

MAKOVECZ, Istvan, dr.

Test of strength for men and machines. Auto motor 16  
no.4:5 21 F '63.

MAKOVECZ, Istvan, dr.

Interpretation of some rules from the Traffic Regulations  
for Public Thoroughfares. Pt. 1. Auto motor 16 no.18:23  
21 9 '63.

MAKOVECZ, Istvan, dr.

Interpretation of some rules of the Traffic Regulations for  
Public Thoroughfares. Auto motor 16 no.19:23 6 0 '63.

MAKOVECZ, Istvan, dr.

Interpretation of some rules of the Traffic Regulations for  
Public Thoroughfares. Pt. 3. Auto motor 16 no.20:24 21 0 '63.

MAKOVECZ, Istvan, dr.

Interpretation of some rules of the Traffic Regulations for public  
Thoroughfares.Pt.4. Auto meter 16 no.21:24 6 N '63.

MAKOVECZ, Istvan, dr.

Interpretation of some rules of the Traffic Regulations for Public  
Thoroughfares.Pt.7. Auto motor 16 no.24:26 21 D '63.

MAKOVECZ, Istvan, dr.

Interpretation of some rules of the Traffic Regulations for Public  
Thoroughfares.Pt.8. Auto motor 17 no.1:24 6 Ja '64.

MAROVICZ, Istvan, dr.

Remark about the article "Debates about a puzzling international  
question in connection with the Traffic Regulations for  
Thoroughfares." Auto motor 17 no.13:23 6 JI '71



MAROVICH, Istvan, dr., n. onagy

insufficiently illuminated areas. Auto motor 16 no. 3:43  
21 Ap '65.

MAKOVEL'SKIY, A.O.

~~Benedict Spinoza and his place in the history of psychology.~~  
Vop.psikhol. 5 no.5:71-78 S-0 '59. (MIRA 13:3)

1. AN AzerSSR.

(Spinoza, Benedict, 1632-1677)

MAKOVENKO, I., general-mayor aviatsii

In close connection with life and problems. Voen. vest. 43  
no.9:42-44 S '63. (MIRA 16:10)

(Russia--Armed forces--Political activity)

MAKOVENKO, V.Ya.

Clinical and anatomical data to establish the characteristics of the course of acute appendicitis in elderly and senile persons. Trudy Kish.gos.med.inst. 12:73-75 '60. (MIRA 16:4)

1. Kafedra gosital'noy khirurgii Kishinevskogo gosudarstvennogo meditsinskogo instituta.  
(GERIATRICS) (APPENDICITIS)

1. MAKOVER, M. D., Eng.
2. USSR (600)
4. Labels
7. Technique of preparing metal labels. Technical instruction. Vest mash No. 11 1952.

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

MAKOVER, Mikhail Danilovich; ZAMYSHLYAYEVA, I.M., red. izd-va;  
LELYUKHIN, A.A., tekhn. red.

[Care and maintenance of home and household goods]Ukhod za  
zhilishchem i domashnimi veshchami. Moskva, Izd-vo kommun.  
khoz.RSFSR, 1962. 62 p. (MIRA 15:9)  
(Home economics)

KRASNOV, Nikolay Petrovich; MAKOVER, Mikhail Danilovich; KOL'GUNENKO,  
Inna Ivanovna; KRASNOV, Yuriy Matveyevich; CHEREPAKHINA,  
Anna Nikolayevna; ZAV'YALKIN, N.P., red.; BAKHTIYAROVA, R.Kh.  
red. izd-va; BOLOTINA, A.V., red. izd-va; ZAMYSHLYAYEVA, I.M.,  
red. izd-va; SMIRNOVA, R.N., red. izd-va; NERONOVA, M.D., red.  
izd-va; LELYUKHIN, A.A., tekhn. red.

[Home and family life] Dom i byt. Moskva, Izd-vo M-va kommun.  
khoz.RSFSR, 1962. 315 p. (MIRA 15:11)  
(Home economics)

MAKOVER, Mikhail Danilovich; KOMAROVA, V.V., red.

[Minor repairs of household articles] Melkii remont domashnikh veshchei. Moskva, Legkaia industriia, 1965. 56 p.  
(MIRA 18:4)



MAKOVER, R.G.

Treating ambulant patients with slow healing ulcerations of the skin,  
with LIFX-V preparation of the Leningrad Institute of Blood Transfusion.  
Vest.ven.i derm. no.2:57 Nr-Ap '53. (MLRA 6:5)

1. Koshno-venerologicheskii dispanser No.13, Leningrad.  
(Skin--Diseases)

LIPSKAYA, M.I.; MAKOVER, R.G.; SHVARTSMAN, S.M., kand.med.nauk

Treating pustular skin diseases with a synthomycin emulsion. Vest.derm.  
i ven. 31 no.2:46 Mr-Apr '57. (MIRA 12:12)

1. Iz kozhno-venerologicheskogo dispansera No.13 Frunzenskogo rayona  
Leningrada.

(SKIN--DISEASES)

(CHLOROMYCETIN)

MAKOVER S.

Sanin P. Nametkin S. and Tsyba A., Kataliticheskoye Obesserivaniye  
Kashirskogo Benzina V. Atmosfere Vodoroda, Goryuchiye Slantsy, 1933, No. 1,32.

SO:

Goryuchiye Slantsy # 1934-35, TN. 871  
G .74

MAKOVER S.

Sanin P. Nametkin S. and Tsvba A., Obesserivaniye Slantsevykh Benzinov  
Gidrirovaniyem Pod Davleniyem V Prisutstvii Katalizatorov, Goryichiye Slantsy, 1934, No.1, 44

SO:

Goryuchiye Slantsy # 1934-35, TN .871  
G .74

1. MAKOVER, S. G.
2. USSR (600)
4. Prospecting - Geophysical Methods - Siberia
7. Preparation, summarization, and dissemination of the material of the gravimetric and magnetic plottings of Siberia. (Abstract) Izv.Glav.upr.geol.fon. No. 2 - 1947.

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

MAKOVER, S. G.

Planets - Phases

Approximation formulae for the computation in advance of the date of opposition of a small planet. Biul. Inst. teor. astron. 4 no. 3, 1949

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

YAKOVLEV, S. G.

YAKOVLEV, S. G. "Судьба..."  
Известия ЦК КПСР, 1983, № 7, стр. 1-2.

Со: М-061, 1-001-001, (Л-001-001-001) 30-001-001-001.

MAKOVER, S. G.

Planets, Minor - (250)

Corrected orbits of the planet (250) Bettina. Biul. Inst. teor. astron. 4 no. 6, 1949

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



MAKOVER, S. G.

Orbits

Corrected Orbits of the planet (250) Bettina. Biul. Inst. teor. astron. 5 no. 1, 1951

Monthly List of Russian Accessions, Library of Congress, August, 1952, UNCLASSIFIED

1. MAKOVER, S. G.
2. USSR (600)
4. Planets, Minor
7. Approximate amendment of the orbits of five minor planets of the type of Hecuba. Biul. Inst. teor. astron. 5 No. 4, 1952.

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

MAKOVER, S.G.

Elements and ephemeris of Encke-Backlund's comet for 1954. *Astron. tsir.*  
no.135:2-4 P '53. (MLRA 6:6)

1. Institut Teoreticheskoy Astronomii Akademii nauk SSSR.  
(Comet, Encke-Backlund's)

MAKOVER, S.G.

Possibility of observing Encke-Backlund's Comet during the solar eclipse of June 30, 1954. Aston.tsir. no.145:1-2 Ja '54. (MLRA 7:6)

1. Institut Teoreticheskoy Astronomii AN SSSR.  
(Comet, Encke-Backlund's)

Name: MAKOVER, Samuil Grigor'yevich

Dissertation: The Enk-Baklund Comet (movement during  
the period 1937-1954)

Degree: Doc Phys-Math Sci

Affiliation: Inst of Theoretical Astronomy, Acad  
Sci USSR

Defense Date, Place: 14 Feb 55, Council of the Main Astro-  
nomical Observatory, Acad Sci USSR

Certification Date: 29 Jun 57

Source: BMVO 18/57

MAKOVER, S.G.

Determining original orbits of long-period comets. Bul. Inst.  
teor. astron. 6 no.4:244-248 '55. (MIRA 13:3)  
(Comets--Orbits)

MAKOVER, S.G.

Encke-Backlund's comet. Report No.2: Determination of the mass  
of Mercury on the basis of observations of the comet during 1937-1954.  
Trudy ITA no.6:67-75 '56. (MLRA 10:5)  
(Mercury (Plant))  
(Comet, Encke-Backlund's)

MARKOVER, S.G.

5

Markover, S. G. Solution of a system of normal equations with the aid of matrices. Astr. Zh. 33 (1956), 423-439. (Russian) I-FW

This is a survey of elementary matrix algebra, followed by a matrix formulation of the method of least squares for inconsistent linear algebraic systems. A known compact elimination scheme is expounded for the numerical solution of the normal equations, followed by the efficient computation of certain weights. [Such methods are described in P. Dwyer, Linear computations, Wiley, New York, 1951; MR 13, 283 -- reviewer's reference.] The introduction states that at the moment [Soviet] astronomers and geodetists make little use of such compact methods, perhaps because the major Soviet text, N. I. Idel'son [The method of least squares and the theory of mathematical processing of observations, Izdat. Geodez. Kartograf. Lit., Moscow, 1947] does not treat matrices. There is no reference to machine computation. G. E. Forsythe (Stanford, Calif.)

gmn

Int. Theoretical Astronomy - AS USSR



MAKOVER, S.G.; ROZHKOVSIIY, D.A.; MATYAGIN, V.S.

Observations of Encke-Backlund's comet (1957 c) at the Mountain Observatory of the Institute of Astrophysics of the Academy of Sciences of the Kazakh S.S.R. (Alma Ata). Astron.tsir. no.193: 2-3 Jy '58. (MIRA 12:1)

1. Institut teoreticheskoy astronomii AN SSSR i Astrofizicheskiy institut AN Kazakhskoy SSR.  
(Cometa--1957)

MAKOVER, S.G.; BOKHAN, N.A.

Motion of the Encke-Baklund comet in the years 1898-1911, and a recent determination of the mass of Mercury. Dokl. AN SSSR 134 no.3:552-554 S '60. (MIRA 13:9)

1. Institut teoreticheskoy astronomii Akademii nauk SSSR. Predstavleno akad. V.G. Fesenkovym.  
(Encke's comet) (Mercury (Planet))

MAKOVER, S.G.

Ephemeris of Encke-Baklund's comet for 1960-61. *Astron. tsir.*  
no.211:3-5 My '60. (MIRA 13:10)

1. Institut teoreticheskoy astronomii AN SSSR.  
(Comets)

MAKOVER, S.G.; BOKHAN, N.A.

Encke-Backlund's comet. No.3: The comet's motion in 1898-1911  
and a new determination of the mass of Mercury [with summary in  
English]. Trudy ITA no.8:137-179 '61. (MIRA 14:8)  
(Comets) (Mercury (Planet))

MAKOVER, S.G.

Calculating orbits of artificial earth satellites. Biul.sta.-  
opt.nabl.isk.sput.Zem. no.24:3-11 '61. (MIRA 15:6)

1. Institut teoreticheskoy astronomii AN SSSR.  
(Artificial satellites--Orbits)

1,256.

S/816/61/000/024/003

AUTHORS: Makover, S. G., Gontkovskaya, V. T., Kochina, N. G., Sochilina, A. S. and Subbotina, N. S.

TITLE: Investigation of the motion of the second Soviet artificial earth satellite (Sputnik II or 1957  $\beta$ ).

SOURCE: Akademiya nauk SSSR. Astronomicheskiiy sovet. Byulleten' stantsiy opticheskogo nablyudeniya iskusstvennykh sputnikov Zemli. no. 24. 1961, 11-16.

TEXT: This is a presentation of the results of calculations of the orbit elements of Sputnik II from November 1957 to March 1958, based on visual tracking data, as used in the short-range prediction of the ephemerides. The method employed is described in the paper by Makover, S. G., The orbit determination of artificial earth satellites. Byulleten' stantsiy ... no. 24, 1961, 3-11 (Abstract S/816/61/000/024/001/003). Computations were performed on the BESM (BESM) electronic high speed computer of the AS USSR Computing Center (A. A. Dorodnitsin, Director). All preparatory work was done at the State Astronomical Institute imeni Shternberga (D. Ya. Martynov, Director). The computation program comprised the following specific steps: (1) Computation of the instantaneous orbit elements for the time of a given observation. (2) computation of the rectangular satellite coordinates from  
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Investigation of the motion ...

S7816/61/000/024.002

the formulas of its elliptical motion, (3) computation of the local sidereal time and the rectangular coordinates of the observation station, (4) computation of the celestial equatorial coordinates of the satellite and comparison between calculated and observed coordinates, (5) computation of the coefficients of tentative equations, (6) computation of the corresponding component coefficients for the normal equations. Computational stages (1) through (6) were performed consecutively for each observation, resulting in the ultimate coefficients of the normal equations. The following operations were then performed: (7) Determination of corrections to the elements as obtained from the solution of the system of normal equations, and determination of an improved system of elements, (8) determination of weight factors for the unknown. An entire cycle of orbit improvement from 100 observations requires one minute of machine time. Upon completion of all computations including stages (1) through (8), the entire computational cycle was repeated until convergence. Successive approximations were achieved (usually, 5 to 6 cycles). An additional computation was made of the so-called "variations," i.e., the changes of the right ascension and declination of the satellite due to an assumed 1-second error in time determination by the observer; this variation was found to be useful in the analysis and reconciliation of differences between observational values and those of reference stars, etc., was achieved by eliminating any observation with a

Card 2/3





MAKOVER, S.G.

Ephemeris of Neujmin's periodic comet III for 1961. Astron. tsir.  
no.218:2-3 F '61. (MIRA 14:7)

1. Institut teoreticheskoy astronomii AN SSSR.  
(Comets--1961)

MAKOVER, S.G.

Some problems in the theory of the moon's physical libration. Biul.  
Inst.teor.astron. 8 no.4:249-263 '62. (MIRA 16:6)  
(Moon--Libration)

MAKOVER, S.G.; LUCHICH, S.I.

Motion of Encke's comet in 1947-1957. *Biul.Inst.teor.astron.* 9  
no.4:224-233 '63. (MIRA 17:3)

MAKOVER, S.G., otv. red.

[Ephemerides of minor planets for 1965] Efemeridy mal'nykh planet na 1965 god. 19. god izd. Moskva, Nauka, 1964.  
150 p. (MIRA 17:8)

1. Akademiya nauk SSSR. Institut teoreticheskoy astronomii.

MAKOVER, S.G.

Perturbations of comets by fixed stars. Riul.Inst.teor.astron. 9  
no.8:525-536 '64. (MIRA 17:12)

MAKOVER, S.G.; BELYAYEV, N.A.

Program for numerical integration of equations of the motion of minor planets and for the comparison with observations. Biul. Inst. teor. astron. 9 no.8:542-549 '64. (MIRA 17:12)

МАКОФАН, С.Г., отв. ред.

Op. exercises of minor planets for 1966. (Yearly book)  
izdat na 1966 god. Dvedtatsi god izdati. Moskva,  
1966. 151 p.

Академия наук СССР. Институт астрономии  
1966

MAKOVER, S.G.

More exact orbits for 36 minor planets. *Biul. Inst. teor. astron.*  
10 no.3:181-191 '65. (MIRA 18:8)



L 25812-66 EWT(1) CW

ACC NR: AR5018946

SOURCE CODE: UR/0269/65/000/007/0069/0069

AUTHOR: Makover, S. G. 2/8

ORG: none

TITLE: Disturbances of comets <sup>✓</sup> caused by stationary stars <sup>✓</sup>

SOURCE: Ref. zh. Astronomiya. Otdel'nyy vypusk, Abs. 7.51.579

REF SOURCE: Byul. in-ta teor. astron. AN SSSR, v. 9, no. 8, 1964, 525-536

TOPIC TAGS: star, comet, orbit, ~~pericenter~~ <sup>astronomy</sup>

TRANSLATION: A study was made of the movement of a hypothetical comet with orbit characteristics of:  $Q = 50,000$  astronomical units,  $q = 2,0$  a.u. and  $e = 0,99996$ , being disturbed by a stationary star of a  $1 M_{\odot}$  mass, which is located in the direction of the large axis of the comet orbit at a distance of 200,000 a.u. The disturbances (first order only) were computed by integrating Lagrange equations for osculatory elements; it proved to be helpful to use the excentric anomaly as the independant variable, as had been done earlier by F. Kh. Perlin (RZhAstr., 1962, 12A98). The integration was carried in reverse for the half period of the comet revolution ( $5 \cdot 10^6$  years) with a  $10^6$  step. It appeared that 5 million years ago the orbit of this comet would have had the following characteristics:  $Q = 50,000$  a.u.,  $q = 3,96$  and  $e = 999934$ . This case permits making the deduction that inasmuch as the real stars have velocities  $\sim 10^{-5}$  parsec/year,

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UDC: 523.12:521.4

L 25842-66

ACC NR: AR5018946

the disturbing influence of a star which does not come closer than 1 parsec cannot cause any considerable variations in the perihelion distances of comets, as well as disturbances from associations of stars surrounding the Sun. Considerable disturbances may occur only in cases of very close approaches of stars to the Sun, at distances much smaller than 1 parsec. In order to establish actual occurrences of such approaches in the past, the Glize catalogue was consulted; in the future such an approach is to be achieved by the star indicated by A. Alksnis and A. Michulis (See Astron.zh., 1952, No. 29, 2,265). The time and distances of such approaches were found for 276 stars located not farther than 20 parsec from the Sun. The data obtained does not contradict the hypothesis on the possibility of previous close approaches between the Sun and the stars. The author makes a deduction regarding the agreement between the Oort comet cloud hypothesis with the computed data on the comet orbits and on the contradictions between the latter and the S. K. Vsekhsvyatskiy eruption hypothesis on the formation of comets.

SUB CODE: 05/      SUBM DATE: none

Card 2/2 *ll*

MAKOVER, S.G.

Ephemeride of Encke's comet for 1963-1964. Astron. tsir.  
no.239:3-4 Ap '63. (MIRA 17:6)

1. Institut teoreticheskoy astronomii AN SSSR.

MAKOVETSKAYA, G.A.

Mucoviscidosis in children. Vop.okh.mat.i det. 7 no.8:79-81 Ag  
'62. (MIRA 15:9)

1. Iz kafedry detskikh bolezney (zav. - prof. A.I.Miloserdova)  
Kuybyshevskogo meditsinskogo instituta (rektor - kand.med.nauk  
D.A.Voronov).

(CYSTIC FIBROSIS)

MAKOVETSKAYA, G.A.

Celiac disease syndrome in children. Vop.okh.mat.i det. 8  
no.3:77-79 Mr '63. (MIRA 16:5)

1. Iz kafedry detskikh bolezney (zav. - prof. A.I. Miloserdova)  
Kuybyshevskogo meditsinskogo instituta.  
(CELIAC DISEASE)

Solid solutions in the system InP-GaP. N. N. Sirota, V. V. Rozov.

Investigation of solid solutions of InP-GaAs. N. N. Sirota, L. A. Makovetskaya.

Physical properties of the system ZnTe-CdTe. N. N. Sirota, V. D. Yanovich.

Physical properties of ternary alloys of the system  $Zn_3As_2$ - $Cd_3As_2$ . N. N. Sirota, E. M. Smolyarenko.

Semiconducting properties of manganese-telluride and selenide. N. N. Sirota, G. I. Makovetskiy.

Production of films of semiconducting compounds of the type  $A^V B^{VI}$  and  $A^{IV} B^V$  on antimony by reactive diffusion. N. N. Koren', N. N. Sirota. (25 minutes). (Presented by N. N. Sirota).

Report presented at the 3rd National Conference on Semiconductor Compounds, Kishinev, 16-21 Sept 1963

MAKOVETSKAYA, L.A.

AID Nr. 989-1 13 June

InP-GaAs SYSTEM (USSR)

Sirota, N. N., and L. A. Makovetskaya. IN; Akademiya nauk BSSR. Doklady, v. 7, no. 4, Apr 1963, 230-232. S/250/63/007/004/002/005

The Department of Solid-State Physics and Semiconductors of the Belorussian Academy of Sciences has conducted a study of the quasi-binary InP-GaAs system. Nine alloys of the system with GaAs content increasing in steps of 10 mol % were synthesized from In, Ga, P, and As with purities of 99.995%, 99.95%, 99.999%, and 99.999%, respectively. Synthesis and subsequent homogenization (by zone melting) of the alloys were carried out at 1100 to 1300°C. X-ray diffraction patterns showed that the lattice constant "a" varied as follows: with increasing GaAs content: 5.863 ± 0.002 Å for pure InP, a decrease to a minimum of 5.561 ± 0.002 Å at 40% GaAs, and then an increase to 5.569 ± 0.002 Å for pure GaAs. The microhardness-composition curve followed the reverse pattern: it increased from 420 ± 20 kg/mm<sup>2</sup> for pure InP to a maximum of 800 ± 20 kg/mm<sup>2</sup> at 50% GaAs and then dropped to 640 ± 50 kg/mm<sup>2</sup> for pure GaAs. Both phenomena are characteristic for systems with a continuous series of solid solutions. Microscopic examination confirmed that all the alloys tested have a single-phase structure. [WW]

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L 43806-65 EWT(m)/EWP(t)/EWP(b) LJP(c)/AFMD(t)/AFWL/ASD(a)-5/SSD/RAEM(a)/  
ESD(t) JD S/0250/64/008/009/0572/0574  
ACCESSION NR: AP4047006

AUTHOR: Makovetskaya, L. A.; Sirota, N. N.

TITLE: Width of the forbidden band in solid solutions of indium phosphide and gallium arsenide, determined by the edge of the main optical absorption band

SOURCE: AN BSSR. Doklady, v. 8, no. 9, 1964, 572-574

TOPIC TAGS: absorption band, optical density, solid solution, forbidden band width, indium phosphide, gallium arsenide

ABSTRACT: The authors made a systematic study of the variation in optical density of samples (10 compositions) of InP-GaAs solid solutions as a function of wavelength from 0.2 to 2  $\mu$ . Slices were cut from polycrystalline ingots of InP-GaAs, obtained by synthesis in a two-temperature oven and zone-equalizing, and optically polished to 10-35  $\mu$ . Curves of optical density as a function of wavelength are given for various proportions of the raw materials as well as a derived curve showing the width of the forbidden band. Deviations of the lattice constant, from a straight line in the direction of compression, agreed with the deviation of width of the forbidden band from the additive straight line in an increasing direction, and were proportional thereto in the first approximation. A table shows the optical trans-

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L 13806-65

ACCESSION NR: AP4047006

mission and wavelength at the edge of the absorption band for various proportions of the materials, and sample thicknesses. This shows that the forbidden band of such solid solutions may be wider than that of the constituent materials when pure, and that the solid solution is formed with a negative heat effect. These widths are in agreement with those obtained by previous workers. Orig. art. has: 1 table and 2 figures.

ASSOCIATION: Institut fiziki tverdogo tela i poluprovodnikov (Institute of Solid State and Semiconductor Physics)

SUBMITTED: 12Apr64

ENCL: 00

SUB CODE: SS

NO REF SOV: 004

OTHER: 003

Card 2/2

L 23465-65 EWT(l)/EWG(k)/EWT(m)/T/EWP(t)/EWP(b)/EWA(h) Pz-6/Feb IJP(c)  
FD/AT S/0250/64/008/010/0632/0633

26  
25  
B

ACCESSION NR: AP5001198

AUTHOR: Sirota, N. N.; Makovetskaya, L. A.

TITLE: Electric conductivity and the width of the forbidden zone in solid solutions of indium phosphide-gallium arsenide semiconductor compounds

SOURCE: AN BSSR. Doklady, v. 8, no. 10, 1964, 632-633

TOPIC TAGS: semiconductor compound, indium phosphide, forbidden zone width, gallium arsenide, electric conductivity, solid solution compound, solid solution, compound forbidden zone

ABSTRACT: A study has been made of the temperature dependence of the electric conductivity of InP-CeAs alloy at temperatures from -170 to 750C in an attempt to determine the width of the forbidden zone on the basis of the temperature dependence of intrinsic conductivity. It was found that in the range of temperatures from that of liquid nitrogen up to about 500C the conductivity is extrinsic, and only above 500-600C does it become intrinsic. The width of the forbidden

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L 23465-65

ACCESSION NR: AP5001198

zone of InP-GaAs alloys depends upon its composition (see Fig. 1 of the Enclosure); the maximum width of the zone is observed in the alloy with 50-60% GaAs content. Thus, in the quasi-binary InP-GaAs system there is a substantial deviation from the additivity principle in relation to the forbidden zone, which is apparently associated with a similar deviation in relation to the energy of the solid-solution lattice. Orig. art. has: 2 figures and 1 table. [ND]

ASSOCIATION: Institut fiziki tverdogotela i poluprovodnikov AN BSSR (Institute of Solid-State Physics and Semiconductors, AN BSSR)

SUBMITTED: 15Jul64

ENCL: 01

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OTHER: 002

ATD PRESS: 3174

Card 2/3

L 23465-65  
ACCESSION NR: AP5001198

ENCLOSURE: 01

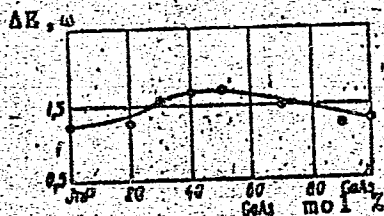


Fig. 1. Composition dependence of the activation energy on the width of the forbidden zone in indium phosphide-gallium arsenide alloys

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L 63825-65 EWT(1)/EWT(m)/EMP(t)/EMP(b) IJP(c) JM/JG

ACCESSION NR: AP5019324

UR/0250/65/009/007/0435/0437

AUTHOR: Sirota, N. N.; Makovetskaya, L. A.

25  
24  
B

TITLE: Thermal emf of the solid solutions of indium phosphide and gallium arsenide

SOURCE: AN BSSR. Doklady, v. 9, no. 7, 1965, 435-437

21 27 27 27 27

TOPIC TAGS: indium phosphide, gallium arsenide, indium phosphide alloy, gallium arsenide containing alloy, alloy thermal electromotive force, thermal emf composition dependence, thermal emf temperature dependence

ABSTRACT: The dependence of the thermal emf on the composition and temperature has been investigated in InP, GaAs, and 9 InP-GaAs alloys with a composition varying from 0.1 InP-0.9 GaAs to 0.9 InP-0.1 GaAs, and an impurity concentration within limits of  $1.7 \cdot 10^{16}$ — $3.0 \cdot 10^{19}$ . The thermal emf was measured on polycrystalline n- and p-specimens in a vacuum or a helium atmosphere in the 120—600K range, the temperature difference at the hot and cold ends of the specimens was 10—12C. The differential thermal emf readings were practically identical during heating or cooling and increased with increasing temperature after passing through a small minimum below room temperature. At all test temperatures, the maximum value of  $\alpha^2 \sigma$  (where  $\sigma$  is the specific electric conductivity) was observed in an alloy con-

Card 1/2

L 63825-65

ACCESSION NR: AP5019324

taining 30% GaAs; with increasing temperature, the value of  $\alpha^2\sigma$  increased. The magnitude of the thermal emf ( $\alpha$ ) below temperatures at which the intrinsic conductivity is reached depended mainly on the impurity concentration ( $n$ ). For example, at  $T = 300K$  in 0.4 InP-0.6 GaAs alloy  $n = 5.8 \cdot 10^{18}/cm^3$ ,  $\alpha = -46 \mu v/deg$ ; in 0.7 InP-0.3 GaAs alloy  $n = 1.7 \cdot 10^{18}/cm^3$ ,  $\alpha = -280 \mu v/deg$ ; the corresponding figures for 0.8 InP-0.2 GaAs and 0.3 InP-0.7 GaAs were:  $3.4 \cdot 10^{17}$  and  $2.4 \cdot 10^{17}/cm^3$  and 294 and 370  $\mu v/deg$ , respectively. The absolute values of  $\alpha$  and  $\sigma$  in the investigated InP-GaAs system were of the same order as in alloys of the InP-InAs and InAs-GaAs systems. Orig. art. has: 2 figures and 2 tables. [MS]

ASSOCIATION: Institut fiziki tverdogo tela i poluprovodnikov AN BSSR (Institute of Solid State Physics and Semiconductors, AN BSSR)

SUBMITTED: 24Apr65

ENCL: 00

SUB CODE: SS, EM

NO REF SOV: 003

OTHER: 003

ATD PRESS: 4073

ACC NR: AP6026963

SOURCE CODE: UR/0250/66/010/007/0449/0451

AUTHOR: Sirota, N. N.; Makovetskaya, L. A.ORG: Institute for Solid State Physics and Semiconductors AN BSSR  
(Institut fiziki tverdogo tela i poluprovodnikov AN BSSR)TITLE: Heat conductivity of solid solutions of semiconducting compounds  
of the system indium phosphorous--gallium arsenic

SOURCE: AN BSSR. Doklady, v. 10, no. 7, 1966, 449-451

TOPIC TAGS: heat conductivity, phosphorous compound, indium  
compound, gallium compound, arsenic compound, solid solution

ABSTRACT: The article reports the results of determination of the heat conductivity of solid solutions of indium phosphide and gallium arsenide at a temperature of 320°K. The measurements were made on prismatic samples with a length of 20-25 mm and a cross section of approximately 3 x 4 mm<sup>2</sup>, cut from polycrystalline ingots synthesized in a two temperature furnace by the zone melting process. The article gives a diagram of the experimental apparatus. Measurements of the heat conductivity were made with a temperature drop of 6-8°C. Calculation of the heat passing through the sample was made from the power of the

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ACC NR: AP6026963

heating furnace. All measurements were made in a vacuum  $\geq 10^{-3}$  mm Hg. Based on the experimental data, the article gives curves for the heat conductivity of alloys of the InP--GaAs system with different compositions. The measurements showed that the heat conductivity of indium phosphide is of the order of 0.67/watt/cm-degree, and that of gallium arsenide 0.41 watts/cm-degree. It was found that with a rise in the concentration of the dissolved substance, the heat conductivity of the solid solution decreases considerably. Experimental results are compared with literature data, and the conclusion is drawn that these alloys are very promising for application in thermoelectric instruments. However, it is also indicated that with an increase in the degree of randomness, which is characterized by an increase in the entropy of the mixture, the heat conductivity drops considerably. Orig. art. has: 2 figures and 1 table.

SUB CODE: 11, 20/ SUBM DATE: 30Mar66/ ORIG REF: 005/ OTH REF: 007

Card 2/2



ACC NR: AT700381

SOURCE CODE: UR/0000/66/000/000/0208/0211

AUTHOR: Sirota, N. N. (Academician, BSSR); Makovetskaya, L. A.

ORG: none

TITLE: Width of forbidden band and coefficient of linear expansion of semiconductor alloys InP-GaAs

SOURCE: AN BSSR. Institut fiziki tverdogo tela i poluprovodnikov. Khimicheskaya svyaz' v poluprovodnikakh i termodinamika [Chemical bond in semiconductors and thermodynamics]. Minsk, Nauka i tekhnika, 1966, 208-211

TOPIC TAGS: semiconducting material, solid solution, indium compound, phosphide, gallium arsenide, forbidden band, thermal expansion

ABSTRACT: The authors investigated the variation of the forbidden band at room temperature by determining the edge of the optical absorption band, using polished thin plates and a procedure described earlier (DAN BSSR, v. VIII, no. 9, 572, 1964). The plots of the width of the forbidden band and of the lattice constant against the composition of the InP-GaAs alloys were similar to those obtained by others for other solid solutions of III - V compounds. The coefficient of linear expansion was measured with a quartz dilatometer in vacuum at temperatures of 270 - 600K, and the values of the characteristic temperature were calculated from the measured linear-expansion coefficient and the values of the lattice constant. Both the coefficient of linear expansion and the characteristic temperature showed a slight variation with

UDC: 541.57

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ACC NR: AT7003881

the composition. This variation, however, together with the deviations observed in the width of the forbidden band from the additivity law and the deviations of the lattice-constant curve from the Vegard straight line, agree with the proposed increase of the energy of the interatomic interaction in the crystals as compared with the InPn-GaAs compounds. Orig. art. has: 3 figures, 3 formulas, and 1 table.

SUB CODE: 20/

SUBM DATE: 20Aug66/

ORIG REF: 009/

OTH REF: 005

Card 2/2

OSTROUSHKO, Yu.I.; BUCHIKHIN, P.I.; ALEKSEYEVA, V.V.; NABOYSHCHIKOVA, T.F.;  
KOVDA, G.A.; SHBLKOVA, S.A.; ALEKSEYEVA, R.N.; MAKOVETSKAYA, M.A.;  
PANASENKOVA, Ye.I., red.; MAZEL', Ye.I., tekhn.red.

[Lithium, its chemistry and processes for the treatment of its ores]  
Litii, ego khimiia i tekhnologiya. Moskva, Izd-vo Glav.uprav. po  
ispol'zovaniu atomnoi energii pri Sovete Ministrov SSSR, 1960.  
198 p. (MIRA 13:9)

(Lithium)

ZEFIROV, A.P.; MAKOVETSKAYA, M.A.; ZARGAROVA, M.I.

Present state of lithium technology and its industrial use.  
Met. i metalloved. chist. met. no. 2:159-171 '60. (MIRA 13:12)  
(Lithium--Metallurgy)

MAKOVETSKIY, Aleksandr Fedorovich [Makovets'kyi, O.F.]; PETROVSKIY,  
~~V.V. [Petrovs'kyi, V.V.]~~, red.; CHUCHUPAK, V.D., tekhn. red.

[Physical culture for older people] Fizychna kul'tura dla  
liudei starshoho viku. Kyiv, Derzh.medychne vyd-vo, 1963.  
42 p. (MIRA 16:10)  
(PHYSICAL EDUCATION AND TRAINING FOR THE AGED)

MAKOVETSKIY, A. I.

"A Plumb Line with a Spherical Load,"

SO: Gor. Zhur., No. 1, 1949.

6

MAKOVETSKIY G.I.

Solid solutions in the system InP-GaP. N. N. Sirota, V. V. Rozov.

Investigation of solid solutions of InP-GaAs. N. N. Sirota, L. A. Makovetskaya.

Physical properties of the system ZnTe-CdTe. N. N. Sirota, V. D. Yanovich.

Physical properties of ternary alloys of the system  $Zn_3As_2$ - $Cd_3As_2$ . N. N. Sirota, E. M. Smolyarenko.

Semiconducting properties of manganese-telluride and selenide. N. N. Sirota, G. I. Makovetskiy.

Production of films of semiconducting compounds of the type  $A^V B^VI$  and  $A^{II} B^V$  on antimony by reactive diffusion. N. N. Koren', N. N. Sirota. (25 minutes). (Presented by N. N. Sirota).

Report presented at the 3rd National Conference on Semiconductor Compounds, Kishinev, 16-21 Sept 1963

ACCESSION NR: AP4002835

S/0250/63/007/011/0740/0742

AUTHOR: Makovetskiy, G. I.; Sirota, N. N.

TITLE: Dilatometric analysis of manganese selenide

SOURCE: AN BSSR. Doklady\*, v. 7, no. 11, 1963, 740-742

TOPIC TAGS: manganese selenide, dilatometric analysis, stable modification, unstable modification

ABSTRACT: The experiments described are part of a series of systematic investigations of compounds of manganese and elements of group VI which are being carried out in the laboratory of the Otdel fiziki tverdogo tela i poluprovodnikov AN BSSR (Department of Solid State Physics and Semiconductors, AN BSSR). The immediate purpose of the present work was the investigation of the temperature dependence of the linear expansion coefficient within the 100 to 700K range. A quartz dilatometer with a reading accuracy of 0.002 mm in vacuum was used in the measurements. The specimens, 25—30 mm long and 5.2 mm in diameter, were obtained by sintering MnSe at 800C after the two components had been synthesized in quartz tubes by prolonged heating at 1100C.

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ACCESSION NR: AR4002835

The specimens, according to analyses, were single-phase. The results show a considerable anomaly of the coefficient at about 140—150K, presumably caused by antiferromagnetic conversion. At 260—270K the dilatometric curve contracts appreciably. A considerable temperature hysteresis was observed during the cooling process, accompanied by expansion of the specimen with cooling between 180 and 160K. X-ray graphs of lattice modification, taken at room temperature and at 197K, show, in the latter case, the presence of lines characteristic of non-stable low-temperature modification of MnSe, whose specific volume appreciably exceeds that of high-temperature modification. Thus the anomalies observed in the 250—270K range cannot be ascribed to antiferromagnetic conversion, but represent a polymorphic phenomenon.

Orig. art. has: 2 figures.

ASSOCIATION: Otdel fiziki tverdogo tela i poluprovodnikov AN BSSR  
 (Department of Solid State Physics and Semiconductors, AN BSSR)

SUBMITTED: 23Jul63	DATE ACQ: 03Jan64	ENCL: 00
SUB CODE: PH	NO REF SOV: 003	OTHER: 007
Cord 2/2		

s/0250/64/008/005/0289/0291

ACCESSION NR: AP4040920

AUTHORS: Makovetskiy, G. I.; Sirota, N. N. (Academician)

TITLE: X-ray study of quasi-binary systems MnSe-MnTe

SOURCE: AN BSSR. Doklady\*, v. 8, no. 5, 1964, 289-291

TOPIC TAGS: solid solution, lattice charge, single phase, quasi binary system, electrolytic manganese, oxide film, microhardness, tellurium, selenium, x ray instrument URS 50I, PMT 3 device

ABSTRACT: Propagation domains of solid solutions and laws governing lattice charges as a function of the state and single phase domains in quasi-binary systems were investigated by x-irradiation of MnSe-MnTe specimens. Electrolytic manganese was used, and its surface was kept clean of oxide films by heating in vacuum. Twice distilled (99.99 Te) Te and Se specimens were prepared by sintering in evacuated vials, under careful mixing. The x-ray instrument was a URS-50I device with  $K_{\alpha}$  - copper radiation with a Geiger-Müller counter. The experimental results were depicted graphically in terms of lattice constants  $a(\text{\AA})$  and  $c(\text{\AA})$  versus mol% MnSe-MnTe. By increasing the Te content the lattice constant grows up

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ACCESSION NR: APL040920

to  $a = 5.611 \text{ \AA}$  at 30% MnTe. On the other hand, increasing the MnSe content causes a linear drop in both  $c$  and  $a$ , down to  $c = 6.552 \text{ \AA}$ ,  $a = 4.005 \text{ \AA}$  at MnSe content of 40%, whereas  $c/a$  grows to 1.636 in the same interval. Microhardness  $H$  measurements on the PMT-3 device indicate a sharp rise in the solid solution hardness from  $90 \text{ kg/mm}^2$  at 0 MnTe to  $223 \text{ kg/mm}^2$  at 30 mol% MnTe. On the other hand,  $H$  rises with MnSe content from  $100 \text{ kg/mm}^2$  at 0 MnSe to  $208 \text{ kg/mm}^2$  at 40% MnSe. These results show the presence of a wide range of solid solutions with selenide and telluride bases. Orig. art. has: 2 figures.

ASSOCIATION: Institut fiziki tverdogo tela i poluprovodnikov AN BSSR (Institute of Solid State Physics and Semiconductors AN BSSR)

SUBMITTED: 17Jan64

NO REF SOV: 002

ENCL: 00

OTHER: 006

SUB CODE: SS

Card 2/2

L. 11:353-55 EWT(1)/EWT(m)/EWG(a)/EWP(e)/EWP(b) LJP(c) RPL/55  
ACCESSION NR: AF500861 8/0250/65/009/001/0015/0017

AUTHOR: Makovetskiy, G. I.; Sirota, M. N.

TITLE: Electrical conductivity and thermal emf of manganese selenide

SOURCE: AN BSSR. Doklady, v. 9, no. 1, 1965, 15-17

TOPIC TAGS: manganese compound, electric conductivity, thermal emf, polymorphic transformation

ABSTRACT: The temperature dependence of electric conductivity and thermal emf of manganese selenide was investigated in the temperature range 130 - 800K for the purpose of studying the transformation occurring in this temperature interval. The measurements were made on manganese selenide samples in the form of cylinders 5.2 mm in diameter and 25 - 30 mm long, sintered from powder in vacuum. The technology of sample preparation was described earlier (DAN BSSR no. 11, 1963). The electric conductivity was determined by measuring the voltage drop across a fixed section of the sample with a potentiometer. The thermal emf was measured relative to copper in vacuum for both rising and falling temperatures. Plots of the elec-

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L 44353-65

ACCESSION NR: AP5006861

tric conductivity, of the thermal emf, and of the temperature coefficient of electric resistivity against the temperature exhibit several kinks corresponding to a polymorphic transformation at 250 - 270K and two modifications occurring at 390 and 600 - 670K. A value of 0.68 - 0.70 eV is deduced for the width of the forbidden band of manganese selenide, and a value ~ 0.6 eV is obtained for the activation energy. Orig. art. has: 2 figures.

ASSOCIATION: Institut fiziki tverdogo tela i poluprovodnikov AN BSSR (Institute of Solid State and Semiconductor Physics, AN BSSR)

SUBMITTED: 29Jul64

ENCL: 00

SUB CODE: SS, EM

HR REF SOV: 002

OTHER: 002

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Card 2/2

L 52234-65 EPR/EWG(c)/EWT(1)/EWT(m)/EWG(m)/EWP(b)/T/EWA(d)/EWP(w)/EWP(t) Ps-4/  
Pz-5 IJP(c) RDW/AT/JD

ACCESSION NR: AP5009104

S/0250/65/009/002/0085/0087

37  
36  
B

AUTHOR: Makovetskiy, G. I.; Sirota, N. N.

TITLE: Electrical conductivity, thermoelectromotive force, and forbidden gap width of manganese selenide-manganese telluride alloys

SOURCE: AN BSSR. Doklady, v. 9, no. 2, 1965, 85-87

TOPIC TAGS: manganese selenide, manganese telluride, thermoelectromotive force, forbidden gap width, electrical conductivity 21

ABSTRACT: The authors investigated the effect of composition and temperature on the electric and thermoelectric properties of alloys of the MnSe-MnTe system. The electrical conductivity was measured between liquid nitrogen temperatures and 500-600°C, and curves showing conductivity ( $\ln \sigma$ ) as a function of temperature (see Fig. 1 of the Enclosure) and as a function of composition at five temperatures from 150 to 780°K (see Fig. 2 of the Enclosure) are given. Values of the forbidden gap width were obtained from the tangent to the slope for curves of  $\ln \sigma = f(T)$  in the region of intrinsic conductivity (see Fig. 2 of the Enclosure). The thermo-emf of all the alloys was positive. The absolute values of the thermo-emf and electrical conductivity are considered: in alloys of the compositions 0.1 MnSe•0.9 MnTe and

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L 52234-65

ACCESSION NR: AP5009104

0.2 MnSe-0.8 MnTe, the thermo-emf at 700°K is of the order of 300-340  $\mu\text{V}/\text{deg}$  at a conductivity of 20-30  $\text{ohm}^{-1}\cdot\text{cm}^{-1}$ . This first study of the MnSe-MnTe system shows beyond any doubt the existence of a quasibinary section, a wide region of solubility, and semiconducting properties over the entire concentration range. Orig. art. has: 2 figures.

ASSOCIATION: Institut fiziki tverdogo tela i poluprovodnikov AN BSSR (Institute of Solid State Physics and Semiconductors, AN BSSR)

SUBMITTED: 31Jul64

ENCL: 02

SUB CODE: MM, EM

NO REF SOV: 003

OTHER: 005

Card 2/4

MAKOVETSKIY, G.O. [Makovets'kyi, H.O.], robitnik

Use of transverse planning machines for cutting pipes. Mekh.  
sil'. hosp. 12 no 9:15 S '61. (MIRA 14:11)

1. Maysternya Verkhn'okhortits'kogo rayonnogo viddilennya  
"Sil'gosp'tekhniki", Zaporiz'koi oblasti.  
(Planning machines)



MAKOVETSKIY, I. V.

Monuments of the people's architecture of Upper Volga region Moskva, Izd-vo  
Akademii nauk SSSR, 1952. 120 p.

MAKOVETSKIY, I. V.

Monuments of folk architecture of the Middle Volga region. Moskva, Izd-vo Akad. nauk  
SSSR, 1954. 133 p.

1. Architecture - Volga Valley.

MAKOVETSKIY, I. V.

"Arkhitektura russkogo narodnogo zhilishcha (novye materialy i issledovaniya)."

report submitted for 7th Intl Cong, Anthropological & Ethnological Sciences,  
Moscow, 3-10 Aug 64.

BUZANOV, I.F., akademik; MAKSIMOVICH, A.Ye., kand. sel'skokhozyaystvennykh nauk; MAKOVETSKIY, K.A.

Using sodium trichloroacetate and isopropyl chlorophenyl carbamate in the control of monocotyledonous weeds on sugar beet fields. Dokl. Akad. sel'khoz. 23 no. 6:6-9 '58. (MIRA 11:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sakharnoy svekly.  
(Sodium acetate)  
(Carbamic acid)  
(Weed control)

REYKHSFELD, V.O.; MAKOVETSKIY, K.L.; YEROKHINA, L.L.

Cyclic trimerization of acetylenes. Zhur.ob.khim. 32 no.2:653  
F '62. (MIRA 15;2)

1. Leningradskiy tekhnologicheskii institut imeni Lensoveta.  
(Acetylene)

MAKOVETSKIY, K. L.; REYKHSFEL'D, V. O.; YEROKHINA, L.L.

Simultaneous cyclic trimerization of butylacetylene with  
phenylacetylene. Zhur. ob. Khim. 34 no.6:1968-1970 Je '64.  
(MIRA 17:7)

Leningradskiy tekhnologicheskii institut imeni Lensoveta.

MAKOVETSKIY, K.L.; LEYN, B.I.; REYKHSFEL'd, V.O.

Cyclic trimerization of tert-butylacetylene. Zhur. ob. khim. 34  
no.10:3505-3506 O '64. (MIRA 17:11)

1. Leningradskiy tekhnologicheskii institut im. Lensoveta.

L 10782-66 EWT(m)/EWP(i) RM  
ACC NR. AP60G0007

UR/0080/65/038/011/2592/2594

AUTHOR: Grigor'yev, V.B.; Grigor'yeva, L.A.; Raykhsfel'd, V.O.;  
Makovetskiy, K.L.; Smirnov, N.I.

ORG: Leningrad Institute of Technology im. Lensovet (Leningradskiy tekhnologicheskii institut)

TITLE: Separation of polymer homologous mixtures in a thermogravitational column

SOURCE: Zhurnal prikladnoy khimii, v.38, no.11, 1965, 2592-2594

TOPIC TAGS: silane, chemical separation, polymer

ABSTRACT: The article describes an attempt to apply a thermogravitational column to the separation of some complex mixtures which cannot be fractionated by other means, or only with great difficulty. In particular, the column was applied to polymer homologous mixtures obtained by the addition of various unsaturated monomers to dimethylmethyhyropoly-siloxanes/ and also to the products of the cocyclotrimerization of acetylenes--trisubstituted benzenes. The article gives a diagram of the construction of the thermogravitational column. The distance between plates was 0.3 mm, and the height of the working section of the column

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UDC: 541.6



L 10782-66

ACC NR: AP6000007 4

was 774 mm. The temperature difference between the walls of the column was 30° in the separation of products obtained by the addition of olefins to dimethylmethyldropolysiloxanes, and 40° in the separation of mixtures of alkylarybenzenes. Results of the experimental separations are shown in tables. These data indicate that separation in a thermogravitational column is well suited to separation of polymer homologous mixtures of large molecules which differ only slightly in their structure, and can also be recommended for the separation of very high boiling mixtures. Orig. art. has: 1 figure and 2 tables. 4/155

SUB CODE: 07/ SUBM DATE: 17Jan64/ ORIG REF: 003/ OTH REF: 008

PC  
Card 2/2

REYKHSFEL'D, V. O.; MAKCVETSKIY, K. L.

Mechanism of the cyclic trimerization of acetylenes on complex organometallic catalysts. Dokl. AN SSSR 155 no. 2:414-417  
Mr '64. (MIRA 17:5)

1. Leningradskiy tekhnologicheskiy institut im. Lensoveta.  
Predstavleno akademikom A. A. Grinbergom.

BUTOMO, S.V.; REYKHSFEL'D, V.O.; MAKOVETSKIY, K.L.

Synthesis of trimethylbenzenes for the measurement of natural radiocarbon  
by the scintillation method. Radiokhimiia 7 no.3:364-366 '65.  
(MIRA 18:7)

POZIN, Maks Yefimovich. Prinsipali uchastiye: ARSEN'YEVA, L. Z.; KAGANOVICH, Yu.Ya.; KLEBANOV, G.S.; KLEVKE, V.A.; KOPYLEV, B.A.; SOKOLOVSKIY, A.A.; MAKOVETSKIY, L.A., red.; GRIVA, Z.I., red.; ERLIKH, Ye.Ya., tekhn. red.

[Technology of mineral salts; fertilizers, pesticides, industrial salts, oxides and acids] Tekhnologiya mineral'nykh solei; udobrenii, pestitsidov, promyshlennykh solei, okislov i kislot. 2., izd. perer. i dop. pri uchastii: L.Z.Arsen'evoi i dr. Leningrad, Gos. nauchno-tekhn. izd-vo khim. lit-ry, 1961. 1008 p. (MIRA 14:10)  
(Fertilizers and manures) (Salts)

VULIKH, A.I.; STATSENKO, A.A.; MAKOVETSKIY, M.I.; MIL'SKIY, S.A.

Chemical method for the preparation of welding fluxes. Prom.khim. reak.  
i osobo chist.veshch. no.2:18-22 '63. (MIRA 17:2)

VULIKH, A.I., kand.tekhn.nauk; STATSENKO, A.A., inzh.; MAKOVETSKIY, M.I.,  
inzh.; MIL'SKIY, S.A., inzh.

New technology for the production of fluxes for soldering and  
welding. Svar. proizvod. no.9:24-26 S '63. (MIRA 16:10)

1. Novosibirskiy zavod khimicheskikh reaktivov.

L 12660-65 EWG(j)/EWT(m)/EPF(c)/EPF(n)-2/EVR/EWP(b) Pr-4/Ps-4/Pz-4  
ASD(d)/AS(mp)-2/ASD(m)-3/AEDC(b) JD/JG/KK

ACCESSION NR: AT4046116

S/0000/63/000/002/0023/0026

AUTHOR: Vulikh, A. I.; L.D. Prikhod'ko; M. I. Makovetskiy

TITLE: Preparation of anhydrous lithium hydroxide and oxide from lithium hydroxide monohydrate

SOURCE: USSR. Gosudarstvennyy komitet khimicheskoy i neftyanoy promyshlennosti. Promyshlennost' khimicheskikh reaktivov i osobo chistykh veshchestv (Industry of chemical reagents and extra pure substances); informatsionnyy byulleten', no. 2. Moscow, IREA, 1963, 23-26

TOPIC TAGS: lithium hydroxide, lithium oxide, anhydrous lithium hydroxide, anhydrous lithium oxide, thermal decomposition, vacuum melting, vacuum dehydration, corundum crucible

ABSTRACT: The thermal decomposition of lithium carbonate and lithium hydroxide monohydrate in a vacuum was investigated on a large scale, and the conditions for obtaining anhydrous lithium hydroxide and lithium oxide from the monohydrate were established. Among all the crucible materials tested, corundum was found to be the best for this purpose. A horizontal vacuum electric furnace with a steel retort and Silit heaters was used, with a VN-2 oil vacuum pump. The process was

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L 12650-65

ACCESSION NR: AT4046116

carried out in two stages: first, the water of hydration was removed by heating at 300-350C in vacuo (600-650 mm Hg) and the anhydrous hydroxide was obtained, which is a porous product with a structure similar to that of the initial mono-hydrate. In the second stage, the complete dissociation of lithium hydroxide is obtained at a gradually increasing temperature (up to 900-1000C) and a gradually decreasing pressure (down to 1 mm Hg). The resulting lithium oxide is a solid cake, which separates readily from the corundum crucible. The weight is only 1-2% lower than the theoretical yield. No traces of the product could be detected outside the crucible. Thus, by removing most of the water from LiOH at a temperature lower than 900C, when the vapor pressure of LiOH is still low, loss of lithium oxide can be avoided. Chemical analysis showed that the reaction product contained 98-99% Li<sub>2</sub>O, less than 0.1% Al, and less than 1% Li<sub>2</sub>CO<sub>3</sub> (the initial lithium hydroxide contained 0.5% CO<sub>2</sub>).

ASSOCIATION: None

SUBMITTED: 27Nov63

ENCL: 00

SUB CODE: IC, GC

NO REF SOV: 003

OTHER: 012

Card 2/2



NAUMOVA, S.F.; MAKOVETSKIY, M.I.; YEROFEYEV, B.V.

Sulfoacid cation exchanger based on 1,3-polycyclohexadiene.  
Dokl. AN BSSR 8 no. 3:161-164 Mr '64. (MIRA 17:5)

1. Institut fiziko-organicheskoy khimii AN BSSR.

YEROFLEYEV, B.V. [Erafeyev, B.V.]; MAMONINA, S.F. [Mamonova, S.F.]; MIKOVETSKIY,  
A.I. [Mikavetski, A.I.]

Study of the thermal stability of the IFUKh-1 sulfonated cation  
exchanger. Vestsi AN BSSR. Ser. fiz.-tekh. nav. no.4:46-52 '64.  
(MIRA 18:3)

332  
S/580/61/000/000/011/016  
A057/A126

5.3400

AUTHORS: Tishchenko, I.G., Makovetskiy, M.N.

TITLE: The reaction of peracetic acid with isomeric mesityl oxide

SOURCE: Yerofeyev, B.V. and I.G. Tishchenko, eds. Zhidkofaznoye okisleniye nepredel'nykh organicheskikh soyedineniy, Minsk, 1961, 113 - 117

TEXT: The reaction between mesityl oxide and peracetic acid was investigated by the present authors in an earlier work. Kinetics of the oxidation of mesityl oxide were studied by I.V. Khvostov. It is known, however, that mesityl oxide usually contains isomesityl oxide, which differs from the normal compound in the position of the double bond. The effect of peracetic acid, oxidizing more easily the isolated double bond, on isomesityl oxide was therefore of particular interest. The separation of the isomesityl oxide was effected in the present investigation by fractional distillation, and the obtained product (boiling at 121-121.5°C/760 mm,  $n_D^{20} = 1.4210$ ) digested in absolute alcohol with peracetic acid at 23-24°C for about 48 h. From the reaction product there was obtained the new  $\beta$ -keto oxide mesityl-4-methyl-4,5-epoxypentanone-2 with 52.5% yield, with the

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following characteristics: boiling point 71-72°C/24 mm,  $n_D^{20} = 1.4212$ ,  $d_4^{20} = 1.0056$ , rather soluble in water, well soluble in organic solvents, and stable in atmospheric air. Infrared absorption spectra of 4-methyl-4-pentene-2-ol and its product mesityl-4-methyl-4,5-epoxypentanone-2 were taken on an MKC-14 (KRS-14) spectrophotometer in the range 300 - 1,800  $\text{cm}^{-1}$  and the maxima 1,708  $\text{cm}^{-1}$  (carbonyl group) were observed in both substances, while the absorption band 1,647  $\text{cm}^{-1}$  (of the isolated double bond) and 1,610  $\text{cm}^{-1}$  (the double bond conjugated with the carbonyl group), which were observed in the isomesityl oxide, disappeared in the spectrum of the  $\beta$ -keto oxide. Instead, the maximum 866  $\text{cm}^{-1}$ , apparently characteristic of the isolated epoxide cycle, was observed in the spectrum of the  $\beta$ -keto oxide. There are 2 figures.

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