PASYNKOV, V. V.

May 52

USSR/Electricity - Personalities

"Professor N. P. Bogoroditskiy, in Connection With His 50th Birthday," P. I. Skotnikov, A. F. Alabyshev, S. Ya. Sokolov, A. A. Vavilov, V. V. Pasynkov, B. M. Tareyev

"Elektrichestvo" No 5, p 88

Reviews main features of professional life of Nikolay Petrovich Bogoroditskiy, born 20 May 02 in Tashkent. His principal interest has been development of h-f dielectrics. Between 1933 and 1942 he developed the now widely-used radio materials tikond, micalex, h-f glass, radio porcelain, and ultra-porcelain. Affiliations include Military Elec Eng Acad imeni Budennyy (193[illegible] - 1942) and a large plant laboratory (where he produced a number of inventions) during World War II. He has published a number of articles in journals, books, and textbooks. He received three Stalin Prizes: for an invention in field of ceramics (1942); for textbook "Electrical Engineering Materials" (1952); and for development and organization of mass production of parts for radio equipment(1952).

PA 240T58

BOGORODITSKIY, N.P., PASYNKOV, V.V.; TAREYEV, B.M.; KENNE, V.T., redaktor
VORONETSKAYA, L.V., tekhnicheskiy redaktor.

[Materials used in electric engineering] Elektrotekhnicheskie materialy. Izd-vo 302, pere. Moskva, Gos. energ. izd-vo, 1955. 372 p. (MLRA 8:8)
(Electric engineering--Materials)

PASYNKOV V.V.

621.314.632:621.382.33 272

Semiconducting Ignitors for Ignitron Rectifiers.

V. V. Pasynkov. *Zh. Tekh. Fiz.* March 1955, Vol. 25, No. 3, pp. 577–586. A detailed report on an experimental investigation is presented as a result of which methods are proposed for the design and manufacture of ignitors based on silicon carbide.

FD-3175

USSR/Physics - Radioactivity, Semiconductors

Card 1/1 Pub. 153-5/21

Author : Pasynkov, V. V.

Title : Influence of radioactive radiation on a photoelement

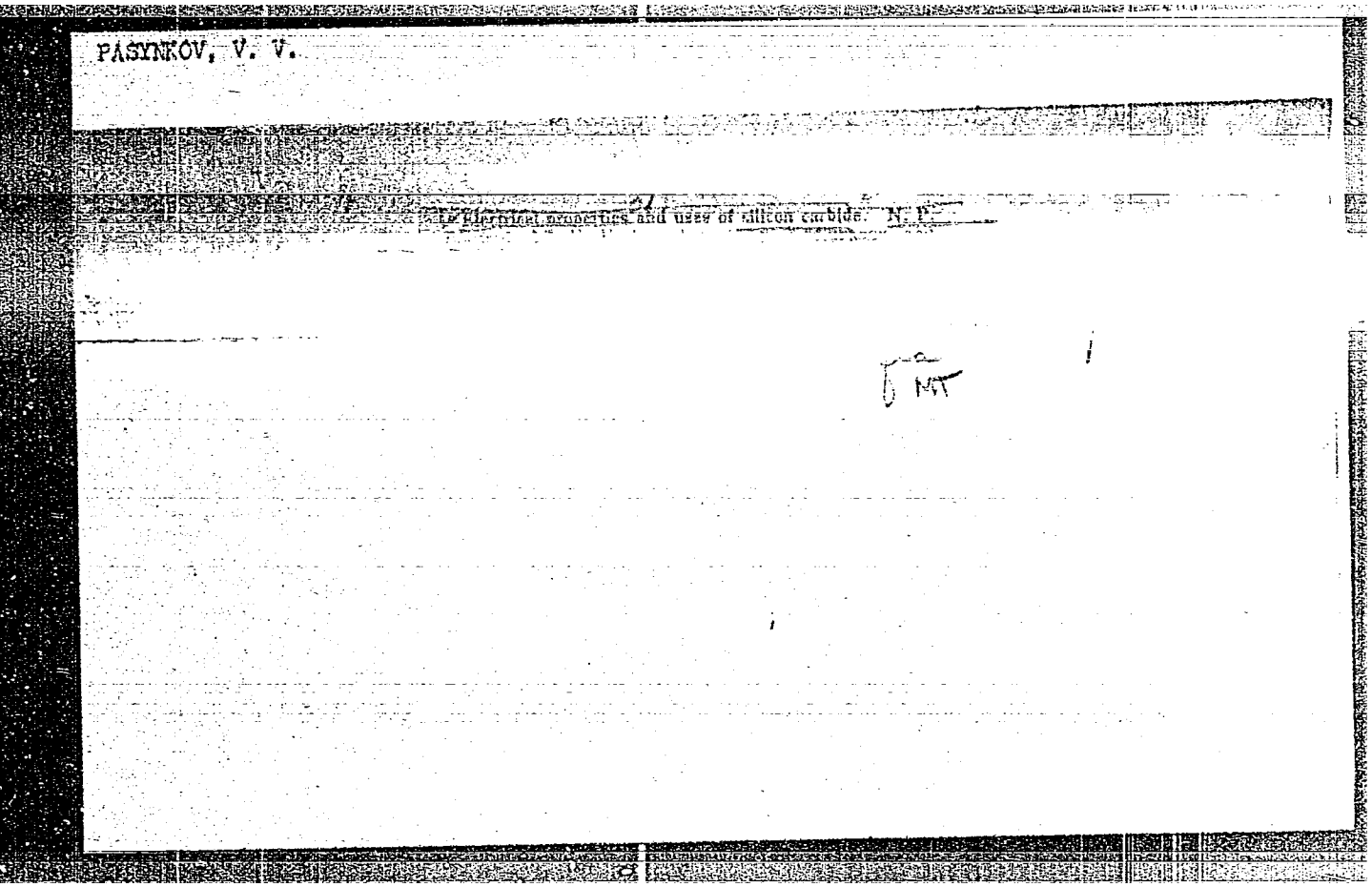
Periodical: Zhur. tekh. fiz., 25, No 8 (August), 1955, 1376-1385

Abstract : The author studies the transition of nuclear energy to electrical energy which takes place as a result of the influence of radioactive radiation on semiconductor systems with a blocking layer. The results of experimental measurements are presented in graphical and tabular form. Some of the author's conclusions follow. The influence of beta radiation on a selenium photoelement is analogous to the action of a stream of light and produces an emf. Using known facts about semiconductors it is possible to choose the best semiconductor systems with the largest coefficient of electron multiplication. The use of radioactive isotopes requires that they be studied from the point of view of interaction with semiconductors and the absence of harmful gamma radiation.

Submitted : January 4, 1955

KHARADZHA, Feofan Nikolayevich; PASYNKOV, V.V., redaktor; ZAHRODINA, A.A., tekhnicheskiy redaktor

[General course in X-ray techniques] Obshchii kurs rentgenotekhniki. Izd. 2-oe, perer. i dop. Moskva, Gos. energ. izd-vo, 1956. 564 p. (MLRA 9:10)
(X RAYS)



PASYNKOV, V. V.

Electrical properties and uses of silicon carbide. M. L.

PHASE I BOOK EXPLOITATION 678

Pasynkov, Vladimir Vasil'yevich, Doctor of Technical Sciences

Nelineynyye poluprovodnikovyye soprotivleniya; varistory (Nonlinear Semiconductor Resistances; Varistors) [2d ed., rev. and enl.] Leningrad, Leningradskiy Dom nauchno-tekhnicheskoy propagandy, 1957. 35 p. (Series: Obshchestvo po rasprostraneniyu politicheskikh i nauchnikh znaniy RSFSR. Poluprovodniki, vyp. 5) 15,000 copies printed.

Sponsoring Agencies: Akademiya nauk SSSR. Institut poluprovodnikov, and Leningradskiy Dom nauchno-tekhnicheskoy propagandy.

Tech. Ed.: Freger, D.P.; Editorial Board: Ioffe, A.F., Academician, (Ed. in Chief); Sominskiy, M.S., Candidate of Physical and Mathematical Sciences,(Asst. Ed. in Chief); Maslakovets, Yu. P., Doctor of Physical and Mathematical Sciences; Smolenskiy, G.A., Doctor of Physical and Mathematical Sciences; Shalyt, S.S., Doctor of Physical and Mathematical Sciences; Regel', A.R.,

Card 1/3

Nonlinear Semiconductor Resistances; Varistors 678

Candidate of Physical and Mathematical Sciences; Subashiyev, V.K., Candidate of Physical and Mathematical Sciences; Shagurin, K.A. Engineer; Achkinadze, Sh. D., Engineer.

PURPOSE: This brochure is addressed to engineers and technicians working with semiconductor devices and materials.

COVERAGE: This monograph is the fifth of the series entitled "Poluprovodniki" (Semiconductors). A list of the 18 titles constituting the series is given at the end of each brochure. [For translations of these titles, see abstract Nr 674.] This brochure gives a general introduction to nonlinear resistances, and covers such phases of the subject as the characteristics, operating principle and production of nonlinear resistances, and their applications in industry and technology. There are 12 Soviet sources (including 1 translation), 4 German, 4 English, and 2 French. No personalities are mentioned.

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Nonlinear Semiconductor Resistances; Varistors 678

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PASYNKOV, V. V.

"Low power Nonlinear Semiconductor Resistances,"

report presented at the Session on Semiconductors, All-Union Scientific Session of VNORiE, Moscow, 20-25 May 1957.

In his lecture V. V. Pasynkov noted that the technology of the manufacture of non-linear resistors for different specified parameters is quite simple, does not require complicated and expensive equipment, and makes it possible to automatize the manufacturing processes in mass production of resistors. Characteristics of resistor specimens developed for telephone engineering are not inferior to the parameters of American specimens obtained from actual apparatus.

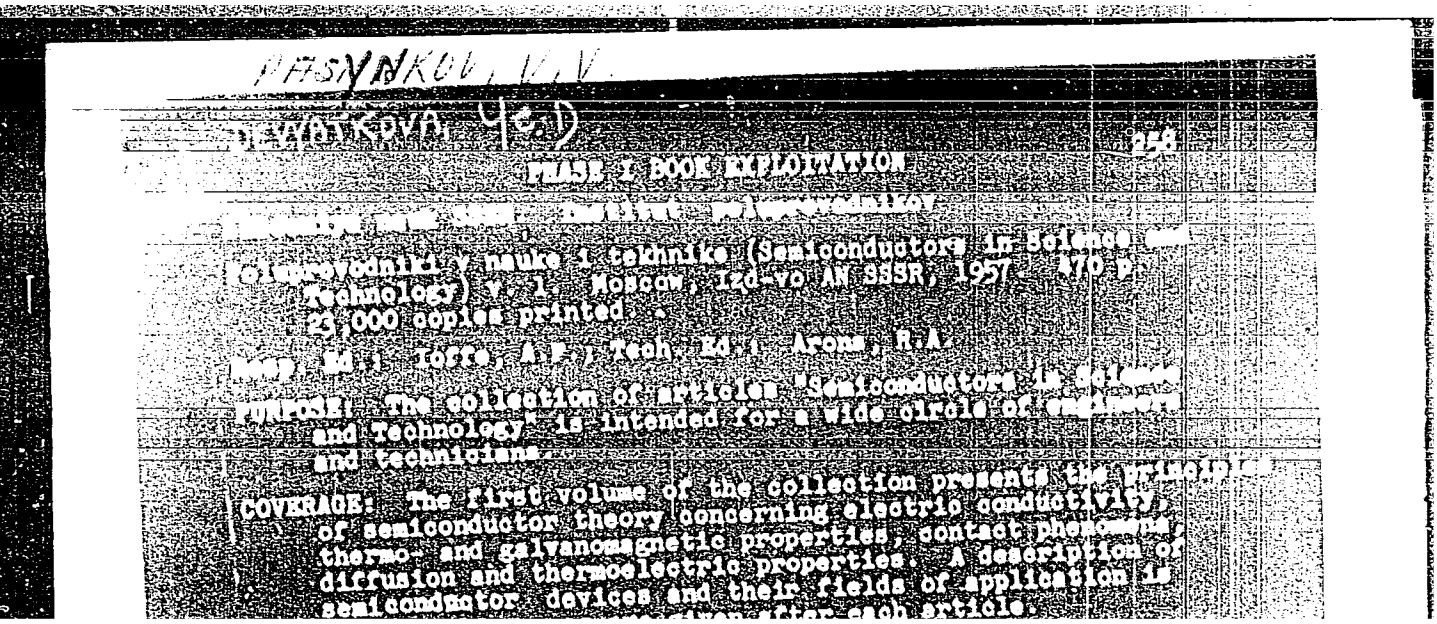
Electronic Design, 22 Jan 58

PASYNKOV, Vladimir Vasil'yevich; SAVEL'YEV, Georgiy Anatol'yevich; CHIRKIN, Lev Konstantinovich; NASLEDOV, D.N., doktor fiz-mat. nauk, prof., retsenzent; SHINKOV, A.D., nauchnyy red.; KVOCHKINA, G.P., red.; SHISHKOVA, L.M., tekhn. red.

[Nonlinear semiconductor resistances and their uses]Nelineinye poluprovodnikovye soprotivleniia i ikh primenenie. Leningrad, Sudpromgiz, 1962. 211 p. (MIRA 15:11)
(Semiconductors) (Electric resistors)

OSIPOV, K.D.; PASYNKOV, V.V.; REMEZ, G.A., red.; GOLOVANOVA, L.V., red.; KOCHETKOVA, N.A., red.; KUKOLEVA, T.V., red.

[Reference book on radio measuring devices] Spravochnik po radioizmeritel'nym priboram. Pod red. G.A.Remeza. Moskva, Sovetskoe radio. Pt.5. [Supplement] Dopolnitel'naia. 1964. 397 p. (MIRA 17:6)



PAVLOV, V. V.

PAVLOV, V. V. (Moscow)

"Book Exploitation"

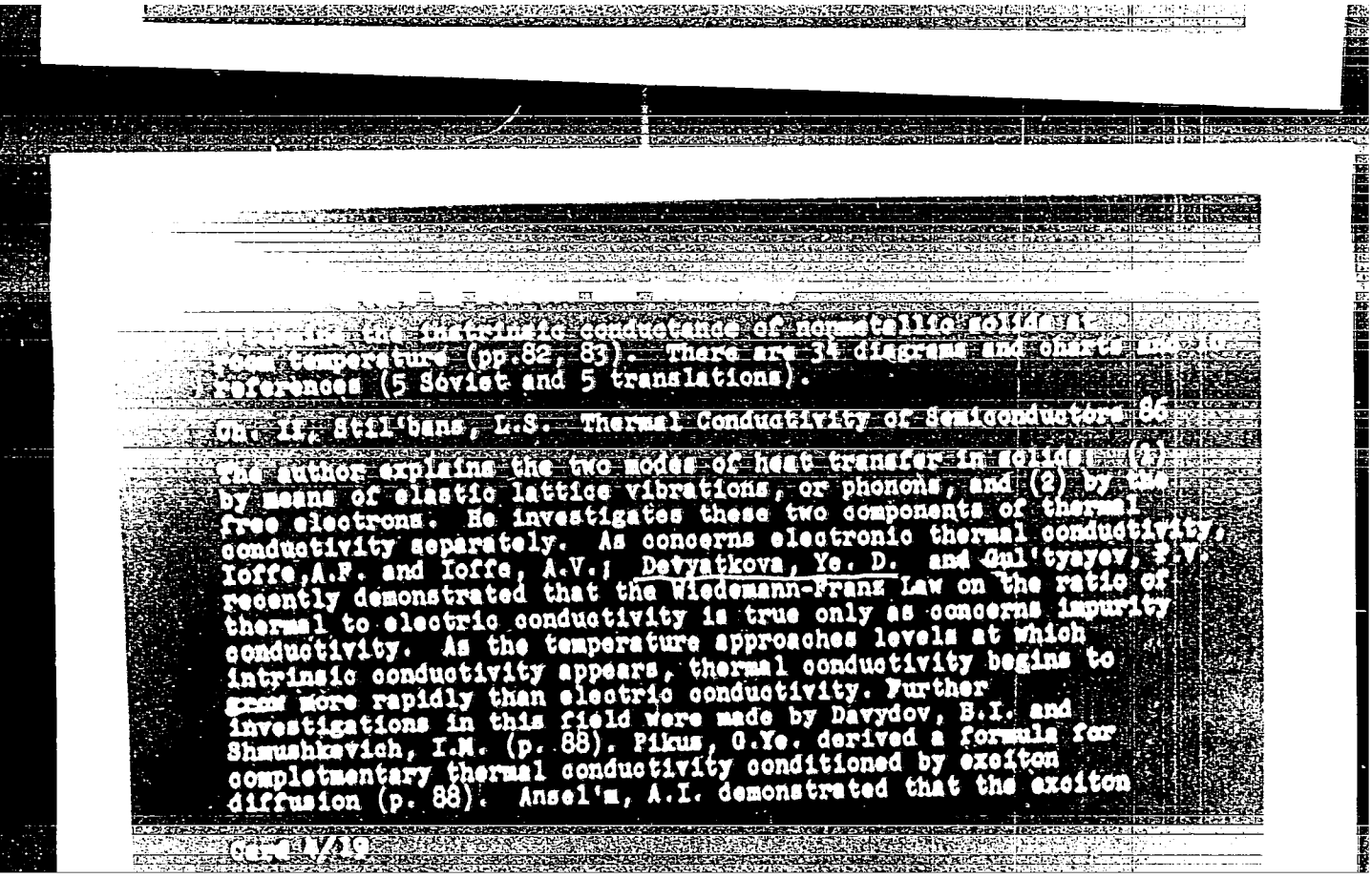
Poluprovodnikovaya tekhnika (Semiconductor Technology) / V. V. Pavlov, Moscow, Izd-vo AN SSSR, 1957. 170 p. 23,000 copies printed.

Ed.: Ioffe, A. F.; Tech. Ed.: Arons, R. A.

PURPOSE: The collection of articles "Semiconductors and Technology" is intended for a wide circle of readers and technicians.

COVERAGE: The first volume of the collection presents the [illegible] of semiconductor theory concerning electric conductivity, thermo and galvanomagnetic properties, contact phenomena, diffusion and thermoelectric properties. A description of semiconductor devices and their fields of application is [illegible]

heat-resisting semiconductor materials with given electric and thermal properties to be used in economically profitable thermal generators. The author considers the scientific, technical and economic importance of the semiconductor problem to be equal to that of the problem of utilization of nuclear energy. He presents some general ideas on the electric conductivity of solids and on the concentration and mobility of current carriers (p. 10) on the charge sign of current carriers in semiconductors; on the intrinsic and impurity conductivity of semiconductors (p. 36); on the relation of semiconductor conductance to temperature (p. 49); on semiconductor photoconductivity (p. 61); on the influence of a strong electric field on semiconductor conductance (p. 68); on the influence of various corpuscular radiations on semiconductor conductance (p. 74); on the influence of deformation (p. 78); and on conductance of liquid, amorphous and polycrystalline bodies (p. 80). A table is given of the numerical values of basic physical parameters which



...the intrinsic conductivity of nonmetallic solids at ... room temperature (pp.82, 83). There are 34 diagrams and charts and ... references (5 Soviet and 5 translations).

...ch, I. F. Stil'bans, L.S. Thermal Conductivity of Semiconductors 86

The author explains the two modes of heat transfer in solids: (1) by means of elastic lattice vibrations, or phonons, and (2) by the free electrons. He investigates these two components of thermal conductivity separately. As concerns electronic thermal conductivity, Ioffe, A.F. and Ioffe, A.V.; Datyatkova, Ye. D. and Gul'tyayev, P.V. recently demonstrated that the Wiedemann-Franz Law on the ratio of thermal to electric conductivity is true only as concerns impurity conductivity. As the temperature approaches levels at which intrinsic conductivity appears, thermal conductivity begins to grow more rapidly than electric conductivity. Further investigations in this field were made by Davydov, B.I. and Shmushkevich, I.M. (p. 88). Pikus, G.Ye. derived a formula for complementary thermal conductivity conditioned by exciton diffusion (p. 88). Ansel'm, A.I. demonstrated that the exciton

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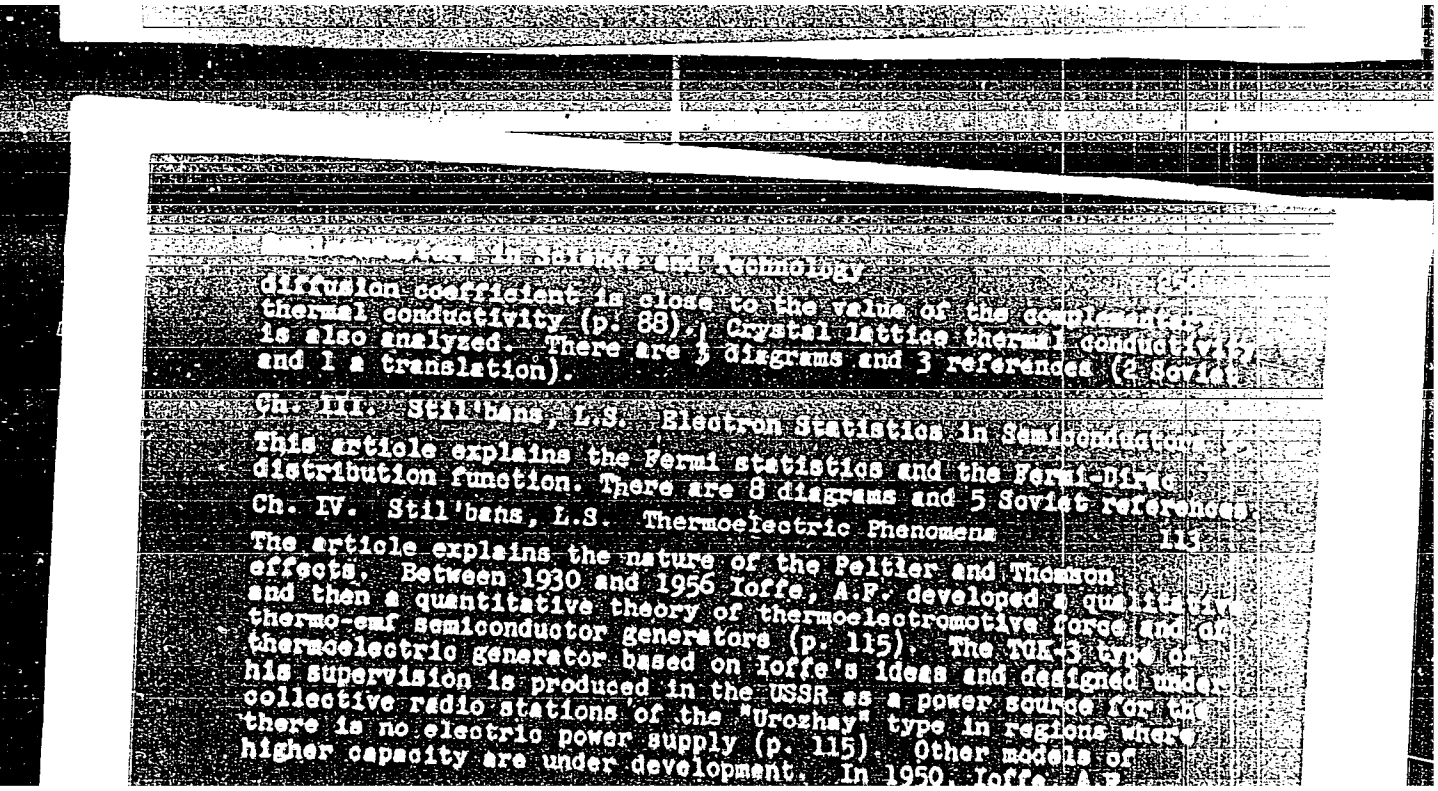


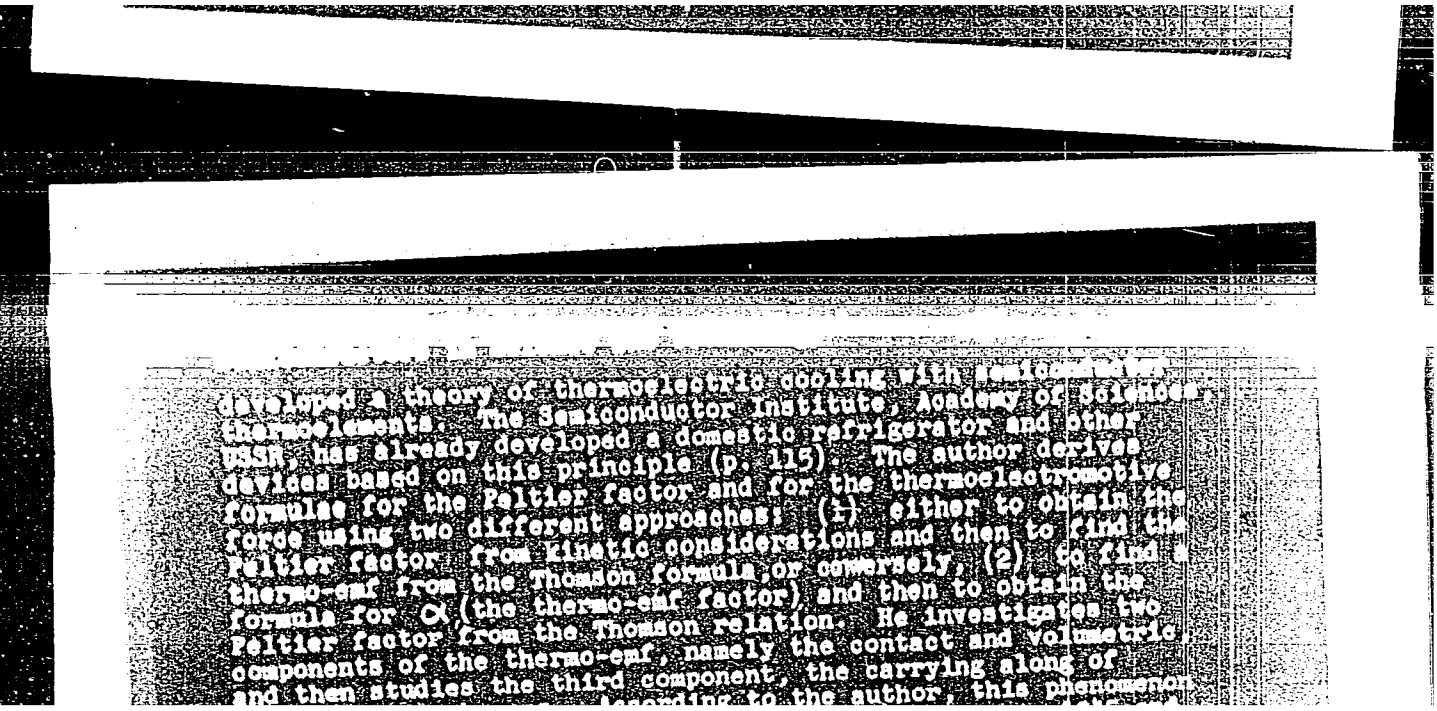
diffusion coefficient is close to the value of the [illegible] thermal conductivity (p. 88). Crystal lattice thermal conduct[illegible] is also analyzed. There are 3 diagrams and 3 references (2 Soviet and 1 a translation).

Ch. III. Stil'bans, L.S. Electron Statistics in Semiconductors

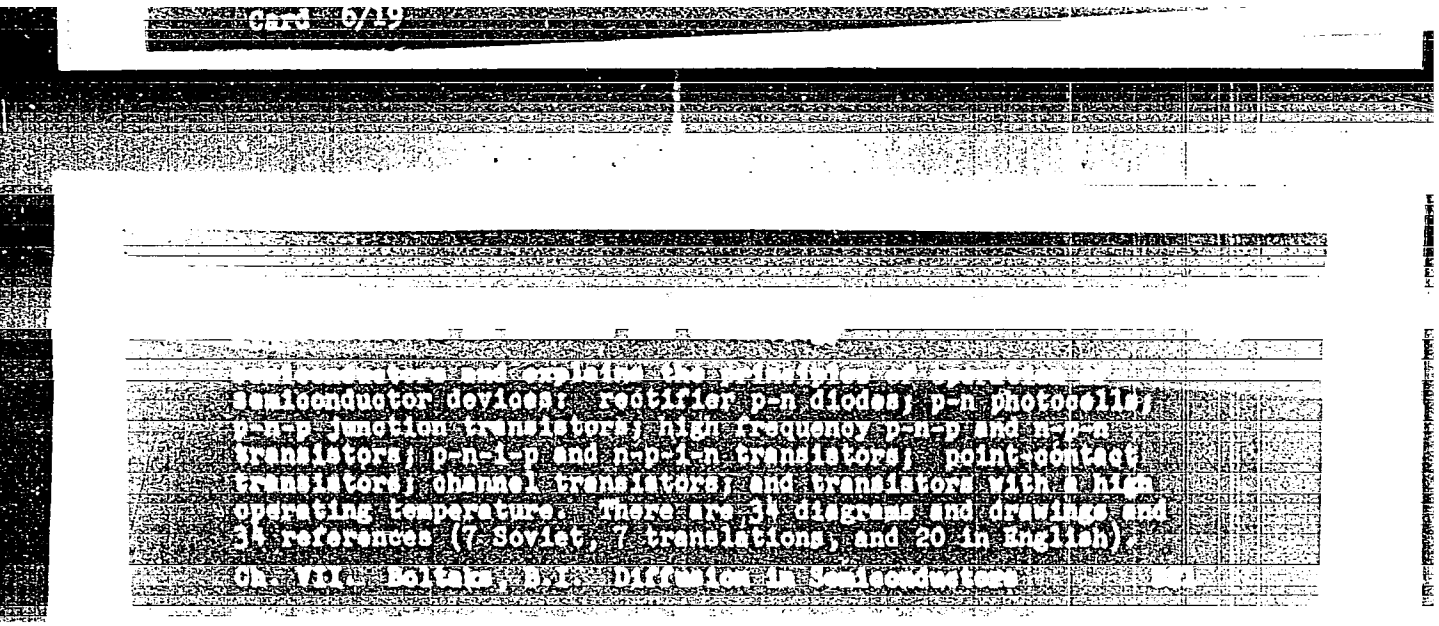
This article explains the Fermi statistics and the Fermi-Dirac distribution function. There are 8 diagrams and 5 Soviet references.

Ch. IV. Stil'bans, L.S. Thermoelectric Phenomena 115

The article explains the nature of the Peltier and Thomson effects. Between 1930 and 1956 Ioffe, A.F. developed a quantitative and then a quantitative theory of thermoelectromotive force and of thermo-emf semiconductor generators (p. 115). The TGK-3 type of thermoelectric generator based on Ioffe's ideas and designed under his supervision is produced in the USSR as a power source for the collective radio stations of the "Urozhay" type in regions where there is no electric power supply (p. 115). Other models of higher capacity are under development. In 1950 Ioffe, A.F.



developed a theory of thermoelectric cooling with [illegible]
thermoelements. The Semiconductor Institute, Academy of Sciences
USSR, has already developed a domestic refrigerator and other
devices based on this principle (p. 115). The author derives
formulae for the Peltier factor and for the thermoelectromotive
force using two different approaches: (1) either to obtain the
Peltier factor from kinetic considerations and then to find the
thermo-emf from the Thomson formula, or conversely, (2) to find a
formula for α (the thermo-emf factor) and then to obtain the
Peltier factor from the Thomson relation. He investigates two
components of the thermo-emf, namely the contact and volumetric,
and then studies the third component, the carrying along of
[illegible] According to the author, this phenomenon



mechanism of self-diffusion and hetero-diffusion in hard bodies (p. 222). This presentation results from the kinetic theory of real crystals developed by Frenkel', Ya. I. (2) Impurity diffusion in germanium and silicon (p. 226). The authors, together with Sozinov, I., recently investigated the diffusion of copper in silicon for a temperature range of 800° to 1100° C. (p. 231). (3) Diffusion in sulfur, selenium and tellurium (p. 232). Nasledov, D. and Malyshev, Ye. studied the diffusion of mercury in

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manufacture, basic temperature relationships, volt-[illegible] and dynamic characteristics (p. 250). According to the author, Bel'nev, G.N. was the first to develop a quantitative theory of energy processes occurring during the operation of thermistors in stationary conditions. This theory made possible the explanation of the electrical static characteristics of thermistors and the creation of bases for the design and construction of thermistors with given characteristics (p. 258). Nechayev, G.K. developed methods of graphic calculation and analysis of a-c circuits with thermistors in which the latter may be combined not only with resistances, but also with inductances and capacitances (p. 260). II. Basic operational principles in circuits under small and large loads with temperature control or temperature compensation and voltage stabilization, and capacity measurements with UHF are discussed (p. 265). Kaganov, M.A. is credited with the development of devices for remote centralized measurement of temperatures (p. 26[illegible]). Nechayev, G.K. suggested a system of heat control based on utilizing the relay effect arising at a specific temperature in a circuit with

with thermistors (p. 275). The Institute of Electr[illegible] Academy of Sciences, USSR, developed and service-tested a system of automatic temperature signaling with thermistors of the KMT-10 type (p. 272). KMT-11 type thermistors are also used for industrial temperature control. An analysis of bridges used for measuring capacities at UHF was made by Kerstenetskaya, F.O. (p. 276).
III. Industrial types of thermistors are described (p. 277) and the work of Kolomiyts, B.T., is mentioned as the basis of the Soviet thermistor industry. Types produced in the USSR are enumerated: resistance thermometers of the KMT-1,-4 and KMT-1,-4 types (table of specifications p. 279); thermocompensators of the KMT-8 and -9 types (table p. 283); thermistors for heat control of the KMT-10 and -11 types (characteristics p. 284); voltage stabilizers of the TP2/0.5, TP2/2 and TP6/2 types (table p. 286); capacity meters of 11 types: T8M, T8D, T8R, T8C1, T9 and others; and thermistors with indirect heating of the TKP-300 type (table p. 288). There are 45 illustrations: photographs, drawings and diagrams and 22 references (18 Soviet, 2 translations, 1 in English and 1 German).

[redacted]

[redacted] and in particular of semiconductor bolometers (p. 306) are described. A highly-sensitive Bi-Pb bolometer was assembly developed by Markov, M.N. at the Physics Institute, Academy of Sciences, USSR (p. 293). In 1956 at the Semiconductor Institute, Academy of Sciences, USSR a method of producing low-inertia Ge bolometers was developed (p. 307). Characteristics of semiconductor bolometers are presented (p. 308-313) and their [redacted] described. There are 12 illustrations: photographs and diagrams and 22 references (7 Soviet, 3 translations and 12 English and German).

(Varistors)

The author gives a brief description of symmetrical and asymmetrical varistors. Symmetrical varistors for low voltages and small currents are produced in some countries, but are not produced by Soviet industry (p. 315). The development of such types of varistors for various parameters is done at the Leningrad Electrical Engineering Institute im. Lenin (LETI), where [redacted]

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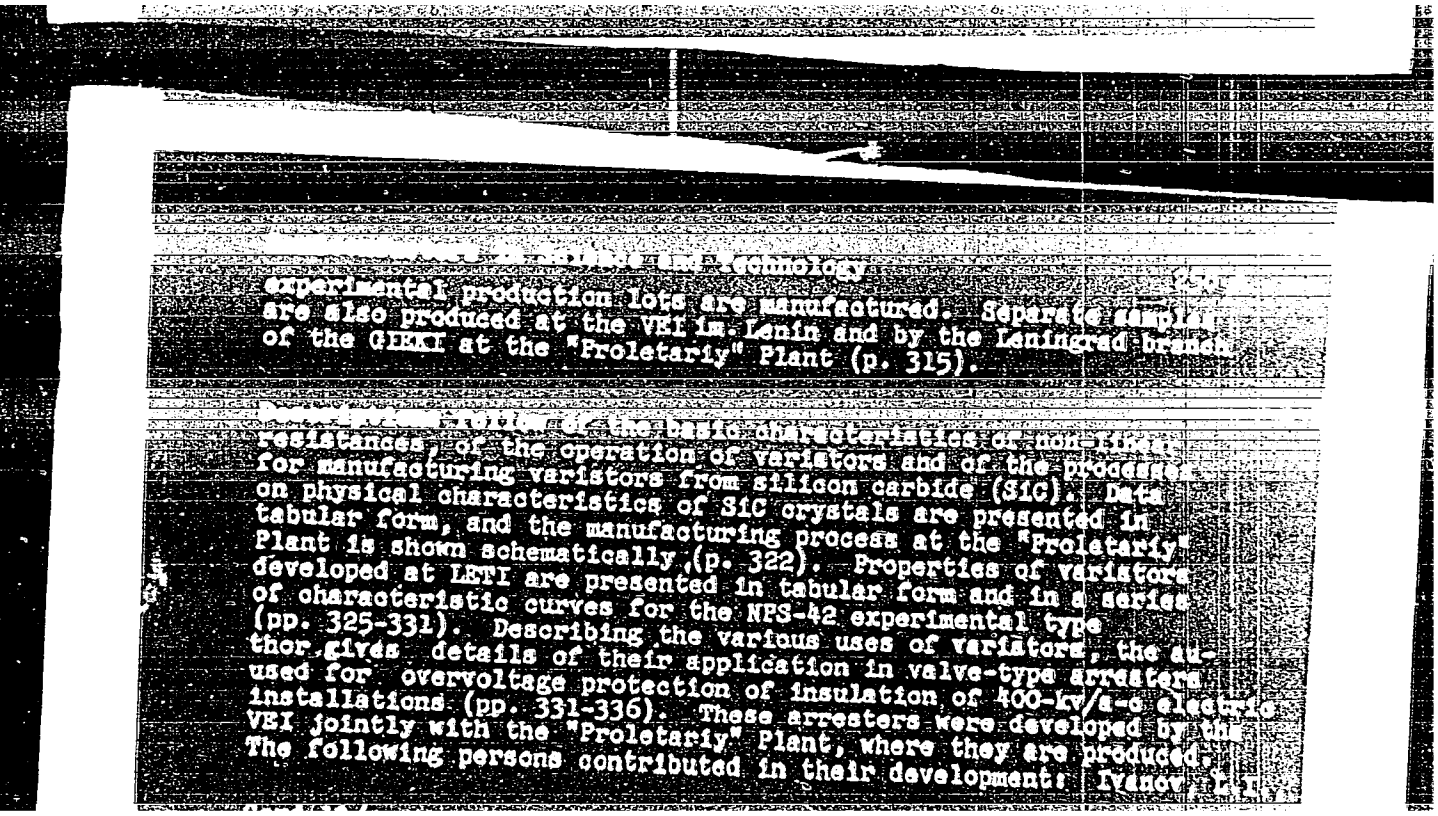

technology
experimental production lots are manufactured. Separate samples
are also produced at the VEI im. Lenin and by the Leningrad branch
of the GIREDMET at the "Proletariy" Plant (p. 315).

[illegible] basic characteristics of nonlinear
resistances, of the operation of varistors and of the procedure
for manufacturing varistors from silicon carbide (SiC). Data
on physical characteristics of SiC crystals are presented in
tabular form, and the manufacturing process at the "Proletariy"
Plant is shown schematically (p. 322). Properties of varistors
developed at LETI are presented in tabular form and in a series
of characteristic curves for the NPS-42 experimental type
(pp. 325-331). Describing the various uses of varistors, the au-
thor gives details of their application in valve-type arresters
used for overvoltage protection of insulation of 400-kv/a-c electric
installations (pp. 331-336). These arresters were developed by the
VEI jointly with the "Proletariy" Plant, where they are produced.
The following persons contributed in their development: Ivanov, S. I.

[redacted], V.I., Sokolov, V.P., Blovman, P.S., and others.
Shidlovskiy, D.V., is studying the characteristics of the arresters produced. Six basic types of arresters are produced at the "Proletariy" Plant ...satisfying the demand for them in the Soviet Union as well as in several foreign countries..." (p. 332). Some specifications and basic electric characteristics of the arresters are presented (p. 333), as well as detailed drawings and a photograph. There are 27 illustrations and 23 references (12 Soviet, 2 translations and 9 English, French and German).

Ch. II. Sominskiy, M.S. Photoresistors 338

The author explains the physical origins of photoresistance and the history of its discovery and uses. He describes the methods of making photoresistors and, in particular, of applying the semiconductor layer by the method of evaporation in a vacuum. A rotary vacuum oil pump of the RVN-20 type is used to obtain a preliminary vacuum, and for the high vacuum, diffusion vacuum oil pumps of the TsVL-40 type or TsVL-100 type are used (p. 342). The properties of photoresistances are described. An example is

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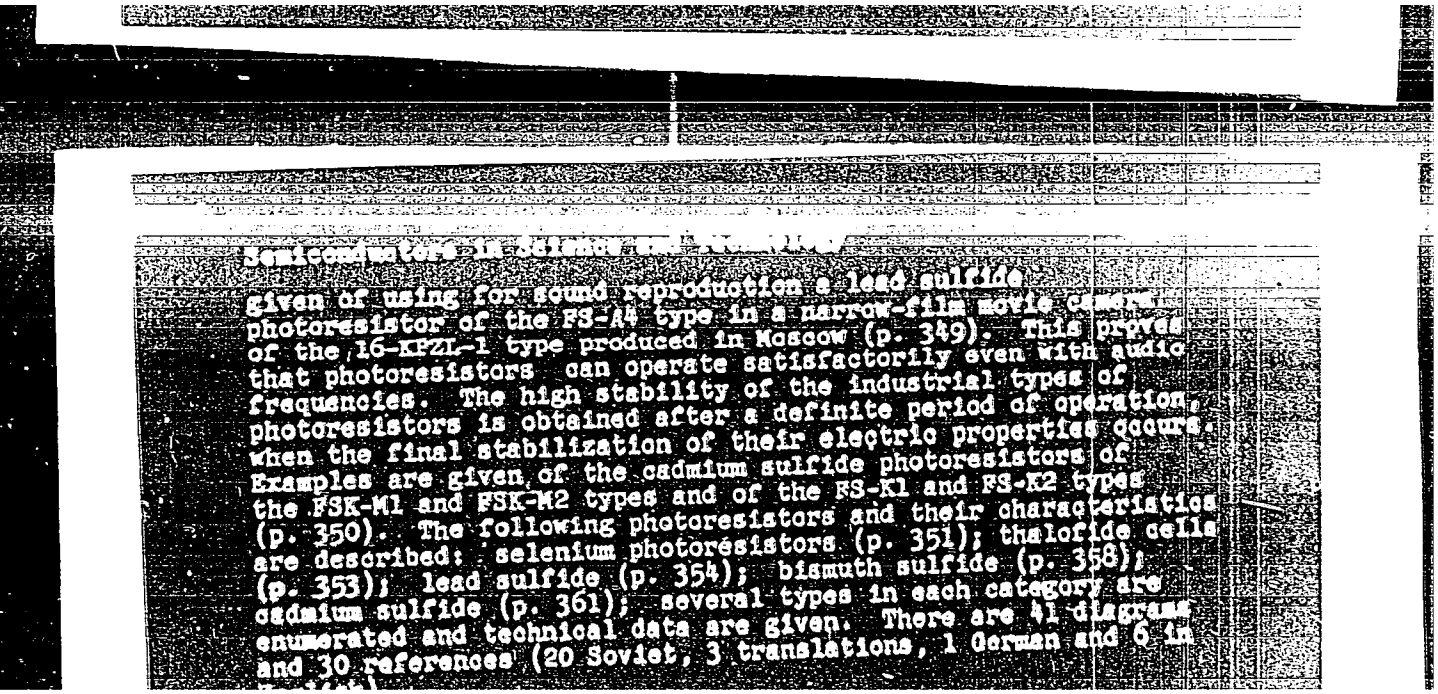

given of using for sound reproduction a lead sulfide photoresistor of the FS-A4 type in a narrow-film movie c... of the 16-KFZL-1 type produced in Moscow (p. 349). This proved that photoresistors can operate satisfactorily even with audio frequencies. The high stability of the industrial types of photoresistors is obtained after a definite period of operation, when the final stabilization of their electric properties occurs. Examples are given of the cadmium sulfide photoresistors of the FSK-M1 and FSK-M2 types and of the FS-K1 and FS-K2 types (p. 350). The following photoresistors and their characteristics are described: selenium photoresistors (p. 351); thalofide cells (p. 353); lead sulfide (p. 354); bismuth sulfide (p. 358); cadmium sulfide (p. 361); several types in each category are enumerated and technical data are given. There are 41 diagrams and 30 references (20 Soviet, 3 translations, 1 German and 6 in

[redacted]

[redacted] June 195[illegible] 20.

[redacted] with the recent development of semiconductor devices. The article includes the following: I. General information about electrical and galvanomagnetic properties of semiconductors (p. 368). II. Some information on semiconductors with high electron mobility (p. 376); data about the following semiconductors are given in detail and presented in a table of specifications: Ge, Si, HgSe, HgTe, InAs, InSb. III. Hall emf transmitter as a network element (p. 384); a table showing some characteristics of transmitters made from different semiconductors is presented (p. 389). IV. Practical development of Hall emf transmitters and various errors (p. 389); descriptions are given of the production of transmitters made with HgSe, HgTe and their solid solutions, of cutting of thin semiconductor plates with abrasive carbide discs developed at the VNIMASH in Leningrad and of the production of contacts. The author discusses the linearity of transmitter readings, errors of multiplication, and temperature influence. V. The applications of Hall emf transmitters for various technical purposes (p. 394) are discussed. Among these are measurements of the intensity of constant and variable

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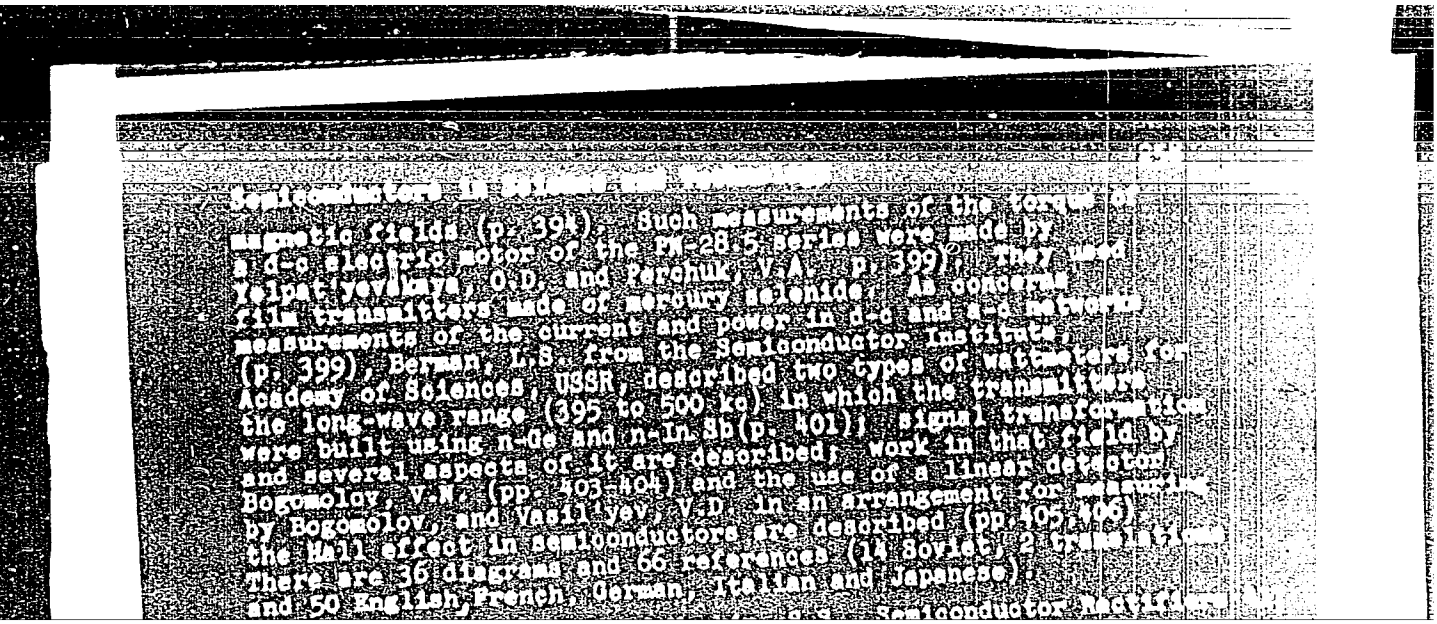
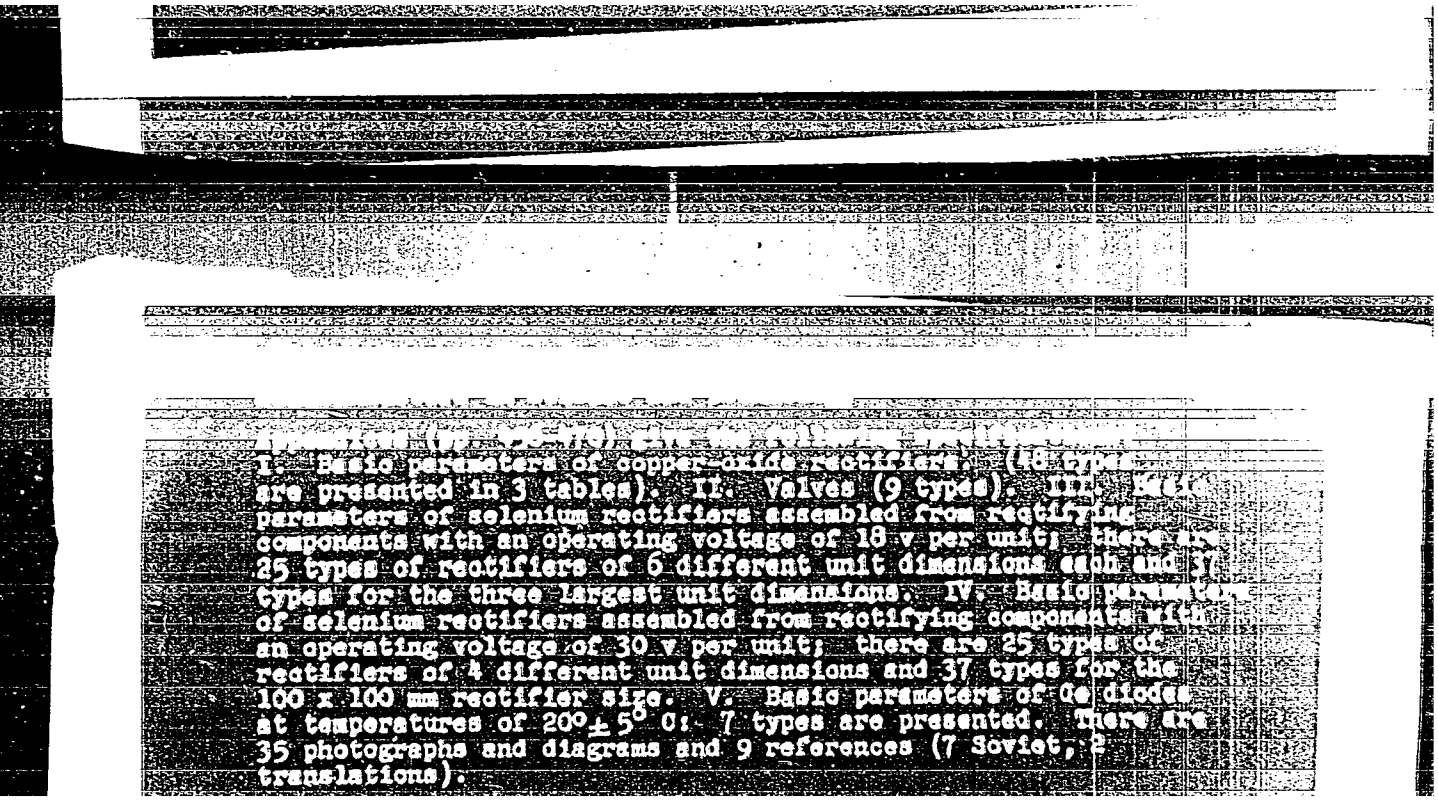


magnetic fields (p. 394). Such measurements of the Hall
a d-c electric motor of the PM 28.5 series were made by
Yelpat'yevskaya, O.D. and Parshuk, V.A. (p. 399). They used
film transmitters made of mercury selenide. As concerns
measurements of the current and power in d-c and a-c networks
(p. 399), Berman, L.S. from the Semiconductor Institute
Academy of Sciences, USSR, described two types of watt-hour
the long-wave range (395 to 500 kc) in which the transmitters
were built using n-Ge and n-In Sb (p. 401); signal or information
and several aspects of it are described; work in that field by
Bogomolov, V.N. (pp. 403-404) and the use of a linear detector
by Bogomolov, and Vasil'yev, V.D. in an arrangement for
the Hall effect in semiconductors are described (pp. 405-406).
There are 36 diagrams and 66 references (14 Soviet, 2
and 50 English, French, German, Italian and Japanese).



I. Basic parameters of copper-oxide rectifiers (10 types are presented in 3 tables). II. Valves (9 types). III. Basic parameters of selenium rectifiers assembled from rectifying components with an operating voltage of 18 v per unit; there are 25 types of rectifiers of 6 different unit dimensions each and 37 types for the three largest unit dimensions. IV. Basic parameters of selenium rectifiers assembled from rectifying components with an operating voltage of 30 v per unit; there are 25 types of rectifiers of 4 different unit dimensions and 37 types for the 100 x 100 mm rectifier size. V. Basic parameters of Ge diodes at temperatures of $20^{\circ} \pm 5^{\circ}$ C: 7 types are presented. There are 35 photographs and diagrams and 9 references (7 Soviet, 2 translations).

ALEKSANDROV, A.G., dots; ARONOVICH, I.S., inzh.; BABIKOV, M.A., doktor tekhn.nauk; BATUSOV, S.V., kand.tekhn.nauk; BEL'KIND, L.D., doktor tekhn.nauk; VENIKOV, V.A., doktor tekhn.nauk; VESELOVSKIY, O.N., kand.tekhn.nauk; GOLOVAN, A.T., doktor tekhn.nauk; GOLUBTSOVA, V.A., doktor tekhn.nauk; GREYNER, L.K., inzh.; GRUDINSKIY, P.G., prof.; GUSEV, S.A., inzh.; DMOKHOVSKAYA, L.F., kand.tekhn.nauk; DROZDOV, N.G., doktor tekhn.nauk; IVANOV, A.P., doktor tekhn.nauk [deceased]; KAGANOV, I.L., doktor tekhn.nauk; KEHBER, L.L., inzh.; KOCHENOVA, A.I., kand.tekhn.nauk.; LARIONOV, A.N.; MINOV, D.K., doktor tekhn.nauk; NETUSHIL, A.V., doktor tekhn.nauk; NIKULIN, N.V., kand.tekhn.nauk; NILENDER, R.A., prof.; PANTYUSHIN, V.S., prof.; PASYNKOV, V.V., doktor tekhn.nauk; PETROV, G.N., doktor tekhn.nauk; POLIVANOV, K.M., doktor tekhn.nauk; PRIVEZENTSEV, V.A., doktor tekhn.nauk; RADUNSKIY, L.D., inzh.; RENNE, V.T., doktor tekhn.nauk; SVENCHANSKIY, A.D., doktor tekhn.nauk; SOLOV'YEV, I.I., doktor tekhn.nauk; STUPEL' F.A. kand.tekhn.nauk; TALITSKIY, A.V., prof.; TEMNIKOV, F.Ye., kand.tekhn. nauk; FEDOROV, L.I., inzh.; FEDOSEYEV, A.M., doktor tekhn.nauk; KHOLYAVSKIY, G.B., inzh.; CHECHET, Yu.S., doktor tekhn.nauk; SHNEY-BERG, Ya.A., kand.tekhn.nauk; SHUMILOVSKIY, N.N., doktor tekhn.nauk; ANTIK, I.B., red.; MEDVEDEV, L.Ya., tekhn.red.

[The history of power engineering in the U.S.S.R. in three volumes] Istoriia energeticheskoi tekhniki SSSR v trekh tomakh. Moskva, Gos. energ. izd-vo.

(Continued on next card)

ALEKSANDROV, A.G.--(continued) Card 2.

Vol.2. [Electric engineering] Elektrotekhnika. Avtorskii kollektiv toma: Aleksandrov i dr. 1957. 727 p. (MIRA 11:2)

1. Moscow. Moskovskiy energeticheskiy institut. 2. Chlen-korrespondent AN SSSR (for Larionov)
(Electric engineering)

BOGORODITSKIY, Nikolay Petrovich; FRIDBERG, Ilariy Dmitriyevich; PASYNKOV, V.V., red.; SOBOLEVA, Ye.M., tekhn.red.

[Electrophysical characteristics of high-frequency ceramics] Elektrofizicheskie osnovy vysokochastotnoi keramiki. Moskva, Gos.energ.izd-vo, 1958. 191 p. (MIRA 12:3)
(Ceramic materials--Electric properties)

SOV/58-59-8-18420

Translated from: Referativnyy Zhurnal Fizika, 1959, Nr 8, p 200 (USSR)

AUTHORS: Pasynkov, V.V., Savel'yev, G.A.

TITLE: Low-Power Nonlinear Semiconductor Resistors (Varistors)

PERIODICAL: V sb.: Primeneniye poluprovodnikov v elektrotekhn., Leningrad, 1958, pp 95-114

ABSTRACT: Nonlinear semiconductor resistors (varistors) are described, which are manufactured from silicon carbide and have a nonlinear volt-ampere rating. It is demonstrated that their volt-ampere rating can be approximated on a certain section by an exponential function. The coefficient of nonlinearity depends on the applied voltage and can vary from 2 to 3.5. Theories are advanced to explain the nonlinearity of the volt-ampere characteristic of varistors. The authors hold that the parallel action of several mechanisms clarifying nonlinearity is possible under concrete conditions. The technology of producing such resistors is briefly described. It is noted that these mechanisms must

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Low-Power Nonlinear Semiconductor Resistors (Varistors)

be made thoroughly hermetic in order to ensure stability. The authors cite the methods and results of testing resistors manufactured in the Leningrad Electrotechnical Institute. Applications of nonlinear semiconductor resistors are described in several circuits, as, for example, for stabilizing voltage, increasing the frequency, etc. The bibliography contains 23 titles.

G.K. Nechayev

PHASE I BOOK EXPLOITATION SOV/4217

Osipov, Konstantin Dmitriyevich, and V.V. Pasynkov

Spravochnik po radioizmeritel'nym priboram, chast' 4: Spetsial'nyye izmeritel'nyye pribory i istochniki pitaniya (Handbook on Radio Measuring Instruments, Pt. 4: Special Measuring Instruments and Electric Current Supply). Moscow, Izd-vo "Sovetskoye radio," 1959. 152 p. No. of copies printed not given.

Ed. (Title page): G.A. Remez; Ed. (Inside book): Yu.I. Sukhanov; Tech. Ed.: B.V. Smurov.

PURPOSE: This handbook is intended for technical personnel engaged in the development, operation, and repair of radio engineering equipment and radiometers.

COVERAGE: This volume is the fourth part of a 4-part work on radio measuring instruments. It covers instruments for measuring field strength and low h-f voltages, special and auxiliary meters for measuring at super high frequencies, electron tube testers, and electric current supplies of radio systems. The authors thank G.A. Remez, V.G. Dubenetskiy, and V.N. Sretenskiy. No references are given.

Card 1/6

PASYNKOV, V V

PHASE I BOOK EXPLOITATION SOV/4102

Osipov, Konstantin Dmitrovich, and V.V. Pasynkov

Spravochnik po radioizmeritel'nym priboram, ch 3: Pribory dlya izmereniya formy kolebaniy (Handbook on Radio Measuring Instruments, Pt 3: Instruments for Measuring Shape of Oscillations) Moscow, Izd-vo "Sovetskoye radio," 1959. 170 p. Errata slip inserted. No. of copies printed not given.

Ed. (Title page): G.A. Remez; Ed. (Inside book): V.G. Masharova; Tech. Ed.: B.V. Smurov.

PURPOSE: This handbook is intended for engineers and technicians engaged in the development, operation, and repair of radio equipment and radio measuring instruments.

COVERAGE: The handbook gives detailed information on electronic oscilloscopes, special oscillographic devices, spectrum and frequency response analyzers, modulation meters, nonlinear distortion measuring equipment, and measuring amplifiers. The book also gives in-

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formation on general purpose, serial production radio measuring instruments, and on instruments which, though out of production, are still widely used. The authors thank G.A. Remez, V.G. Dubenetskiy, and V.N. Sretenskiy. There are no references.

TABLE OF CONTENTS:

- Pasynkov V V

PHASE I BOOK EXPLOITATION SOV/4410

Osipov, Konstantin Dmitriyevich, and Vsevolod Vladimirovich Pasynkov

Spravochnik po radioizmeritel'nym priboram, chast' I: Pribory dlya izmereniya toka, napryazheniya, moshchnosti i parametrov elementov skhem (Handbook on Radio Measuring Instruments, Pt 1: Instruments for Measuring Current, Voltage, Power, and Parameters of Circuit Elements). Moscow, Izd-vo "Sovetskoye Radio," 1959. 220 p. Errata slip inserted. No. of copies printed not given.

Ed. (Title page): G.A. Remez; Ed. (Inside book): N.Ya. Arenberg; Tech. Ed.: B.V. Smurov.

PURPOSE: This handbook is intended for technical personnel engaged in designing, operating or repairing radio engineering or radio measuring equipment.

COVERAGE: This first part of the handbook contains information on radio measuring instruments of general application whose purpose is to measure the values of current, voltage, power, capacitance, inductance, circuit Q-factors, resistances and reactances. The description of each instrument consists of the following sections: purpose and field of application, basic technical characteristics,

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Handbook on Radio Measuring Instruments (Cont.) SOV/4410

brief description of a circuit and of the principle of action, operating set of replaceable components and their assembly. The basic circuit is given for all instruments, and a block diagram is presented for the more complex ones. The authors thank G.A. Remez for his help and V.G. Dubenetskiy and V.N. Sretenskiy for their useful advice. There are no references.

TABLE OF CONTENTS:

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Pasynkov, V V

S(2), 9(6) Anisimov, V. I., Engineer SOV/119-59-3-13/15
AUTHOR:

TITLE: The Inter-university Scientific Conference on Electrical Measuring Instruments and on the Technical Means of Automation (Mezhvuzovskaya nauchnaya konferentsiya po elektroizmeritel'nym priboram i tekhnicheskim sredstvam avtomatiki)

PERIODICAL: Priborostroyeniye, 1959, Nr 3, pp 30-31 (USSR)

ABSTRACT: This Conference was held at the Leningradskiy elektrotekhnicheskiy institut im. V. I. Ul'yanova (Lenina) (Leningrad Institute of Electrical Engineering imeni V. I. Ul'yanov (Lenin)) in November 1958. It was attended by more than 500 representatives of universities, scientific research institutes, of the OKB, the SKB (Special Design Office), of industries and other organizations. More than 30 lectures were delivered in the meetings of this Conference. In opening the conference B. P. Borodulskiy underlined the outstanding importance of automation and of measuring technique for the development of national economy. E. I. Shumilovskiy in his lecture reported on "The Trends in the Development of Methods of Radioactive Control of Production Data" and outlined the extensive possibilities of using radioactive methods in such control. Ye. G. Shramkov and S. A. Spektor reported on a new method of measuring heavy direct currents with the help of the nuclear magnetic resonance. M. A. Rozenblat investigated problems of the application of magnetic amplifiers in automation and in measuring technique. A. V. Fateyev reported on the present-day state on the prospects of automatic control technique. Ya. Z. Tsypkin investigated some peculiar features of and the prospects offered by automatic pulse systems. The lecture by N. G. Bolgov dealt with problems of stability of discrete automatic systems. V. B. Smolov discussed the main trends in the development of mathematical analog computers and of computers designed for industrial use. The report by V. S. Rabinskiy deals with an electronic analog correlator for the calculation of correlation functions in the investigation of winds in the ionosphere. R. I. Turgeson reported on the most important methods, which guarantee both an active and passive freedom from disturbances in discrete selective systems. Ye. V. Khrushchev discussed problems of averaging, differentiation, and balancing of time-dependent functions which can be represented by electric signals. V. P. Skuridin investigated new computing devices with polarized relays. A. I. Frenkel' and Ye. M. Dushkin reported on instrument transformers for automatic instruments with automatic recording. V. S. Lubkov and E. M. Kopay-Gora reported on a computer for the automatic centralized control of production specifications. Z. M. Fateyev discussed fundamental problems of the theory of automatic measuring instruments with an inverse conversion for the measurement of non-electric quantities. Ye. I. Yevtikov dealt with problems of the construction of automatic d. c. potentiometers with high accuracy. D. I. Volov discussed a high-precision automatic d. c. bridge for digital computations. The participants in the Congress listed below discussed the following subjects (which, however, are not given by the exact wording of the titles): Ye. A. Ivanov: The planning of measuring elements for

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PAGE - 2

The Inter-university Scientific Conference on 307/119-59-3-13/15
Electrical Measuring Instruments and on the Technical
Means of Automation

accurate automatic quotient-type meters in digital computations.
E. E. Charchenko: Methods of determining the dynamic errors
of a magnetic oscilloscope by simulation. F. P. Ornatskiy:
Problems in measuring electric quantities at extremely low
frequencies by electrical indicating instruments of various
systems. L. P. Kulikovskiy: Novel types of a. c. compensators
suited for the control of the parameters of various
series production. A. A. Automatic bridges and a. c. compensators.
widget induction motors which can be used in measuring
technique and automation. D. A. Borodayev: Ultrasonic
pressure- and liquid level gages. Yu. A. Zaripskiy: The
circuitry of a phase-sensitive computation indicator for
of instruments with automatic bridges. M. P. Zavidi: The application
considerable simplification of the design of permit a
and the circuitry used in the measurement of the apparatus
quantities. V. A. Frantsi: Method of increasing the
sensitivity of oxygen gas analyzers. P. P. Sviridkiy:
Design of apparatus for measuring vibration quantities.
P. V. Tsvetkov: Main types of non-linear semiconductor
Factory and possibilities of their application to
circuitry in automation and measuring technique. G. K.
Horopashnyy: Development of measuring amplifiers with
semiconductor triodes. Ya. V. Zeveke: Ya. A. Zairacr,
To. Yo. Afanas'yev, Ye. P. Varfunov: Precision semiconductor
frequency meter operating according to the pulse-counting
principle. P. G. Nikitin and A. Rezukhadzev: Methods of
measuring the magnetic field strength by means of biaxial
resistors and transducers operating on the Hall effect
principle. A resolution was adopted by the closing plenary
meeting of the Conference, which indicates ways of
improving and coordinating scientific research work in the
field of automation, electric measuring and computing
technique.

Card 4/5

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KAHPOV, Yu. S., PASYNKOV, V.V.

In regard to the article "Terminology in the field of transistor electronics". Izv. vys. ucheb. zav.; radiotekh. 2 no.6:750-751 N-D '59. (MIRA 13:6)

1. Kafedra dielektrikov i poluprovodniko Leningradskogo elektrotekhnicheskogo instituta imeni V.I. Ul'yanova (Lenina).
(Transistors--Terminology) (Agakhanian, T.M.)
(Kononov, B.N.) (Stepanenko, I.P.)

PHASE I BOOK EXPLOITATION SOV/5569

Osipov, Konstantin Dmitriyevich, and Vsevolod Vladimirovich Pasynkov

Spravochnik po radioizmeritel'nym priboram. ch. 2: Pribory dlya izmereniya chastoty i izmeritel'nyye generatory (Manual on Radio Measuring Devices. pt. 2: Frequency-Measuring Devices and Measuring Generators) Moscow, Izd-vo "Sovetskoye radio," 1960. 203 p. No. of copies printed not given.

Ed. (Title page): G. A. Remez; Eds.: N. A. Kochetkova and Yu. I. Sukhanov; Tech. Ed.: B. V. Smurov.

PURPOSE : This manual is intended for technical personnal engaged in the development, operation, or maintenance of radio engineering and radio measuring equipment.

COVERAGE: This part of the manual contains information on resonance and heterodyne frequency meters and measuring oscillators (l-f oscillators, signal generators, and standard signal generators). The description of each instrument consists of the

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Manual on Radio Measuring (Cont.) SOV/5569

following sections: purpose and field of application, basic technical characteristics, a brief description of circuit and principle of operation, operating set of changeable components, and list of additional parts. Moreover, the manual includes a description of the external shape and the schematic diagram of each instrument, as well as block diagrams of complex devices. The authors thank V. G. Dubenetskiy and V. N. Sretenskiy for their advice. There are no references.

TABLE OF CONTENTS:

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PHASE I BOOK EXPLOITATION SOV/5058

Bogoroditskiy, N. P., and V. V. Pasynkov, eds.

Spravochnik po elektrotekhnicheskim materialam. V dvukh tomakh. t. 2; Magnitnyye, provodnikovyye, poluprovodnikovyye i drugiye materialy (Handbook on Electrical Engineering Materials. In two volumes. Vol. 2; Magnetic, Conducting, Semiconducting, and Other Materials) Moscow, Gosenergoizdat, 1960. 511 p. Errata slip inserted. 30,000 copies printed.

Eds. of Handbook: K. A. Andrianov, N. P. Bogoroditskiy, Yu. V. Koritskiy, V. V. Pasynkov, and B. M. Tareyev; Eds. (This vol.): N. P. Bogoroditskiy and V. V. Pasynkov; Tech. Ed.: Ye. M. Soboleva.

PURPOSE: This handbook is intended for technical personnel of electrical and radio engineering establishments, power stations and substations, electric repair shops, laboratories, and scientific research institutes.

Card 1/19

PART II. CONDUCTING METALLIC MATERIALS AND ELECTRICAL CARBON

BEREZIN, Boris Mikhaylovich; PASYNKOV, V.V., prof., doktor tekhn.nauk, otv.red.; VARKOVETSKAYA, A.I., red.; TSAL, R.K., tekhn.red.

[Materials for electricians in shipbuilding] Materialovedenie dlia elektrikov-sudostroitelei. Leningrad, Gos.soiuznoe izd-vo sudostroit.promyshl., 1960. 212 p. (MIRA 13:5)
(Shipbuilding--Supplies) (Electricity on ships)

81356

S/181/60/002/03/10/028
B006/B017

9.2100

AUTHORS: Pasynkov, V. V., Kholuyanov, G. F., Chirkin, L. K.

TITLE: Dynamic Current-voltage Characteristics of Silicon Carbide Resistors

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 3, pp. 434-437

TEXT: In recent times, the number of low-voltage nonlinear silicon carbide resistors has widely increased; the maximum current densities in these apparatus do not exceed 1 - 2 a/cm^2. Basing on the same principle the authors produced resistors from green and black silicon carbide, and investigated their dynamic current-voltage characteristics at low current densities by means of an apparatus the circuit of which is shown in Fig. 2. The current-voltage characteristics show essential deviations from the ordinary ones (Fig. 1). Figs. 3a and 3b show typical dynamic characteristics of resistors of green silicon carbide (sample thickness: 1.5 mm, area: 75 mm^2; natural capacitance: 30 pf). The oscillograms were recorded with pulse durations of 30 and 20 μsec (pulse

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Dynamic Current-voltage Characteristics of Silicon Carbide Resistors

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height: 138 v). The hysteresis of the characteristics is a result of the natural capacitance of the nonlinear resistor. The succession of the branches of the hysteresis loop was determined by charging and discharging the capacitance of the samples. The hysteresis loop in the initial part of the current-voltage characteristic widened with increasing steepness of the pulse fronts. At low current densities, the microheatings of the contacts between the crystals had no essential influence on the nonlinearity of the resistors. With increasing voltage the resistance of the samples decreases, the influence of natural capacitance decreases as well, and the dynamic current-voltage characteristic approaches the static one. The capacitance of the nonlinear resistors of black and green silicon carbide does not vary within the frequency range 50 kc/s - 25 Mc/s. The dielectric constant of a non-homogeneous resistor material raises the natural dielectric constant of silicon carbide considerably. This phenomenon is connected with the presence of polarizations within the layers of a non-homogeneous material. The capacitance of the nonlinear resistors does not depend on the constant displacement voltages. There are 4 figures and 6 references:

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Dynamic Current-voltage Characteristics of Silicon Carbide Resistors

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B006/B017

2 Soviet, 2 French, 1 Swiss, and 1 German.

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut im. V. I. Ul'yanova (Lenina) (Leningrad Electrotechnical Institute imeni V. I. Ul'yanov (Lenin))

SUBMITTED: May 11, 1959

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PASYNKOV, V., Inzh.

A pamphlet on achievements in radioelectronics. Prof.-tekh.obr. 17 no.6:28 Je '60. (MIRA 13:7)
(Electronic apparatus and appliances)

PASYNKOV, V. V.

PHASE I BOOK EXPLOITATION SOV/5389

Bogoroditskiy, Nikolay Petrovich, and Vladimir Vasil'yevich Pasynkov

Materialy v radioelektronike (Materials in Radio Electronics) Moscow, Gosenergoizdat, 1961. 352 p. 45,000 copies printed.

Ed.: Ya. I. Panova, Candidate of Technical Sciences; Tech. Ed.: Ye. M. Soboleva.

PURPOSE: This book has been approved by the Ministry of Higher and Secondary Special Education, RSFSR, as a textbook for radio engineering schools of higher education and university divisions. It may be also useful to technical personnel engaged in radio electronics.

COVERAGE: The book presents the principles of the phenomena occurring in insulating, semiconductor, conductor, and magnetic radiotechnical materials. Their electrical properties, especially at elevated and high frequencies, and their

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physicochemical and mechanical characteristics are described. The production technology of numerous radiotechnical materials and their use in the manufacture of articles and components used in radio engineering are briefly examined. The authors thank the following persons: D. N. Nasledov, Professor, Head of the Department of Physics of the Leningradskiy politekhnicheskiy institut im. M. I. Kalinina (Leningrad Polytechnical Institute imeni M. I. Kalinin); A. N. Tekuchev, Professor, head of the committee of teachers of the Ryazanskiy radiotekhnicheskiy institut (Ryazan' Institute of Radio Engineering), who reviewed the book; and G. I. Panteleyeva, who helped with the manuscript. There are 25 references, all Soviet (including 2 translations).

TABLE OF CONTENTS:

BOGORODITSKIY, Nikolay Petrovich; PASYNKOV, Vladimir Vasil'yevich; TAREYEV, Boris Mikhaylovich; RENNE, V.T., doktor tekhn.nauk, prof., red.; ZHITNIKOVA, O.S., tekhn.red.

[Electric engineering materials] Elektrotekhnicheskie materialy. Izd.4., perer. Moskva, Gos.energ.izd-vo, 1961. 528 p. (MIRA 14:6)

1. Zaveduyushchiy kafedroy elektroizolyatsionnoy i kabel'noy tekhniki Leningradskogo politekhnicheskogo instituta im. M.I.Kalinina (for Renne).

(Electric engineering--Materials)

ACC NR: AP7003648 (N) SOURCE CODE: UR/0020/67/172/001/0083/0086

AUTHOR: Volokobinskiy, Yu. M.; Lototskiy, B. Yu.; Pasynkov, V. V.; Chirkin, L. K.

ORG: none

TITLE: Thermal processes in thin films

SOURCE: AN SSSR. Doklady, v. 172, no. 1, 1967, 83-86

TOPIC TAGS: semiconducting film, dielectric coating, volt ampere characteristic, thermal effect

ABSTRACT: The authors show that in thin semiconductor and dielectric films, local inhomogeneities of the thermal properties can play in important role and lead in a number of cases to S-shaped or N-shaped volt-ampere characteristics. The effect of thermal inertia of homogeneous semiconductor and dielectric films operated at alternating current on the volt-ampere characteristics is analyzed by expanding in Fourier series the heat flow and the temperature variation in both the film and substrate. The effect of substrate thickness is discussed. The results show that homogeneous films deposited on thick substrates have a larger thermal inertia and even at low frequencies the temperature of the film lags the changes in the heat release. It is shown that materials in which the conductivity decreases with temperature in a certain temperature interval cannot be analyzed by the same procedure as a uniform film. Some experimental results confirming the analysis are presented for Al_2O_3 films. This report was presented by Academician B. P. Konstantinov 10 March 1966. Orig. art. has:

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537:

UDC: 539.216.22:539.216.22: 536

ACC NR: AP7003648

2 figures and 16 formulas.

SUB CODE: 20/ SUBM DATE: 03Feb66/ OTH REF: 002

Card 2/2

BALODIS, Yu.N., PASYNKOV, V.V.

Low-voltage thin-film nonlinear elements. Izv. vys. uoneb. zav., prib. 8 no.[illegible] '65. (MIRA 18:[illegible])

1. Leningradskiy elektrotekhnicheskiy institut imeni Ul'yanova (Lenina). Rekomendovana kafedroy dielektrikov i poluprovodnikov.

KURNOSOV, Anatoliy Ivanovich; YUDIN, Vladimir Vasil'yevich; ALFEROV, Zh.I., kand. tekhn. nauk, retsenzent; MITROFANOV, V.V., inzh., retsenzent; PASYNKOV, V.V., prof., doktor tekhn. nauk, nauchn. red.; CHFAS, M.A., red.; KVOCHKINA, G.P., red.

[Technology of the manufacture of semiconductor devices] Tekhnologiia proizvodstva poluprovodnikovykh priborov. Leningrad, Sudostroenie, 1965. 247 p. (MIRA 18:8)

L 5440-66
EWT(1)/EPA(s)-2/EWT(m)/EWP(t)/EWP(b) IJP(c) JD/WW/JG
ACCESSION NR: AP5019763 UR/0051/65/019/002/0281/0283
535.376

AUTHOR: Golovkina, E. D.; Pasynkov, V. V.; Khanina, G. N.

TITLE: Low-voltage electroluminescence of evaporated ZnS-Cu, Mn, Cl films in a dc field

SOURCE: Optika i spektroskopiya, v. 19, no. 2, 1965, 281-283

TOPIC TAGS: electroluminescence, zinc compound optic material, luminor, volt ampere characteristic, optic brightness

ABSTRACT: The authors obtained thin-film specimens which became electroluminescent in a low-voltage dc field by evaporating the ready-made EL-580 electroluminor in vacuum (~5 x 10^{-5} mm Hg) on a heated glass substrate with SnO_2 layer. The construction of the resultant luminor film is shown in Fig. 1 of the Enclosure, which includes the volt-ampere and voltage-brightness characteristics. The over-all film thickness was 3--5 μ. The volt-ampere characteristics were measured by a standard technique. The brightness was measured with a selenium photocell. The specimens produced could be divided into two groups, one of which (I) became electroluminescent when the aluminum electrode was positive, and the other (II) became electroluminescent with both negative and positive polarity. The groups differed in

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brightness, voltage required to produce luminescence, current-carrying capacity, aging, emission intensity, and other characteristics. All these effects can be related to changes in the electrical resistance and thickness of the dielectric layer between the electrode and the luminor. Most promising from the point of view of practical applications is operation with negative polarity on the metallic electrode. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 03Jun64 ENCL: 01 SUB CODE: OP, SS

NR REF SOV: 001 OTHER: 001

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ACCESSION NR: AP5019763

ENCLOSURE: 01

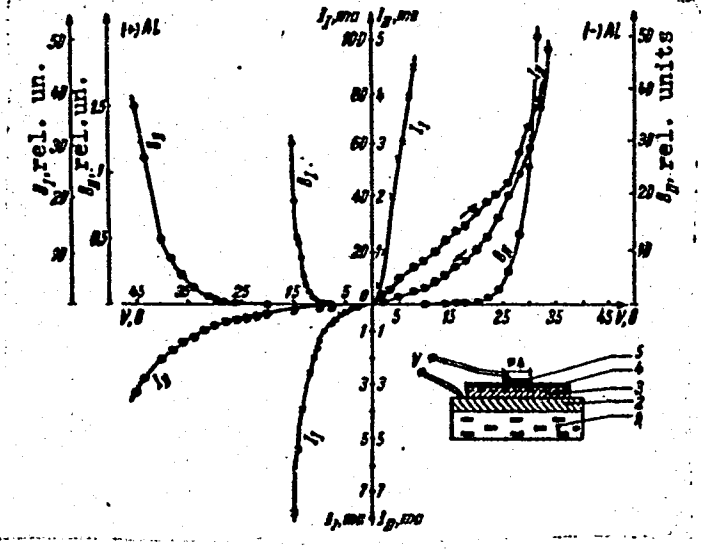

Fig. 1. Volt-ampere and voltage vs. brightness characteristics of electroluminescent thin films after 3 hours' operation at the highest voltage and at a given polarity. The structure of the film is shown in the lower right corner of the figure.

1 - Glass substrate,

2 - conducting layer,

3 - evaporated electroluminor,

4 - insulating SiO layer,

5 - aluminum electrode.

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L 57603-65 EWT(1)/EEC(b)-2/EWA(h) Peb/Pl-4

ACCESSION NR: AR5000577 3/0271/64/000/009/B016/B017

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29
B

SOURCE: Ref. zh. Avtomat. telemekh. i vychisl. tekhn. Sv. t., Abs. 9B115

AUTHOR: Korovitskiy, S. L.; Pasynkov, V. V.; Savel'yev, G. A.

TITLE: Investigation of the effect of temperature on the current-voltage characteristics of varistors intended for computing equipment

CITED SOURCE: Izv. Leningr. elektrotekhn. in-ta, vyp. 53, 1964, 301-307

TOPIC TAGS: varistor, nonlinear semiconductor resistor, semiconductor, current voltage characteristic, computer

TRANSLATION: In using the nonlinear semiconductor resistors (varistors) as voltage function generators in the computing equipment, it is necessary that the error of reproduction of the function in question be independent of ambient temperature variation. The effect of temperature on the current-voltage characteristics of a silicon-carbide varistor, in a working range of +20 + 80C, has been investigated; this range is necessary for correct selection of the temperature-compensation method. To characterize the temperature effect on the varistor conductivity, a temperature coefficient of resistance $k_r = \frac{1}{R_{st}} \frac{\partial R_{st}}{\partial T}$ or a temperature coefficient

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of current $k_i = \frac{1}{i}\frac{\partial i}{\partial T}$ are introduced; here, $k_{r_{st}} = k_i$ or U = const (U is the applied voltage, r_{st} is the static resistance). Specimens of three types NPS-20-5-2, NPS-30-3-2,3, and NPS-70-1-2-,9 were measured by means of a PPTV-1 potentiometer; an M-195 galvanometer was used as a balance indicator (C = 4×10^{-9} amp per one division). The outfit has a current error of 10^{-8} amp and a voltage error of 1 mv. The specimens were held in a thermostat having an error of 0.1C. The measured current-voltage characteristics permit to state that the variation of the varistor temperature results not only in an increased conductivity of the silicon-carbide but also causes a variation in the nonlinearity coefficient of the varistor. Considering that the varistor nonlinearity mechanism is due to (a) the phenomenon of closure of contact gaps between the grains as the applied voltage increases, (b) microheating of the contact points between the grains which facilitates the electron emission, (c) increase in the conductance of contact layer and their partial breakdown, and (d) nonlinearity of p-n junction conductance at the grain contacts, it is assumed that, with a temperature rise caused by the inequality between the thermal expansion coefficient of silicon carbide (4.7×10^{-6} per degree C) and that of ultraporcelain 5.5×10^{-6} per degree C), internal mechanical stresses may appear in the varistor which may change the conditions of contact between the grains. The discovered dependence of the nonlinearity

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ACCESSION NR: AR5000577

factor on temperature and the dependence of k_{rst} on voltage modify the problem of temperature compensation of the varistors used in the computing equipment. The effect of voltage on k_{rst} has to be taken into account, and the compensation methods are to be sought in which the resistor characteristics could be kept constant in the entire range of applied voltages. Four illustrations. Bibliography: 5 titles.

ENCL: 00

SUB CODE: DP, EC

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L 63644-65 EWT(m)/EWP(i)/EWP(b)/EWP(t) JD UR/0146/65/008/003/0011/0016
ACCESSION NR: AP5016461 621.3.032

11
12
B

AUTHOR: Balodis, Yu. N.; Pasynkov, V. V.

TITLE: Low-voltage thin-film nonlinear elements

SOURCE: IVUZ. Priborostroyeniye, v. 8, no. 3, 1965, 11-16

TOPIC TAGS: thin film nonlinear element, silicon film, symmetric thin film, low voltage nonlinear element

ABSTRACT: G. Gass showed (Z. anorg. Chem., 1948, B. 257, S. 166) that thin amorphous films can be obtained by vacuum condensation of Si vapor onto cold glass supports. By sandwiching such films between thin aluminum strips the authors produced thin nonlinear elements whose static voltampere characteristics were symmetrical. Production procedures, the dependence of the nonlinearity coefficient on the applied voltage, and the dynamic characteristics of samples at frequencies of 50—20,000 cps are also given. Similar symmetric devices were studied by G. Feldman (Electronics, 1964, v. 37, no. 4). Orig. art. has: 2 formulas and 3 figures. [08]

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L 63644-65

ACCESSION NR: AP5016461

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut im. V. I. Ul'yanova (Lenina) (Leningrad Electrical Engineering Institute)

SUBMITTED: 06Jun64 ENCL: 00 SUB CODE: EC

NO REF SOV: 001 OTHER: 002 ATD PRESS: 4055

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BOGOROD[illegible]

Electric properties of oxides [illegible]
DSSR 160 no.3:578-58[illegible]

.. Leningradskiy elektrotekhnicheskiy institut im. [illegible]
Lenina. Submitted August [illegible]

KOROVITSKIY, S.L.; PASYUK, V.V.

Simulation of exponential and logarithmic functions by means of nonlinear semiconductor resistors. Izv.vys.ucheb.zav.; prib. no.2:74-81 '64. (MIRA 18:)

1. Leningradskiy elektrotekhnicheskiy institut imeni Ul'yanova (Lenina). Rekomendovana kafedroy dielektrikov i poluprovodnikov.

ACCESSION NR: AP4037466 S/0146/64/007/002/0074/0081

AUTHOR: Korovitskiy, S. L.; Pasy*nkov, V. V.

TITLE: Simulation of exponential and logarithmic functions by nonlinear semiconductor resistors

SOURCE: IVUZ. Priborostroyeniye, v. 7, no. 2, 1964, 74-81

TOPIC TAGS: function, exponential function, logarithmic function, function simulation, function simulation by varistors

ABSTRACT: The theory of a semiconductor-type exponential-function generator and its experimental verification are reported. The current-voltage characteristic of a silicon-carbide nonlinear resistor is described by: $i = \sigma_0 e^{b\sqrt{U}} U$, where σ_0 is the weak-field electric conductivity and b is a nonlinearity-characterizing constant. The parallel connection of nonlinear and linear resistors proved to possess the required exponential-function characteristic $i = ka^{m\psi}$. A numerical

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ACCESSION NR: AP4037466

calculation of the exponential-function generator is supplied. Experimental verification was conducted on a hookup whose simplified circuit is shown in Enclosure 1. By inserting the above generator into the feedback circuit of a computing amplifier, a logarithmic-function generator may be obtained. Orig. art. has: 4 figures, 9 formulas, and 4 tables.

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut im. V. I. Lenina (Leningrad Electrotechnical Institute)

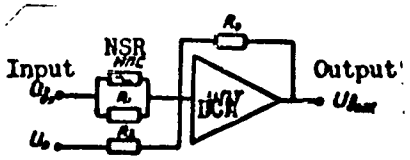
SUBMITTED: 31Oct63 DATE ACQ: 05Jun64 ENCL: 01

SUB CODE: EC NO REF SOV: 005 OTHER: 000

Card 2/3

ACCESSION NR: AP4037466

ENCLOSURE: 01



A simplified connection diagram of an exponential-function generator

NSR - nonlinear semiconductor resistor;
DCA - d-c amplifier
U_0 - bias voltage
R_2 - operating point setting resistor

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BOGORODITSKIY, Nikolay Petrovich; KAL'MENS, Natan Vladimirovich; NEYMAN, Moisey Isakovich; POLYAKOVA, Natal'ya Lavrent&yevna; ROTENBERG, Boris Abovich; SALITRA, Dmitriy Borisovich; AFANAS'YEVA, Margarita Aleksandrovna; FRIDBERG, Illariy Dmitriyevich; Prinimala uchastiye MUDROLYUBOVA, L.P.; PASYNKOV, V.V., red.; ZHITNIKOVA, O.S., tekhn. red.

[Ceramic materials in radio engineering] Radiokeramika. Moskva, Gosenergoizdat, 1963. 553 p. (MIRA 16:12)
(Radio--Equipment and supplies)
(Electric engineering--Materials)
(Ceramic materials)

GAYLISH, Ye.A.; DROZDOV, N.G.; YEVSTROP'YEV, K.S.; KAZARNOVSKIY, D.M.; NEYMAN, L.R.; PASYNKOV, V.V.; PRIVEZENTSEV, V.A.; RENNE, V.T.; TAREYEV, B.M.

N.P. Bogoroditskii; on his sixtieth birthday and the thirty-fifth anniversary of his theoretical and educational work. Elektrichestvo no.7:87-88 Jl '62. (MIRA 15:7)
(Bogoroditskii, Nikolai Petrovich, 1902-)

L 29962-65 EWT(m)/EWP(t)/EWP(b) IJP(c) JD/JG

ACCESSION NR: AP5005886 S/0020/65/160/003/0578/0581

AUTHOR: Bogoroditskiy, N.P.; Pasynkov, V.V.; Rifat Rizk Basili; Volokobinskiy, Yu. M.

TITLE: Electrical properties of oxides of rare-earth elements

SOURCE: AN SSSR. Doklady, v. 160, no. 3, 1965, 578-581

TOPIC TAGS: rare earth element, rare earth element oxide, electrical property, electrical resistivity, electrical conductivity loss tangent, dielectric constant, optical dielectric permittivity

ABSTRACT: The electrical properties of oxides of rare-earth elements (r-e) have been investigated at temperatures up to 1300C. The temperature dependence of resistivity (see Fig. 1 of the Enclosure) showed that Tb_2O_3 and PrO_2 are semiconductors, while other r-e oxides can be classed as dielectrics. All r-e oxides have electron conductivity. Ion conductivity constitutes less than 0.25% of the total conductivity. The room temperature dielectric constant(ε) of Gd_2O_3, Ho_2O_3, and Yb_2O_3 is independent of the frequency in the 50-kc to 30-mc frequency range, and

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ACCESSION NR: AP5005886

changes very slightly in the 20—300C range at a frequency of 1 mc. At 20—300C, the temperature coefficient of ε for Ho_2O_3 is practically zero, which makes Ho_2O_3 suitable for making capacitors with stable properties. Yb_2O_3 appears to be a likely material for making thin-film nonlinear elements. It has a cubic structure, is stable, and does not undergo phase transformations with heating in air up to the melting temperature. Metallic Yb has the lowest melting and vaporization temperatures (824 and 1427C) among the rare metals, which makes it the most suitable for making thin films by vacuum evaporation and subsequent oxidation. Orig. art. has: 2 figures and 4 tables.

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut im. V. I. Ul'yanova-Lenina (Leningrad Electrotechnical Institute)

SUBMITTED: 01Aug64 ENCL: 01 SUB CODE: IC, EM

NO REF SOV: 001 OTHER: 001 ATD PRESS: 3195

Card 2/3

L 29962-65

ACCESSION NR: AP5005886

ENCLOSURE: 01

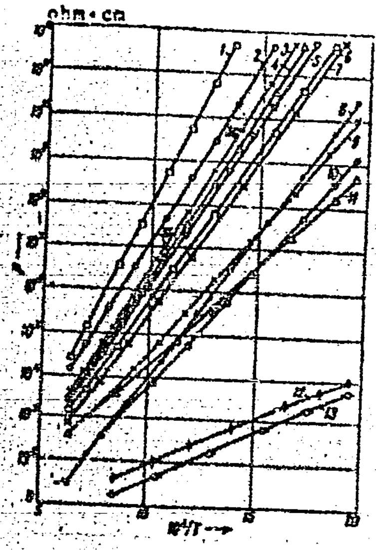

Fig. 1. Temperature dependence of resistivity

1 - Lu_2O_3; 2 - Er_2O_3; 3a - Tu_2O_3; 3b - Gd_2O; 4 - Dy_2O_3; 5 - Yb_2O_3; 6 - Ho_2O_3; 7 - La_2O_3; 8 - CeO_2; 9 - Sm_2O_3; 10 - Nd_2O_3; 11 - Eu_2O_3; 12 - Tb_2O_3; 13 - PrO_2.

Card 3/3

PASYNKOV, V. V., doktor tekhn. nauk, prof.; CHIRKIN, L. K., kand. tekhn. nauk

Third Interuniversity Conference on Present Dielectrics and Semiconductors Technology. Izv. LETI 59 no.46:348-350 '62. (MIRA 15:10)

(Dielectrics—Congresses)
(Semiconductors—Congresses)

S/058/62/000/011/048/061
A160/A101

AUTHORS: Pasynkov, V. V., Chirkin, L. K.

TITLE: The Third Inter-University Conference on the Present State of Dielectric and Semiconductor Engineering, 13 - 18 June 1960

PERIODICAL: Referativnyy zhurnal, Fizika, no. 11, 1962, 1, abstract 11-4-1k ("Izv. Leningr. elektrotekhn. in-ta", no. 46, 1961, 348 - 350)

TEXT: The Third Inter-University Conference on the Present State of Dielectric and Semiconductor Engineering was held in LETI from 13 to 18 June 1960. The conference heard and discussed 178 reports. A total of 1,249 persons, representatives of 34 towns of the USSR and of the east-bloc countries participated in it. It is noted that side-by-side with great achievements in the work of higher educational institutions on dielectrics and semiconductors, there are serious deficiencies, especially inadequate work done by higher educational institutions in the field of ferrite application. Mentioned in the conference resolution was the necessity to increase scientific research work, especially in the field of heat-resisting insulation, inorganic polymers, organic semiconductors,

Card 1/2

S/058/62/000/[illegible]
The Third Inter-University Conference on the... A150/A101

highly-resistant materials, the reliability of semiconductor devices, and [illegible] ing their stability and temperature work range. The conference decided [illegible] mend that the Fourth Conference be called for 1962.

L. Sh.

[Abstracter's note: Complete translation]

Card 2/2

PASYNKOV, Vladimir Vasil'yevich; OKUNEV, Yuriy Timofeyevich; FREGER, D.P., red.izd-va; BELOGUROVA, I.A., tekhn. red.

[Nonlinear semiconductor resistors (varistors)] Nelineinye poluprovodnikovye soprotivleniia (varistory). Leningrad, Leningr. dom nauchno-tekhn. propagandy, 1963. 34 p. (Seriia: "Poluprovodniki," no.11) (MIRA 16:11)
(Semiconductors) (Electric resistors)

PASYNKOV, Ye.I.; SOROKOUMOV, V.N. (Moskva)

Niels Finsen (100th anniversary of his birth). Vop. kur., fizioter. i lech. fiz. kul't. 26 no.5:473-474 S-O '61.
(MIRA 14:11)
(FINSEN, NIELS RIJBERG, 1860-1904)

PASYNKOV, Ye.I.

[Textbook on physical therapy] Uchebnik fizioterapii. Moskva, Medgiz, 1957. 291 p. (MIRA 11:6)
(PHYSICAL THERAPY)

PIONTKOVSKIY, I.A., professor, redaktor; ANIKIN, M.N., dotsent, redaktor; VARSHAVER, G.S., dotsent, redaktor; MANIKOV, M.Ye., starshiy nauchnyy sotrudnik, redaktor; OBROSOV, A.N., professor, redaktor; PASYNKOV, Ye.I., professor, redaktor.

[Problems of physiotherapy; joint-plenum of the administration of the All-Union Society of Physiotherapists and the Scientific Council of the State Physiotherapy Scientific Research Institute of the Ministry of Health of the R.S.F.S.R.] Voprosy fizioterapii; ob"edinennyi plenum pravleniia Vsesoiuznogo obshchestva fizioterapevtov i uchenogo soveta Gosudarstvennogo nauchno-issledovatel'skogo instituta fizioterapii Ministerstva zdravookhraneniia RSFSR. Moskva, 29 iiunia- 2 iiulia 1951 g. Moskva, Medgiz, 1953. 239 p. (MLRA 7:2)

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PASYNKOV, Ye.I.; RUBIN, L.R.; GLASKO, N.M., redaktor; GLUKHOYEDOVA, G.A., tekhnicheskiy redaktor

[General physical therapy; brief course] Obshchaia fizioterapiia; kratkii kurs. Izd.3-e. Moskva, Gos.izd-vo meditsinskoi lit-ry, 1955. 253 p. (MLRA 9:2)

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"Penicillin in Prophylactics of Suppuration of Postoperative Wounds," Voyenno-Med. Zhur., No. 6, p. 32, 1955.

PASYNKOV, Yefim Izrailevich. Prinimal uchastiye SHAMRAYEVSKIY, S.M., dots.; MANIKOV, M.Ye., red.; ZUYEVA, N.K., tekhn. red.

[General physiotherapy] Obshchaia fizioterapiia. Moskva, Medgiz, 1962. 350 p. (MIRA 15:3)
(PHYSICAL THERAPY)

PASYNKOV, Yefim Izrailevich. Prinimali uchastiye: SHAMGAYEVSKIY, S.F., dots.; PRIBYLOV, K.N., kand. med. nauk; MAN[illegible], M.Ye., red.

[Physiotherapy] Fizioterapiia. Izd.2. Moskva, Meditsina, 1966. 310 p. (MIRA 19:1)

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I.A.Piontkovskii. Vop.kur.,fizioter. i lech. fiz. kul't.
27 no.5:468-469 S-O'63. (MIRA 16.9)
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SO: Sum. No 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

PASYNKOVA, K.N., kand.med.nauk

Use of a new Soviet cholagigic substance oxaphenamide in the compound treatment of cholecystitis. Terap.arkh. no.7:82-84 Jl '62. (MIRA 15:8)

1. Iz kafedry fakul'tetskoy terapii (zav. - prof. B.P. Kushelevskiy) Sverdlovskogo meditsinskogo instituta.
(SALICYLAMIDE) (GALL BLADDER--DISEASES)

PASYNKOVA, K.N., kand.med.nauk

Use of a new Soviet cholagigic substance oxaphenamide in the compound treatment of cholecystitis. Terap.arkh. no.7:82-84 Jl '62. (MIRA 15:8)

1. Iz kafedry fakul'tetskoy terapii (zav. - prof. B.P. Kushelevskiy) Sverdlovskogo meditsinskogo instituta.
(SALICYLAMIDE) (GALL BLADDER--DISEASES)

KUSHELEVSKIY, B.P., zasluzhennyy deyatel' nauki, prof.; PASYNKOVA, K.N., kand.med. nauk (Sverdlovsk)

Botkin's cholecysto-coronary syndrome. Klin. med. 41 no.7: 9-12 Jl '63 (MIRA 16:12)

1. Iz kliniki fakul'tetskoy terapii Sverdlovskogo gosudarstvennogo meditsinskogo instituta.

PASYNKOVA, K.N.

KUSHELEVSKIY, B.P., prof.; PASYNKOVA, K.N., kand.med.nauk

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KORYAGIN, G.A.; KRASNOVA, G.S.; PASYNKOVA, Z.T.; MAKHOV, D.S.

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1. Rabotniki Novosibirskoy distantsii Zapadno-Sibirskoy dorogi.

PASYNOK, M.V.; FRISH, V.A. (Sverdlovsk); KUPRIN, M.

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(MIRA 14:5)

1. Nedryanskaya shkola Kiyevskiy oblasti (for Pasynok). 2. 14-ya shkola g. Kurgana (for Kuprin).
(Physical geography—Study and teaching)