

S/O20/63/036/001/024/026  
D204/D307

AUTHORS:

Nemilov, S.V. and Petrovskiv, G.T.

TITLE:

A new method for measuring the viscosity of glasses

PERIODICAL:

Zhurnal prikladnoy khimii, v. 36, no. 1, 1963, 222 - 225

TEXT:

The present work, first in the series of studies concerned with measurement of viscosity ( $\eta$ ) in glass-forming systems not containing oxygen, describes some measurements carried out in a viscometer designed by Slavynnskiy. The action of this viscometer depends on the measurement of the rate at which a cylindrical rod may be pressed into the specimen, under known load and at a known temperature. Construction of this instrument is illustrated and described in some detail, and calibration plots are given, obtained with the aid of chemically pure  $F_2O_3$ . It is demonstrated that  $\log \tau = A + P \log T$  (where  $T$  is the time during which the indenter sinks by  $100 \mu$ ), and values

Card 1/2

A new method for ...

080/01/3/001/024/025  
176/01/07

of A and B are listed for various loads and indenter diameters. Viscosity of glass-forming polymer measured by the above method over  $T = 100^{\circ}\text{C}$  was in excellent agreement with literature data. The method is rapid and suitable for  $\eta = 10^4 - 10^{15}$  poise. The authors express their gratitude to V. F. Slavvanskiy and Ye. N. Prostrikova whose work allowed this study to be carried out. There are 4 figures and 1 table.

SUBMITTED: January 11, 1962

Card 1/1

PETROVSKY, G.T.; NEMOV, I.V.

Investigating the kinetics of catalyzed ester hydrolysis by  
viscosimetry. *Dokl. Akad. Nauk SSSR*, no. 1, 112-116, '63.

1963

PETROVSKIY, G.I. NRO 12345, YE.N. TRPBN. B. HIKLIA, K.2.

Catalyzed system. Stereocenter. 8.65. 1um 8.11.86  
system. Stereocenter. 8.65. 1um 8.11.86  
(MIRA 12.20)

NEMILOV, S.V.; PETROVSKIY, G.T.

Viscosity of glasses of the system selenium - arsenic.  
Zhur. prikl. khim. 36 no.5:977-981 My '63. (MIRA 16:8)

(Arsenic selenide) (Viscosity)

L 51438-65 EWP(a)/EWT(m)/EWP(1)/EWP(b) Pg-4 WH  
ACCESSION NR: AP5015511 UR/0286/65/000/008/0047/0047  
666.221.4

26  
B

AUTHOR: Petrovskiy, G. T.

TITLE: Optical glass, Class 32, No. 170152

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 8, 1965, 47

TOPIC TAGS: optical glass

ABSTRACT: This Author's Certificate introduces an optical glass which contains SiO<sub>2</sub>, B<sub>2</sub>O<sub>3</sub>, Ca<sub>2</sub>O<sub>3</sub>, Na<sub>2</sub>O, Li<sub>2</sub>O. A noncrystallizing glass with shortened partial dispersion in the blue portion of the spectrum is produced by using (in wt %): SiO<sub>2</sub>--30-60; B<sub>2</sub>O<sub>3</sub>--less than 12; Ca<sub>2</sub>O<sub>3</sub>--30-40; Na<sub>2</sub>O--less than 8; Li<sub>2</sub>O--less than 5; and in addition BaO and ZnO--2-10.

ASSOCIATION: none

SUBMITTED: 03Feb64

ENCL: 00

SUB CODE: MT, OP

NO REF SOV: 000

OTHER: 000

Card 1/1

L 27373-66 EWT(m)/EWP(e)/EWP(t)/ETI IJP(c) JD/JG/WH

ACC NR: AP6011577

SOURCE CODE: UR/0051/66/020/003/0519/0521

AUTHORS: Petrovskiy, G. T.; Peofilov, P. P.; Tsurikova, G. A.

51  
50  
B

ORG: none

TITLE: Absorption and luminescence of divalent samarium in fluorine-beryllate glasses

SOURCE: Optika i spektroskopiya, v. 20, no. 3, 1966, 519-521

TOPIC TAGS: samarium, glass property, light absorption, luminescence, gamma irradiation, optic transition, *glass, absorption spectrum*

ABSTRACT: The authors report the results of an investigation of absorption and luminescence of  $Sm^{2+}$  ions in oxygen-free fluoro-beryllate glasses, on which little data are available, especially the colored glasses. The glass chosen had relatively low tendency to crystallization, containing 60% of molecular beryllium fluoride and 20% potassium fluoride, and also fluorides of calcium and aluminum. For better stability, the reduction of the samarium to the divalent state was by irradiation with gamma rays from  $Co^{60}$ . The absorption spectrum had a single broad intense band with maximum near 520 nm, causing red-orange color (the glass was yellowish prior to irradiation). Upon excitation,

2

Card

1/2

UDC: 535.34 + 535.37:546.659

L 27373-66

ACC NR: AP0011577

the glass containing the divalent samarium emitted red luminescence, with a spectrum consisting of several bands with maxima near 6825, 6960, 7200, 7600, and 8150 Å. Some bands had a structure. The luminescence duration was  $3 \times 10^{-3}$  sec at room temperature. It increased to  $7 \times 10^{-3}$  at liquid nitrogen temperature, with a corresponding increase in the brightness. The transitions corresponding to the luminescence bands are identified. Notice is taken of the high stability of the divalent state of the samarium and the glass, which remains unchanged even when the glass is heated to softening temperature (250 -- 300C). The authors thank G. A. Mokeyeva for help with the investigations of the luminescence spectra. Orig. art. has: 1 figure.

SUB CODE: 11,20/ SUBM DATE: 23Aug65/ ORIG REF: 015/ OTH REF: 010

Cord

2/2

PB



ACC NR: AP6025970

AUTHOR: Petrovskiy, V. V.; Tolstoy, V. V.; Izrael, A. A.; Sharovskiy, V. V.

CR: none

CLASSIFICATION: secret

CLASSIFICATION: secret

TOPIC: stimulation of luminescence in phosphor glass, 522.221.011.011.011.011

ABSTRACT: The luminescence and phosphor glass classes of the phosphor glass, 522.221.011.011.011.011

...the absorption and ... the data obtained in the study of most diverse compositions. The l

Card 1/3

ACC NR: AP6025970



Fig. 1. Luminescence spectra of  $Nd^{3+}$  in fluorberyllate glasses at 300 (a) and 280 (b) nm. The curves in the various groups are normalized to the same level. The horizontal line indicates the luminescence spectrum of the fluoride glass. The regions of generation of stimulated emission are marked.

comparison with spectra of  $Nd^{3+}$  in other matrices shows that although in fluorberyllate glasses the half-width of bands corresponding to transitions between the individual splitting components of the terms substantially exceeds that observed in crystals, the bands in these glasses are nevertheless much narrower than in oxygen-containing (for example, silicate) glasses. A second characteristic feature of Nd spectra (and other

Card 2/3

ACC NR: AP/025970

part. earth ions) in fl...  
tion of terms, as a...  
located in the field...  
small... of...  
critical...  
row lines. The center of...  
located near the maximum...  
class is...  
class.

SEE ALSO: 86/ SUBJ DATA: ...

Card 3/3 hs

ACCESSION NR: AT4019298

S/0000/63/003/001/0112/0116

AUTHOR: Petrovskiy, G. T.; Nemilov, S. V.

TITLE: Investigation of the kinetics of catalyzed submicrocrystallization by the viscosimetric method

SOURCE: Simpozium po stekloobraznomu sostoyaniyu. Leningrad, 1962. Stekloobraznoye sostoyaniye, vyyp. 1: Katalizirovannaya kristallizatsiya stekla (Vitreous state, no. 1: Catalyzing crystallization of glass). Trudy\* simpoziuma, v. 3, no. 1. Moscow, Izd-vo AN SSSR, 1963, 112-116

TOPIC TAGS: submicrocrystallization, glass, catalyzed crystallization, glass viscosity, viscosimetry, titanium dioxide

ABSTRACT: The catalyzed submicrocrystallization of glass 13 samples containing titanium dioxide was investigated by the viscosimetric method, since the viscosity is closely correlated with the nature of the covalent skeletal structure of the glass. The variation in the viscosity of the initial glass mass and the crystallization products was studied and plotted at different temperatures. On the basis of the experimental data obtained at high temperatures in order to study the kinetics of the catalyzed crystallization process, it was established that this process consists of two stages: the induction period and the crystallization process

Card 1/2

ACCESSION NR: AT4019298

itself. The energy characteristics show that the processes taking place during the induction period, as well as those during the actual crystallization, are limited by the rearrangement of the covalent bonds in the glass skeleton rather than by the processes of ionic diffusion. A mechanism of catalyzed crystallization is given in which covalent transformation diffusion plays an important role. Orig. art. has: 4 figures and 2 formulas.

ASSOCIATION: none

SUBMITTED: 17May63

DATE ACQ: 21Nov63

ENCL: 00

SUB CODE: MT

NO REF SOV: 005

OTHER: 001

Card 2/2

ACCESSION NR: AT4019312

S/0000/63/003/001/0167/0169

AUTHOR: Petrovskiy, G. T.; Krestnikova, Ye. N.; Grebenshchikova, N. I.

TITLE: Catalyzed crystallization of glasses of the lithium gallium silicate system

SOURCE: Simpozium po stekloobraznomu sostoyaniyu. Leningrad, 1962. Stekloobraznoye sostoyaniye, vyyp. 1: Katalizirovannaya kristallizatsiya stekla (Vitreous state, no. 1: Catalyzing crystallization of glass). Trudy\* simpoziuma, v. 3, no. 1. Moscow, Izd-vo AN SSSR, 1963. 167-169

TOPIC TAGS: glass, glass crystallization, catalyzed crystallization, lithium silicate, gallium silicate

ABSTRACT: Lithium gallium silicate glasses containing various additives were investigated to determine the effect of composition on structure. The thermal expansion coefficients are tabulated for aluminum- and gallium-containing lithium silicate glasses and semi-crystalline samples, and the data are compared with data obtained by other investigators. Crystallization was effected for 8 hours at 950C. A glass with the composition  $Li_2O-Ga_2O_3-6SiO_2$  had a large amount of the vitreous phase even after exposure to 1000C for ten hours. The thermograms for glasses of varying composition are given. Thermal analysis showed that because

Card 1/2

ACCESSION NR: AT4019312

of the high rate of heating, the crystallization temperatures determined by this method exceed the temperature at which the crystallization actually occurs. During the thermal treatment of lithium-gallium silicate glasses containing titanium dioxide, at 650C, a typical coloration of the glasses can be detected, the intensity of which can be reduced by the addition of certain oxides. The variations in the properties (such as the refractive index, dispersibility, density, and microhardness) during crystallization is shown by tabulated data for gallium glass. The heat capacity data show that the "defrosting" of the valency variations occurs at lower temperatures for gallium oxide than for aluminum oxide. Hence, the gallium glasses are more readily soluble than aluminum glasses, but the loss of transparency occurs at lower temperatures for gallium-containing ceramics. Orig. art. has: 1 figure and 2 tables.

ASSOCIATION: none

SUBMITTED: 17May63

SUB CODE: HT

DATE ACQ: 21Nov63

NO REF SOV: 007

ENCL: 00

OTHER: 004

Card 2/2

KRESTNIKOVA, Ye.N.; PETROVSKIY, I.T.

Viscosity of fluoride glass-forming systems. Zhur.prikl.khim.  
36 no.6:1205-1211 Je '63. (MIRA 16:8)  
(Glass) (Fluorides) (Viscosity)



17206-63  
ACCESSION NR: AP3003765  
S/0080/63/036/006/1199/1204

AUTHORS: Grebenshchikova, N. I.; Petrovskiy, G. T.

TITLE: Solution kinetics of several fluoroberyllate glasses in water.

SOURCE: Zhurnal prikladnoy khimii, v. 36, no. 6, 1963, 1199-1204

TOPIC TAGS: glass, fluoroberyllate glass, solution kinetics, stability, Na, K, Cs.

ABSTRACT: Analysis of the solution kinetics in water of 24 non-oxygen-containing fluoroberyllate glasses (4-component systems  $BaF_2-AlF_3-MgF_2-R'F$ , where  $R' = Na, K, Cs$ ) indicated that the solution is of non-diffusion character, since rate of solution was independent of agitation and the activation energy  $E$  of the process was much higher than for diffusion.  $E = 1200$  kcal/mol.; the value of the preexponential factor was near to that calculated theoretically. Since the different solubilities of Na, K and Cs fluorides do not appear in the corresponding chemically-stable glasses, these fluorides must enter into the glass in the

Card 1/2

L 17906-63

ACCESSION NR: AP3003765

structure of the component fluoroberyllates. Replacement of  $MgF_2$ ,  $B_2O_3$ , or  $R_2F_2$  by  $AlF_3$  increases glass stability; replacement of  $R_2F_2$  by  $MgF_2$  has little effect. Replacement of  $B_2O_3$  with  $KF$  decreases stability. In  $B_2O_3$ - $MgF_2$ - $R_2F_2$  systems containing more than 30% alkali,  $KF$  glasses are better in that they crystallize less than  $NaF$  glasses. Orig. art. has: 1 figure, 4 tables and 5 equations.

ASSOCIATION: none.

SUBMITTED: 02Apr62

DATE ACQ: 07Aug63

ENCL: 00

SUB CODE: CH, MA

NO REF SOV: 008

OTHER: 003

Card 2/2

BOBOVICH, Ya.S.; PETROVSKIY, G.T.

State of titanium in the products of the complete crystallization of some systems. Zhur.strukt.khim. 4 no.5:765-768 S-0  
'63. (MIRA 16:11)

1. Gosudarstvennyy opticheskiy institut imeni S.I.Vavilova.

NEMILOV, S.V.; PETROVSKIY, G.T.

New method for measuring the viscosity of glasses. Zhur.prikl.khim.  
36 no.1:222-225 Ja '63. (MIRA 16:5)  
(Glass) (Viscosity)

I. 11134-63  
ACCESSION NR: AP 3002697  
EWP(g)/EWT(m)/EBS AFFTC/ASD/ESD-3 R-4 WH:  
S/0080/63/036/005/0977/0981

AUTHOR: Nemilov, S. V.; Petrovskiy, G. T.

TITLE: Investigation of the viscosity of selenium-arsenic glasses 15 61

SOURCE: Zhurnal prikladnoy khimii, v. 36, no. 5, 1963, 977-981

TOPIC TAGS: oxygenfree glasses, chalcogenide glasses, selenium-arsenic system, As sub 2 Se sub 3, AsSe, synthesis of glasses, viscosity, semiconductors, infrared transparency, viscosity measurements, iso-viscosity curves

ABSTRACT: The present study is the second of a series (S. V. Nemilov, G. T. Petrovskiy, and V. T. Slavyanskiy, ZhPKh, XXXVI, 1, 222, 1963) investigating viscosity in oxygenfree chalcogenide glasslike systems. The research was undertaken in view of the increasing interest in the semiconductor properties and infrared transparency of such systems. Twenty-five Se-As glass samples of varying composition were synthesized. Mixtures of purified Se and As in evacuated

Card 1/2

L 11131-63  
ACCESSION NR: AP3002697

quartz ampoules were heated for 5 hr at 540C and 1 hr at 700C with agitation in a tubular rocking furnace. The melt was then allowed to cool in the furnace. Samples were either polished after heating to 400C in a muffle furnace or fire-polished without heating. The results of viscosity measurements conducted by a method described in the first paper are presented in a table. Iso-viscosity curves, plotted within the 4--13 log Eta range, are shown in Fig. 1 of the Enclosure. The inflection point at 29--30 at% As in all the curves is associated either with the formation of quinquevalent As or with blocking of As-Se-Se-As bonds by the more rigid As-Se-As bonds. The family of peaks corresponding to As sub 2 Se sub 3 and AsSe results from the formation of binary compounds, as indicated by previous data on electrical conductivity, density, and microhardness. The family of second peaks shifts toward As sub 2 Se sub 3 with increasing temperature as a result of the breaking up of structural nodes which are stable at low temperatures only. The fall of the iso-viscosity curves when As content exceeds 50% is governed by the transformation of weakened covalent bonds. Orig. art has: 2 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 29Jan62

SUB CODE: 00

DATE ACQ: 24Jul63

NO REF SOV: 006

ENCL:01

OTHER:006

Card 2/10

~~1-11269-63~~ EWP(q)/EWI(a)/EOS-AFFIC/ASD-Pq-4-WI  
ACCESSION NR: AP300766 8/0080/63/036/006/1205/1211

58

AUTHOR: Krestnikova, Ye. N.; Petrovskiy, G. T.

TITLE: Study of the viscosity of fluoride glass-forming systems

SOURCE: Zhurnal prikladnoy khimii, v. 36, no. 6, 1963, 1205-1211

TOPIC TAGS: BeF sub 2 glass-forming system, beryllium fluoride, BeF sub 2, AlF sub 3, KF, CaF, NaF, LiF, MgF sub 2, CaF sub 2, SrF sub 2, BaF sub 2, fluoride glass viscosity, GOI viscosimeter, fluoride glass two-component system, fluoride glass three-component system, fluoride glass volatility, fluoride glass crystallization, silica glass, oxygen-free glass, BeF sub 2 toxicity

ABSTRACT: The viscosity of beryllium fluoride-based glass-forming systems has been measured in the molten state and in the region of softening temperatures with GOI viscosimeters. The experiments were conducted with two-component systems containing 5, 10, 20, and up to 40 mol % alkali, alkaline-earth, or magnesium fluorides and with three-component systems containing up to 70 mol % AlF, and KF or up to 50 mol % KF and MgF<sub>2</sub>. The temperature range of measurements in the molten state has an upper limit due to glass volatility and a lower limit due to

Card 1/2

L 11289-63

ACCESSION NR: AP3003766

the onset of crystallization. Measurement of the viscosity of many of the glasses in the softening-temperature region is hindered by rapid crystallization. Only glasses with a high  $\text{BeF}_2$  content exhibit a low crystallization capacity, making it possible to measure the viscosity within a wide temperature range (150—300 to 800—900C). The results of the measurements given in the form of viscosity-temperature curves show that addition of the other fluorides to  $\text{BeF}_2$  lowers the viscosity of the glass. Comparison of glasses containing 10% of the second fluoride shows that the viscosity-lowering effect increases in the order  $\text{NaF}(\text{LiF}) < \text{CaF}_2 < \text{KF}$  and  $\text{BaF}_2 < \text{CaF}_2(\text{MgF}_2) < \text{SrF}_2$ . Substitution of  $\text{BeF}_2$ ,  $\text{KF}$ , or  $\text{MgF}_2$  in three-component systems with  $\text{AlF}_3$  increases the viscosity. An increase in  $\text{MgF}_2$  content in the  $\text{BeF}_2$ - $\text{KF}$ - $\text{MgF}_2$  system increases the viscosity at lower temperatures and reduces it at higher temperatures. The viscosities of beryllium fluoride-based glasses are lower than those of their structural analogs—silica glasses. Orig. art. has: 8 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 05Apr62

DATE ACQ: 07Aug63

ENCL: 00

SUB CODE: CH

NO REF SOV: 004

OTHER: 004

nh/2/2  
Card 2/2



101. 013011. 011.

Classes of glass electrodes. Trademark no. 119: 0114  
198. (Electrodes Glass)

The following information was obtained from a report dated 11/28/65, prepared by the CIA Office of Technical Services, and is being furnished to you for your information.

The report, entitled "The Security of the Telephone System in the State of Virginia," contains information regarding the security of the telephone system in the State of Virginia. It includes a description of the system, a list of the personnel who are authorized to operate the system, and a list of the equipment used in the system.

The report also contains information regarding the security of the telephone system in the State of Virginia. It includes a description of the system, a list of the personnel who are authorized to operate the system, and a list of the equipment used in the system.

The following information was obtained from a report dated 11/28/65, prepared by the CIA Office of Technical Services, and is being furnished to you for your information.

The report, entitled "The Security of the Telephone System in the State of Virginia," contains information regarding the security of the telephone system in the State of Virginia. It includes a description of the system, a list of the personnel who are authorized to operate the system, and a list of the equipment used in the system.

The report also contains information regarding the security of the telephone system in the State of Virginia. It includes a description of the system, a list of the personnel who are authorized to operate the system, and a list of the equipment used in the system.

The following information was obtained from a report dated 11/28/65, prepared by the CIA Office of Technical Services, and is being furnished to you for your information.

The report, entitled "The Security of the Telephone System in the State of Virginia," contains information regarding the security of the telephone system in the State of Virginia. It includes a description of the system, a list of the personnel who are authorized to operate the system, and a list of the equipment used in the system.

The report also contains information regarding the security of the telephone system in the State of Virginia. It includes a description of the system, a list of the personnel who are authorized to operate the system, and a list of the equipment used in the system.

SECRET

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

SECRET

L 12124-66 EWP(e)/EWT(m)/EWP(b) GS/WH

ACC NR. AT6000491

SOURCE CODE: UR/0000/65/000/000/0183/0186

AUTHOR: Petrovsky, G. T.

ORG: None

TITLE: Structural characteristics of fluoberyllate glasses

SOURCE: Vsesoyuznoye soveshchaniye po stekloobraznomu sostoyaniyu. 4th, Leningrad, 1964. Stekloobraznoye sostoyaniye (Vitreous state); trudy soveshchaniya. Leningrad, Izd-vo Nauka, 1965, 183-186

TOPIC TAGS: glass, glass property, beryllium compound, crystallization

ABSTRACT: The article reviews published material on the structure of fluoberyllate glasses. Attention is given to the physicochemical properties of vitreous beryllium fluoride, such as viscosity, entropy of activation and free energy of activation, energy of bond rupture, and electrical conductivity. This is followed by a discussion of the characteristic features of the structure of fluoberyllate glasses having a complex composition. In contrast to the tetrahedra in silicate glasses, the fluoberyllate tetrahedra are deformed symmetrically, as indicated among other things by the lack of electron spin resonance spectra. It is shown that because alkali fluorides enter into the structure of complex fluoberyllates, the crystallization of fluoberyllate glasses occurs initially in the matrix phase, and their tendency to crystallize depends on the degree of overheating of the melt. This structural feature also accounts for the solution kinetics of fluoberyllate glasses in water. Orig. art. has: 1 figure.

Card 1/2

L 12124-66

ACC NR: AT6000491

SUB CODE: 11 / SUBM DATE: 22May65 / ORIG REF: 010 / OTH REF: 009

HW

Card 2/2

L 13559-66 EWP(o)/EWT(m)/EWP(b) GS/WH

ACC NR: AT6000500

SOURCE CODE: UR/0000/65/000/000/0327/0331

AUTHOR: Petrovskiy, G. T.; Krestnikova, Ye. N.; Grebenshchikova, N. I.; Proskuryakov, M. V.

ORG: None

TITLE: Structural interpretation of the possibility of creation of transparent glass-crystal materials in various systems

SOURCE: Vsesoyuznoye soveshchaniye po stekloobraznomu sostoyaniyu. 4th, Leningrad, 1964. Stekloobraznoye sostoyaniye (Vitreous state); trudy soveshchaniya, Leningrad, Izd-vo Nauka, 1965, 327-331

TOPIC TAGS: glass property, optic property, silicate glass

ABSTRACT: The authors survey ways for the creation of transparent glass-crystal materials and report some recent investigations of their own concerning 1) the experimental checking of the assumption that larger changes in glass viscosity above 660C can be explained by the inclusion of the bonds otherwise frozen in liquefaction groupings; 2) the feasibility of transparent glass ceramics formation in  $SiO_2-Bi_2O_3-SrTiO_3(BaTiO_3, PbTiO_3)$ ,  $SiO_2-ZnO-K_2O$  and  $SiO_2-B_2O_3-ZnO$ , and beryllium oxide-containing systems; and 3) the role of polar and nonpolar components in lithium-gallium silicate. All the results seem to confirm the previously proposed mechanism for the production of transparent glass-ceramic material (G. T. Petrovskiy, I. M. Buzhinskiy, OMP, 4, 31, 1963) which required the simultaneous presence of cations which

Card 1/2

L 13559-66

ACC NR: AT6000500

during the heat treatment of glass increase and decrease, respectively, their coordination number. The crystallization process is determined not only by the catalyzer content but also by the ratio between the polar and nonpolar components. Orig. art. has: 4 figures and 1 table.

SUB CODE: 11, 20 / SUBM DATE: 22May65 / ORIG REF: 005 / OTH REF: 001

Card 2/2

L 05693-67

ACC NR: AP6024399

Comparison of experimental conductivity values with those calculated with the assumption of transfer of electricity by Cs<sup>+</sup> ions in cesium fluoberyllate glasses indicates that the contribution of the cationic component of the conduction is negligibly small (of the order to 1-2%). Comparison of this result with data reported in the literature leads to the conclusion that the conduction in beryllium fluoride-base glasses is anionic in character. The paper was presented by Academician Terenin, A. N., 4 Nov 65. Orig. art. has: 3 figures, 1 table and 2 formulas.

SUB CODE: 11/ SUBM DATE: 28Oct65/ ORIG REF: 011/ OTH REF: 002

Card 2/2



L 06286-67 EWT(m)/EWP(\*) WW/OD/WH  
ACC NR: AT6027142 (A)

SOURCE CODE: UR/0000/65/000/000/0133/0138

AUTHOR: Nemilov, S. V.; Petrovskiy, G. I.

ORG: none

TITLE: Study of the pyroceramization kinetics of glasses of the  $\text{Li}_2\text{O}-\text{Ga}_2\text{O}_3-\text{SiO}_2$  system containing titanium dioxide admixtures

SOURCE: AN SSSR. Otdeleniye obshchey i tekhnicheskoy khimii. Issledovaniya v oblasti khimii silikatov i okislev (Studies in the field of chemistry of silicates and oxides). Moscow, Izd-vo Nauka, 1965, 133-138

TOPIC TAGS: silicate glass, pyroceramic, titanium oxide, catalyzed crystallization, gallium compound, lithium oxide

ABSTRACT: An attempt was made to determine the effect of composition on the nature of the kinetic processes involved in the catalyzed pyroceramization of glasses of the  $\text{Li}_2\text{O}-\text{Ga}_2\text{O}_3-\text{SiO}_2$  system. The main composition, from which others were prepared, was  $\text{Li}_2\text{O} \cdot \text{Ga}_2\text{O}_3 \cdot 6\text{SiO}_2 \cdot 0.4\text{TiO}_2$ . The viscosity of the crystallization products was found to be substantially affected by any changes in composition. Changes in the nature of crystallization caused by changes in composition were studied kinetically during the preparation of the glass for crystallization and during the crystallization process itself. The analysis suggests that the pyroceramization consists in the following. Apparently, nucleation centers already exist in the glass during cooling, as indicated

Card 1/2

... requires and 1 12018.

SUB CODE: 11/ SUBM DATE: 28Apr64/ ORIG REF: 011

Card 2/2 *gd*

SOURCE CODE: UR/0181/66/008/010/3106/3108

ACC NR: AP6033581

AUTHOR: Yudin, D. M.; Tsurikova, G. A.; Petrovskiy, G. T.

ORG: None

TITLE: Paramagnetic resonance of fluoroberyllate glasses activated with cobalt

SOURCE: Fizika tverdogo tela, v. 8, no. 10, 1966, 3106-3108

TOPIC TAGS: electron paramagnetic resonance, glass property, resonance line, line broadening, optic spectrum, temperature dependence

ABSTRACT: Inasmuch as the EPR spectra of cobalt-activated glasses have not been observed before, the authors attempted to obtain glasses in which the EPR of  $\text{Co}^{2+}$  could be observed at temperatures above 20K. Fluoroberyllate glass was chosen because of its rigid structure. The EPR spectrum recorded at 77K exhibited a broad resonance line with  $g = 4.28$  for the midpoint between the extrema. This line was not observed at room temperature. The spectrum was calibrated against signals from  $\text{D}_2\text{Ph}$  and silicate glass with  $\text{Fe}^{3+}$  in tetrahedral coordination. The measurements were made with a 3-cm microwave spectrometer (RE-1301). A correlation was observed between the intensity of the line with  $g = 4.28$  and the cobalt content in the glass. The glass color is red and its color intensity and optic spectrum are the same as in oxide glasses. The optic spectrum exhibits absorption bands characteristic of  $\text{Co}^{2+}$  in ox-

Card 1/2

ACC NR: AP6033581

tahedral coordination. Glasslike beryllium fluoride with cobalt has a much more intense blue color and exhibits no EPR at 77K. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 21Jan66/ ORIG REF: 001/ OTH REF: 001

Card 2/2

AUTHOR: retrovskiy, J.V., Senior Foreman

1978-12/39

TITLE: **Increasing the Reliability of Stuffing Box Packings in a Heating System**  
(Povysneniye nadezhnosti sal'nikovykh ... v teplotovoy seti)

PERIODICAL: Energetik, 1978, No 6, pp 14-17 (USSR)

ABSTRACT: The author described a method of raising the reliability of packing seals in thermal circuits by stuffing the box with rutter and asbestos. Rings lubricated with graphite dust in cylinder oil.

AVAILABLE: Library of Congress

Card 1/1

1. Rubber seals-Test methods 2. Asbestos seals-Test methods

PETROVSKIY, G.V., starshiy master.

Increasing reliability of packing boxes in heating systems. (MIRA 11:8)  
Energetik 6 no. 0:13-14 '58.  
(Pacing (Mechanical engineering))

PETROVSKIY, I. [Petrovs'kyi, I.]

Construction on the collective farms of White Russia. 311'. bud.  
13 no.11:18-19 N '63. (MIRA 17:1)

1. Nachal'nik Glavnogo upravleniya kolkhoznogo stroitel'stva pri  
Sovete Ministrov Belorusskoy SSR.

PETROVSKIY, I., akademik

Our first university. Starsh.-serzh. no.11:27 O.l.e. 11/11.  
(MIRA 1972)

1. Rektor Moskovskogo gosudarstvennogo universiteta imeni  
Lomonosova.

(Moscow University)

PETROVSKIY, I.

Prefabrication techniques in rural housing construction. 4th  
stroi. no. 29-32 31 '61. MIRA 1961

1. Nachal'nik Glavnogo upravleniya po orranizatsii stroitel'stva v  
kolkhozakh pri Sovete Ministrov BSSR.  
(White Russia--Construction industry)



PETROVSKIY, I. B.

MARKOVNIKOV, V.V.; PLATE, A.F., doktor khimicheskikh nauk, redaktor;  
BYKOV, G.V., kandidat khimicheskikh nauk, redaktor; PETROVSKIY  
I.B., akademik, redaktor; BYKOV, K.M., akademik, redaktor; ~~KALAB-~~  
SKIY, B.A., akademik, redaktor; SHMIDT, O.Yu., akademik, redaktor;  
ANDREYEV, N.N. akademik, redaktor; SHCHERBAKOV, D.I., akademik,  
redaktor; YUDIN, P.F., akademik, redaktor; DELONE, B.N., redaktor  
KOSHTOYANTS, Kh, S., redaktor; SAMARIN, A.M., redaktor, LEHEDEV,  
D.M., professor, redaktor; FIGUROVSKIY, N.A., professor, redaktor;  
KUZNETSOV, I.V., kandidat filologicheskikh nauk, redaktor; STERLI-  
GOV, O.D., redaktor; ZEMLYAKOVA, T.A., tekhnicheskii redaktor

[Selected works] Izbrannye trudy. Redaktsiya, stat'i i primechania  
A.F. Plata i G.V. Bykova, Moskva, Izd-vo Akademii nauk SSSR 1955.  
926 p. (MLR 8:10)

1. Chlen-korrespondent AN SSSR (for Delone, Koshtoyants, Samarin)  
(Chemistry) (Markovnikov, Vladimir Vasil'evich 1837-1904)

PETROVSKIY, I. B.

MARKOVNIKOV, V.V.; PLATE, A.F., doktor khimicheskikh nauk, redaktor;  
 BYKOV, G.V., kandidat khimicheskikh nauk, redaktor; PETROVSKIY,  
I.B., akademik, redaktor; BYKOV, K.M., akademik, redaktor; KAZAN-  
 SKIY, B.A., akademik, redaktor; SHMIDT, O.Yu., akademik, redaktor;  
 ANDREYEV, N.N., akademik, redaktor; SHCHERBAKOV, D.I., akademik,  
 redaktor; YUDIN, P.F., akademik, redaktor; DELONE, B.N., redaktor  
 KOSHTOYANTS, Kh. S., redaktor; SAMARIN, A.M., redaktor, LEBEDEV,  
D.M., professor, redaktor; FIGUROVSKIY, N.A., professor, redaktor;  
 KUZNETSOV, I.V., kandidat filologicheskikh nauk, redaktor; STERLI-  
 GOV, O.D., redaktor; ZEMLYAKOVA, T.A., tekhnicheskii redaktor

[Selected works] Izbrannye trudy. Redaktsiia, stat'i i primechania  
 A.F. Plate i G.V. Bykova, Moskva, Izd-vo Akademii nauk SSSR 1955.  
 926 p. (MLRA 8:10)

- Chlen-korrespondent AN SSSR (for Delone, Koshtoyants, Samarin)  
 (Chemistry) (Markovnikov, Vladimir Vasil'evich 1837-1904)

ИЕТРОВИЧ, Иван Георгиевич; ГИДОВ, Л.А., ред.; РЫБКИ, Л.П.,  
ред.

(Lectures on the theory of integral equations. Lektsii i  
teorii integral'nykh uravnenii. 1 kn. 3., 188 s. Moskva,  
Nauka, Glav. red. fiziko-matem. lit-ry, 1988. 188 s.).  
(EIRA 1810)

PETROVSKIY, I.G.

Sur les fonctions primitives par rapport a une fonction continue arbitraire. C.R. Acad. Sci. 189 (1929), 1242-1245.

SO: Mathematics in the USSR, 1917-1947  
edited by Kurosh, A.G.,  
Markushevich, A.I.,  
Rashevskiy, P.K.  
Moscow-Leningrad, 1948

PETROVSKIY, I.G., Continued

Sur l'unicite de la fonction primitive par rapport a une fonction continue arbitraire.  
Matem. sb., 41 (1934), 48-59.

SO: Mathematics in the USSR, 1917-1947  
edited by Kurosh, A.G.,  
Markushevich, A.I.,  
Rashevskiy, P.K.  
Moscow-Leningrad, 1948

PETROVSKIY, I.G. Continued

Ueber das Verhalten der Integralkurven eines Systems gewöhnlicher Differentialgleichungen  
in der Nahe eines singularen Punktes. Matem. sb 41 (1934), 107-156.

SO: Mathematics in the USSR, 1917-1947  
edited by Kurosh, A.G.,  
Markushevich, A.I.,  
Rashevskiy, P.K.  
Moscow-Leningrad, 1948

PETROVSKIY, I.G. Continued

Ueber das Irrfahrtproblem. Math. Ann., 1948 (1947), 7-20.

SO: Mathematics in the USSR, 1917-1947  
edited by Kurosh, A.G.,  
Markushevich, A.I.,  
Rashevskiy, P.K.  
Moscow-Leningrad, 1948

PETROVSKIY, I.G. Continued

Zur erste handverlaufsbender Barkeleitungsleistung. Comp. math, 1 (1935), 3-4.

SO: Mathematics in the USSR, 1917-1947  
edited by Kurosh, A.G.,  
Markushevich, A.I.,  
Rashevskiy, P.K.  
Moscow-Leningrad, 1948



PETROVSKIY, I.G. Continued

Nachtrag zu meiner Arbeit. Über das Verhalten der Integralkurven eines Systems gewöhnlicher Differentialgleichungen in der Nähe eines singulären Punktes. Matem. sb., 42 (1935), 403.

SO: Mathematics in the USSR, 1917-1947  
edited by Kurosh, A.G.,  
Markushevich, A.I.,  
Rashevskiy, P.K.  
Moscow-Leningrad, 1948

PETROVSKIY, I.G. Continued

Ueber das Cauchysche Problem für System von partiellen Differentialgleichungen. Mat. sb., 2 (4.), (193 ), 16-87.

SO: Mathematics in the USSR, 1917-1947  
edited by Kurosh, A.G.,  
Markushevich, A.I.,  
Rashevskiy, P.K.  
Moscow-Leningrad, 1948

PETROVICH, Ivan Georgievich.

Lectures on the theory of ...  
... ..

PETROVSKIY, I.G. Continued

Sur l'analyticite des solutions des systemes d'equations differentielles. *Actes. 22.*,  
5 (47), (1939), 3-70.

SO: Mathematics in the USSR, 1917-1947  
edited by Kurosh, A.G.,  
Markushevich, A.I.,  
Rashevskiy, P.K.  
Moscow-Leningrad, 1948

PETKROVSKIY, I.G. Continued

Novoye dokazatel'no sushchestvovaniye resheniya zadachi Dirikhle metodom Chernykh raznostey. Uspekhi matem. Nauk, 8 (1941), 161-170.

SO: Mathematics in the USSR, 1917-1947  
edited by Kurosh, A.G.,  
Markushevich, A.I.,  
Rashevskiy, P.K.  
Moscow-Leningrad, 1948

PETROVSKIY, I. G.

"Dependence of Solutions of Cauchy's Problem on Initial Conditions," Dok. Ak. Nauk,  
Vol. 38, No. 5-6, 1943. (Math. Inst., Moscow State Univ., c. 1943)

PETROVSKIY, Ivan Georgiyevich

"On the Diffusion of Waves in a System of Hyperbolic Equations," 1944.

PETROWSKIY, I. G.

Petrowskiy, I. On the diffusion of waves and the lacunas for hyperbolic equations. Rec. Math. [Mat. Sbornik] N.S. 17(59), 289-370 (1945). (English. Russian summary) [MF 16672]

The following summary is taken from the author's introduction [cf. C. R. (Doklady) Acad. Sci. URSS 38, 151-153 (1943); Bull. Acad. Sci. URSS. Sér. Math. [Izvestia Akad. Nauk SSSR] 8, 101-106 (1944); these Rev. 5, 8; 6, 229]

In the present paper we consider hyperbolic systems [cf. Petrowskiy, same Rec. N.S. 2(44), 815-868 (1937)] of the form

$$(3) \quad \partial^k u_i / \partial t^k = F_i(t, x_1, \dots, x_p; u_1, \dots, u_N, \dots), \quad i=1, \dots, N,$$

where the derivatives of the form

$$\frac{\partial^k u_j}{\partial t^k \partial x_1^{k_1} \dots \partial x_p^{k_p}}, \quad \sum k_s = k, \quad k_s < n_j, \quad j=1, \dots, N,$$

are not indicated explicitly in  $F_i$ . The functions  $F_i$  are supposed to have derivatives of sufficiently high order with respect to all these variables [cf. the paper cited above]. We say that there is a lacuna  $L$  for the system (3) in the neighborhood of the initial data

$$\partial^k u_i / \partial t^k = u_i^{(k)}(x_1, \dots, x_p), \quad i=1, \dots, N; \quad k=0, 1, \dots, n_i-1,$$

for a point  $P(t^*, x_1^*, \dots, x_p^*)$  if the values at  $P$  of the functions  $u_1, \dots, u_N$  satisfying this system do not depend on the values of the initial data at  $t=t_0$  constant on the domain

$L$  lying in the base of the characteristic cone with vertex at  $P$ , that is,  $u_i(t^*, x_1^*, \dots, x_p^*)$  do not vary when  $u_i^{(k)}(x_1, \dots, x_p)$  are replaced by functions which, with their derivatives up to a certain order, differ but slightly from  $u_i^{(k)}$  everywhere and coincide with  $u_i^{(k)}$  outside a domain  $L^*$  lying, together with its boundary, in  $L$ . We shall consider only the domains  $L$  cut out by the characteristic cone having its vertex at  $P$ . This cone is constructed for the solution determined by the initial data  $u_i^{(k)}(x_1, \dots, x_p)$  and therefore, in the case of a nonlinear system, this cone and the lacuna  $L$  depend on the initial data. In the case of linear systems there is no such dependence.

In chapter II we investigate the lacunas for linear systems in the case  $p=1$ . In chapter I we establish a relation between the existence of lacunas for general nonlinear hyperbolic systems and that for the corresponding linear systems with constant coefficients containing only the highest derivatives of all the functions. For one hyperbolic equation of such a kind the formulae for the solution of Cauchy's problem were given by Herglotz for  $p > 1$ . Since these formulae are to be modified and generalized for our purposes, we give in chapter III a detailed proof in the required form without unnecessary restrictions.

Using the formulae obtained, in chapter V we give necessary and sufficient conditions for the existence of stable lacunas for a linear hyperbolic equation with constant coefficients containing the highest derivatives only. A lacuna

Source: Mathematical Reviews, 1/2 Vol. 8, No. 2

D-7



$L$  for such an equation is called stable if it is not destroyed by sufficiently small variations of the coefficients. At the beginning of chapter V we suppose that the characteristic equation of the hyperbolic equation represents a nondegenerate algebraic surface without singular points. The problem of lacunas is studied for the case where this surface is degenerate. The existence of lacunas is discussed for a system of equations. The results are applied to some equations of mathematical physics.

In chapter IV some theorems that are necessary for chapter V, regarding integrals over algebraic surfaces, are proved.

As is known, for  $t > 0$  and any odd  $p > 1$  the value of the solution  $u$  of the equation (1)  $u_{tt} = \sum_{i=1}^p u_{x_i x_i}$  at the point  $(t^*, x_1^*, \dots, x_p^*)$  depends only on the values of  $u$  at  $t=0$  (initial values) and of the derivative of  $u$  with respect to  $t$  on the sphere (2)  $\sum_{i=1}^p (x_i - x_i^*)^2 = (t - t^*)^2$  that belongs to the plane  $t=0$  and is the intersection of the latter with the characteristic cone for the equation (1) having its vertex at the point  $(t^*, x_1^*, \dots, x_p^*)$ . For  $p$  even or  $p=1$ , the value of  $u(t^*, x_1^*, \dots, x_p^*)$  depends not only on the values of the initial data on the sphere (2), but also on their values within it.

This implies that in case  $p$  is odd the spherical wave produced in a small neighborhood of a point  $Q$  of the  $(x_1, \dots, x_p)$ -space has the property that both its front and back edges are sharp. As to the case where  $p$  is even or  $p=1$ , only the front edge of such a wave is sharp, while the back edge is diffuse. In the first case it is said that there is no diffusion of waves for the equation (1), in the second case, that the diffusion of waves takes place [J. Hadamard, *Le Problème de Cauchy*, Paris, 1932, p. 238].

It may happen that for a hyperbolic equation or for a hyperbolic system the value of the solution of Cauchy's problem at the point  $P(t, x_1, \dots, x_p)$  does not depend on the values of the initial data on some of those domains into which the base of the characteristic cone with vertex at  $P$  is decomposed by this cone. This possibility is realized, for instance, for the fundamental equations of the theory of elasticity. We say that such domains are lacunas for the systems.

*E. T. Copson (Dundee).*

Source: *Mathematical Reviews*, 2/2 Vol 8, No. 2

PETROVSKIY, I. G.

"On the Propagation Velocity of Discontinuities of the Displacement Derivatives on the Surface of an Unhomogenous Elastic Body of Arbitrary Form," Dok. AN, 47, No. 4, 1945. (Cor. Mbr. Acad.; Inst. of Math. im. V. Steklov, c. 1945)

PETROVSKIY, I. G.

Petrovskii, I. G. On some problems of the theory of partial differential equations. Uspehi Matem. Nauk (N.S.) 1, no. 3-4(13-14), 44-70 (1946). (Russian)

This is a survey of typical questions arising in the theory of partial differential equations, with many indications as to problems awaiting solution. Briefly noted, the content of the three parts into which the survey is divided is as follows: (1) Hyperbolic equations and Cauchy's problem. S. Kowalevsky's theorem [J. Reine Angew. Math. 80, 1-32 (1875)] for the solution of Cauchy's problem for the equation

$$\frac{\partial^2 u}{\partial t^2} = F\left(x_1, x_2, \dots, x_n, u, \dots, \frac{\partial u}{\partial x_1}, \dots, \frac{\partial u}{\partial x_n}\right),$$

$k_1 < n$ , the given analytic data being  $\frac{\partial^k u}{\partial t^k} = \varphi_k(x_1, \dots, x_n)$ ,  $k=0, 1, \dots, k_1-1$  on the plane  $t=0$ ; Holmgren's [Ofversigt af Kongl. Svenska Vetenskaps-Akad. Forhandlingar 58, 91-103 (1901)] and Carleman's [Ark. Mat. Astr. Fys. 26B, no. 17 (1939); these Rev. 1, 55] uniqueness theorems for the related problem where the function is sought in a domain on one side of, and bounded partially by, the plane  $t=0$ ;

Source: Mathematical Reviews,

Hadamard's example of an "incorrectly posed" boundary value problem [Le Problème de Cauchy, Hermann, Paris, 1932, pp. 30-31]; following Hadamard's ideas, a definition is given of a correctly posed boundary value problem, and certain sufficient conditions for this to be the case are discussed [for hyperbolic equations Cauchy's problem is always correctly posed; see the author's paper, Rec. Math. [Mat. Sbornik] N.S. 2(44), 815-870 (1937)]; Hadamard's result [Le Problème de Cauchy, Hermann, Paris, 1932, pp. 239-241] concerning linear hyperbolic second order equations in an odd number of variables, for which "diffusion" always occurs; M. Mathisson's results [Acta Math. 71, 249-282 (1939); these Rev. 1, 120] when the number of variables is four, and the author's discussion of the general hyperbolic equation in this connection [C. R. (Doklady) Acad. Sci. URSS (N.S.) 38, 151-153 (1943); these Rev. 5, 8].

(11) Elliptic equations. Dirichlet problem for Laplace's equation; method of subharmonic functions, regular boundary points [O. Perron, Math. Z. 18, 42-54 (1923); N. Wiener, J. Math. Physics 3, 129-146 (1924)]; Lebesgue's [C. R. Soc. Math. France 1913, 17] and Urysohn's [Math. Z. 23, 155-158 (1925)] examples; Lavrentieff and Keldyich's results [Keldyich, Uspehi Matem. Nauk 8, 171-231 (1941); these Rev. 3, 123] on the "stability" of the solution of the

Vol 10 No. 4

Dirichlet problem when the given domain  $G$  is "approached" by means of domains contained in, and containing, it; method of finite differences; the author [Uspehi Matem. Nauk 8, 107-114, 161-170 (1941); these Rev. 3, 123] proves that the function so obtained satisfies the boundary conditions; Neumann's problem; boundary value problems for more general elliptic equations and systems [Feller, Math. Ann. 102, 633-649 (1930); Z. Shapiro, C. R. (Doklady) Acad. Sci. URSS (N.S.) 46, 133-135 (1945); N. I. Simonov, ibid. 44, 259-261 (1944); these Rev. 7, 14; 6, 228]; Lavrentieff's [Rec. Math. [Mat. Sbornik] 42, 407-424 (1935)] quasi-conformal maps, defined by functions  $u$  and  $v$  satisfying a linear elliptic system  $\partial u/\partial x = a_1 \partial u/\partial y + b_1 \partial v/\partial y$

and for which, in particular, the generalization of Riemann's conformal mapping theorem has been obtained;  $Z$ -monogenic functions, introduced by Bers and Gelbart [Trans. Amer. Math. Soc. 86, 67-93 (1944); these Rev. 6, 86] are discussed at length, and related unpublished work of Markušević and others is mentioned.

(11) Parabolic equations. This section deals mostly with the results of Tichonoff [Bull. Math. Univ. Moscou A 1, no. 9 (1938)]. At the end, L. Åsgeirsson's [Math. Ann. 113, 321-346 (1936)] mean value theorem for ultrahyperbolic equations is discussed. J. B. Diaz (Providence, R. I.)

Source: [Illegible]

*dy*

PETROV, Ivan Georgievich.

Lectures on the theory of...  
1947-1948

PIETROVSKIY, I.G.

"Lecture on the theory of integral equations", (in title o teorii integralnykh uravnenii).  
Published by the State Publishing House for Technical-Theoretical Literature, MOSCOW-  
SARATOV 1948.

SC: D-70905, 28 July 1954.

PETROVSKIY, I. G.

N Petrovskii, I. G. *Lekcii po teorii obyknovennykh differentsial'nykh uravnenii. [Lectures on the Theory of Ordinary Differential Equations]*. 3d ed. Gosudarstv. izdat. Tehn. Teor. Lit., Moscow-Leningrad, 1949. 208 pp.  
Part I. A single differential equation of the 1st order with one unknown function; General notions; The simplest differential equations; General theory. Part II. Systems of ordinary differential equations; General theory; General theory of linear systems; Linear systems with constant coefficients. Appendix: Partial differential equations of the 1st order in one unknown function. *Table of contents.*

Source: *Mathematical Reviews*,

Vol 12

No. 5

# PETROVSKIY, I. G.

Petrovskiy, I. G., and Oleinik, O. A. On the topology of real algebraic surfaces. *Izvestiya Akad. Nauk SSSR Ser. Mat.* 13: 389-402 (1949). (Russian)

In this paper the authors give the proofs of some results which they announced in a preceding paper [Doklady Akad. Nauk SSSR (N.S.) 67, 31-32 (1949), these Rev. 11, 7047]. These results yield upper bound estimates depending only on  $m$  and  $n$ , for the absolute value of the Euler-Poincaré characteristic (mod 2)  $E(\Gamma_0)$  of any real hypersurface  $\Gamma_0$  of order  $n$  in the projective  $m$ -space  $S_m$ , under the assumption that  $\Gamma_0$  is free from real singularities. If  $F(x_1, \dots, x_m)$  is the equation of  $\Gamma_0$  and if  $M_0$  denotes the closure, in  $S_m$  of the set of points at finite distance where  $F=0$ , then similar estimates are obtained also for  $E(M_0)$ . An important preparatory step consists in replacing  $\Gamma_0$  by a very near hypersurface  $\Gamma'_0$  which is sufficiently general for all the purposes of the proof. This is possible since it is proved that  $\Gamma'_0$  and the corresponding set  $M'_0$  are homeomorphic to  $\Gamma_0$  and  $M_0$  respectively. With this preparation of  $\Gamma_0$  it is then permissible to assume that the "critical points" of the polynomial  $F(x)$ , i.e., the intersections (real or imaginary)  $P_0$  of the  $m$  polar hypersurfaces  $F'_i=0$  are exactly  $(n-1)^m$  in number and that  $F$  takes distinct nonzero values at these points. These assumptions imply that if  $\Gamma_0$  denotes the hypersurface  $F=C=0$  ( $C$  a real constant) and  $M_C$  is the analogue of  $M_0$  for  $\Gamma_0$ , then  $E(M_C)$  increases or diminishes by 1 as  $C$  passes through a critical value  $F(P_0)$ ,  $P_0$  real. By letting the real parameter  $C$  vary between two fixed constants  $C_1$  and  $C_2$  such that  $C_1 < F(P_0) < C_2$  for all real critical points  $P_0$ , the authors obtain the relation

$$E(M_{C_2}) - 1 [E(M_{C_1}) + E(M_{C_2})] = A + B' + (n-1)^{m/2} - \gamma,$$

where the symbols have the following significance: (1)  $A$  is the number of real critical points  $P_0$  such that  $0 < F(P_0) < C_1$  and such that the (nonsingular) quadratic form which approximates, locally at  $P_0$ , the polynomial  $F(x) - F(P_0)$  has signature  $m - 2k, k$  even; (2)  $B'$  has a similar significance for  $C_2$ , but  $k$  now must be odd; (3)  $2\gamma$  is the number of imaginary critical points  $P_0$ . An algebraic lemma and an interpolation formula of Euler-Jacobi enable the authors to establish the crucial inequality  $A + B' > S(m, n) - \gamma - 1$ , where  $S(m, n)$  is the number of linearly independent polynomials in  $x_1, x_2, \dots, x_m$  which are of degree at most  $n-2$  in each of the variables  $x_i$  and of total degree at most  $[(m-2m-n)/2]$ . This inequality, combined with the preceding result, yields the estimate

1000

Source: Mathematical Reviews, 1950 Vol 11 No. 5



# PETROVSKIY, I. G.

Petrovskii, I. G., and Oleinik, O. A. On the topology of real algebraic surfaces. Doklady Akad. Nauk SSSR (VSN) 07, 31-32 (1949). (Russian)

Let  $\Gamma$  be a real algebraic hypersurface of order  $m$  and free from singularities in a projective space of dimension  $n$ . If  $F(x) = 0$  is the non-homogeneous defining equation of  $\Gamma$ , let  $M$  denote the closure (in the real projective space) of the set of points  $(x)$  such that  $F(x) \geq 0$ . Moreover, let  $E(\Gamma)$  and  $E(M)$  denote the Euler characteristics of  $\Gamma$  and  $M$ , respectively. The following estimates are announced: (1) If  $m$  is odd, then  $|E(\Gamma)| \leq (m-1)^n - 2S(m, n) + 1$ , where  $S(m, n)$  is the number of terms in the polynomial  $\prod_{i=1}^n (x_i^{m-1} - 1)/(x_i - 1)$  which are of degree not greater than  $\lfloor (m-1)/2 \rfloor$ . If  $m$  is even, then  $E(\Gamma) = 0$ ; (2) if  $n$  is even, and  $m$  is arbitrary, then  $|E(M)| \leq \frac{1}{2}(m-1)^n - S(m, n) + \frac{1}{2}$ ; (3) if both  $m$  and  $n$  are odd, then  $|E(M)| \leq \frac{1}{2}(m-1)^n - S(m, n) + \frac{1}{2}$ ; (4) if  $n$  is odd and  $m$  is even, then

$$|E(M)| \leq \frac{1}{2}(m-1)^n - S(m, n) + \frac{1}{2}(m-1)^{n-1} - S(m-1, n) + 1.$$

The estimates (2), (3) and (4) are also valid if  $\Gamma$  has only a finite number of singular points. In the case  $m=2$  the estimates (2) and (4) have been obtained by Petrovskii in an earlier paper [Ann. of Math. (2) 39, 189-209 (1938)]. It has shown that in that case there exist curves  $\Gamma$  for which the equality holds in (2) and (4). It is stated that also in the case  $m=3, n=4$  there exist surfaces  $\Gamma$  for which the equality holds in (1) and (2).  $\Gamma$  is then a surface of order 4 in  $S_4$  consisting of 10 ovals.

C. Z. 2-2-53 (Cambridge, Mass.)

SMW  
Z

1-10-50

Source: Mathematical Reviews,

Vol 11 No. 3

PETROVSKIY, I. G.

Petrovskii, I. G. Lekcii ob uravneniyah s kachestvennymi [Lectures on Partial Differential Equations]. Gosudarstv. Izdat. Tehn.-Fiz. Lit., Moscow-Leningrad, 1950. 303 pp.

The present book is a concise and lucidly written introduction to the subject of partial differential equations. Important results are carefully stated in the form of theorems, bringing out the relevant hypotheses in each case. The proofs are presented clearly and directly. Chapter I, entitled "Introduction. Classification of equations," deals with Cauchy's problem. S. Kowalewsky's existence theorem, characteristics, E. Holmgren's uniqueness proof for Cauchy's problem, canonical forms for second order linear partial differential equations in one unknown function of two independent variables and canonical forms for systems of linear first order partial differential equations in two independent variables. Chapter II, entitled "Hyperbolic equations," is divided into two parts: (a) Cauchy's problem in the domain of non-analytic functions and (b) vibrations. Part (a) deals with the "correct posing" of Cauchy's problem. Cauchy's problem for the wave equation in one, two, and three space-dimensions and for hyperbolic systems in two independent variables, Lorentz transformations, mathematical foundations of special relativity. Part (b) deals with vibration problems, the so-called "mixed" problems for the wave equation, and specially Fourier's method (expansion in terms of particular solutions obtained by the method of separation of variables) for the vibrating string equation. Two proofs of the needed eigenfunction expansions are given, the first is variational, and the second by means of integral equations. Chapter III, entitled "Elliptic equations", deals with Laplace's equation, potential theory, solution of Dirichlet's problem for a circle by Poisson's integral. The uniqueness of the solution of the Dirichlet problem is proved by an elementary method (not involving Green's theorem) due to I. I. Privalov [Mat. Sbornik (1) 32, 464-469 (1925)] and the existence of the solution by means of the Poincaré-Perron method of sub- and super-harmonic functions. The difference equation method for the approximate solution of the Dirichlet problem is also considered. Parabolic equations are discussed very briefly in chapter IV. An interesting feature of the book is the presence, at the end of each of the last three chapters, of a brief but informative survey of related known results.

J. B. Dias  
J. B. Dias

Source: Mathematical Reviews.

Vol. 13 No. 3

PETROVSKIY, I. G.

\*Petrovskiy, I. G. *Lechi po teorii integral'nykh uravneniy. [Lectures on the Theory of Integral Equations]*, 2d ed. Gosudarstv. izdat. Tehn. Teor. Lit., Moscow, Leningrad, 1951. 127 pp.

The author gives an exposition of the fundamental theorems of integral equations of the second kind:

$$\varphi(P) = \int_a^b K(P, Q)\varphi(Q) + f(P).$$

where  $P, Q \in S$ , a  $d$ -dimensional region bounded by a finite number of  $(d-1)$ -dimensional smooth surfaces. In chapter 1 the Fredholm theorems are stated and then proved, first for a degenerate kernel, next for continuous kernels, and a degenerate value, then for uniformly continuous kernels, and finally for kernels of the form  $K(P, Q) = PQ^a$  where  $a < d$  and  $K$  is uniformly continuous. In chapter 2 Volterra equations are treated briefly by reduction to the last case of chapter 1. In chapter 3 real symmetric piecewise continuous kernels are treated. Here the author emphasizes the analogy with transformations of  $n$ -dimensional vectors by symmetric matrices, setting forth the analogous theorems in parallel columns. The rest of the chapter is then devoted to proving these theorems for the integral equation case. In an appendix the author indicates the necessary modifications in order to carry through the theorems of chapter 3 for real symmetric Lobachev square integrable kernels. The book is written simply and clearly and with good motivation for the theorems.

J. V. Welosuter (Providence, R. I.)

*MS*  
*de*

*0022*

Source: Mathematical Reviews,

Vol 13 No 5

P. I. PETROVSKIY, I. G.

USSR/Mathematics - Book Report

Jan/Feb 51

"Book Report I. G. Petrovskiy's Lectures on Equations With Partial Derivatives," V. I. Levin

"Uspekhi Matemat Nauk" Vol VI, No 1 (41), pp 197-201

Subject book was published by the Gostekhizdat (State Tech Press) in 1950, with total of 15,000 copies; 303 pp, 7.95 rubles. The four chapters are: 1. Introduction, Classical Equations, 2. Hyperbolic Equations; 3. Elliptic Equations; 4. Parabolic Equations. This book accompanies 2 other earlier books by Levin on ordinary differential eq and theory of integral eq. Report is favorable.

177T60

LC

SMITHSONIAN, I. S.

"Topology of Real Algebraic Surfaces," Us. Mat. Nauk: V. 1. 1951.

1-1-55, 1-1-55

USSR/Engineering - Educational Institutions  
Moscow State University  
Nov 51

"The Palace of Science," Acad. I. G. Petrovskiy, Rec-  
tor of Moscow Order of Lenin State U Inent M. V.  
Lomonosov

"Nauka i Zhizn" Vol XVIII, No 11, pp 9-12

Construction of the new building of Moscow State U  
in the Lenin Mountains is nearing completion. The  
natural sciences faculties will be transferred to  
this building while the humanitarian sciences facul-  
ties will remain in the buildings on Mokhovaya St,  
Moscow. The new building will accommodate 7,100  
213769

students and 300 aspirants while the old buildings  
have facilities for 6,500 students and 500 aspirants.  
The first few faculties will transfer to the new  
building in the 2d semester of the 1951-52 school yr.

213769

PETROVSKIY, I. G.

PETROVSKIY, I. G.

PHASE I Treasure Island Bibliographic Report

BOOK

Call No.: AF5580 03

0000053

Author: PETROVSKIY, I.G.

Full Title: LECTURES ON THE THEORY OF SIMPLE DIFFERENTIAL EQUATIONS, 4th edition.

Transliterated Title: Lektsii po teorii obyknovennykh differentsial'nykh uravneniy.

Publishing Data

Originating Agency: None.

Publishing House: State Publishing House of Technical and Theoretical Literature

Date: 1952

No. pp.: 232

No. copies: 15,000

Editorial Staff

Editor: A.D. Myshkis

Technical Editor: None.

Editor-in-Chief: None.

Appraiser: None.

Others: Thanks are given to O.A. Oleynik and A.D. Myshkis who contributed to this edition, and A.I. Barabanov, V.V. Stepanov and S.A. Galpern, who contributed to the first edition.

Text Data

Coverage: The author has chosen only several typical cases from the general theory of differential equations, without touching upon the theory of analytical functions. He tends to present the questions fully and in strict conformity with present day mathematical disciplines. The present volume is the fourth edition of this book.

Purpose: A textbook in the physico-mathematical schools of the universities of U.S.S.R.

Card 2/2

Call No.: AF 5580 03

0000053

Full Title: LECTURES ON THE THEORY OF SIMPLE DIFFERENTIAL EQUATIONS, 4th edition.

Facilities: None.

No. Russian and Slavic References: A few scattered references in the footnotes.

Available: A.I.D., Library of Congress



PETROVSKIY, I.

Mathematical Reviews  
Vol. 15 No. 3  
March 1954  
Analysis

7-13-54  
LL

② math 3

\*Petrovskij, I. G. Parcialni differentsialni rovnice. [Partial differential equations.] Pirodovédcké Vydavatelství, Praha, 1952. 276 pp. 180 Kčs.  
Translation by J. Kufner of "Lectii ob uravneniyah s častnymi proizvodnymi" [Gostizdat, Moscow-Leningrad, 1950; these Rev. 19, 241].

PETROVSKIY, I. G.

USSR (600)

Moscow University

Moscow University on "Lenin Hills.", Priroda, 41, no 1, 1952

9. Monthly List of Russian Accessions, Library of Congress, May 195<sup>1</sup>/<sub>2</sub>, Unclassified.

PETROVSKIY, I. G.

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 400-1

Call No.: AP60-17

BOOK

Author: PETROVSKIY, I. G.  
Full Title: LECTURES ON PARTIAL DIFFERENTIAL EQUATIONS, 2nd ed.  
Transliterated Title: Lektsii ob uravneniyakh s chastnykh proizvodnykh

Publishing Data

Originating Agency: None  
Publishing House: State Publishing House of Technical and Theoretical Literature  
Date: 1953 No. pp.: 360 No. of copies: 10,000

Editorial Staff

Contributors to this 2nd editions: Oleynik, Olga A. wrote a new four sections (23, 28, 40 and 41) and added exercises; Acad. Smirnov, V. I., Myshkiss, A. D., Ladyzhenskaya, G. A. and Chudov, L. A. gave valuable comments.

Text Data

Coverage: This is a course of lectures given for several years by the author to students in mathematics of the Department of Mechanics and Mathematics of the Moscow State University. The book was awarded the Stalin Prize of second class for 1951. The text is well covered by the table of contents.

Lektsii ob uravneniyakh s chastnymi proizvodnymi

AID 425 - I

PAGES

fundamentals in Cauchy problem and a study of hyperbolic equations.

143-226

Part II Vibrations of Limited Bodies  
Uniqueness of the solution of a mixed problem. Dependence on primary conditions. Fourier's method applied to the equation of vibrations of a string. The basis of Fourier's method. Green's functions. Vibrations of membranes. Eigenvalues and Eigenfunctions.

227-320

Ch. 3 Elliptic Equations

Properties of the maximum and minimum. Dirichlet's problem for a circle. Theorems of the fundamental properties of harmonic functions. Proof that the solution of Dirichlet's problem exists. Dirichlet's exterior problem. The second boundary problem. Potential theory. Method of finite differences applied to the approximate solution of Dirichlet's problem. Review of some results for general elliptic equations.

321-334

Ch. 4 Parabolic Equations

The first boundary problem. Maximum and minimum theorem. Solution of the first boundary problem for a rectangle by the Fourier method. Cauchy problem. Review of further study of parabolic equations.

3/4

Lektsii ob uravneniyakh s chastnymi proizvodnymi

AID 425 - I

PAGES  
335-349

Appendix

Solution of the first boundary problem for the equation of heat conductivity by the method of finite differences.  
Remarks on this method.

Purpose: The book is intended for students in mathematics of university departments of mechanics and mathematics.

Facilities: None

No. of Russian and Slavic References: Many footnotes to the text give references to names of scientists and their work mainly Russian.

Available: A.I.D., Library of Congress.

4/4

PETROVSKIY, I. G.

PA 243T102

USSR/Miscellaneous - Moscow University Jan 53

"Contribution of Soviet Scientists to Peace," I. G  
Petrovskiy

"Priroda" No 1, pp 3-6

States that Soviet machine designers created 500 new types and modifications of machines and mechanisms in 1951, and that Moscow U will occupy 320 ha, which is 5 times larger than area covered by Columbia U in US. States that Moscow's 103 higher educational institutions now have 270,000 students. Notes that electric power is transmitted from Kuybyshev to Moscow at 400,000 v.

243T102

*PETROVSKIY, I.G.*

PETROVSKIY, I.G.; VOVCHEENKO, G.D.; SALISHCHEV, K.A.; SERGEYEV, E.M.;  
MOSKVITIN, V.V.; SRETENSKIY, L.V.; GEL'FOND, A.D.; GOLUBEV, V.V.;  
ALEKSANDROV, P.S.; SOBOLEV, S.L.; BAKHVALOV, S.B.; OGUBALOV P.M.;  
KREYNES, M.A.; MYASNIKOV, P.V.; ZHIDKOV, M.P.; GAL'PERN, S.A.;  
ZHEGALKINA-SLUDSKAYA, M.A.

Vsevolod Aleksandrovich Kudriavtsev; obituary. Vest.Mosk.un. 8  
no.12:129 D '53. (MLRA 7:2)  
(Kudriavtsev, Vsevolod Aleksandrovich, 1885-1953)

PETROVSKIY, I.G., akademik.

Young science cadres. Nauka i zhizn' 20 no.9:1-4 S '53. (MLBA 6:11)

1. ~~Rektor~~ Moskovskogo gosudarstvennogo universiteta. (Moscow University)



*PETROVSKIY, I.G.*

BITSADZE, A.V.; PETROVSKIY, I.G., akademik, otvetstvennyy redaktor:  
NIKOL'SKIY, S.M., zamestitel' otvetstvennogo redaktora.

Equations of the mixed type. A.V.Bitsadze. Trudy Mat.inst. 41  
58 p. '53.

(Differential equations, Partial)

1. PITROVSKIY, I. G., Acad.
2. USSR 600
4. Science
7. Contribution of Soviet scientists to the cause of peace, Priroda, 42, No. 1, 1953.

9. Monthly List of Russian Accessions. Library of Congress. April . . . . .

CHUDOV, L.A.; PETROVSKIY, I.G., akademik.

Isolation of a singular point and a line of solutions for linear equations with partial derivatives. Dokl. AN SSSR 90 no.4:507-508 Je '53. (MLRA 6:5)

1. Akademiya Nauk SSSR (for Petrovskiy). (Differential equations, Linear)

MAYOROV, V.M.; PETROVSKIY, I.G., akademik.

Invariant characteristics of a generalized-potential network. Dokl. **AN**  
SSSR 90 no.6:965-968 Je '53. (MLBA 6:6)

1. Yaroslavskiy gosudarstvennyy pedagogicheskiy institut im.K.D.Ushinskogo  
(for Mayorov). 2. Akademiya nauk SSSR (for Petrovskiy).  
(Aggregates) (Vector analysis)

VVEDENSKAYA, N.D.; PETROVSKIY, I.G., akademik.

Boundary problem for equations of the elliptic type, degenerate at the boundary of the domain. Dokl. AN SSSR 91 no.4:711-714 Ag '53. (MLRA 6:8)

1. Akademiya nauk SSSR (for Petrovskiy).  
(Differential equations) (Geometry, Differential)

CHIBCHIK, V.A.; PETROVSKIY, I.G.

Applicability of the method of S.A. Chaplygin in approximate integration of non-linear differential equations of the second order with partial derivatives. Dokl. AN SSSR 91 no. 4: 741-744 Ag '53. (MIRA 6:8)

1. Akademiya nauk SSSR (for Petrovskiy).  
(Differential equations, partial)

BAZYLEV, V.T.; PETROVSKIY, I.G., akademik.

Quasi-Laplacian transformations of  $p$ -surfaces of space  $P_n$ . Dokl. AN SSSR  
92 no.3:453-455 S '53. (MLRA 6:9)

1. Akademiya nauk SSSR (for Petrovskiy). 2. Moskovskiy gorodskoy pedagogi-  
cheskiy institut im. V.P.Potemkina (for Bazylev).  
(Transformations (Mathematics)) (Geometry, Differential)

LAKTANOVA, N.V.; PETROVSKIY, I.G., akademik.

Developable pair of surfaces. Dokl. AN SSSR 92 no. 3: 473-474 S 1955.  
(MLRA 1:4)

1. Akademiya nauk SSSR (for Petrovskiy). 2. Moskovskiy gorodskoy pedagogicheskiy institut (for Laktanova).  
(Surfaces)



GRINTSEVICHUS, K.I.; PETROVSKIY, I.G., akademik.

Linear complex in affine space. Dokl. AN SSSR 92 no. 4:575-577 6 '59.

(MIRA 5:1)

1. Akademiya nauk SSSR (for Petrovskiy).

(Complexes)

RYBAKOV, V.N.; PETROVSKIY, I.G., akademik.

Binormal families of congruences. Dokl. AN SSSR 93 no.1:13-14 II '53.  
(MLRA 6:10)

1. Akademiya nauk SSSR (for Petrovskiy). (Congruences (Geometry))

YEFIMOV, N.V.; PETROVSKIY, I.G., akademik.

Study of single-valued projection of a surface of negative curvature. Dokl.  
AN SSSR 93 no.4:609-611 D '53. (MLBA 6:11)

1. Akademiya nauk SSSR (for Petrovskiy) 2. Moskovskiy lesotekhnicheskiy  
institut (for Yefimov). (Surfaces)

RUL'YE, K.F.; DAVITASHVILI, L.Sh.; MIKULINSKIY, S.R.; PETROVSKIY, I.G.,  
akademik, redaktor; ANUR'YEV, N.N., akademik, redaktor; BYKOV, K.M.,  
akademik, redaktor; KAZANSKIY, B.A., akademik, redaktor; OPARIN, A.I.,  
akademik, redaktor; SHMIDT, O.Yu., akademik, redaktor; SHCHERBA-  
KOV, D.I., akademik, redaktor; YUDIN, P.F., akademik, redaktor;  
KOSHTOYANTS, Kh.S., redaktor; SAMARIN, A.M., redaktor; MAKSIMOV, A.A.,  
redaktor; LEBEDEV, D.M., doktor geograficheskikh nauk, redaktor;  
FIGUROVSKIY, N.A., doktor khimicheskikh nauk, redaktor; KUZNETSOV, I.V.,  
kandidat filosofskikh nauk, redaktor; OZNOBISHIN, D.V., kandidat isto-  
richeskikh nauk, redaktor;

[Selected biological works] Izbrannye biologicheskie proizvedeniya.  
Redaktsiya, stat'ia i kommentarii L.Sh.Davitashvili i S.R.Mikulins-  
skogo. Moskva, Izd-vo Akademii nauk SSSR, 1954. (MLRA 7:8)

1. Chlen-korrespondent AN SSSR (for Koshtoyants, Samarin, Maksimov)  
(Biology)

GADOLIN, A.V.; ANSHELES, O.M., redaktor; SHAFRANOVSKIY, I.I., redaktor;  
FRANK-KAMENETSKIY, V.A., redaktor; SAZONOV, L.S., redaktor; PETROV-  
SKIY, I.G., akademik, redaktor; ANDREYEV, N.N., akademik, redaktor;  
BYKOV, K.M., akademik, redaktor; KAZANSKIY, B.A., akademik, redaktor;  
OPARIN, A.I., akademik, redaktor; SHMIDT, O.Yu., akademik redaktor;  
SHCHERBAKOV, D.I., akademik, redaktor; YUDIN, P.F., akademik,  
redaktor; KOSHTOYANTS, Kh.S., redaktor; MAKSIMOV, A.A., redaktor;  
SAMARIN, A.M., redaktor; LEBEDEV, D.M., doktor geograficheskikh nauk,  
redaktor; FIGUROVSKIY, N.A., doktor khimicheskikh nauk, redaktor;  
KUZNETSOV, I.V., kandidat filosofskikh nauk, redaktor; OZNOBISHIN,  
D.V., kandidat istoricheskikh nauk, redaktor; SMIRNOVA, A.V.,  
tehnicheskii redaktor

[Development of all crystallographic systems and their subdivisions  
from a common origin] Vyvod vseh kristallograficheskikh sistem i ikh  
podrazdelenii iz odnogo obshchego nachala. Redaktsiia i primechania  
O.M.Anshel'sa, I.I.Shafranovskogo, V.A.Frank-Kamenetskogo. [Leningrad]  
Izd-vo Akademii nauk SSSR, 1954. 155 p. (MLRA 7:10)

1. Chlen-korrespondent AN SSSR (for Koshtoyants, Maksimov, Samarin)  
(Crystallography)

PETROVSKIY, I. G.  
~~PETROWSKI, I. G.~~

✓ **Vorlesungen über die Theorie der gewöhnlichen Differentialgleichungen (Lectures on the Theory of Ordinary Differential Equations)** (I. G. Petrovskiy). Translated from the Russian by Viktor Vexler. Leipzig: B. G. Teubner Verlagsgesellschaft, 1954. 188 pp., 8pt. Dm 7.20; 21.27. In German.

This translation of the fourth edition, published in Moscow in 1952, is a development of lectures first delivered in 1926-1937 at the State Universities of Saratov and Moscow. Many examples drawn from the fields of physics and mechanics are included, as well as problems for the student.

Contents: A Differential Equation of the First Order with One Unknown Function; General Concepts; The Simplest Differential Equations; General Theory; Systems of Ordinary Differential Equations; General Theory; General Theory of Linear Systems; Systems of Linear Differential Equations with Constant Coefficients; Partial Differential Equations of the First Order; (1) the Unknown Function

3

*gms*  
*any*

AMPERE, Andre Marie, 1775-1836; DORFMAN, Ya.G., professor redaktor; ZAYCHIK, N.K., redaktor; PETROVSKIY, I.G., akademik, redaktor; ANDREYEV, N.N., akademik, redaktor; BYKOV, K.M., akademik, redaktor; KAZANSKIY, B.A., akademik, redaktor; OPARIN, A.I., akademik, redaktor; SHMIDT, O.Yu., akademik, redaktor; SHCHERBAKOV, D.I., akademik, redaktor; YUDIN, P.F., akademik, redaktor; KOSHTOYANTS, Kh.S., redaktor; MAKSIMOV, A.A., redaktor; SAMARIN, A.M., redaktor; LEBEDEV, D.M., doktor geograficheskikh nauk, redaktor; FIGUROVSKIY, N.A., doktor khimicheskikh nauk, redaktor; KUZNETSOV, I.V., kandidat filosofskikh nauk, redaktor; OKNOBISHIN, D.V., kandidat istoricheskikh nauk, redaktor; SMIRNOVA, A.V., tekhnicheskii redaktor

[Electrodynamics] Elektrodinamika. Redaktsiia, stat'i i primechania IA.G.Dorfmana. [Leningrad] Izd-vo Akademii nauk SSSR, 1954. 492 p. (MLRA 7:10)

1. Chlen-korrespondent AN SSSR (for Koshtoyants, Maksimov, Samarin)  
(Electrodynamics)

ПЕТРОВСКИЙ, И.Г.

BREDIKHIN, F.A.; DUBYAGO, A.D.; ORLOV, S.V., redaktor; GUNOV, K.P., redaktor; PETROVSKIY, I.G., akademik, redaktor; ANDREYEV, N.E., akademik, redaktor; BYKOV, F.M., akademik, redaktor; KAZANSKIY, B.A., akademik, redaktor; OPARIN, A.I., akademik, redaktor; SEMIDT, O.Yu., akademik, redaktor; SHCHERBAKOV, D.I., akademik, redaktor; YUDIN, P.F., akademik, redaktor; KOSHTOYANTS, Kh.S., redaktor; SAMARIN, A.M., redaktor; MAKSIMOV, A.A.; LEBEDEV, D.M., doktor geograficheskikh nauk, redaktor; FIGUROVSKIY, N.A., doktor khimicheskikh nauk, redaktor; KUZNETSOV, I.V., kandidat filosoficheskikh nauk, redaktor; OZNOBISHIN, D.V., kandidat istoricheskikh nauk, redaktor; ZELENIKOVA, Ye.V., tekhnich. red.

[Studies on meteors] Etudy o meteorakh. Stat'ia i kommentarii A.D.Dubiago. Red. S.V.Orlova. Moskva, Izd-vo Akademii nauk SSSR, 1954. 606 p. (MLBA 7:12)

1. Chlen-korresp. AN SSSR (for Orlov, Koshtoyants, Samarin, Maksimov)  
(Meteors)



PETROVSKIY, I.G.

BERNSHTEIN, S.N.; AKHIEZER, N.I., redaktor; GONCHAROV, V.L., redaktor;  
KOLMOGOROV, A.N., redaktor; PETROVSKIY, I.G., redaktor.

[Collected works] Sobranie sochinenii. Vol. 2 [Construction theory of  
functions (1931-1953)] Konstruktivnaia teoriia funktsii [1931-1953].  
1954. 626 . (MLRA 7:5)  
(Functions)

PETROVSKIY, I. G.

VESALIUS, Andreas; TERNOVSKIY, V.N., redaktor, [translator]; SHESTAKOV, S.P., [translator]; PAVLOV, I.P., akademik; PETROVSKIY, I.G., akademik, redaktor; BYKOV, K.M., akademik, redaktor; KAZANSKIY, B.A., akademik, redaktor; OPARIN, A.I., akademik, redaktor; SHMIDT, O.Yu., akademik, redaktor; ANDREYEV, N.N., akademik, redaktor; KOSHTOYANTS, Kh.S., redaktor; SAMARIN, A.M., redaktor; MAKSIMOV, A.A., redaktor; SHCHERBAKOV, D.I., akademik, redaktor; YUDIN, P.F., akademik, redaktor; LEBEDEV, D.M., doktor geograficheskikh nauk, redaktor; FIGUROVSKIY, N.A., doktor khimicheskikh nauk, redaktor; KUZNETSOV, I.V., kandidat filosofskikh nauk, redaktor; OZNOBISHIN, D.V., kandidat istoricheskikh nauk, redaktor; SHIDLOVSKAYA, O.G., redaktor; RUDNEVA, O.A., redaktor; KISELEVA, A.A., tekhnicheskiy redaktor.

[Structure of the human body; in 7 books] O stroenii chelovecheskogo tela; v semi knigakh. Perevod s latinskogo V.N.Ternovskogo i S.P.Shestakova. Red. V.N.Ternovskogo. Posleslovie I.P.Pavlova. [Moskva] Izd-vo Akademii nauk SSSR. Vol. 2. 1954. 960 p. (MLRA 7:11)

1. Deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR (for Ternovskiy)
2. Chlen-korrespondent Akademii nauk SSSR (for Shestakov, Koshtoyants, Samarin, Maksimov)  
(Anatomy, Human--Early works to 1800)

PETROVSKIY, I G

USSR/Mathematics - Discontinuity

FD-1173

Card 1/1

Pub. 118-14/30

Author : Petrovskiy, I. G., and Chudov, L. A.

Title : Lines and two-dimensional surfaces along which the solution of the wave equation can possess a discontinuity

Periodical : Usp. mat. nauk, 9, No 3(61), 175-180, Jul-Sep 1954

Abstract : The authors note that still very little study has given to the problem concerning the possible directions of lines and two-dimensional surfaces of discontinuity and concerning the peculiarity's nature. In the present article they treat this problem in one particular case where the investigation is conducted in a perfectly elementary way. The more general case of an isolated singularity for equations of arbitrary order with four independent variables has been treated in a work by L. A. Chudov. One reference: Courant and Hilbert, Methods of mathematical physics, 1951.

Institution :

Submitted : January 5, 1954

ПЕТРОВСКИЙ, И

BARANSKIY, N.; BLIZNYAK, Ye.; BUKHOL'TS, O.; VOSKRESENSKIY, S.; IVANOV, K.;  
KOVALEV, S.; KOVAL'SKAYA, N.; MAKUNINA, A.; MARKOV, K.; PETROVSKIY, I.;  
PROZOROV, Ye.; RAKITNIKOVA, A.; SAUSHKIN, Yu.; SOLOVTSEVA, T.; STEPANOV, P.;  
SHAPOSHNIKOV, A.; KHRUSHCHEV, A.

Nikolai Nikolaevich Kolosovskii. [Obituary] Vest.Mosk.un.9 no.12:139-141  
D '54. (MIRA 8:3)

(Kolosovskii, Nikolai Nikolaevich, 1891-1954)