effect points to a strong increase in the carrier density with increasing temperature. The conductivity in the CoO is produced by carriers of one sign, and at sufficiently high temperatures the crystal is in practice a pure p-type semiconductor. The dominating defects in the lattice, causing the occurrence of p-type conductivity on deviation from stoichiometry, are cation vacancies which can be singly and doubly ionized. The experimental data can be well described by the theory of quasi-chemical processes, which lead to the appearance of electronic carriers in ionic crystals, under the assumption that the drift mobility of the holes depends on neither the temperature nor the density. The Hall mobility of the holes increases slightly with rising temperature and becomes practically independent of temperature at high temperatures. It amounts to 0.04--0.07 $cm^2/v\text{-}sec$ at room temperature, and is somewhat lower than that of nickel monoxide. This result does not contradict the conclusions of the existing theory of semiconductors with low mobility. The drift mobility of the holes at high temperatures (500--1000C) obtained by the authors by thermogravitational measurements of the cation vacancies in CoO, is close to the Hall mobility. Orig. art. has: 1 figure.

SUB CODE: 20/ SUBM DATE: 08Oct65/ ORIG REF: 004/ OTH REF: 007

L 25488-66 EWT(1)/EWT(m)/T/EWP(t) IJP(c) JD/HW

ACC NR: AP6009679 SOURCE CODE: UR/0181/66/008/003/0883/0887

AUTHOR: Shelykh, A. I.; Artemov, K. S.; Shvayko-Shvaykovskiy, V. Ye.

ORG: Institute of Semiconductors AN SSSR, Leningrad (Institut poluprovodnikov AN SSSR); Institute of Chemistry of Silicates AN SSSR, Leningrad (Institut khimii silikatov AN SSSR)

TITLE: Electric properties of single crystals of cobalt oxide at high temperatures and their dependence on the partial pressure of the oxygen

SOURCE: Fizika tverdogo tela, v. 8, no. 3, 1966, 883-887

TOPIC TAGS: cobalt compound, single crystal, electric conductivity, thermal emf, Hall effect, carrier density, crystal defect

ABSTRACT: The authors investigated the conductivity and the thermal emf coefficient of single crystal p-type CoO in the temperature range 900--1500K, and also its dependence on the partial pressure of the oxygen in the surrounding medium at 700K. Single crystals measuring 0.4 x 0.7 x 10 mm were used for measurements of the electric conductivity and the thermal emf, and crystals measuring 0.5 x 1.8 x 4 mm were used for measurements of the Hall effect. The electric parameters were measured by a potentiometer method using both alternating and direct current, and the Hall effect was measured in a constant magnetic field. The partial pressures of the oxygen ranged from 1 to 1 x 10^{-5} atmospheres. The electric conductivity exhibited a linear decrease with increasing reciprocal of the temperature. The increase in conductivity,

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ACC NR: AP6009679

whether due to a change in temperature or to a change in the partial pressure of the oxygen, was always accompanied by a decrease in the coefficient of differential thermal emf. In the impurity conductivity region, the behavior of the electric resistivity was determined essentially by the carrier density and not by their mobility. From the measurements of the dependence of the electric conductivity on the partial pressure of the oxygen, it was also possible to determine the character of the defects occurring in the single-crystal CoO. At pressures 160--775 mm Hg the defects are essentially of the (Co^{3+} - Co vacancy) and (Co^{3+}) type. The authors thank V. P. Zhuze for valuable advice and a discussion. Orig. art. has: 2 figures and 2 formulas.

SUB CODE: 20/ SUBM DATE: 06Aug65/ ORIG REF: 003/ OTH REF: 017

Card 2/2

FEDOSEYEV, K.G.; SHELYKH, G.I.

Thermal effect in the fermentation of antibiotics. Med. prom. 16 no.1:34-38 Ja '62. (MIRA 15:3)

1. Leningradskiy khimiko-farmatsevticheskiy institut.
(FERMENTATION) (ANTIBIOTICS)

SHELYMAGIN, I., doktor ekon.nauk

Creative development of Marxist-Leninist theory. Sov. profsoiuzy 6 no.4:12-17 Ap '58. (MIRA 11:5)
(Communism)

USYUKIN, I.P., SHELYNIKOV, V.M., TIMOFEYEV, A.V., SHCHEKINA, L.N.

Effect of [illegible] solubility of acetylene in acetone and methanol at low temperatures. Neftepererab. i neftekhim. no.[illegible] (MIRA 17:8)

1. Moskovskiy institut khim. mashinostroyeniya.

SHELYUBSKIY, B.V.

Skrepernyye raboty.
Kiev, 1952.
107p.

A manual written for technical workers, on earth moving operations, with tractor-drawn scrapers, D27 D1033,D 30, etc.; published as a Govt. Edition of Technical-Literature, USSR. (Sent to Engrs for re

1. Russia--Engineer Equipment

2. Russia--Mechanical Engineering

3. Russia--Machinery Industry and Trade

4. Scraper Operations

SHELYUBSKIY, B.V., inzh.

Seminar on the quality improvement longevity, and reliability of construction and road machinery and the improvement of their technical servicing. Stroi. i dor. mash. 9 no.6: 37-38 Je '64. (MIRA 18:11)

SHELYUBSKIY, B.V.; PRUSOV, V.V., otvetstvennyy redaktor; KOVALIKHINA, N.F., tekhnicheskiy redaktor.

[Tractor-drawn scrapers; manual for tractor operators] Traktornye skrepery; posobie traktoristu. Moskva, Avtotransizdat Ministerstva avtomobil'nogo transp. i shossoinykh dorog SSSR, 1954. 94 p.
(Scrapers) (MLRA 7:11)

SHELYUBSKIY, Boris Vladimirovich; NIKITIN, A.G., red.; GALAKTIONOVA, Ye.N., tekhn.red.; NIKOLAYEVA, L.N., tekhn.red.

[Operation of scrapers; manual for tractor operators] Ekspluatatsiia skreperov; posobie traktoristu. Izd.2-e, perer. i dop. Moskva, Nauchno-tekhn.izd-vo M-va avtomobil'nogo transp. i shosseinykh dorog RSFSR, 1960. 126 p. (MIRA 13:9)
(Scrapers)

SHELYUBSKIY, B.V., inzh.

Good manual for workers in the popular occupations. Avt. dor. 27 no.2: 27-28 F '64. (MIRA 17:3)

SHELYUBSKIY, B.V., inzh.

Seminar for Crimean mechanics. Avt. dor. 27 no. 3:31,p.3 of cover Mr '64. (MIRA 17:5)

SHELYUBSKIY, V., inzh.

A valuable seminar. Avt. dor. 25 no.2:32 F '62. (MIRA 15:2)

(Road machinery)

USSR/Chemistry - Lead Glass Aug 52

"Electron-Microscopic Investigation of the Reduction of Lead After Treatment of Lead Glass in a Reducing Flame," V. I. Shelyubskiy and A. I. Krokhina. Phys Inst, Moscow State U

"DAN SSSR" Vol 85, No 5, pp 1097-1098

Samples of Pb glass contg 30% PbO and 6% PbO were treated in a reducing flame and subjected to electron-microscopic study. In both cases tiny crystals of Pb were observed. The glass contg 30% PbO had crystals of 0.01-0.05 microns and 0.1-0.25 microns. The density of the fine crystals was 10^9 per sq cm. The

239T28

glass contg 6% PbO had crystals of 0.05-0.08 microns. The density was 10^9 per sq cm. Submitted by Acad P. A. Rebinder 26 May 52

239T28

[illegible], L. I.

Journal of the American
Ceramic Society
July 1954
Glass

Measurement of electrical conductivity of glass in the solid state. V. I. Shelyubskii. *Steklo i Keram.*, 10 [9] 13–15 (1953). —Measurements were made of $T_x - 100$ (temperature at which specific resistance is 10^8 ohms/cm.) using a mirror galvanometer and an electronic megohmeter. Two measuring installations were designed, one for one specimen and another for 6 specimens. With the mirror galvanometer, the specific resistance was calculated from $\rho = K(D^2/l) \times (v/\alpha)$, where $K = \pi/40C$ is a constant of the installation, D is the diameter of the specimen in mm., l is the length of the specimen in mm., v is the voltage on the specimen, α is the galvanometer reading in mm., C is constant of the galvanometer in amp./mm. Measurements were made at 4 to 6 temperatures, and from these $T_x - 100$ was determined graphically. Most errors were the result of temperature measurements; an error of 1° in temperature measurement was equivalent to a 4% error in specific resistance. It was sufficient to make measurements over the interval within which specific resistance varies from $2–4 \times 10^7$ to $0.7–2 \times 10^9$ ohms. B.Z.K.

SHELYUBSKIY, V. I.

USSR/Miscellaneous

Card 1/1 : Pub. 104 - 9/14

Authors : Shelyubskiy, V. I.

Title : Electron-microscopic study of the structure of etched glass surface

Periodical : Stek. i ker. 10, 19-22, Oct 1954

Abstract : Electron-microscopic investigation of the structure of an etched glass surface was carried out by the method of single-stage quartz impression obtained by evaporation of the crystalline quartz in vacuum. The results obtained are described in detail. Illustrations.

Institution : ...

Submitted : ...

SHELYUBSKIY, V, I.

USSR/ Physics

Card : 1/1

Authors : Shelyubskiy, V. I.

Title : Investigation of the lead reducing process during the treatment of lead glass with the reducing flame

Periodical : Dokl. AN SSSR, 96, Ed. 4, 745 - 747, June 1954

Abstract : Experiments showed, that a rapid increase in surface conductivity and of the reflection coefficient, takes place during the initial stages of flame treatment (5-15 sec.). This is in conformity with the assumptions made regarding the reduction of lead in atom form. The lead atoms serve as centers facilitating the electron exchange. The surface of the glass acquires the properties of a semi-conductor with an electron conductivity. An increase in processing time increases the number of reduced lead atoms. Eleven references. Graphs.

Institution : Central Scientific-Research Laboratory of Electro-Technical Glass

Presented by: Academician P. A. Rebinder, March 3, 1954

SHELYU KI, . I.

SHELYUBSKIY, . I.: "Investigation of the process of reducing lead i working leaded glass in a reducing flame". Moscow, 195 . Min Higher Education USSR. Moscow Order of Lenin Chemicotechnological Inst imeni D. I. Mendeleyev. (Dissertations for the degree of Candidate of Technical Science.)

SO: Knizhnaya Letopis' No. 50 10 December 1955. Moscow.

USSR/Electronics - Electron Microscopy, H-1

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35121

Author: Shelyubskiy, V. I.

Institution: None

Title: Use of Electron Microscope in the Investigation of Glass

Original Periodical: Collection: Stroyeniye stekla, Moscow-Leningrad, AN SSSR, 1955, 219-223

Abstract: None

Card 1/1

SHELYUBSKIY, V. I.

USSR

1724. An electron-microscope investigation of the initial stages of the attack of glass by water.—V. I. SHELYUBSKII (*Glass & Ceramics*, Moscow, 12, No. 1, 8, 1955). A brief article with 4 (poor) photomicrographs. The initial stages of attack are important particularly for differentiation between attack on a fire-polished and on a mechanically-polished glass surface. The latter were strongly attacked after only 5 min. in boiling water, whereas the former did not show marked attack until after 20 min. Attack begins at points where the surface has been damaged or at points of heterogeneity. The higher resistance of the fire-polished surface layer differs from the lower glass layers both in its chemical composition and structure. The rapid attack of mechanically-polished glass surfaces is promoted by the considerable increase in surface resulting from residual micro-scratches. (4 figs.)

SHELYUBSKIY, V.I.

The use of an electron microscope in studying the polished surface of glass. Stek. i ker. 12 no.10:7-9 O '55 (MLRA 9:1)
(Glass manufacture) (Electron microscope)

SHELYUBSKIY, V.I.

USSR/Chemistry - Microscopic analysis

Card 1/1 Pub. 104 - 3/12

Authors : Shelyubskiy, V. I.

Title : Electron-microscopic investigation of the initial stages of destruction of glass with water

Periodical : Stek. i ker. 1, 8 - 9, Jan 1955

Abstract : Electron-microscopic investigation of the initial stages of destruction of glass with water was carried out by a method of single-stage quartz impression obtained by treating ZS-5 glass specimens in distilled water at a temperature of 100°. One USSR reference (1950). Illustrations.

Institution: .....

Submitted: .....

112-2-4287

TRANSLATION FROM: Referativnyy zhurnal, Elektrotekhnika, 1957, Nr 2, p. 249 (USSR)

AUTHOR: Shelyubskiy, V. I.

TITLE: The Utilization of the Electron Microscope for Research on Glass (Primeneniye elektronnogo mikroskopa dlya issledovaniya stekla)

PERIODICAL: V Sb. Stroyeniye stekla, Moscow-Leningrad, AN SSSR, 1955, pp. 219-223

ABSTRACT: Bibliographic entry

Card 1/1

AUTHOR: Shelyubskiy, V.I. 32-12-65/71

TITLE: Short Reports (9) (Korotkiye soobshcheniya).

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 12, pp. 1521-1521 (USSR)

ABSTRACT: In this paper a new device, a ram impact machine (type ПУ-20) for the testing of glass material with respect to impact and bending is suggested. It consists of a firmly mounted stand on to which a bracket with an adjustable pendulum is mounted, so that the pendulum can be adjusted to a higher or lower position. As a weight the pendulum has an exchangeable hammer, and its way can be adjusted accordingly. A power meter is mounted on to the bracket, which shows the power used at the moment of the destruction of the sample. The sample is fastened under the pendulum by screw clamps in such a manner that it is subjected to the impact of the pendulum at an angle of 17°. As samples the rods of the glass material to be tested, which are either round or rectangular, are used. Good success was attained with this device especially when testing glass material after thermal treatment carried out in order to increase its resistance against impact and bending. In order to prevent splinters of the destroyed glass sample from being strewn about, the whole device is provided

Card 1/2

with a protective case consisting of a metal frame and unbreakable glass plates. There is 1 figure.

ASSOCIATION: Scientific Research Institute for Electrovacuum Glass (Nauchno-issledovatel'skiy institut elektrovakuumnogo stekla).

AVAILABLE: Library of Congress

 1. Glass-Test equipment

KITAYGORODSKIY, I.I.; SHELYUBSKIY, V.I.

The mechanism of lead reduction in the treatment of lead glasses in the reducing flame (with summary in English). Zhur. fiz. khim. 31 no.6:1285-1294 Je '57. (MIRA 10:12)

1. Nauchno-issledovatel'skiy institut elektrovakuumnogo stekla.
(Reduction, Chemical) (Lead) (Glass)

SOV-120-58-1-37/43

AUTHORS: Shelyubskiy, V. I., Gusarov, V.V.

TITLE: A High Temperature Silit Resistor Furnace (Vysokotempera - turnaya silitovaya pech')

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1958, Nr 1, pp. 138-139 (USSR)

ABSTRACT: A silit resistor furnace designed to give temperatures of the order of 1500°C with small temperature gradients within the crucible containing the material under investigation was developed for a viscometer used to measure the viscosity of molten glass. The furnace is shown schematically in Fig.1. The heater consists of 12 silit resistor rods placed at equal distances round the central part of the furnace. The length of these rods can be varied. The temperature at the surface of these rods is not more than 1530°C. The circuit supplying the furnace is shown in Fig.2. The temperature of the furnace is automatically controlled and can be kept constant to within ±1°C. The temperature gradient in the working space is about 1-2°C, the linear dimensions of this region being about 5 cm. A thin alundum tube

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SOV-120-58-1-37/43

A High Temperature Silit Resistor Furnace.

separates the working volume from the silit resistor rods so that the furnace can be used with substances whose vapours react with the silit resistor rods. There are 2 diagrams and 4 Soviet references.

ASSOCIATION: Nauchno-issledovatel'skiy institut elektrovakuumnogo stekla (Scientific Research Institute for Electrovacuum Glass)

SUBMITTED: May 20, 1957.

1. Furnaces--Design 2. Glass--Viscosity 3. Viscosimeters--Applications

Card 2/2

SHELYUBSKIY, V.I.; KARCHMAR, TS.A.

Determining homogeneity of the batch by its natural radioactivity. Stek. i ker. 15 no.4:16-18 Ap '58. (MIRA 11:5)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut elektrovakuumnogo stekla.
(Glass manufacture--Quality control)
(Radioactivity--Measurement)

SOV/32-24-10-39/70

AUTHOR: Shelyubskiy, V. I.

TITLE: An Apparatus for Thermal Resistance Tests (Ustanovka dlya ispytaniy na termicheskuyu ustoychivost')

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 10, pp 1266-1267 (USSR)

ABSTRACT: The apparatus UOTS-1 is devised for determinations of the thermal resistance of glass, compounds of glass and metals, minute radio details, and electro-vacuum apparatus. The construction of the apparatus was carried out by A. I. Neyman and V. A. Lipovskiy under the supervision of the author. The apparatus consists of an electrical stove which rotates on a bracket, a container for cooling the samples, a cooler, and a switch board. Autotransformers of the types LATR-1 and LATR-2 are used in the electrical supply for stoves. The temperature is automatically controlled with an accuracy of ±0,3% by dilatometric control, the temperature of the sample being measured by a thermometer or a thermocouple. In the second case a potentiometer of the type PP is used. The apparatus makes possible tests of the thermal resistance within a temperature range of +800 to -65°. At lower temperatures the cooling is carried out by means of an alcohol - dry ice mixture.

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An Apparatus for Thermal Resistance Tests

There is 1 figure.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy institut elektro-vakuumnogo stekla (State Scientific Research Institute of Electro-Vacuum Glass)

AUTHOR: Shelyubskiy, V. I. SOV/120-59-5-42/46

TITLE: A Programmed Temperature Regulator for a Thermostat

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 5, p 144 (USSR)

ABSTRACT: The regulator (Fig 1) is in the form of an attachment to an ultra-thermostat. It may be used to change at a constant rate the temperature in an instrument when the temperature is stabilized with the aid of a thermostat controlled by a contact thermometer with a magnetic head. Rates of up to 1.5°C/min can be obtained. There are 2 figures.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy institut elektrovakuumnogo stekla i tekhnologicheskogo oborudovaniya (State Scientific Research Institute for Electrovacuum Glass and Technological Equipment)

SUBMITTED: July 24, 1958

Card 1/1

15(2)
AUTHOR: Shelyubskiy, V. I. SOV/72-59-11-9/18

TITLE: New Apparatus for Investigating the Physical Properties of Glass

PERIODICAL: Steklo i keramika, 1959, Nr 11, pp 27-32 (USSR)

ABSTRACT: The present paper deals with and describes the following testing units developed by the Nauchno-issledovatel'skiy institut elektrotekhnicheskogo stekla (Scientific Research Institute of Electrotechnical Glass). Automatic Recording Viscosimeter: As can be seen from the paper by V. T. Slavyanskiy (Footnote 1), the automatic viscosimeter GOI has so far been used. However, it is not suitable for the measurement of low viscosity values. The basic electromechanical scheme of the viscosimeter is given in figure 1, a general view of the instrument in figure 2. N. A. Belotelov, L. A. Fedin, and P. P. Chernikov (Footnote 2) cooperated in the design of this viscosimeter. In connection with the development of the electric furnace of this viscosimeter, previous papers by the author and V. V. Gusarov (Footnote 3) are referred to. The furnace is fed from the auto transformer of type TNN-45, and its temperature is controlled by means of the three-point potentiometer EPP-09.

Card 1/2

Unit for the Determination of the Thermostability of Glass: This device is also of interest for the calculation of technological processes, as it demonstrated in the paper by V. L. Indenbom, N. I. Ananich (Footnote 4). The new unit is shown in figures 3 and 4. A. I. Neyman and V. A. Lipovskiy (Footnote 5) cooperated in the design. Apparatus for transverse-bending tests and the determination of Young's modulus. It can be seen in figures 5 and 6. The apparatus MYu-15 was developed from the apparatus MYu-5, as can be seen in the paper by V. I. Shelyubskiy, S. S. Galaktionov, G. A. Kukarkin. The development of the design was carried out, inter alios, by V. A. Tsaplin and S. S. Galaktionov (Footnote 6). Impact testing machine for impact bending tests: the light pendulum machine of type PKhS-20 was specially developed for glass, on the basis of the pendulum machine of type MK-0.5. The machine can be seen in figure 7. There are 7 figures and 5 Soviet references.

14(11), 15 SOV/32-25-1-41/51

AUTHORS: Shelyubskiy, V. I., Galaktionov, S. S., Kukarkin, G. A.

TITLE: Machine for Testing the Bending, and Determining the Young Modulus of Glass (Pribor dlya ispytaniya na izgib i opredeleniya modulya Yunga stekla)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 1, pp 114-116 (USSR)

ABSTRACT: The limit of the berding strength and the Young modulus of glass are usually tested on metal testing machines (Ref 1) or on simple laboratory apparatus (Ref 2). No equal increase in stress can be adjusted there, which fact decreases the measuring accuracy, as the strength of glass considerably depends on the rate of the increase in stress (Ref 3). An apparatus was constructed which records automatically the magnitude of the destruction stress and makes possible a determination of the maximum deformation. The operation principle of the apparatus (Fig) is that a motor (by way of a worm screw) on a lever of a supporting girder displaces the stress while the other arm exerts a certain pressure upon the sample from below; thus, the sample is pressed against a support fixed above the sample. The position of this support can be adjusted and the support itself

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Machine for Testing the Bending, and Determining the Young Modulus of Glass

is connected with an electric contact which automatically records the stress in the case of the destruction of the sample. The magnitude of the stress is calculated according to the equation (1). The measuring accuracy depends on the production of the sample and is about 2-3%.
There are 1 figure and 4 references, 3 of which are Soviet.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy institut elektrovakuumnogo stekla (State Scientific Research Institute of Electro-Vacuum Glass)

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PHASE I BOOK EXPLOITATION SOV/5486

Vsesoyuznoye soveshchaniye po vnedreniyu radioaktivnykh izotopov i yadernykh izlucheniy v narodnoye khozyaystvo SSSR. Riga, 1960.

Radioaktivnyye izotopy i yadernyye izlucheniya v narodnom khozyaystve SSSR; trudy soveshchaniya v 4 tomakh. t. 1: Obshchiye voprosy primeneniya izotopov, pribory s istochnikami radioaktivnykh izlucheniy, radiatsionnaya khimiya, khimicheskaya i neftepererabatyvayushchaya promyshlennost' (Radioactive Isotopes and Nuclear Radiations in the National Economy of the USSR; Transactions of the Symposium in 4 Volumes. v. 1: General Problems in the Utilization of Isotopes; Instruments With Sources of Radioactive Radiation; Radiation Chemistry; the Chemical and Petroleum-Refining Industry) Moscow, Gostoptekhizdat, 1961. 340 p. 4,140 copies printed.

Sponsoring Agency: Gosudarstvennyy nauchno-tekhnicheskiy komitet Soveta Ministrov SSSR, and Gosudarstvennyy komitet Soveta Ministrov SSSR po ispol'zovaniyu atomnoy energii.

Ed. (Title page): N.A. Petrov, L.I. Petrenko and P.S. Savitskiy; Eds. of this Vol.: L.I. Petrenko, P.S. Savitskiy, V.I. Sinitsin, Ya. M. Kolotyrkin, N.P. Syrkus and R.F. Romm; Executive Eds.: Ye. S. Levina and B. F. Titskaya; Tech. Ed.: E.A. Mukhina.

Card 1/12

Radioactive Isotopes (Cont.) SOV/5486

PURPOSE: The book is intended for technical personnel concerned with problems of application of radioactive isotopes and nuclear radiation in all branches of the Soviet economy.

COVERAGE: An All-Union Conference on problems in the introduction of radioactive isotopes and nuclear radiation into the national economy of the Soviet Union took place in Riga on 12-16 April 1960. The Conference was sponsored by: the Gosudarstvennyy nauchno-tekhnicheskiy komitet Soveta Ministrov SSSR (State Scientific and Technical Committee of the Council of Ministers, USSR); Glavnoye upravleniye po ispol'zovaniyu atomnoy energii pri Sovete Ministrov SSSR (Main Administration for the Utilization of Atomic Energy of the Council of Ministers, USSR); Academy of Sciences, USSR; Gosplan USSR; Gosudarstvennyy komitet Soveta Ministrov SSSR po avtomatizatsii i mashinostroyeniyu (State Committee of the Council of Ministers, USSR, for Automation and Machine Building) and the Council of Ministers of the Latvian SSR. The transactions of this Conference are published in four volumes. Volume I contains articles on the following subjects: the general problems of the Conference topics; the state and prospects of development of radiation chemistry; and results and prospects of applying radioactive isotopes and nuclear radiation in the petroleum refining and chemical industries. Problems of designing and manufacturing instruments which contain sources of radioactive radiation and are used for checking and automation of technological processes are examined, along with problems of accident prevention in their use. No personalities are mentioned. References accompany some of the articles.

Card 2/12

S/072/60/000/008/004/007/XX
B021/B054

AUTHOR: Shelyubskiy, V. I.

TITLE: New Method of Determining and Controlling the Homogeneity of Glass

PERIODICAL: Steklo i keramika, 1960, No. 8, pp. 17 - 22

TEXT: The new method of determining glass homogeneity is based on the change in dispersion of a parallel bundle of monochromatic light by means of fine glass powder in an immersion medium at small temperature changes. The glass investigated is charged in powder form into a transparent cuvette with immersion liquid. Fig. 1 shows the temperature dependence of the intensity of light penetrated through the cuvette. The glass powder in the immersion medium may be regarded as a Christiansen filter whose light transmittance is expressed by the Raman formula. Fig. 2 shows the amount of maximum light transmittance as a function of the degree of heterogeneity σ^2 at different values of coefficient α. Coefficient α is calculated from

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the half-width p of the light transmittance curve (Fig. 3). It does not depend on the degree of glass homogeneity nor on the immersion liquid, the thickness of the cuvette, or particle dimensions. The device for determining glass homogeneity is an attachment to the ФЭК-М (FEK-M) photoelectric colorimeter, and is shown in Fig. 4. It contains a ДНаС-18 (DNaS-18) sodium tube, an СН (SN) ferroresonance stabilizer, and an ЛАТР-2 (LATR-2) autotransformer. The sensitiveness of the device can be greatly increased by replacing the photocells by ФСК-1 (FSK-1) photoresistors, and by introducing an optical extension of the light beam between cuvette and photoresistor. Fig. 6 shows the change in maximum light transmittance on adding to K-8 glass (refractive index n = 1.5179, particle dimension 0.1 mm) powder of K-8 glass from another melt (n = 1.5171, cuvette thickness 10 mm). Fig. 8 shows the change in light transmittance of K-8 glasses by different heat treatments. The author found a direct relationship between the maximum of inhomogeneity measured and the scrap rate of glass production. The new method of determining and controlling glass homogeneity can be easily automatized. There are 9 figures and 2 references: 1 Soviet and 1 Indian.

S/072/60/000/008/004/007/XX
B021/B054

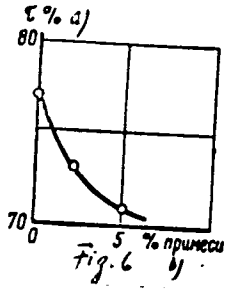


Fig. 6

Legend to Fig. 6: a) light transmittance, b) admixture

Card 3/3

SHELYUBSKIY, V.I.; VAYSFEL'D, N.M.

Using electron microscopes in studying the structure of crystalline glass. Stek.i ker. 17 no.5:23-24 My '60. (MIRA 13:8)

(Ceramic materials)
(Electron microscope)

SHELYUBSKIY, V. I.

New method for determining and controlling the homogeneity of glass. Stek. i ker. 17 no.8:17-22 Ag '60. (MIRA 13:8)
(Glass--Testing)

S/020/60/133/03/06/013
B019/B056

AUTHOR: Shelyubskiy, V. I.

TITLE: A New Method of Determining the Homogeneity of Glass

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 3, pp. 572 - 574

TEXT: The method suggested here is based upon change in dispersion of a parallel beam of monochromatic light by glass powder in the immersion medium when changes in temperature are not large. In this case, the measure of inhomogeneity is the statistical dispersion which characterizes the deviation of the refractive index of small glass particles from the mean value. The Raman formula (1) for the glass powder, considered to be a Christiansen filter in the immersion medium, is written down. The author next develops formula (4) for the optical density of the filter, which goes over into the Raman formula in the absence of dispersion. Fig. 2 shows the temperature dependence of light transmission for K-8 glass (K-8 glass) in the case of two different preliminary heat treatments. The glass sample cooled in air is less homogeneous than the annealed glass

Card 1/2

A New Method of Determining the Homogeneity of Glass

S/020/60/133/03/06/013
B019/B056

sample. The high sensitivity and the simplicity of the method are pointed out, and its suitability for production control is shown. There are 3 figures and 9 references: 7 Soviet, 1 German, and 1 Indian.

ASSOCIATION: Naucnno-issledovatel'skiy institut elektrotekhnicheskogo stekla (Scientific Research Institute for Electrotechnical Glass)

PRESENTED: March 30, 1960, by P. A. Rebinder, Academician

SUBMITTED: March 23, 1960

VB

Card 2/2

SHELYUBSKIY, V.I.; KARCHMAR, TS.A.

Improved method of controlling batch homogeneity. Stek.i ker. 18 no.9:16-20 S '61. (MIRA 14:10)
(Glass manufacture)

IS 2510

29989
S/076/61/035/011/013/013
B101/B110

AUTHORS: Shelyubskiy, V. I., and Vaysfel'd, N. M.

TITLE: Investigation of the crystallization processes of glasses

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 11, 1961, 2652 - 2654

TEXT: In this "Letter to the Editor" the authors describe the electron-microscopic investigation of glasses of fine-crystalline structure, the particles of which are of the order of magnitude of 1 μ. The investigation was conducted with an ЭМ-100 (EM-100) electron microscope with 14,000-fold magnification. Work was carried out with chromium preshadowed carbon replicas or celluloid-carbon replicas. Glass splinters etched with 12% HF to make the structure visible were investigated. The detaching of replicas from the glass was sometimes achieved by immersing the specimen in HF. In most cases, gelatin had to be used. Thereby it was possible that glass splinters adhered to the replica and they were removed by treatment with HF of several days' duration. Results: (1) With increasing duration of

Card 1/3

Investigation of the crystallization...

the thermal treatment at constant crystallization temperature, the particle size increases and the number of particles decreases. This is explained with the absorption of small particles by large ones owing to diffusion displacement of the phases. (2) The material investigated contained two phases. One had particles of a size of from 0.2 to 0.5 μ, some of which showed the form of disthene, $Al_2O_3 \cdot SiO_2$. The other phase showed strongly elongated prisms which often grew together to twins and triplets, as is characteristic of rutile. The presence of these two minerals in the glass was proved by X-ray analysis. (3) At a certain point of time of crystallization, a dendritic intermediate phase appears, particle size 0.2 μ, which disappears again at high temperatures. This phase was identified as $MgO \cdot 2TiO_2$ by X-ray analysis. (4) Light-sensitive glasses previously exposed to ultraviolet radiation showed relations between length of irradiation and structure. With increasing irradiation dose, the particle size decreased and the content of crystalline phase increased up to a saturation value. (5) The individual crystals can be identified by electron microscope. β-eucryptite and muscovite were found. The latter was also identified

Card 2/3

29989
S/076/61/035/011/013/013
B101/B110

Investigation of the crystallization ...

by X-ray analysis and petrography. [Abstracter's note: The electron-microscopic photographs cannot be reproduced]. There are 4 figures and 5 references: 3 Soviet and 2 non-Soviet. The reference to the English-language publication reads as follows: R. D. Maurer, J. Appl. Phys., 29, 1, 1958.

SUBMITTED: March 23, 1961

Card 3/3

23811

S/020/61/138/001/015/023
B104/B201

24,7300(1153, 1160, 1136)

AUTHORS: Shelyubskiy, V. I. and Vansfel'd, N. M.

TITLE: Electron microscopic study of the structure of sodium-boron silicate glasses

PERIODICAL: Doklady Akademii nauk SSSR, v. 138, no. 1, 1961, 100-101

TEXT: A study has been made of a glass with the following composition (mole%): Na_2O 7, B_2O_3 23, SiO_2 70. The study comprises the changes undergone by the glass structure due to a rise in the time of heat treatment from 6 to 192 hr at a temperature of 645°C, and on a change of temperature between 695 and 755°C with constant time of heat treatment. The results of similar examinations with scattered light and scattered X-rays (N. A. Voyshvillo, Optika i spektroskopiya, 2, No. 3, 371 (1957); Optika i spektroskopiya, 3, No. 3, 281 (1957); Voyshvillo et.al. Fiz. tverd. tela, 2, no. 5, 1011 (1960)) are compared with those obtained here by means of an electron microscope. The investigation was conducted with the replica method at 75 kv and 14,000-fold magnification using an

Card 1/4

Electron microscopic study of the...

3M-100 (EM-100) electron microscope. The specimens were etched in an etching agent with 12 % hydrofluoric acid. The results are collected in Table 1. The mean particle size R_{cp} of the sodium-borate phase was optically determined, and this value was found to be by three to four times smaller than the value R_{Φ} calculated with scattered light. In the authors' opinion, this is in relation to the usability of the scattering formula in the case concerned here, where the particle distances are comparable with the particle size. N. A. Voyshvillo assumes that the deviation of the particles from spherical form and the spread of particle size are responsible for this. An estimation of the volume of the particles and of the channels connecting them has led to the following conclusions: The channels occupy 20 % of the total particle volume. The relative volume of the sodium borate phase, no matter how long the treatment, remains constant with a given temperature and amounts to about 25 %. The particles grow with the duration of treatment. This occurs by absorption of the smaller particles, which takes place by diffusion and does not involve phase variations. Increased temperatures give rise to a strong growth of the particles already with brief duration of treatment.

Card 2/4

Electron microscopic study of the...

Opalescence was no more observed on specimens subjected to a one-hour treatment at 755°C. The strong diminution of structural elements to 3 mm is evidence of the reciprocal solution of phases at temperatures above the opalescence temperature. There are 3 figures, 2 tables, and 16 references: 14 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy institut elektrotekhnicheskogo stekla i tekhnologicheskogo oborudovaniya (State Scientific Research Institute for Electrotechnical Glass and Technical Equipments)

PRESENTED: December 3, 1960, by P. A. Rebinder, Academician

SUBMITTED: December 3, 1960

23511

S/020/61/139/001/015/025
B104/B201

Electron microscopic study of the...

Legend to Table 1: 1) Duration of treatment at 654°C, hr; 2) number of particles per cm^2; 3) mean diameter, mμ; 4) relative volume of the sodium-borate phase, %.

Таблица 1

1)	Время выдержки при 654 °С, часы	6	12	24	48	72	144	192
2)	Число частиц в 1 $см^3$	$13 \cdot 10^{14}$	$6,6 \cdot 10^{14}$	$5,0 \cdot 10^{14}$	$2,0 \cdot 10^{14}$	$1,0 \cdot 10^{14}$	$0,61 \cdot 10^{14}$	$0,52 \cdot 10^{14}$
3)	$D_{ср.}$, мμ	45	68	83	120	150	190	200
4)	Относительный объем натриевоборатной фазы, %	23	20	25	22	22	24	25

Card 4/4

29119
S/020/61/140/005/015/022
B103/B110

15.2510

AUTHORS: Solomin, N. V., Shelyubskiy, V. I., and Vaysfel'd, N. M.

TITLE: Formation of glass-microcrystalline structures

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 140, no. 5, 1961, 1087-1089

TEXT: This paper deals with the study of changes in the dimensions of new formations in the crystallization of glass containing SiO_2, Al_2O_3, and TiO_2. The changes Δs of the interface, and ΔZ of the isobaric-isothermal potential are interrelated by $I\Delta s = \Delta Z$, where I denotes the intensity of the surface energy. Since the entropy change $\Delta S = -\partial\Delta Z/\partial T)_p$, $\Delta S = -\Delta s(\partial I/\partial T)_p$ is valid, and for the enthalpy change holds $\Delta H = \Delta s\left[I - T(\partial I/\partial T)_p\right]$. Samples of initial glass were crystallized at two different temperatures. In the last stage of crystalligation, the samples of both series were heated in the thermostat at 1050°C. Carbon replica of the crystallized samples were studied under the ЭМ-4 [EM-4?] electron microscope with a 14000-fold magnification. Prior to this study they were etched for 5-20 sec in 1% HF.

Card 1/3

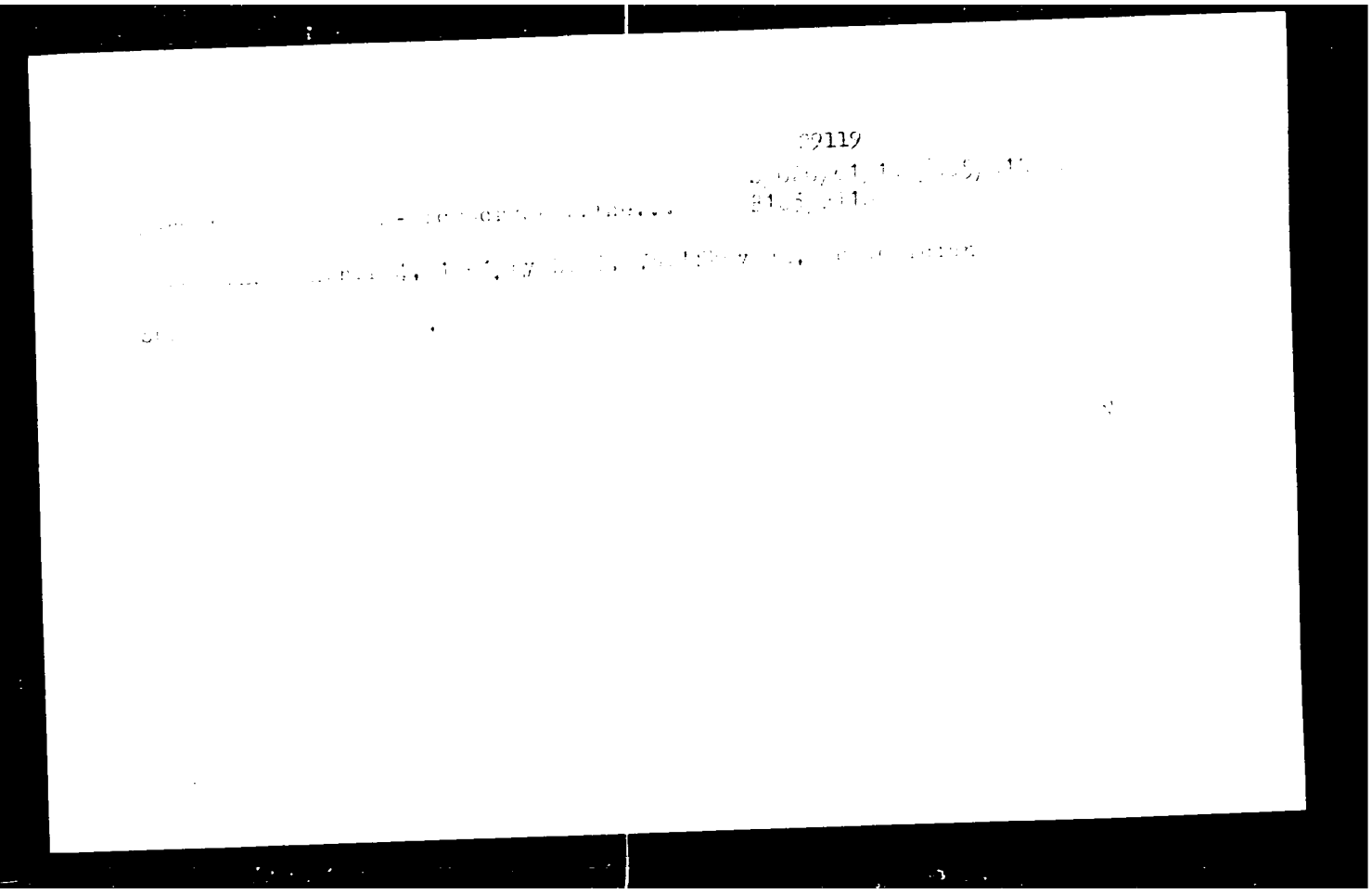
29119
S [illegible]
B [illegible]

[illegible]ormation of [illegible]lass-microcrystalline...

[illegible] main crystalline phases could be distinguished. By X-ray analysis [illegible] were identified as disthene and rutile. The disthene crystals were [illegible] rutile [illegible] prisms with pyramidally inclined small [illegible]. The difference in the crystal sizes of the two phases was very [illegible]. The crystals increased in size as the time of treatment at constant [illegible] temperature was extended, their number, however, decreased while the phase [illegible] was kept constant. This is due to an absorption of smaller [illegible] by [illegible]. [illegible] to show that the process of redistribution of [illegible]crystalline structure is of considerable importance in thermal treatment. Since the heterogeneity of composition occurring in the initial semiproduct favors new formations in the initial and thus also in the final stage, a maximum chemical homogeneity of the glass semiproduct is necessary to guarantee maximum homogeneity of the glass-microcrystalline structure. There are [illegible] figures, [illegible] table, and [illegible] references: [illegible] Soviet-bloc, and 2 non-Soviet-bloc.

[illegible]: Gosudarstvennyy nauchno-issledovatel'skiy institut elektro-tekhnicheskogo stekla i tekhnologicheskogo oborudovaniya (State Scientific Research Institute for Electrotechnical Glass and Technological Equipment)

Card [illegible]/3



SHELYUBSKIY, V.I., kand.tekhn.nauk; GEFEN, A.G., inzh.

Automatic device for determining the degree of homogeneity of glass. Stek.i ker. 19 no.11:13-15 N '62. (MIRA 15:12)
(Glass research—Equipment and supplies)

S/020/62/145/005/018/020
B101/B144

AUTHOR: Shelyubskiy, V. I.

TITLE: Method of investigating systems using solid specimens of variable composition

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 145, no. 5, 1962, 1098-1101

TEXT: A method is suggested for the production of specimens with continually changing composition so as to facilitate the investigation of constitution diagrams. The powdery components are filled from a dosing feeder into a boat. The composition of the mixture is altered by adjusting the slide valve of the dosing feeder continuously. The boat is put into a furnace where zone melting of the mixture takes place. A glass mixture of the following composition was used to test the apparatus: component A (% by weight): 20 Na_2O + 10 CaO + 70 SiO_2, component B: 20 K_2O + 10 CaO + 70 SiO_2. The dosing feeder reduced the Na_2O content of the mixture from 20 to 4%, and raised the K_2O content from 0 to 16%. The linear change of the K_2O content was proved by determining tan δ, ε, n_D and the micro-

Method of investigating...

hardness, along with chemical analysis. The minimum of tan at 12% Na_2O and 6% K_2O proved that the two components formed not a mechanical mixture but a homogeneous melt. The optical density measured after an addition of 0.01 - 0.09% CoO confirmed the linear change in composition. There are 4 figures.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy institut elektrotekhnicheskogo stekla i tekhnologicheskogo oborudovaniya (State Scientific Research Institute of Electrotechnical Glass and Industrial Equipment)

PRESENTED: April 2, 1962, by S. A. Vekshinskiy, Academician

SUBMITTED: March 3, 1962

ACCESSION NR: AT4019282 S/0000/63/003/001/0041/0043

AUTHOR: Vaysfel'd, N.M.; Shelyubskiy, V.I.

TITLE: Electron microscopic investigation of the microcrystallization of glass

SOURCE: Simpozium po stekloobraznomu sostoyaniyu, Leningrad, 1962. Stekloobraznoye sostoyaniye, vy*p. 1: Kataliziravannaya kristallizatsiya stekla (Vitreous state, no. 1: Catalyzing crystallization of glass). Trudy* simpoziuma, v. 3, no. 1. Moscow, Izd-vo AN SSSR, 1963, 41-43, insert pages between p. 32 and 33

TOPIC TAGS: glass, glass crystallization, electron microscopy, replica, carbon replica, spallation fragment, etching, glass structure

ABSTRACT: The processes of microcrystallization in different types of glass were studied with the EM-100 and Tesla BS-242A electron microscopes at accelerating voltages of 75 and 60 kv, respectively. Magnification in both cases was 15000 X. The familiar carbon replica method was used. In some cases, the method of simultaneous indirect application of platinum and carbon powder was used, depending on the composition of the glass. Electron photomicrographs were taken of the same microcrystalline material with a polished, unetched surface, with an unetched

Card 1/2

ACCESSION NR: AT4019282

spallation fragment, and with a spallation fragment which had been etched for 10 sec. in 10% hydrofluoric acid. In order to determine the relationship between the final structure and thermal treatment, the crystallization of glass ceramic samples was studied at different temperatures and at different crystallization times. It was found that the structure is determined not only by thermal treatment conditions but also by ultraviolet irradiation. During the initial stages of crystallization at temperatures between 500 and 550 C, changes in the number and dimensions of the crystals depending on the dose of irradiation can be clearly seen. With increasing doses of radiation, the number of crystals, the density of their distribution and the degree of crystallization increase. The optimum crystallization conditions were determined. The authors conclude that the strength of a material can be determined by the systematic investigation of its structure. Orig. art. has: 5 figures.

ASSOCIATION: None

SUBMITTED: 17May 63	DATE ACQ: 21Nov63	ENCL: 00
SUB CODE: MT	NO REF SOV: 005	OTHER: 000

Card 2/2

KITAYGORODSKIY, I.I., doktor tekhn. nauk; RABINOVICH, E.M., inzh.;
SHELYUBSKIY, V.I., kand. tekhn. nauk

Regularities in the initial stages of the formation of crystal structures in glass. Stek. i ker. 20 no.12:1-9 D '63. (MIRA 17:1)

VAYSFELD, N. M.; SHELYUBSKIY, V. I.

"On potentialities of electron microscopy in studying glass structure."

report submitted for 4th All-Union Conf on Structure of Glass, Leningrad, 16-21 Mar 64.

ACCESSION NR: AP4042275 S/0072/64/000/007/0014/0016

AUTHOR: Shelyubskiy, V. I. (Candidate of technical sciences)

TITLE: The correlation effect of batch and scrap content on the mechanical properties of glass

SOURCE: Steklo i keramika, no. 7, 1964, 14-16

TOPIC TAGS: electrotechnical glass, glass property

ABSTRACT: The author examined the statistical stability, elasticity, impact stability, and the heterogeneity of barylite electrotechnical glass containing 14% of alkali oxides. The coefficient of thermal expansion was found to be less than $\pm 0.2 \times 10^{-7}$ deg^{-1}; the temperature was 100° according to an automatic recorder with an accuracy of ±1°. The results are presented in tables and graphs. The author concluded that the breakdown in the mechanical properties increases with an increase in the inhomogeneity of the glass mass and with incomplete compensation of the volatile components, variations in chemical compositions at various points of impact, and insufficient homogenization in the boiling process.

ASSOCIATION: none

1/2

Card

SHELYUBSKIY, V.I.; RYAZANOV, G.V.

Role of diffusion in a process for the production of glass specimens of variable composition. Dokl. AN SSSR 156 no. 2: 302-305 My '64. (MIRA 17:7)

1. Predstavleno akademikom S.A.Vekshinskim.

L 11851-66 EWT(m)/EWP(e)/EWP(t)/EWP(b) IJP(c) WH/JD/GS

ACC NR: AT6000511 SOURCE CODE: UR/0000/65/000/000/0400/0402

AUTHOR: Shelyubskiy, V. I.

ORG: None

TITLE: A study of the crystallization of titanium-containing glasses using samples of varying composition

SOURCE: Vsesoyuznoye soveshchaniye po stekloobraznomu sostoyaniyu. 4th, Leningrad, 1964. Stekloobraznoye sostoyaniye (Vitreous state); trudy soveschaniya, Leningrad, Izd-vo Nauka, 1965, 400-402

TOPIC TAGS: catalyzed crystallization, lithium, glass, silicate glass, glass property, crystallization, titanium, glass

ABSTRACT: The method employing glass samples of varying composition prepared by zonal melting of powder mixtures of varying concentration was applied to the study of the effect of TiO_2 on the crystallization of glasses along the binary cut of the $Li_2O \cdot 4SiO_2$-$Na_2O \cdot 4SiO_2$-$K_2O \cdot 4SiO_2 \cdot CaO$ system having a 4.5 mol % CaO content. The composition of the samples and the results of the experiments are summarized in Figures 1 and 2. It is interesting to note that substituting Na_2O and K_2O for

Card 1/4

L 11851-66

ACC NR: AT6000511

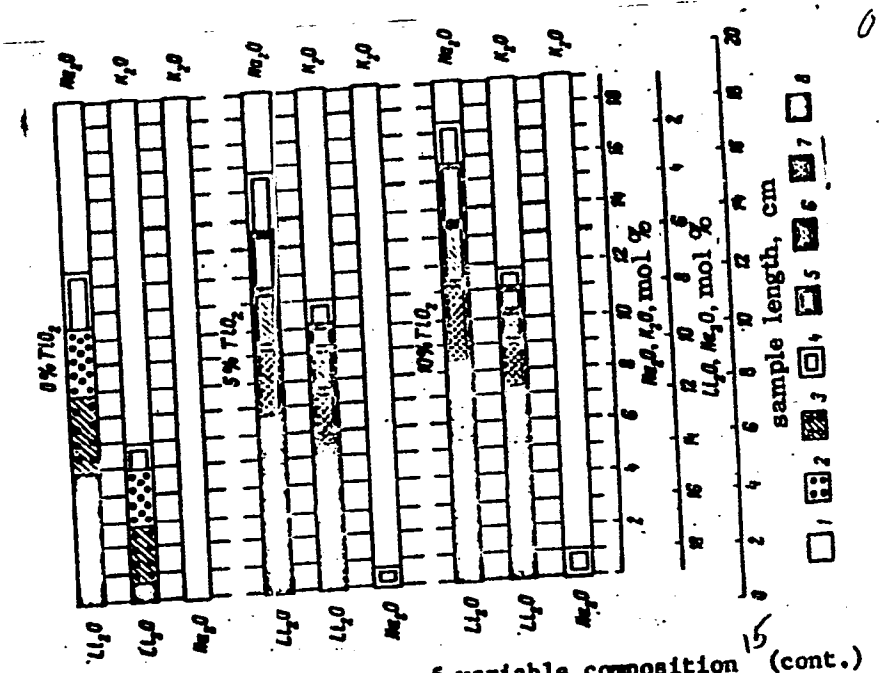


Fig. 1. Crystallization diagrams of variable composition (cont.)

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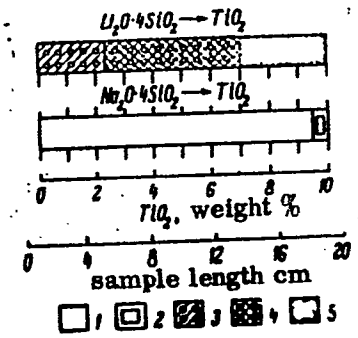
samples representing binary sides of $Li_2O \cdot 4SiO_2$-$Na_2O \cdot 4SiO_2$-$K_2O \cdot 4SiO_2$-CaO (4.5 mol %), as a function of the titanium oxide content (TiO_2 in wt. %). 1 - Absence of crystallization and opalescence; 2 - weak opalescence, glass is semitransparent; 3 - strong liquation, glass opaque; 4 - surface crystallization in the form of separate patches; 5 - surface crystallization in the form of a continuous thin film; 6 - surface crystallization in the form of a thick continuous crust with occasional propagation of crystals into the depth of the sample; 7 - crystallization propagation throughout the volume but the crystalline phase is less than 50%; 8 - total crystallization.



Card 3/4 Fig. 2. Crystallization diagrams of $R_2O \cdot SiO_2$ + 4.5 (Contd.)

L 11851-66

ACC NR: AT6000511

mol % CaO samples with variable titanium oxide content.
1 - absence of crystallization and opalescence; 2 - surface crystallization;
3 - liquation; 4 - liquation and crystallization; 5 - crystallization.

Li_2O destroys the liquation structure of the glasses, preventing the formation of a microcrystalline structure. Orig. art. has: 2 figures.

SUB CODE: 11, 20 / SUBM DATE: 22May65 / ORIG REF: 005 / OTH REF: 002

Card 4/4 jw

L 63546-65 EWP(e)/EPA(s)-2/EWT(m)/EWF(c)/EWP(i)/EPR/FPA(w)-2/EWP(j)/T/EWP(t)/EWP(v)/EWP(k)/EWP(z)/EWP(b)/EWA(c) Pc-4/Pf-4/Pr-4/Ps-4/Pt-7 JD/

ACCESSION NR: AP5017454 WW/RM/WH UR/0020/65/162/005/1038/1040

53
52
B

AUTHOR: Shelyubskiy, V. I.

TITLE: Application of the method of variable-composition specimens to the investigation of metal-ceramic and metal-glass systems

SOURCE: AN SSSR. Doklady, v. 162, no. 5, 1965, 1038-1040

TOPIC TAGS: metal powder compact, ceramic containing compact, glass containing compact, variable composition compact, variable composition compact preparation

ABSTRACT: A method of obtaining specimens of sintered materials with a continuously varying composition without zone melting is described. The method is based on preparation of powder mixtures with a required change in the concentration of components and subsequent compacting and sintering without a change in the distribution of concentrations. Depending on the design of the dosing unit, sufficiently strong plates or bars of varying composition with one- or two-dimensional gradient of compositions can be obtained. The operation of the dosing unit, which is designed for preparing a two-component mixture (see Fig. 1 of the Enclosure), is based on the proportionality of the weight or volume quantity of the components admitted from the bunkers and the area of their outlets covered by the slide valve. With uniform

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L 63546-65

ACCESSION NR: AP5017454

shifting of the valve, the ratio of the component powders A and B changes linearly, which results in the formation of a powder mixture with a composition varying along the height of the container. After filling and closing the container at the top, the mixture is hot or cold compacted by the punch. The compacting takes place in the direction perpendicular to the gradient of concentrations with no change in the distribution of the components. The green compacts can be subsequently sintered. In field tests, satisfactory aluminum-corundum and aluminum-glass test specimens of variable compositions were obtained. The use of the described method in powder metallurgy can appreciably accelerate the preparation of specimens for investigating the phase diagrams of metal-ceramic and metal-glass systems. Orig. art. has: 3 figures and 3 formulas. [MS]

ASSOCIATION: none

SUBMITTED: 30Nov64 ENCL: 01 SUB CODE: MM, MT

NO REF SOV: 007 OTHER: 002 ATD PRESS: 4049

Card 2/3

L 63546-65

ACCESSION NR: AP5017454 ENCLOSURE: 01

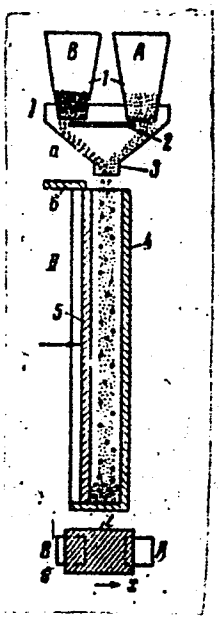

Fig. 1. Preparing metal-ceramic specimens of variable composition

1 - Bunker; 2 - slide valve; 3 - mixer; 4 - die; 5 - punch; 6 - cover.

Card 3/3

L 3462-66 EWT(l)/EWP(e)/EWT(m)/EWP(t)/EWP(c)/EWP(b) IJP(c) WW/RM/WH

ACCESSION NR: AP5017208 UR/0020/65/162/006/1281/1283

AUTHORS: Shelyubskiy, V. I.; Vekshinskiy, S. A. 42 B

TITLE: Investigation of the refraction of light by poly-alkaline silicate glasses by the method of samples of variable composition

SOURCE: AN SSSR. Doklady, v. 162, no. 6, 1965, 1281-1283

TOPIC TAGS: refractive index, optic glass, silicate glass, glass property

ABSTRACT: To investigate the influence of the poly-alkaline effect on the refraction of light, the authors studied binary sections of 4-component systems R_2O-R^1_2O-CaO-SiO_2, with constant content (19.1 molar per cent) of the two alkaline oxides, CaO (4.5 molar per cent) and SiO_2 (76.4 molar per cent), and binary sections of the five-component system Li_2O-Na_2O-K_2O-CaO-SiO_2 with the same constant content of the sum of the three alkaline oxides, CaO, and SiO_2. The method used

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L 3462-66
ACCESSION NR: AP5017208

to prepare the variable-composition samples is described. The refractive index was measured accurate to $\pm 5 \times 10^{-4}$ with an Abbe type refractometer. The results for the constant- and variable-composition samples were compared with the refractive indices of the initial samples and of specially prepared constant-composition samples. The results show that the simultaneous presence of two or three alkaline substances does not lead to any nonlinearity in the dependence of the refractive index on the composition, so that it can be concluded that there is no poly-alkaline effect in complex silicate glasses. This report was presented by S. A. Vakshinskiy. Orig. art. has: 2 figures.

ASSOCIATION: None

SUBMITTED: 30Nov64 ENCL: 00 SUB CODE: OP, MT

NR REF SOV: 012 OTHER: 002

Card 2/2 DP

L 62767-65 EI.(c)/EPF(n)-2/EWT(m)/EWP(i)/EWP(b)/EWP(e) Pq-4/Pr-4/Pu-4

ACCESSION NR: AP5018091 GG/JAJ/WH UR/0020/65/163/001/0164/0165

AUTHOR: Brekhovskikh, S. M.; Landa, L. M.; Viktorova, Yu. N.; Shelyubskiy, V. I. 22

TITLE: Optical radiation stability of quartz glass irradiated with gamma-rays at various temperatures 19 15 16

SOURCE: AN SSSR. Doklady, v. 163, no. 1, 1965, 164-165

TOPIC TAGS: optical radiation stability, quartz glass, color center, F center, temperature dependence

ABSTRACT: The effect of temperature on the radiation-induced discoloration of quartz glasses KI and KRL has been studied in the virtual absence of literature on this subject. The optical radiation stability (ORS) of the glass specimens was studied at room temperature. The ratio of the light transmission of the irradiated glass to the initial transmission in the visible part of the spectrum (P_c), which is characteristic for ORS, was determined for different doses of irradiation (see Table 1 of the Enclosure). Table 2 illustrates the ORS at low temperatures. The transmission was measured 10 sec, 60 min, and 24 hr after taking the specimens out of the Dewar vessel; the results remained constant. In the case of KI glass, the effect of temperature was perceived visually: specimens irradiated at room temperature were black-violet, and those irradiated at 90K were light-smoky.

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L 62767-65

ACCESSION NR: AP5018091

The observed dependence of the discoloration on the temperature of irradiation can be explained by the shift of the dynamic equilibrium between the formed and decaying color centers. It is assumed that the number of F-centers formed decreases with decreasing temperature, while the radiation destruction of these centers does not depend on the temperature. The constant, P_c after low doses of irradiation can be explained by a decrease in the effect of radiation annealing due to the diminishing number of color centers and an increase in their stability. Orig. art. has: 2 tables.

][BN]

ASSOCIATION: none

SUBMITTED: 07Dec64 ENCL: 02 SUB CODE: MT, NP

NO REF SOV: 001 OTHER: 008 ATD PRESS: 4056

Card 2/4

L 62767-65

ACCESSION NR: AP5018091

ENCLOSURE: 01

Table 1. ORS at room temperature

Irradiation dose, r (Co^{60})	KI glass *T,%	P_c	KRL glass T,%	P_c
Initial	92	—	92	—
10^4	87	0.95	92	1
10^5	40	0.43	92	1
10^6	2	0.02	92	1
10^7	0	0	92	1

*) T - Light transmission measured on IF-16 device.

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L 62767-65 ENCLOSURE: 02

ACCESSION NR: AP5018091

Table 2. ORS at low temperatures

Irradiation temperature, °K	KI glass, dose 10^4r		KI glass, dose 10^6r		KRL glass, dose 10^6r	
	T, %	P_c	T, %	P_c	T, %	P_c
90	87	0.95	68	0.74	91	1
200	88	0.95	21	0.2	91	1
300	87	0.95	2	0.02	92	1

Card 4/4

L 4018-66 EWP(e)/EPA(s)-2/EWT(m)/EWP(t)/EPA(w)-2/EWP(b) WW/WH
ACCESSION NR: AP5022279 UR/0363/65/001/007/1236/1237
666.1:542.65

AUTHOR: Shelyubskiy, V. I.

TITLE: Possibility of formation of porosity during pyroceramization

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 7, 1965, 1236-1237

TOPIC TAGS: ceramic material, heat resistant glass, porosity

ABSTRACT: The problem of pore formation in pyroceramics during their crystallization is of major importance, since porosity decreases the strength and resistance to heat. The author suggests that the probability of formation of pores, i.e., numerous closed discontinuities in the material, is very low during the formation of the microcrystalline structure of a pyroceramic. A thorough study of over four thousand electron microscope photographs of various ceramics at various stages of pyroceramization, carried out in collaboration with N. M. Vaysfel'd, did not reveal any defects whatsoever which could be identified with pores. It is concluded that the process of pyroceramization is not associated with the formation of porosity under the influence of internal strains at the phase boundaries, and that the formation of cracks in certain cases is attributable

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L 4018-66
ACCESSION NR: AP5022279

to imperfections in the technological process used for preparing the pyroceramic.

ASSOCIATION: none

SUBMITTED: 11Feb65 ENCL: 00 SUB CODE: MT

NO REF SOV: 009 OTHER: 003

Card 2/2

KOSLOVSKIY, S.F., inzh.; SHELYUBSKIY, V.I., inzh.

Investigating the strength and durability of glass products.
Stek. i ker. 22 no.9:20-24 S '65. (MIRA 18:9)

ACC NR: AP6036842 SOURCE CODE: UR/0020/66/171/002/0333/0336

AUTHOR: Shelyubskiy, V. I.

ORG: none

TITLE: Investigation of the crystallization of glasslike systems represented by samples of variable composition

SOURCE: AN SSSR. Doklady, v. 171, no. 2, 1966, 333-336

TOPIC TAGS: glass property, crystallization, phase composition, temperature dependence

ABSTRACT: This is a continuation of earlier work (DAN v. 145, no. 5, 1098, 1962) dealing with crystallization of glass-like systems obtained by zone melting from powdered mixtures of variable composition. The present article is devoted to the system SiO_2 - CaO - Na_2O, with the analysis of the crystalline phases carried out nondestructively by x ray analysis, as well as petrographically. The crystallization was also investigated in the system $Li_2O.4SiO_2$ - $Na_2O.4SiO_2$ - $K_2O.4SiO_2$ with constant CaO content (4.5 mol.%). The tests were made by placing simultaneously twelve samples of variable composition in thermostats at temperatures 500, 600, 700, 800, 900, and 950° for one hour. The crystallization after heat treatment differed greatly from crystallization of the same system directly from the melt, in that opalescence appeared, due

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ACC NR: AP6036842

to microliquation and to the formation of an exchange fine-crystal structure preventir the melting of the samples. The liquation and crystallization decreased rapidly as the Li^+ was replaced by Na^+, and especially by K^+. The crystallization diagram of this system, deduced from the crystallization of the variable-composition samples, agrees well with the diagram constructei on the basis of crystallization samples of constant composition. Some individual differences are explained. The reduction in the crystallizing ability when the lithium is replaced by sodium or potassium agrees with results of investigations in simple alkali-silicate systems. It is concluded that the laws governing crystallization of variable-composition samples agree with the crystallization properties of the systems represented by these samples. Orig. art. has: 2 figures.

SUB CODE: 07/ 20/ SUBM DATE: 12Apr66/ ORIG REF: 010/ OTH REF: 004

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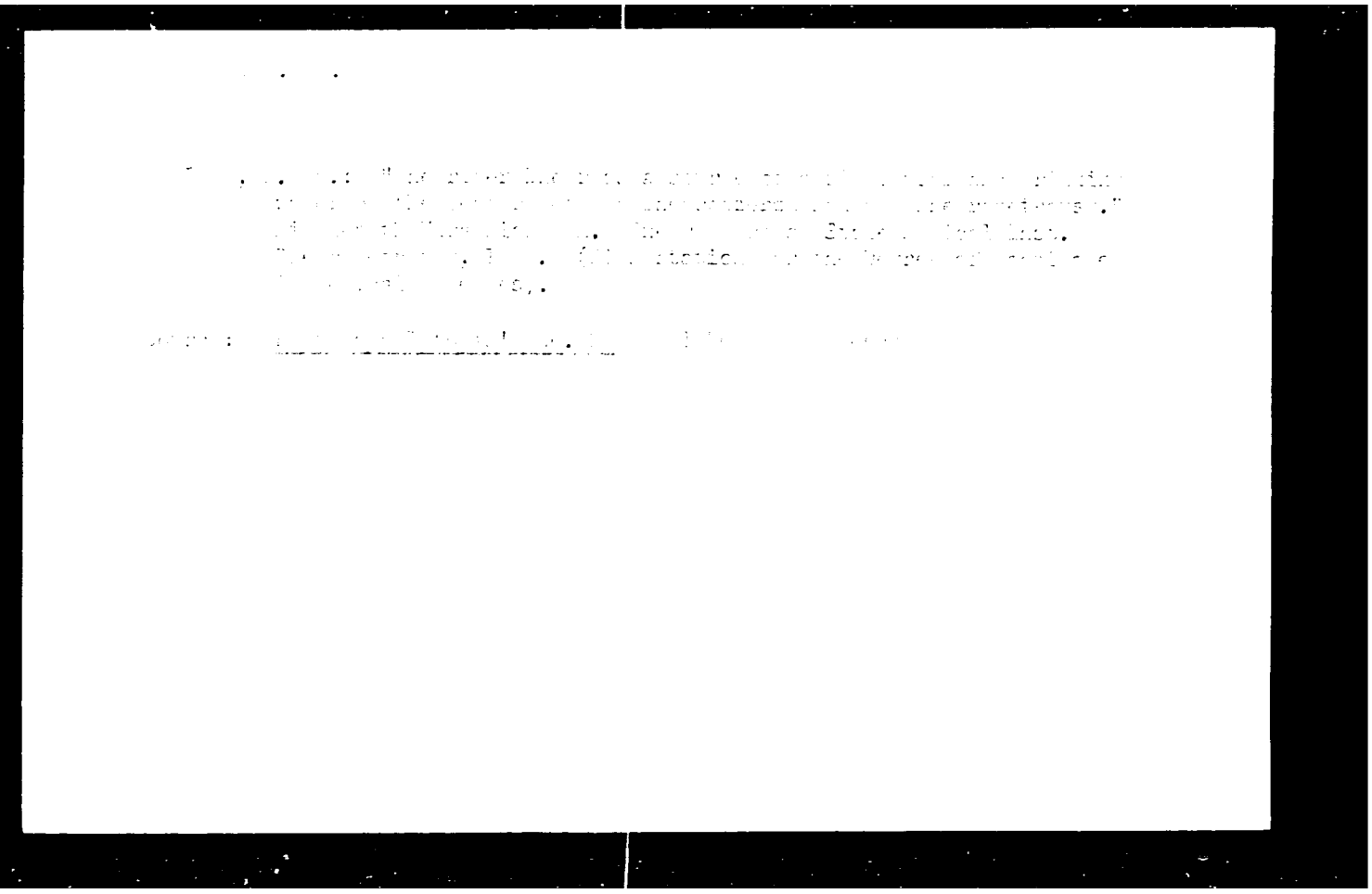

LAPTIKHOV, K.F., kand.veterin.nauk; SHELYUGINA, Z.G., starshiy nauchnyy sotrudnik

Nonspecificity of inclusion bodies in infectious atrophic rhinitis in swine. Veterinariia 40 no.9:71-72 S '63. (MIRA 17:1)

1. Novosibirskaya nauchno-issledovatel'skaya veterinarnaya stantsiya.

SHELYUKH, S.

According to today's standards. Za rul. 21 no.1:8-9 Ja '63.
(MIRA 16:1)

1. Zamestitel' predsedatelya Rostovskogo oblastnogo komiteta Dobrovol'nogo obshchestva sodeystviya armii, aviatsii i flotu, Rostov-na-Donu.
(Rostov Province—Automobile drivers—Education and training)

SHELYUTTO, Kseniya Vladimirovna; BOROVSKAYA, Yekaterina Nikiforovna; BODELSKOVA, N.N., red.; TIMOFEYEVA, N.V., tekhn. red.; VLADIMIRSKAYA, L.S., tekhn. red.

[Bonus payments to engineers and technicians according to Soviet law] Premirovanie inzhenerno-tekhnicheskikh rabotnikov po sovetskomu pravu. Moskva, Gos. izd-vo iurid. lit-ry, 1962. 124 p. (MIRA 15:3)

(Engineers--Salaries, pensions, etc.)
(Bonus system)

Country :
CATEGORY :

P

1954, No.

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT :

PAGE: 1/1

VEL'YASHEV, Lev Nikolayevich; KRAVCHENKO, Semen Mikhaylovich; SHELYUTTO, Ye.P., red.; ZAYTSEVA, L.A., tekhn.red.

[Repairing calculating machines] Remont arifmometrov. Moskva, Vses.koop.izd-vo, 1960. 77 p. (MIRA 13:11)
(Calculating machines--Maintenance and repair)

GOLYATO, Lidiya Petrovna; IZOTOVA, Mariya Alekseyevna; TER-OVAKIMYAN, Ivan Artem'yevich; YANCHEVSKAYA, Yekaterina Aleksandrovna; SHELYUTTO, Ye.P., red.; ZAYTSEVA, L.A., tekhn.red.

[Men's shirts] Sorochki vekhnie muzhskie. Pod obshchei red. I.A.Ter-Ovakimian. Moskva, Vses.koop.izd-vo, 1960. 95 p. (Shirts, Men's)

KONISSAROV, Naum Grigor'yevich; LEVIGUROVICH, A.I., red.; SHELYUTTO, Ye.P., red.; ZAYTSEVA, L.A., tekhn. red.

[Manual for the repair of footwear] Spravochnik po remontu obuvi. Moskva, Vses. koop. izd-vo, 1960. 237 p. (MIRA 14:9)
(Boots and shoes--Repairing)

GOLYATO, Lidiya Petrovna; IZOTOVA, Mariya Alekseyevna; TER-OVAKIMYAN, Ivan Artem'yevich; CHUKASHEV, Aleksandr Dmitriyevich; YANCHEVSKAYA, Yekaterina Aleksandrovna; SHELYUTTO, Ye.P., red.; ZAYTSEVA, L.A., tekhn. red.

[Easy to make women's apparel] Zhenskoe legkoe plat'e. [By] L.P.Golyato i dr. Moskva, Gos. izd-vo mestnoi promyshl. i khudozh. promyslov RSFSR, 1961. 465 p. (MIRA 15:2)
(Dressmaking)

CHERNYSHEV, Georgiy Alekseyevich; SHELYUTTO, Ye.P., red.; ZAYTSEVA, L.A., tekhn. red.

[Manufacture of wicker articles] Proizvodstvo pletenykh izdelii. Moskva, Gos.izd-vo mestnoi promyshl. i khudozh. promyslov RSFSR, 1961. 107 p. (MIRA 15:2)
(Basket making) (Furniture)

VEL'YASHEV, Lev Nikolayevich; KRAVCHENKO, Semen Mikhaylovich; SHELYUTTO, Ye.P., red.; OVCHINNIKOVA, G.I., red.; ZAYTSEVA, L.A., tekhn. red.

[Maintenance and repair of typewriters] Remont pishushchikh mashin. Moskva, Gos. izd-vo mestnoi promyshl. i khudozh. promyslov RSFSR, 1961. 169 p. (MIRA 14:11)
(Typewriters—Maintenance and repair)

SAVVA, David Abramovich; VLASOV, Nikolay Dmitriyevich; BEL'SKIY, B.R., spets. red.; SHELYUTTO, Ye.P., red.; ZAYTSEVA, L.A., tekhn. red.

[Using the production-line method for watch and clock repairs] Remont chasov potochno-operatsionnym metodom. Moskva, Gos.izd-vo mestnoi promyshl. i khudozh.promyslov, RSFSR, 1961. 133 p. (MIRA 14:12)

(Clocks and watches---Repairing and adjusting)
(Assembly-line methods)

KRUGLYAK, I.N.; SVIDERSKIY, G.D.; SHELYUTTO, Ye.P., red.;
KHARITONOVA, L.I., tekhn. red.

[Repair of household refrigerators]Remont domashnikh kholodil'nikov. Izd.2., perer. i dop. Moskva, Gosmestpromizdat, 1961. 279 p. (MIRA 15:12)
(Refrigerators--Maintenance and repair)

FEDOROVSKIY, A.N., prof.; NESTERENKO, G.B., dotsent, KATKOVA, M.Ya., vrach; OSLIK, Ya.M., vrach; SHELYUZHENKO, A.A., vrach

Use of bicillin in the treatment of syphilis. Vest.derm.i ven. no.9:61-62 '61. (MIRA 15:5)

1. Iz kliniki kozhnykh i venericheskikh bolezney Dnepropetrovskogo meditsinskogo instituta i oblastnogo kozhno-venerologicheskogo dispansera.

(SYPHILIS) (BICILLIN)

SHERMAGIN, A.

Shippers should have an interest in cargo transportation by inland waterways. Rech. transp. 22 no.10:7-8 O '63.
(MIRA 16:12)

1. Nachal'nik Moskovskogo parokhodstva.

SHEMAGIN, A.I.

Automatic bearing indicator. Rech.transp. 14 no.2:26 F '55.
(Nautical instruments) (MLRA 8:5)

SHEMAGIN, A. I

For merchant marine operations without losses. Rech. transp. 14 no. 3:10-11 Mr '55. (MLRA 8:5)
(Shipping)

SHEMAGIN, A.I.

Prospects for the development of the Moscow River shipping.
Rech. transp. 15 no.2:5-7 F '56. (MLRA 9:6)

1.Nachal'nik Moskovskogo parokhodstva.
(Moscow River--Steamboat lines)