '62. (MIRA 17:1)

VENGROVA, I.V.; POLYANSKAYA, T.G.; RABINOVICH, R.[illegible].; FOKINA, Ye.N.

Discoveries and events. Sov. zdrav. 22 no.9:76 '63. (MIRA 17:4)

1. Otdel istorii meditsiny i sovetskogo zdravookhraneniya Instituta organizatsii zdravookhraneniya i istorii meditsiny imeni N.A. Semashko.

VENGROVA, I.V.; GUSAKOVA, T.V.; ZINOV'YEV, I.A.; POLYANSKAYA, T.G.;
FOKINA, Ye.N.; PETROV, B.D., red.

[Significant dates and anniversaries in the history of medicine for 1960] Znamenatel'nye i iubileinye daty istorii meditsiny 1960 goda. Sost. I.V.Vengrova i dr. Moskva, M-vo zdravookhraneniia SSSR, 1959. 53 p. (MIRA 13:1)

1. Moscow. Institut organizatsii zdravookhraneniya i istorii meditsiny imeni N.A.Semashko. 2. Zaveduyushchiy otdelom istorii meditsiny Instituta organizatsii zdravookhraneniya i istorii meditsiny imeni N.A.Semashko (for Petrov).
(MEDICINE--BIOGRAPHY)

FOKINA, Ye.N. (Moskva, 21, Teplyy per., dl. 18, kv. 19)

Albrecht von Haller (1708-1777) and his activity as anatomist; 250th anniversary of his birth. Arkh.anat.gist. i embr. 36 no.2: 83-85 F '59. (MIRA 12:4)

(ANATOMY,
contribution of Albrecht von Haller (Rus))
(BIOGRAPHIES,
Haller, Albrecht von (Rus))

FOKINA, Ye.N.

Foreign reviews of Soviet works on the history of medicine. Sov. zdrav. 19 no.5:71-72 '60. (MIRA 13:9)
(MEDICINE)

FOKINA, Ye.N.

"The physician in a socialist society" by A.Mette, G. Misgeld, K.Winter. Reviewed by E.N.Fokina. Sov.zdrav. 19 no.5:72-73 '60. (MIRA 13:9)

(SOCIAL MEDICINE) (METTE, A.)
(MISGELD, G.) (WINTER, K.)

ZINOV'YEV, I.A.; KAL'YU, T.V.; POLYANSKAYA, T.G.; RABINOVICH, R.S.;
FOKINA~~, Ye.N.~~

Significant and anniversary dates of the history of medicine during 1962. Sov. zdrav. 20 no.9:76-79 '61. (MIRA 14:12)

1. Iz Instituta organizatsii zdravookhraneniya i istorii meditsiny imeni Semashko Ministerstva zdravookhraneniya SSSR.
(MEDICINE)

ZINOV'YEV, I.A.; KAL'YU, T.V.; POLYANSKAYA, T.G.; RABINOVICH, R.S.;
FOKINA, Ye.N.; PRONINA, N.D., tekhn. red.

[Significant and aniversary dates in the history of medicine for 1963]Znamenatel'nye i iubileinye daty istorii meditsiny 1963 goda. Moskva, Medgiz, 1962. 61 p. (MIRA 15:11)
(MEDICINE)

ZINOV'YEV, I.A.; KAL'YU, T.V.; POLYANSKAYA, T.G.; RABINOVICH, R.S.;
FOKINA, Ye.N.; ZUYEVA, N.K., tekhn. red.;

[Significant and jubilee dates in the history of medicine for 1962] Znamenatel'nye i iubileinye daty istorii meditsiny 1962 goda. Moskva, Medgiz, 1962. 71 p. (MIRA 15:4)
(MEDICINE)

ZINOV'YEV, I.A.; KAL'YU, T.V.; POLYANSKAYA, T.G.; RABINOVICH, R.S.; FOKINA, Ye.N.

Significant and anniversary dates in the history of medicine: June. Sov. zdrav. 21 no.1:61-63 '62. (MIRA 15:2)

1. Institut organizatsii zdravookhraneniya i istorii meditsiny imeni N.A.Somashko Ministerstva zdravookhraneniya SSSR, otdel istorii meditsiny.

(MEDICINE)

FOKINA, Ye.N. (Moskva)

Control of alcoholism in Rusia; works of A.M.Korovin, 1865-1943.
Sov.zdrav. 21 no.7:60-64 '62. (MIRA 15:8)
(KOROVIN, ALEKSANDR MIKHAILOVICH, 1865-1943)

ZINOV'YEV, I.A.; POLYANSKAYA, T.G.; RABINOVICH, R.S.; KAL'YU, T.V.;
FOKINA, Ye.N.

Significant and anniversary dates in the history of medicine in 1963 - May. Sov.zdrav. 22 no.2:67-68 '63. (MIRA 16:2)
(MEDICINE)

VENGROVA, I.V.; POLYANSKAYA, T.G.; RABINOVICH, R.S.; FOKINA, Ye.N.

Important and anniversary dates in the history of medicine in 1964. Sov. zdrav. 22 no.9:77-79 '63. (MIRA 17:4)

1. Otdel istorii meditsiny i sovetskogo zdravookhraneniya Instituta organizatsii zdravookhraneniya i istorii meditsiny imeni N.A. Semashko.

VENGROVA, I.V.; POLYANSKAYA, T.G.; RABINOVICH, R.S.; FOKINA, Ye.N.;
PETROV, B.D., prof., red.

[Significant dates and anniversaries of medicine in 1965] Znamenatel'nye i iubileinye daty istorii meditsiny 1965 goda. Pod red. B.D.Petrova. Moskva, Meditsina, 1964. 74 p. (MIRA 17:12)

1. Zaveduyushchiy otdelom istorii meditsiny i sovetskogo zdravookhraneniya Instituta organizatsii zdravookhraneniya i istorii meditsiny im. N.A.Semashko (for Petrov).

FOKINA, Ye.N. (Moskva)

Group of Russian doctors in a painting from the first half of the 19th century by N.I.Podkliuchnikov. Vest. khir. 94 no.1:126-131 Ja '65. (MIRA 18:7)

5(2),5(3),5(4) 05885

AUTHORS: Fialkov, Ya. A. (Deceased), Fokina, Z. A. SOV/78-4-11-38/50

TITLE: Physicochemical Investigation of the Galliumtrichloride-nitrobenzene System

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 11, pp 2611-2616 (USSR)

ABSTRACT: Numerous publication data, many of which are based on papers by V. A. Plotnikov and his school, prove the distinct capability of halogen compounds of aluminum of forming complex compounds also in nonaqueous systems. The halogen compounds of gallium have been little investigated so far. The papers by I. A. Sheka (Refs 9, 10) are mentioned. The complex compounds mentioned in publications correspond to those of aluminum, and are listed in table 1. The system $GaCl_3$ - $C_6H_5NO_2$ was thermally analyzed; its electric conductivity and the decomposition potential were measured, and an electrolysis was carried out. The thermal analysis (Table 2, Fig 2) carried out in Stepanov ampullae (Fig 1) yielded, as in the case of Al, two compounds: $GaCl_3 \cdot C_6H_5NO_2$ (melting point 64°), and the incongruently melting $GaCl_3 \cdot 2C_6H_5NO_2$. The measurement of

Card 1/2

05885

SOV/78-4-11-38/50

Physicochemical Investigation of the
Galliumtrichloride-nitrobenzene System

the electric conductivity was carried out by means of a sound generator of type ZG-10, frequency 1500 c/s, and a tube of type 6E5 as a zero instrument (Figs 2, 3, Table 3); here, the compound $GaCl_3 \cdot C_6H_5NO_2$ could be even detected at 75°. $GaCl_3$ exhibits much lower electrolytic properties as compared with $AlCl_3$ (Fig 4). The measurement of the decomposition potential yielded 1.15 v, while the potential computed from the formation heat of $GaCl_3$ is equal to 1.86 v. A similar reduction of the decomposition potential in contrast to the value computed was also observed in the solutions of aluminum halogen compounds in nitrobenzene (Refs 26-28), and explained by the discharge of the solvated Al-ions and the depolarizing effect of nitrobenzene. This should also prove correct for the system with $GaCl_3$. There are 4 figures, 3 tables, and 28 references, 12 of which are Soviet.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii Akademii nauk USSR (Institute of General and Inorganic Chemistry of the Academy of Sciences, UkrSSR)

SUBMITTED: July 2, 1958

Card 2/2

S/073/63/029/001/003/009
A057/A126

AUTHORS: Fortunatov, N.S., Fokina, Z.A.

TITLE: The solubility of gallium, indium, and thallium chloride in sulfur monochloride

PERIODICAL: Ukrainskiy khimicheskiy zhurnal, v. 29, no. 1, 1963, 16 - 20

TEXT: N.S. Fortunatov published in an earlier work [Kompleksnaya pererabotka sul'fidnykh rud (Complex reprocessing of sulfidic ores), Ed. AS UkrSSR, 1959] a method for the digestion of sulfidic polymetallic ores by chlorination with dry chlorine gas in sulfur monochlorides (S_2Cl_2). The present paper deals with investigations of the behavior of Ga, In, and Tl chlorides under such conditions. Quantitative data of the solubility of these chlorides in S_2Cl_2 or S_2Cl_2, respectively, with excess chlorine gas at 20 to 120°C were obtained and also results on distillation of the chlorides with S_2Cl_2. Complex-formation in these systems will be studied in future investigations. The solubility was measured in a thermostated cylinder with a stirrer at 20, 40, 60, 80, and 120°C by determining Ga as oxide, and In and Tl polarographically. The analysis of liquid equi-

Card 1/2

librated phases was carried out at 25, 35, 45, 50, 55 and 65°C. A binodal of phase separation was drawn for the system $GaCl_3$-S_2Cl_2. The complex $3GaCl_3 \cdot SCl_4$, which is insoluble in S_2Cl_2, is formed when excess chlorine is added to $GaCl_3$ solutions. $GaCl_3$ is distilled together with S_2Cl_2. No Tl could be distilled with S_2Cl_2 from TlCl, and only small amounts (about 10 times less than in the solution) of $InCl_3$ were distilled. The solubility of $InCl_3$ or TlCl in S_2Cl_2 does not change by passing chlorine gas through the solution. The different behavior of Ga, In, and Tl chloride in S_2Cl_2 is apparently connected with the different degree of interaction between these chlorides and S_2Cl_2. Possibly relatively stable $GaCl_3$ solvates are formed, while no reaction occurs with TlCl and $InCl_3$. This decrease in the reaction rate corresponds to known literature data upon the drop of "complex-formation ability" in the sequence Ga, In, Tl. There are 1 figure and 4 tables.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN USSR (Institute of General and Inorganic Chemistry, AS UkrSSR)

SUBMITTED: July 16, 1961

Card 2/2

FORTUNATOV, N.S.; FOKINA, Z.A.; KOPA, M.V.; BIRYUK, L.I.

Interaction of tetrachlorides of elements of group IV with sulfur monochloride. Ukr.khim.zhur. 31 no.2:148-153 '65.

(MIRA 18:4)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.

L 42824-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6029838 SOURCE CODE: UR/0073/66/032/008/0900/0901

AUTHOR: Fortunatov, N. S.; Kublanovskiy, V. S.; Timoshchenko, N. I.; Fokina, Z. A.

33

ORG: Institute of General and Inorganic Chemistry, AN UkrSSR (Institut obshchey i neorganicheskoy khimii AN UkrSSR)

B

TITLE: Chlorination in sulfur chloride medium with help of ultraviolet irradiation

SOURCE: Ukrainskiy khimicheskiy zhurnal, v. 32, no. 8, 1966, 900-901

TOPIC TAGS: chlorination, metal extracting, ultraviolet irradiation, sulfur chloride, pyrite, sphalerite, molybdenum oxide, vanadium pentoxide

ABSTRACT: A series of experiments were described in which ultraviolet irradiation was applied in low-temperature chlorination of sulfidic and oxidic ores for the purpose of intensification of the process. Earlier, extraction of iron and zinc from polymetallic sulfidic ores was found to be only 65—75% complete when conventional, low-temperature chlorination in sulfur chloride medium was applied. Experimental chlorination of pyrite, sphalerite, vanadium pentoxide (V_2O_5), and molybdenum trioxide (MoO_3) was carried out at 137C in a quartz tube irradiated by a PRK-2 lamp or without irradiation. Chemical separation of the chlorination products was described for each material. The percentage of material chlorinated with and without irradiation was: in the case of pyrite and sphalerite—78% versus 46% in 30 min; in the case of V_2O_5—100 versus about 60% in 60 min; and in the case of MoO_3—80 versus

Card 1/2 UDC: 66.542.944.03

L 42824-66

ACC NR: AP6029838

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about 20% in 20 min. A leveling of the yield at 80% was observed in case of MoO_3 chlorination because of substitution of sulfur for oxygen in the first stage of the process. In all cases irradiation significantly increased the chlorination rate, as shown by the respective positions of chlorination curves with and without irradiation. Orig. art. has: 2 figures. [JK]

SUB CODE: 11/ SUBM DATE: 23Mar65/ ORIG REF: 003/ATD PRESS:5066

Card 2/2

FOKINA, Z.V., zootekhnik-selektsioner.

Put an end to underrating breeding stock. Ptitsevodstvo 8 no.5:36
My '58. (MIRA 11:5)

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(Geese)

FOKINA, Z.V., aspirant

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(Roosters)

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FOKMAN, Igor, inz.; HOLUBEK, Rudolf, inz.

Possibility of using the Puccinellia distans as prospective grass for saline soils. Rost vyroba 10 no. 3:331-342 Mr '64.

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Construction of a new type of interlocked industrial building by assembly-line methods. Prom. stroi. 40 no.5:4-9 '62. (MIRA 15:5)

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2. Trest Mosstroy No.2 (for Agayan).

(Factories--Design and construction)

SHVIDENKO, Valentin Iosifovich, prof.; MATOKHIN, Vladimir Pavlovich, dots., kand. tekhn. nauk; SMIRNOV, Aleksey Mikhaylovich, dots., kand. tekhn.nauk; FOKOV, Rostislav Ivanovich, kand. tekhn. nauk; CHERNYSHEV, Sergey Fedorovich, dots.kand.tekhn. nauk; YAKIMENKO, L.I., red.

[Assembly of multistory industrial buildings] Montazh mnogoetazhnykh promyshlennykh zdanii. Khar'kov, Izd-vo Khar'kovskogo univ., 1964. 142 p. (MIRA 18:3)

POKOV, R.I., kand.tekhn.nauk; FISH, A.M., inzh.; LERMAN, I.A., inzh.

Planning the organization of the construction of a large industrial building. Prom.stroi. 42 no.7:4-9 '65.

(MIRA 18:8)

FOKS, A.D.; MILLER, S.Ye.; VEIS, M.T.; LOMIZE, L.G. [translator]; MIRIMANOV, Ruben Gayevich, redaktor; KRYUKOV, I.A., redaktor; KORUZEV, N.N., tekhnicheskiy redaktor

[Behavior and application of ferrites in the microwave region. Translated from the English] Svoistva ferritov i ikh primenenie v diapazone SVCH. Perevod s angliiskogo L.G. Lomize. Moskva, Izd-vo "Sovetskoe radio," 1956. 99 p. (MLRA 9:3)

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MISZEL, Leon; FOKS, Brunon

New laboratory appliance blood taking from the finger. Polski tygod. lek. 9 no.41:1332 11 Oct 54.

1. Ze Szpitala Miejskiego w Gliwicach, oddz. wewn. II, ordynator: dr Leon Miszel, dyrektor Szpitala: dr Wladyslaw Orlewski.

(BLOOD,
taking from finger, appar.)
(HEMATOLOGY, apparatus and instruments,
for blood taking from finger)

FOKS, Henryk; SAWLEWICZ, Jozef, prof. dr.

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Ways for reducing the acidity in the production of edible hydrogenated fats. Masl.-zhir. prom. 29 no.8:20-22 Ag '63. (MIRA 16:10)

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FOKSHA, L.T.; BALAKHNICHEVA, T., red.; MANDEL'BAUM, M., tekhn.red.

[Trade of the Moldavian S.S.R. in the seven-year plan] Torgovlia Moldavskoi SSR v semiletke. Kishinev, Gos.izd-vo "Kartia Moldoveniaske," 1959. 99 p. (MIRA 13:7)
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FOKSHANSKIY, Yu.L.

Some features of the structure of the basement of the southern Moscow syneclise and the Ryazan trough based on data from geophysical studies. Geofiz. razved. no.8:56-67 '62. (MIRA 15:7)
(Moscow Basin--Geology, Structural)
(Prospecting--Geophysical methods)

FOKT, E.

The variation of the electrical conductivity of certain resistance alloys of the solid-solution type. T. Dumitriu, D. Drimer, and E. Fokt. *Rev. mét., Acad. rép. populaire Roumaine* 3, No. 3, 81-90(1958)(in French); cf. *C.A.* 53, 2812*d*.—The temp.-cond. characteristics of 5 alloys are discussed on the basis of 2 hypotheses. One, a proposed order-disorder transformation, accounts for the range of temp. over which the characteristic has a neg. slope. The other permits the same temp.-cond. variation, but postulates the gradual disappearance of certain agglomerates (lacunas) in the solid soln. with increasing temp. For the Cr-Ni alloys studied, the Hall const. is pos. As a result, for more of the electrons, there is a 2nd mechanism of conduction through the lacunas. This complex method of conduction occurs, directly as a result of impurities and defect, in the upper level of the conduction band. E. M. Sherwood

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A semiconductor component of electrical properties in some resistant alloys of the solid-solution type. T. Dulkmită, D. Drimer, and E. Fokt. *Acad. rep. populare Romîne, Studii şi cercetări ~~de metalur~~gia* 3, 151-60(1958).—Investigations were carried out in order to classify resistant metallic materials from the point of view of their possible semicond. behavior. Wire specimens were produced *in vacuo*, and measurements of elec. resistance were also carried out *in vacuo*. The specimens contained: (*1*) Ni 79.4, Cr 20.6; (*2*) Ni 78.45, Cr 19.40; (*3*) Ni 78.11, Cr 20.25; (*4*) Ni 41.21, Cu 58.6; (*5*) Ni 20.52, Cr 7.2, Cu 71.1%. The results were plotted in a coördinate system of log σ(σ = elec. cond. in m./ohm sq. mm.) and $1/T \times 10^4$ (T = abs. temp.). *1* and *2* present a semicond. component; *3*, in a limited temp. range; *4* has no such component and has a typically metallic behavior; *5* shows neither semiconductor component nor metallic behavior. It is hypothesized that a modification in the internt. bond takes place, owing to alloying.

Felicitas D. Goodman

6

4E3c

4E2c

Semiconductor properties of antimony-zinc alloys. M. Protopopescu, D. Drimer, E. Pokl, and T. Dulămiţă. *Acad. rep. populare Romîne, Studii cercetări met.* 4, 31-67 (1959).—The variations of the elec. and thermoelec. properties of Sb-Zn alloys are investigated as functions of their compn. and structure. The alloys are produced *in vacuo* or under Ar. Zn, purified to 99.99, and Sb, purified to 99.99 and 99.9998%, are used. The elec. resistance, as a function of the compn. and the structure of the alloys, shows a pronounced max. in the case of SbZn at ρ = 14,320 $\mu\Omega$-cm. With 30-45% Zn the semiconductor character of the alloys is especially notable. In a no. of these alloys the activation energy for the thermal transitions of the charge carriers ΔE is calcd. to be 0.40 e.v. The relation between the thermo-e.m.f. (α) and the elec. cond. (σ) is α = 466.5 − 81.4 log σ in the entire range of the alloy system Sb-Zn.

Felicitas D. [illegible]

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Distr: 4E3c/4E2c

FORT, E.

21

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✓ Semiconductor properties of cadmium-antimony alloys. Marius Protopopescu, Dolphi Drimer, and Emeric Fort. *Acad. rep. populare Romîne, Studii cercetări met.* 4, 311-36 (1959); cf. Yurkov, *C.A.* 51, 11051*a*.—A literature survey of the phase diagram Cd-Sb revealed 2 definite compounds CdSb and Cd_3Sb_2. Because of the difference in m.p. of Cd and Sb, their great reactivity, and the volatility of Cd, in order to form pure and stable compounds, the melting and prepn. of the alloy was performed in evacuated (10^{-3} mm.) vials of Jena glass and quartz, by using Cd and Sb of high purity (Cd 99.88% and Sb 99.86%) and for the last series of alloys, zone-refined Sb (99.9998%). Forty alloys of various compns. were prepd., in rectangular bars (3 × 6 × 80 mm.) with all faces polished by metallographic techniques. Microstructure, microhardness, elec. resistance, and thermo-e.m.f. were detd. The structural constituents were analyzed by selective attack reagents; the semiconductor properties of the alloys were evaluated by detg. the elec. resistance as function of compn., the elec. cond. as function of temp., and the mean coeff. of the thermo-e.m.f. Better semiconductor properties were found for CdSb, the elec. resistance of which is 2500 times (22,210 ohm-cm.), and the mean coeff. of the thermo-e.m.f. 200 times, that of pure Cd. In alloys contg. excess of metal these values are considerably reduced, but not in accord with the distribution of the constituents in the alloy. No semiconductor properties were found for Cd_3Sb_2. The theoretically expected correlation between the coeff. of thermo-e.m.f. α and the elec. cond. σ, of differently proportioned alloys of Cd and Sb, $\alpha = A - B \log \sigma$, was verified exptl. for the region Cd + CdSb. The exptl. results were interpreted in light of the electronic theory of metals and semiconductors, and hypotheses were suggested for explanation of $A^{II}B^{V}$ phases, the structural, phys., and semiconductor properties of ZnSb and CdSb being compared.

M. Ben Elieser

FOKT, E

Distr: 4Elx(g)/4E2o/4E2d(b) 2 cys 6

2-MJL (JD)(RJ)

4

7 Intermetallic compounds with semiconductor properties of the type $A^{II}B^{IV}$. T. Dulămiţă, D. Drimer, and E. Fokt. *Acad. rep. populare Romîne, Studii cercetări met.* 4, 511–23 (1959).—Two compds. of the type $A^{II}B^{IV}$, Mg_2Sn and Mg_2Pb (which crystallize in the reciprocal system of Si and Ge), were compared in order to det. the influence of the lattice structure on the semiconductor characteristics and in what way they vary in the same column (of the periodic table) as a function of the at. no. of one of its components. The compds. were prepd. by using the purest available components, melting under a protective layer of anhyd. $MgCl_2$ 55, anhyd. KCl 40, and NH_4Cl 5% in a graphite crucible, necessitating an initial excess of Mg (2% in the case of Mg_2Sn) in order to achieve rigorous stoichiometric compn., then a thermal treatment (48 hrs. at 450–500°, inert atm., cooling to 200° at 10°/hr.), a subsequent more advanced purification, and eventual production of a monocrystal. The specimens underwent metallographic and microhardness study. The semiconductor properties were detd. by comparing the resistivity measurements, by detn. of the elec. cond. variation with temp. (20–420°) and of the sign and value of the thermo-e.m.f. Since Mg_2Sn was found to be a semiconductor, while Mg_2Pb has metallic properties, it is not the cryst. structure which dets. semicond. This transition (along the periodic table column) of semiconductor properties to metallic properties, can be explained by the fact that the probability for the electrons in the peripheral layers to pass the conduction level into the valence level, grows with the at. no. of the element. Thus, the characteristics of the intermetallic compds. can be predicted. 17 references.

M. Ben Eliezer

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KOCSIS, Istvanne; FOKY, Jozsef (Patka); FUZI, Dezso (Budapest)

Forum of innovators. Ujit lap 12 no.17:30 10 S '60.

1. Szegedi Ruhagyar ujitasi eloadoja (for Kocsis).

FOLAK, Feliks; PORASIEWICZ-KACZMARSKA, Jadwiga

Narrow- and wide-pore silicagels as drying agents. Przem chem 40 no.12:702-705 D '61.

1. Katedra Technologii Chemicznej, Uniwersytet Jagiellonski, Krakow.

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Pathogenesis of muscular disorders in thyrotoxicosis. Vestsi AN BSSR. Ser. biial. nav. no.2:91-96 '64.

(MIRA 17:11)

FOL'B, I.I.

Automatic microburet for amperometric titration. Lab. delo no.8:507-509 '65. (MIRA 18:9)

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Fol'b, Rakhil' L'vovna

Principles of visual flashing-light signaling (Osnovy* vizual'noy probleskovoy signalizatsii) Moscow, Izd-vo "Mashinostroyeniye", 1964. 98 p. illus., biblio., Errata slip inserted. 2600 copies printed. Reviewer: Engineer A. A. Belov; [illegible] Professor [illegible] V. Meshkov, Doctor of Technical Sciences [illegible] M. F. [illegible]; Technical editor [illegible]

TOPIC TAGS: flash lamp, photosensitivity, signal light

PURPOSE AND COVERAGE: This book was intended for research personnel, engineers, and students engaged in the development and design of equipment for flashing-light signaling; it may be useful also for physical [illegible] [illegible] interested in problems connected with the [illegible] [illegible] devoted to problems of perception [illegible] [illegible] light energy and the [illegible] [illegible], and the [illegible] of flash [illegible] influence of the flash period on the effective illumination and [illegible], of

Card 1/3