Heat-Resistant Material From (Cont.) SOV/5685

from sintered aluminum powder. The technology for the manufacture of aluminum powder and briquets is described as are sintering processes, and pressing, rolling, drawing, and sheet-stamping methods. The dependence of the properties of semifinished products on the aluminum-oxide content of the powder, on the degree of hot and cold deformation, and on the stresses of pressing is investigated. Also investigated are the mechanical and corrosive properties of semifinished products, the mechanism of hardening of sintered aluminum powder, the reasons for blister formation, and the possibility of recrystallization. Data on sintered aluminum alloys are included. No personalities are mentioned. References in the form of footnotes accompany the articles.

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Heat-Resistant Material From (Cont.) SOV/5685

AVAILABLE: Library of Congress

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10-27-61

Card 5/5

ACCESSION NR: AT4012727 S/2981/63/000/002/0153/0159

AUTHOR: Davy*dova, N. A.; Kuznetsova, Ye. A.; Matveyev, B. I.; Gel'man, A. A.

TITLE: Treatment of SAP (sintered aluminum powder) waste

SOURCE: Alyuminiyevy*ye splavy*. Sbornik statey, no. 2, Spechenny*ye splavy*. Moscow, 1963, 153-159

TOPIC TAGS: powder metallurgy, aluminum, aluminum powder, sintered aluminum, sintered aluminum powder, aluminum powder waste, SAP

ABSTRACT: SAP waste is formed during the production of blanks, so that utilization of this waste is very important for lowering the cost. The authors studied different methods for treating SAP waste. Pressed or rolled packs of SAP waste can be made with minimal losses. For better results, however, the waste should be disintegrated. Hammer mills cannot be used as they only dent the metal. The authors found that milling of SAP into shavings 0.2-0.5 mm thick and 1-5 mm wide with a density of 0.3-0.5 g/cc and further disintegration in mills leads to good quality material having a 15.2% aluminum oxide content. The further processing of waste (stamping temperature, pressure, etc.) is also of great importance. Increasing the temperature, for instance, from 450 to 580C leads to an increase in ultimate strength from 36 to 39 kg/sq mm, and the relative elongation increases proportion-

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ACCESSION NR: AT4012727

ately. Higher temperatures lead to better sintering and redistribution of aluminum oxide. The best temperature for heating blanks, therefore, is 550-580C. By following the requirements listed in the article, secondary SAP can be produced having the same quality as primary SAP. Orig. art. has: 1 figure and 5 tables.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 13Feb64 ENCL: 00

SUB CODE: ML NO REF SOV: 000 OTHER: 000

Card 2/2

ACCESSION NR: AP4005830 S/0129/63/000/012/0035/0037

AUTHOR: Sidorin, I. I.; Fridlyander, I. N.; Silayeva, V. I.; Kuznetsova, Ye. A.

TITLE: Investigation of the structure and properties of SAP-1 material

SOURCE: Metalloved. i termich. obrab. metallov, no. 12, 1963, 35-37

TOPIC TAGS: sintered aluminum powder, SAP sheet, SAP sheet structure, SAP sheet strength, SAP sheet ductility, SAP cold rolling, SAP hot rolling, SAP sintering SAP annealing, SAP structure, SAP property, SAP alloy

ABSTRACT: The authors have investigated the effect of technological conditions, especially the temperature of preliminary sintering and annealing, on the structure and mechanical properties of sintered aluminum powder products at higher temperatures (especially above 500C). The tested material was first sintered at temperatures of 500 and 650C for 2 hours, hot pressed at 500C under a specific pressure of 55 kg/mm^2, pressed at 500-550C with 89.5% deformation, hot rolled at 500C with 70% deformation, and cold rolled with a deformation of 50%. Preliminary sintering at higher temperatures (650C) decreased the strength and hardness of the semifinished product and increased the percentage of elongation. This effect may be due to recrystallization in microvolumes. The texture formed as a result of pressing and hot and cold rolling of this material was very stable up

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to 650C. The mechanical properties of pressed and rolled SAP-1 material deteriorated after annealing, and microcracks appeared. The temperature of annealing leading to microcracks depends on the temperature of preliminary sintering of the briquets. It was concluded that an increase in the sintering temperature up to 650C markedly increases the degasification coefficient and consequently reduces the tendency to microcrack formation during annealing while widening the temperature interval of the stability of the mechanical properties of the annealed and rolled sheet of SAP-1. Orig. art. has: 1 figure and 1 table.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 09Jan64 ENCL: 00

SUB CODE: ML, MA NO REF SOV: 000 OTHER: 000

Card 2/2

ACCESSION NR: AT4012711 S/2981/63/000/002/0041/0047

AUTHOR: Kishnev, P. V.; Kuznetsova, Ye. A.; Vlasova, P. T.

TITLE: Effect of heating aluminum powder prior to bricket formation on the mechanical properties of pressed blanks

SOURCE: Alyuminiyevy*ye splavy*. Sbornik statey, no. 2. Spechenny*ye splavy*. Moscow, 1963, 41-47

TOPIC TAGS: powder metallurgy, aluminum powder, aluminum bricket, aluminum blank, bricketting

ABSTRACT: It is well known that aluminum powder contains numerous sources of gas, such as the fat added during powder pulverization in ball mills, as well as moisture. This gas interferes with the manufacture of finished products from pressed aluminum powder, so that the powder should first be heated to help eliminate the gases. The present authors attempted to determine the optimal conditions for heating aluminum powder by measuring the content of fat, H_2 and Al_2O_3, as well as the mechanical properties, following both cold briquetting and treatment at 100-600C. The lowest quantity of gas was detected in powder held at a temperature of 600C for 5 hours. The mechanical properties of pressed blanks did not change when the powder was heated up to 500C. An

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ACCESSION NR: AT4012711

increase in temperature up to 600C, however, led to lowering of the ultimate strength and increase in relative elongation. Formation of brickets from heated powder allows one to obtain a monolithic high-quality product with a density of 2.5-2.7 kg/sq. mm. This permits elimination of additional pressing operations required during cold formation of brickets, thus lowering the load on the presses. Orig. art. has: 6 figures, 4 tables, and 1 formula.

ASSOCIATION: None

SUBMITTED: 00 DATE ACQ: 13Feb64 ENCL: 00

SUB CODE: MM NO REF SOV: 000 OTHER: 000

2/2
Card

ACCESSION NR: AT4012714 S/2981/63/000/002/0064/0070

AUTHOR: Kuznetsova, Ye. A.; Gel'man, A. A.

TITLE: Perfection of the flow process for manufacturing blanks of SAP

SOURCE: Alyuminiyevy*ye splavy*. Sbornik statey, no. 2, Spechenny*ye splavy*. Moscow, 1963, 64-70

TOPIC TAGS: powder metallurgy, sintered aluminum, aluminum powder, sintered aluminum powder, flow process, SAP, aluminum powder pressing

ABSTRACT: Up to the present time, the manufacture of pressed blanks from SAP generally includes the steps of cold briquetting, additional pressing or sintering under pressure at a temperature of 450-500C, and final pressing of the blank. This additional pressing of the briquet increases the density and produces partial sintering. Recent studies, however, have led to several innovations, such as briquetting of heated SAP and pressing of SAP at high temperatures. The present authors therefore investigated the effect of the pressing temperature on the structure and mechanical properties of the briquets or blanks, and the possibility of shortening the entire operation by eliminating the additional pressing of the briquets. Studies of the microstructure, hardness and electrical conductivity were carried out on briquets pressed at 450-500C from grade

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APS-1 SAP containing 7.4% Al_2O_3, with additional pressing at 40-60 kg/mm^2. At high briquetting temperatures, the conductivity and hardness were both decreased, and additional pressing had little effect. The effect of pressing technology and Al_2O_3 content on the mechanical properties is shown in the Enclosure. The authors conclude that when briquets are made from heated powder, the briquet itself can serve as the blank, since additional pressing has no significant effect on the structure or properties. Orig. art. has: 4 figures and 5 tables.

ASSOCIATION: None

SUBMITTED: 00 DATE ACQ: 13Feb64 ENCL: 01

SUB CODE: MM NO REF SOV: 000 OTHER: 000

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Card

ENCLOSURE: 01

ACCESSION NR: AT4012714

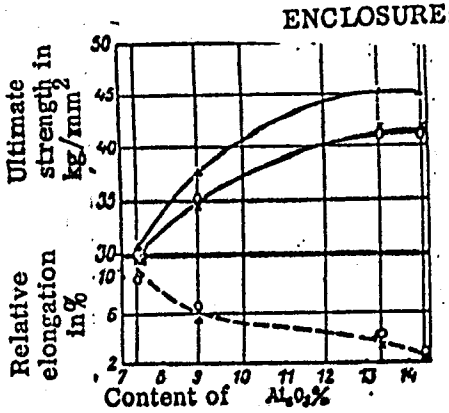

Fig. 1 - Relationship between the Al_2O_3 content and the ultimate strength and relative elongation of rods (50 MM in diameter), pressed under various technological conditions.

o - pressing without a stopper;
x - usual conditions
▲ - pressing with a stopper

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L 40954-66 EWT(m)/EWP(k)/T/EWP(v)/EWP(t)/ETI IJP(c) JH/JD/HM/WB

ACC NR: AT6024921 SOURCE CODE: UR/2981/66/000/004/0120/0134

AUTHOR: Fridlyander, I. N.(Doctor of technical sciences); Kuznetsova, Ye. A.; Davydova, N. A.; Rubenshchikov, V. S.; Nabatova, I. A.

ORG: none

TITLE: Delayed failure of Al-Zn-Mg alloy welds

SOURCE: Alyuminiyevyye splavy, no. 4, 1966. Zharoprochnyye i vysokoprochnyye splavy (Heat-resistant and high-strength alloys), 120-134

TOPIC TAGS: aluminum alloy, high strength alloy, metal weld, ~~weld failure~~, mechanical failure, ~~delayed failure, metal failure~~, metal property, zinc containing alloy, manganese containing alloy, ~~ATsM aluminum alloy~~, ATsMU aluminum alloy

ABSTRACT: The behavior of ATsM and ATsMU alloy welds under stress in air and in argon has been investigated. The respective content of alloying elements in alloys was: zinc 4.5 and 4.3%, magnesium 1.8 and 1.5%, manganese 0.6 and 0.3%, and copper 0.75 and 0.1%. The contents of zirconium (0.17%), iron (0.3%), and silicon (0.25%) were the same in both alloys. The welds were made with AMg6 and AMg4 alloy filler wire. The specimens were stressed (below the yield strength) by bending in a special device. It was found that the duration and temperature of aging affects the susceptibility to delayed failure, especially in ATsM alloy welds. Specimens of this alloy aged at 20C or at 90C were not susceptible to delayed failure, while specimens aged

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ACC NR: AT6024921 2

at 100 (100 hr) or 120 (10 hr) and 175 (1 hr) were very susceptible. The susceptibility of ATsM was also affected by the filler wire. The specimens welded with AMg6 alloy filler wire were less susceptible to delayed failure than those welded with AMg4 alloy wire. The susceptibility of ATsMU alloy was lower than that of ATsM alloy and failure was observed only on the specimens welded with AMg4 filler wire and aged at 120C for 10 hr + at 175 for 1 hr. Specimens of ATsM and ATsMU alloys tested in argon remained intact for 50-60 days. Even when removed from argon and left under stress in air, no cracking occurred within 90 days. It appears that the delayed failure of ATsM and ATsMU alloy welds is a result of stress corrosion under the effect of air mositure. The optimum aging conditions for both alloys were 90C for 100 hr. Orig. art. has: 6 figures and 9 tables. [TD]

SUB CODE: 11, 13/ SUBM DATE: none/ ORIG REF: 001/ OTH REF: 006/ ATD PRESS: 5056

Card 2/2 hs

L 47041-66 EWT(m)/T/EWP(t)/ETI IJP(c) JD/JH

ACC NR: AT6024923 (A,N) SOURCE CODE: UR/2981/66/000/004/0143/0151

AUTHOR: Fridlyander, I. N.; Kuznetsova, Ye. A.; Bubenshchikov, V. S. 36 B+1

ORG: none

TITLE: Kinetics of aging of an alloy of the Al-Zn-Mg system

SOURCE: Alyuminiyevyye splavy, no. 4, 1966. Zharoprochnyye i vysokoprochnyye splavy (Heat resistant and high-strength alloys), 143-151

TOPIC TAGS: aluminum alloy, zinc alloy, magnesium containing alloy, metal aging, ALLOY SYSTEM

ABSTRACT: The kinetics of aging of an alloy of the Al-Zn-Mg system was studied at various temperatures immediately after quenching (30 min at 450°C, cooling in water) and after two months of aging. The alloy had the composition (in %): Zn 4.35, Mg 1.57, Mn 0.45, Zr 0.17, Fe 0.27, Si 0.17, Cu 0.021, bal. Al). The alloy was found to be characterized by a very long aging period at 20°C, probably measured in years. The set of mechanical properties and the nature of change in electrical conductivity correspond to the zone stage of aging. Transition to phase aging may occur at a temperature as low as 50-70°C; it is possible that if the holding time is increased, this transition will shift toward lower temperatures. Preliminary zone aging has an appreciable effect on subsequent aging at high temperatures. It is postulated that some of the zones change in an allotropic manner (or in any other manner related to the zones) into metastable particles, and the particles thus formed have a greater thermal stabi-

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L 47041-66

ACC NR: AT6024923

lity than those formed from the nuclei directly in the matrix. This mechanism accounts for the effect of stepwise aging. Orig. art. has: 6 figures.

SUB CODE: 11/ SUBM DATE: none

Card 2/2 vmb

L 04197-67 EWT(m)/EWP(w)/I/EWP(t)/ETI/EWP(k) IJP(c) JD/HW/WB/JH

ACC NR: AP6028585 SOURCE CODE: UR/0129/66/000/008/0020/0024

AUTHOR: Kuznetsova, Ye. A.; Bubensh chikov, V. S.; Davydova, N. A.; Nabatova, I. A.

ORG: none

TITLE: The influence of aging on delayed fracture of welded parts made from alloys of the Al-Zn-Mg system

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 8, 1966, 20-24

TOPIC TAGS: aluminum alloy, welding cracking, mechanical property, bending, fractography, argon, heat treatment, precipitation hardening

ABSTRACT: The effect of aging on delayed fracture was studied in welded Al-Zn-Mg alloys. Two alloys were investigated: alloy No. 1--4.5% Zn, 1.8% Mg, 0.6% Mn, and 0.05% Cu; alloy No. 2--4.3% Zn, 1.5% Mg, 0.3% Mn, and 0.1% Cu. Welded pieces were tested under cantilever bending in air and argon at room temperature. Two different welding rods made of AMg6 (6.3% Mg, 0.65% Mn) and AMg4 (4.4% Mg, 0.65% Mn) were used. Mechanical properties were given for various aging treatments. The percentage of samples fractured in air, given as a function of cantilever end displacement, initially increased sharply, but dropped when plastic deformation occurred due to elastic stress relaxation. At small displacements (1.8-1.9 mm), corresponding to 0.6 $\sigma_{0.2}$, the average time to fracture was 60-65 days. Alloy 1 had a greater tendency toward delayed

UDC: 669.715'72:621.79

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ACC NR: AP6028585

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fracture, since in alloy 2 the tendency was only exhibited after step aging and only after using the AMg4 welding rod. For both alloys, the relative number of artificially aged samples that fractured in a period of ten years was given as a function of fracture time. The early fractures (70 days or less) were caused by welding cracks which under stress initiated fracturing. After aging 100 hr at 90°C, the cracks could not propagate readily due to the higher plasticity. Similar tests, done in an argon filled chamber, showed no cracking after 50-60 days even for the severest aging conditions found in atmospheric tests. Correlations with creep studies confirmed that corrosion cracking in alloy No. 1 can only occur for aging at 100°C, 100 hr or at 120°C, 10 hr + 175°C, 1 hr. Microstructures showed that cracking generally occurred in the heat affected zone along grain boundaries. Orig. art. has: 6 figures, 2 tables.

SUB CODE: 11,13/ SUBM DATE: none

Card 2/2 LC

KUZNETSOVA, Ye.A.; ZHURAVLEV, S.V.; STEPANOVA, T.N.

Synthesis of 2-mercaptobenzothiazole derivatives. Part 4: Some 2-(haloalkylmercapto) benzothiazoles. Zhur. org. khim. 1 no.4:767-772 Ap '65. (MIRA 18:11)

1. Institut farmakologii i khimioterapii AMN SSSR.

L 12103-66 EWT(l)/EWl(m)/T/EWP(t)/EWP(b) IJP(c) JD/GG

ACC NR: AP6000535 SOURCE CODE: UR/0070/65/010/006/0918/0920

AUTHOR: Synorov, V.F.; Kuznetsova, Ye.A.

ORG: Voronezh State University (Voronezhskiy gosudarstvennyy universitet)

TITLE: The structure of silicon and germanium sulfide surface layers

SOURCE: Kristallografiya, v. 10, no. 6, 1965, 918-920

TOPIC TAGS: silicon single crystal, silicon compound, germanium single crystal, germanium compound, protective coating

ABSTRACT: Numerous attempts were made recently to produce oxygen-free surface compounds on silicon and germanium crystals. In the first part of the present paper the authors investigated, using electron diffraction analysis, the structure (in particular, the phase composition) of the sulfide layer created on the surface of a Si monocrystal processed in a special sulfidation tank. The experimental results obtained for the lattice plane distances are in good agreement with the theoretical data for SiS. The second part of the paper is devoted to the study of the structure of germanium sulfide layers produced on the surface of germanium monocrystals during their reaction with sulfur vapors. The Debye diagram utilized the Cu K_α line. The comparison of the experimental and theoretical values for various lattice plane distances showed that the stable chemical compound formed is indeed crystalline GeS. Differences in color of such layers are due to differences in thickness only. Orig. art. has: 1 figure and 3 tables.

Card 1/2 UDC: 548.736

L 12103-66

ACC NR: AP6000535

SUB CODE: 11,20 / SUBM DATE: 14May64 / ORIG REF: 004 / OTH REF: 002

Card 2/2

KORSUNSKIY, Moisey Izrailevich; KUZNETSOVA, Ye.B., red.

[Optics, atomic structure, and the atomic nucleus] Optika, stroenie atoma, atomnoe iadro. Izd.2., ispr. i dop. Moskva, Nauka, 1964. 527 p. (MIRA 17:10)

SAVEL'YEV, Igor' Vladimirovich; KUZNETSOVA, Ye.B., red.

[General physics course] Kurs obshchei fiziki. Moskva, Izd-vo "Nauka," Vol.2. [Electricity] Elektrichestvo. 1964. 335 p. (MIRA 17:8)

SHCHETINKOV, Yevgeniy Sergeyevich; KUZNETSOVA, Ye.B., red.

[Physics of the combustion of gases] Fizika goreniia gazov. Moskva, Nauka, 1965. 739 p. (MIRA 18:6)

ZAVEL'SKIY, Fridirikh Samuilovich; KUZNETSOVA, Ye.B., red.; AKHLAMOV, S.N., tekhn. red.

[Time and its measurement from trillionths of a second to billions of years] Vremia i ego izmerenie; ot billionnykh dolei sekundy do milliardov let. Izd.2., dop. Moskva, Gos. izd-vo fiziko-matem. lit-ry, 1961. 217 p. (MIRA 14:11)

(Time measurements)

SOBEL'MAN, Igor' Il'ich; KUZNETSOVA, Ya.B., red.; BRUDNO, K.F., tekhn. red.

[Introduction to the theory of atomic spectra] Vvedenie v teoriiu atomnykh spektrov. Moskva, Fizmatgiz, 1963. 640 p. (MIRA 16:12)

(Atomic spectra)

ZISMAN, Girsh Abramovich; TODES, Oskar Movshevich; KUZNETSOVA, Ye.B., red.

[Course in general physics] Kurs obshchei fiziki. Moskva, Nauka. Vol.2. 1965. 366 p. (MIRA 18:5)

CHENKIN, A.F.; KRESLIN', A.K. [Kreslins, A.]; KUZNETSOVA, Ye.D.

Information and brief news. Zashch.rast. ot vred. i bol. 9 no.11:54-61 '64. (MIRA 18:2)

KUZNETSOVA, Ye. G.

Strawberries

High yields of strawberries. Sad i og. no. 6, 1952.

9. Monthly List of Russian Accessions, Library of Congress, _____1953. Unclassified.

KUZENTSOVA, E. G.

KUZNETSOVA, Ye G.

KUZENTSOVA, E. G.--"The Rate of Formation of Lactic Acid During the Development of Bacterium Delbruckii and the Use of Biological Material for Repeated Fermentation." Inst of Microbiology, Acad Sci USSR. Moscow, 1955. (Dissertation for the Degree of Candidate in Biological Science).

SO Knizhnay letopis'
No 2, 1956.

KUZNETSOVA, Ye.G.

[Rate of formation of lactic acid in the development of Bacterium Delbrückii and using the bacterial mass for a secondary fermentation]Skorost' obrazovaniia molochnoi kisloty v protsesse razvitiia Bacterium Delbruckii i ispol'zovanie biomassy dlia povtornogo brozheniia. Moskva, 1955. 16 p.
(MLRA 10:4)

(LACTIC ACID) (FERMENTATION)

VESELOV, I.Ya.; KUZNETSOVA, V.G.

Physiological role of the formation of lactic acid by homofermentative lactic acid bacteria. Trudy Inst. mikrobiol. no. 6:61-71 '59. (MIRA 13:10)

1. Institut mikrobiologii AN SSSR.
(LACTIC ACID BACTERIA)

PROKOPENKO, S.F.; YEFREMOVA, N.I.; NASONOVSKAYA, Z.S.; KUZNETSOVA, Ye.G.; MYSAK, G.Ya., inzh.; DOBROSINETS, Ye.I., inzh.

Spraying orchards with a small expenditure of liquids. Zashch. rast. ot vred. i bol. 8 no.2:35 F '63. (MIRA 16:7)

1. Sotrudniki Vsesoyuznogo nauchno-issledovatel'skogo instituta sel'skokhozyaystvennogo mashinostroyeniya (for Prokopenko, Yefremova, Nasonovskaya). 2. Glavnyy agronom sovkhoza imeni Lenina Moskovskoy obl. (for Kuznetsova). 3. Gosudarstvennoye seriyno-konstruktorskoye byuro L'vovskogo soveta narodnogo khozyaystva (for Mysak, Dobrosinets).
(Spraying and dusting in agriculture)

KUZNETSOVA, Ye.G.; NOSYREVA, R.D., agronom po zashchite rasteniy

On the Lenin State Farm. Zashch. rast. ot vred. i bol. 8 no.5: 4-7 My '63. (MIRA 16:9)

1. Prigorodnoye proizvodstvennoye upravleniye Moskovskoy oblasti.
2. Glavnyy agronom sovkhoza imeni Lenina (for Kuznetsova).
(Spraying and dusting in agriculture)
(Fruit—Diseases and pests)

ANTONOV, I.A., kand.tekhn.nauk; ANTOSHIN, Ye.V., inzh.; ASINOVSKAYA, G.A., inzh.; VASIL'YEV, K.V., kand.tekhn.nauk; GUZOV, S.G., inzh.; DEYKUN, V.K., inzh.; ZAYTSEVA, V.P., inzh.; KAZHEKOV, P.P., inzh.; KARAN, Yu.B., inzh.; KOLTUNOV, P.S., kand.tekhn.nauk; KOROVIN, A.I., inzh.; KRZHECHKOVSKIY, A.K., inzh.; KUZNETSOVA, Ye.I., inzh.; MATVEYEV, N.N., tekhnik; MOROZOV, M.Ye., inzh.; NEKRASOV, Yu.I., inzh.; NECHAYEV, V.D., kand.tekhn.nauk; NINBURG, A.K., kand.tekhn.nauk; SPEKTOR, O.Sh., inzh.; STRIZHEVSKIY, I.I., kand.khim.nauk; TESMENITSKIY, D.I., inzh.; KHROMOVA, TS.S., inzh.; TSEUMEL', A.K., Inzh.; SHASHKOV, A.N., kand. tekhn.nauk, dots.; SHELECHNIK, M.M., inzh.; SHUKHMAN, D.Ya., inzh.; EDEL'SON, A.M., inzh.; VOLODIN, V.A., red.; UVAROVA, A.F., tekhn.red.

[Machines and apparatuses designed by the All-Union Institute of Autogenous Working of Metals] Mashiny i apparty konstruktsii VNIIAvtogen. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroitel'noi lit-ry, 1957. 173 p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skii institut avtogennoi obrabotki metallov, no.9)

(Gas welding and cutting--Equipment and supplies)

KUZNETSOVA, Ye.I.

The DZP-1-57 reducer with a consumption indicator. Biul.tekh.-ekon.inform. no.11:14-16 '59. (MIRA 13:4)
(Gas welding and cutting)

KUZNETSOVA, Ye.I.

Thaumasite from skarn deposits in central Kazakhstan. Trudy Inst. geol.nauk AN Kazakh.SSR 7:273-287 '63. (MIRA 17:9)

S/136/60/000/08/001/008
E193/E183

AUTHORS: Fors'lom, G.V., Arakelyan, O.I., Kuznetsova, Ye.I., and Goldelenok, Ye.G.

TITLE: Investigation of the Structure of Titanium Sponge

PERIODICAL: Tsvetnyye metally, 1960, No 8, pp 50-51

TEXT: Microscopic examination of samples of titanium sponge, taken from various parts of a batch produced by the chloride process, revealed that most diverse forms of crystallization of titanium are encountered in the central zone of the reaction chamber, where dendrites of various sizes, platelike crystals of hexagonal habit, agglomerates of columnar crystals, and single crystals of irregular shape, are formed. These results, correlated with the data on the reaction conditions, indicate that the mode of crystallization of titanium depends on temperature and the concentration (rate of feed) of titanium tetrachloride. Thus, slow rates of reaction are favourable for the formation of large, well-developed dendrites and for the uniform growth of crystals. At increased rates of feed of titanium tetrachloride,

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Investigation of the Structure of Titanium Sponge

the rate of crystallization increases and the metal crystallizes in the form of thin dendrites. If the temperature is raised to 1000 °C, and the rate of feed of titanium tetrachloride slowed down, the sponge obtained in the central zone of the reaction vessel is granular and contains single crystals. At lower temperatures, the thickness of dendrites increases with decreasing specific consumption of tetrachloride. In general, it can be concluded that structure of titanium sponge depends more on the rate of feed of titanium tetrachloride than on the reaction temperature.

There are 4 figures, (photomicrographs).

ASSOCIATION: VAMI

Card 2/2

89024
S/020/60/135/004/021/037
B016/B062

11.2211

AUTHORS: Dolgoplosk, B. A., Corresponding Member AN USSR, Kropacheva, Ye. N., Khrennikova, Ye. K., Kuznetsova, Ye. I., and Golodova, K. G.

TITLE: Polymerization of Dienes Under the Influence of Homogeneous Catalytic Systems Containing Salts of Cobalt and Nickel

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 4, pp. 847-848

TEXT: The authors report on the considerable efficacy of homogeneous catalysts in the production of cis-polybutadiene from butadiene in benzene solution. The catalysts were hydrocarbon-soluble systems of cobalt chloride (concentration 0.005 - 0.01 percentage by weight, as referred to the monomer) in complex with pyridine or ethanol in combination with alkyl-, dialkyl-, and trialkyl aluminum chlorides. Polymerization takes place already at 0°C and 0.005 % cobalt chloride, the polymer structure being independent of temperature. The polymer yield rises with increasing concentration of the cobalt chloride, while the molecular weight of the polymer decreases. The polymerization rate is highest at a concentration of 0.01 %,

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Polymerization of Dienes Under the Influence of Homogeneous Catalytic Systems Containing Salts of Cobalt and Nickel

S/020/60/135/004/021/037
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whereas the molecular weight in the entire concentration range studied decreases simultaneously with the acceleration of polymerization. The temperature rise from 5° to 30°C also reduces the molecular weight to 1/2 - 1/3. The role of the displacement reactions becomes much more considerable in the presence of lower olefins. For instance, approximatively 1 % of β-butene (referred to the monomer) considerably decelerates the polymerization and reduces the molecular weight of the polymer from 150 000 to 90 000. On the strength of data on the microstructure of polybutadiene the authors found, depending on the catalyst system (Table 1, polymerization of divinyl), that the highest percentage of 1,4-members was obtained with diisobutyl aluminum chloride systems (97 %) and diethyl aluminum chloride systems. Triisobutyl aluminum considerably increases the number of 1,2-members (up to 70 %). Cobalt salts of stearic acid lead to an only inconsiderably deviating chain structure in the range of concentrations ensuring a homogeneous system. Polybutadiene produced in the presence of nickel stearate has a chain structure similar to that of cobalt stearate, but a lower molecular weight. If iron benzoate and stearate is used, the polymerization is considerably slower than with cobalt- and

89024

Polymerization of Dienes Under the Influence of Homogeneous Catalytic Systems Containing Salts of Cobalt and Nickel

S/020/60/135/004/021/037
B016/B062

nickel salts. The cobalt systems are also effective in the polymerization of other diene-hydrocarbons, especially of isoprene. There are 2 figures, 1 table, and 7 references: 5 Soviet, 1 US, and 1 German.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S. V. Lebedeva (All-Union Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev)

SUBMITTED: August 22, 1960

Card 3/3

KUZNETSOVA, Ye.I., laborant

Controlling the European corn borer. Zashch.rast.ot vred. i bol. 4 no.4:22-23 Jl-Ag '59. (MIRA 16:5)

1. Donskoy zonal'nyy institut sel'skogo khozyaystva, Rostov.
(Rostov Province—European corn borer—Extermination)
(Rostov Province—Corn (Maize)—Diseases and pests)

MOISEYEV, A.Ye.; KUZNETSOVA, Ye.I.

Races of the European corn borer (Pyrausta nubilalis Hbn.) in Rostov Province. Vop. ekol. 7:120-121 '62. (MIRA 16:5)

1. Nauchno-issledovatel'skiy institut sel'skogo khozyaystva, Rostov-na-Donu.

(Rostov Province--European corn borer)

USTINOV, M.P.; KUZNETSOVA, Ye.K.

Slotted drainage system made of stainless pipes for mechanical and cation filters. Sbor.rats.predl.vnedr.v proizv. no.1:41-42 '61. (MIRA 14:7)

1. Kuznetskiy metallurgicheskiy kombinat.
(Filters and filtration)

PERVEYEV, F.Ya.; KUZNETSOVA, Ye.M.

Interaction of ammonia and amines with oxides of acetylene and vinylacetylene series. New synthesis of pyrrole. Zhur.ob.khim. 28 no.9:2360-2371 S '58. (MIRA 11:11)

1. Leningradskiy gosudarstvennyy universitet.
(Pyrrole)

21(5) SOV/76-32-11-28/32

AUTHORS: Kuznetsova, Ye. M., Makarov, A. V., Panchenkov, G. M.

TITLE: On the Calculation of the Once-Through Coefficient of the Separation of Isotopes for Equilibrium Processes (O raschete odnokratnogo koeffitsiyenta razdeleniya izotopov dlya ravnovesnykh protsessov)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol 32, Nr 11, pp 2641-2643 (USSR)

ABSTRACT: The change of the isotope concentration in simple investigations is within the error limits of mass spectrometers. For this reason several tests must be carried out, i.e. the separation must be repeated to obtain the required accuracy. In the present paper a calculation method for the once-through separation coefficient is given for cases where the isotopes are separated according to the method of ion chromatography, a chemical exchange, a formation of a precipitation (according to the theorem by V. G. Khlopin), or according to other equilibrium methods. The authors proceeded from the assumption that the stoichiometric coefficients for the separation reaction are equal to unity. In this case the once-through

Card 1/3

On the Calculation of the Once-Through Coefficient of the Separation of Isotopes for Equilibrium Processes

coefficient α coincides with the constant of the chemical equilibrium. The final equation obtained is:

$$\alpha = \frac{t}{t - 1 + \sqrt[n]{\frac{x_0}{y_n}}}$$

x_0 = the initial content of isotopes in the first phase

y_n = the content of isotopes in the second phase after n separations

n = number of separation stages (repetitions of separation)

$t = \frac{L}{G}$, where L denotes the amount of the isotope mixture in the first phase, and G the amount of the isotope mixture till the separation process. There is 1 reference.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet, Khimicheskiy fakul'tet (Moscow State University, Chemistry Department)

PANCHENKOV, G.M.; KUZNETSOVA, Ye.M.; AKSHINSKAYA, N.V.

Polarographic determination of alkali metals in aqueous and alcohol-water solutions without the supporting electrolyte. Zhur.anal. khim. 15 no.4;424-426 Jl-Ag '60. (MIRA 13:9)

1. M.V.Lomonosov Moscow State University.
(Alkali metals)

S/076/60/034/010/021/022
B015/B064

AUTHORS: Kuznetsova, Ye. M., Panchenkov, G. M., Filippova, R. S., and Malakhov, V. F.

TITLE: A New Method of Separating the Boron Isotopes

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 10, pp. 2370 - 2371

TEXT: A method of separating boron isotopes by a selective extraction with water and isoamyl alcohol in an apparatus already described (Ref.16) has been developed. After the distribution of boric acid along the cells of the apparatus the first and last fraction were analyzed for the isotopic composition. The analysis was carried out on a MC-4 (MS-4) mass spectrometer by a method already described (Ref. 17). The results obtained show that together with the distribution of boric acid between water and isoamyl alcohol, a fractionation of the boron isotopes takes place, i.e. in the first fraction a concentration of the light isotope B^{10}, and in the last fraction of the B^{11} isotope. Thus, it is in principle possible to

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A New Method of Separating the Boron Isotopes S/076/60/034/010/021/022
B015/B064

employ the method of an extraction by liquids for the separation of boron isotopes. A calculation of the separation coefficient of a single fractionation yielded $\alpha = 1.0027$. It is assumed that by a combination of the complex formation characteristic of boron and an extraction, the separation coefficient is increased and the method described rendered more economical. There are 1 table and 18 references: 6 Soviet, 6 US, 2 British, 1 Yugoslavy, and 1 S.African.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: March 31, 1960

Card 2/2

5.3831
~~5(3), 19(9)~~

67892

AUTHORS: Kropacheva, Ye.N., Dolgoplosk, B.A., Corresponding Member AS USSR, Kuznetsova, Ye.M.

S/020/60/130/06/020/059
B011/B015

TITLE: Investigation of the Rate of Addition of Lithium Ethyl to Styrene and Isoprene in the Course of the Polymerization Process

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 130, Nr 6, pp 1253-1255 (USSR)

ABSTRACT: The aim of this paper is to prove that the original organometallic compound is not added at once to the diene monomer as shown by data of S.Ye.Bresler and collaborators (Ref 1). The authors carried out their experiments in pure anhydrous argon at 250-300°. For this purpose they used a special reaction apparatus (Fig 1). Samples were taken from the reaction vessel within certain intervals, and by means of them the amount of the polymer formed was determined as well as that of the lithium ethyl which did not enter the reaction. The molar ratio between lithium ethyl and monomer was 1/150 (with isoprene) and 1/100 (with styrene). Figure 2 shows the polymerization kinetics of

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Investigation of the Rate of Addition of Lithium Ethyl to Styrene and Isoprene in the Course of the Polymerization Process

S/020/60/130/06/020/059
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styrene at +1°, figure 3 the same at 24° for isoprene. These data indicate that the addition of lithium ethyl to the monomer proceeds gradually in the course of the entire process of polymerization. The polymerization of styrene and isoprene in the presence of tetrahydrofurane with which organolithium compounds form complexes was investigated in a similar way. For this purpose, solutions in heptane were used which contained 16% of styrene (at -20°) or 20% of isoprene (at +25°). The curves III in figures 2 and 3 show the consumption of lithium ethyl in the course of the polymerization of styrene and isoprene, respectively, in the presence of tetrahydrofurane (1 : 5). Curves IV show the polymer yield. They indicate the rapid acceleration of the primary act of addition of lithium ethyl to the monomer brought about by tetrahydrofurane. Thus, polymerization is also accelerated. The "living" polymer chain thus developing remains capable of further growing during a long time, even if the entire lithium ethyl and the monomer are consumed. Curves V and VI (Fig 3) indicate that the polymerization process sets in with normal rapidity when isoprene (20%) was filled up in heptane. The data set up by the authors deal

Investigation of the Rate of Addition of Lithium Ethyl to Styrene and Isoprene in the Course of the Polymerization Process

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B011/B015

with the concentration range of lithium ethyl between 0.7 and 1% by mole (referred to the monomer). A considerable dependence of the rates of the primary addition act and the growth of chain on the association degree of lithium ethyl is possible. This degree decreases with falling concentration of the organometallic compound in solution (Ref 10). There are 3 figures and 10 references, 8 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S.V. Lebedeva (Scientific Research Institute of Synthetic Rubber imeni S.V. Lebedev)

SUBMITTED: November 23, 1959

4

Card 3/3

KUZNETSOVA, Ye.M.

Electron scattering by a charged dislocation. Fiz.tver.tela 3 no.7:1987-1994 Jl '61. (MIRA 14:8)
(Electrons--Scattering) (Dislocations in crystals)

24.7700 (1144, 1035, 1055)

S/181/61/003/011/014/056
B102/B138

AUTHORS: Adirovich, E. I., and Kuznetsova, Ye. M.

TITLE: The possibility of inverse electron distribution in degenerate semiconductors

PERIODICAL: Fizika tverdogo tela, v. 3, no. 11, 1961, 3339-3341

TEXT: The creation of quantum systems with negative temperatures, i.e. with inverse electron distribution, is of great importance for the generation and amplification of electromagnetic waves in the submillimeter, infrared and optical bands. A method of creating inverse distribution between the bands in a semiconductor could be by injection through the p-n junction in a tunnel diode above the barrier (N. G. Basov, O. N. Krokhin, Yu. M. Popov. ZhETF, 40, 6, 1879, 1961). $F_2 - F_1 = \Delta$ as a critical condition (this corresponds to the demand that the population numbers of the ceiling of the valence band and of the bottom of the conduction band are equal) does not provide for inverse distribution in the final band of rarefied states. A sufficient condition would be $F_2 - F_1 = \Delta + \Delta_1 + \Delta_2$ (1)

Card 1/4

The possibility of inverse electron...

(c.f. figure), according to which one band must be degenerate. A p-type semiconductor is considered, with $\Delta_2 = kT$ and $\Delta_1 = \frac{h^2}{2m_p^*}\left(\frac{3p'}{8\pi}\right)^{2/3}$, p' being the total hole concentration. Their recombination with electrons from Δ_2 contributes to negative absorption. With F_1 and F_2 being given as functions of p, n and T etc. and

$$\left(N_1 = 2\left(\frac{2\pi m_p^* kT}{h^2}\right)^{3/2},\ N_2 = 2\left(\frac{2\pi m_n^* kT}{h^2}\right)^{3/2}\right)$$

$$n = N_2 e^{-\sqrt{\frac{9\pi}{16}}\left[\left(\frac{p}{N_1}\right)^{1/3} - \left(\frac{p'}{N_1}\right)^{1/3}\right]+1}, \qquad (2)$$

is found for (1) and

$$n = N_2 e^{-\sqrt{\frac{9\pi}{16}}\left(\frac{p}{N_1}\right)^{1/3}}. \qquad (3)$$

for the condition $F_2 - F_1 = \Delta$. The forbidden band width is not included in these formulas. In (2) and (3) $p = p(N_a, T)$. The explicit function

depends on the state of the centers of the main impurity in the semiconductor. Three limiting cases are discussed: (1) The acceptor levels remain discrete and do not merge with the valence band. In this case

$$\frac{n}{N_a}\left[\ln\frac{N_a}{n}\right]^{-1/2}=\frac{4}{3\sqrt{\pi}}\frac{N_i}{N_a}e^{\frac{\varepsilon_a-\varepsilon_i}{kT}}, \qquad (4)$$

holds and, also under optimum conditions, inverse distribution may be realized only with very high current densities ($j\simeq 10^4$-10^5 a/cm^2). (2) The acceptor states form an impurity band which does not overlap with the valence band. For band inversion (4) also holds, but inversion is also possible between conduction and impurity bands. For the usual acceptors or donors inverse distribution can only be created relative to the impurity band if the impurity level in highly alloyed semiconductors is broadened considerably and is highly asymmetric. (3) The impurity states merge with the valence band without changing the level density on its upper edge. For $p=N_a$ (semimetals) and all T

$$n = N_{ie}\, e^{-\sqrt{\frac{9\pi}{16}}\left[\left(\frac{N_e}{N_i}\right)^{1/6} - \left(\frac{F}{F_i}\right)^{1/6}\right]+1} \qquad (5)$$

holds. At $T = 100^{\circ}K$ and $j \simeq 10^3$ a/cm^2 $n \simeq 10^{16}$ cm^{-3} and at $T = 20^{\circ}K$ and $j \simeq 1$ a/cm^2 $n \simeq 10^6$ cm^{-3}. In this case the injection level leading to distribution inversion is highly dependent on the degree of alloying of the semiconductor, and also on the structure and the degree of band overlapping. If hybrid band formation in a degenerate semiconductor is accompanied by a decrease in the effective mass of majority carriers inversion will be achieved more easily. There are 1 figure and 5 references. 4 Soviet and 1 non-Soviet. The two references to English-language publications read as follows: F. Herman. Proc. IRE, 43, 1703, 1955; N. Solar, E. Burstein. Phys. Rev. 98, 1757, 1955.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR Moskva
(Physics Institute imeni P. N. Lebedev AS USSR, Moscow)

SUBMITTED: May 27, 1961

KUZNETSOVA, Ye.M.; MAKAROV, A.V.; PANCHENKOV, G.M.

Application of the multistage experiment formula for devising the scheme of an ideal cascade. Zhur.fiz.khim. 35 no.9:2116-2119 '61. (MIRA 14:10)
(Isotope separation)

KUZNETSOVA, Ye.M.; ZAKURIN, N.V.; NIKITIN, O.T.

Isotopic effect during distribution of titanium compounds between water and ether. Zhur.neorg.khim. 7 no.3:676-677 Mr '62. (MIRA 15:3)
(Titanium—Isotopes) (Titanium compounds)

24.7700

33959
S/020/62/145/001/008/018
B104/B102

AUTHORS: Adirovich, E. I., Academician AS UzSSR, and Kuznetsova, Ya. M.

TITLE: Effect of adhesion levels on the kinetics of electron processes in p-n junctions

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 145, no. 1, 1962, 67-70

TEXT: A theory of a p-n junction in semiconductors with adhesion levels is developed. The cross section of these levels and the binding energies are assumed to be arbitrary. The minority carrier kinetics in the junction base $(0 \leqslant x \leqslant w)$ is described by

$$\frac{\partial p}{\partial t} - D\frac{\partial^2 p}{\partial x^2} = -\frac{p-p_n}{\tau} + Bp_n - Ap(N_n - p_n), \quad \frac{\partial p_n}{\partial t} = Ap(N_n - p_n) - Bp_n. \qquad (1).$$

The complex differential conductivity of a p-n junction is shown to depend on three relaxation times: (1) the recombination time τ of the holes in the valence band; (2) the lifetime τ_n of the holes in the adhesion levels;

Card 1/3

Effect of adhesion levels on the...

(3) the characteristic adhesion time $\tau_{пр}$ of a free hole.

$$\tau_{эфф} = \tau \frac{1 + \omega^2\tau_n^2 + \tau_n/\tau_{пр}}{1 + \omega^2\tau_n^2(1 + \tau/\tau_{пр})}. \qquad (11)$$

is obtained for the effective relaxation time. $\tau_{eff} \approx$ const if

$$N_a \ll \frac{1}{A\tau + \frac{1}{N_v} e^{(\varepsilon_a - \varepsilon_v)/kT}}. \qquad (12)$$

where $\tau_{eff} \approx \tau$. The inequality (12) is the necessary and sufficient condition for a small concentration of minority carrier adhesion levels. Unless the inequality is satisfied, adhesion influences the effective lifetime and the inertia of the electron processes in the junctions. At high concentration of the adhesion levels a junction has two independent

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Effect of adhesion levels on the...

τ_{eff} in two different frequency ranges:

$$\text{a) } \omega^2\tau_n^2 < \frac{\tau_{np}}{\tau+\tau_{np}} \quad \text{б) } \omega^2\tau_n^2 > \frac{\tau_n+\tau_{np}}{\tau_{np}}. \qquad (13).$$

In the former case $\tau_{eff} = \tau(1+\tau_n/\tau_{np})$, and at these frequencies α and β traps have the same effects on the electron processes. In the latter case $\tau_{eff} = \tau\tau_{np}/(\tau+\tau_{np})$. $\tau_{eff} = \tau$ holds for β traps; for α traps the result $\tau_{eff} = \tau_{np}$ is not consistent with earlier results (F. M. Berkovskiy et al., Fiz. tverd. tela, 3, 230 (1961); S. M. Ryvkin, Sborn. Poluprovodniki v nauke i tekhnike, 2, Izd. AN SSSR, 1958). The deviations are discussed. There is 1 figure.

ASSOCIATION: Fiziko-tekhnicheskiy institut Akademii nauk UzSSR (Physico-technical Institute of the Academy of Sciences UzSSR)

SUBMITTED: March 10, 1962

Card 3/3

ADIROVICH, E. I., akademik; KUZNETSOVA, Ye. M.

Lifetime of nonequilibrium charge carriers in semiconductors with local levels. Dokl. AN SSSR 147 no.4:813-816 D '62.
(MIRA 16:1)

1. Fiziko-tekhnicheskiy institut AN UzSSR. 2. AN UzSSR (for Adirovich).

(Semiconductors—Electric properties)

KUZNETSOVA, Ye.M.; GRYAZNOVA, Z.V.; PANCHENKOV, G.M.

Calculation of the single-separation coefficient for some chemical exchange reactions. Dokl. AN SSSR 148 no.1:144-147 Ja '63.
(MIRA 16:2)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
Predstavleno akademikom A.N. Frumkinym.
(Isotope separation)

KUZNETSOVA, Ye. M.; GRYAZNOVA, S. V.; PANCHENKOV, G. M.;

"Zur Frage der Isotopentrennung durch Extraktion"

Berechnung des elementaren Isotopentrennfaktors bei Isotopenaustauschreaktionen und bei der Destillation.

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

KUZNETSOVA, Ye.M.; MAKAROV, A.V.; PANCHENKOV, G.M.; PARBUZIN, V.S.

Estimation of the once-through isotope separation coefficient from data on the equilibrium operation of a column with a draw-off pan. Zhur. fiz.khim. 37 no.10:2349-2350 O '63. (MIRA 17:2)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova, khimicheskiy fakul'tet.

ACCESSION NR: AP4034945 S/0181/64/006/005/1548/1550

AUTHOR: Kuznetsova, Ye. M.

TITLE: The unity of characteristic times during uniform excitation and during injection of carriers

SOURCE: Fizika tverdogo tela, v. 6, no. 5, 1964, 1548-1550

TOPIC TAGS: characteristic time, minority carrier, p n junction, semiconductor

ABSTRACT: The author's objective is to prove that the characteristic time for inequilibrium concentrations of minority carriers during uniform excitation is the same as the characteristic time for the current of minority carriers at p-n junctions (photodiodes). She considers systems of equations describing the kinetics of electron processes in semiconductors, the potential at the p-n junction, and the relaxation time for pulses of different forms, and she concludes from each consideration that the times agree. It is pointed out that the relaxation times for pulses of different forms are different but that there is invariably a relationship between these times for current through a p-n junction and for irregular concentrations of minority carriers when excitation is uniform. "In conclusion, I wish to thank Academician E. I. Adirovich of the AN UzSSR for his guidance in the work."

Card 1/2

ACCESSION NR: AP4034945

Orig. art. has: 5 formulas.

ASSOCIATION: none

SUBMITTED: 16Dec63 ENCL: 00

SUB CODE: EC NO REF SOV: 004 OTHER: 000

Card 2/2

KUZNETSOVA, Ye.M.; NIKITIN, O.T.

Isotopic effect in the distribution of titanium compounds between water and benzene. Zhur. fiz. khim. 36 no.9:2050-2052 S '62. (MIRA 17:6)

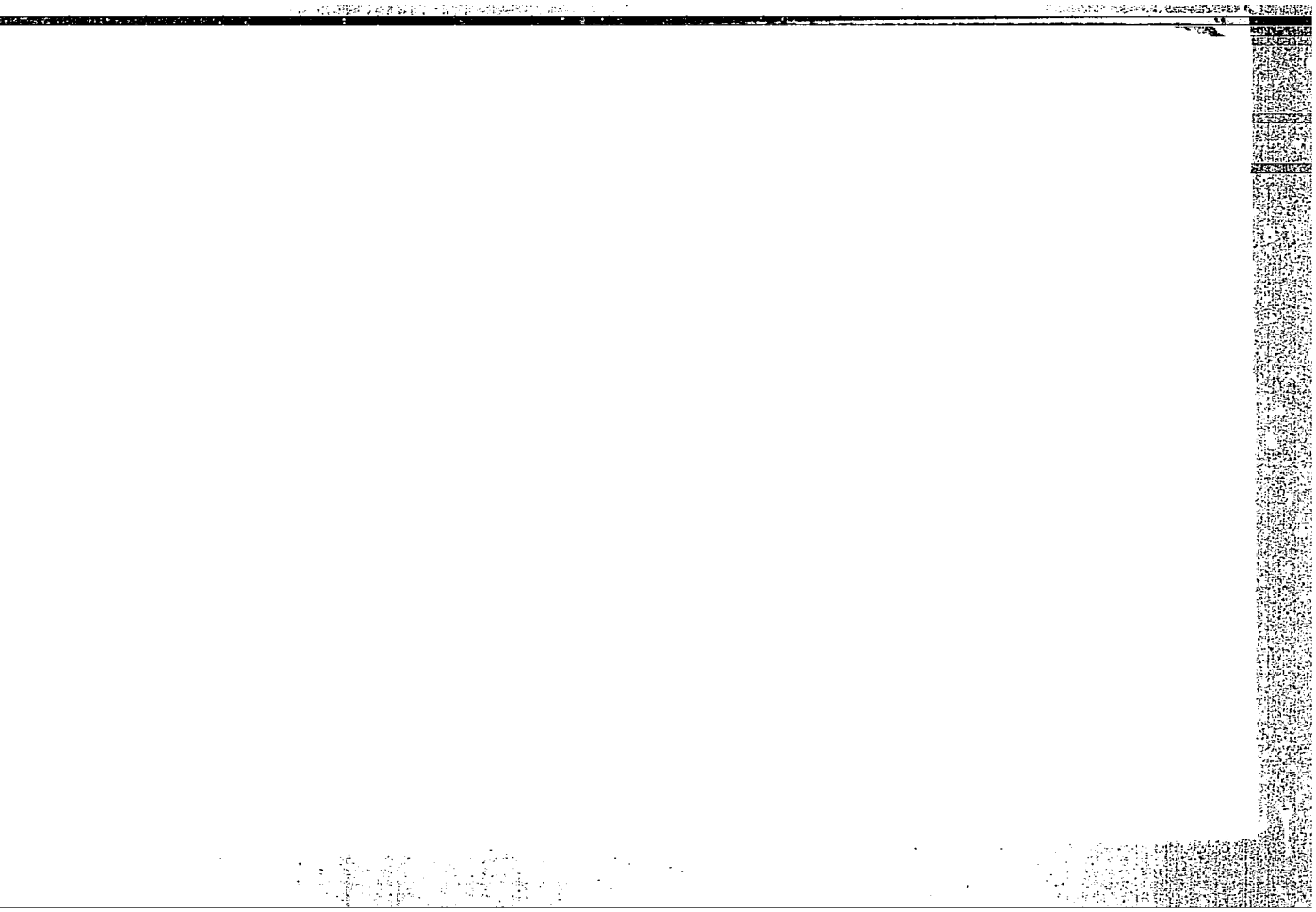
1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

KUZNETSOVA, Ye.M.

Unity of characteristic time in both uniform excitation and injection of charge carriers. Fiz. tver. tela 6 no.5:1548-1550 My '64. (MIRA 17:9)

KUZNETSOVA, Ye.M.

Reactive properties of a p-n junction related to diffusion.
Radiotekh. i elektron 9 no.11:2040-2042 N '64.
(MIRA 17:12)



APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000928220019-8"

the investigation of various semiconductor materials and was explained by indirect transitions with the participation of optical phonons. "In conclusion, I take this

L 30403-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6008098 SOURCE CODE: UR/0076/66/040/002/0481/0482

3D
B

AUTHOR: Kuznetsova, Ye. M.; Panchenkov, G.M.

ORG: Moscow State University im. M.V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Separation of lithium and sodium chlorides in an extraction apparatus

SOURCE: Zhurnal fizicheskoy khimii, v. 40, no. 2, 1966, 481-482

TOPIC TAGS: lithium chloride, sodium chloride, solvent extraction, partition coefficient, aluminum chloride

ABSTRACT: Lithium and sodium chlorides were separated in the presence of aluminum chloride by using a Craig-type extractor made up of five cells. An aqueous solution of $AlCl_3$ saturated with isoamyl alcohol was placed in the second through the fifth cell; the solution of the first cell contained the LiCl-NaCl mixture in addition to $AlCl_3$. Following the separation, the samples were analyzed for their sodium and lithium content by means of a spectrophotometer. The partition coefficients of LiCl and NaCl were found to be the same in all the cells. Their values obtained in static experiments and in those involving the Craig apparatus were found to be in good mutual agreement for lithium. A certain discrepancy in the partition coefficients for sodium is attributed to the presence of sodium chloride impurity in the aluminum chloride employed. Orig. art. has: 2 figures and 1 table.

SUB CODE: 07 / SUBM DATE: 31Dec64 / ORIG REF: 003

UDC: 543.544

Card 1/1 CC

L 01819-67 EWT(1)

ACC NR: AP6030969 SOURCE CODE: UR/0181/66/008/009/2724/2729

54

AUTHOR: Kuznetsova, Ye. M.

B

ORG: none

21

TITLE: Band to band light absorption taking polarons into consideration

SOURCE: Fizika tverdogo tela, v. 8, no. 9, 1966, 2724-2729

TOPIC TAGS: light absorption, polaron, absorption coefficient

ABSTRACT: The author investigates the spectrum of a free polaron. The band-to-band absorption coefficient is calculated, taking into consideration hole and electron polarons. The frequency dependence of the absorption coefficient is estimated. The author thanks V. L. Bonch-Bruyevich for his discussions and constant attention of the work. Orig. art. has: 11 formulas. [Based on author's abstract] [NT]

SUB CODE: 20/ SUBM DATE: 17Feb66/ ORIG REF: 006/ OTH REF: 001/

Card 1/1 fv

KUZNETSOVA, Ye. N.

Root Crops

Harvesting fodder root crops on time and without loss. Korm. baza 3 No. 8, 1952.

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

1. PANCHENKOV, G. M.; KUZNETSOVA, Ye. P.

2. USSR (600)

4. Cracking Process

7. Kinetics of catalytic cracking of gasoil, Dokl. AN SSSR, 87, No. 1, 1952.

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

KUZNETSOVA, Ye. P.

Kuznetsova, Ye. P. -- "Separation of Solid Bodies in a Rotating Electric Field." Cand Phys-Math Sci, Moscow City Pedagogical Inst imeni V. P. Potemkin, 20 Jan 54. (Vechernyaya Moskva, 8 Jan 54)

SO: SUM 168, 22 July 1954

KUZNETSOVA Ye.P.

SOV/112-58-1-638

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1958, Nr 1, p 96 (USSR)

AUTHOR: Kuznetsova, Ye. P.

TITLE: Electric Rotating Field Separator
(Separator s vrashchayushchimsya elektricheskim polem)

PERIODICAL: Uch. zap. Mosk. gor. ped. in-t, 1955 (1956), Nr 50, pp 59-74

ABSTRACT: On the basis of an investigation of electric-field configuration, a construction has been developed for an electrostatic separator in which the separation of solid particles is effected by ponderomotive field forces. A special separating field configuration is obtained between 3 thin wire electrodes connected to secondaries of a 3-phase step-up transformer. The electrodes are placed along the generatrices of a cylindrical trough made from insulating material. The separator trough is formed by 2 side walls made of plexiglas with thin wire electrodes embedded in the walls. The third electrode is enclosed in a groove cut in the bottom of the trough. A conveyer band is passed between the bottom and the walls of the trough at a distance determined by

Card 1/2

SOV/112-58-1-638

Electric Rotating Field Separator

calculations. Separation of a number of artifically prepared powder mixtures of solids having different electrical characteristics has revealed that in the cylindrical rotating electric field a fairly good separation can be obtained for conductors (chalcopyrite, pyrite) or semiconductors (siderite, hematite, limonite) with conductance $\gamma > 10^{-9}$ ohm^{-1}.cm^{-1} from dielectrics with a conductivity less than 10^{-12} ohm^{-1}.cm^{-1} (quartz, fluorite, calcite, etc.) Performance figures of separation for two dielectrics having a considerable difference between their permittivities (perovskite with $\varepsilon = 130$, and quartz with $\varepsilon = 4.5$) are also very high. More difficult is the separation of conductors ($\gamma = 10^{2}$ ohm^{-1}.cm^{-1}) from semiconductors, such as siderite ($\gamma = 10^{-5}$ ohm^{-1}.cm^{-1}), limonite ($\gamma = 10^{-9}$ ohm^{-1}.cm^{-1}). Bibliography: 21 items.

M.D.M.

AVAILABLE: Library of Congress

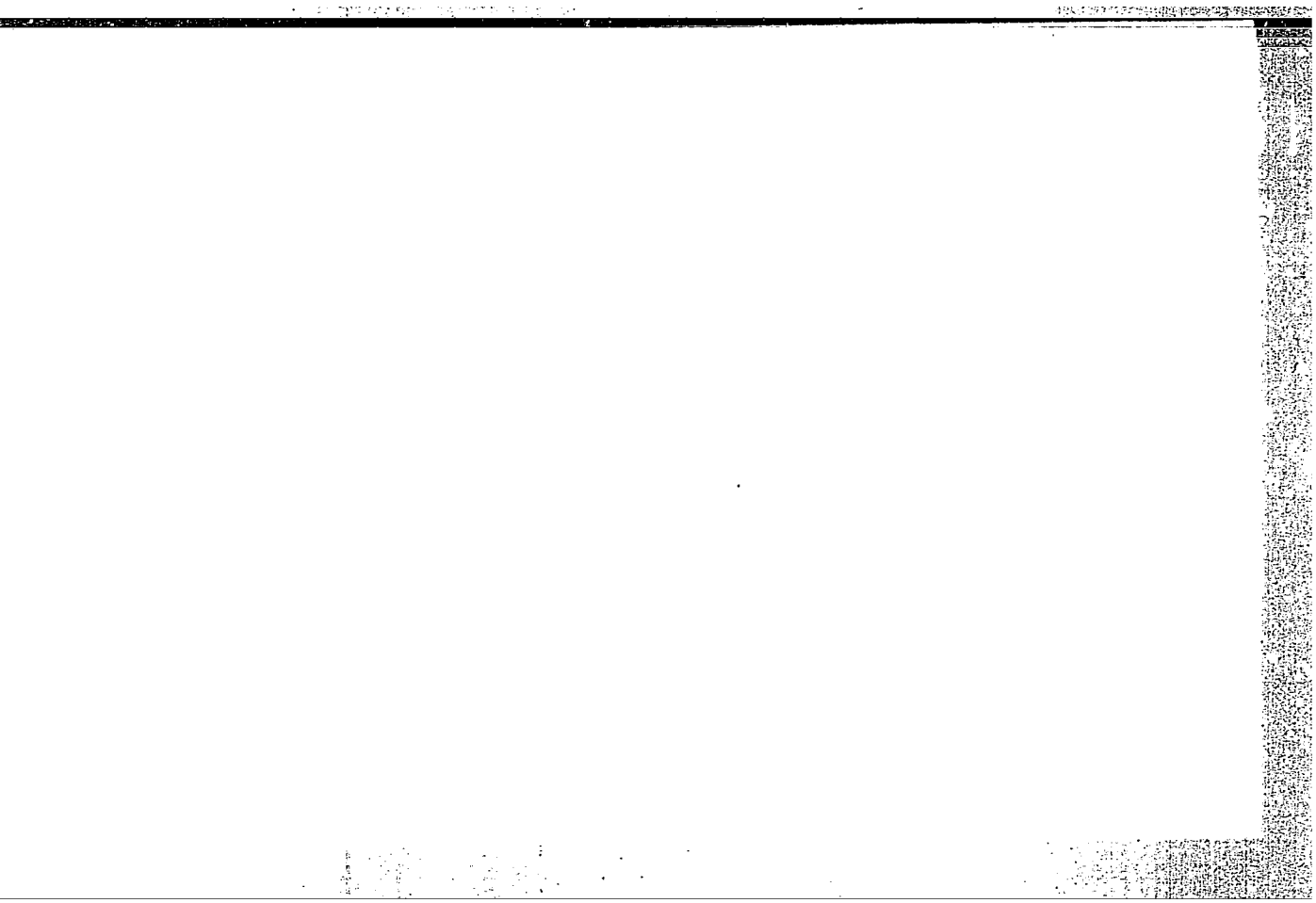
1. Materials--Separation 2. Electrical equipment--Design 3. Electric fields--Performance

Card 2/2

KUZNETSOVA, Ye.P.; KLENKOVA, N.I.

Activation of cellulose for acetylation by a heterogeneous method. Zhur. prikl. khim. 37 no.2:399-408 F '64.
(MIRA 17:9)

1. Okhtinskiy khimicheskiy kombinat i Institut vysokomolekulyarnykh soyedineniy AN SSSR.



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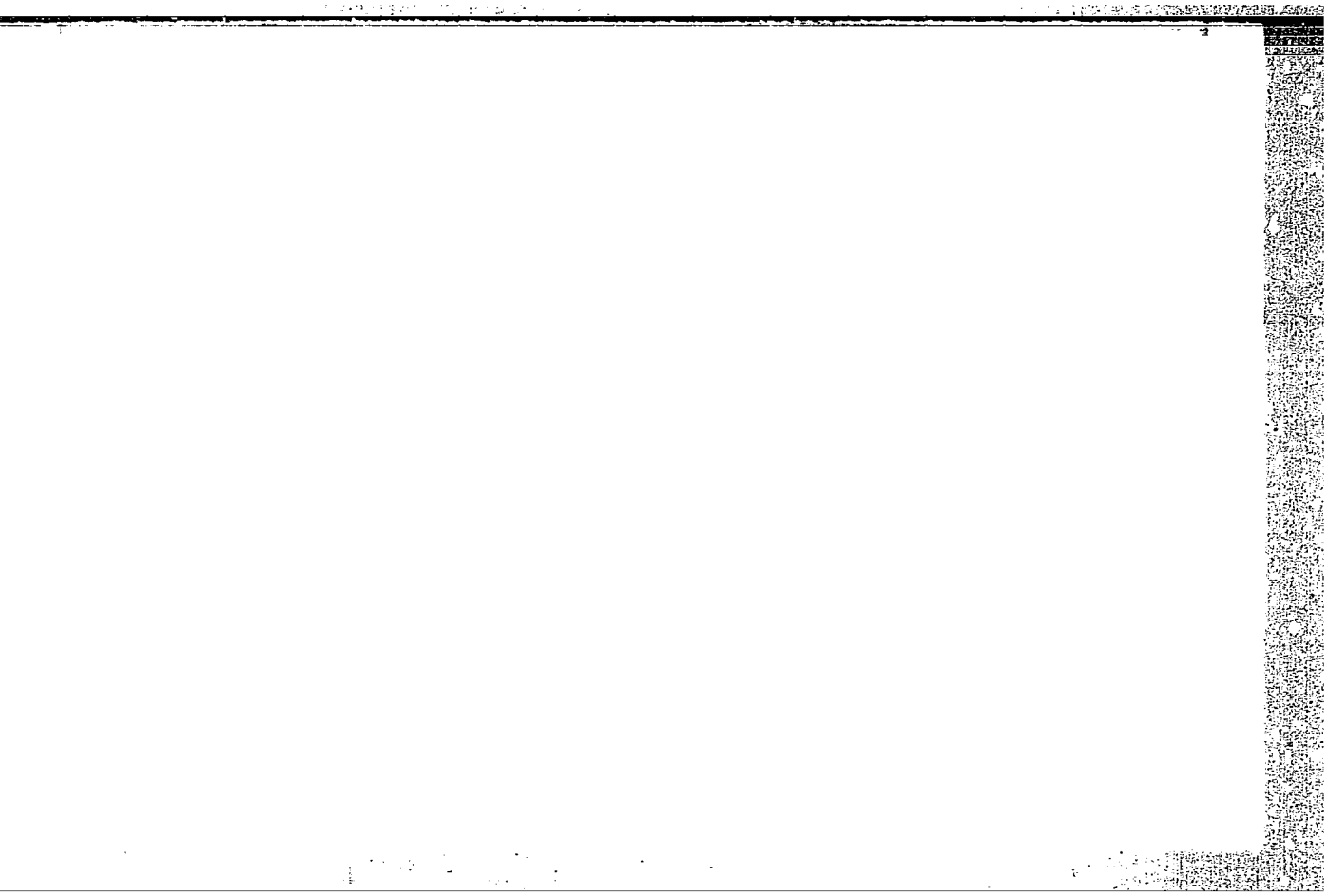

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KUZNETSOVA, Ye.P.; KLENKOVA, N.I.

Degradation of cellulose triacetate in the process of acetylation in the presence of benzene. Zhur.prikl.khim. 37 no. 5:1073-1080 My '64. (MIRA 17:7)

1. Okhtinskiy khimicheskiy kombinat i Institut vysokomolekulyarnykh soyedineniy AN SSSR.

LEBEDEVA, Z.A.; SOROKINA, Z.A.; BUSURINA, I.V.; KUZNETSOVA, Ye.S.

The nature of healing in osteoarticular tuberculosis in adults.
Probl.tub. 38 no.6:31-36 '60. (MIRA 13:11)

1. Iz kostnotuberkuleznogo otdeleniya dlya vzroslykh (zav. Z.A. Lebedeva) Instituta tuberkuleza AMN SSSR (dir. - chlen-korrespondent AMN SSSR prof. N.A. Shmelev).
(BONES--TUBERCULOSIS)

KUZNETSOVA, Ye.S.

Development of nonsymptomatic tuberculous foci in the bones. Probl.tub. 38 no.7:64-69 '60. (MIRA 14:1)

1. Iz kliniki kostnogo tuberkuleza dlya vzroslykh Instituta tuberkuleza (dir. - chlen-korrespondent AMN SSSR prof. N.A. Shmelev, zav. otdeleniyem - kand.med.nauk Z.A. Lebedeva) AMN SSSR.

(BONES—TUBERCULOSIS) (TUBERCULOSIS)

GIBSHMAN, F. I., KUZNETSOVA, [illegible] S.

Fishes

Study on the theme "fish class" (grade 7). Est. v shkole no. 3, 1952.

9. Monthly List of Russian Accessions, Library of Congress, September 1952, UNCL.

1. GIBSHMAN, F.I., KUZNETSOVA, YE. S.

2. USSR (600)

4. Insects

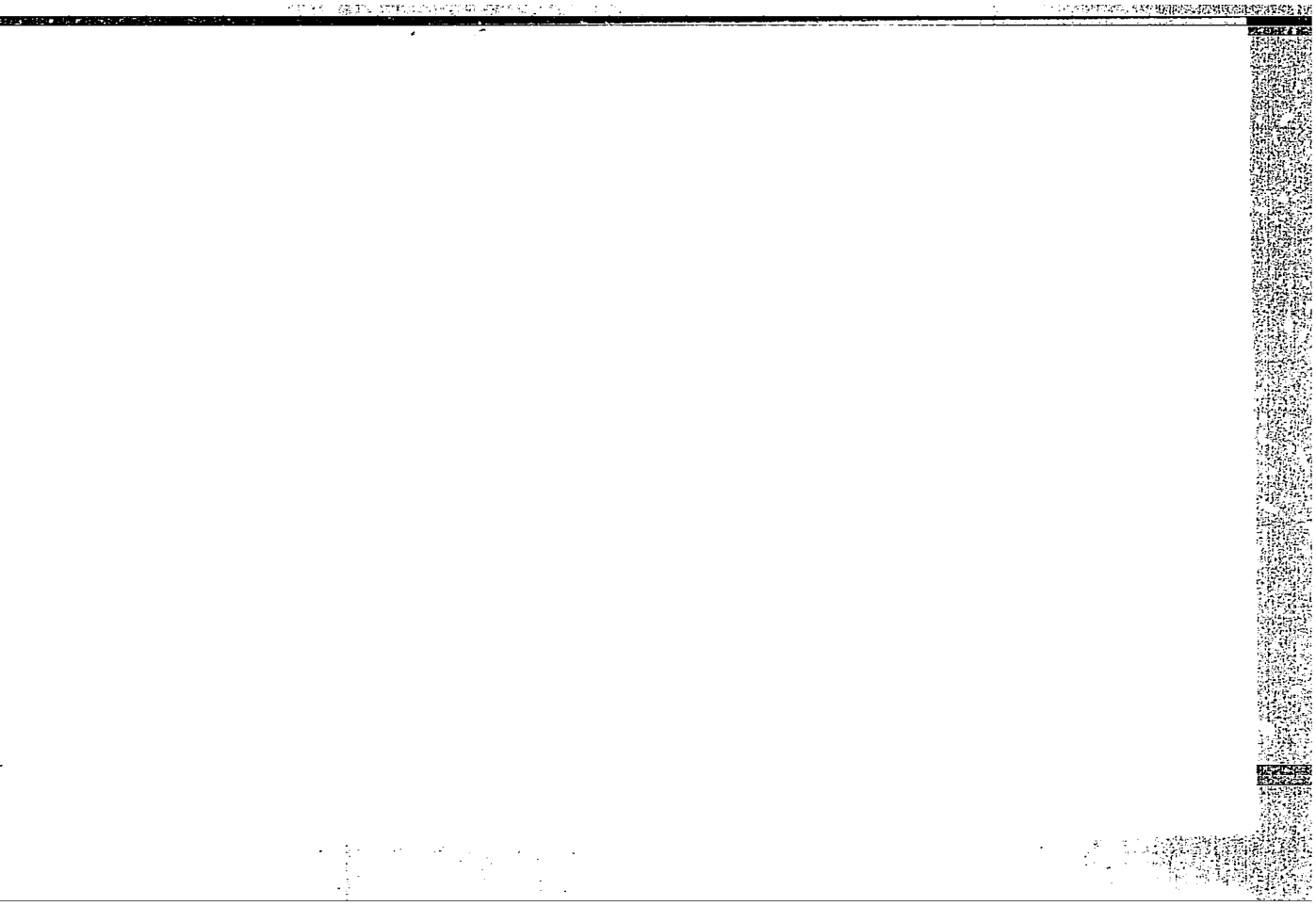
7. Lessons on the study of insects. Est. v shkole No. 1 1953.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

BERKMAN, N.S.; ORIONOV, A.A.; SEREBRENNIKOVA, Ye.Ya.; Prinimali uchastiye: SYRTSOVA, V.N.; KUZNETSOVA, Ye.S.

Granulation and fluidized bed roasting of copper charge mixtures at the Alaverdi Combine. Sbor. nauch. trud. Gintsvetmeta no.18: 321-327 '61. (MIRA 16:7)

(Alaverdi—Copper industry)
(Ore dressing)



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36442
S/137/62/000/003/108/191
A060/A101

19.1200

AUTHORS: Potemkin, A. Ya., Kuznetsova, Ye. S.

TITLE: Study of the phase constitution of alloys in the system Ge-Cu-Sb

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 9, abstract 3I57 ("Tr. In-ta metallurgii AN SSSR", 1961, no. 8, 135-142)

TEXT: Ge (99.99%), vacuum Cu (99.99%), and metallic Sb (99.98%) were taken as the starting materials. The alloys were smelted in evacuated quartz ampoules in the resistance furnace ТГ-3 (TG-3). The stirring of the melt was carried out by shaking the ampoules. The alloys were annealed in evacuated ampoules at 500°C for 350 hours, and then some of them were hardened in water, and the other part was cooled down to 300°C, soaked for 200 hours, and thereupon partly hardened in water and partly furnace-cooled. The investigation was carried out by the method of microscopic analysis. The following sections were studied: isoconcentrates at 80% Ge and 60% Ge, the radial section to 49% Sb, 51% Cu, and the section from 26% Ge, 73.5% Cu to 49% Sb, 51% Cu. It was found that in the solid state at temperatures up to 500°C the Ge is in equilibrium with the γ-phase on the base of the chemical compound Cu_2Sb. In the Cu vertex

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A060/A101

Study of the phase constitution ...

of the Ge-Cu-Sb system at temperatures up to 500°C the γ-phase on the base of the Cu_2Sb compound is in equilibrium with the ε-phase, whose composition in the Ge-Cu system corresponds to Cu_3Ge. There are 8 references.

Z. Rogachevskaya

[Abstracter's note: Complete translation]

Card 2/2

30028
S/020/61/141/001/010/021
B103/B147

5.2400 1087, 1043 2209

AUTHORS: Dudkin, L. D., and Kuznetsova, Ye. S.

TITLE: Study of the system Mn - Si in the range rich in silicon

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 141, no. 1, 1961, 94 - 97

TEXT: The existence of $MnSi_2$ in the system Mn-Si is not sufficiently founded (Ye. N. Nikitin, Fiz. tverd. tela, 1, 340 (1959)), and the data on the formation of the disilicide and on the phase diagram are contradictory. For these reasons, the authors studied the range rich in Si of the system Mn-Si. They used Si (99.998%) prepared according to Beketov [Abstracter's note: method not stated] and electrolytic Mn remelted twice in vacuo with traces of Al, Si, and Cu, as well as with < 0.001% Pb, Mo, Ti, and Co. Phases corresponding to the phase diagram were synthesized by melting together the initial components in evacuated and sealed quartz ampuls by means of high-frequency heating. After cooling in air the samples were annealed under argon at 1000°C for 200 hr. Heating curves for equilibrium samples were plotted at 600 and 1200°C,

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Study of the system Mn - Si...

and a thermal analysis was conducted. Sample and standard (Si) were molten in evacuated Stepanov vessels [Abstracter's note: vessel not stated]. The series of alloys produced contained 46 - 55% Mn. It was found that cast and annealed $MnSi_2$ samples were not monophase but contained considerable Si separations. On the basis of the microstructure of samples rich in Si, no $MnSi_2$ phase was found to occur in the system Mn-Si. Neither were there any phase transformations in the range of primary Si crystallization. In alloys richer in Mn, a transformation is supposed to occur in the corresponding part of the system, which leads to a homogeneity of the sample with 46% Si. This Si content corresponds to the stoichiometric ratio of components of 3:5. Further, Mn_3Si_5 was found to have a narrow homogeneity range which corresponds to a dissolution of about 0.5% of excess Si and Mn atoms in the compound. Fig. 2 shows the phase diagram for part of the system. Crosses denote the thermal effects of M. Hansen (Ref. 5, see below). The diagram shows that Mn_3Si_5 is formed by a peritectic reaction from MnSi and from the liquid at 1159°C. The eutectic of Mn_3Si_5 with Si corresponds to a Si content of ~49%, and melts

Study of the system Mn - Si...

at a temperature some 10°C lower (~1149°C). The composition of this compound is very similar to that of the liquid phase which corresponds to the nonvariant peritectic transformation. For this reason, the formation process of Mn_3Si_5 takes place during crystallization, and the cast samples do not show the characteristic patterns as correspond to the hardened peritectic transformation. These conclusions were confirmed by Debye patterns. A narrow homogeneity range on the basis of Mn_3Si_5 causes a complicated dependence of the thermoelectric properties on Si content. The dissolution of excess Mn and Si atoms is accompanied by the formation of additional current carriers. This is assumed to be connected with the formation of a defective lattice. The assumption is confirmed by a considerable increase in electrical conductivity in the range of the solid solution. The thermo-emf increases slightly at the same time. The change of the thermoelectric characteristics in the two-phase range is due to the effect of different secondary phases. Up to about 500°C, a metallic dependence $\ln\sigma(1/T)$ prevails; at higher temperatures, the measured values lie on a straight line. The activation energy of the current carriers is~0.2 ev. A. S. Berezhnoy's monograph: Kremniy i yego binarnyye sistemy

Study of the system Mn - Si...

(Silicon and Its Binary Systems), Kiyev, 1958, is mentioned. There are 4 figures and 8 references: 4 Soviet and 4 non-Soviet. The reference to the English-language publication reads as follows: Ref. 5: M. Hansen, Constitution of Binary Alloys, N. Y., 1958.

ASSOCIATION: Institut metallurgii im. A. A. Baykova Akademii nauk SSSR (Institute of Metallurgy imeni A. A. Baykov of the Academy of Sciences USSR)

PRESENTED: June 12, 1961, by I. I. Chernyayev, Academician

SUBMITTED: June 8, 1961

Card 4/4

DUDKIN, L.D.; KUZNETSOVA, Ye.S.

Investigating the electrophysical properties of alloys on a base of chromium and manganese semiconductor disilicides. Porosh. met. 2 no.6:20-31 N-D '62. (MIRA 15:12)

1. Institut metallurgii imeni A.A.Baykova AN SSSR.
(Semiconductors—Thermal properties) (Chromium-silicon alloys)
(Manganese-silicon alloys)