"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

L 38118-66 EEC(k)-2/EWP(k)/EWT(1)/EWT(m)/FBD/T/EWP(t)/ETI IJP(c) WG/JD

ACC NR: AP6024470 SOURCE CODE: UR/0181/66/008/007/2087/2091

69
B

AUTHOR: Zakharov, Yu. P.; Nikitin, V. V.; Semenov, A. S.; Uspenskiy, A. V.; Shcheglov, V. A.

ORG: Physics Institute im. P. N. Lebedev, AN SSSR (Fizicheskiy institut AN SSSR)

TITLE: The theory of optically coupled p-n GaAs lasers

SOURCE: Fizika tverdogo tela, v. 8, no. 7, 1966, 2087-2091

TOPIC TAGS: semiconductor laser, gallium arsenide, laser coupling, SOLID STATE LASER, PN JUNCTION

ABSTRACT: Using a slotted p-n GaAs diode as a model of a semiconductor laser, optical laser coupling was studied theoretically and experimentally. Eight different diodes, prepared by methods described by G. J. Lasher and F. Stern (Phys. Rev., 133, A553, 1964), with $0.2 \leq \gamma \leq 0.5$ were used ($\gamma = \frac{L_2}{L_1} \leq 1$, where L_1 and L_2 lengths of the p-n junction on each side of the slot). Spectral characteristics of each diode were observed for different values of the threshold injection currents (J_1 and J_2) through the slotted parts of a junction. Experimental results indicate that the function $k = \frac{J_1^{thresh}}{J_2^{thresh}}$ increases with an increase in γ ($k = \frac{\gamma}{1-\gamma}$). This result agrees essentially with the theory. Orig. art. has: 3 figures and 10 formulas. [YK]

SUB CODE: 20/ SUBM DATE: 10Dec65/ ORIG REF: 002/ OTH REF: 004/ ATD PRESS: 5042

Card 1/1

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

ACC NR: AP6033568 SOURCE CODE: UR/0181/66/008/010/3047/3049

AUTHOR: Dudenkova, A. V.; Nikitin, V. V.

ORG: Physics Institute im. P. N. Lebedev, AN SSSR, Moscow (Fizicheskiy institut AN SSSR)

TITLE: Lifetimes in single crystals of gallium arsenide

SOURCE: Fizika tverdogo tela, v. 8, no. 10, 1966, 3047-3049

TOPIC TAGS: gallium arsenide, semiconductor single crystal, carrier lifetime, majority carrier, minority carrier, photoconductivity, temperature dependence, semiconductor laser

ABSTRACT: The lifetimes of majority and minority carriers in n-type single-crystal GaAs were determined by measuring the stationary-photoconductivity and photoelectromagnetic-effect voltages at a low injection level of the minority carriers. The lifetimes of the majority and minority carriers were determined separately from the plots of the short-circuit current of the photoelectromagnetic effect and the stationary-photoconductivity current with account taken of the capture of the carriers by traps. The mobility of the minority carriers was assumed equal to the mobility of the majority carriers, the latter being calculated from the Hall effect. The temperature dependence of the lifetimes was measured in the interval from 77 to 450K. The test procedure and the sample preparation are briefly described. The results showed that the lifetimes are sensitive to the presence of structural defects, since one

Card 1/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

ACC NR: AP6033568

sample with many defects exhibited a large difference between the lifetimes of the majority and minority carriers, as well as a large degree of trapping of the holes. A connection between the time characteristics obtained at low injection level and the emission characteristics of semiconductor lasers made of the same samples was also established. The authors thank P. G. Yeliseyev and Yu. M. Popov for a discussion of the experimental results and K. P. Fedoseyev and V. P. Shchedrin for help with the work. Orig. art. has: 3 figures.

SUB CODE: 20/ SUBM DATE: 31Jan66/ OTH REF: 002

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

L 33441-66 EWT(1)/EWT(m)/T/EWP(e)/EWP(t)/ETI IJP(c) WH/JD

ACC NR: AP6013522 SOURCE CODE: UR/0120/66/000/002/0180/0182

AUTHOR: Dudenkova, A.V.; Krasil'nikov, A.I.; Nikitin, V.V.

ORG: None

TITLE: Installation for growing single crystals of unstable semiconductors

Source: Pribory i tekhnika eksperimenta, no.2, 1966, 180-182

TOPIC TAGS: crystal, single crystal, semiconductor single crystal, single crystal growing, indium arsenide

ABSTRACT: An improved apparatus for the growing of compound semiconductor single crystals of groups III - V elements is described. Chamber pressure was kept in balance with the stabilized pressures of the component vapors over the stochiometric melt surface. Smooth lifting and rotation of the growing crystal was provided by an electromagnetic system. Minimum contamination was assured by sealed quartz design and efficient operational procedures. A review of prior art and a drawing of the apparatus are given together with recommended procedures. Authors thank N.G. Basov for his attention and help, and V.K. Kulikov, P.A. Safonov, P.K. Pashkov, V.P. Shchedrin and T.A. Shevelev for aid in the installation adjustments. Orig.art. has 2 figures.

SUB CODE: 20/ SUBM DATE: 12Feb65/ ORIG REF: 000/ OTH REF: 006

Card 1/1 UDC: 548.552:621.315.592

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, V. Ya.

Nikitin, V. Ya.

"Biological Measures [illegible] Conditions [illegible] Chernoiskiy Agricultural Inst. Chernoiskiy, 1955. (Dissertation for the Degree of Candidate in Agricultural Science)

SO: Knizhnaya Letopis' No. [illegible], [illegible] July 1955

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, V. YA.

NIKITIN, V. YA.--"Suprapleural Novacaine Block According to V. V. Mosin as a Method of Treating Climatic Barre ness among Female Rabbits." Min. Higher Education USSR, Kazan' Veterinary Inst imeni N. E. Bauman, Kazan', 1955 (Dissertation for the Degree of Candidate in Vererinary Sciences)

SO: Knizhnaya Letopis', No. 35, 1955

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, V.Ya., aspirant.

Treating female rabbits for acute infectious mastitis.
Veterinariia 33 no.12:35-36 D '56. (MLRA 9:12)

1. Kazanskiy gosudarstvennyy veterinarnyy institut imeni N.E. Baumana.
(Rabbits--Diseases) (Udder--Diseases)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

USSR/Diseases of Farm Animals. The Pathology of Multiplication R-3

Abs Jour: Ref Zhur - Biol., No 1, 1959, 2858

Author : Nikitin, V. Ya.
Inst : Kazan' Veterinary Institute
Title : Suprapleural Novocain Block of V. V. Mosin as a Method of Treating Climatic Sterility in Female Rabbits

Orig Pub: Uch. zap. Kazansk. vet. in-ta, 1957, 65, 109-120

Abstract: No abstract

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

BOTVINIK, M. M.; KARA-MURZA, S. N.; AVAYEVA, S. M.; NIKITIN, V. Ya.

Infrared spectroscope study of the mechanism underlying the formation of p-nitrophenyl esters of benzoyl amino acids and acyl peptides by the carbodiimide method. Dokl. AN SSSR 156 no. 1:88-91 My '64. (MIRA 17:5)

1. Moskovskiy gosudarstvennyy univeriste'. Predstavleno akademikom A. N. Nesmeyanovym.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

We interrupt the production of this film at this point - We ran out of cards

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

Here We Go Again

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, Ye.A.; TSVETKOV, N.A.

Preparation of ammonium luteophosphotungstates (phospho-9-tungstates). Zhur.neorg.khim. 3 no.12:2698-2706 D '58. (MIRA 12:1)

1. 2-y Moskovskiy meditsinkiy institut imeni N.I. Pirogova.
(Ammonium phosphotungstates)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, Ya.A., inzhener.

Examples of damage done to concrete hydraulic aprons by drifting detritus. Gidr.stroi. 22 no.10:12-14 O '53. (MLRA 6:10)
(Hydraulic engineering) (Concrete construction)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, YE. A.; KOKURIN, A. S.

Acids, Inorganic

Structure of heteropolyacids, Izv. Sekt. plat. i blag. met., No. 25, 1950.

9. Monthly List of Russian Accessions, Library of Congress, April 1952, Uncl.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

VLASOV, V.A.; VOYEVODIN, Ye.N.; LBOV, A.A.; MARTYNOV, N.P.; NIKITIN, Ye.A.; UTENKOV, G.G.

Possibility of maintaining low moisture in glove boxes. Zav.lab. 29 no.5:586-588 '63. (MIRA 16:5)

(Rubber--Permeability)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

SAIDOV, A. M.; NIKITIN, Ye.A.

Gel cementing of drilling strings. Neftianik 5 no.6:9-10 Je '60. (MIRA 13:7)

1. Nachal'nik upravleniya neftyanoy i gazovoy promyshlennosti Dagestanskogo sovnarkhoza (for Saidov). 2. Nachal'nik proizvodstvenno-tekhnicheskogo upravleniya neftyanoy i gazovoy promyshlennosti Dagestanskogo sovnarkhoza (for Nikitin).
(Daghestan--Oil well cementing)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

KUMSKOV, V.T., kand.tekhn.nauk; KONAKOV, P.K., doktor tekhn.nauk; NIKITIN, Ya.A., inzh.; AKSENOV, K.F., kand.tekhn.nauk; GUTKIN, L.V., kand.tekhn.nauk; BOBROVA, Ye.N., tekhn.red.

[Thermal processes in electric and diesel locomotives] Teplonye protsessy teplovozov i elektrovozov. Moskva, Vses.izdatel'sko-poligr.ob"edinenie M-va putei soobshcheniia, 1960. 178 p. (MIRA 13:11)

(Diesel locomotives) (Electric locomotives)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, Ye.A., inzh.

Applying the theory of similitude in investigating the operational conditions of diesel engines without compressors. Trudy MIIT no.125:137-148 '60. (MIRA 13:10)
(Dimensional analysis) (Diesel engines)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

9(2)

SOV/159-58-3-28/31

AUTHOR: Nikitin, Ye.A.

TITLE: The Selection of Dynamic System Parameters by the Minimum of the Action Integral

PERIODICAL: Nauchnyye doklady vysshey shkoly, Mashinostroyeniye i priborostroyeniye, 1958, Nr 3, pp 197-206 (USSR)

ABSTRACT: The transient process times are one of the most important quality indexes of dynamic systems. They are determined by the energy dissipation speed of the system. In real, linear dynamic systems, the energy dissipation speed is proportional to the speed of motion. In case the latter is close to zero, then t - ∞ and the energy dissipation time will be within the limits of 0, ∞. However, the expression for the energy dissipation speed cannot be determined without the solution of a differential equation. Therefore it is necessary to abandon the direct evaluation of the transient process quality and replaced it by an indirect method which is connected with the energy dissipation speed. For such an evaluation, the author uses the integral of

Card 1/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

The Selection of Dynamic System Parameters by the Minimum of the Action Integral

the system energy within the time range (0, [illegible])

$$\Phi = \int_{0}^{t_k} E(t)\,dt$$

whereby E(t) is the energy of the system at an arbitrary moment of time. Since the energy for a linear dynamic system is a quadratic form of coordinates and speeds, the determination of the action integral of the system [illegible] is reduced to calculating integrals of the following type:

$$I_1 = \int [illegible] \qquad I_2 = \int [illegible]$$

The author then presents the calculation of the aforementioned integral by the operational calculus. He considers the selection of system parameters by the minimum of the action integral for isolated dynamic systems with one and two degrees of freedom. The

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

The Selection of Dynamic System Parameters by the Minimum of the Action Integral

SOV/159-58-3-28/31

application of this method for an automatic control system will be published in the next number of this periodical There are 2 graphs, 1 diagram and 7 Soviet references.

This article was presented by the Kafedra "Giroskopicheskiye pribory" Moskovskogo vysshego tekhnicheskogo uchilishcha imeni Baumana (Chair "Gyroscope Instruments" of the Mosco.. Higher Technical School imeni Bauman)

SUBMITTED: March 25, 1958

Card 3/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, Ye.A.

Determining the power for linear systems of automatic control. Part 2. Nauch.dokl.vys.shkoly; mash.i prib. no.4:220-229 '58. (MIRA 12:5)

1. Stat'ya predstavlena kafedroy "Giroskopicheskiye pribory" Moskovskogo vysshego tekhnicheskogo uchilishcha im. Baumana.
(Automatic control)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

N. K. I. N, Ye. A.

28(2) PHASE I BOOK EXPLOITATION SOV/3254

Moscow. Vyssheye tekhnicheskoye uchilishche imeni Baumana.

Schetno-reshayushchiye pribory (Computers) Moscow, Mashgiz, 1959. 84 p. (Series: Its: Sbornik trudov, vyp. 82) 6,000 copies printed.

Ed.: S. O. Dobrogurskiy, Doctor of Technical Sciences, Professor; Ed. of Publishing House: A. L. Tairova; Tech. Ed.: A. F. Uvarova; Managing Ed. for Literature on Machine Building and Instrument Making (Mashgiz): N. V. Pokrovskiy, Engineer

PURPOSE: This collection of articles is intended for engineers, scientific personnel and students working in the field of computers.

COVERAGE: This is a collection of articles compiled by the department of computers at MVTU and devoted to analysis of computer components: diode circuits which perform mathematical operations; drive circuits with a servomotor in the form of a powder magnetic

Card 1/6

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

clutch, with a mushroom-shape friction clutch and with a friction clutch of the Svetozarov system; investigation of a pulse tracking system and of the drifts occurring in a single-shaft gyrostabilizer. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

Kazakov, V. A. Candidate of Technical Sciences. Function Generators Using Diodes 3

The author states that vacuum-tube or semiconductor diodes may be used in function generator circuits, for which case errors may be as high as 1 to 3 percent, or as low as one-tenth of a percent. When selenium or copper oxide rectifiers are used as diodes, errors will greatly increase. The author emphasizes the advantages of diode-equipped function generators over electromechanical ones (potentiometers, rotatable transformers, etc.). These advantages consist primarily in the absence of mechanical parts

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

and, consequently, in low inertia. The author presents several schematic diagrams of various types of function generators and derives their equations according to functions of these generators (reproduction of a parabola, sine and cosine functions, multiplication of two independent variables, etc.). The author concludes that errors occurring in the operation of diode function generators are mostly errors of method and instrument errors.

Chetverikov, V. N. Candidate of Technical Sciences. Tracking Drives With Powder Magnetic Clutches 22

The author investigates the possibilities of developing drives with position control or with the rate of change of position or with both methods combined. A powder magnetic clutch was used as the actuating element. As setting elements, a potentiometer and a tachogenerator were used. From these a voltage proportional to the angle and speed of rotation of the flywheel is delivered as the input signal, from which a corresponding clutch velocity is

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

obtained. The author establishes equations for the system, determines its efficiency and investigates methods for its improvement.

Presnukhin, L. N. Doctor of Technical Sciences, Professor. Components of Semi-automatic Drives 29

The author describes various types of mechanical variable speed drives. Three types of friction mechanisms are described and the principles of their operation presented: the disk friction clutch, the mushroom-shaped friction clutch and the friction mechanism of Svetozarov. Characteristic equations and some specifications of these three types are presented.

Smirnov, Yu. M., Candidate of Technical Sciences. Investigation of Tracking Systems Operating Under Pulse Conditions 44

The author investigates the quality of performance of a semi-automatic tracking system with a manual drive. Assuming the linearity of the system and, consequently,

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

utilizing the superposition principle, the author finds optimum values of system parameters by comparing results obtained from the investigation of the three most characteristic features of the operation of tracking systems under pulse conditions. These features are: 1) effect of the initial error of the indicator device on the stability and quality of the tracking system. 2) distortion of the coordinate incoming on the system input by tracking errors and the determination of the accuracy of continuous adjustment of this coordinate. 3) effect of acceleration in the rate of change of the input coordinate on the value of the systematic error of adjustment. The results of investigation of these three cases permit making recommendations as to the selection of optimum values of the basic system parameters and particularly, of the optimum value of the time constant of the drive. This, in turn, permits calculating the function generator of the system according to the pulse sequence periods, which change within wide limits.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

Computers (Cont.) SOV/3294

Nikitin, Ye. A. Candidate of Technical Sciences. Drifts of a Single-Shaft Stabilizer During the Swinging of Its Framework 77

The author assumes that the swingings are harmonic and have a small amplitude and that harmful Coulomb friction and damping moments act along the stabilization axis, Y. The author derives equations for the system and derives a formula for the averaged drift velocity.

AVAILABLE: Library of Congress

Card 6/6 JP/mmh
4-11-60

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

S/146/61/004/006/012/020
D235/D301

13.2570

AUTHORS: Nikitin, Ye. A. and Shestov, S. A.

TITLE: A magnetic suspension for float instruments

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye, v. 4, no. 6, 1961, 87-96

TEXT: The authors consider the problem of utilizing a 12-pole magnetic transmitter and suspension for float gyroscopes and accelerometers. The transmitter is a combination of four 3-pole differential transformers. The principle of operation of the transmitter is explained and basic conditions for the parameters are deduced. A numerical example of approximate design of the suspension is given, with determination of the rigidity of the latter. There are 6 figures and 5 references: 2 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: P. Gilinson, W- Denhard and R. Frazier, Magnetic support for floated inertial instruments. Published by Instrumentation Laboratory Massachusetts Institute of Technology, April 1960. This article

Card 1/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

ODINTSOV, Anatoliy Alekseyevich; RYABOV, B.A., prof., retsenzent; NIKITIN, Ye.A., dots., retsenzent; SHESTOV, S.A., assist., retsenzent; SAYDOV, P.I., prof., red.; KHRUSTALEVA, N.I., red. izd-va; MURASHOVA, V.A., tekhn. red.

[Desgin of electrical elements of gyroscopic devices]Proektirovanie elektroelementov giroskopicheskikh ustroistv. Moskva, Vysshaia shkola, 1962. 190 p. (MIRA 15:12)
(Gyroscope)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

L 29714-66 EWP(m)/EWT(1) WW

ACC NR: AP6015584 (N) SOURCE CODE: UR/0146/66/009/002/0107/0111

AUTHOR: Nikitin, Ye. A.

ORG: Moscow "Order of Lenin" and "Order of the Red Banner of Labor" Higher Technical Academy im. Bauman (Moskovskoye ordena Lenina i ordena Trudovogo Krasnogo Znameni Vysshaye tekhnicheskoye uchilishche)

TITLE: Position of stable equilibrium for the axis of a cylinder in a rotating volume of liquid

SOURCE: IVUZ. Priborostroyeniye, v. 9, no. 2, 1966, 107-111

TOPIC TAGS: cylindric flow, equilibrium flow, accelerometer

ABSTRACT: The author considers the problem of the position of stable equilibrium for the axis of rotation of a cylinder in a rotating cylindrical chamber filled with two ideal imiscible liquids of differing density. The interface between the liquids is a cylindrical surface with a given diameter. A cylindrical solid with a positive buoyancy with respect to the liquids is located inside the chamber. If the principle axis of this float makes an angle with the axis of rotation, inertial drag will tend to bring the principal axis of the cylinder into alignment with the axis of rotation of the liquid. Conditions are found which must be satisfied by the ratio between the moments of inertia of the float and the volume of displaced liquid in order for the co-

Card 1/2 UDC: 531.768

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, Yevgeniy Georgiyevich, kand. tekh. [illegible], [illegible], A.F., red.

[Technological precision of parts from thermoplastics manufactured by the injection molding method] Tekhnologicheskaia tochnost' detalei iz termoplastov, poluchaemykh metodom litlia pod davleniem. Leningrad, 1964. 30 p. (MIRA 17:11)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, Ye.I.

Study of basic technological and economic indices of assembling and welding of ship hulls using standardized beds. Trudy LKI no.28:87-93 '59. (MIRA 15:5)

1. Kafedra tekhnologii sudostroyeniya Leningradskogo korablestroitel'nogo instituta.
(Shipbuilding--Costs)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, Ye.I.

Investigating the dependence of the indices of yield, cost and investments in assembling ship hulls, to the number of sections and the annual program. Trudy LKI no.29:73-81 '59. (MIRA 14:7)

1. Leningradskiy korablestroitel'nyy institut, kafedra tekhnologii sudostroyeniya.

(Shipbuilding--Costs)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, Ye.I.

Study of the relation of the time required to assemble and weld a hull to the number of sections, and a construction variant (for boats). Trudy LKI no.31:31-50 '60. (MIRA 15:2)

1. Kafedra tekhnologii sudostroyeniye Leningradskogo korablestroitel'nogo instituta.
(Hulls (Naval architecture)) (Shipbuilding)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

DORMIDONTOV, Vladimir Konstantinovich; AREF'YEV, Timofey Vasil'yevich; KISELEVA, Nina Arsen'yevna; KUZ'MENKO, Vladimir Kuz'mich; LUK'YANOV, Petr Grigor'yevich[deceased]; NIKITIN, Yevgeniy Ivanovich; TURUNOV, Savva Matveyevich; CHERVYAKOV, V.I., laureat Leninskoy premii, inzh., retsenzent; MESHCHERYAKOV, V.V., inzh., retsenzent; KAZAROV, Yu.S., red.; CHISTYAKOVA, R.K., tekhn. red.

[Shipbuilding technology]Tekhnologiia sudostroeniia. Pod obshchei red. V.K.Dormidontova. Leningrad, Sudpromgiz, 1962. 695 p. (MIRA 16:1)

(Shipbuilding)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

ABRAMOV, S.A., kand.tekhn.nauk; MORGULIS, P.S., kand.tekhn.nauk; NIKITIN, Ye.A., kand.tekhn.nauk

Reviews and bibliography. Vest.mashinostr. 45 no.11:89-92 N '65. (MIRA 18:12)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

CA

10

PROCESSES AND PROPERTIES INDEX

Condensations of furan compounds. I. Reciprocal transformations of furfuryl-idenoacetone with the other condensation products of acetone. V V CHELINTZEV AND E. K. NIKITIN. *Bull. soc. chim.* 51, 875-83(1932).—The velocity of the condensation was detd. by observing the rate of formation of unstable, colored by-products. Furfural can be displaced from its union with acetone by aliphatic aldehydes but displaces aromatic aldehydes. Also in *J Gen. Chem.* (U. S. S. R.) 2, 224-30(1932). A. H

COMMON ELEMENTS

OPEN

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

A-3

Condensation of furan compounds. II. Coloured derivatives of the furylidene series, and a method of determining small quantities of acetone based on them. V. V. TSCHELINCEV and E. K. NIKITIN (J. Gen. Chem. Russ., 1939, 3, 319—326).—A new and accurate colorimetric method of determining $CO(Me)_2$, in concns. as low as 0·0001%, is described. $CO(Me)_2$, when treated with a 2½—3-fold excess of furfuraldehyde gives difurfurylideneacetone, m.p. 61°, which develops a characteristic reddish-violet colour in H_2SO_4 solution. This reaction is sp. and is not given by any other aldehyde or keto-compound. M. Z.

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

1ST AND 2ND ORDERS
PROCESSES AND PROPERTIES INDEX
3RD AND 4TH ORDERS
COMMON ELEMENTS
OPEN
MATERIALS INDEX
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Condensation of furan compounds. IV. The nature of the colored products of the condensation of furfural with acetone in sulfuric and hydrochloric acids. A theory of the reaction of alcohols and olefins with furfural. V. V. Chelintzev and B. K. Nikitin. *J. Gen. Chem.* (U. S. S. R.) **8**, 256-64(1938); cf. *C.A.* **28**, 5370[6].—Since all "idene compds." form conjugated systems capable in the processes of addn. to change the position of the double bonds, and the coloring of the analogous pyrrole and pyrone rings is effected by their isomerization to the iso forms, it is probable that the unstable coloring substances given with 50% H_2SO_4 or 34% HCl and furfurylidene-acetone (I) and difurylidenacetone, obtained from furfural (II) and Me_2CO (III), are formed by the following isomer conversion: O.CH:CH.CH:CH:CHCOR → O:CH.CH:CH.C:CHCH:C(O)R + HCl (H_2SO_4 → ClO:CH.CH:CH.C:CHCH:C(OH)R. The reaction of II with fusel oil (IV) was studied (1) with the addn. of III to IV, (2) with IV freed from all traces of III, (3) with substitution of HCl for H_2SO_4 to eliminate any possibility of dehydration of IV (olefin formation), and (4) by comparing the relative color intensification on the addn. of equal amts. of III and olefins to IV. The results show that contrary to Korenman (*C. A.* **26**, 1877, 4006) the color reaction is caused by the traces of III and not by olefins in IV. V. **Application of the furfurylidene test in the study of the condensation process of acetone with formaldehyde.** V. V. Chelintzev and M. N. Tilichenko. *Ibid.* 265-73; cf. *C. A.* **26**, 5948; **28**, 1686[1].—The velocity and degree of alk. condensation of III with CH_2O was studied with mixts. of 5 cc. of 34.66% CH_2O and 3 cc. III with the addn. of 5 cc. of 1/4, 0.2, 1/1, 0.5 and 1.5 *N* KOH, and the results tabulated. The reaction, checked by furfurylidene test, completely stopped with 0-0.8 part of III still unconsumed, and with the KOH partly or completely neutralized, depending on the concn. of KOH used, by an acid generated in the process. It was disclosed that parallel with the main aldol condensation there proceeds the Cannizzaro reaction with the liberation of HCO_2H. Special expts. with and without addn. of III showed that the Cannizzaro reaction alone proceeds at a slow rate and that in the presence of III the reaction is catalytically accelerated, viz., from 1.3 in 0.5, 2 in 1, 3.4 in 2 and 0% in 3.5 hrs. to 4.5, 11.9, 33.9 and 53.2%, resp. It is not impossible that there may exist an interdependence between the 2 processes, because of the cleavage of 1 mol. H_2O in the condensation of III with CH_2O and the binding of 1 mol. of H_2O by 2 mols. of aldehyde in the Cannizzaro reaction: III + CH_2O → AcCH:CH_2 + H_2O; $2CH_2O + H_2O$ → MeOH + HCO_2H. C. B.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

a - 3

BC

Approximate determination of furfuraldehyde in solutions. E. K. Nikitin (J. Appl. Chem. Russ., 1936, 9, [illegible]).—The approx. concn. X of furfuraldehyde (I) is given by $X/C=K$, where C is the concn. of (I) in a standard solution (usually 0·2%), and $K=1/(1+(v-v_1)/(v_2-v_1))$ for solutions of pure (I), and $2/(1+2(v-v_1)/(v_2-v_1))$ for crude distillates, where v is the time elapsing before appearance of turbidity in a mixture of 2 ml. of neutral aq. (I) (approx. 0·2%), 2 ml. of 0·01% aq. $COMe_2$, and 2 ml. of 60% KOH, and v_1 and v_2 are respectively the times for 0·2 and 0·1% (I). R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

BC

1 - 3

Velocity of reaction of furfuraldehyde with acetone, and its application to the determination of furfuraldehyde. E. K. Nikitin (J. Gen. Chem. Russ., 1936, 6, 1278—1285).—5 ml. of 0·1% aq. $COMe_2$ and 5 ml. of H_2O are shaken with 5 ml. of solution, containing approx. 0·05% of furfuraldehyde (I), 5 ml. of 60% aq. KOH are added, and the mixture is kept at 20° for 12 min. The turbidity developed is compared with that given by a similar mixture containing 5 ml. of 0·005% (I) in place of 5 ml. of H_2O. The concn. of (I) is given by $0{\cdot}005/[\sqrt{(h_1/h_2)}-1]$, where h_1 and h_2 are the readings of the first and second solutions, respectively. R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

CA

7

Rapid determination of furfural in solutions. E. K. Nikitin. *J. Applied Chem.* (U. S. S. R.) 9, 950-5 in German 956(1936); cf. *C. A.* 28, 5370[8]; 29, 5110[8]. The concn. of furfural in H_2O is detd. with an accuracy of ±5% by treating 1 cc. of 0.01-0.2% furfural soln. with 1 cc. of 0.01% Me_2CO and 60% KOH, and comparing the rate of pptn. with that of a standard soln. similarly treated. Higher concns. and the presence of aldehydes affect the results. Chas. Blanc

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

BC

d-3

Rapid approximate determination of acetone in aqueous solutions. E. K. NIKITIN (J. Appl. Chem. Russ., 1956, 9, 1543—1546).—1 ml. of 0·001—0·05% aq. $CO(Me)_2$ and 1 ml. of 0·2% aq. furfuraldehyde are shaken with 1 ml. of 50% KOH, when the time elapsing before appearance of turbidity is a linear function of the $CO(Me)_2$ content. Solutions containing >0·05% of $CO(Me)_2$ should be diluted accordingly.

R. T.

A50-SL4 METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

CA

7

Rapid proximate analysis of ketones. B. K. Nikitin. *J. Applied Chem.* (U. S. S. R.) 9, 1704-9(in German 1709-10)(1936); cf. *C. A.* 31, 1323[1]. One cc. of aq. soln. of ketone is mixed with 1 cc. of 0.2% aq. furfural and 1 cc. of 60% aq. KOH. The time (in sec.) from the moment of addn. of KOH (and shaking) to the moment of the appearance of emulsion of the condensation product, is the velocity of the appearance of emulsion (v). Methyl ethyl ketone in aq. soln. and methyl propyl ketone were detd. by this method with errors of 0-6.6 and 0-6.1%, resp. In both cases, the following formula was used: $x = c/[1 + [(v - v_1)/(v_2 - v_1)]]$, where x is the concn. of the ketone soln., and v, v_1 and v_2 are the above velocities in the soln. under investigation, standard soln. and twice-dild. standard soln., resp. The concn. of ketone soln. should not be over 0.001 *M*. If the ketone is not sol. in water, then its alc. soln. should be dild. with water to a concn. of alc. equal to 10%. Five cc. of such soln. is mixed with 5 cc. of a standard soln. of ketone (with alc. content equal to that of the unknown soln.), this is soln. (1); 5 cc. of soln. (1) is mixed with 10 cc. of 10% alc. aq. soln. (soln. (2)); and 5 cc. of the unknown soln. is mixed with 5 cc. of aq. alc. soln. (10%) (soln. (3)). The formula used in this case is: $x = c(v_2 - v_1)/(v - v_1)$. The method is not applicable for cyclohexanone, menthone and camphor. If the alc. soln. of ketone does not form an emulsion on diln. with water, the following method should be applied: 10 cc. of the standard is mixed with 10 cc. of the alc. soln. of ketone dild. 10 times with water. Soln. (1) is prepd. by mixing equal vols. of this soln. and the standard; soln. (2) is prepd. by dilg. soln. (1) with an equal vol. of the alc. aq. soln., and soln. (3) is prepd. by mixing equal vols. of the alc. aq. soln. and the unknown soln. In this case the formula used is: $x = c(2v_2 - v_1 - v)/(v - v_1)$. Ten references.

A. A. Podgorny

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

PROCESSES AND PROPERTIES INDEX

CA

Determination of acetone with furfural. E. K. Nikitin and I. I. Paul'. *J. Applied Chem.* (U. S. S. R.) 9, 1711-15 (in German 1715)(1936); cf. *C. A.* 31, 2120[9].—An investigation of the Chelintsev and Nikitin method (*C. A.* 28, 1696[4]). Best conditions for the colorimetric det. of acetone are: 10 cc. of 0.01% acetone soln. and 10 cc. of 0.2% furfural (aq.) are condensed in the presence of 10 cc. of 10% KOH at room temp. for 10-15 min. The standard soln. of acetone is treated in the same manner, simultaneously. Aliquots (10 cc.) are mixed with 20 cc. of 60% H_2SO_4, and after 3-5 min. cooling to room temp., are compared in a colorimeter. The error of the method is ±0.5%. The time intervals between an addn. of alkali and acid to the 2 solns. must be the same. A discussion of the results is presented. Four references. A. A. P.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

C.A.

7

Rapid determination of the aldehydes and ketones IV. Determination of benzaldehyde and acetone. E. K. Nikitin. *J. Applied Chem.* (U. S. S. R.) 9, 2100-7 (in German 2107-8)(1936); cf. C. A. 30, 7400[8]. The previously described method is used. The reagents are C_6H_5CHO, $(CH_3)_2CO$, alc. and 60% KOH. The accuracy is ±0%, and time required 30–40 min. The concns. of C_6H_5CHO or $(CH_3)_2CO$ are calcd. by the formulas: (a) pure soln., $x = c/(1 + s)$; with admixt., $x = c/s$, where x and c are the concns. of the unknown and standard solns. and $s = (v - v_1)/(v_2 - v_1)$. A. A. Podgorny

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

Velocity of reaction between aldehydes and ketones. II. Reaction between furfuraldehyde and acetophenone. III. Reaction between benzaldehyde and acetone. IV. Reaction between benzaldehyde and acetophenone. E. K. NIKITIN (J. Gen. Chem. Russ., 1937, 7, 9—13, 71—79, 148—150).—II. The velocity of reaction between furfuraldehyde (I) and COPhMe $\propto$ concn. of (I). Furfurylidenoacetophenone gives an intense yellow coloration in acid solution, and the reaction is adapted to the detection of (I) (<1 p.p.m.), as well as to the colorimetric determination of (I) or COPhMe.

III. The velocity of reaction of PhCHO with $COMe_2$ in alkaline aq. solution $\propto$ $[PhCHO]^2$. The greenish-yellow coloration given by the condensation product in acid solution serves for the detection (<100 p.p.m.) or determination of PhCHO.

IV. The velocity of reaction of PhCHO with COPhMe $\propto$ [PhCHO]. The condensation product gives a yellow coloration in acid solution, serving for detection of $<0{\cdot}1\%$ of either component. R. T.

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

The velocity of the Cannizzaro reaction in relation to the aldehyde concentration. I. The Cannizzaro reaction with formaldehyde solutions. E. K. Nikitin and I. I. Paul. *J Gen. Chem.* (U. S. S. R.) 7, 1292-8(1937).

The application of the following method of CH_2O detn. in solns. to the alk. aldol condensation of aldehydes revealed that the velocity of the Cannizzaro reaction ($2CH_2O + KOH = HCO_2K + MeOH$) increases with the increasing CH_2O concn. and temp. Highly concd. CH_2O solns. are dild. with 4-5 parts of H_2O. A mixt. of 10 cc. of the soln. with 10 cc. of 50% KOH, after digesting on a water bath at 50-60° for 30-40 min., is dild. to 100 cc. Ten cc. of this soln. and 10 cc. of the 50% KOH dild. with 9 vols. of H_2O are titrated with 0.15 N H_2SO_4. The CH_2O is calcd. from the difference of H_2SO_4 soln. used in the 2 titrs.

Chas. Blanc

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

7

Rapid determination of aldehydes and ketones. V. Determination of vanillin and acetone. E. K. Nikitin and S. A. Vershinskii. *J. Gen. Chem.* (U. S. S. R.) 7, 1308-14 (1937); cf. *C. A.* 31, 4232[9].— The basis of the colorimetric detn. of vanillin (I) by means of acetone (II), and of II by means of I is that in the alk. condensation of I with II, with either component in excess, the velocity of the reaction is directly proportional to the concns. of I and II, because in the primary stage of the reaction, lasting up to 2 hrs., only vanillalacetone (III) is formed. The formation of vanillalbisacetone proceeds slowly as the result of the secondary reaction between I and III. Best conditions for the detn. of I are: 5 cc. of the soln. is treated with 5 cc. of 1-2 cc. of II and then with 5 cc. of 50% KOH. A standard soln. of 0.01% I is treated in the same manner, simultaneously. The concn. X of I is calcd. according to the formula: $X = C(h_s/h_0)$, where C is the concn. of the standard I soln., and h_s and h_0 are the corresponding heights on the colorimeter scale for the control and tested solns. In case of I solns., contg. compds. capable of reacting with II or giving colored solns., a mixt. of an equal part of the tested soln. with the standard soln. is used as a control soln., and that with H_2O as the tested soln. The calcn. of the results is then: $X = C(h_s/h_0 - h_0)$. The latter procedure is recommended for the detn. of I in alc solns. The detn. of II is analogous to that of I with II.

Chas. Blanc

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

BC

A-1

Velocity of reaction of aldehydes with ketones. VI. Determination of the relative activities of vanillin and salicylaldehyde in their reaction with acetone. E. K. NIKITIN (J. Gen. Chem. Russ., 1937, 7, 2264—2274).—Vanillin reacts with $COMe_2$ 5·27 times as fast as does salicylaldehyde. Methods of determining the velocity coeffs. of reactions of this type are described. R. T.

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

10

Ca

Condensations of furan compounds. VIII. The displacement of furfural from furfurylidenes by aldehydes as a method for determining the concentration of formaldehyde and acetaldehyde. V. V. Chelintsev and B. K. Nikitin. *J. Gen. Chem.* (U. S. S. R.) 7, 2324-31 (1937); *Bull. soc. chim.* [5], 4, 1727-34; cf. *C. A.* 31, 5703[8]. When difurfurylidenacetone is dissolved in 60% H_2SO_4 it gives a violet-red color. When aliphatic aldehydes are added to such solns., furfural is replaced by the other aldehyde and the color fades. AcH reacts faster than CH_2O. The concn. of dil. solns. of these aldehydes can be detd. by permitting the discharge of 30-40% of the original color by an unknown soln., and comparing this with the amt. of color discharged in the same time by a standard soln. of the aldehyde, since the loss of color is directly proportional to the amt. of aldehyde used. H. M. L.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

7

CP

Detection of acetone obtained in the dry distillation of wood E. K. Nikitin. *J. Applied Chem. U. S. S. R.* 10, [illegible] (in German) [illegible] *C. A.* 31, [illegible]. The color reaction of acetone with furfural in the presence of an acid is applicable to acetone obtained in dry distil of wood but not to acetone obtained by fermentation. [illegible]

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

7

Determination of acetone with salicylaldehyde E. K. Nikitin and S. A. Vershinskii. *J. Applied Chem. U. S. S. R.* 10, 755-7 (in German 758) (1937). cf. C. A. 31, 2351[1]. Heat 1 cc. of 0.01-0.001% acetone, 1 cc. of 50% KOH and 0.5 cc. of 5% salicylaldehyde (in alc.) on a water bath at 50° for 25 min. Mix an aliquot (1 cc.) of the resulting soln. with 10 cc. of 60% H_2SO_4, and compare colorimetrically with the standard soln. prepd. in the same manner, using a known concn. of acetone. Under these conditions the color of the resulting soln. is directly proportional to the acetone concn. The accuracy of the method is ±1.2%. Twelve references. A. A. P.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

BC

0-3

Iodometric determination of acetone by a turbidimetric method. E. K. NIKITIN and M. E. EGOROVA (Zavod. Lab., 1936, 7, 1366—1367).—1 ml. of 15% I in KI and 1 ml. of 10% KOH are added to 1 ml. of 5% aq. $COMe_2$, and the time t_1 elapsing before appearance of turbidity is noted. An equal vol. of H_2O is added to the aq. $COMe_2$, and the experiment is repeated (time = t_2). Finally, the time t required for development of turbidity in the unknown solution is determined. The $[COMe_2]$ is then given by $(x + c)/2$, where $x = c/\{1 + (t - t_1)/(t_2 - t_1)\}$, and c is the $[COMe_2]$ of the standard solution. A second, more dil. standard $COMe_2$ solution (0·01%) is used, with 0·2% instead of 10% KOH, for comparison with very dil. $COMe_2$ solutions. R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

BC

A-1

Colorimetry. E. K. Nikitin and V. I. Tichonova (J. Appl. Chem. Russ., 1936, 11, 347—351).—The accuracy with which red colours may be compared is > that of yellow ones. The concn. of CrO_4'' may be determined by adding a ml. of fuchsin solution to the standard (concn. C), and then adding the same solution from a microburette to the unknown (concn. x) until the tone (but not intensity) of the colorations matches. The val. of x is then Cb/a, where b is the vol. of fuchsin added to the unknown. R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Ca

2

Reaction velocity of aldehydes with ammonia. I. Reaction of furfural with ammonia. E. K. Nikitin and M. A. Abramova. *J. Gen. Chem.* (U. S. S. R.) 9, 1347-55(1939); cf. *C. A.* 30, 7495[8].—The concn. of furfural in H_2O is detd. with an accuracy of ±2% by treating at 12.5° 1 vol. of 1.5-3% furfural soln. with 2 vols. of a satd. Na_2CO_3 soln. in 7.5-8.5% NH_4OH, and comparing the rate of hydrofuramide pptn. with that of a standard soln. similarly treated. The results are calcd. by the formula previously given (*C. A.* 31, 2126[8]). Lower concns. and the presence of aldehydes affect the results. C. B.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Ca

7

Determination of iodine concentrations by the rate of turbidity formation E. K. Nikitin and Yu. A. Kochkin. *Zavodskaya Lab.* 9, 1251-4(1940). A study was made of the rate of turbidity formation of aq. solns. of I_2 from the CHI_3 which is formed by the reaction of I_2 with excess acetone in alk. medium. The rate of turbidity formation is inversely proportional to the I_2 concn. On this basis a new method was developed for the detn. of the concn. of I solns. with an error not exceeding ±1.5%. Add 1 ml. of acetone and 1 ml. of KOH (0.1%) to 1 ml. of the I_2 soln., shake thoroughly and start the stop watch. As soon as the first light turbidity appears, stop the watch. The av. of 3 readings is taken. The rate of turbidity formation is compared with that of a control soln. The I_2 concn. is calcd. from $x = C[1 - (v_1 - v)/2(v_1 - v_2)]$ where C is concn. of the control sample, and v_1, v_2 and v are the rates of turbidity formation for the first control sample, the second control sample and for any intermediate soln., resp.

B. Z. Kamich.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

Ca

Condensation of furan compounds. XIII. Substitution of one aldehyde by another in carbonyl ethylene compounds. V. V. Chelintsev and E. K. Nikitin. *J. Gen. Chem.* (U. S. S. R.) 10, 1453-6(1940); cf. *C. A.* 34, 4387[4,6]. —The authors review their previous work (cf. *C. A.* 26, 5948; 28, 1690[3], 5370[6]; 29, 5110[6]; 30, 8200[7]; 32, 440[7]). After bringing further evidence to substantiate their views which are in disagreement with Esafov's (cf. *C. A.* 34, 4053[7]) they come to the following conclusions: conjugated bonds are generally not essential for *aldolysis* (I) as it is clear from substitution reactions, e. g., of hydrazones, semicarbazones and bisulfite derivs. There is therefore no basis for stating that I is caused by the conjugated ethylene bond with the carbonyl group. The matter consists in the influence of a neighboring carbonyl group on the double bond and in the influence that a carbonyl group has on the mobility of a H atom at the neighboring C atoms, which is shown, e. g., in chlorination and other substitution reactions, in the absence of any conjugated bond. It is clear from the published data that I consists here in hydrolysis and in the subsequent substitution of 1 carbonyl compound by another in consequence of the difference in their activity.

James J. Lichtin

COMMON ELEMENTS

OPEN

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

PROCESSES AND PROPERTIES INDEX

7

Determination of concentration of organic and inorganic substances. B. K. Nikitin. *Ann. secteur anal. phys.-chim., Inst. chim. gén.* (U. S. S. R.) 13, 75-83(1940).—N's. method of evaluating results of turbidimetric titrations (cf. Spiridonova, *C. A.* 31, 7311[1]) is expounded.

B. C. P. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

7

Chronometric determinations based on the rate of becoming turbid. E. K. Nikitin and S. A. Vershinskii (Saratov Med. Inst.). *Zhur. Anal. Khim.* 4, 341-4 (1949).—The method is based on the time required after the addn. of a suitable reagent to the appearance of turbidity in the soln. Except for very small and very large concns. of the substance to be detd., the time interval is directly proportional to the concn. of the unknown. The results are within 7.5% of the truth. By using standards of turbidity, the error was reduced. To prep. the standard, add 0.02-0.03 ml. of acetophenone to 1 ml. of alc. and then H_2O slowly to a slight turbidity. Such a standard is good for several hrs. The standard lasts longer if water is first added to considerable turbidity and then the soln. is detd. to a desired turbidity.

M. Hosch

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, YeK.

23609 SKOROYe LABORATORNOYe POLUChENIYe NEKOTORYKh LEKARSTVENNYKh VESHchESTV VO VREMYa VELIKOY OTECHESTVENNOY VOYNY. DOKLAD NA IX NAUCh. SESSII SARAT. GOS. MED. IN-TA. TRUDY SARAT. GOS. MED. IN--TA, T. VIII, 1949, C. 105-07.

SO: LETOPIS' NO. 31, 1949.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

[illegible], YE. K.

[illegible], Ye. K. "Vladimir [illegible]'yevich [illegible]," ([illegible], 1877-1947) [illegible], vol. [illegible], [illegible], [illegible]

SO: [illegible], [illegible] ([illegible] 16, [illegible]

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

CA

2

Research on the enolization of carbonyl compounds by the chronometric turbidity method. III. The turbidity rate of alkaline mixtures of acetone and iodine in the presence of free iodine. E. K. Nikitin and A. G. Kondrat'eva (State Med. Inst., Saratov).—*J. Gen. Chem. U.S.S.R.* 20, 255-9 (1950)(Engl. translation); *Zhur. Obshchei Khim.* 20, 243-7 (1950).—The kinetics of the iodoform reaction of acetone are investigated by the chronometric turbidity method (Nikitin and Vershinskii, *C.A.* 44, 3395h). The reactive acetone mols. are those in the enol form (I). With large excesses of iodine (II) the concn. of I is low compared to II and rate is zeroth order with respect to II. With excess alkali to bleach all the II, the rate remains zeroth order with respect to II, I^-, or OI^-, but varies with varying alkali concns. due to the dependency of the tautomeric I on alkali concn. However with low alkali concns. (0.03%) so that part of II remains free, the turbidity rate is inversely proportional to the concn. of II. The reaction remains zeroth order with respect to II, but free II dissolves CHI_3, retarding development of turbidity. Evidence of the solubilizing effect of II on CHI_3 is shown by titration of alc. CHI_3 solns., contg. various amts. of II, with water until turbidity develops (Spiridonova, *C.A.* 31, 7311[1]). Addn. of KI reduces the solubilizing effect of II through formation of I_3^-. Since the soly. of CHI_3 is shown to be a linear function of the concn. of II, CHI_3 is proposed as an indicator for aq. titrations to det. concn. of II in alc. solns. W. G. Lloyd

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

CA

General & Physical Chemistry - 2

In memory of Vladimir Vasil'evich Chelintsev. K. M Rodionov and E. K. Nikitin. *Zhur. Obshchei Khim.* (J Gen. Chem.) 22, 1271-8(1952).—Obituary (1877-1947) with portrait and bibliography. G. M. Kosolapoff

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, Ye. K.

Pers
(3)

Chemical Abstracts
Vol. 48 No. 5
Mar. 10, 1954
General and Physical Chemistry

In memory of [redacted] Chelintsev, K. M. Rodionov and [redacted] J. Gen. Chem. U.S.S.R. 22 1315-21(1952)(Engl. translation).—See C.A. 47, 11b.
H. L. H.

6/3/54 LM

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, Ye. K.

2485. The accurate chronometric micro-determination of the concentration of solutions. E. K. Nikitin and K. N. Podomareva. Trudy Komiss. Anal. Khim., Akad. Nauk, SSSR, 1956, 7 (10), 223-233; Ref. Zhur., Khim., 1956, Abstr. No. 71,800.—The chronometric titration method, as applied to the chain reaction between SO_3^{2-} and IO_3^-, depends on the determination of the commencement and conventional end-point of the reaction, i.e., on the accurate measurement of the period of induction, the end of which will be noted by a coloration, cloudiness or a discoloration. After appropriate treatment, the soln. to be analysed is titrated in a vol. of 1 ml with the reagent added dropwise from a microburette. The concn. being sought is determined by the times of induction of the soln. and of control soln. Formulae are given for the calculation of the concn. of soln. of $K_2S_2O_8$ and KIO_3. The error is $> \pm 1.0\%$. The method may be used for the determination both of the primary soln. and of an added soln. which affects the rate of the given reaction. C. D. Kopkin

4

4Ef3 v1

PM aaz

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

USSR/Analytical Chemistry - Analysis of Inorganic Substances, G-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 1258

Author: Nikitin, Ye. K., and Ponomareva, Ye. N.

Institution: Academy of Sciences USSR

Title: Determination of Chloride and Bromide Concentrations by the Method of Chronometric Titrations

Original Periodical: Tr. komis. po analit. khimii AN SSSR, 1956, Vol 7, No 10, 234-245

Abstract: The method of chronometric titration is based on the determination of the point marking the start of reaction, fixed by a stopwatch, when one drop of sulfite solution is introduced into a test tube containing the solution to be analyzed, and the point marking the end of the induction period, when a sudden coloring of the starch is observed, due to the I_2 released after the oxidation of all the SO_3^{2-}. For the determination of Br^- 5 ml of 0.001 M $K_2S_2O_5$ are mixed with 5 ml of the solution to be analyzed and one milliliter of 0.5% starch solution. One milliliter of this solution is titrated in a test tube with

Card 1/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

5(2, 3) SOV/153-58-5-3/28

AUTHORS: Spiridonova, S. I., Nikitin, Ye. K.

TITLE: On the Dissolving Effect of the Mixtures in the Physical Titration in the Presence of Turbidity Indicators (O rastvoryayushchey sposobnosti smesey pri fizicheskom titrovanii v prisutstvii indikatorov pomutneniya)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 5, pp 22-27 (USSR)

ABSTRACT: Some time ago, the author mentioned first suggested a titration method with water, as mentioned in the title (Refs 1, 2). In the present paper the authors discussed some characteristic features of this system which occur in investigations of aqueous solutions of salting electrolytes. Table 1 shows the investigation results of H_2SO_4, HCl, HNO_3, CH_3COOH, $(COOH)_2$ and the "uncharged" mixture using a 60% (per cent by volume) isobutyl and ethylalcohol mixture. In the physical titration of salt solutions with water the appropriate concentration of the working solution of the turbidity indicator is determined by the character of the effect of the electrolyte used upon the solubility of the said indicator (non-electrolyte), i.e. by the salting out and salting effect of the electrolyte.

Card 1/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

SOV/153-58-3-3/28

On the Dissolving Effect of the Mixtures in the Physical Titration in the Presence of Turbidity Indicators

In the case of the s a l t i n g o u t electrolyte the dissolving effect of the solution to be titrated becomes weaker than that of the "uncharged" mixture at the same concentration of the turbidity indicator. In a titration not higher than at 20° a mixture of 50 : 50 (with respect to volume) of isobutyl and ethyl alcohol is recommended. The s a l t i n g electrolytes (in relation to the non-electrolyte used) in contrast to the salting out mixtures increase the solubility of the turbidity indicator in the mixtures. Therefore, the curves of the maximum and the actual indicator concentration deviate and it becomes less probable that they intersect. A considerable displacement of the point of intersection of the curves on the curve of the actual indicator concentration to the right exerts a noticeable influence upon the clearness of the turbidity threshold: a range of opalescence precedes a constant turbidity (Table 3). To obtain positive results in such cases the point of intersection of the actual concentration with the curve of the maximum concentration of the turbidity indicator must be clearly displaced on the curve

Card 2/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

SOV/153-58-5-3/28

On the Dissolving Effect of the Mixtures in the Physical Titration in the Presence of Turbidity Indicators

mentioned first. It is sufficient to decrease to a certain degree the dissolving effect of the mixture to be prepared, i. e. to increase the concentration of the working solution of the turbidity indicator. In the investigation of aqueous solutions of salting electrolytes also such non-electrolytes can be used as turbidity indicators which are infinitely soluble in ethyl alcohol. Good indicators of this type are: furfurol and isobutyl alcohol (9 g in 100 g water at 20°). In the case of salting electrolytes alcoholic solutions of acetic ester, acetyl acetone and isobutyric acid are suitable. There are 1 figure, 3 tables, and 3 Soviet references.

ASSOCIATION: Saratovskiy zooveterinarnyy institut, Kafedra neorganicheskoy i analiticheskoy khimii (Saratov Zoo-Veterinary Institute, Chair of Inorganic and Analytical Chemistry)

SUBMITTED: November 5, 1957

Card 3/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

5(4) SOV/153-2-4-8/32

AUTHORS: Nikitin, Ye. K., Gayvoronskaya, I. Ya.

TITLE: Investigation of the Solubility in a Mixed Solvent by Means of Physical Titration by One of Its Components. I. Solubility of Isoamyl Alcohol in Aqueous Mixtures of Isopropyl Alcohol

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1959, Vol 2, Nr 4, pp 509-515 (USSR)

ABSTRACT: The subject mentioned in the title has so far been little investigated, and remains complicated (Refs 1-4). A double solvent consists of intermixable liquids. These may have a different dissolving power in relation to the third component. If one of the components of the double solvent is a very bad solvent with regard to the third component, the possibility arises of the titration, mentioned in the title of an unsaturated solution in the good solvent until the turbidity threshold is reached. Then the mixture is saturated by the dissolved substance. The computation of the solubility is comparatively easy. If a calibration curve exists, this solubility can be graphically determined with any content of the constant component. The use of an empirical equation for the computation mentioned is still more

Card 1/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

Investigation of the Solubility in a Mixed Solvent by Means of Physical Titration by One of Its Components. I. Solubility of Isoamyl Alcohol in Aqueous Mixtures of Isopropyl Alcohol SOV/153-2-4-8/32

favorable. In this case, the dissolving power of a double solvent of any quantitative composition in relation to the third component at the temperature of the control mixtures might be predicted. The computation conditions of the solubility mentioned in the title are investigated in the paper under discussion. The results obtained were additionally tested by direct titration with isoamyl alcohol up to the saturation point of the respective binary mixtures by means of this alcohol. Table 1 shows average results of the physical titration of 9 binary mixtures of the alcohols mentioned with water at 18° up to the turbidity threshold according to the method by Spiridonova (Ref 5). Hence it appears that the solubility of isoamyl alcohol in all aqueous mixtures of isopropyl alcohol being formed at the end of the titration of alcohol mixtures (Table 1) can be computed. For this purpose, the quantitative composition of such mixtures is computed at the end titration (Table 1). The figure (without number) shows the isothermal line of the solubility of isoamyl alcohol in the mixtures mentioned according to data of table 1 (Curve 1). With low concentrations (up to 20%) of isopropyl alcohol in water, the solubility of isoamyl alcohol re-

Card 2/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

Investigation of the Solubility in a Mixed Solvent by Means of Physical Titration by One of Its Components. I. Solubility of Isoamyl Alcohol in Aqueous Mixtures of Isopropyl Alcohol SOV/153-2-4-8/32

mains small. Then it rises quickly, and becomes unlimited with 60% isopropyl alcohol. The same curve shows a direct dependence of the solubility of isoamyl alcohol on the concentration of isopropyl alcohol in its aqueous mixtures. This (obviously exponential) dependence is rather complicated (Equations (2)-(4a)). Table 3 shows the results of computations according to equation (4a). Thus, it is sufficient to prepare two control mixtures from both alcohols, and to titrate them with water up to the turbidity threshold at a certain temperature. Hence, information on the solubility mentioned in the title can be obtained. In conclusion, the effect of temperature is discussed. There are 1 figure, 6 tables and 4 Soviet references.

ASSOCIATION: Saratovskiy meditsinskiy institut, Kafedra neorganicheskoy i analiticheskoy khimii (Saratov Medical Institute, Chair of Inorganic and Analytical Chemistry)

SUBMITTED: April 17, 1958

Card 3/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

S/153/60/003/004/009/040/XX
B023/B054

AUTHORS: Nikitin, Ye. K., Gurskaya, T. P.

TITLE: Homogenization of Mixtures Having Passed Full Reaction by Means of Water as a Method of Quantitative Analysis Determination of Magnesium

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1960, Vol. 3, No. 4, pp. 591 - 599

TEXT: S. I. Spiridonova has recently proved that physical titration is possible in quantitative analysis in many cases of both nonelectrolytes and ionogenic substances. A concentration determination is technically very simple and fast with the use of standard solutions. To determine electrolytes, the authors used another modification of physical titration, namely titration of the heterogeneous (turbid) mixture until its homogenization. The authors' studies were based on the following principles: a) In the reaction, the ion to be determined and the corresponding organic reagent form a compound which has a high molecular

Card 1/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

Homogenization of Mixtures Having Passed Full Reaction by Means of Water as a Method of Quantitative Analysis. Determination of Magnesium

S/153/60/003/004/009/040/XX
B023/B054

weight and is poorly soluble in the mixture having passed full reaction b) The resulting precipitate should be well soluble in water in order that a relatively low dilution of the turbid mixture having passed full reaction with water may lead to full dissolution of the precipitate. c) The precipitate should be obtained in the form of a fine suspension (turbidity) so that the beginning homogenization will be clearly perceptible. The authors used Urotropin as organic reagent. Many electrolytes form fine-crystalline complex compounds with it. Making use of published data (Refs. 3,4,5), the authors employed magnesium-salt solutions for their studies. A fast quantitative micromethod of homogenization with water proved to be the reaction of magnesium salts with Urotropin under formation of a complex bromide compound which is difficultly soluble in the reaction mixture but well soluble in water. Similar reactions of barium-, strontium-, and calcium cations with a Urotropin - bromide mixture were studied for their sensitivity The conditions for the elimination of inhibiting factors were determined The error of magnesium determinations was 0.1 micrograms at most. It was established that the anion of ortho-phosphoric acid does not disturb

Card 2/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, Ye.K.; SPIRIDONOVA, S.I.

Study of the complex formation of alcohols with electrolytes, based on the curves of physical titration to the turbidity threshold. Izv.vys.ucheb.zav.; khim.i khim.tekh. 4 no.1:33-37 '61. (MIRA 14:6)

1. Saratovskiy meditsinskiy i zooveterinarnyy instituty.
(Alcohols) (Complex compounds)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

SPIRIDONOVA, S.I.; NIKITIN, Ye.K.

Characteristics of turbidity indicators during physical titration with water. Izv.vys.ucheb.zav.;khim. i khim.tekh. 6 no.2: 343-344 '63. (MIRA 16:9)

1. Saratovskiy zooveterinarnyy i Saratovskiy gosudarstvennyy meditsinskiy instituty.
(Indicators and test papers) (Turbidity)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

SPIRIDONOVA, S.I.; NIKITIN, Ye.K.

Mutual effect of furfurole and isobutanol on their solubility in mixed solvents. Izv. vys. ucheb. zav.; khim. i khim. tekh. 8 no.1 31-35 '65. (MIRA 18:6)

1. Saratovskiy zooveterinarnyy institut i Saratovskiy meditsinskiy institut.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

L 63193-65 EWP(k)/EWP(z)/EWA(c)/EWT(d)/EWT(m)/EWP(b)/T/EWA(d)/EWP(1)/EWP(w)/EWP(v)/

ACCESSION NR: AP5019973 EWP(t) MJW/JD/HW UR/0136/65/000/008/0084/0085

669.295.004.12:621.771.2

AUTHOR: Krasnikov, N. Ye.; Skryabin, N. P.; Kushakevich, S. A.; Nikitin, Ye. M.; Bazhenov, Yu. M.; Tokmakov, P. Ya.; Gritsenko, Yu. P.; Makhmutova, Ye. A.

TITLE: Investigation of the mechanical properties and structure of titanium alloys during rolling

SOURCE: Tsvetnyye metally, no. 8, 1965, 84-85

TOPIC TAGS: titanium alloy, titanium alloy rolling, titanium alloy structure, titanium alloy mechanical property

ABSTRACT: The mechanical properties and microstructure of BT5, BT8, and BT15 titanium alloys rolled on rolling mill 300 at various temperatures and with various reductions have been investigated. Specimens 20 x 28 x 140 mm were preheated and rolled with a rolling-end temperature of 800, 850, 900, 1000, and 1100C. The experiments showed that tensile strength of all the alloys increased as rolling temperature decreased from 1100 to 800C. Microscopic examination revealed that recrystallization was not completed at 800—850C, but only at 900—1000C. The recrystallized structure improved ductility; the values changed according to the curve, hav-

Card 1/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

L 63498-65

ACCESSION NR: AP5019973

ing a maximum at 900—1000C. A further increase in rolling temperature up to 1100C increased the grain size and concentration of impurities on the grain boundaries. As a result, the elongation and reduction of area dropped and the embrittlement increased. A change of rolling reduction from 10 to 27% affected the tensile strength insignificantly, but increased plastic characteristics considerably. This phenomenon is caused by improved structure. Orig. art. has: 3 figures and 2 tables. [WW]

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM, AS

NO REF SOV: 000 OTHER: 000 ATD PRESS: 4023

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, Yevgeniy Mikhaylovich; KARLIN, David Mironovich; ZHARKOV, D.V., red.; MURASHOVA, N.Ya., tekhn.red.

[Theoretical mechanics for students in engineering schools] Teoreticheskaia mekhanika dlia tekhnikumov. Moskva, Gos.izd-vo tekhniko-teoret.lit-ry, 1957. 663 p. (MIRA 10:12)
(Mechanics)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

SLIVKO, V.V., otv. red.; GLAZACHEV, V.V., red.; YEMEL'YANOV, A.S., red.; ZAMORYSHEV, A.V., red.; MORDVINTSEV, P.V., red.; NIKITIN, Ye.M., red.; SHUBIN, M.Ye., red.; SOKOLOVA, S.I., tekhn. red.

[Scientific Conference on the Results of Research Work for the period from 1958 to 1959] Nauchnaia konferentsiia po itogam nauchno-issledovatel'skoi raboty za 1958-1959 gg.; tezisy dokladov. Vologda, Vologodskoe knizhnoe izd-vo, 1960. 174 p. (MIRA 16:10)

1. Molochnoye (Vologodskaya oblast') Vologodskiy molochnyy institut. 2. Kafedra ekonomiki i organizatsii proizvodstva v sotsialisticheskikh sel'skokhozyaystvennykh predpriyatiyakh i molochnoy promyshlennosti Vologodskogo molochnogo instituta (for Mordvintsev). 3. Kafedra kormleniya selskokhozyaystvennykh zhivotnykh Vologodskogo molochnogo instituta (for Yemel'yanov). 4. Kafedra chastnoy zootekhniki Vologodskogo molochnogo instituta (for Zamoryshev). 5. Kafedra tekhnologii moloka i molochnykh produktov Vologodskogo molochnogo instituta (for Glazachev, Shubin).

(Vologda Province--Farm produce--Research)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, Yevgeniy Mikhaylovich, dots.; Prinimal uchastiye KARLINYY, D.M., dots.; KREMENTULO, V.V., red.; SHKLYAR, S.Ya., tekhn. red.

[Theoretical mechanics for technical schools] Teoreticheskaia mekhanika dlia tekhnikumov. Izd.3., perer. Moskva, Fizmatgiz, 1963. 518 p. (MIRA 16:11)
(Mechanics, Analytic) (Mechanical engineering)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

L 63193-65 EWP(k)/EWP(z)/EWA(c)/EWT(d)/EWT(m)/EWP(b)/T/EWA(d)/EWP(l)/EWP(w)/EWP(v)/

ACCESSION NR: AP5019973 EWP(t) MJW/JD/HW UR/0136/65/000/008/0084/0085

669.295.004.12:621.771.2

AUTHOR: Krasnikov, N. Ye.; Skryabin, N. P.; Kushakevich, S. A.; Nikitin, Ye. M.; Bazhenov, Yu. M.; Tokmakov, P. Ya.; Gritsenko, Yu. P.; Makhmutova, Ye. A.

TITLE: Investigation of the mechanical properties and structure of titanium alloys during rolling

SOURCE: Tsvetnyye metally, no. 8, 1965, 84-85

TOPIC TAGS: titanium alloy, titanium alloy rolling, titanium alloy structure, titanium alloy mechanical property

ABSTRACT: The mechanical properties and microstructure of BT5, BT8, and BT15 titanium alloys rolled on rolling mill 300 at various temperatures and with various reductions have been investigated. Specimens 20 x 28 x 140 mm were preheated and rolled with a rolling-end temperature of 800, 850, 900, 1000, and 1100C. The experiments showed that tensile strength of all the alloys increased as rolling temperature decreased from 1100 to 800C. Microscopic examination revealed that recrystallization was not completed at 800—850C, but only at 900—1000C. The recrystallized structure improved ductility; the values changed according to the curve, hav-

Card 1/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

L 63498-65

ACCESSION NR: AP5019973

ing a maximum at 900—1000C. A further increase in rolling temperature up to 1100C increased the grain size and concentration of impurities on the grain boundaries. As a result, the elongation and reduction of area dropped and the embrittlement increased. A change of rolling reduction from 10 to 27% affected the tensile strength insignificantly, but increased plastic characteristics considerably. This phenomenon is caused by improved structure. Orig. art. has: 3 figures and 2 tables. [WW]

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: MM, AS

NO REF SOV: 000 OTHER: 000 ATD PRESS: 4073

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

7

CA NIKITIN, Ye.N

The anodic process for the electropolishing of copper in orthophosphoric acid solution. K. P. Batashev and I. N. Nikitin (Kalinin Polytech. Inst., Leningrad). *Zhur. Prikl. Khim.* (J. Applied Chem.) 23, 263-70(1950). — The compn. of the electrolyte at different stages of anodic polishing of Cu (18 sq. cm.) in a soln. of H_3PO_4, d. 1.55, with an anodic c.d. of 1.5 amp./sq. dm., was detd. by sepn. with Me_2CO which dissolves H_3PO_4 but ppts. Cu

phosphates. At the end of the 1st 200 sec. of electrolysis, the Cu^{2+} PO_4 ratio found in the electrolyte corresponded very exactly to $CuHPO_4$, after 200 sec. from the upward jump of the anode potential, that ratio was found to be very close to the formula $Cu_3(PO_4)_2$. These 2 distinct anodic products correspond to the 2 branches of the current-potential curve. The secondary $CuHPO_4$ is formed first, and is gradually converted into the tertiary $Cu_3(PO_4)_2$. This process of exhaustion of $CuHPO_4$ is faster in recesses of the anode surface, and slower on its projecting points; consequently, the latter points will remain more conducting, and are dissolved preferentially. That portion of the current-potential curve along which the actual electropolishing takes place, is characterized by increasing potential at practically const. c.d., the latter being limited by diffusion of the satd. soln. of $Cu_3(PO_4)_2$. The apparent passivity of the metal along that portion of the curve is not due to any change in the properties of the metal but to exhaustion of $CuHPO_4$ through its complete conversion into $Cu_3(PO_4)_2$. Further rise of the voltage gives rise to rapid increase of the c.d., corresponding to evolution of O_2 and accompanied by pitting of the anode surface. By thermodynamic calcn. (from the known heats and entropies), the e.m.f. of the cells (I) $+Cu|Cu(H_2PO_4)_2||H_3PO_4|H_2$, Cu−, (II) $+Cu|Cu_3(PO_4)_2|H_3PO_4|H_2$, Cu−, and (III) $+Cu|Cu_3(PO_4)_2|H_3PO_4|H_2$, Cu−, corresponding, resp., to the reactions (I) $Cu(H_2PO_4) + H_2 \rightarrow Cu + 2H_3PO_4$, (II) $CuHPO_4 + H_2 \rightarrow Cu + H_3PO_4$, and (III) $Cu_3(PO_4)_2 + 3H_2 \rightarrow 3Cu + 2H_3PO_4$, are, resp., (I) 0.204, (II) 0.172, and (III) 0.325 v. Exptl. detn. of the standard potential of (II) gave 0.179 v. These values account for the observed sequence of formation of $CuHPO_4$ and of $Cu_3(PO_4)_2$. N. Thon

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, B.N.

USSR.

Improvements in apparatus for measuring sorption. B. N. Nikitin. *Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci.* [illegible] translation).—See C.A. 48, 4258i.

H. L. H.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

USSR/Chemistry - Adsorption Jul/Aug 53

"New Developments in Equipment for Measuring Sorption," Ye. N. Nikitin, Inst of Silicate Chem, Acad Sci USSR

Iz Ak Nauk SSSR OKhN, No 4, pp 629-634

Describes an apparatus for the volumetric measurement of sorption. Calcd optimum dimensions of a quartz helix for a sorption balance. This calcn showed that increased precision of measurements can be achieved by increasing the radius of the helix rather than by reducing the thickness of the quartz thread.

270T8

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

Nikitin, E. N.

USSR

The sorption properties of calcined zirconium dioxide. E. N. Nikitin. *Doklady Akad. Nauk S.S.S.R.* 89, 1053-6 (1953).—The surface area and the porosity of surface-active ZrO_2, calcined at 18°, 100°, 200°, 300°, 400°, 500°, 600°, 700°, 800°, 1000° were detd. from the sorption isotherms by using EtOH. The max. sorption was observed for samples calcined at 250°. At 300° crystn. starts and is accompanied by a decrease in the sorption capacity. X-ray studies show that below 1000° ZrO_2 is in the monoclinic form and above 1000° it changes to the tetragonal system. As the calcining temp. is increased the max. on the curve for the pore distribution with respect to the effective radius is shifted toward larger pore sizes.

J. Rovtar Leach

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, Ye.N.; DUBININ, M.M., akademik.

Sorptive properties of baked calcium and magnesium oxides. Dokl.AN SSSR 90 no.4:591-594 Je '53. (MLRA 6:5)

1. Akademiya nauk SSSR (for Dubinin). 2. Institut khimii silikatov Akademii nauk SSSR (for Nikitin). (Oxides)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, YE. N.

USSR/Chemistry - Zirconium, Refractories, 21 Sep 53
Adsorbents

"Adsorptive Properties of Calcined Equimolecular Mixtures $CaO-ZrO_2$ and $MgO-ZrO_2$," Ye.N. Nikitin, Inst of Silicate Chem, Acad of Sci USSR

DAN SSSR, Vol 92, No 3, pp 617-620

Plotted isotherms of adsorption of EtOH on equimol mixt ZrO_2-CaO. Also illustrated graphically the distribution of pores by their effective radii for the equimol mixt ZrO_2-CaO, and plotted sp surface-temp curves for the equimol mixts $CaO-ZrO_2$ and $MgO-ZrO_2$. Presented by Acad M.M. Dubinin 17 Jul 53.

268T6

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, Ye.N.

Use of sorption in the study of the interaction of zirconium dioxide with potassium and magnesium oxides. Dokl.AN SSSR 94 no.5:919-921 F '54. (MLRA 7:2)

1. Institut khimii silikatov Akademii nauk SSSR. Predstavleno akademikom M.M.Dubininym. (Sorption) (Oxides)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

NIKITIN, E.N.

3066

Sorption of water by kaolin and the oxides composing it. E. N. Nikitin. (*Dokl. Akad. Nauk SSSR*, 1955, 105, 1014—1016). Kaolin heated in high vac. loses its H_2O of constitution rapidly above 200°. This change is irreversible. It is concluded that dehydrated kaolin cannot be a finely dispersed mixture of Al_2O_3 and SiO_2, since $Al(OH)_3$ and $Si(OH)_4$ gels retain high adsorptive power for H_2O when dehydrated separately at 400° or more (also these latter require substantially higher temp. for complete dehydration). An intimate mixture of Al_2O_3 and SiO_2, in proportions approx. those in kaolin, showed dehydration and adsorption characteristics much closer to those of its constituent oxides than does kaolin.

F. W. KIRKBRIDE.

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

57-1-3/30

AUTHOR: Nikitin, Ye. N.

TITLE: The Investigation of the Temperature Dependence of Electric Conductivity and Thermoelectromotive force of Silicides (Issledovaniye temperaturnoy zavisimosti elektroprovodnosti i termoelektrodvizhushchey sily silitsidov)

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958, Vol. 28, Nr 1, pp. 23-25 (USSR)

ABSTRACT: A special apparatus was built for the investigations. The sample was placed in a fireproof frame. Frame and sample were immerged into a thickwalled quartz cylinder from which the air was pumped out. The movable probes and thermo-elements were equipped with 5 tantalum-springs. By means of an autotransformer the temperature was gradually raised. At the investigations within the range of low temperatures the sample plus frame were immerged into a Dyuar-pot with liquid nitrogen. The measurements were carried out by means of compensation schemes. The author shows that with MnSi, $MnSi_2$ and CoSi the monotonous increase of electric conductivity with the drop of temperature is characteristic. The values

Card 1/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

The Investigation of the Temperature Dependence of Electric Conductivity and Thermoelectromotive force of Silicides 57-1-3/30

of electric conductivity vary only 2-3-fold within the range of from -200 ÷ +800°C, i.e. the temperature-coefficient of electric conductivity is close to that of metals. An analogous course was obtained with less pure silicides. The heating of the silicides to a temperature close to melting point brought about an increase of electric conductivity. $CrSi_2$ has an in-between position between metals and semiconductors. The temperature-dependence is expressed by a curve with aminimum at 200°C like a semiconductor (positive temperature-coefficient). The temperature-dependence of the thermoelectromotive force has a parallel course with electric conductivity in the case of silicides. With MnSi, $MnSi_2$ and CoSi a certain increase of the thermoelectromotive force with the rise of temperature was observed. The temperature dependence of the thermoelectromotive force with $CrSi_2$ has a strange course and shows a clear maximum at 200°C. According to the analysis of the silicides of transition metals in relation to the temperature-dependence of the electric conductivity as well as of the thermoelectromotoric force the author states that the representatives of this class of compounds examined are closer to metals than to

Card 2/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

The Investigation of the Temperature Dependence of Electric Conductivity and Thermoelectromotive force of Silicides 57-1-3/3

semiconductors. The decrease of the electric conductivity with the temperature rise is, in the case of silicides, probably not only dependent on an increased scattering of the electrons by thermal lattice oscillations but also on the expansion of the crystallographic elementary cell. The latter is accompanied by a decrease of the degree of zonal overlapping. There are 3 figures.

ASSOCIATION: Institute for Semiconductors AN USSR, Leningrad (Institut poluprovodnikov AN SSSR, Leningrad)

SUBMITTED: September 27, 1957

AVAILABLE: Library of Congress

Card 3/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

AUTHOR: Nikitin, Ye. N. 57-1-4/20

TITLE: The Electric Conductivity and the Thermoelectromotive Force of Silicides of Transition Metals (Elektroprovodnost' i termoelektrodvizhushchaya sila silitsidov perekhodnykh metallov).

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958, Vol. 28, Nr 1, pp. 26-28 (USSR)

ABSTRACT: As basic material for the silicides served silicium with 99,999% Si (electric resistance 5 Ohm.cm) and chemically pure metals. Besides, silicides were synthetically produced in great quantities from technical silicium of the Kp-0 brand with 99,03 % Si (electric resistance 0,1 Ohm.cm). The results are collected in a table. From these results we see that for silicides, which have a rich metallic component, high electric conductivity values are characteristic. With the increase of the content of silicium the electric conductivity usually decreases. With MnSi and $CrSi_2$ produced of pure silicium the thermo-e.m.f. is 100 μV/degree. The highest negative thermo-e.m.f. values has CoSi (40-50 μV/degree at 3000-4000 $Ohm^{-1}.cm^{-1}$). The multiplicand $\alpha^2\sigma$ is for CoSi and $MnSi_2$ - 7,5 resp. 5.

Card 1/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

The Electric Conductivity and the Thermoelectromotive Force of Silicides of Transition Metals 57-1-4/30

With single samples it reached 10-12. Low thermo-e.m.f. values are characteristic for silicides produced of technical silicium. An exception is $MnSi_2$ where the thermo-e.m.f. is twice as high. The investigation here not given of the dependence of the electric conductivity and of the thermo-e.m.f. on the temperature with silicides within the range of from 100-1100°K justifies the assumption that the silicides are compounds with overlapping zones. When additions are introduced a change for the crystallographic elementary cell as well as of the degree of zonal overlapping takes place. Thus we can influence, the electric indices of silicides by means of the introduction of additions. The measurements carried out by A. V. Ioffe in the Laboratory for Thermal Properties showed that the heat conduction coefficient χ with $MnSi_2$ and $CrSi_2$, at room temperature, is equal to $15 \cdot 10^{-2}$ and with $MnSi$ $-10 \cdot 10^{-2}$ cal/sec.cm degree. The author assumes that the hot end of the thermo couple can be heated to from 800-900°C (taking into account the high melting temperature of

Card 2/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3

The Electric Conductivity and the Thermoelectromotive Force of Silicides of Transition Metals 57-1-4/20

silicides as well as their thermal resistance in the air). The degree of efficiency with this temperature drop will amount to from 3-5%.
L.S. Stil'bans supported the author in his work and A. V. Ioffe (a lady) carried out the measurements for thermal conduction.
There are 1 figure, 1 table.

ASSOCIATION: Institute for Semiconductors AN USSR, Leningrad (Institut poluprovodnikov AN SSSR, Leningrad)

SUBMITTED: September 27, 1957

AVAILABLE: Library of Congress

Card 3/3

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137020004-3"