

21415

24.7700

1043, 1138, 1160

S/120/61/000/002/028/042  
E073/E135

AUTHORS: L'vov, S.N., Nemchenko, V.F., and Marchenko, V.I.

TITLE: On a method of measuring the Hall coefficient and the specific electric resistance of solid high melting point compounds

PERIODICAL: Pribery i tekhnika eksperimenta, 1961, No. 2, pp. 159-160

TEXT: The electrical properties of compounds of the transition metals of the fourth to the sixth group of the periodic table with boron, carbon, nitrogen, etc. have been relatively little studied. For such measurements it is difficult to obtain suitable samples and it is also difficult to ensure the supply of a current intensity strong enough for the experiments. In this paper some measures are described which enable these difficulties to be overcome. Specimens of about 14 x 2.5 x 0.6 mm are cut by electro-erosion from the core of compact sintered blanks with the highest uniformity as regards porosity and chemical composition. The specimen must not be polished to a high brightness, since this would cause difficulties in obtaining a strong copper coating, which is necessary for soldering on leads  
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S/120/61/000/002/028/042  
E073/E135

On a method of measuring the Hall coefficient and the specific electric resistance of solid high melting point compounds

Such leads cannot be soldered on directly but they can be soldered on by using a thin intermediate coating of metal, for instance copper, at the ends. Such a coating can be deposited electrolytically in a bath of the following composition: water 100 g,  $\text{CuSO}_4$  20 g,  $\text{H}_2\text{SO}_4$  5 g, ethyl alcohol 0.2 g. The obtained copper layer will adhere quite strongly and will be suitable for applying low melting point solders, for instance Wood alloy. The reliability of such contacts was verified on a number of carbides, nitrides, borides and silicides of high melting point metals. Current of a density of up to 300 to 350 A/cm<sup>2</sup> can be passed through the specimen with a stability of the order of the third to fourth decimal place: this is 10 to 15 times as high as the densities obtained by J.M. Bardeen and B.S.Chandrasekhar (J. Appl. Phys., 1958, 28, 1372). As a result, even in materials with low Hall coefficients ( $\sim 0.5 \times 10^{-4}$  cm<sup>3</sup>/Coulomb), the scatter in the measured voltages will not exceed 1 to 2% in the case of a potentiometric set-up with a sensitivity of  $10^{-7}$  V/scale division.  
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21435

S/120/61/000/002/028/042

On a method of measuring the Hall...E073/E135

In specimens of 1.5 mm<sup>2</sup> cross-section applied by the authors, this current density is obtained for a current intensity of 4 to 5 A, which simplifies the current supply to the test set-up. The Hall measurements on solid high melting point compounds can be carried out by the usual method with electromagnets ensuring a field of 12 to 15 kOersted. For convenient measurement, the specimen is placed into a gap of the electromagnet in a special holder, designed to also permit measuring the specific electric resistance of the specimen. It consists of a 2 mm thick pertinax plate 1 (see figure) with an opening 2 of 6 x 6 mm<sup>2</sup> in the centre, on the sides of which are two grooves 3. In these the current leads 5 are held by pressure from two thin brass plates 4. Due to the mobility of the current leads, it is easy to adjust the centre of the specimen to be opposite the metering probes. Into six slots, which are perpendicular to the axis of the holder, thin copper tubes are glued in, in which molybdenum probes 6 (0.8 mm dia.) can move easily but tightly. The middle ones serve for measuring the Hall voltage, the end ones serve for measuring the voltage drop when measuring the specific resistance. The probes are pressed on by means of two screws 7 which carry perspex discs at the ends.

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S/120/61/000/002/028/042  
E073/E135

On a method of measuring the Hall ...

Rubber washers 9 are glued on to the faces of the discs so as to produce a tight and uniform pressure on the probes. The holder is connected in the circuit by means of seven pins 11 which are glued into appropriate recesses and are pressed down with the plate 10; these pins are fitted into a block with sockets ("recesses") and fixed to one of the poles of the electromagnet. The second current lead is connected to a separate terminal 12. The holder is convenient and reliable in operation and, particularly, it permits measurement inside a very narrow inter-pole space (3 mm). As a result, a relatively high magnetic potential and a uniform magnetic field can be obtained with relatively small magnets.

There are 1 figure and 3 references: 2 Soviet and 1 non-Soviet.  
[Abstractor's Note: This is a slightly abridged translation.]

ASSOCIATION: Khersonskiy pedagogicheskiy institut  
(Kherson Pedagogic Institute)

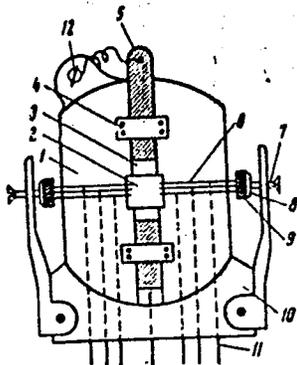
SUBMITTED: February 16, 1960

Card 4/5

21415

S/120/61/000/002/028/042  
E073/E135

On a method of measuring the Hall coefficient and the specific electric resistance of solid high melting point compounds



Figure

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L'VOV, S.N.; NEMCHENKO, V.F.; MARCHENKO, V.I.

Methods for measuring the Hall coefficient and electric resistivity  
of solid high-melting compounds. Prib. i tekh. eksp. 6 no.2:  
159-160 Mr-Ap '61. (MIRA 14:9)

1. Khersonskiy pedagogicheskiy institut.  
(Solids--Electric properties)

L 13/08-63

EWP(g)/BDS/EWT(m) AFFTC/ASD JD/JG

ACCESSION NR: AF3000111

S/0126/63/015/004/0631/0633

AUTHOR: Marchenko, V. I.; Samsonov, G. V.

60

58

TITLE: Thermal properties of certain lanthanide sulfides

SOURCE: Fizika metallov i metallovedeniye, v. 15, no. 4, 1963, 631-633

TOPIC TAGS: lanthanide sulfide, thermal property, rare earths monosulfide, sesquisulfide, cerium, praseodymium, neodymium

ABSTRACT: The thermal expansion coefficients of lanthanum, cerium, praseodymium and neodymium mono- and sesquisulfides have been determined experimentally. The composition of baked polycrystalline samples of lanthanum and cerium was practically stoichiometric, while that of praseodymium and neodymium had a somewhat lower sulfur content. The relative sample dilation was measured with a quartz dilatometer in the temperature interval 20-1020C, using argon as a protective medium. The results obtained showed an increase in the thermal expansion coefficient with an increase in the atomic number of the metallic component. The coefficients decreased during the transition from the mono- to sesquisulfide state. This is explained by a greater hardness of the covalent bonds in Me sub 2 S sub 3 compared to the metallic bonds in MeS. The expected increase in the melting-point

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L 13408-63

ACCESSION NR: AP3000111

temperature with the decrease in the thermal expansion coefficient (at the transition from MeS to Me sub 2 S sub 3) was not observed. The authors conclude that thermal properties of sulfides of the rare earth metals are determined by the amount of covalent bonds S-S in their crystalline lattices. Orig. art. has: 1 table. 2

ASSOCIATION: Institut metallokeramiki i spetsial'nykh splavov AN UkrSSR  
(Institute of Powder Metallurgy and Special Alloys, Academy of Sciences UkrSSR)

SUBMITTED: 03Sep62

DATE ACQ: 12Jun63

ENCL: 00

SUB CODE: 00

NO REF SOV: 003

OTHER: 007

Card 2/2

S/226/63/000/002/009/014  
A006/A101AUTHORS: Marchenko, V. I., Samsonov, G. V.

TITLE: Thermoelectric properties of lanthanum sesquisulfide

PERIODICAL: Poroshkovaya metallurgiya, no. 2, 1963, 60 - 64

TEXT: In previous investigations it was established that  $\text{La}_2\text{S}_3$  is a semiconductor with 1.32 eV forbidden band width and transition to proper conductivity at about  $700^\circ\text{C}$ . The authors studied the temperature dependence of the thermo-emf coefficient in the range from 300 to  $1,000^\circ\text{C}$ . Thermo-emf was measured in a  $10^{-2}$  mm Hg vacuum by the compensation method. The thermo-emf coefficient and the specific electric resistivity of  $\text{La}_2\text{S}_3$  sulfide as functions of temperature are graphically represented. The temperature of transition from the proper to the extrinsic conductivity coincides with the thermo-emf temperature of inversed sign. The absolute value and the sign of the thermo-emf coefficient in the given temperature range depend on the correlation between concentration and carrier mobility. In the range of extrinsic conductivity ( $200 - 500^\circ\text{C}$ ) the coefficient of thermo-emf has a positive sign and decreases at higher temperatures. This

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3/226/63/000/002/009/014  
A006/A101

## Thermoelectric properties of lanthanum sesquisulfide

proves that hole conductivity prevails in the given range. At higher temperature the mobility of vacancies decreases and entails a reduction in the coefficient of thermo-emf. This dependence is shown in formula

$$\alpha = 86 \left( \frac{\Delta E_n}{2kT} - 1.98 \right) [\mu\text{V/degree}]$$

Calculation and experimental data are compared. They differ at temperatures over 400°C (-17.5%). This difference is explained by the deviation of the ionization energy from the mean value 0.32 eV, and by the fact that the electron diffusion was not taken into account. The experimental results can be used to reveal the nature of conductivity, and for the practical application of new semiconductor compounds, as a means of controlling thermal processes in a vacuum, inert medium, molten metal medium, and as operational components of thermo-electric power transformers. There are 2 figures and 1 table.

ASSOCIATION: Institut metallokeramiki i spetsial'nykh splavov AN USSR (Institute of Ceramics and Special Alloys, AS UkrSSR)

SUBMITTED: January 12, 1963

Card 2/2

L 41151-65 EWT(1)/EWT(m)/T/ENP(t)/ENP(b)/EWA(h) Pz-6/Peb IJP(c) JD/  
JG/AT/GS

ACCESSION NR: AT1048714

S/0000/64/000/000/0177/0179

AUTHOR: Marchenko, V. I.

TITLE: Semiconductor and some other properties of lanthanum, cerium praseodymium and neodymium sulfides

SOURCE: Vsesoyuznoye soveshchaniye no splavam redkikh metallov, 1963, Voprosy\* teorii i primeneniya redkozemel'nykh metallov (Problems in the theory and use of rare-earth metals); materialy\* soveshchaniya, Moscow, Izd- vo Nauka, 1964, 177-179

TOPIC TAGS: Lanthanum sulfide, lanthanum sesquisulfide, semiconductor property, rare earth sulfide, sulfide thermoelectromotive force, rare earth sulfide conductivity, cerium sulfide, praseodymium sulfide, neodymium sulfide

ABSTRACT: The relationship between temperature and electrical resistivity of the mono- and sesquisulfides of the rare earths were studied between 20 and 1000°C. The resistivity, mean temperature coefficients of resistance, activation energy of impurities, width of the forbidden zone, temperature of transition to inherent conductivity, etc. are tabulated. The thermal e.m.f. was measured for the sesquisulfides between 200 and 1000°C and the monosulfides at room temperature. Resistivity was  $0.7 - 2 \times 10^6$  for the sesquisulfides at 20°C and  $15-90$  at 1000°C; for

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29  
27  
B+1  
27 27 27

L 41151-65

ACCESSION NR: AT048714

the monosulfides the mean thermal resistivity was 0.44-0.61. Data obtained for the thermal conductivity, resistivity and thermal e.m.f. permitted calculation of the coefficient of thermo-electrical quality of the sulfides; at room temperature  $I = 10^{-4}$  degree, reaching  $(1.6-4) \times 10^{-7}$  degree at 1000 C. These values varied somewhat for the specific monosulfide, depending on the atomic number and its tendency to oxidation. The experimental data show the importance of the Me-S ionic bonds in the MeS lattices. To a high degree, these bonds determine the compound's thermal stability in a vacuum and in contact with molten metals, and are thus responsible for the high refractory quality of the monosulfides. Data on the relationship between temperature and resistivity, as well as other data on the physical properties of the monosulfides, showed them to be of use for refractories in the precision metallurgy of rare metals. "The author wishes to thank G. V. Samsenov, corresponding member of the AN UkrSSR, for his continuous help in this work". Orig. art. has: 1 table.

ASSOCIATION: none

SUBMITTED: 13 Jun 64

ENCL: 00

SUB CODE: IC, DC

NO REF SOV: 005

OTHER: 002

64rd <sup>60</sup> 2/2

MARCHENKO, V.I.

Significance of the oxide coefficient for the facies analysis of  
marine sediments. Lit. i pol. iskop. no.4:125-137 JI-Ag '65.  
(MIRA 18:9)

I. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskii institut,  
Leningrad.

L 34073-65 EWT(m)/EWP(b)/EWP(t) IJP(c) JD/JG

ACCESSION NR: AP5007605

S/0363/65/001/001/0047/0052

23

AUTHOR: Marchenko, V. I.; Samsonov, G. V.

22

B

TITLE: Preparation and some physicochemical properties of lanthanum sulfides

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 1, 1965, 47-52

27 27

TOPIC TAGS: lanthanum sulfide, rare earth sulfide, semiconductor, lanthanum sulfide electrical property, magnetic susceptibility

ABSTRACT: The authors investigated the preparation of compact specimens of LaS and La<sub>2</sub>S<sub>3</sub>, as well as the electrical resistance of these semiconductors. Briquettes pressed from fine La<sub>2</sub>S<sub>3</sub> were sintered in a stream of H<sub>2</sub>S by heating at 100/min. to 1300-1400C and holding for 30-45 min. at this temperature; the sintered material attained 84-87% of the calculated maximum density. Heating at 1400-1450C reduced porosity further but also formed large blowholes. Coarse grinding of this sinter, dampening with water, pressing into briquettes and resintering in H<sub>2</sub>S at 1300-1400 produced better results. Heating LaS briquettes was found to lead to a final porosity of 7.5-12.5%. The electrical resistivity (ohm.cm) of LaS varies between  $9.2 \times 10^{-5}$  and  $22.0 \times 10^{-5}$  in the 20-950 C range, and that of La<sub>2</sub>S<sub>3</sub> varies between

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L 34073-65

ACCESSION NR: AP5007605

1.5 -  $2 \times 10^6$  and 80-100 over the same temperature range. The resistivity/temperature curves of  $\text{La}_2\text{S}_3$  show two rectilinear sections with a different slope corresponding to different values of the energy gap, which is characteristic of semiconductors with admixture atoms within the energy gap. The width of the energy gap shows that the displacement of the electron density maximum in the  $\text{La}_2\text{S}_3$  lattice corresponds to a partial organization of covalent S - S bonds. These results were checked by repeated heating. The electrical resistivity of  $\text{LaS}$  depends on temperature in the same way as that in metals. The magnetic susceptibility agreed well with the published data,  $\text{La}_2\text{S}_3$  always showing diamagnetic and  $\text{LaS}$  paramagnetic magnetization. Orig. art. has: 5 figures, 1 formula and 1 table.

ASSOCIATION: Institut problem materialovedeniya, Akademiya Nauk UkrSSR (Material science problems institute, Academy of sciences, UkrSSR)

SUBMITTED: 13Aug62

ENCL: 00

SUB CODE: IC, MT

NO REF EOV: 007

OTHER: 006

Card 2/2

L 26355-66 EWT(m)/T WJ/JW/JWD

ACC NR: AP6013380

SOURCE CODE: UR/0195/66/007/002/0224/0229

AUTHOR: Koltunov, V. S.; Marchenko, V. I. B/B

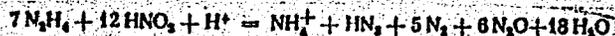
ORG: none

TITLE: Kinetics of oxidation of hydrazine by nitrous acid

SOURCE: Kinetika i kataliz, v. 7, no. 2, 1966, 224-229

TOPIC TAGS: hydrazine, nitrous acid, oxidation kinetics, reaction rate

ABSTRACT: The mechanism of the reaction between hydrazine and nitrous acid was studied kinetically in nitric and hydrochloric acid solutions in the 9-40°C range. Analysis of the reaction products led to the following stoichiometric equation of the reaction:



In nitric acid, the overall reaction order is two; with respect to each of the reagents, it is one. The reaction rate is given by the equation

$$-\frac{d(\text{HNO}_2)}{dt} = k(\text{HNO}_2)(\text{N}_2\text{H}_4)(\text{H}^+)$$

the activation energy of the reaction being 8.6 kcal/mol. In hydrochloric acid, the

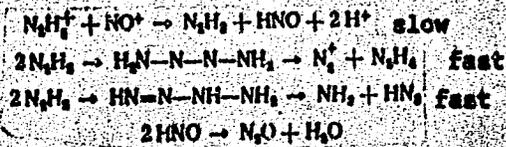
UDC: 547.234 : 542.943+541.127-14

Card 1/2

L 26355-66

ACC NR: AP6013380

overall reaction order is two; with respect to nitrous acid, it is one. A possible mechanism of the oxidation of hydrazine by nitrous acid is represented as follows:



Orig. art. has: 2 figures, 5 tables, 13 formulas.

SUB CODE: 07/

SUBM DATE: 19Oct64/

ORIG REF: 001/

OTH REF: 016

Card 2/2

MARCHENKO, V.I.

Stratigraphic scale and lithologic features of Neocomian sediments  
of the Kopet-Dag. Trudy VSEGEI 42:120-134 '60. (MIRA 14:9)  
(Kopet-Dag--Geology, Stratigraphic) (Rocks, Sedimentary)

MARCHENKO, V.I.

Paleogeographic and facies features of Neocomian sediments in the central Kopet-Dag and their oil and gas potentials. Trudy VSEGEI (MIRA 14:9) 42:135-155 '60.  
(Kopet-Dag--Petroleum geology) (Kopet-Dag--Gas, Natural--Geology)

MARCHENKO, V.I.

Neocomian of the eastern Kopet-Dag and the age of the gypsum-bearing formation. Trudy VSEGEI 46:113-125 '61. (MIRA 14:11)  
(Kopet-Dag--Geology, Stratigraphic) (Gypsum)

MARCHENKO, V.I.; SAMSONOV, G.V. [Samsonov, H.V.]

Physical properties of cerium sulfide. Ukr. fiz. zhur. 8  
no.1:140-142 Ja '63. (MIRA 16:5)

1. Institut metallokeramiki i spetsial'nykh splavov AN UkrSSR,  
Kiyev.

(Cerium sulfide)

L 10295-63 EWF(l)/EWG(k)/EWP(q)/EWT(m)/BDS/ES(w)-2--  
AFFTC/ASD/ESD-3/SSE--Pa-4/Fab-4--AT/JD/LJP(C)/JG  
ACCESSION NR: AP3001008 S/0109/63/008/006/1076/1081

AUTHOR: Marchenko, V. I.; Samsonov, G. V.; Femenko, V. S. 77

TITLE: Thermionic emission of lanthanum and cerium sulfides,

SOURCE: Radiotekhnika i elektronika, v. 8, no. 6, 1963, 1076-1081

TOPIC TAGS: thermionic emission, rare-earth compounds

ABSTRACT: Experimental investigation of thermionic emission of mono- and sesquisulfides of the above metals is reported. Specimens 0.6 - 0.8 -mm thick and 6-mm in diameter were subjected to electronic bombardment from a tungsten filament kept at 400 v; anode voltage was 600 v. Table 3 (see Enclosure 1) gives the results of the investigation: work-function values at 1200 and 1700K, its variation with temperature, and emission-current density at 1700K. The sulfides have a low emission-current density at medium through rather high temperatures: at 1700K, a few ma per cm sup 2. The temperature coefficient of work function, around  $(1-2) \times 10 \text{ sup } -3$ , is characteristic for ionic compounds. "The authors express their gratitude to N. G. Ushakov for hooking up and pre-testing the experimental outfit." Orig. art. has: 5 figures and 3 tables.

Card 1/1

MARCHENKO, V.I.; SAMSONOV, G.V.

Properties of rare earth metal monosulfides. Zhur.neorg.khim. 8  
no.9:2035-2037 S '63. (MIRA 16:10)

1. Institut metallokeramiki i spetsstlavov AN UkrSSR.

AP4009931

8/0057/64/034/001/0128/0130

AUTHOR: Marchenko, V.I.; Samsonov, G.V.; Fomenko, V.S.

TITLE: Thermionic emission of praseodymium and neodymium sulfides

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.1, 1964, 128-130

TOPIC TAGS: thermionic emission, rare earth sulfides, work function, thermoelectric emission, praseodymium sulfide work function, neodymium sulfide work function, praseodymium sulfide, neodymium sulfide

ABSTRACT: Because of the importance of compounds of rare earth metals with Group VI elements, the thermoelectric emissions of  $\text{PrS}$ ,  $\text{Pr}_2\text{S}_3$ ,  $\text{NdS}$ , and  $\text{Nd}_2\text{S}_3$  were measured at temperatures from 800 to 1500°C. The sesquisulfides were prepared by heating compressed powder pellets in  $\text{H}_2\text{S}$  at 1400°C. The monosulfides were prepared from intermediate products of a reaction discussed elsewhere (S.V.Radzikovskaya, G.V. Samsonov, Ukr.khim.zhurn.,26,412,1960). The thermoelectric currents were measured by a procedure described earlier (V.I.Marchenko, G.V.Samsonov, V.S.Fomenko, Radiotekhnika i elektronika,8,6,1067,1963). From measured saturation currents the work function was obtained as a function of temperature by employing the tables of C. Jansen and R.Loosjes (Phil.Res.Rep.,8,61,1953).The work functions of all four com-

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AP4009931

pounds increase approximately linearly with temperature up to about 1400 or 1500°C. At higher temperatures the increase continues, but at a slightly lower rate. Comparison of the present results with similar measurements for lanthanum and cerium sulfides shows that 1) the work functions of the two sulfides of the same metal are close (at a given temperature) and 2) the work function of the sulfide decreases slightly on going from the lanthanum to the cerium to the praseodymium compound. These results are regarded as confirmation of a previous suggestion that the work function is related to the 4f-5d electron transition probability. The work function of neodymium sulfide is slightly greater than that of praseodymium sulfide. Orig.art.has: 5 figures and 1 table.

ASSOCIATION: Institut metallokeramiki i spetsial'nykh splavov AN UkrSSR, Kiev  
(Institute of Cermets. and Special Alloys, Academy of Sciences, UkrSSR)

SUBMITTED: 03Nov62

DATE ACQ: 10Feb64

ENCL: 00

SUB CODE: PH

NR REF SOV: 004

OTHER: 001

Card 2/2

SAMSONOV, G.V.; MARCHENKO, V.I.

Electrophysical properties of lanthanum and cerium sesquisulfides.  
Dokl. AN SSSR 152 no.3:671-673 S '63. (MIRA 16:12)

1. Institut metallokeramiki i spetsial'nykh splavov AN UkrSSR.  
Predstavleno akademikom A.P.Aleksandrovym.

ACCESSION NR: AP4041075

S/0170/64/000/006/0120/0122

AUTHOR: Marchenko, V. I.; Barantseva, I. G.

TITLE: Determination of heat conductivity coefficient of sesquisulfides of some rare earth metals

SOURCE: Inzhenerno-fizicheskiy zhurnal, no. 6, 1964, 120-122

TOPIC TAGS: heat conductivity, rare earth metal, metal sesquisulfide, sesquisulfide heat conductivity

ABSTRACT: The heat conductivity of sesquisulfides  $\text{La}_3\text{S}_3$ ,  $\text{Ce}_2\text{S}_3$ ,  $\text{Pr}_2\text{S}_3$ , and  $\text{Nd}_2\text{S}_3$  has been determined. Cylindrical specimens 6—8 mm in diameter and 10—15 mm long were obtained by cold pressing and sintering at 1400—1450K in dry  $\text{H}_2\text{S}$ . The heat conductivity was determined by the stationary method, based on the direct measurement of the temperature gradient in the specimen section through which the heat current of a certain capacity has been transmitted (see Table 1 of the Enclosure). For the determination of the electron component of heat conductivity coefficient  $\lambda_{el}$ , the equation

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ACCESSION NR: AP4041075

$$\lambda_{elec} = \sigma T \times 1.5 \times 10^{-8} \frac{W}{S \cdot deg^2}$$

was used, where  $\sigma$  is electrical conductivity and T is temperature. The electron component was found to be negligible in comparison to the phonon component. In the series  $La_2S_3 \rightarrow Nd_2S_3$  some heat conductivity increase is observed, which can be attributed to the loss of crystal lattice rigidity. Orig. art. has: 1 formula and 2 tables.

ASSOCIATION: Institut metallokeramiki i spetsialny\*ch splavov AN USSR, Kiev (Institute of Powder Metallurgy and Special Alloys)

SUBMITTED: 11May63

ATD PRESS: 3075

ENCL: 01

SUB CODE: MM, TD

NO REF SOV: 003

OTHER: 000

ACCESSION NR: AP4041075

ENCLOSURE: 01

Table 1. Coefficients of heat conductivity  $\lambda$  and electron component of heat conductivity  $\lambda_{el}$ , and electric conductivity  $\sigma$  of some rare earth metal sesquisulfides

Sulfide	Porosity %	$\lambda$		
		W/m·deg	$\sigma \cdot 10^5$ S/m	$\lambda_{el} \cdot 10^{10}$ W/m·deg
La <sub>2</sub> S <sub>3</sub>	13	2.3 ±0.1	5.8	2.6
Ce <sub>2</sub> S <sub>3</sub>	16	3.5 ±0.1	8.4	3.8
Pr <sub>2</sub> S <sub>3</sub>	25	2.7 ±0.2	9.1	4.1
Nd <sub>2</sub> S <sub>3</sub>	18	3.4 ±0.1	14.3	6.4

Card

3/3

MARCHENKO, V.I.; SAMSONOV, G.V.; FOMENKO, V.S.

Thermionic emission properties of praseodymium and neodymium sulfides.  
Zhur. tekhn. fiz. 39 no.1:128-130 Ja '64. (MIRA 17:1)

1. Institut metallokeramiki i spetsial'nykh splavov AN UkrSSR, Kiyev.

ИИИ  
СОЛОВ'ЯЕВ, В.Д.; МАРЧЕНКО, В.И.

Problem of prevention of whooping cough. *Oig. sanit., Moskva no.5:46-51*  
May 1953. (CML 25:1)

1. Of the Department of Epidemiology of Second Moscow Medical Institute  
imeni I. V. Stalin.

MARCHENKO, V. I.

Effective method for injecting whooping-cough vaccine; author's abstract. Zhur.mikrobiol. epid.i immun. 27 no.7:64-65 Jy '56.  
(MLRA 9:9)

1. Iz II Moskovskogo meditsinskogo instituta imeni I.V.Stalina i Gosudarstvennogo kontrol'nogo instituta imeni L.A.Tarasevicha.  
(WHOOPING COUGH--PREVENTIVE INOCULATION)

USSR/Virology - Human and Animal Viruses.

E

Abs Jour : Ref Zhur Biol., No 1, 1959, 576

Author : Marchenko, V.I.

Inst : Moscow Scientific Research Institute of Vaccines and  
Sera

Title : Experimental Association in Immunization of Animals  
Against Grippe and Whooping Cough.

Orig Pub : Tr. Mosk. n.-i. in-ta vaktsin i syvorotok, 1957, 9, 121-  
126

Abstract : No abstract.

Card 1/1

- 11 -

MARCHENKO, V.I.

Use of pancreatin in the preparation of single-layer cultures  
from various tissues. Vop.virus. 4 no.2:240-241 Mr-Ap '59.

(MIRA 12:6)

(TISSUE CULTURE,

prep. with pancreatin (Rus))

(PANCREAS, extracts,

pancreatin, in prep. of tissue cultures (Rus))

AVDYKOVICH, A.A.; MARCHENKO, V.I., kand.med.nauk

Pharyngo-conjunctival fever in ophthalmological practice in the  
Bronnitsy zone of Moscow Province. Vest.oft. no.6:44-45 '60.  
(MIRA 14:11)

1. Bronnitskaya bol'nitsa Moskovskoy oblasti i Virusologicheskaya  
laboratoriya Moskovskogo oblastnogo nauchno-issledovatel'skogo  
klinicheskogo instituta.

(BRONNITSY---ADENOVIRUS INFECTIONS) (CONJUNCTIVA---DISEASES)

MARCHENKO, V.I., kand.med.nauk; VORONKOVA, O.I., doktor med.nauk;  
PMEGINA, N.L., kand.med.nauk; MATVEYEVA, N.A.

On the role of adenoviruses in chronic tonsillitis. Vest.otorin.  
22 no.2:13-19 Mr-Ap '60. (MIRA 13:12)

1. Iz eksperimental'nogo otdela (zav. - doktor med.nauk O.I.  
Voronkova), Loringologicheskoy kliniki (zav. - prof.I.Ya.  
Sendul'skiy) i detskoy kliniki (zav. - prof.M.I.Olevskiy)  
Moskovskogo oblastnogo nauchno-issledovatel'skogo klinicheskogo  
instituta imeni M.F.Vladimirovskogo.  
(TONSILLITIS virol.)

MARCHENKO, V.I., kand.med.nauk; PINEGINA, N.L., kand.med.nauk;  
MATVEYEVA, N.A.; USHAKOVA, S.P.

Relationship between adenoviruses and rheumatism. Terap.arkh.  
no.6:72-75 '61. (MIRA 15:1)

1. Iz nauchno-eksperimental'nogo otdela (zav. - doktor med.nauk  
O.I. Voronkova), otorinolaringologicheskoy kliniki (zav. - prof.  
I.Ya. Sendul'akiy), detskoy kliniki (zav. - prof. M.I. Olevskiy)  
Moskovskogo oblastnogo nauchno-issledovatel'skogo klinicheskogo  
instituta imeni M.F. Vladimirovskogo.

(ADENOVIRUS INFECTIONS) (RHEUMATISM)

MARCHENKO, V.I.; PINEGINA, N.L.; MATVEYEVA, N.A.

Incidence of discovery of antibodies to adenoviruses in healthy subjects and those with different diseases based on complement fixation data. Vop.virus. 7 no.3:357-360 My-Je '61. (MIRA 14:7)

1. Nauchno-eksperimental'nyy otdel, pediatricheskaya i otolaringologicheskaya kliniki Moskovskogo oblastnogo klinicheskogo instituta imeni M.F.Vladimirovskogo.

(ADENOVIRUS INFECTIONS)

(COMPLEMENT FIXATION)

MARCHENKO, V.I., kand.med.nauk; VORONKOVA, O.I., doktor med.nauk;  
PINEGINA, N.L., kand.med.nauk; MATVEYEVA, N.A.

Problem of chronic adenovirus infection in chronic tonsillitis.  
Vest.otorin. 23 no.1:54-57 Ja-Fe '61. (MIRA 14:2)

1. Iz nauchno-eksperimental'nogo otdela (zav. - doktor med.nauk  
O.I. Voronkova), Moskovskoy nauchnoy otorinolaringologicheskoy  
kliniki (zav. - prof. I.Ya. Sendul'skiy), pediatricheskoy  
kliniki (zav. - prof. M.I. Olevskiy), Oblastnogo nauchno-issledo-  
vatel'skogo klinicheskogo instituta imeni M.F. Vladimirovskogo,  
Moskva.

(TONSILS--DISEASES) (ADENOVIRUS INFECTIONS)

VORONKOVA, O. I.; MARCHENKO, V. I.; MARKOVA, Ye. A.; USHAKOVA, S. P.  
(Moskva)

Antistreptolysin O titer in Botkin's disease. Klin. med. no.2:  
63-66 '62. (MIRA 15:4)

1. Iz virusologicheskoy laboratorii (zav. V. I. Marchenko)  
Moskovskogo oblastnogo nauchno-issledovatel'skogo instituta imeni  
M. F. Vladimirovskogo i infeksionnoy kliniki (dir. - deystvitel'nyy  
chlen AMN SSSR prof. A. F. Bilibin) II Moskovskogo meditsinskogo  
instituta imeni N. I. Pirogova.

(HEPATITIS, INFECTIONS) (ANTISTREPTOLYSINS)

PINEGINA, N. L.; MARCHENKO, V. I.; ZAKHAROVA, T. N.

Characteristics of the clinical course of chronic tonsillitis  
in connection with adenovirus and streptococcal infections.  
Vest. otorin. no.3:27-30 '62. (MIRA 15:6)

(ADENOVIRUS INFECTIONS) (STREPTOCOCCAL INFECTIONS)  
(TONSILS--DISEASES)

MARCHENKO, V.I.; PINEGINA, N.L.; MATVEYEVA, N.A.

Virological and microbiological parallels in chronic tonsillitis in children. Vop.virus 7 no.4:78-83 J1-Ag '62. (MIRA 15:8)

1. Moskovskiy oblastnoy nauchno-issledovatel'skiy klinicheskiy institut imeni M.F.Vladimirskogo.  
(TONSILS--DISEASES) (ANTISTREPTOLYSINS) (ADENOVIRUS INFECTIONS)

OLEVSKIY, M.I.; MARCHENKO, V.I.; ONINOKOVA, V.A.; GAL'PERIN, Yu.M.

Immunological method for the reproduction of an experimental  
hepatolienal syndrome in rabbits. Pat. fiziol. i eksp. terap.  
3 no.5:86-87 S-O '64. (MIRA 18:14)

1. Moskovskiy oblastnoy nauchno-issledovatel'skiy klinicheskoy  
Institut. Submitted May 29, 1963.

VENGRINOVICH, V. L.; MARCHENKO, V. K.

T-butt welding of gear shift forks on an MTZ-50 tractor. Avtom.  
svar. 16 no.3:76-78 Mr '63. (MIRA 16:4)

1. Minskiy traktorny zavod.

(Gearing---Welding)

20675

S/120/61/000/001/006/062

E032/E114

26.2312

AUTHORS: Kozlov, V.F., Marchenko, V.L., and Fogel', Ya.M.  
TITLE: A High-Frequency Ion Source with Discharge Taking  
Place in the Vapours of Salts  
PERIODICAL: Pribory i tekhnika eksperimenta, 1961, No.1, pp.25-28  
TEXT: High-frequency ion sources using hydrogen as the  
working gas are widely used in accelerator technology to obtain  
hydrogen ion beams. High-frequency ion sources have also been  
used to obtain nitrogen, carbon, oxygen, chlorine, boron and  
fluorine ion beams. To obtain these ions, use was made of gaseous  
compounds of the appropriate elements; for example, to obtain C<sup>+</sup>,  
Cl<sup>+</sup>, B<sup>+</sup> and F<sup>+</sup>, the gases CO<sub>2</sub>, CCl<sub>2</sub>F<sub>2</sub> and BF<sub>3</sub> were employed. X  
However, it is difficult to obtain ions of metals in this way  
because the relevant elements do not form gaseous compounds. This  
difficulty can be overcome by producing the ion beam from the  
plasma in a discharge occurring in the vapours of solid compounds.  
This type of ion source is described in the present paper. A  
sectional drawing of the device is shown in Fig.1. The discharge  
chamber is in the form of a cylindrical quartz container 30 mm in  
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S/120/61/000/001/006/062  
E032/E114

A High-Frequency Ion Source With Discharge Taking Place in the Vapours of Salts

diameter and 200 mm long. At the lower part of the chamber there is a spherical bulb 1 containing the substance to be evaporated. The extracting potential difference is applied between the anode 2 and the probe 3. The anode is in the form of a tungsten wire 1 mm in diameter and is spot-welded to a molybdenum foil 0.05 mm thick, fused through quartz. The gas discharge is initiated by means of the coil 4 which is wound on the quartz chamber. The extraction system consists of the probe 3, which is made of the Electron alloy, and the quartz jacket 6. The channel in the probe is 11 mm long and 3 mm in diameter. The extraction system is held at the end of the copper tube 7 which is screwed into the flange of the source. The extraction system can be moved by rotating this tube relative to the flange. The gas is admitted through the leak valve 8 and the pumping speed is controlled by means of the valve 9. Electrical heaters 10 and 11 (900 W each) are attached at each end of the discharge chamber. The lower heater is used to evaporate the charge in 1, while the

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S/120/61/000/001/006/062  
E032/E114

### A High-Frequency Ion Source With Discharge Taking Place in the Vapours of Salts

upper heater prevents the condensation of the working substance at the other end of the discharge chamber. The coil 4 consists of 4 turns of a copper tube, 6 mm in diameter, supplied by a high-frequency oscillator consisting of a push-pull circuit based on two  $\Gamma U-6-5$  (GI-6-B) triodes. The oscillator wavelength is 15 m and details of the circuit have been given by Ya.M. Fogel et al. in Ref.8. The total ion current is measured with the aid of a Faraday cup, and a mass-spectrometric analysis of the ion beam was carried out with the aid of the apparatus described by Ya.M. Fogel' and L.I. Krupnik in Ref.9. The source has been used with NaCl and NiCl<sub>2</sub>. A mass-spectroscopic analysis of the ion beam obtained with NaCl is illustrated in Fig.6. Ion currents of the order of 1 mA can be obtained with this source, the average lifetime being 50 hours, and the average consumption of the working material 30 mg/hour. Acknowledgements are expressed to A.D. Timofeev, L.I. Krupnik and A.A. Kalmykov who took part in the development of the design of this source.

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S/120/61/000/001/006/062  
E032/E114

A High-Frequency Ion Source With Discharge Taking Place in the Vapours of Salts

There are 8 figures and 9 references: 7 Soviet and 2 English.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR  
(Physico-technical institute. AS Ukr. SSR)

SUBMITTED: February 25, 1960

Card 4/5

MARCHENKO, V.M.

Use of mycerin in treating pneumonia in infants. Sov. med. 25 no.10:  
92-95 0 '61. (MIRA 15:1)

1. Iz kafedry fakul'tetskoy i gospiatal'noy pediatrii (zav. - prof.  
B.P. Apollonov) Ivanovskogo gosudarstvennogo meditsinskogo instituta  
(dir. - dotsent Ya.M.Romanov).  
(PNEUMONIA) (INFANTS...DISEASES) (ANTIBIOTICS)

MARCHENKO, V.M.

Case of rhinogenous suppurative meningitis following resection  
of the nasal septum with a favorable outcome. Zhur. ush., nos.  
i gorl. bol. 23 no.5:85-86 S-0'63 (MIRA 17:3)

1. Iz kliniki bolezney ukha, gorla i nosa ( zav. - dotsent  
D.Ye. Rozengauz) Khar'kovskogo meditsinskogo instituta.

ACC NR: AN6016007

Monograph

UR/

Marchenko, Vitaliy Maksimovich

Temperature fields and stresses in aircraft structures (Temperaturnyye polya i napryazheniya v konstruktsii letatel'nykh apparatov)  
Moscow, Izd-vo "Mashinostroyeniye," 1965. 298 p. illus., biblio.  
Errata slip inserted. 2500 copies printed.

TOPIC TAGS: aircraft fuselage, heat transfer, heat conduction, heat radiation, thermal stress, heat convection

PURPOSE AND COVERAGE: The principles of calculating the temperature fields and thermal stresses of aircraft structural elements are presented. Much attention is given to numerical method of calculating temperature fields and the effect of radiant heat transfer on temperature distribution in the structure. The effect of thermal stresses on rigidity in torsion and flexure is dealt with. The problem of inelastic behavior of nonuniformly heated bodies, relaxation and creep are also mentioned. The book is intended for scientific workers, engineers and students of higher technical schools.

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UDC: 629.13 : 536.244.001.2

ACC NR: AM6016007

**PART I. Basic Concepts and the Laws of Heat Transfer Theory, Convective and Radiant Heating of Aircraft Structures.**

1. Principles of studying heat flow by conduction and convection -- 5
2. The fundamentals of thermal similarity -- 10
3. Aerodynamic heating. Heat release during flights at high speeds by an aircraft -- 28
4. Basic concepts and laws of radiant heat exchange -- 40

**PART II. Methods and Examples of Calculating Temperature Fields in Aircraft Structural Elements**

5. The simplest problems of heat propagation in aircraft structural elements -- 70
6. Solution of problems of heat conduction in structural elements of aircraft using the method of separation of variables -- 102
7. Operational method for solving the problem of heat conduction -- 128
8. Numerical methods for solving the problems of heat conduction in aircraft structural elements -- 150

**PART III. Some Problems of One-Dimensional Thermoelasticity and Creep**

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ACC NR: AM6016007

9. Basic relations and theorems of thermal elasticity -- 179
10. The effect of thermoelastic stresses on rigidity in torsion and flexure -- 211
11. Thermoelastic stresses in thin-walled rods with an open cross section -- 236
12. Stability of thin-walled rods (beams) during the action of temperature field and loads -- 255
13. Basic concepts of the theory of creep -- 271

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SUB CODE: 01,20/SUBM DATE: 26Nov65/ ORIG REF: 080/ OTH REF: 030

Card 3/3

MARCHENKO, V.M.

16(1) PHASE I BOOK EXPLOITATION 30V/2660

Vsesoyuznyy matematicheskiy s'ezd. 3rd, Moscow, 1956  
Trudy. t. 4; Kratkiye soobsheniya sektsionnykh dokladov. Doklady  
Inostrannykh uchnykh (Transactions of the 3rd All-Union Mathema-  
tical Conference in Moscow, vol. 4; Summary of Sectional Reports,  
Reports of Foreign Scientists) Moscow, Izd-vo AN SSSR, 1959,  
247 p. 2,200 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Matematicheskii Institut.  
Tech. Ed.: G.N. Shevchenko; Editorial Board: A.A. Abramov, V.G.  
Boltvanskiy, A.M. Vasil'yev, S.V. Medvedev, A.D. Ryshki, S.M.  
Nikol'skiy (Resp. Ed.), A.G. Pivovarov, Yu. V. Frolobov, K.A.  
Rybnikov, P. L. Ul'yanov, V.A. Uspenkiy, M.G. Chetaev, G. Ye.  
Shilov, and A.I. Shironov.

PURPOSE: This book is intended for mathematicians and physicists.  
COVERAGE: The book is Volume IV of the Transactions of the Third All-  
Union Mathematical Conference, held in June and July 1956. The  
book is divided into two main parts. The first part contains sum-  
maries of the papers presented by Soviet scientists at the Con-  
ference that were not included in the first two volumes. The  
second part contains the text of reports submitted to the editor  
by non-Soviet scientists. In this paper to the editor, the title  
artist did not submit a copy of the paper was printed in a previous  
volume, reference is made to the appropriate volume. The papers,  
both Soviet and non-Soviet, cover various topics in number theory,  
algebra, differential and integral equations, function theory,  
problems of mechanics and physics, computational mathematics,  
mathematical logic and the foundations of mathematics, and the  
history of mathematics.

- Marchenko, V.M. (Moscow). The elongation and torsion of naturally twisted rods 108
- Migrenko, G.S. (Leningrad). Elastic vibrations of hollow multiply connected beams 110
- Rostovitskiy, V.A. (Komsomol'sk-na-Amure). Application of complex potentials and generalized functions in problems of axisymmetric flow with circular cross section 111
- Srebnik, V.A. (Petrozavodsk). Contact problems of the theory of elasticity under dynamic-action of compression force 112
- Stanyukovich, K.F. (Moscow). Certain nonsteady plane gas flows 113
- Khaskind, M.D. (Odessa). The flow around thin bodies in a three-dimensional flow 114

Section on the Mathematical Problems of Physics  
Card 21/34

MARCHENKO, V.M.

Report presented at the 1st All-Union Congress of Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb '60.

- 168. A. D. Levin (Cherepnevskiy): On space buckling of columns in the elastic-plastic range.
- 169. V. A. Kozlov (Kozlov): Vibration at room temperature.
- 170. V. A. Kozlov (Kozlov): Plasticity of metals under combined loading.
- 171. A. I. Lomov (Lomov): Some problems of non-stationary flow of an incompressible viscoelastic (Maxwellian) liquid.
- 172. A. I. Lomov, M. D. Buzinov (Lomov): Some problems of quasi-steady flow of an incompressible viscoelastic (Maxwellian) liquid.
- 173. V. A. Kozlov (Kozlov): The generalization of the torsion theory of thin-walled bars.
- 174. M. E. Lomov, V. I. Kozlov (Lomov): The development of microcracks.
- 175. M. E. Lomov (Lomov): Plastic flow of elastic plates under tension and buckling of compression and bending.
- 176. A. G. Pribludnyy (Pribludnyy): Torsion of an anisotropic curved bar.
- 177. A. D. Lomov (Lomov): Free vibrations and stability of stability and prebuckling elastic restrained beams.
- 178. A. Lomov (Lomov): Displacement of rods due to oscillation of a clamped layer.
- 179. V. A. Kozlov (Kozlov): On the application of matrix methods to the problem of stability of linear equations of stability theory.
- 180. G. I. Lomov (Lomov): The selection of critical parameters for structures of equal stability consisting of plates and struts.
- 181. A. D. Lomov (Lomov): Large deformations of shallow shells of non-linear elastic materials.
- 182. M. E. Lomov (Lomov): Methods for the solution of the problems of dynamic states of three-dimensional bodies.
- 183. A. D. Lomov (Lomov): Analysis of an anisotropic cylindrical shell under an arbitrary load applied to a ring.
- 184. G. I. Lomov (Lomov): On the experimental study of stability in plates and shells.
- 185. G. I. Lomov (Lomov): Creep strains and ruptures of high polymers.
- 186. G. I. Lomov (Lomov): Vibrations of non-circular cylindrical shells.
- 187. G. I. Lomov (Lomov): Some problems of combined loading of quasi-isotropic bodies.
- 188. G. I. Lomov (Lomov): The influence of structural discontinuity in concrete on its strength.
- 189. G. I. Lomov (Lomov): Investigation of the state of stress in a square prism with conical cylindrical hole under internal pressure.
- 190. G. I. Lomov (Lomov): Solving the three-dimensional problem of stability of a cylindrical shell in the problem of linear combined with displacement.
- 191. G. I. Lomov (Lomov): Stress and strain in naturally curved cylindrical shells.
- 192. G. I. Lomov (Lomov): The problem of external loads on cylindrical shells.
- 193. G. I. Lomov (Lomov): The design of finite and infinite beams on elastic foundations including the case of anisotropic number of holes.
- 194. G. I. Lomov (Lomov): The design of finite and infinite beams on elastic foundations including the case of anisotropic number of holes.
- 195. G. I. Lomov (Lomov): The design of a curved bar in an elastic medium with an elastic support.
- 196. G. I. Lomov (Lomov): An experimental study of basic creep law for soils.
- 197. G. I. Lomov (Lomov): On statically equivalent loadings.
- 198. G. I. Lomov (Lomov): Contribution to the theory of plastic shells of infinite strength.
- 199. G. I. Lomov (Lomov): On the buckling of a simply supported rectangular plate.
- 200. G. I. Lomov (Lomov): Prediction of the rheological properties of anisotropic materials in homogeneous stress.

LOPOVOK, Boris Nikolayevich; MARCHENKO, V.M., retsenzent; BURMISTROV,  
D.I., retsenzent; RYABTSEVA, I.L., red.; BARANOVSKAYA, K.P.,  
tekhn. red.

[Moments of inertia of plane figures] Momenty inertsii ploskikh  
figur. Moskva, Mosk. aviatsionnyi in-t im. Sergo Ordzhonikidze,  
1962. 26 p. (MIRA 16:4)

(Moments of inertia)

L 23319-66 FBD/EWT(1)/EWT(m)/EEC(k)-2/T/EWP(k)/EWA(h) IJP(c) WG

ACC NR: AP6011581

SOURCE CODE: UR/0051/66/020/003/0531/0532

AUTHOR: Konyukhov, V. K.; Marchenko, V. M.; Prokhorov, A. M.

50  
13

ORG: none

TITLE: CaF<sub>2</sub>:Sm<sup>2+</sup> laser pumped by a ruby laser

SOURCE: Optika i spektroskopiya, v. 20, no. 3, 1966, 531-532

TOPIC TAGS: laser, solid state laser, stimulated emission

ABSTRACT: A CaF<sub>2</sub>:Sm<sup>2+</sup> laser pumped by a Q-switched ruby laser operating at 65-90K is described. The monocrystals of CaF<sub>2</sub>:Sm<sup>2+</sup>, grown by several different methods, had silver or dielectric coatings. The output of the exciting ruby laser was 0.5 j and the pulse duration 50 nsec. The oscillation threshold of the CaF<sub>2</sub>:Sm<sup>2+</sup> was achieved when the output of the exciting ruby laser was 0.1 j. The spectrum of the CaF<sub>2</sub>:Sm<sup>2+</sup> laser consisted of three lines, at 0.708, 0.720, and 0.729 μ. When the temperature was lowered to 65K only the line at 0.708 μ remained. The oscillation pulse had the same shape as the pump pulse. The energy efficiency of the system at 77K was determined to be 0.13. Orig. art. has: 4 figures. [CS]

SUB CODE: 20/ SUBM DATE: 23Sep65/ ORIG REF: 003/ OTH REF: 004/ ATD PRESS: 4232

2

Card 1/1

UDC: 621.375.9:535

MARCHENKO, V. N.

"Dynamics of occupational Poisonings in the RSFSR."

report submitted at the 13th All-Union Congress of Hygienists, Epidemiologists  
and Infectionists, 1959.

MARCHENKO, V. N.

3

Complex utilization of the lignites of the Ukrainian S.S.R.  
XIX. Properties and composition of the tar obtained by low  
temperature coking of lignite under pressure under labora-  
tory conditions. V. I. Kuznetsov, A. A. Kobayev, and V. N.  
Marchenko. *Ukrain. Khim. Zhur.* 23, 660-6 (1957) (In Rus-  
sian). *Ch. S. A. 60, 8944a, 61, 1691k.*—Lignite was heated  
to 560° in a stream of N<sub>2</sub> or to 650-66° in a 1:1 mixt. of N<sub>2</sub>  
and steam. The pure N<sub>2</sub> atm. led to a greater amt. of crack-  
ing than the mixed stream which led to less low-boiling ma-  
terials, more paraffin and solid phenols, a greater sp. gr., and  
a higher drop temp. Very slight changes in compon. result  
from changing the pressure from 10 to 15 atm. J. H. S.

11

S/079/61/031/011/001/015  
D228/D305

AUTHORS: Kashireninov, O. Ye., Osipov, O. A., Panina, M. A.  
and Marchenko, V. N.

TITLE: Magnetic susceptibility of binary liquid systems

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 11, 1961. 3504-3509

TEXT: The authors determined the magnetic susceptibility of 10 binary liquid systems: benzene-carbon tetrachloride (I), benzaldehyde-methyl ethyl ketone (II), pyridine-quinoline (III), isoamyl acetate-methyl caproate (IV), acetone-n-butyl alcohol (V), chloroform-diethyl ether (VI), aniline-acetic acid (VII), stannic chloride-butyl propionate (VIII), stannic chloride-isoamyl benzoate (IX), and stannic chloride-acetic acid (X). Their aim was to clarify the influence of the polarity of components on the magnitude of the magnetic susceptibility of mixtures; previous work in this field suggests that there is a direct connection between the magnetic susceptibility of binary liquid systems and the polarity of their components, and that the divergence of the magnetic susceptibility from

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Magnetic susceptibility

S/079/61/031/011/001/015  
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the additivity is greatest in systems consisting of polar components  
Experimental procedure: All materials were first purified by O. A.  
Osipov's method (Ref. 16: Zh. obshch. khimii, 26, 322, 1956; Ref. 17:  
Ibid. 31, 3153, 1961; Ref. 18: Ibid., 27, 1425, 1957). The susceptibility  
measurements were made by L. Gouy's method in fields of about 5000 - 8000  
oe; the magnets were fitted with cooling devices to maintain the field  
strength constancy and to eliminate convection currents. The apparent  
changes in the ampoule weights were measured by means of micro-analytical  
weights, and the calibrating material was purified, air-saturated benzene  
with a magnetic susceptibility of  $-0.703 \times 10^{-6}$ . Experimental results  
and conclusions: The data show that the susceptibility isotherms of sys-  
tems I - IV, whose components possess rather similar dipole moments, have  
a rectilinear course at the 5 - 7 concentration levels studied by the  
authors. For other systems where the components react chemically with  
the formation of a hydrogen or donor-acceptor bond, the congruence or  
difference of the components' dipole moments is not important, since their  
behavior is largely governed by the character of the components' reactions;

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Magnetic susceptibility...

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D228/D305

with the exception of system V the deviations of the isotherms from the rectilinear course have positive values, and the maximum deviations correspond to the composition of the resulting compound. The authors consider that magnetic susceptibility may find a wide application in physico-chemical analysis. There are 10 tables and 26 references 10 Soviet-bloc and 16 non-Soviet-bloc. The references to the 4 most recent English-language publications read as follows: I. van Vleck, The Theory of Electric and Magnetic Susceptibilities, Oxford University Press (1932); V. Trew, D. Watkins, Trans. Far. Soc., 29, 310 (1933); P. Seely, Physic. Rev., 49, 812 (1936); W. Angus, D. Tilston, Trans. Far. Soc. 43, 221, (1947).

SUBMITTED: November 25, 1960

Card 3/3

ACCESSION NR: AR4036340

S/0169/64/000/003/G007/G007

SOURCE: Referativnyy zhurnal. Geofizika, Abs. 3G42

AUTHOR: Belonogov, A. M.; Sazonov, A. M.; Serdyuk, A. S.; Marchenko, V. N.;  
Rusakov, A. F.

TITLE: A spectrometer for observation of electron paramagnetic resonance in  
solid bodies

CITED SOURCE: Sb. Geofiz. priborostr. Vy\*p. 16. L., Gostoptekhizdat, 1963,  
94-101

TOPIC TAGS: geophysics, geophysical instrument, electron paramagnetic resonance,  
mineralogy, spectrometer

TRANSLATION: It is noted that a study of the spectra of electron paramagnetic  
resonance in minerals makes it possible to determine the presence and composition  
of paramagnetic impurities, the valence and ground state of a paramagnetic ion,  
the type of crystal lattice, and in a number of cases to explain certain other  
properties, such as color, conductivity, etc. The authors describe an electron

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ACCESSION NR: AR4036340

paramagnetic resonance spectrometer of the superheterodyne type designed for these purposes. The article includes a block diagram of this spectrometer and a brief description of the principal peculiarities of the apparatus by which it differs from earlier described instruments of this type. Circuit diagrams are given for the intermediate frequency preamplifier and the automatic tuner of the heterodyne klystron. The designed spectrometer has been used for a study of electron paramagnetic resonance in a number of natural compounds: spinel, corundum, beryl, apatite, sphene, cassiterite, etc. The measurements were made at room temperature by use of an electromagnet with a uniform magnetic field of at least  $10^{-4}$  gauss/cm (the diameter of the pole pieces is 200 mm), which was fed from a current stabilizer with a stability of  $10^{-5}$ . The instrument sensitivity was checked during the measurements using the signal from a standard specimen of diphenylpicrylhydrazil. The mean sensitivity of the spectrometer was approximately  $5 \cdot 10^{-9}$  mole of diphenylpicrylhydrazil. As an illustration of the results of the measurements the authors cite and briefly discuss spectral derivative curves of electron paramagnetic resonance in spinel and andradite. A. Frolov.

DATE ACQ: 17Apr64

SUB CODE: AS

ENCL: 00

Card 2/2

ACC NR: AP7005109

SOURCE CODE: UR/0079/66/036/009/1693/1702

KOLODYAZHNYI, Yu. V., MARCHENKO, V. N., OSIPOV, O. A., KOGAN, M. G., Rostov-on-Don State University (Rostovskiy-na-Donu gosudarstvennyy universitet)

"Investigation of the Interaction Between Tetra-n.-Butoxytitanium and the Tetrachlorides of Tin and Silicon"

Moscow, Zhurnal Obshchey Khimii, Vol 36, No 9, 66, pp 1693-1702

Abstract: With the aid of various physicochemical techniques (dielectric losses, cryoscopy, electric conductivity, etc.) it is shown that tetrabutoxytitanium  $Ti(OBu)_4$  forms conducting complex compounds not only with stannic tetrachloride but also with such a weak electron acceptor such as silicon tetrachloride. It was shown that the interaction between the tetrachlorides of tin and silicon and tetra-n.butoxytitanium in dilute benzene solutions leads to the formation of the following complexes:  $SnCl_4 \cdot 4Ti(OBu)_4$ ,  $SnCl_4 \cdot 2Ti(OBu)_4$ ,  $SiCl_4 \cdot 4Ti(OBu)_4$ ,  $SiCl_4 \cdot Ti(OBu)_4$ . The association of complexes 1:2 composition was established and this is attributed to not only donor-acceptor interaction between molecules of tetrabutoxytitanium but also, and to a large degree, to the interaction between the butoxy-group hydrocarbon radicals; the gradual decomposition of such associated complexes accounts for the decrease in their electric conductivity with time. Orig. art. has: 11 figures, 2 formulas and 8 tables. (JPRS: 38,970)

TOPIC TAGS: organotitanium compound, organotin compound, organosilicon compound  
SUB CODE:07 / SUBM DATE: 06Jul65 / ORIG REF: 013 / OTH REF: 001

Card 1/1

UDC: 547.1'3 + 546.81 + 546.28

MARCHENKO, V.P.

[Planning scientific work in the U.S.S.R. (based on the case of the Ukrainian Academy of Sciences] Planirovanie nauchnoi raboty v SSSR (na opyte Ukrain-skoi Akademii Nauk). Munich, Izd-vo Institut für Erforschung der Geschichte und Kultur der UdSSR, 1953. 36 p. (MLBA 6:7)  
(Research) (Academy of Sciences of the Ukrainian S.S.R.)

KONDRAT'YEV, L.F.; MARCHENKO, V.P., red.; RYABOVA, O.A., red. izd-  
va; SHEVTSOV, S.V., tekhn. red.

[Planning and practicing economy at the present stage of the  
building of communism] Planirovanie i rezhim ekonomii na  
sovremennom etape kommunisticheskogo stroitel'stva. n.p.  
Rosvuzizdat, 1963. 45 p. (MIRA 16:7)  
(Russia--Economic policy)

L 6933-65 EWT(1)/EEC(t) IJP(c)/SSD/AFETR/AFWL/AEDC(b)/RAEM(1)/ASD(a)-5/  
ACCESSION NR: AR4039913 RAEM(c)/ESD(ga)/S/0058/64/000/004/DO64/DO64  
RAEM(t) 55  
SOURCE: Ref. zh. Fiz., Abs. 4D484

AUTHORS: Belonogov, A. M.; Sazonov, A. M.; Serdyuk, A. S.;  
Marchenko, V. P.; Rusakov, A. F.

TITLE: Spectrometer for the observation of electron paramagnetic resonance in solids

CITED SOURCE: Sb. Geofiz. priborostr. Vy\*p. 16. L. Gostoptekhizdat, 1963, 94-101

TOPIC TAGS: spectrometer, electron paramagnetic resonance, solid state, spinel, andradite, automatic frequency control

TRANSLATION: A 3-cm band superheterodyne EPR spectrometer is described, intended for analysis of natural solid compounds. The signal-klystron frequency is stabilized with an automatic frequency control using frequency modulation (700 kcs); this system turned out

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ACCESSION NR: AR4039913

to be simpler in adjustment and more stable in operation than an automatic frequency control using the working cavity. The authors present detailed block diagram of the spectrometer, the circuit of the 30 Mcs intermediate-frequency preamplifier, and the automatic frequency control for the heterodyne klystron. The average spectrometer sensitivity is  $\sim 5 \times 10^{-9}$  mole of DPPH. Derivative EPR spectra of natural spinel and andradite spectra are presented.  
A. Stepanov.

SUB CODE: NP

ENCL: 00

Card 2/2

L 20237-65 EWP(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(v) JD  
ACCESSION NR: AP5000608 S/0021/64/000/011/1443/1447

AUTHOR: Marohenko, V. P.

TITLE: The motion of a point of variable mass under friction and resistance

SOURCE: AN UkrRSR. Dopovid1, no. 11, 1964, 1443-1447

TOPIC TAGS: effective velocity, active region, elementary function, special function

ABSTRACT: The author studies the motion of a material point of variable mass  $m(t)$  in a resistant medium with friction and variable effective rate of escape of particles  $v_r(t)$ . Functions  $m$  and  $v_r$  are determined, which with a given store of energy  $E$  may deliver the maximum to the active section  $s_k$ , i.e., the extremum of the functional

$$s_k = \int_0^k \left( \frac{dS}{dt} \right) dt,$$

is sought under the conditions

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ACCESSION NR: AP5000608

0

$$m(t) \frac{d^2s}{dt^2} + k_1 \left( \frac{ds}{dt} \right)^2 + \frac{dm}{dt} v_r(t) + k_2 gm(t) = 0, \quad \text{and} \quad E = \mu \int_0^h \frac{1}{2} \left( -\frac{dm}{dt} \right) v_r^2 dt.$$

A n optimal solution of the first of these conditions is found with allowance made for the conditions

$$v_r = v + k_2 gt + v_r^0 \quad \text{and} \quad m = (v + k_2 gt + v_r^0)^{-1} \left[ 2k_1 \int_0^t v(v + k_2 gt + v_r^0) dt + \frac{C_1 t}{\mu \lambda_1} + C_2 \right].$$

in the form

$$s(t) = \frac{1}{6k_2 g} \left[ (k_2 gt + v_r^0) \sqrt{(k_2 gt + v_r^0)^2 - \frac{3C_1}{\mu k_1 \lambda_1} - v_r^0} \sqrt{v_r^0 - \frac{3C_1}{\mu k_1 \lambda_1}} \right] + \\ + \frac{C_1}{2\mu k_1 k_2 g \lambda_1} \ln \frac{\sqrt{v_r^0 - \frac{3C_1}{\mu k_1 \lambda_1} + v_r^0}}{\sqrt{(k_2 gt + v_r^0)^2 - \frac{3C_1}{\mu k_1 \lambda_1} + k_2 gt + v_r^0}} \frac{k_2 gt^3}{6} - \frac{v_r^0 t}{3} + s_0.$$

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L 20237-65  
ACCESSION NR: AP5000608

Under certain assumptions in respect to functions  $m$  and  $v_r$  a solution of the initial equation is presented in elementary and special functions.

ASSOCIATION: Odes'kyi derzhavnyi universytet (Odessa State University)

SUBMITTED: 22Nov63

ENCL: 00

SUB CODE: ME

NO REF SOV: 003

OTHER: 000

Card 3/3

L-48332-65 EWT(1)/EEG(a)/EWP(m)/FS(v)-3/EEC(j)/EEC(r)/EWG(v)/EWA(d)/EEC(t)/

T Po-4/Pa-5/Pq-4/Pg-4/Pl-4 TJP(c) GW

ACCESSION NR: AP5011786

UR/0198/65/001/004/0119/0123

AUTHOR: Marchenko, V. P. (Odessa)

TITLE: Determination of optimal conditions for the motion of a body of a variable mass in a gravitational field

SOURCE: Prikladnaya mekhanika, v. 1, no. 4, 1965, 119-123

TOPIC TAGS: variable mass, body motion, optimal motion, optimal motion characteristics, variational problem

ABSTRACT: The problem of determining the optimal characteristics of ascending motion of a body of a variable mass in a resisting medium is analyzed under the condition that the mass of a body and the effective exhaust velocity of particles are functions of time. The Meshcherskiy equation describing such motion is written in the form

$$m \frac{d^2s}{dt^2} + \psi(v) \frac{dm}{dt} + \frac{g_0 R^2}{s^2} m + Q(s, \dot{s}) = 0, \quad (1)$$

where  $m(t)$  is the mass of the body,  $v = \dot{s}$  the velocity,  $v_r$  the velocity

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L 48332-65

ACCESSION NR: AP5011786

able effective exhaust velocity of particles,  $g_0$  the gravitational constant on the surface of the earth,  $R$  the radius of the earth,  $s$  the distance of the body from the center of the earth, and  $Q(s, \dot{s})$  the resistance of the medium. Assuming that the supply of energy is given, the problem defined above is reduced to determining those laws for the variation of the mass  $m(t)$  and the effective exhaust velocity  $v_r(t)$  which ensure the maximum powered flight distance  $S$  expressed in the form of a certain functional. The Euler equations for this variational problem serve as the basis from which the differential equation for determining  $m(t)$  is derived; an integral expression for  $m(t)$  in terms of  $Q(s, \dot{s})$  and  $v_r$  is obtained under the assumption that the gravitational field is homogeneous. An analysis of the function  $Q(s, \dot{s})$  indicated that in the general case it is impossible to integrate equation (1) and that it is necessary to employ a simplified model of the motion or approximate methods to solve this problem. Simplified models of the motion of a body of a variable mass in a homogeneous gravitation field in which the resistance function  $Q(s, \dot{s})$  is a linear or quadratic function of velocity are analyzed. The variational problem for these cases is completely solved; that is, those  $m(t)$  and  $v_r(t)$  which maximize the  $s(t)$  are determined. Original art. has: 18 formulas. [LK]

Card 2/3

L 48332-65

ACCESSION NR: AP5011786

ASSOCIATION: none

SUBMITTED: 13Feb64

ENCL: 00

SUB CODE: AC

NO REF SOV: 004

OTHER: 000

ATD PRESS: 3250

Card 3/3

L 27527-66 EWT(1) IJP(c)

ACC NR: A56007756

SOURCE CODE: UR/0021/66/000/001/0046/0051

AUTHOR: Marchenko, V. P.ORG: Odesa State University (Odes'ky derzhavnyy universytet)TITLE: On the integration of the equations of perturbed motion of a material point  
in a central force field

SOURCE: AN UkrRSR. Dopovidi, no. 1, 1966, 46-51

TOPIC TAGS: particle motion, motion equation, integration, gravitation field, per-  
turbed satellite motion, Lagrange equation

ABSTRACT: The author considers the motion of a material point with mass  $m$  in a Newtonian gravitational force, under the influence of an additional force  $\epsilon$ . The additional force can be radial, transverse, or applied at a certain angle  $\beta$  to the polar radius. The general Lagrangian equations of the second kind are rewritten for these types of perturbations and are integrated by the small-parameter method. The convergence of the resultant expansions under various conditions is discussed. A different small parameter is used for each type of perturbation. The first-approximation equations are written out. The mass  $m$  and the angle  $\beta$  are assumed to be independent of the time. This report was presented by Academician AN UkrRSR Yu. O. Mytropol's'kyi (Yu. A. Mitropol'skiy). Orig. art. has: 21 formulas.

SUB CODE: 20/ SUM DATE: 18May64/ ORIG REF: 002/ ORTH REF: 001

Card 1/1

BKG

ACC NR: AP6021548

(N)

SOURCE CODE: UR/0198/66/002/006/0092/0098

AUTHOR: Marchenko, V. P. (Odessa); Podzhlo, V. M. (Odessa)

ORG: Odessa State University (Odesskiv gosudarstvennyy universitet)

TITLE: Motion of a body of variable mass in a resistant medium

SOURCE: Prikladnaya mekhanika, v. 2, no. 6, 1966, 92-98

TOPIC TAGS: Euler equation, motion equation, motion mechanics

ABSTRACT: Certain particular cases of the integration of Euler equations of motion of a body having a variable mass about a fixed point with consideration of the resistance of the medium are examined in this article. It was found in the four cases examined that it is possible to integrate the dynamic equations of the Euler type, i. e., the equations of motion of a body of variable mass with one fixed point in a resistant medium when  $p$ ,  $q$ , and  $r$  are defined as explicit functions of time. It is pointed out that for a complete investigation of this motion it is necessary to integrate the kinematic equations derived, which is impossible without additional limitations on the character of motion since, if they are taken in the Poisson form, one ultimately arrives at the integration of the Riccati equation with complex coefficients. If the kinematic equations are taken in the Euler form difficulties arise in integration of the integro-

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L 41152-66

ACC NR: AP6021548

differential equation. The condition of the periodicity of the functions  $p(t)$ ,  $q(t)$ ,  $r(t)$  permit solving the stated formula to the end in quadratures. Orig. art. has: 17 formulas.

SUB CODE: 12,20/ SUBM DATE: 21Mar66/ ORIG REF: 003

Card 2/2 hs

MARCHENKO, V.S.

Modernization of machines for welding circular joints. Rats. 1  
izobr. predl. v stroi. no.92:15-16 '54. (MIRA 8:6)  
(Pipe, Steel--Welding)

3.4000

67362

~~3(4)~~AUTHORS: Buglov, G. N., Marchenko, V. S. SOV/6-59-12-2/22TITLE: Experience in the Stereotopographic Survey of a Rough Area

PERIODICAL: Geodeziya i kartografiya, 1959, Nr 12, pp 9 - 13 (USSR)

ABSTRACT: From 1955 to 1957, the Ukrainskoye aerogeodezicheskoye predpriyatiye (Ukrainian Aerogeodetical Service) made a stereotopographic survey on a scale of 1 : 10,000 with a contour interval of 2.5 m in an area of about 16,000 km<sup>2</sup>. The territory surveyed belongs to the plane rough areas. The differences of height go up to 120 m. To obtain good aerophotographic maps at lower expenditure of work and material, and to increase the accuracy of stereomapping delineation of a flat plane territory, an air survey with two different aerial cameras was made by authorization of the GUCK (Main Administration of Geodesy and Cartography), one with the aerial camera of type AFA-TE, objective "Rodina-2b" with  $f_k = 55$  mm on a scale of 1 : 14,000, the other with a camera of the same type but with  $f_k = 200$  mm on a scale of 1 : 20,000. The air surveys with  $f_k = 55$  mm were

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Experience in the Stereotopographic Survey of a  
Rough Area

SOV/6-59-12-2/22

destined for drawing the relief, those with  $f_k = 200$  mm for  
aerophotographic contour maps. The time difference in photo-  
graphing with the 2 aerial cameras was 2-3 days, at the most.  
The classification survey was made on the mosaic photo strips  
which were compiled from the air surveys with  $f_k = 200$  mm by  
the method of optical mounting. This method was suggested by  
Comrades Venglinskiy and Radovil'skiy and consists in a  
reduction of air surveys by means of a transformer to a scale  
of about 1 : 10,000. The stereoscopic drawing of the relief  
was made on the STD-2 according to the air surveys with  $f_k = 55$  mm  
which were stuck onto a glass. The altitudes in photographing  
were determined by means of the radar altimeter of type RV-10.  
The elements of relative orientation were calculated according  
to the transversal parallaxes measured on the SM-4. The survey car-  
ried out showed that the use of an aerial camera with short-  
focus objective for the stereoscopic drawing of the relief in  
combination with repeated photographing by means of an aerial  
camera with long-focus objective ensures a high quality of  
stereotopographic survey 1 : 10,000. The experience made here

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Experience in the Stereotopographic Survey of a  
Rough Area

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30V/6-59-12-2/22

shows that the method of stereotopographic survey described requires no additional expenses. By means of an example it is shown that the expenses connected with the repeated air survey are fully covered by the saving of money in the preparation of aerophotographic maps according to the air surveys 1:20,000 with  $f_k = 200$  mm. Experience shows that the method described is very convenient for surveys on a scale of 1 : 10,000. Application of this method improves the organization of work. There are 5 tables and 1 Soviet reference.

Card 3/3

MARCHENKO, V.T., inzhener.

Increase the tempo and raise the quality of repair work on apartment houses. Gor.khoz.Mosk. 25 no.12:29-31 D '51.

(MLBA 7:11)

(Moscow--Apartment houses--Maintenance and repair)

(Apartment houses--Maintenance and repair--Moscow)

MARCHENKO, V.T., inzhener.

Some results and prospects of installing gas heating in apartment  
houses. Gor.khoz.Mosk.31 no.1:19-23 Ja '57. (MIRA 10:3)  
(Moscow--Apartment houses)  
(Gas--Heating and cooking)

BLOKHIN, P.N., arkhitektor; MARCHENKO, V.T., inzh.; RUDEKOVSKIY, Ye.N., inzh.

Housing construction and management in Belgium and the Netherlands.  
Gor.khoz.Mosk. 31 no.5:30-35 My '57. (MIRA 12:3)  
(Belgium--Apartment houses) (Netherlands--Apartment houses)

SMIRNOV, D.N.; MARCHENKO, V.T.

Some problems in improving the maintenance of apartment houses. Gor.  
khoz.Mosk. 33 no.1:20-23 Ja '59. (MIRA 12:3)  
(Moscow--Apartment houses--Maintenance and repair)  
(Moscow--Apartment houses--Accounting)

DUMASHOV, Yu.F., inzh., red.; IVANOV, I.T., kand. tekhn. nauk; ~~MARCHENKO,~~  
V.T., inzh.; POLYAKOV, Ye.V., kand. tekhn. nauk, dotsent; KHIMUNIN,  
S.D., kand. tekhn. nauk; ZAMYSHLYEVA, I.M., red. izd-va; NAZAROVA,  
A.S., tekhn. red.

[Standards and norms for the maintenance of residential buildings]  
Pravila i normy tekhnicheskoi ekspluatatsii zhilishchnogo fonda.  
Moskva, 1961. 183 p. (MIRA 14:7)

1. Russia (1917- R.S.F.S.R.) Ministerstvo kommunal'nogo kho-  
zyaystva . 2. Glavnyy inzhener Upravleniya zhilishchnogo khozyaystva  
Ministerstva kommunal'nogo khozyaystva RSFSR (for Dumashov). 3. Di-  
rektor Akademii kommunal'nogo khozyaystva im. K.D. Pamfilova (for Iva-  
nov). 4. Glavnyy inzhener Zhilishchnogo upravleniya ispolkoma  
Mossoveta (for Marchenko). 5. Moskovskiy inzhenerno-stroitel'nyy in-  
stitut im. V.V. Kuybysheva (for Polyakov). 6. Zaveduyushchiy labora-  
toriyey kapital'nogo remonta zhilykh domov Leningradskogo nauchno-  
issledovatel'skogo instituta Akademii kommunal'nogo khozyaystva  
(for Khimunin)

(Dwellings—Maintenance and repair)

MARCHENKO, V.T.

Efficiency promotion and invention in housing in the capital.  
Gor. khoz. Mosk. 36 no.9:40-43 S '62. (MIRA 15:10)

1. Zamestitel' nachal'nika Zhilishchnoye upravleniye Moskovskogo  
gorodskogo soveta deputatov trudyashchikhsya.  
(Technological innovations) (Moscow--Housing research)

BRODSKIY, Mikhail Georgiyevich; VISHNEVETSKIY, Isay Moiseyevich;  
GREYMAN, Yuriy Vladimirovich; MARCHENKO, V.T., red.;  
SUKHAREVA, E.S., red.izd-va; LELYUKHIN, A.A., tekhn.red.

[Repair, operation, and modernization of elevators] Remont,  
ekspluatatsiia i modernizatsiia liftov. Moskva, Izd-vo  
M-va kommun.khoz.RSFSR, 1963. 119 p. (MIRA 16:12)  
(Elevators--Maintenance and repair)

S/185/63/008/001/022/024  
D234/D308

**AUTHORS:** Marohenko, V. Y. and Samsonov, H. V.

**TITLE:** Physical properties of cerium sulfides

**PERIODICAL:** Ukrayins'kyy fizychnyy zhurnal, v. 8, no. 1, 1963,  
140-142

**TEXT:** The authors have measured the temperature dependence of electric resistance, thermal expansion (both at 20 - 1000°C) and magnetic susceptibility (at room temperature) of CeS and Ce<sub>2</sub>S<sub>3</sub>, and calculated their thermal coefficients of resistance and the width of the forbidden band. These data are plotted and tabulated. There are 2 figures and 1 table.

**ASSOCIATION:** Instytut metalokermiky i spetsaplaviv AN URSR, Kiev  
(Institute of Metal Ceramics and Special Alloys,  
AS UkrSSR, Kiev)

**SUBMITTED:** September 26, 1962

Card 1/1

ACCESSION NR: AP4006583

S/0021/63/000/004/0463/0466

AUTHOR: Marchenko, V. Y.; Samsonov, G. V. (Corresponding member)

TITLE: Thermoelectric properties of  $Ce_2S_3$

SOURCE: AN UkrRSR. Dopovidi, no. 4, 1963, 463-466

TOPIC TAGS: thermoelectric property, cerium sulfide, thermal emf

ABSTRACT: The temperature dependence of the thermal e.m.f. of a polycrystalline cerium sulfide,  $Ce_2S_3$ , was investigated, between 200 and 1000 C. This material is useful in that it is stable against high temperature oxidation in vacuum ( $10^{-2}$  to  $10^{-3}$  Torr), and it is impervious to many modern metals, making it an excellent refractory. The results are shown graphically in Fig. 2 of Enclosure 01. In the region of extrinsic conductivity (100-600 C) the thermal e.m.f. is positive and changes in inverse proportion to the temperature, in accordance with the relationship established by N. L. Pisarenko (c. f. A. F. Loffe, Fizika Poluprovodnikov, Izd'vo AN USSR, 1957). The thermal e. m. f. changes sign between 700 and 800 C; about 800 C it increase in direct proportion to the temperature.

*LAST METALLO-CERAMICS AND SPECIAL ALLOYS - AN UKR SSR*

Card 1/8

N L 13071-66 ENT(m)/ENP(w)/T/ENP(t)/ENP(k)/ENP(b)/EWA(c) JD/HW

ACC NR: AP5028578

SOURCE CODE: UR/0148/65/000/011/0136/0140

AUTHOR: Kidin, I. N.; Marshalkin, A. N.; Gokhberg, Ya. A.; Marchenko, V. Z.; Mizonov, Yu. M.; Kachapin, A. A.

46  
45

ORG: Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov)

B

TITLE: Effect of the deformation of austenite prior to patenting on the properties of carbon-steel wire

SOURCE: IVUZ. Chernaya metallurgiya, no. 11, 1965, 136-140

TOPIC TAGS: carbon steel, wire, rupture strength, plasticity, metal drawing, metal heat treatment, material deformation, ultimate strength, fatigue strength

ABSTRACT: The authors present the results of an experimental method for improving the strength and plasticity of carbon-steel wire by combining its thermomechanical treatment with sorbitizing and cold deformation by drawing. In view of the difficulties that might be encountered when thermomechanical treatment is combined with deformation by drawing (possibility of rupture, etc.), the thermomechanical treatment included deformation of the austenite by rolling prior to sorbitizing. The wire was heated by the electrocontact method at the rate of 50 and 400°C/sec prior to its sorbitizing. Following thermomechanical treatment (TMO) with deformation by rolling, (60% reduction of area) the strength of 2.5-mm diameter wire proved to be 28 kg/mm<sup>2</sup> higher than following conventional patenting, and there was also some increase in

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UDC: 669.14:621.771.42

2

L 13071-66

ACC NR: AP5028578

plasticity which may be attributed to the onset of initial stages of recrystallization and the formation of a polygonal structure of the  $\alpha$ -phase. On cold drawing of patented wire following its TMO the ultimate strength continually increases with increasing draft. When the draft reaches 84%, ultimate strength rises to 260 kg/mm<sup>2</sup>, which is some 110% higher than immediately after TMO. The improvement in plasticity is such that the wire can be bent 25-28 times instead of 8-10 times and twisted 33-35 times instead of 8-12 times. This new method of producing high-strength wire dispenses with the need of employing the patenting process based on the use of lead and salt baths, makes it possible to obtain a wire with higher mechanical properties than following conventional patenting and cold drawing, increases by a factor of 2 or 3 the rate of heat treatment and markedly expands the possibilities for its automation. Orig. art. has: 2 tables, 4 figures.

SUB CODE: 11, 13/ SUM DATE: 12Apr65/ ORIG REF: 004/ OTH REF: 001

Card

2/2 HW

MARCHENKO, Ya.V.; VEDENIN, P.S., brigadir elektromontazhnikov

Installing main cables of the interior electric wiring without using pipes during the construction of buildings. Suggested by IA.V. Marchenko, P.S.Vedenin. Rats.i izobr.predl.v stroi. no.13: 118-120 '59. (MIRA 13:6)

1. Nachal'nik uchastka Stroitel'no-montazhnogo upravleniya No.1 tresta No.27 Mytishchistroy Glavmosoblstroya, stantsiya Mytishchim Moskovskoy oblasti, Vodoprovodnaya ul., d.13 (for Marchenko).
2. Uchastok Stroitel'no-montazhnogo upravleniya No.1 tresta No.27 Mytishchistroy Glavmosoblstroya, stantsiya Mytishchim Moskovskoy oblasti, Vodoprovodnaya ul., d.13 (for Vedenin).  
(Electric wiring, Interior)

BONDAR, B., arkhitektor; VELIKA, Z., arkhitektor; MARCHENKO, Ye., inzh.

Using continuous-shift method in the loose housing of cows.  
Sil'.bud. 10 no.8:14-17 Ag '60. (MIRA 13:8)  
(Dairy barns)

MARCHENKO, Ye., mayor intendantskoy eluzhby.

Supplying materiel to field troops in the winter. Ty1 i snab.Sov.  
Voor.Sil 21 no.1:46-48 Ja '61. (MIRA 14:6)  
(Russia--Army--Supplies and stores)

MARCHENKO, Ye.A., inzhener.

Overvoltage in apparatus with linear compensation. Elektrichestvo no.12:10-13 D '53. (MIRA 6:11)

1. Nauchno-issledovatel'skiy institut postoyannogo toka.  
(Electric lines) (Condensers (Electricity))

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