Galvanomagnetic phenomena ....

of components of permanance σ, and expressions for the Hall coefficient and changes of resistance in longitudinal and transverse magnetic fields are derived for the three first cases of extrema location. For the case of arbitrary magnetic fields a more general expression is cited for current density

$$I_i = S_{ik}(\vec{H}) E_k \qquad (19)$$

and detailed formulas are provided for all components of tensor S_{ik}. To obtain galvanomagnetic coefficients, Eq.(19) should be inverted. This is done, as an example, for one particular case of current and magnetic field directions. Formulas are presented in the asymptotic case of strong magnetic fields for the Hall coefficient

$$R\ (H \longrightarrow \infty) = 1/ecN$$

and for all galvanomagnetic coefficients ρ. In conclusion indications are given as to the practical application of the theoretical formulas derived to analysis of experimental data on the resistance measured in the longitudinal magnetic field and to

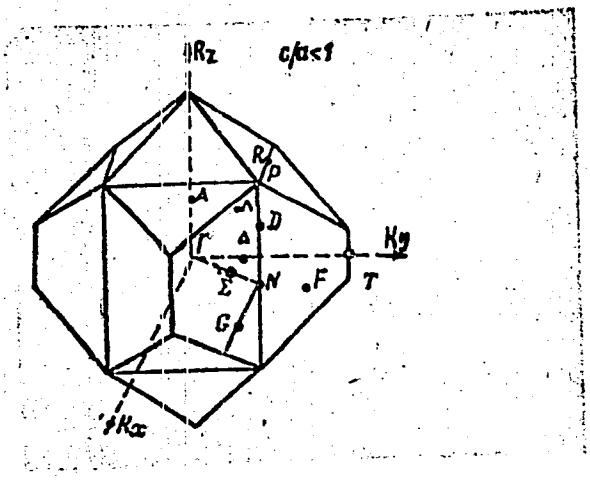
Card 3/4

S/233/62/000/006/007/008
E010/E420

Galvanomagnetic phenomena ...

the determination of the extrema location. There is 1 figure.

Figure.



Card 4/4

Physico-chemical properties and structure of monocrystalline samples of $ZnSiAs_2$. A. A. Vaypolin, N. A. Goryunova, E. O. Osmanov.

Investigation of macrocrystalline $ZnSiP_2$. N. A. Goryunova, A. A. Vaypolin, Yu. V. Rud'.

Some properties and zone structure of the ternary compound $CdGeAs_2$. F. M. Gashimzade, N. A. Goryunova, E. O. Osmanov.

Electrical properties of monocrystalline samples of $ZnSnAs_2$. N. A. Goryunova, F. P. Kesamanly, D. N. Nasledov, Yu. V. Rud'.

Investigation of properties of $ZnGeP_2$ and $CdGeP_2$. N. A. Goryunova, N. K. Takhtareva, I. I. Tychina.

On the question of the existence of homogeneous many-component tetrahedral phases. G. K. Aberkiyeva, A. A. Vaynolin, N. A. Goryunova.

X-Ray investigation of certain compounds of the type $A^{II}B^{IV}C_2^{VI}$. A. A. Vaynolin, E. O. Osmanov, Yu. V. Rud', I. I. Tychina, A. F. Lindin, N. A. Goryunova, A. F. Tyavin'sh.

GASHIMZADE, F.M.

Energy spectrum of holes in semiconductors structured as chalcopyrite. Izv. AN Azerb. SSR.Ser. fiz.-mat. i tekh. nauk no.3:67-76 '63. (MIRA 16:11)

L 10695-63 EWT(1)/EWG(k)/BDS/EEC(b)-2--AFFTC/ASD/ESD-3--Pz-4--AT/IJP(C)

ACCESSION NR: AP3001514 S/0233/63/000/001/0133/0136

64

AUTHOR: Gashimzade, F. M.

TITLE: Farady effect on free carriers in the semi-conducting compound TlSe

SOURCE: AN AzerbSSR. Izv. Seriya fiziko-matematicheskikh i tekhnicheskikh nauk, no. 1, 1963, 133-136

TOPIC TAGS: Faraday effect, TlSe semiconductor compound, crystals with tetragonal symmetry

ABSTRACT: Formulas are obtained for the angle of rotation of the polarization plane in crystals with tetragonal symmetry, under the influence of a weak magnetic field with electromagnetic wave propagation below the optical axis of the crystal. "The author expresses recognition to Yu. M. Sedov for proposing the theme of this work." Orig. art. has: 12 formulas.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 12 Jun 63 ENCL: 00

SUB CODE: 00 NO REF SOV: 002 OTHER: 002

Card 1/1 ja/

S/181/63/005/003/027/046
B102/B180

AUTHOR: Gashimzade, F. M.

TITLE: Theory of current drag by phonons in semiconductors with tetragonal symmetry

PERIODICAL: Fizika tverdogo tela, v. 5, no. 3, 1963, 883-885

TEXT: In connection with Herring's investigations (Phys. Rev. 95, 954, 1954; 96, 1163, 1954) and the fundamental calculations by V. L. Gurevich and Yu. A. Firsov (FTT, 4, 530, 1962) the author calculates the effect of random mutual intersections of the acoustical branches of the phonon spectrum on the temperature dependence of the phonon component of the thermo-e.m.f. in tetragonal crystals. It can be shown that weak anisotropy of the phonon part of the thermo-e.m.f. will arise at low temperatures if there is no random intersection of the vibrational branches. There is 1 figure.

S/181/63/005/003/027/046
B102/B180

Theory of current drag by phonons in...

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR, Leningrad (Physicotechnical Institute imeni A. F. Ioffe AS USSR, Leningrad); Institut fiziki AN Az. SSR, Baku (Institute of Physics AS AzSSR, Baku)

SUBMITTED: October 25, 1962

Card 2/2

S/181/63/005/004/038/047
B102/B186

AUTHOR: Gashimzade, F. M.

TITLE: Band structure of $A^{II}B^{IV}C_2^V$-type semiconductor compounds with chalcopyrite structure

PERIODICAL: Fizika tverdogo tela, v. 5, no. 4, 1963, 1199 - 1201

TEXT: Taking $CdInAs_2$ as an example, the characteristics of the band structure of $A^{II}B^{IV}C_2^V$-type semiconductors are discussed on the basis of previously obtained results (cf. e.g. DAN SSSR, 142, 623, 1962; J. Phys. Chem. Sol., 1, 249, 1957; Mamayev, Avtoref. diss. LGPI im. A. I. Gertsena, 1962) and the structural properties are compared with those of $A^{III}B^{IV}$-type compounds (InSb or InAs). It can be shown that the conduction band is not parabolic but has spherical symmetry by reason of its interaction with the valence band. This interaction, which is so strong because of the narrowness of the forbidden band, also leads to a reduction of the carrier effective masses. Especially the electron effective mass m* is a function of temperature and concentration (as it is the case in InAs or InSb). In

Card 1/2

S/181/63/005/004/038/047
B102/B186

Band structure of...

the compounds considered here m* is shown to be weakly anisotropic but in first approximation it may be considered isotropic (as in InAs or InSb). Assuming $\Delta \approx 0.45$ ev $P^2 = 0.44$ at.un. (matrix element of dipole transition) and $E_g = 0.26$ ev one obtains $m^* = 0.014\ m_o$; m^* increases with conduction band filling, i.e. with electron concentration and temperature. Since, however, also the forbidden band width is temperature-dependent ($E_g = 0.23$ ev at $300^\circ K$), the reduction of E_g with increasing temperature leads to a reduction of m^*. These two effects are responsible for the minimum in the $m^*(T)$-curve.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR Leningrad
(Physicotechnical Institute imeni A. F. Ioffe AS USSR, Leningrad)

SUBMITTED: August 11, 1962 (initially)
December 12, 1962 (after revision)

Card 2/2

ACCESSION NR: AP4028425 S/0181/64/006/004/1030/1033

AUTHORS: Gashimzade, F. M.; Gubanov, A. I.

TITLE: Density of electron states in the "tail" of the band in amorphous semiconductors

SOURCE: Fizika tverdogo tela, v. 6, no. 4, 1964, 1030-1033

TOPIC TAGS: electron density, semiconductor, band theory, Gaussian distribution, Green function

ABSTRACT: The authors' purpose was to obtain an expression for density of electron states in the tail of the semiconducting band, i.e., in the zone where the edge becomes diffuse. They investigated the relative role of close-range and long-range orders, considering two cases: 1) small distortions of the neighboring cells are so correlated that the total relative deformation of cells in any part of the crystal is less than unity and long-range order is preserved; this corresponds to an unordered crystalline alloy, not to an amorphous body; 2) deformation changes weakly from cell to cell, close-range order prevailing in small zones, but, where cells are farther apart, the close-range order may be strongly

Card 1/2

ACCESSION NR: AP4028425

differentiated and long-range order may be destroyed; this case corresponds to an irregularly deformed crystal more commonly than to a true liquid. Considering these two cases, the authors find that the density of state in an amorphous body, far from the base of the band in the crystal, declines exponentially. It may be stated that the "tail" has a Gaussian distribution, and the disperse diffusion of the band edge is a more fundamental effect than the shift of the band edge. The "tail" of the band in amorphous semiconductors is a local fluctuating level. Orig. art. has: 15 formulas.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe AN SSSR, Leningrad (Physicotechnical Institute AN SSSR)

SUBMITTED: 30Sep63 DATE ACQ: 27Apr64 ENCL: 00

SUB CODE: NP, SS NO REF SOV: 004 OTHER: 002

Card 2/2

S/0048/64/028/006/1085/1089

ACCESSION NR: AP4041383

AUTHOR: Vaypolin, A.A.; Gashimzade, F.M.; Goryunova, N.A.; Kesamanly*, F.P.; Osmanov, E.O.; Rud', Yu.V., Nasledov, D. N. (Doctor of physico-mathematical sciences)

TITLE: Investigation of the physical-chemical and electric properties of crystals of some ternary semiconductor compounds of the $A^{II}B^{IV}C_2^V$ type [Report, Third Conference on Semiconductor Compounds held in Kishinev 16 to 21 Sep 1963]

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.28, no.6, 1964, 1085-1089

TOPIC TAGS: semiconductor, electric conductivity, Hall effect, crystal structure, cadmium compound, zinc compound, carrior mobility

ABSTRACT: Single crystals of the following semiconductors were obtained and their properties were investigated: $CdGeAs_2$, $ZnSiAs_2$, $CdSiP_2$, $ZnSnAs_2$ and $ZnSiP_2$. The method of synthesis is not described. X-ray diffraction showed the specimens to be single crystals with the chalcopyrite structure. The crystallography of these materials is discussed briefly, and the lattice parameters, density, hardness and melting point are tabulated. Both p-type and n-type crystals of $CdGeAs_2$ were obtained. Only p-type conductivity was found in the other two arsenides, and only n-type in

Card 1/3

ACCESSION NR: AP4041383

$ZnSiP_2$. Results of conductivity and Hall coefficient measurements over the temperature range from 90 to 600°K are presented graphically for an n-type $CdGeAs_2$ crystal, a p-type $CdGeAs_2$ crystal, and several $ZnSnAs_2$ crystals with different but unspecified impurity contents. The Hall coefficient of the n-type $CdGeAs_2$ was independent of temperature, and the conductivity increased with increasing temperature above about 150°K. The concentration of conduction electrons was approximately 10^{17} cm^{-3} and their mobility was 10^3 $cm^2/Vsec$. With the aid of thermoelectric measurements, the effective mass was estimated to be 0.027 electron masses. The Hall coefficient of the p-type $CdGeAs_2$ decreased rapidly with increasing temperature above 200°K and changed sign at 520°K. Neither the conductivity nor the Hall coefficient of the $ZnSnAs_2$ crystals varied greatly with temperature. The Hall coefficient exhibited a maximum at about 200°K which became less pronounced and shifted toward higher temperatures with increasing impurity content. This is ascribed to conduction in the impurity band. The band structure of the materials is discussed. The effective masses of the carriers in the conduction band and the V_2 and V_3 valence bands were calculated, and these and the gap energy are tabulated. All these quantities increased with decreasing molecular weight. The energy gap ranged from 0.53 to 2.5 eV, and the effective masses from 0.020 to 0.096, 0.035 to 0.19, and 0.12 to 0.49 electron masses for the C, V_2 and V_3 bands, respectively. Orig.art.has: 1 formula, 6

Card 2/3

ACCESSION NR: AP4041383

figures and 2 tables.

ASSOCIATION: Fiziko-tekhnicheskiy institut im.A.F.Ioffe Akademii nauk SSSR (Physico-technical Institute, Academy of Sciences, SSSR)

SUBMITTED: 00 ENCL: 00

SUB CODE: SS,IC NR REF SOV: 007 OTHER: 006

Card 3/3

L 52520-65 EWT(1)/T/EWA(h) Pz-6/Pab IJP(c) AT UR/0181/65/007/004/1114/1118
ACCESSION NR: AP5010721

AUTHOR: Askerov, B. M.; Gashimzade, F. M.

TITLE: Singularities of the conduction-electron spectrum in semiconductors with ionic lattice in a strong magnetic field

SOURCE: Fizika tverdogo tela, v. 7, no. 4, 1965, 1114-1118

TOPIC TAGS: electron spectrum, conduction spectrum, ionic crystal, semiconductor crystal, quantizing magnetic field, Green function, electron state density

ABSTRACT: The method of causal Green's functions is used to calculate the density of the states of electrons in a quantizing magnetic field, with allowance for interaction with the optical phonons. The calculations show that the state density can oscillate in regions near the Fermi limit, and that the oscillations connected with the Fermi limit and the limiting frequency of the optical phonon are clearly distinguishable, the former taking place at low temperatures and the latter at high temperatures. There is no screening of phonon potential, and a calculation of the coefficient of absorption of light in polar semiconductors of the $A^{III}B^{V}$ type, with

Card 1/2

L 52520-65
ACCESSION NR: AP5010721

2

allowance for the interaction between the carriers and the optical phonons, is found to agree qualitatively with that obtained by others. "The authors thank Yu. M. Seidov for continuous interest and for a discussion of the results." Orig. art. has: 24 formulas.

ASSOCIATION: Institut fiziki AN AzSSR, Baku (Physics Institute, AN AzSSR)

SUBMITTED: 04May64 ENCL: 00 SUB CODE: SS , NP

NR REF SOV: 004 OTHER: 004

Card 2/2

L 14138-66 EWT(1) IJP(c) WW
ACC NR: AP6000866 SOURCE CODE: UR/0181/65/007/012/3631/3634

60
58

AUTHORS: Askerov, B. M.; Gashimzade, F. M.

ORG: Institute of Physics AN AzSSR, Baku (Institut fiziki AN AzSSR)

TITLE: Interband Faraday effect in semiconductors in strong crossed electric and magnetic fields

SOURCE: Fizika tverdogo tela, v. 7, no. 12, 1965, 3631-3634

TOPIC TAGS: Faraday effect, electron transition, semiconductor band structure, dispension equation, dielectric polarization, Green function, absorption coefficient

ABSTRACT: The Faraday effect is calculated in strong crossed electric and magnetic fields for direct interband transitions. The calculations are based on the dispersion relations and use is made of the fact that in the case of weak absorption the angle of rotation of the plane of polarization in the magnetic field can be expressed in terms of the imaginary part of the nondiagonal component of the dielectric tensor of the medium. The Green's function method is

Card 1/2

employed. The polarization operator is calculated by the standard technique, and from the expression for the polarization operator, the angle of rotation of the plane of polarization is calculated. It is shown that in an electric field the oscillation maxima of the allowed transitions are shifted, an additional oscillation maxima due to forbidden transitions appear. The shifts of the maxima are towards the long-wave side. In the case of weak electric fields, the intensities of the allowed and forbidden transitions become comparable for large Landau numbers. In very weak fields the effect of the field is manifest only in a shift of the threshold of the maximum of the angle of rotation towards longer wavelengths. In the long-wave region the angle of rotation has a regular behavior. The expression obtained for the polarization operator makes it also possible to determine the absorption coefficient in crossed fields. Authors thank Ye. V. Kharitonov for a preprint of his paper and Yu. M. Seidov for valuable advice. Orig. art. has: 15 formulas.

SUB CODE: 20/ SUBM DATE: 09Feb65/ ORIG REF: 005/ OTHER REF:005

Card FW 2/2

AMETOV, B.M.; GASHIMZADE, F.M.

Interband Faraday effect in semiconductors in strong crossed electric and magnetic fields. Fiz. tver. tela 7 no. 12:3631-3634 D '65 (MIRA 19:1)

1. Institut fiziki AN AzSSR, Baku.

L 30005-66 IJP(c)

ACC NR: AP5024756 SOURCE CODE: GE/0030/65/011/002/0719/0722

AUTHOR: Askerov, B. M.; Gashimzade, F. M. 66 B

ORG: Institute of Physics, Academy of Sciences of the Azerbaydzhan SSR, Baku

TITLE: Damping of the electron spectrum and magnetooptical effects in semiconductors

SOURCE: Physica status solidi, v. 11, no. 2, 1965, 719-722

TOPIC TAGS: electron hole, semiconductor band structure, magnetooptic effect, crystal imperfection, electron interaction, phonon, electron spectrum

ABSTRACT: A convenient method of determining the oscillation maximum in magnetooptical phenomena is to find the form of the peaks of various interband effects by introducing the interaction of electrons with lattice imperfections directly into the electron spectrum when calculating polarization operator $\Pi(\omega)$. The absorption constant k and the angle of Faraday rotation (θ) are related to $\Pi(\omega)$ by

$$k = -\frac{4\pi}{c n_0 \omega} \operatorname{Im} \Pi(\omega),$$

$$\theta = -\frac{2}{n_0 \omega} \int_0^\infty \left(\frac{\omega}{\omega'}\right)^2 \frac{\operatorname{Im} \Pi_-(\omega') - \operatorname{Im} \Pi_+(\omega')}{\omega'^2 - \omega^2} d\omega'$$

Card 1/3

where ω is the frequency of the incident radiation, n_0 is the refractive index, $\Pi_i(\omega)$ is the polarization operator for the two circularly polarized components of the linearly polarized radiation. The polarization operator is given for the case of direct transitions between two simple parabolic bands in a strong magnetid field by

$$\Pi(\omega) = \frac{4g_0^2}{(2\pi\hbar)^2} \sum_n \int_0^\infty dP_z \left[\omega_g - \omega + (n+1/2)\Omega_r + \frac{P_z^2}{2m_r} + \frac{i}{2\tau_r}\right]^{-1}$$

where g_0 is the coupling constant of the electron with the electromagnetic field of radiation, m_0 is the free electron mass, P is the impulse operator, l a polarization vector of the photon, $\hbar\omega_g$ is the band gap, and $m_r^{-1} = m_e^{-1} + m_h^{-1}; \tau_r^{-1} = \tau_e^{-1} + \tau_h^{-1}$ is a quantity characterizing the damping of the electron spectrum due to interactions with lattice imperfections. The imaginary part of the polarization operator is calculated and evaluated in the quantum limit ($n=n'=0$). The amplitude of the resonance maximum of the absorption constant is

$$\operatorname{Im}\Pi(\omega_{res}) = -\frac{2}{3\sqrt{6}\pi} \frac{e^2 (P^2)_{cv}^2}{m_0^2} \left(\frac{m_r^2}{m_e + m_h}\right)^{1/2} B^{-1/2}.$$

and its half width in the quantum limit is

$$|\Delta\omega| \approx \frac{(m_e + m_h)^{1/2}}{m^{1/2}} B^{1/2}.$$

The form of oscillation maximum for other interband magnetooptical phenomena are similarly found. The case of inelastic interaction of electrons with optical phonons is

L 30005-66

ACC NR: AP5024756

considered under certain restrictions and evaluated at the quantum limit. The absorption constant k as a function of H has a pronounced minimum at $\Omega_r=\omega_0$ connected with a singularity in the density of electron states for polar semiconductors in a strong magnetic field. Orig. art. has: 15 formulas.

SUB CODE: 20/ SUBM DATE: 21Jul65/ ORIG REF: 003/ OTH REF: 003

Card 3/3

ACC NR: AP7001972 SOURCE CODE: GE/0030/66/018/002/0667/0675

AUTHOR: Askerov, B. M.; Gashimzade, F. M.

ORG: Institute of Physics, Academy of Sciences of the Azerbaidzhan SSR, Baku

TITLE: Quantum theory of the electrical conductivity of semiconductors with a nonstandard energy band

SOURCE: Physica status solidi, v. 18, no. 2, 1966, 667-675

TOPIC TAGS: quantum theory, electric conductivity, conduction band, electron spectrum, electric field, magnetic field, valence band, motion equation, linear approximation, tensor, electron scattering, inelastic scattering, SEMICONDUCTOR CONDUCTIVITY

ABSTRACT: The theory developed by Adams and Holstein [E. Adams and T. Holstein, J. Phys. Chem. Solids 10, 254 (1959)] is generalized for the case of an isotropic but nonstandard energy band, such as the conduction band in InSb. The problem of the electron spectrum in crossed electric and magnetic fields is solved, in consideration all the interactions of the conduction band with the valence band. It is shown that in this case, as for a parabolic band, an electric field appears in

Card 1/2

the spectrum within the linear approximation. The solution of the equation of motion for the density matrix shows that the nonparabolity enters into the dissipative current only through the energy conservation law or the scattering process. The general equation for the electrical conductivity tensor is applied for degenerate semiconductors; Shubnikov-de-Haas oscillation conditions are obtained, in consideration of spin splitting of the Landau levels. The positions of the oscillation maxima are calculated. Inelastic electron scattering by optical phonons is analyzed. The conditions for magnetophon resonance are derived for semiconductors with nonstandard energy bands. It is shown that all the maxima of the Gurevich-Firsov oscillations, except the first one, have the natural width. Orig. art. has: 46 formulas and 1 table. [Based on authors' abstract] [NT]

SUB CODE: 20/SUBM DATE: 07Sep66/ORIG REF: 007/OTH REF: 005/

1. GASHIMZADE, M. U.

2. USSR (600)

4. Electric Current Rectifiers

7. Thermal rectification. Trudy Inst. fiz. i mat. AN Azerb. SSR no. 5, 1951.

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

USSR/Physics - Semiconductors, Thermal Mar/Apr 52
Rectification

"Thermal Rectification," M.U. Gashim-Zade, Inst of Phys and Math, Acad Sci Azerbaydzhan SSR

"Iz Ak Nauk, Ser Fiz" Vol XVI, No 2, pp 218-224

Thermal rectification or asym elec cond was 1st detected by Kh. I. Amirkhanov ("Zhur Eksper i Teoret Fiz" Vol XIV, No 6, 195 1944; "Iz Ak Nauk, Ser Fiz" Vol 5, No 4, 5, 1941; "Trudy Sektora Fiz AzFAN" 1, 49 1940). Exptl research by author proved that

220T96

thermal rectification is found in all semiconductors with either electron or hole cond; that the coeff of thermal cond is a function of temp gradient and depends on potential; rectification coeff could be improved by creation of thermal field.

220T96

GASHIM-ZADE, M. U.

KERIMBEKOV, M.B.; GASHIMZADE, N.U.

Study of the blinking of stars. Izv. AN Azerb. SSR. Ser. fiz.-mat. i tekh. nauk no.2:61-64 '63. (MIRA 16:10)

KACHURIN, L. G.; GASHIN, L. I.; OSIPOV, Yu. G.

Control of the structure of crystals growing in a flow of supercooled aerosols. Dokl. AN SSSR 147 no.4:833-834 D '62. (MIRA 16:1)

1. Leningradskiy gidrometeorologicheskiy institut. Predstavleno akademikom A. V. Shubnikovym.

(Aerosols) (Crystals—Growth)

L 55033-65 EWT(1)/FCC/EEC(t) RB/GW

ACCESSION NR: AT5012358 UR/2531/65/000/173/0019/0025

AUTHOR: Gashina, S. B.; Sal'man, Ye. M. (Candidate of physico-mathematical sciences)

TITLE: Peculiarities of the radar characteristics of storm clouds

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 173, 1965. Voprosy radiometeorologii (Problems in radiometeorology), 19-25

TOPIC TAGS: storm cloud identification, storm cloud radar echo, storm cloud structure, storm cloud reflectivity, meteorological radar

ABSTRACT: One of the basic problems of storm forecasting by radar is to localize regions of intense storm activity against the background of the general field of cumulo-nimbus clouds. However, the signs currently used during attempts at physical separation of showers and storms (vertical strength of reflected signals, maximum reflectivity, position of the maximum reflection) are not yet unambiguous. The present study searched for further reliable radar storm-cloud critera which would take into account the cloud dynamics affecting the radar echos. The paper describes the experimental method utilizing a ground and aircraft laboratory, the vertical structure of convection clouds, and radar echo areas of convection clouds. Tests showed that storm clouds representing the final stages of develop-

Card 1/2

L-55033-65

ACCESSION NR: AT5012358

ment of convection clouds a) reflect signals whose vertical reflectivity is only weakly dependent on altitude; b) exhibit stronger reflectivity from the supercooled layer of the cloud only; furthermore, c) the maximum height of radio echo propagation is twice the height of the zero level isotherma; d) the horizontal dimensions of the radar echo are larger than the vertical dimension; and e) the total reflectivity of the cloud volume V

$$Z_{tot} = \int_0^V Z(V)dV,$$

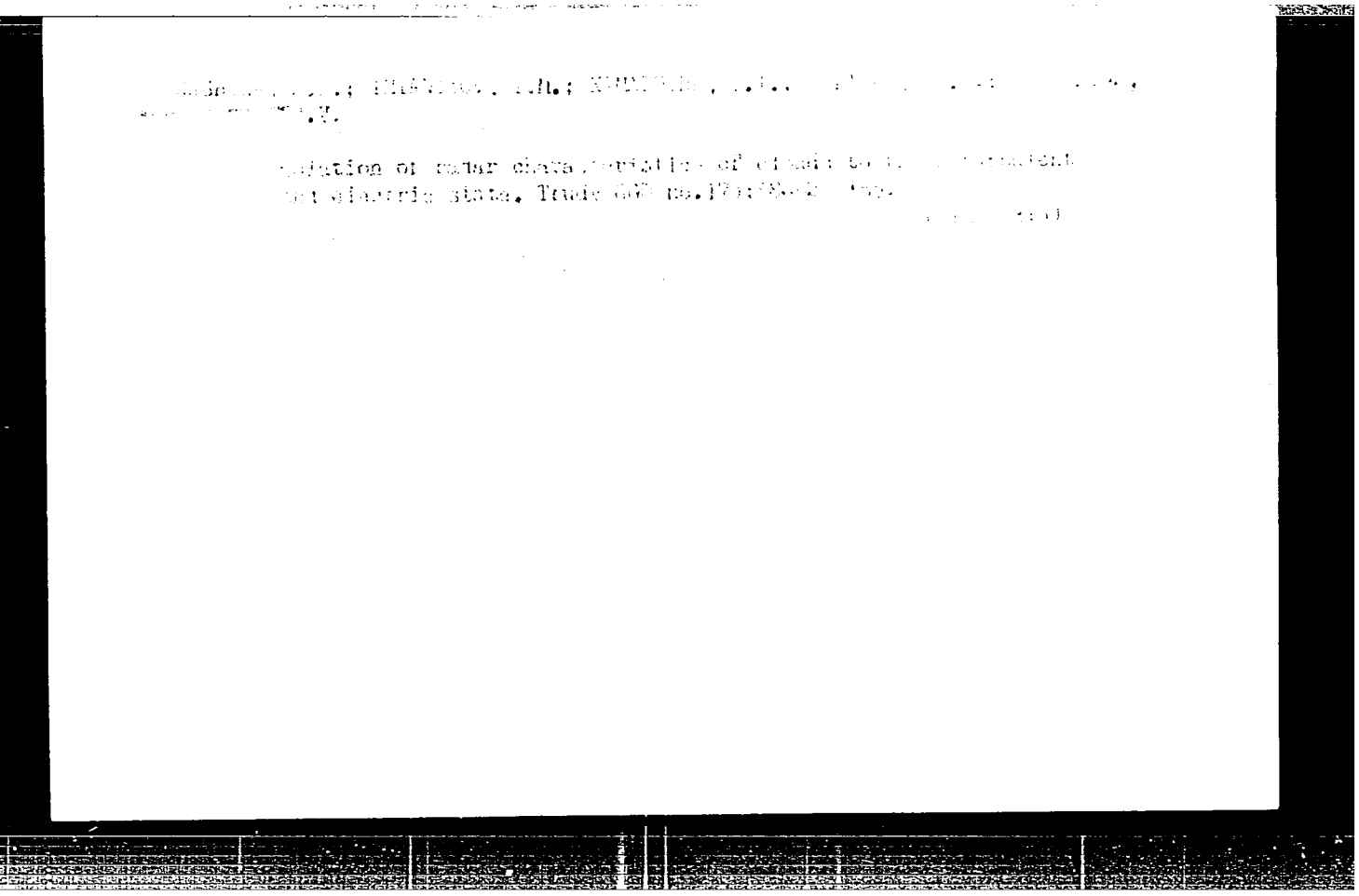
can be used as a useful storm cloud criterion. Orig. art. has: 2 formulas, 3 figures, and 3 tables.

ASSOCIATION: Glavnaya geofizicheskaya observatoriya im. A. I. Voyeykova, Leningrad (Main Geophysical Observatory)

SUBMITTED: 00 ENCL: 00 SUB CODE: ES

NO REF SOV: 002 OTHER: 000

Card 2/2



GASHINA, V. P.

GASHINA, V. P.: "On the anatomy of the ulnar and knee joints of man". Gor'kiy, 19[illegible]5. Gor'kiy State Medical Inst imeni S. M. Kirov. (Dissertation for the Degree of Candidate of Science of Medical Sciences)

SO: Knizhnaya Letopis', No. 41, 8 Oct 55

GASHINCHEV, V.I., gornyy inzh.-elektromekhanik

Analyzing load distribution in the machinery of a dual-engine asynchronous drive of mine hoists. Ugol' Ukr. 5 no.4:14-17 Ap '61. (MIRA 14:4)

(Hoisting machinery)

GASHINSKIY, A.G.

ACHERKAN, Naum Samuilovich, 1872- , doktor tekhnicheskikh nauk, professor, redaktor; BELYAYEV, V.N., dotsent, kandidat tekhnicheskikh nauk; BIDERMAN, V.L., kandidat tekhnicheskikh nauk; BOROVICH, L.S., kandidat tekhnicheskikh nauk; GASHINSKIY, A.G., inzhener; GORODETSKIY, N.Ye., professor, doktor tekhnicheskikh nauk; IVANOV, B.A., professor, doktor tekhnicheskikh nauk; KOLMIYTSEV, A.A., dotsent, kandidat tekhnicheskikh nauk; KRAGEL'SKIY, I.V., professor, doktor tekhnicheskikh nauk; PETRUSEVICH, A.I., doktor tekhnicheskikh nauk; POZDNYAKOV, S.N., dotsent; PONOMAREV, S.D., professor, doktor tekhnicheskikh nauk; PORTUGALOVA, A.A., kandidat tekhnicheskikh nauk; PRONIN, B.A., kandidat tekhnicheskikh nauk; RESHETOV, D.N., professor, doktor tekhnicheskikh nauk; RESHETOV, L.N., professor, doktor tekhnicheskikh nauk; SAVERIN, M.A., professor, doktor tekhnicheskikh nauk; SAVERIN, N.A., kandidat tekhnicheskikh nauk; SLOBODKIN, M.S., inzhener; SPITSYN, N.A., professor, doktor tekhnicheskikh nauk; STOLBIN, G.B., dotsent, kandidat tekhnicheskikh nauk; UMNOV, V.A., inzhener; CHERNYAK, B.Z., kandidat tekhnicheskikh nauk; SHCHEDROV, V.S., dotsent, kandidat tekhnicheskikh nauk.

[Machine parts; collection of materials on calculation and design in two volumes; vol.1] Detali mashin; sbornik materialov po raschetu i konstruirovaniiu. Izd.2., ispr.i dop. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. i sudostroit. lit-ry, 1953- . (MLRA 6:11)

(Machinery--Design)

ACHERKAN, N.S., doktor tekhnicheskikh nauk, professor, redaktor; BELYAYEV, V.N., kandidat tekhnicheskikh nauk, dotsent; BIDERMAN, V.L., kandidat tekhnicheskikh nauk; BOROVICH, L.S., kandidat tekhnicheskikh nauk; GASHINSKIY, A.G., inzhener; GORODETSKIY, I.Ye., doktor tekhnicheskikh nauk, professor; IVANOV, B.A., doktor tekhnicheskikh nauk, professor; KOLOMIYTSEV, A.A., kandidat tekhnicheskikh nauk, dotsent; KRAGEL'SKIY, I.V., doktor tekhnicheskikh nauk, professor; MAZYRIN, I.V., inzhener; NIKOLAYEV, G.A., doktor tekhnicheskikh nauk, professor; PETRUSEVICH, A.I., doktor tekhnicheskikh nauk; POZDNYAKOV, S.N., dotsent; PONOMAREV, S.D., doktor tekhnicheskikh nauk, professor; PORTUGALOVA, A.A., kandidat tekhnicheskikh nauk; PRONIN, B.A., kandidat tekhnicheskikh nauk; RESHETOV, D.I., doktor tekhnicheskikh nauk, professor; RESHETOV, L.N., doktor tekhnicheskikh nauk, professor; SAVERIN, M.A., doktor tekhnicheskikh nauk, professor; SAVERIN, M.M., kandidat tekhnicheskikh nauk; SLOBODKIN, M.S., inzhener; SPITSYN, N.A., doktor tekhnicheskikh nauk, professor; STOLBIN, G.B., kandidat tekhnicheskikh nauk, dotsent; UMNOV, V.A., inzhener; CHERNYAK, B.Z., kandidat tekhnicheskikh nauk; SHCHEDROV, V.S., kandidat tekhnicheskikh nauk, dotsent.

[Machine parts; collection of materials on calculation and design in two volumes] Detali mashin; sbornik materialov po raschetu i konstruirovaniiu v dvukh knigakh. Izd.2. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit.i sudostroit.lit-ry. Vol. 2. 1953. 560 p. (MLRA 6:12)

(Machinery--Design)

GASHINSKIY, A. G.,

HEYLINA, TS.O., inzhener; BLAGONADEZHDIN, V.Ye., inzhener; BOGUSLAVSKIY, P.Ye., kandidat tekhnicheskikh nauk; VORONKOV, I.M., professor, GITINA, L.Ya., inzhener; GROMAN, M.B., inzhener; GOROKHOV, N.V., doktor tekhnicheskikh nauk [deceased]; DENISYUK, I.N., kandidat tekhnicheskikh nauk; DOVZHIK, S.A., kandidat tekhnicheskikh nauk; DUKEL'SKIY, M.P., professor, doktor khimicheskikh nauk [deceased]; DYKHOVICHNYY, A.I., professor; ZHITKOV, D.G., professor, doktor tekhnicheskikh nauk; KOZLOVSKIY, N.S., inzhener; LAKHTIN, Yu.M., doktor tekhnicheskikh nauk; LEVENSON, L.B., professor, doktor tekhnicheskikh nauk [deceased]; LEVIN, B.Z., inzhener; LIPKAN, V.F., inzhener; MARTYNOV, M.V., kandidat tekhnicheskikh nauk; MOLEVA, T.I., inzhener; NOVIKOV, F.S., kandidat tekhnicheskikh nauk; OSETSKIY, V.M., kandidat tekhnicheskikh nauk; OSTROUMOV, G.A.; PONOMARENKO, Yu.F., nauk; REGIRER, Z.L., inzhener; RAKOVSKIY, V.S., kandidat tekhnicheskikh kandidat tekhnicheskikh nauk; SOKOLOV, A.N., inzhener; SOSUNOV, G.I., STEPANOV, V.N., professor; SHEMAKHANOV, M.M., kandidat tekhnicheskikh nauk; EL'KIND, I.A., inzhener; YANUSHEVICH, L.V., kandidat tekhnicheskikh nauk; BOKSHITSKIY, Ya.M., inzhener, redaktor; BULATOV, S.B., inzhener, redaktor; GASHINSKIY, A.G., inzhener, redaktor; GRIGRO'YEV, V.S., inzhener, redaktor; YEGURNOV, G.P., kandidat tekhnicheskikh nauk, redaktor; ZHARKOV, D.V., dotsent, redaktor; ZAKHAROV, Yu.G., kandidat tekhnicheskikh nauk, redaktor; KAMINSKIY, V.S., kandidat tekhnicheskikh nauk, redaktor; KOMARKOV, Ye.F., professor, redaktor; KOSTYLEV, B.N., inzhener, redaktor; POVAROV, L.S., kandidat tekhnicheskikh nauk, redaktor; ULINICH, F.R., redaktor; KLORIK'YAN, S.Kh., otvetstvennyy redaktor; GLADILIN, L.V., redaktor;

(Continued on next card)

HEYLINA, TS.O. --- (continued) Card 2.
RUPPENEYT, K.V., redaktor; TERPIGOREV, A.M., glavnyy redaktor; BARABANOV, F.A., redaktor; BARANOV, A.I., redaktor; BUCHNEV, V.K., redaktor; GRAFOV, L.Ye., redaktor; DOKUKIN, A.V., redaktor; ZADEMIDKO, A.N., redaktor; ZASYAD'KO, A.F., redaktor; KRASNIKOVSKIY, G.V. redaktor; LETOV, N.A., redaktor; DISHIN, G.L., redaktor; MAN'KOVSKIY, G.I., redaktor; MEL'NIKOV, N.V., redaktor; ONIKA, D.G., redaktor; OSTROVSKIY, S.B., redaktor; POKROVSKIY, N.N., redaktor; POLSTYANOY, G.N., redaktor; SKOCHINSKIY, A.A., redaktor; SONIN, S.D., redaktor; SPIVAKOVSKIY, A.O., redaktor; STANCHENKO, I.K., redaktor; SUDOPLATOV, A.P., redaktor; TOPCHIYEV, A.V., redaktor; TROYANSKIY, S.V., redaktor; SHEVYAKOV, L.D., redaktor; BYKHOVSKAYA, S.N., redaktor izdatel'stva; ZAZUL'SKAYA, V.F., tekhnicheskiy redaktor; PROZOROVSKAYA, V.L., tekhnicheskiy redaktor.

[Mining; an encuclopedic handbook] Gornoe delo; entsiklopedicheskii spravochnik. Glav.red. A.M. Terpigorev. Chleny glav.red. F.A. Barabanov i dr. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po ugol'noi promysh]. Vol.1. [General engineering] Obshchie inzhenernye svedeniia. Redkollegiia toma S.Kh.Klorik'ian i dr. 1957. 760 p.
(Mining engineering) (MLRA 10:10)

GASHINSKIY, V.V.

Use of phase contract microscopy in determining the sensitivity of micro-organisms to anthiotics. Lab.delo 4 no.5:47-48 S-O '58

1. Iz kiyevskogo meditsinskogo instituta (dir. - dotsent I.P. Alekseyenko).
(PHASE MICROSCOPE)
(BACTERIA--EFFECT OF DRUGS ON)
(ANTIBIOTICS)

GASHINSKIY, V.V. [Hashyns'kyi, V.V.]

Properties of Staphylococcus and Escherichia coli during their adaptation to streptomycin. Report No.1. Mikrobiol.zhur. 21 no.1:52-55 '59. (MIRA 12:6)

1. Z kafedri mikrobiologii Medichnogo institutu.
(MICROCOCCUS PYOGENES, eff. of drugs on, streptomycin, adaptation (Uk))
(ESCHERICHIA COLI, eff. of drugs on, same)
(STREPTOMYCIN, eff. on E. coli & Micrococcus pyogenes, adaptation (Uk))

GASHINSKIY, V.V. Cand Med Sci - - (diss) "Properties of staphylococcus and Bacillus E. coli in connection with accommodation to streptomycine," Kiev, 1960, 13 pp (Kiev Medical Institute im Acad. A. A. Bogomolets) (KL, 34-60, 124)

28(1) SOV/118-59-4-12/25

AUTHOR: Gashinskiy, V.V., Engineer

TITLE: A New Machine for Cutting Branches

PERIODICAL: Mekhanizatsiya i avtomatizatsiya proizvodstva, 1959, Nr 4, pp 35-36 (USSR)

ABSTRACT: The Vsesoyuznyy nauchno-issledovatel'skiy institut torfyanoy promyshlennosti - VNIITP (All-Union Scientific Research Institute of the Peat Industry - VNIITP) has developed, built and tested a new machine type "ROP-1" for sorting lumber, cutting branches and loading topped crowns on caterpillar dump trucks. The machine is driven by a DT-55 tractor through a propeller shaft. The ROP-1 consists of a caterpillar carriage and a platform upon which the following devices are mounted: a crane arm; a cutting device; a pulling-through device; and a discharging jib. The ROP-1 operates together with the lumber stacking machine "ESL-4". The technical characteristics of the ROP-1 machine are: length - 1,078 cm; width -

Card 1/2

295 cm; height - 309 cm; and weight - 7,165 kg. The machine can handle logs up to 12 m long, with a maximum diameter of 28 cm. The maximum diameter of branches which can be cut - 8.5 cm. The ROP-1 machine was successfully tested in 1957 and 1958, and a production model (ROP-2) is presently under construction at the Zavod opytnykh mashin filiala VNIITP (Experimental Machine Plant of the VNIITP Branch). There are 3 diagrams, and 1 photograph.

GASHINSKIY, V.V., inzh.

Machines for tree felling and abnodation. Mekh. i avtom. proizv. 17 no.5:11-12 My '63. (MIRA 16:6)

(Lumbering--Machinery)

GASHINSKIY, V.V.

Camera for microscopic observation of the multiplication of microorganisms in a flowing nutrient medium. Lab. delo no. 12: 743-745 '64. (MIRA 18:1)

1. Kafedra mikrobiologii (zaveduyushchiy- prof. S.S.Dyachenko) Kiyevskogo meditsinskogo instituta.

SVIRIDENKO. P. A., GASHIVANKO, Ye. M.

Reaction of mice ot matter which possesses a strong umpleasant odor. Trudy Inst. zool. AN UPSR 6, 1951.

24.7700
~~24(3), 24(6)~~

SOV/181-1-9-18/31

AUTHORS: Gashka, I. I., Pozhela, Yu. K.

TITLE: Measurement of Electrical Parameters of a Semiconductor by Means of the shf-Technique

PERIODICAL: Fizika tverdogo tela, 1959, Vol 1, Nr 9, pp 1431 - 1433 (USSR)

ABSTRACT: The authors determined lifetime, sign and mobility of the minority carriers in germanium by means of an apparatus devised specially for this purpose, and whose block diagram is shown in figure 1. Square voltage pulses are fed into the sample by means of a pulse generator, triggered by a synchronizing block with a certain time delay with respect to the scanning triggering of the oscilloscope. From one of the sample contacts, which are situated inside the waveguide, there proceeds the injection and drift of the minority carriers within the sample volume. As a consequence thereof, the amount of conductivity changes in that part of the probe which is situated directly in the waveguide. After the pulse injection stops, conductivity goes back to its original value at a rate which is dependent on the mean life of the introduced carrier. The change in the attenuation of the electromagnetic

Card 1/2

wave in the waveguide occurring in this connection is recorded by a special indicator. Figure 2 shows a typical oscillogram of the relaxation process taking place in germanium. The carrier lifetime can be determined from the conductivity drop. The advantages of this method are discussed in detail. The method allows the injection of nonequilibrium carriers not only by means of an injection contact but also by light (light probe). Light pulse investigations of the relaxation of photoresistivity were carried out on single germanium crystals, PbS films and polycrystalline PbS disks. Next, the authors describe the determination method of sign and drift rate of the carrier. Finally, the authors thank A. I. Vebre for his assistance. There are 2 figures and 1 reference.

ASSOCIATION: Institut fiziki i matematiki AN Litovskoy SSR (Institute of Physics and Mathematics of the Litovskaya SSR). Vil'nyusskiy gosudarstvennyy universitet im. V. Kapsunansa (Vilna State University imeni V. Kapsunans)

SUBMITTED: March 16, 1959

GASHKA, I. I.[Gaska, I.]

Studying relaxational processes in a polycrhstalline cadmium sulfide with the help of ultra high frequency techniques. Liet ak darbai no.3:133-140 '61.

1. Vil'nyusskiy gosudarstvennyy universitet im. V. Kapsukasa.

L 30077-65 EWT(1)/T/EWA(h) Peb/Pz-6 IJP(c) AT

ACCESSION NR: AT5002018 S/2910/64/004/003/0359/0363

AUTHOR: Gashka, I. (Gashka, I.)

TITLE: A study of the photosensitivity of some high-resistance semiconductors

SOURCE: AN LitSSR. Litovskiy fizicheskiy sbornik, v. 4, no. 3, 1964, 359-363

TOPIC TAGS: cadmium sulfide, cadmium selenide, semiconductor photosensitivity, photoelectric property, photosensitivity measurement

ABSTRACT: An interest has recently been shown in investigations of the photoelectric properties of semiconductors by means of a contactless method using microwave techniques. In this work, the author reports the results of an investigation of photosensitivity changes as a function of the intensity of illumination and the photoelectric characteristics of single crystal and polycrystalline specimens of CdS and CdSe by the microwave method as well as by the DC method. The photosensitivity was determined as the ratio between the conductivity change $\Delta\sigma$ during illumination of the sepcimen with light of constant intensity and the stationary conductivity σ. The samples on a mica plate were placed inside the volume resonator into which electromagnetic energy was fed through a gap. The investigated signal passed from the detector to the oscillograph. The specimens were illuminated by means of a 100 watt incandescent, lamp, and the intensity of il-

1/5

L 30077-65

ACCESSION NR: AT5002018

lumination was changed by means of neutral filters. Water filters were used for absorption of the thermal radiation. The relationship between the photosensitivity of CdS and CdSe and the intensity of illumination are shown in Figs. 1 and 2 of the Enclosure. For all specimens, the photosensitivity measured with the DC current remained constant in a broad interval of illumination intensity, and began to change only at low illumination levels. The microwave sensitivity increased continuously with decreasing illumination intensity. Orig. art. has: 5 figures and 6 formulas.

ASSOCIATION: Vil'nyusskiy Gosudarstvennyy universitet im. V. Kapsukasa (Vilnius state university)

SUBMITTED: 28Nov63 ENCL: 03 SUB CODE: EC, OP

NO REF SOV: 002 OTHER: 001

Card 2/5

L 30077-65

ACCESSION NR: AT5002018 ENCLOSURE: 01

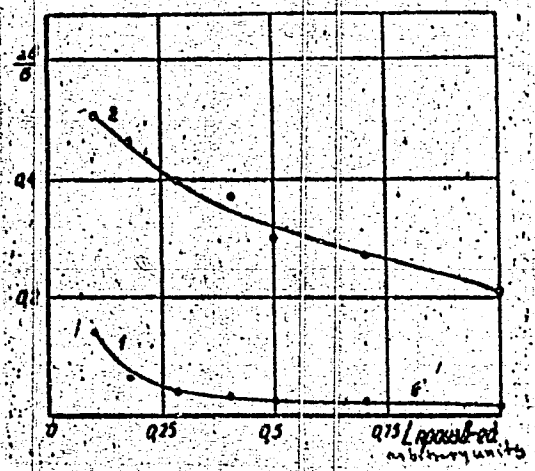
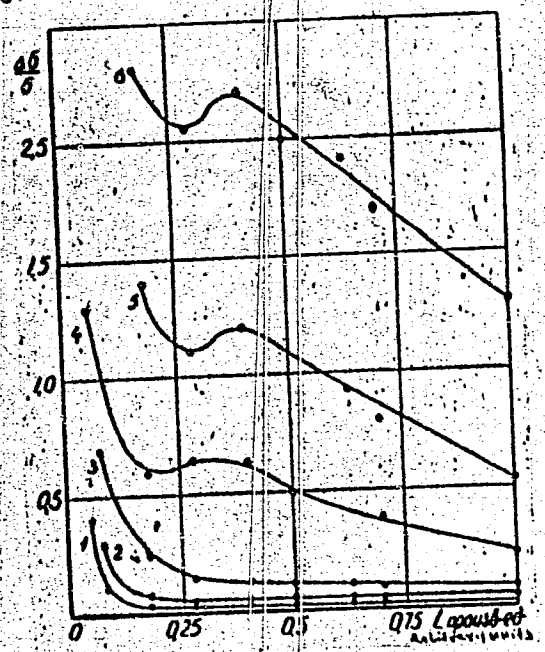


Figure 1. Photosensitivity of polycrystalline CdS as a function of the intensity of illumination:
1- d.c. measurements; 2- microwave measurements.

Card 3/5

L 30077-65

ACCESSION NR: AT5002018 ENCLOSURE: 02



Card 4/5

L 30077-65

ACCESSION NR: AT5002018 ENCLOSURE: 03

Figure 2. Photosensitivity of polycrystalline CdSe as a function of the intensity of illumination:
d.c. measurements, the magnitude of initial illumination is:
1- L_1 =1.0; 2- L_2=0.1; 3- L_3=0.06; microwave measurements, the magnitude of initial illumination is:
4- L_1=1.0; 5- L_2=0.5; 6- L_3=0.1.

Card 5/5

SLOBODYANIK, I. P.; GASHKEVICH, V. B.

"Hydraulic test of a laminated plate with liquid-phase recirculation."

report submitted for 2nd All-Union Conf on Heat & Mass Transfer, Minsk, 4-12 May 1964.

Krasnodarskiy Inst of Food Ind.

ACC NR: AP6018953 (A) SOURCE CODE: UR/0322/66/000/001/0164/0169

AUTHOR: Slobodyanik, I. P.; Gashkevich, V. B.

ORG: Krasnodar Polytechnic Institute (Krasnodarskiy politekhnicheskiy institut)

TITLE: Investigation of mass exchange on a layered plate with liquid phase recirculation

SOURCE: IVUZ. Pishchevaya technologiya, no. 1, 1966, 164-169

TOPIC TAGS: fractional distillation, liquid air fractionation, heat transfer

ABSTRACT: The efficiency of a distillation plate previously described by the authors was determined for desorbing oxygen from water and fractionating methanol-water mixtures. The column arrangement shown in the figure (see Fig. 3) was used for the latter.

Card 1/3 UDC: 66.048.375.021.3

ACC NR: AP6018953

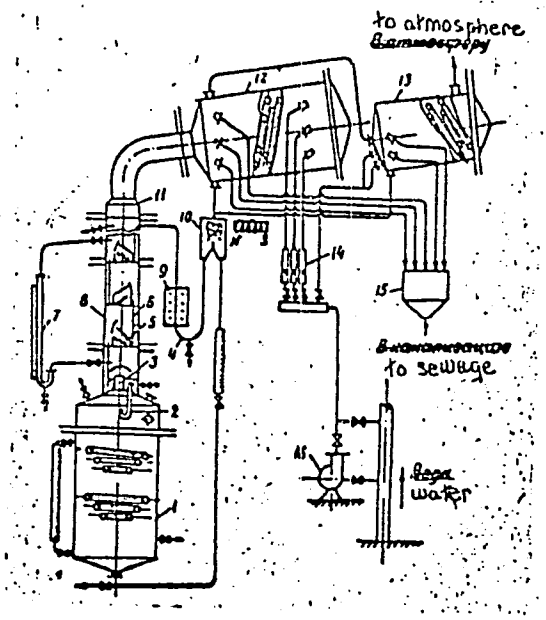


Figure 3.

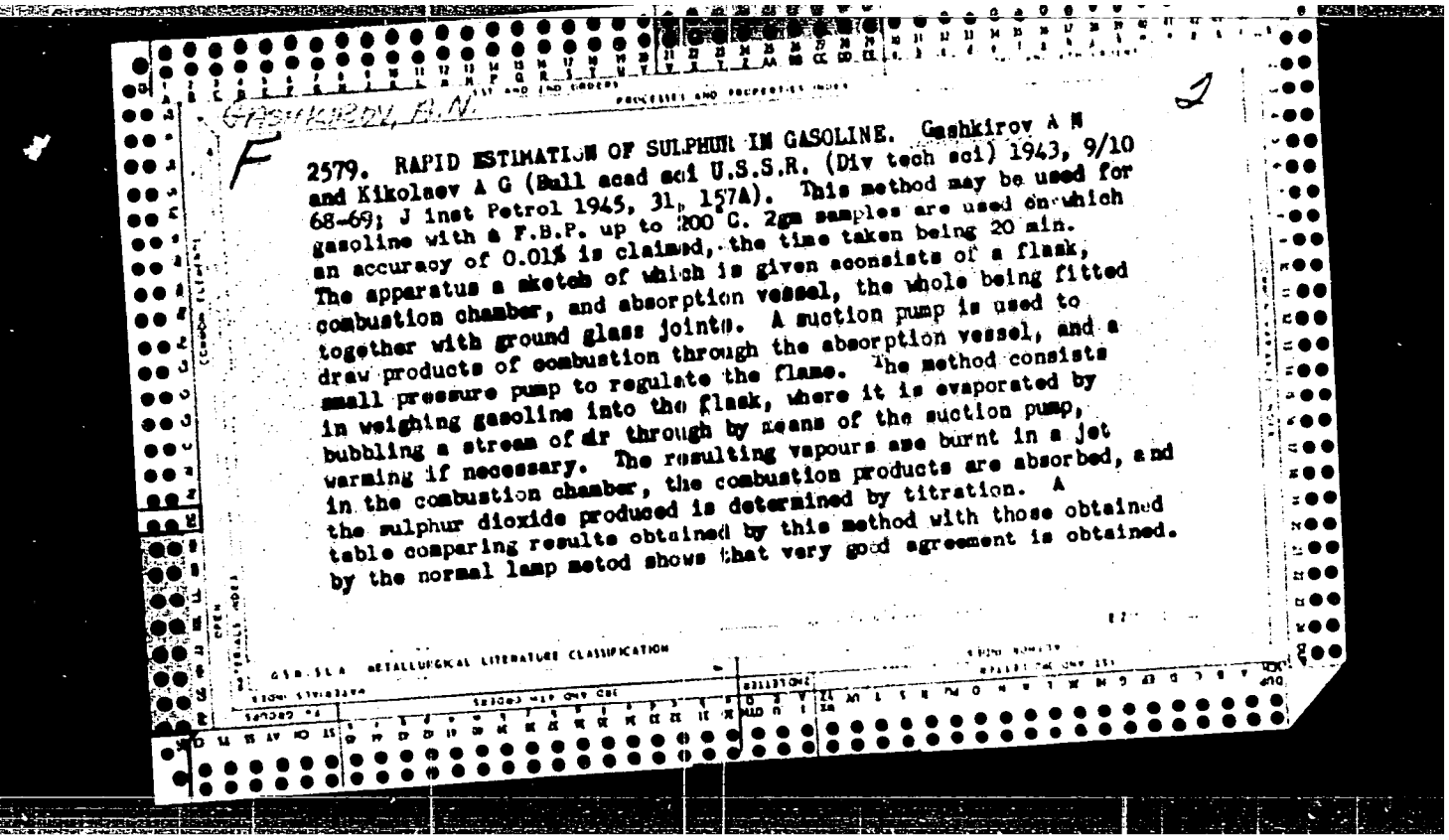
Card 2/3

ACC NR: AP6018953

Vapors from the steam coil heated still 1 are admitted to the column through outlet 3. The column, made up of flanged cylinders 8, contains three plates 5 (250 mm in diameter 300 cm apart, inclined 18°), overflow pipes 6 and connecting pipe 2 to the still, and manometer 7. Vapors proceed through cylinder 11 to reflux condenser 12, provided with separator 10 for returning distillate to the still and to reflux through water seal 4 past the electric heater 9 to the top of the column. Uncondensed vapors from reflux condenser 12 pass to condenser 13 (both inclined about 12° to the horizontal). The condenser is open to the atmosphere. Condensed water goes from the main line through a RS-7 type rotometer 14 to collector 15 and on to the sewer. The 3K-6 centrifugal pump 16 is used for pumping cooling water to the fractionating column and condenser. Plate efficiency of 80-85% was attained with vapor velocities of about 2 m/sec through the column. The stability of the high values for plate efficiency and mass transfer coefficients indicates that this plate construction, which offers minimum hydraulic resistance, is suitable for fractionating gas-liquid systems, especially where the thermal instability of the materials usually requires vacuum fractionation. Orig. art. has: 5 figures and 6 equations.

SUB CODE: 13/ SUBM DATE: 19Feb65/ ORIG REF: 008/ OTH REF: 001

Card 3/3



GASHKIROV, A.N.

F

2579. RAPID ESTIMATION OF SULPHUR IN GASOLINE. Gashkirov A N and Kikolaev A G (Bull acad sci U.S.S.R. (Div tech sci) 1943, 9/10 68-69; J inst Petrol 1945, 31, 157A). This method may be used for gasoline with a F.B.P. up to 200 C. 2gm samples are used on which an accuracy of 0.01% is claimed, the time taken being 20 min. The apparatus a sketch of which is given aconsists of a flask, combustion chamber, and absorption vessel, the whole being fitted together with ground glass joints. A suction pump is used to draw products of combustion through the absorption vessel, and a small pressure pump to regulate the flame. The method consists in weighing gasoline into the flask, where it is evaporated by bubbling a stream of air through by means of the suction pump, warming if necessary. The resulting vapours are burnt in a jet in the combustion chamber, the combustion products are absorbed, and the sulphur dioxide produced is determined by titration. A table comparing results obtained by this method with those obtained by the normal lamp metod shows that very good agreement is obtained.

G.B.S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

GASHKO, A.A.

Device for notching specimens. Sbor.rats.predl.vnedr.v proizv. no.5:58 '60. (MIRA 14:8)

1. Zlatoustovskiy metallurgicheskiy zavod.
(Testing laboratories--Equipment and supplies)

ZAGUBIZHENKO, P.A. (Dnepropetrovsk); GASHKO, A.I. (Dnepropetrovsk); LITVINENKO, Yu.A. (Dnepropetrovsk)

Stress distribution in the contact area of a rigid cylinder and a flexible support. Prikl. mekh. 1 no.9:131-133 '65. (MIRA 18:10)

1. Dnepropetrovskiy gosudarstvennyy universitet.

L 29814-66 EWT(d)/EWT(m)/EWP(w)/EWP(v)/EWP(k) IJP(c) WW/EM

ACC NR: AP6014216 (A) SOURCE CODE: UR/0198/66/002/004/0032/0038 56 B

AUTHORS: Binkevich, Ye. V. (Dnepropetrovsk); Gashko, A. L. (Dnepropetrovsk); Manza, V. P. (Dnepropetrovsk)

ORG: Dnepropetrovsk State University (Dnepropetrovskiy gosudarstvennyy universitet)

TITLE: Calculation of rib reinforcing on a cylindrical shell loaded with radial force 24

SOURCE: Prikladnaya mekhanika, v. 2, no. 4, 1966, 32-38

TOPIC TAGS: cylindric shell structure, stress analysis, reinforced shell structure, numeric analysis

ABSTRACT: A stress analysis is made for a smooth circular cylinder reinforced by massive, variable cross section ribs. Only longitudinal (T^0) and tangential (S^0) stresses are assumed to act at the cross section of the joint in the cylinder. These are expressed by

$$T^0(\beta) = \sum_{k=0}^{\infty} t_k^0 \cos k\beta; \qquad S^0(\beta) = \sum_{k=1}^{\infty} s_k^0 \sin k\beta.$$

For a small rib thickness (relative to its radius) the complete set of equations is obtained

Card 1/3

$$\frac{dN_{m}}{d\beta}+Q_{m}-S^{0}R=0;\quad \frac{dQ_{m}}{d\beta}-N_{m}=0;\quad \frac{dM_{m}}{d\beta}-RQ_{m}=0;$$

$$\frac{du_{m}}{d\beta}-w_{m}=\frac{R}{E_{m}F_{m}}N_{m};\quad \frac{dv_{m}}{d\beta}+\frac{d^{2}w_{m}}{d\beta^{2}}=\frac{R^{2}}{E_{m}I_{m}}M_{m}.$$

To a first approximation, the rib is assumed to be absolutely stiff and the shell is assumed to be a beam of circular cross section. The peak value of the stress in the rib-cylinder joint is calculated from the potential energy minimum of the rib-cylinder system. This yields the value

$$s_{k}^{0l(II)}=\mp\frac{P_{y}}{\pi R}\frac{A_{2k}b_{1}^{I(II)}}{b_{1}^{I(II)}b_{3}^{I(II)}-(b_{2}^{I(II)})^{2}+A_{1k}\left|b_{1}^{I(II)}+b_{1}^{I(II)}\dfrac{b_{1}^{I(II)}b_{3}^{I(II)}-(b_{2}^{I(II)})^{2}}{b_{1}^{II(I)}b_{3}^{II(I)}-(b_{2}^{II(I)})^{2}}\right|};$$

$$t_{k}^{0l(II)}=\mp\frac{b_{2}^{I(II)}}{b_{1}^{I(II)}}s_{k}^{0l(II)}.$$

The effect of reinforcement is calculated on the distribution of internal stresses

L 29814-66

ACC NR: AP6014216

in the rib (when the radial load is applied at the cylinder ends) in the form of a stepped reinforcement of angle 2γ ($\gamma < 180^0$). Numerical results are obtained on the "Ural -1" ETsVM computer and agree well with experimental data. Orig. art. has: 18 equations and 3 figures.

SUB CODE: 20/ SUBM DATE: 05Jul65/ ORIG REF: 005

Card 3/3

KAVERZNEVA, Ye.D.; GASHKO, G.P. [Hashko, H.P.]

Study of the carbohydrate composition of a fraction of ceruloplasmin. Ukr. biokhim. zhur. 35 no.4:507-513 '63. (MIRA 17:11)

1. Institute of Organic Chemistry of the Academy of Sciences of the U.S.S.R., Moscow.

GASHKO, G.P. [Hashko, H.P.]

Preparation of two isocerulоplasmins of swine serum. Ukr. biokhim. zhur. 37 no.2:231-238 '65. (MIRA 18:6)

1. Institut mikrobiologii i virusologii AN UkrSSR, Kiyev.

GASHKOVA, A.K., inzh.; SMIRNOV, S.M., kand.tekhn.nauk

Automatic control of drying systems for drying match boxes and sticks. Der.prom. 9 no.5:3-5 My '60. (MIRA 13:7)

(Match industry) (Automatic control) (Drying apparatus)

GASHKOVA, A.K., inzh.; PUKHOV, A.K., inzh.

Intensification of the drying of matchwood. Der.prom. 14 no.11:9-10 N '65. (MIRA 18:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut derevoobrabatyvayushchey promyshlennosti.

GASHKOVA, O. A.

"Plants Response to Sharp Variation of Temperatures," Dok. AN, 24, No. 5, 1939.
Chair of Botany; Arzamas Pedagogical Inst.

GASHKOVA, O. A.

Practical manual for study of general botany; a textbook for teachers colleges Moskva, uchebno-pedagog. izd-vo, 1951. USSR (600) Science.

GASHKOVA, O.A.; ROZINA, T.A.

How we provide practical training in the study of natural history. (MIRA 11:2)
Politekh. obuch. no.3:59-65 Mr '58.

1. Kaluzhskiy pedagogicheskiy institut.
(Agriculture--Study and teaching)

VASIL'YEVA, N.P. (Moskva); GASHKOVETS, I. (Praga)

Determination of the optimum parameters of certain types of magnetic logic elements. Avtom.i telem. 22 no.7:919-933 Jl '61. (MIRA 14:6)

(Magnetic memory (Calculating machines))
(Cores (Electricity))

VASIL'YEVA, N.P.; GASHKOVETS, I.

Conditions of the precise realization of sequential functions using different sets of real logical elements with consideration of delay. Avtom. i telem. 26 no.9:1578-1591 S '65. (MIRA 18:10)

ACC NR: AP7002640 (A,N) SOURCE CODE: UR/0413/66/000/023/0186/0187

INVENTOR: Vasil'yeva, N. P.; Gashkovets, Irzhi

ORG: None

TITLE: An inverter. Class 42, No. 134482

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 23, 1966, 186-187

TOPIC TAGS: computer component, logic circuit, hysteresis loop, pulse inverter

ABSTRACT: This Author's Certificate introduces: 1. An inverter based on a single core with rectangular hysteresis loop having input and working windings and a series connected load. The logical functions of the device are expanded by magnetic reversal in the core during the control half-cycle using the energy in the working circuit. The voltage source is connected to the working winding through a diode. An auxiliary voltage source which maintains the diode in the conductive state is connected to this winding through a resistor. 2. A modification of this inverter which gives the sum of part of the input signals and inverts the product of the sums of the remaining part of the input signals. A logic circuit which forms the sum of part of the input signals is connected to one end of the input winding and a logic circuit which forms the product of the sums of the remaining part of the input signals is connected to the other end.

SUB CODE: 09/ SUBM DATE: 09Dec56

Card 1/1

ACCESSION NR: AP4024685 S/0103/64/025/002/0239/0249

AUTHOR: Vasil'yeva, N. P. (Moscow); Gashkovets, I. S. (Prague)

TITLE: Magnetic logical elements with mutually excluding flux reversals of cores (inverters)

SOURCE: Avtomatika i telemekhanika, v. 25, no. 2, 1964, 239-249

TOPIC TAGS: automatic control, logical element, magnetic logical element, square loop logical element, logical inverter

ABSTRACT: A theoretical analysis of square-loop magnetic elements which realize the logical functions of inversion is presented. Flux reversals of the controlling and controlled elements are mutually excluded. Two circuits (see Enclosure 1) are considered: (1) with an additional resistor, Fig 1, and (2) with decoupling by controlled diodes, Fig 2. Formulas are developed that connect the magnetic-element parameters under maximum-gain (the number of controlled

Card 1/3

ACCESSION NR: AP4024685

elements per one controlling) and maximum-output-power conditions or under heating-limit-imposed conditions; also, relations necessary to ensure the stability of characteristics are observed. The core saturation state and the flux reversal state are analyzed in detail. Orig. art. has: 10 figures and 52 formulas.

ASSOCIATION: none

SUBMITTED: 25Mar63	DATE ACQ: 15Apr64	ENCL: 01
SUB CODE: DP	NO REF SOV: 003	OTHER: 000

Card 2/3

ACCESSION NR: AP4024685 ENCLOSURE: 01

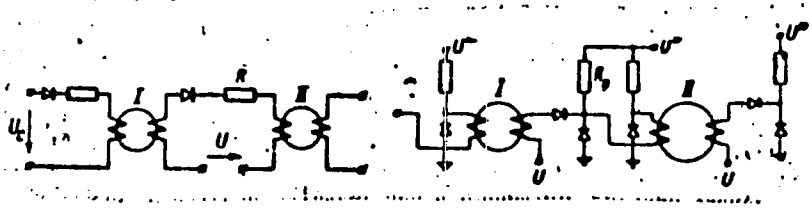


Fig 1 Fig 2

Magnetic square-loop logical inverters

Card 3/3

VASIL'YEVA, N.P. (Moskva); GASHKOVETS, I.S. [Haskovec, J.] (Praga)

Simplest sequential elements (triggers) and realization of the memory portion of sequential functions using those elements. Avtom. i telem. 25 no. 6:1004-1014 Je '64. (MIRA 17:7)

L 7830-66 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(1)
ACC NR: AP5023117 SOURCE CODE: UR/0103/65/026/009/1578/1591

AUTHOR: Vasil'yeva, N. P. (Moscow, Prague); Gashkovets, I. (Moscow, Prague)

ORG: none

5/

TITLE: Conditions for exact realization of sequential functions by means of various sets of real logical elements having delays

SOURCE: Avtomatika i telemekhanika, v. 26, no. 9, 1965, 1578-1591

TOPIC TAGS: automatic control, automatic control design, automatic control system, automatic control theory

ABSTRACT: Based on S. H. Unger's (IRE Trans., CT-6, no. 1, Mar 1959) and G Moisil's works, a method is suggested for analyzing sequential circuits consisting of logical elements with pure and inertial delays and having signals of any duration; recurrent equations and delay matrices are used in the method. The

Card 1/2 UDC: 681.142.67

L 7830-66
ACC NR: AP5023117

O

analysis permits detecting "conditionally stable" states of a sequential circuit consisting of pure-delay elements; these states may prove stable or unstable depending on the sequence of input signals. To realize the sequential functions by means of logical elements according to a certain ideal structure, the use of a delay equalization method is recommended. This method permits determining (a) values and points of application of a minimum number of delays required for the equalization and (b) maximum permissible repetition rate of input signals. The method, illustrated by several variants of a universal trigger constructed with various sets of logical elements, is claimed to have a practical importance for synchronous systems. Orig. art. has: 26 figures and 33 formulas.

SUB CODE: 13,09 / SUBM DATE: 03Sep64 / ORIG REF: 001 / OTH REF: 003

Card 2/2 bjp

S/081/62/000/020/029/040
B160/B144

AUTHORS: Asnovich, E. Z., Gashnikov, E. G., Petrashko, A. I.

TITLE: Organosilicon polymers

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 20, 1962, 500, abstract 20P49 (Vestn. tekhn. i ekon. inform. N.-i. in-t tekhn-ekon. issled. Gos. kom-ta Sov. Min. SSSR po khimii, 1961, no. 12, 28 - 36)

TEXT: Particular structural points, physicochemical properties and fields of application for organosilicon polymers (resins, varnishes, heat-resistant enamels, liquids and rubbers) are discussed. 13 references.
[Abstracter's note: Complete translation.]

Card 1/1

GASHNIKOV, E.G.; RUBINCHIK, S.M.

Adoption of advanced practices in tire plants. Kauch.i rez. 21 no.3:58 Mr '62. (MIRA 15:4)
(Tires, Rubber)

ACC NR: AP6025396 (A) SOURCE CODE: UR/0062/66/000/007/1145/1154

AUTHOR: Petrashko, A. I.; Yelinek, V. I.; Andrianov, K. A.; Zhdanov, A. A.; Gashnikova, N. N.; Golubkov, G. Ya.; Litvinova, L. F.

ORG: All-Union Electrical Engineering Institute im. V. I. Lenin (Vsesoyuznyy elektrotekhnicheskiy institut); Institute of Organometallic Compounds, Academy of Sciences, SSSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR)

TITLE: Study of the conversions of polyorganosiloxanes in the course of thermal polycondensation and catalytic polymerization

SOURCE: AN SSSR. Izv. Ser khim, no. 7, 1966, 1145-1154

TOPIC TAGS: catalytic polymerization, polycondensation, siloxane

ABSTRACT: Changes in certain properties of polyorganosiloxanes were followed during their synthesis from organosiloxane oligomers of various compositions. IR spectroscopic analysis confirmed the structural differences in the oligomers obtained by double decomposition and hydrolytic polycondensation. In the process of thermal and catalytic conversions, these differences disappear, and the polymers have a similar structure independently of the method by which the original oligomers were prepared. It is postulated that thermal polycondensation involves the formation of oxygen bridges between the molecular chains as a result of condensation of hydroxyl groups, and hydrocarbon bridges as a result of oxidation of methyl groups of neighboring molecular chains; the

 UDC: 546.287+542.97+542.952+543.422

L 45717-66
ACC NR: AP6025396

relative importance of these two processes is determined by the composition and structure of the oligomers. Compared to thermal polycondensation, catalytic polymerization leads to the formation of polymers having a higher glass-transition temperature and a wider temperature range of the highly elastic state; this is due to a greater flexibility and mobility of the chains of their molecules owing to the opening of the cyclic links in the oligomer molecules. Orig. art. has: 5 figures and 3 tables.

SUB CODE: 07/ SUBM DATE: 14Feb64/ ORIG REF: 005/ OTH REF: 003

Card 2/2

81555
S/062/60/000/05/04/008
B004/B066

5.3700C

AUTHORS: Andrianov, K. A., Gashnikova, N. P., Asnovich, E. Z.

TITLE: Investigation of the Infrared Absorption Spectra of Polyaluminum Organosiloxanes and Polytitanium Organosiloxanes

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1960, No. 5, pp. 857-862

TEXT: After a short survey of the data in publications dealing with the infrared spectra of various organic and inorganic silicon and aluminum compounds (Refs. 1-13) the authors report on their own investigations. The vibration spectra of the following compounds were investigated: 1) tris-(trimethyl-siloxy)-aluminum $Al[OSi(CH_3)_3]_3$, melting point 98°-100°C, soluble in benzene, toluene and CCl_4, prepared according to Ref. 14; 2) tris-(triethyl-siloxy)-aluminum, melting point 327°C, solubility like 1), prepared like 1); 3) tetrakis-(triethyl-siloxy)-titanium $Ti[OSi(C_2H_5)_3]_4$, data in Ref. 14; 4) Polymethyl siloxane

Card 1/4

Investigation of the Infrared Absorption Spectra of Polyaluminum Organosiloxanes and Polytitanium Organosiloxanes

$(CH_3SiO_{1.5})_n$, prepared according to Ref. 15 by hydrolysis of methyl trichloro silane; 5) polyethyl siloxane $(C_2H_5SiO_{1.5})_n$, prepared like 4); 6) polyphenyl siloxane $(C_6H_5SiO_{1.5})_n$, prepared according to Ref. 16 by hydrolysis of phenyl trichloro silane; 7) polyaluminum-methyl siloxane, synthesized by reaction of methyl-sodium-oxy-dihydroxy-silane with $AlCl_3$, ratio of Si : Al = 1 : 4; 8) polyaluminum-ethyl siloxane, obtained according to Ref. 16, ratio of Si : Al = 1 : 4.75, average molecular weight 40,000; 9) polyaluminum-phenyl siloxane (Ref. 16), Si : Al = 1 : 4, average molecular weight 7,230; 10) polytitanium-methyl siloxane (Ref. 15), Si : Ti = 1 : 3.8; 11) polytitanium-ethyl siloxane (Ref. 15), Si : Ti = 1 : 4, average molecular weight 9,300; 12) polytitanium-phenyl siloxane (Ref. 15), Si : Ti = 1 : 4, average molecular weight 1,500. The infrared absorption spectra were photorecorded on an ИКС-11 (IKS-11) spectrometer. An ИКР-1 (IKR-1) pin was used as radiation source. The frequencies of the absorption bands observable in the range 1200-800 cm^{-1} are presented in a table, the spectra are shown in the diagrams of

Card 2/4

81555

Investigation of the Infrared Absorption Spectra of Polyaluminum Organosiloxanes and Polytitanium Organosiloxanes

S/062/60/000/05/04/008
B004/B066

Figs. 1-3. Fig. 4 shows the dependence of the absorption on the Si/Al ratio for compounds 8 and 9. The frequencies characteristic of the vibration of the Al-O bond in the group Al-O-Si of the compounds 7,8,9 are in the range 1080-1050 cm^{-1}. The frequencies characteristic of the vibration of the Ti-O bond in the group Ti-O-Si of the compounds 10,11,12 lie in the range 922-914 cm^{-1}. The compounds investigated have a linear-cyclic structure of the principal chain of the molecule, in which prevalently tetrameric siloxane- and organometallic siloxane rings are combined with one another by oxygen atoms. The compounds 1,2, and 3 were synthesized by A. A. Kazakova. There are 4 figures, 1 table, and 20 references: 7 Soviet, 1 British, 1 Swiss, and 11 American.

AAOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental-organic Compounds of the Academy of Sciences, USSR). Vsesoyuznyy elektrotekhnicheskiy institut im. V. I. Lenina (All-Union Institute of Electrical Engineering imeni V. I. Lenin)

Card 3/4

81555

Investigation of the Infrared Absorption Spectra of Polyaluminum Organosiloxanes and Poly-titanium Organosiloxanes

S/062/60/000/05/04/00[illegible]
B004/B066

SUBMITTED: November 10, 1958 (initially) and February 2, 1960 (after revision)

Card 4/4

L 62696-65 EWT(m)/EPF(c)/EWP(j)/T RM

ACCESSION NR: AP5014073 UR/0363/65/001/004/0460/0463
541.6:543.422.4

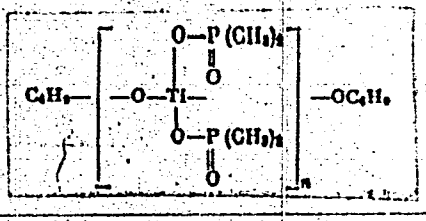
AUTHOR: Andrianov, K. A.; Gashnikova, N. P.; Kuznetsova, I. K.

TITLE: Polymers with inorganic molecular chains. Infrared spectra of polyphosphonyltitanoxanes

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 4, 1965, 460-463

TOPIC TAGS: infrared spectrum, titanium containing polymer, inorganic polymer, titanium compound, phosphorus compound

ABSTRACT: Infrared absorption spectra of polydiphosphonyltitanoxanes of various degrees of polymerization were studied. Polymers having the general formula

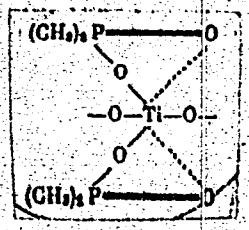


Card 1/3

L 62696-65

ACCESSION NR: AP5014073

were prepared by condensation of dimethylphosphinic acid with n-tetrabutyl titanate, followed by hydrolysis. A similarity in the spectra of the polymers was established in regard to the positions and number of bands in the region of stretching and bending vibrations of the CH_2 and CH_3 groups and stretching vibrations of the P=O and P-O groups, and also in the 400-800 cm^{-1} region, in which for all polymers only two bands, 760 and 450-500 cm^{-1}, were observed (in contrast to bisdimethylphosphonyldibutoxytitanium, which in this region has three bands: 760 cm^{-1}, 618-620 cm^{-1}, and 450-500 cm^{-1}). The similarity in the spectra indicates a similarity in the molecular chains forming the polymers. A lowering of the stretching vibration frequency of P=O was observed in the spectra of bisdimethylphosphonyldibutoxytitanium and polybisdimethylphosphonyltitanoxanes; it is attributed to the intramolecular interaction of P=O with the titanium atom, as follows:



Card 2/3

L 62696-65

ACCESSION NR: AP5014073

3

Orig. art. has: 2 figures, 2 formulas and 1 table.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR Institute of Organometallic Compounds, Academy of Sciences SSSR) 44,55

SUBMITTED: 22Dec64 ENCL: 00 SUB CODE: OP, OC

NO REF SOV: 003 OTHER: 013

dm

Card 3/3

ANDRIANOV, K.A.; SIPYAGINA, M.A.; GASHNIKOVA, N.P.; FROLOVA, Z.M.

Synthesis of α,ω-disodiumhydroxymethylphenylsiloxanes and α-sodiumhydroxy-ω-trimethyl(triphenyl)siloxymethylpenylsiloxanes. Izv. AN SSSR. Neorg. mat. 1 no.9:1441-1446 S '65. (MIRA 18:11)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni Lomonosova.

GORDON, M.D., kandidat tekhnicheskikh nauk; GASHNIKOVA, Ye.I., inzhener.

Methods for more efficient freight transport on the Tashkent railroad.
Trudy TASHIIT no.6:109-123 '56. (MLRA 9:11)
(Railroads--Freight)

L 13610-66 EWT(1)/EWA(h)

ACC NR: AP6002976 SOURCE CODE: UR/0286/65/000/024/0152/0152

22
B

INVENTOR: Gashpar, E. M.; Kulikovskiy, L. F.; Zaripov, M. F.; Brovkin, L. A.

ORG: none

TITLE: Multiple-turn contactless a-c potentiometer. 25 Class 74, No. 177302

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 24, 1965, 152

TOPIC TAGS: potentiometer, ac potentiometer, contactless potentiometer

ABSTRACT: The Author Certificate introduces a multiple-turn contactless a-c potentiometer containing fixed and moving magnetic circuits with a two-section measuring winding and excitation windings (see Fig. 1). To increase the linearity of its static

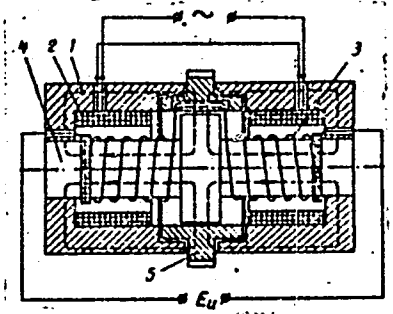


Fig. 1. Contactless a-c potentiometer

1 - Fixed magnetic circuit; 2 - excitation winding; 3 - measuring winding; 4 - fixed magnetic circuit; 5 - moving circular magnetic circuit.

Card 1/2 UDC: 621.317.727.1

L 13610-66

ACC NR: AP6002976 0

characteristics, to reduce the weight of the moving parts, and to improve its protection against the action of external magnetic fields, the two-section measuring winding is made in the form of a current conducting spring differentially wound on the fixed magnetic circuit; the moving magnetic circuit is made in the form of a ring to which the joined terminals of the measuring winding are attached. Orig. art. has: 1 figure. [JR]

SUB CODE: 09/ SUBM DATE: 17Feb64/ ATD PRESS: 4186

jw

Card 2/2

BORAMISA, T., inzh. (Vengerskaya Narodnaya Respublika); GASHPAR, L. [Gaspar, L.], inzh. (Vengerskaya Narodnaya Respublika)

Evaluating the carrying capacity of pavements by the measurement of their flexures. Avt.dor. 25 no.8:28-30 Ag '62. (MIRA 16:2)

(Pavements—Testing)

GASHPAR L.

Hungary/Physiology of Plants. Mineral Nutrition I-2

Abs Jour : Ref Zhur-Biologiya, No 2, 1958, 5640

Author : L. Gashpar
Inst : Agricultural Institute Academy of Scienes of Hungary
Title : Absorption of Phosphorus by Shoots of Wheat

Orig Pub : Agrokem es talaj., 1956, 5, No 2, 213-220

Abstract : In Neybauer experiments conducted at the Agricultural Institute of the Academy of Sciences of Hungary the harmful effect of P^{32} when applied to shoots of winter wheat planted in sandy and other soils has been established. Germination was lowered by 20 to 25%, and the dry weight of the sandy crops dropped by more than half. The plants of the sandy crops utilized 20% of the phosphorus, while those of other soil crops-11% of the phosphorus introduced.

Card 1/1

GASHPAR, L., inzh.

Overall stabilization of sands with dilute bitumen and lime. (MIRA 16:7)
Avt. dor. 26 no.5:28-29 My '63.

(Soil stabilization)

ACCESSION NR: AT4041496 S/2910/63/003/01-/0041/0045

AUTHOR: Gashpar, R.

TITLE: The universal atomic potential

SOURCE: AN LitSSR. Litovskiy fizicheskiy sbornik, v. 3, no. 1-2, 1963, 41-45

TOPIC TAGS: atomic potential, universal atomic potential, Thomas Fermi equation, nuclear charge, Schroedinger equation, cuprous ion, Hartree Fock method, electron potential

ABSTRACT: This article is a short exposition of the author's theory of universal atomic potential, described fully in various issues of Acta Phys. Hung. from 1952 - 1960. The universal potential has all the properties of a potential field as obtained by the method of self-consistent fields with exchange and can be obtained for every atom by a scale transformation. The solution of the Thomas-Fermi equation for a neutral atom is independent of the atomic number. An exponential function of the form $\frac{e^{-\lambda_0 x}}{1 + A_0 X}$ gives a good approximation for the effective charge of the nucleus as obtained from a self-consistent field. A one-particle Schroedinger equation can be written using this expression in the potential

Card 1/3

energy term. The approximation deteriorates for electrons which are further away from the nucleus. The potential can be made more exact by taking into account the exchange energy of the electron, using the Thomas - Fermi theory. The complete potential can then be written as

$$V = \frac{Z_p e}{r} + \frac{4}{3} K_0 e^{-1} \rho^{\frac{1}{3}} = \frac{Ze}{r} \frac{e^{-\lambda_0 x}}{1+\lambda_0 x} + \frac{C'}{e} \frac{e^{-\alpha x}}{1+\lambda x}, \quad (1)$$

where $x = \frac{r}{\mu}$, and $\mu = 0.8853\ a_0 / Z^{1/3}$. An example using the Cu^+ ion shows that this potential agrees better with the Hartree - Fock method at larger distances from the nucleus. For valence electrons and excited electrons, additional corrections are required. From other examples, considered in the author's previous works, it is concluded that the differences (for inner electrons) in the wave functions determined numerically from those determined by the analytical variational method are mainly due to the unsatisfactory choice of the variational functions and not to potential approximations. Orig. art. has: 2 figures and 13 equations.

Card 2/3

ACCESSION NR: AT4041496

ASSOCIATION: Institut teoreticheskoy fiziki, Universitet im. Layosha Koshuta, Debrecen, Hungary (Institute of Theoretical Physics, Kossuth Lajos University)

SUBMITTED: 00 ENCL: 00

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

Card 3/3