NORKUS, P.K.

Use of an O_sO_4 catalyst in titrimetry. Report 4: Determination of chlorine dioxide and chlorite. Zhur.anal.khim. 20 no.5:612-614 '65. (MIRA 18:12)

1. Institut khimii i khimicheskoy tekhnologii AN Litovskoy SSR, Vil'nyus. Submitted March 6, 1964.

NOR-AREVYAN, N.G.

Effect of various oxygen pressures during irradiation on the level of metabolism of phosphorus-containing compounds in the roots of Vicia faba. Radiobiologiia 5 no.2:301-303 '65.
(MIRA 18:12)

1. Armyanskiy nauchno-issledovatel'skiy institut zemledeliya, gorod Echmiadzin.

NORKUS, P.K.; GAL'DIKENE, O.K. [Galdikiene, O.]

Determination of boric acid in a nickel-plating bath. Zav.lab. 31 no.10:1191-1192 '65. (MIRA 19:1)

1. Institut khimii i khimicheskoy tekhnologii AN Litovskoy SSR.

Norling, A.

6 E

USSR.

Electron microscope and X-ray studies of superpolyamide threads. Relationships between the fine structure of superpolyamide threads and that of viscose silk. E. Ribi and A. Norling (*Arkiv Kemi*, 1954, 7, 417—426).—Previous work is reviewed in some detail, especially the work of Fankirchen and Mack (*J. appl. Phys.*, 1944, 15, 364) and of Hess and Kiessig (*Z. phys. Chem.*, 1944, 193, 196) whose conclusions are given in detail. It is now found that in going from a hot-stretched superpolyamide thread to a cold-stretched superpolyamide thread (both being derived from ε-aminocaproic acid) the increase in the degree of orientation is similar to that in discrete elemental fibrils of superpolyamides; these fibrils are obtained by ultrasonic disintegration of the thread. The difference in thickness between superpolyamide fibrils and polyethylene fibrils is determined to be about 100A.; this difference also exists for viscose silk fibrils and fibrils of native wood cellulose, native and mercerised cotton and for chitin. Electron-microscope photographs are reproduced. (23 references.) B. A. H...

BJORK, V.O.; INTONTI, F.; LORKIEWICZ, Z.; KORLUND, S.

Pacemaker treatment in Adams-Stokes syndrome. Cor vasa 7 no.2:93-100 '65.

1. Department of Thoracic and Cardiovascular Surgery, University Hospital, Uppsala, Sweden, and the Surgical Department, Medical Academy, Lodz, Poland.

LORKIEWICZ, Z.; NORLUND, S.; THORÉN, L.

Parenteral fluid administration through a catheter inserted into the superior vena cava. Kardiol. Pol. 8 no.1:25-29 '65

1. Z Oddzialu Chirurgii Klatki Piersiowej Szpitala Miejskiego im. J. Strusia w Poznaniu (Kierownik: prof. dr. J. Moll); z Kliniki Chirurgii Klatki Piersiowej i Sercowo-Naczyniowej (Kierownik: prof. dr. V.O. Björk) i z Kliniki Chirurgicznej Uniwersytetu w Uppsali (Kierownik: prof. dr. O. Hulten).

NORMA, Emili, Zagreb

Plea for reorganization of medical education. Narodno zdrav., Beogr. 11 no.3:67-81 1955.
(EDUCATION, MEDICAL,
in Yugosl., reorganiz)

ACC NR: AT6023362 (N) SOURCE CODE: UR/3174/65/000/055/0042/0043

AUTHOR: Norman, A. Yu. (Junior research associate)

ORG: Ninth soviet antarctic expedition (Devyataya sovetskaya antarkticheskaya ekspeditsiya)

TITLE: Seismic observations at Novolazarevskaya station during the Ninth soviet antarctic expedition

SOURCE: Sovetskaya antarkticheskaya ekspeditsiya, 1955- Informatsionnyy byulleten'. no. 55, 1965, 42-43

TOPIC TAGS: seismology, seismological station, seismic detection, seismic wave, Antarctic seismicity, seismograph/USF seismograph, seismic background, microseism

ABSTRACT: Interest of the seismic observations in Antarctica was centered upon weak earthquakes, since so far no strong earthquakes were ever originated and registered here. For this purpose, a system comprising three ultrasensitive short period seismographs was installed at Novolazarevskaya station. Their optimum registration period was .8 - .9 sec., with the maximum amplification factor between 70,000 and 100,000. During 1964, no earthquakes with antarctic epicenters were observed, although many distant earthquakes could be studied. The presence of very weak earthquakes assigned to an oceanic region 15 - 20° directly north of the station (on the zero meridian) was noted. Its active zone is at the underwater elevation Shpis, which is situated under

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ACC NR: AT6023362

400 m of water, surrounded by much larger depths of 2000- 3000 meters. The nature of the general backgound noise, comprised of short period highly damped oscillations and of microseisms due in part to winds, is discussed.

SUB CODE: 8, 17/ SUBM DATE: 05June65/ ORIG REF: 001

Card 2/2

LUK'YANOV, V.I.; MYSLIN, V.A.; SHNEYEROV, A.I.; KHOKHOT, A.Ya.; YELENSKIY, N.S.; MEL'NIKHOVA, O.M.; PLESHKOV, L.Ye.; ORLOV, V.V.; ZLATOLINSKIY, V.N.; VISHNEVSKIY, F.L.; LAPSHINKOV, P.G.; MAKHOV, M.S.; MUKAVISHNIKOV, I.D.; LITKIN, K.F.; KOZHEVNIKOV, O.A.; ZORKIN, G.N.; NORMAN, B.B.; TUMANOV, N.S.; SEREBRYANIKOV, S.M.; VOLKOV, N.G.; NOVIKOV, P.G.; FRIDBERG, G.V., inzh., red.izd-va; GELLISON, P.G., tekhn.red.

[Designing chief plans for industrial plants; principal methods] Proektirovanie general'nykh planov promyshlennykh predpriiatii; osnovnye polozheniia. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1960. 103 p.
(MIRA 13:6)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut gradostroitel'stva i rayonnoy planirovki. 2. Nauchno-issledovatel'skiy institut gradostroitel'stva Akademii stroitel'stva i arkhitektury USSR (for Khorkhot, Yelenskiy, Mel'nikhova). 3. Gosudarstvennyy institut proyektirovaniya metallurgicheskikh zavodov (Giprometz) (for Pleshkov).
(Continued on next card)

NORMAN, E. A.

"An Accurate Altimeter for Geographical Studies," Iz. vses. geograf obshch., 82, No.3, pp 326-329, 1950

Translation M-15301, 21 Nov 50

NORMAN, E.A.

ALEKSEYEV, B.N.; YENIKEYEV, G.Sh.; GLAGOLEV, A.V.; KISLOVA, A.M.; NORMAN, E.A.; LISOVSKIY, M.A.; MRATKOVSKOY, K.A.; SOROKIN, N.N., inzhener, redaktor; KHITROV, P.A., tekhnicheskiy redaktor

[Use of aerial photographs by railroad location parties] Ispol'zovanie aerofotosnimkov v polevykh trassirovochnykh partiiakh. Moskva, Gos. transp. zhel.-dor. izd-vo, 1955. 130 p. (MLRA 8:6)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo stroitel'stva i proyektirovaniya.
(Railroads--Location) (Photography, Aerial)

PETROV, M.A.; NORMAN, E.A.; VOLODIN, A.P.; DENISOV, V.A.; KOCHKONOGOV, V.P.; BEGAM, L.G.; BARANOV, M.A.; TAVLINOV, V.K.; YENIKEYEV, G.Sh.; BARANOVA, A.I.; KUDRYAVTSEV, G.P.; MALYAVSKIY, B.K.; CHEGODAYEV, N.N.; SURIN, V.S.; GONIKBERG, I.V., retsenzent; ENGEL'KE, V.A., retsenzent; KHRAPKOV, V.A., retsenzent; AL'PERT, G.A., retsenzent; ALEKSEYEV, B.N., retsenzent; SKLYAROV, A.A., retsenzent ALEKSEYEV, Ye.P., retsenzent

[Railroad surveying; reference and methodological handbook] Izyskaniia zheleznykh dorog; spravochnoe i metodicheskoe rukovodstvo. Moskva, Transport, 1964. 495 p. (MIRA 18:1)

1. Babushkin. Vsesoyuznyy nauchno-issledovatel'skiy institut transportnogo stroitel'stva. 2. Leningradskiy gosudarstvennyy proyektno-izyskatel'skiy institut Gosudarstvennogo proizvodstvennogo komiteta po transportnomu stroitel'stvu SSSR (for Gonikberg, Engel'ke, Khrapkov). 3. Sibirskiy gosudarstvennyy proyektno-izyskatel'skiy institut Gosudarstvennogo proizvodstvennogo komiteta po transportnomu stroitel'stvu SSSR (for Alekseyev, YeP.). 4. Moskovskiy gosudarstvennyy proyektno-izyskatel'skiy institut Gosudarstvennogo proizvodstvennogo komiteta po transportnomu stroitel'stvu SSSR (for Al'pert).

GORINOV, Aleksandr Vasil'yevich, nauchnyy sotrudnik; BUTLER, Serafim Aleksandrovich, nauchnyy sotrudnik; MALYAVSKIY, Boris Kirillovich, nauchnyy sotrudnik; NORMAN, Edgar Arturovich, nauchnyy sotrudnik; TAVLINOV, Viktor Konstantinovich, kand. tekhn.nauk, nauchnyy sotrudnik; VASIL'YEV, Yu.F., red.izd-va; ASTAF'YEVA, G.A., tekhn.red.

[Air levelling in surveying railroad lines; explorations of mountainous areas] Aeronivelirovanie na izyskaniiakh putei soobshcheniia; materialy issledovanii v gornoi mestnosti. Moskva, Izd-vo Akad.nauk SSSR, 1959. 272 p. (MIRA 13:3)

1. Chlen-korrespondent AN SSSR (for Gorinov). 2. Rukovoditel' laboratorii zheleznodorozhnykh izyskaniy Vsesoyuznogo nauchno-issledovatel'skogo instituta transportnogo stroitel'stva (TsNIIS) Mintransstroya SSSR (for Butler). 3. Laboratoriya zheleznodorozhnykh izyskaniy Vsesoyuznogo nauchno-issledovatel'skogo instituta transportnogo stroitel'stva (TsNIIS) Mintransstroya SSSR (for all except Vasil'yev, Astaf'yeva).
(Aerial photogrammetry) (Railroads--Surveying)

SIMIN, S.Kh., kandidat tekhnicheskikh nauk; NORMAN, E.V., inzhener.

Structural characteristics of the SK-54 warp-knitting machine.
Leg. prom. 17 no.1:34-37 Ja '57. (MLRA 10:2)

(Germany, East--Warping machines)

NORMAN, E.V.

The AChV-1 carding and knitting machine. Biul. tekh. ekon. inform. no.9:59-61 '59. (MIRA 13:3)
(Knitting machines)

NORMAN, Frantisek, dr.

The new criminal codes. Cs spoje 7 no.3:22-23 Mr '62.

NORMAN, Frantisek, dr.

The Economic Code. Cs spoje 10 no.2:24-25 Ap '65.

NORMAN, ~~F~~rantisek, dr.

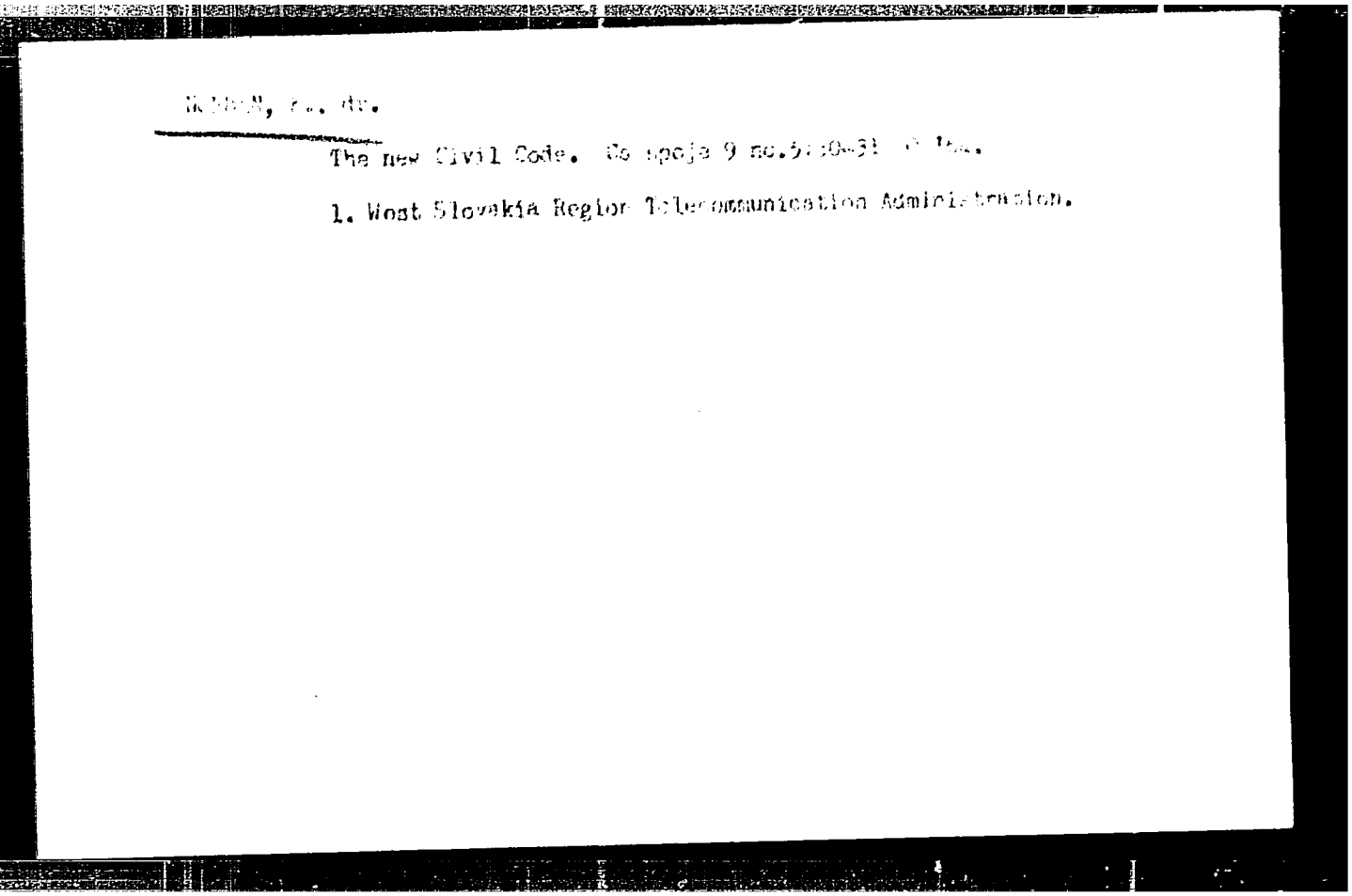
A new regulation of the economic arbitration. Cs spoje 8 no.2:1-2 Ap '63.

NORMAN, Frantisek, dr. (Bratislava)

On the new Civil Code. Cs spoje 9 no.3:25-27 Je '64.

NORMAN, Frantisek, dr.

The new Civil Code. Cs spoje 9 no. 2:22-24 Ap '64.



[illegible], [illegible] dr.

The new Civil Code. Co spoja 9 no.5: 30-31 [illegible].

1. West Slovakia Regior Telecommunication Administration.

NORMAN, Frantisek, dr.

The new Civil Code. Cs spoje 9 no.6:30-32 D '64.

VAYNSHTEYN, L. A.; NORMAN, G. E.

Calculating the cross sections of photoionization of aluminum and gallium atoms. Opt. i spektr. 8 no.2:149-151 F '60. (MIRA 13:10)

(Ionization) (Aluminum) (Gallium)

68880

S/051/60/008/02/001/036
E201/E391

24.6200

AUTHORS: Vaynshteyn, L.A. and Norman, G.E.

TITLE: Calculation of the Photo-ionization Cross-sections of Aluminium and Gallium Atoms

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 2, pp 149 - 151 (USSR)

ABSTRACT: The photo-ionization cross-section of an atom is given by:

$$\sigma = \frac{2\pi^2 a_0^2}{3{,}137} \cdot \frac{\varepsilon - E_{n\ell}}{g_{n\ell}} \sum_{\ell=\ell\pm1} Q_{\ell,\ell'} \left| \int_0^\infty P_{n\ell}(r) P_{\varepsilon\ell'}(r) r dr \right|^2 \quad (1)$$

where a_0 is the Bohr radius; $E_{n\ell}$, $g_{n\ell}$ and $P_{n\ell}(r)$ are, respectively, the energy, statistical weight and the radial function of an optical electron in the initial state of the atom; the radial function of the final state $P_{\varepsilon\ell}(r)$, is normalized to $\delta(\varepsilon - \varepsilon')$. The energy is given in Rydberg units and the other quantities are given in

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Calculation of the Photo-ionization Cross-sections of Aluminium and Gallium Atoms

atomic units. The multiplier $Q_{l,l}$ depends only on the orbital and spin quantum numbers; in the case of a single electron outside a filled shell $Q_{l,l} = 2 \max(l, l)$.

To find the radial function of continuous spectrum $P_{\varepsilon l}(r)$ the authors used Seaton's "quantum defect" expression (Refs 2,3) for the case $\varepsilon \ll 4\pi^2$;

$$P_{\varepsilon l}(r) = A(\varepsilon, l)\left[u_{\varepsilon l}(r)\cos \pi\mu_l(\varepsilon) - v_{\varepsilon l}(r)\sin \pi\mu_l(\varepsilon)\right], \quad (2)$$

$$A^2(\varepsilon, l) = \prod_{s=0}^{l-1}\left[1 - (l - s)^2\varepsilon\right]$$

where $u_{\varepsilon l}(r)$ and $v_{\varepsilon l}(r)$ are linearly independent solutions of the Schrödinger equation with a coulomb field $-\frac{1}{r}$; $\mu_l(\varepsilon)$ is the quantum number defect extrapolated

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to optical electron states with positive energies. For states with negative energies E_{nl}, we have

$$\mu_{nl} = n - n^{*}_{nl}; \quad n^{*}_{nl} = \frac{1}{\sqrt{-E_{nl}}} \qquad (3).$$

The functions $u_{\varepsilon l}(r)$ and $v_{\varepsilon l}(r)$ were expanded as series of Bessel's functions of the first and second type (Eqs 4-6). The calculated values of $u_{\varepsilon l}(r)$ and $v_{\varepsilon l}(r)$ are tabulated for $l = 2$ and for ε from 0 to 0.1 (Tables 1, 2). Using Tables 1 and 2 and the published values of the self-consistent field functions for the ground state (Refs 4,5), the photo-ionization cross-sections of Al and Ga atoms were calculated. For both atoms $l = 1$ for the ground state. Trial calculations

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showed that, of the two possible values $l = l' \pm 1$, only $l = 2$ contributes appreciably to the cross-section. The cross-sections obtained in this way ($\sigma \times 10^{18}$ cm^2) are plotted as functions of the energy (ε) of the electrom removed (in Rydberg units) in a figure on p 149. In the case of Al the cross-section decreases almost linearly with the energy ($\sigma = 30 \times 10^{-18}$ cm^2 at $\varepsilon = 0$ and $\sigma \simeq 4 \times 10^{-18}$ cm^2 at $\varepsilon = 0.12$ Rydberg units). In the case of Ga the cross-section falls more rapidly with energy (from $\sigma = 6 \times 10^{-18}$ cm^2 at $\varepsilon = 0$) reaching zero at $\varepsilon = 0.08$ Rydberg units; then the cross-section of Ga rises with the energy, reaching $\sigma \simeq 0.6 \times 10^{-18}$ cm^2 at $\varepsilon = 0.12$ Rydberg units. This shows that, in spite of the similarity of the external shells of Al and Ga, the energy dependences of the photo-ionization cross-sections

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E201/E391

Calculation of the Photo-ionization Cross-sections of Aluminium and Gallium Atoms

of these two atoms differ very considerably. Unfortunately, the calculated values could not be compared with the experimental ones because no empirical values are yet available for these atoms. Acknowledgment is made to L.M. Biberman for his advice. There are 1 figure, 2 tables and 5 references, 3 of which are English, 1 a translation from English into Russian and 1 German.

SUBMITTED: June 20, 1959

Card5/5

S/051/60/008/04/001/32
E201/E691

On the Calculation of Photo-Ionization Absorption

with ions. Comparison of the expressions derived by the authors with the experimental data of Boldt (Refs 6, 7) is given in Figs 2 and 3. In these figures curves 1 represent the measured absolute emissivity of arcs burning in pure oxygen (Fig 2) or pure nitrogen (Fig 3) at pressures of 1 atm.; the arc temperatures were 10 500-13 000°K. If the effect of formation of negative ions and free-free electron transitions are allowed for, the corrected emissivities are 60-70% lower than those given by curves 1 in Figs 2 and 3. The corrected emissivities agree better with the authors' calculations (curves 3 in Figs 2 and 3) than with Unsöld's values (curves 2' and 2"). There are 3 figures and 6 references, 2 of which are English and 6 German.

SUBMITTED: July 1, 1959

Card 2/2

AVILOVA, I.V.; NORMAN, G.E.

Decrease of potential of electron detachment from negative ions in a plasma. Teplofiz. vys. temp. 2 no.4:517-524 Jl-Ag '64. (MIRA 17:9)

1. Moskovskiy energeticheskiy institut i Nauchno-issledovatel'skiy institut vysokikh temperatur.

BIBERMAN, L.M.; NORMAN, G.E.; UL'YANOV, K.N.

Calculation of photoionization absorption in atomic gases. Opt. i spektr. 10 no.5:565-569 My '61. (MIRA 14:8)
(Photoelectricity)

S/051/62/012/003/001/016
E032/E314

AUTHOR: Norman, G.E.

TITLE: Justification of the quantum-defect method

PERIODICAL: Optika i spektroskopiya, v. 12, no. 3, 1962, 333 - 337

TEXT: It is pointed out that the quantum-defect method (QDM) put forward by Seaton (Ref. 1 - Monthly Notices Roy. Astron. Soc., 118, 504, 1958) cannot be regarded as rigorously justified. In Seaton's method, the asymptotic behaviour of the wave function of an electron with positive energy k^2 is characterized by a phase $\delta(k^2)$. Seaton's theory is criticized on the grounds that his expression for $\beta(k^2)$, which enters into the radial part of the wave function, is taken by analogy with a discrete spectrum, whereas it is not obvious why this should be so. Secondly, it is not immediately obvious why the possibility of extrapolation of $\mu(E)$ follows from the possible extrapolation of $\beta(E)$ and, thirdly, Seaton bases his theory on Ham's results (Ref. 3 - Solid State Physics (ed. F. Seitz, D. Turnbull), v.1, Academic

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S/051/62/012/003/001/016
E032/E314

Justification of ....

Press, N.Y., 1955), whereas Ham did not succeed in proving that $\mu(E)$ could be extrapolated to low energies. The author reports an attempt atajustification of the QDM in the present note. In distinction to Seaton's approach, the problem is treated from the point of view of the general theory of physical scattering. Use is made of the effective-radius theory (ERT) and it is pointed out that this theory has not as yet been applied to the Coulomb field. Transition from the continuous spectrum to the discrete is carried out with the aid of a substitution put forward by Landau and Smorodinskiy (Ref. 9 - ZhETF, 14, 269, 1944; J. Phys. USSR, 8, 154, 1944). The ERT method is used to determine the phase of the electron wave function as a function of energy for an electron located in the field of a positive ion. Expressions are derived for the bound states of an electron in an atom, i.e. a single theory is constructed which is capable of treating both free and bound states and thereby a relation is obtained between the $\delta(k^2)$ and the effective quantum number n^*, which define the corresponding wave functions. The results are said to constitute

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E032/E314

Justification of ....

a rigorous justification of the QDM which turns out to be a simple consequence of the general theory of elastic scattering by a centre of force. Acknowledgments are expressed to L.M. Biberman who directed this work.
There is 1 figure.

SUBMITTED: January 30, 1961

Card 3/3

BIBERMAN, L.M.; VOROB'YEV, V.S.; NORMAN, G.E.

Energy emitted by an equilibrium plasma in spectral lines. Opt. i spektr. 14 no.3:330-335 Mr '63. (MIRA 16:4)
(Plasma (Ionized gases)) (Hydrogen—Spectra)

NORMAN, G.E.

Free-free electron transitions in the ion field. Opt. i spektr. 14 no.4:521-526 Ap '63. (MIRA 16:6)

(Ions) (Quantum theory)

L 9847-63 BDS
ACCESSION NR: AP3000575 S/0051/63/014/005/0593/0597

47
46

AUTHOR: Norman, G. E.

TITLE: Cross sections for photoionization of low-lying states and the oscillator strengths of some lines of carbon and nitrogen atoms

SOURCE: Optika i spektroskopiya, v. 14, no. 5, 1963, 593-597

TOPIC TAGS: photoionization cross section, oscillator strengths, C, N

ABSTRACT: The cross sections for photoionization from two low-lying states of carbon and of nitrogen were calculated by the method proposed by Burgess and Seaton (Monthly Notices ROYAL Astron. Soc., 120, 121, 1960), using values found with the aid of tables published by these authors. The Burgess-Seaton method was chosen owing to its simplicity and reliability. The calculated cross sections are plotted. There were also calculated the oscillator strengths associated with nine lines in the spectra of each of these atoms, corresponding to transitions to the ground state and low-lying states. The computed f-values

are tabulated. Although the calculated cross sections and oscillator strengths

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ACCESSION NR: AP3000575

could not be checked against other computations or experimental data, owing to lack of such data, it is assumed that the results are reasonable in view of the similarity of the departure states to the ground states of the respective atoms and the fact that the values obtained by Burgess and Seaton by means of their equations agree with other estimates. "In conclusion I desire to thank my supervisor L. M. Biberman for his attention and valuable discussions." Orig. art. has: 5 equations, 6 figures and 2 tables.

ASSOCIATION: none

SUBMITTED: 20Jun62 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: PH NR REF SOV: 005 OTHER: 004

ja/mh

Card 2/2

ACCESSION NR: AP4009121 S/0056/63/045/006/1970/1977

AUTHORS: Biberman, L. M.; Norman, G. E.

TITLE: Semiempirical method for calculating the cross section for the elastic scattering of slow electrons by atoms

SOURCE: Zhurnal eksper. i teoret. fiziki, v. 45, no. 6, 1963, 1970-1977

TOPIC TAGS: electron atom elastic scattering, slow electron scattering, scattering length, effective scattering range, quantum defect, isoelectronic extrapolation, elastic scattering cross section, electron argon scattering, electron neon scattering, Ramsauer effect

ABSTRACT: In view of the relatively scanty published data on elastic scattering of slow electrons by atoms, and in view of the felt need for semiempirical methods by which to calculate this scattering, the authors propose a method in which the scattering length and

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ACCESSION NR: AP4009121

the effective range of electron elastic scattering from a neutral atom can be determined by isoelectronic extrapolation in terms of the quantum defect of the electron in the ion fields. The method is based essentially on the quantum-defect method proposed by Seaton (C. R., Paris, v. 240, 1317, 1955) and the extrapolation is carried out not with respect to Z but with respect to model potential parameters which are chosen to correspond to experimentally known quantum defects. By way of an example, the cross sections are determined for the elastic scattering of electrons by argon and neon atoms at energies up to 1 eV. The results obtained are in satisfactory agreement with the available data, for example, the scattering length was found to be negative for argon and positive for neon, in correspondence with the fact that the Ramsauer effect is observed for argon and not for neon, in spite of the fact that the cross sections of argon and neon turn out to be almost the same. "In conclusion we are indebted to A. Kh. Mnatsakanyan and A. N. Starostin for many interesting discussions." Orig. art. has: 4

Card 2/3

ACCESSION NR: AP4009121

figures, 14 formulas, and 2 tables.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Power-Engineering Institute)

SUBMITTED: 31May63	DATE ACQ: 02Feb64	ENCL: 00
SUB CODE: PH	NO REF SOV: 004	OTHER: 028

Card 3/3

ACCESSION NR: AP4041567 S/0293/64/002/003/0441/0454

AUTHOR: Biberman, L. M.; Vorob'yev, V. S.; Norman, G.E.; Yakubov, I. T.

TITLE: Radiation heating in the case of hypersonic flow

SOURCE: Kosmicheskiye issledovaniya, v. 2, no. 3, 1964, 441-454

TOPIC TAGS: radiation heating, hypersonic flow, shock wave, aerodynamic heating, blunt body, boundary layer

ABSTRACT: The problem of the heating of a blunt body by shock-wave radiation in the case of hypersonic flow (velocities > 8 km/sec) is examined with particular attention given to the case of heating caused by flow under conditions where the gas is almost completely dissociated following a density jump. General expressions are given to compute the radiant fluxes. The main elementary radiation processes involved in the determination of the plasma formed after the density jump are analyzed. Methods of computing the contribution of the individual radiation processes to the radiating capacity of the air are presented. The radiation in the continuous spectrum and in the entire aggregate of spectral lines is considered. Compu-

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ACCESSION NR: AP4041567

tations indicate that: 1) there is a broad interval of temperatures, pressures, and thicknesses of the radiating layer in which the lines make the major contribution to the energy emitted by the plasma, 2) the total energy of a large number of weak lines, computed integrally, with a growth of optical density may noticeably increase the contribution of the individually computed strong lines, and 3) in addition to the visible lines, the lines in the ultraviolet may also play an important role. Computations were also made of the coefficients of absorption and the degree of air darkening in the pressure interval p = 0.001—100 atm and for temperatures to 20,000K. The values of the flow parameters at which the radiant heat flux may exceed the convective flow and cause aerodynamic heating are found. The state of the gas behind the shock wave front is discussed. The causes for the departure from a state of equilibrium and the regions of relaxation and quasi-stationary inequilibrium are analyzed. The main processes determining the structure of the inequilibrium zone at high flow velocities are explained. Orig. art. has: 5 formulas and 3 figures.

ASSOCIATION: none

Card 2/2

ACCESSION NR: AP4043002 S/0051/64/017/002/0176/0179

AUTHOR: Norman, G. E.

TITLE: On the role of the negative nitrogen ion in the formation of the continuous spectrum of a nitrogen and an air plasma

SOURCE: Optika i spektroskopiya, v. 17, no. 2, 1964, 176-179

TOPIC TAGS: plasma charged particle, plasma concentration, plasma spectral line, plasma radiation, nitrogen, ion equilibrium

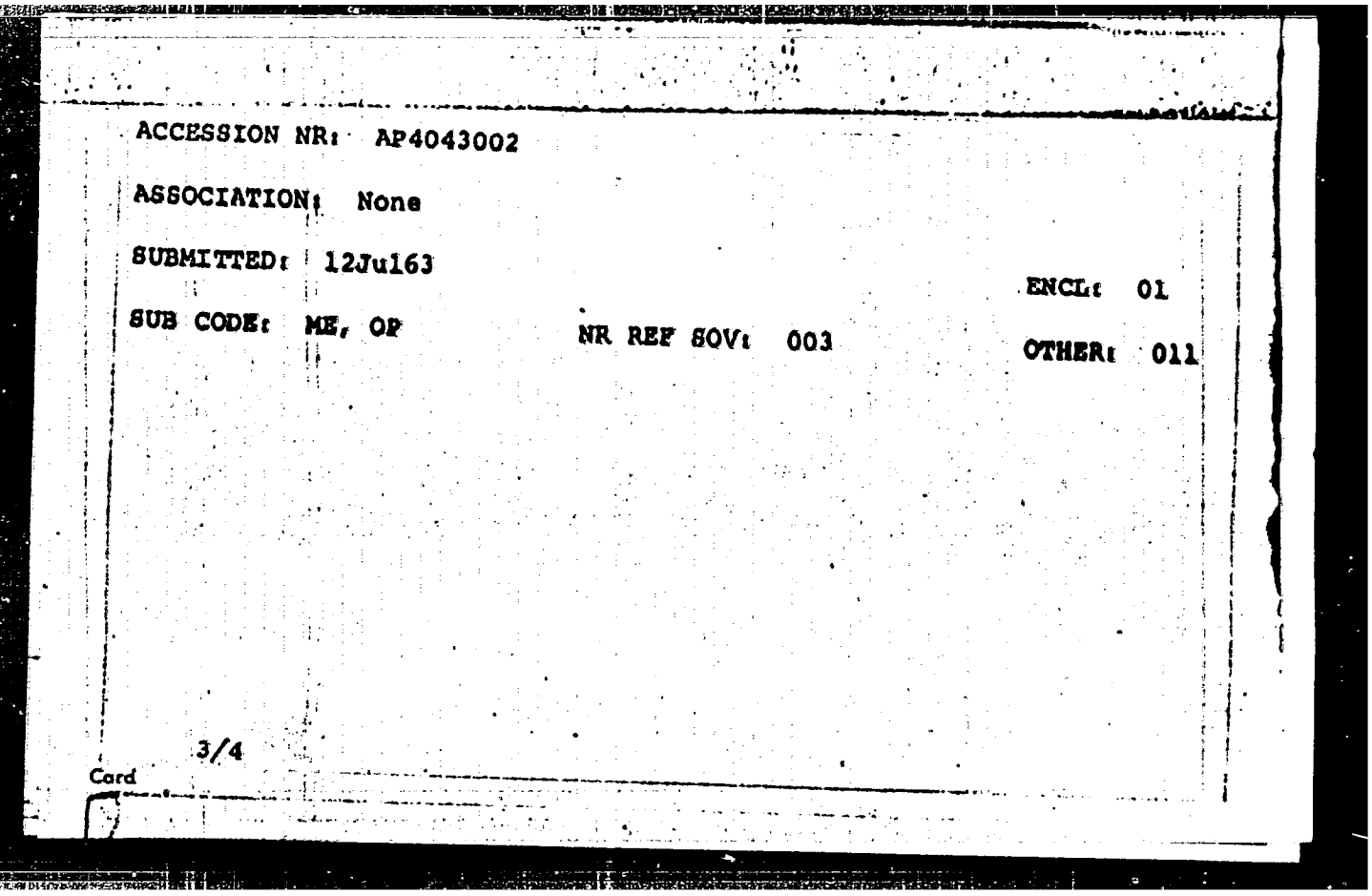
ABSTRACT: Since little attention has been paid to this question so far, the author estimates the cross section for photodetachment from N^-, the role of N^- in the formation of the continuous spectrum from nitrogen and air plasmas, and the range of pressures and temperatures at which N^- has a significant effect. The required binding energy of N^- is calculated by iso-electronic extrapolation on the basis of the results of B. Edlen (J. Chem. Phys. v. 33, 98, 1960).

Card 1/4

ACCESSION NR: AP4043002

It is shown by indirect evidence that the ground state ^3P of the N^- ion is not realized, and that the excited states ^1D and ^1S result from the sticking of an electron to the excited states of the nitrogen atom and are metastable. The dominating ion is in the ^1D state and is the only one considered in the estimates. The photodetachment cross sections obtained for the 0.75 and 1.7 eV levels of $N^-(^1D)$ are 1.2×10^{-16} and 4×10^{-17} cm^2 respectively. Calculations of the relative absorption coefficient as a function of the temperature indicate a major role for the N^- ion, and show agreement with the data obtained by G. Boldt (Zs. Phys. v. 154, 330, 1959) at 10500K, but there are too many unaccounted-for factors (lifetimes of the states of N^-, auto-ionization, deviations of concentration from equilibrium) for definite conclusions without additional experiments. "I am grateful to L. M. Biberman and I. T. Yakubov for useful discussions." Orig. art. has: 2 figures.

Card 2/4



ACCESSION NR: AP4043002

ASSOCIATION: None

SUBMITTED: 12Jul63

ENCL: 01

SUB CODE: ME, OP NR REF SOV: 003 OTHER: 011

3/4

Card

ACCESSION NR: AP4043003 S/0051/64/017/002/0180/0188

AUTHORS: Vorob'yev, V. S.; Norman, G. E.

TITLE: Energy radiated by an equilibrium plasma in spectral lines, II.

SOURCE: Optika i spektroskopiya, v. 17, no. 2, 1964, 180-188

TOPIC TAGS: plasma radiation, plasma spectral line, nitrogen, oscillator strength, line broadening, continuous spectrum, line spectrum

ABSTRACT: The method developed by the authors previously (with L. M. Biberman, Opt. i spektr. v. 14, 330, 1963) for the calculation of line radiation energy is extended from a hydrogen plasma to include a plasma of arbitrary composition. Account is taken of the specific difficulties arising in connection with individual complex atoms, such as differences in oscillator strengths, in the broadening

Card 1/2

ACCESSION NR: AP4043003

mechanism and in the values of the line half-widths, in the multiplet level structures, and in the overlap of certain series. The specific broadening mechanisms of different lines of complex atoms and ions are taken into account, and expressions are derived for the integral contributions of aggregates of weak lines. The influence of the continuous spectrum is estimated. The calculation method is illustrated with nitrogen plasma as an example for which energy balances are calculated for several pressures and optical thicknesses. It is shown that the results obtained for nitrogen are general enough to cast light on the relative role of individual processes. "In conclusion we thank L. M. Biberman for interest in the work and for a discussion of the results. We are also grateful to I. T. Yakubov for useful remarks." Orig. art. has: 1 figure, 10 formulas, and 2 tables.

ASSOCIATION: None

Card 2/3

L 17877-66 EWT(d)/T/EWP(1) IJP(c)
ACC NR: AP5027657 SOURCE CODE: UR/0051/65/019/005/0657/0661

AUTHOR: Norman, G. E.

37
33
8

ORG: none

16,40,55

TITLE: Use of the Coulomb approximation in calculating the probability of transitions [Paper presented at the Symposium on the Intensity and Form of Spectral Line Contours held in Krasnoyarsk on June 26 - July 27, 1964]

SOURCE: Optika i spektroskopiya, v. 19, no. 5, 1965, 657-661

TOPIC TAGS: spectroscopy, spectral line, oscillation, calculation

ABSTRACT: A discussion was held on the applicability of the Coulomb approximation in the form developed by D. R. Bates, A. Damgaard (Phil. Trans. Roy. Soc., London, A242, 101, 1949), and M. J. Seaton (Monthly Notices Roy. Astron. Soc., 118, 504, 1958) for calculating the probability of transitions from the state with equivalent electrons. An inaccuracy of a single conf[illegible]

approximation for the upper states is one of

Card 1/2 UDC: 539.182

2

EWT(1)/T IJP(c)

ACC NR: AP6029770 SOURCE CODE: UR/0294/66/004/004/0473/0479

AUTHOR: Kobzev, G. A.; Norman, G. E.; Seryakov, K. I. 55 B

ORG: Moscow Power Engineering Institute (Moskovskiy energeticheskiy institut); High Temperature Scientific Research Institute (Nauchno-issledovatel'skiy institut vysokikh temperatur)

TITLE: Determination of photoionization cross sections from the oscillator strengths of spectral lines

SOURCE: Teplofizika vysokikh temperatur, v. 4, no. 4, 1966, 473-479

TOPIC TAGS: oscillator strength, photoionization, photoionization cross section, spectral line, IONIZATION CROSS SECTION

ABSTRACT: It is pointed out that the photoionization cross section in the prethreshold region can be calculated by extrapolation, i.e., by extrapolating a smooth curve drawn through the points representing the oscillator strengths for a group of lines of a spectral series. Using this method the authors calculated photoionization cross sections for transition from the ground state of Al, Ga, In, and Sr. It is pointed out that when both the cross sections for photoionization and oscillator strengths have been measured, the correspondence between the cross sections and the density of oscillator strengths can be used to deter-

Card 1/2 UDC: 533.933

ACC NR: AP6029770

mine the accuracy of the experimental results. Using the available experimental data, it has been established that under conditions such as occur in plasma (shifting of the threshold) the cross sections for photoionization extend toward the long-wavelength region past the ideal threshold frequency. When enough data on oscillator strengths are available, the present method of calculating the cross sections for photoionization in the prethreshold region is more reliable than the Burgess-Seaton method. Orig. art. has: 5 figures. [CS]

SUB CODE: 20/ SUBM DATE: 19Jul65/ ORIG REF: 016/ OTH REF: 031

Card 2/2 hs

S/066/60/000/004/004/004/XX
A053/A029

AUTHOR: Norman, K., Engineer

TITLE: New Method of Manufacturing Bimetal Tube Gratings for Heat Exchanging Apparatus

PERICDICAL: Kholodil'naya tekhnika, 1960, No. 4, pp. 47-49

TEXT: The article describes a new method of manufacturing bimetal tube gratings, developed by the Krasnodarskiy kompressornyy zavod (Krasnodar Compressor Plant). The grating is cut to size from a 40-mm steel sheet. On one side of the circular plate a recess is cut which is 73 mm smaller in diameter than the plate. Taking into account allowance for shrinkage of the copper the mechanical machining of the recess is about 19 mm deep. No tube holes are drilled in the grating which for the process of bimetallization is given the form of a smooth disk with a recess to be filled with copper. A boiling hot solution of borax (50 g borax per 100 g water) is then applied by brush to the interior surface of the disk. After drying, a 2 mm layer of powdered borax is spread out and covered with a lid made of heatproof steel. The disk thus prepared is placed into a gas oven and heated to

Card 1/2

NORMAN, Kh. K.

EXCERPTA MEDICA Sec.14 Vol.11/7 Radiology Jul 57.

1193. NORMAN Kh. K. Inst. of Exp. and Clin. Med., Acad. of Sci. of the Estonian SSR, Tallin. *Investigation of the intensity of the red cells phosphorus exchange by means of radioactive isotopes in cases of tb (Russian text) VESTN. RENTGENOL. RADIOL. 1956, 3 (3-6) illus. 3

Eighteen cases of pulmonary tb and 37 cases of tb meningitis were investigated, together with a control group of 50 normal individuals. Radioactive phosphorus (P^{32}) was used as an indicator. The amount of inorganic phosphorus absorbed by erythrocytes in certain conditions was taken as an index of the intensity of the phosphorus exchange. It is known that in physiological conditions one million of erythrocytes can absorb 7.5-16.7% of phosphorus. This falls to 5.8-9% during an exacerbation of a severe pulmonary tb or tb meningitis, and again approaches normal values when the clinical condition improves. When treatment with streptomycin and isoniazid is effective this figure also approaches normal values paripassu with clinical improvement. It was proved on normal animals that streptomycin and isoniazid by themselves do not induce any changes in phosphorus metabolism of the red cells.

Nevskaya - Moscow

SOV/119-58-8-11/16

AUTHOR: Norman, Kh. K.

TITLE: Pneumatic Regulators from the Tallinsk Factory (Pnevmaticheskiye regulyatory Tallinskogo zavoda)

PERIODICAL: Priborostroyeniye, 1958, Nr 8, pp. 24 -27 (USSR)

ABSTRACT: The factory KUP in Tallinn has since 1951 been developing and producing a number of pneumatic regulators which have already been in use on a large scale especially in the Soviet canned fish industry and in the tobacco fermentation industry. Three different types are described in detail. Their data are:

Denomination	PRS	PR	PRS
Range of temperature regulation in °C	40-140	15-65	40-200
Range of regulation of relative moisture in %	-	98	-
Recording errors and errors in temperature regulation in °C	± 1	± 1	± 2
Maximum duration of a cycle of regulation in hours	2,5	288	24

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Pneumatic Regulators of the Tallinn Factory

Denomination	PR3	PR	PR3
Value of division of disk diagram:			
for temperature in oC	1	0,5	2
for time in minutes	15	180	15
pressure of compressed air in kg/cm^2:			
up to the reducer	2-5	2-5	2-5
beyond the reducer	1,1	1,1	1,1
air consumption in Nm^3/h (approximately)	2	2	1
feed voltage in V	12	220	220
required output in VA	26	10	14
length of capillary in m	10	12	15
dimensions of the apparatus in mm	155. 135 .540	540. 460. .200	423. 406. .185
weight of apparatus with reducer in kg	35	45	27

There are 9 figures and 2 tables.

1. Pneumatic apparatus--Equipment 2. Pneumatic apparatus--Performance 3. Temperature--Control 4. Humidity--Control

Card 2/2

KALININ, K.P., kand.tekhn.nauk; NORMAN, K.V., inzh.

Technology of manufacturing bimetallic pipe grates for sea-going vessels. Sudostroenie 27 no.9:61-62 S '61. (MIRA 14:11)
(Heat exchangers) (Metal cladding)

MARTINSON, E.E.; NORMAN, M.Kh.; ZALESKAYA, Yu.M.

Rhubarb leaves as a nutritional source of vitamin C. Vop.pit. 18
no.5:82-83 S-O '59. (MIRA 13:1)

1. Iz kafedry biokhimii (zav. - prof.doktor med.nauk E. Martinson)
Tartuskogo gosudarstvennogo universiteta.
(RHUBARB chem.)
(VITAMIN C chem.)

LIDIN, D.; NORMANSKIY, M.; GOLUBEV, B.; SOROKIN, M.; MAKSIMOV, M.; ALEKSANDROV, I.; MOGILKIN, V.; LAKISOV, A.; FIL'CHUK, A.; SAVEL'YEV, V.

Representatives of the people. Mast.ugl. 7 no.4:3-7 Ap '58. (MIRA 11:4)
(Russia--Politics and government--Biographies)

NORMANSKIY, Yo.S.

Comparative evaluation of various methods of immunization with typhoid fever vaccine. Zhur.mikrobiol., epid. i immun. 42 no.12:44-48 D '65. (MIRA 19:1)

1. Voyenno-meditsinskaya ordena Lenina akademiya imeni Kirova.

37929

24.7700

S/181/62/004/005/017/055
B125/B104

AUTHORS: Bir, G. L., Normantas, E., and Pikus, G. Ye.

TITLE: Galvanomagnetic effects in semiconductors with degenerate bands

PERIODICAL: Fizika tverdogo tela, v. 4, no. 5, 1962, 1180 - 1195

TEXT: The more precise theory of galvanomagnetic effects in p-type Ge semiconductors presented here furnishes substantial corrections to the numerical values of the galvanomagnetic constants and explains the dependence of the Hall constant on the magnetic field observed experimentally. Allow for the influx of carriers from other bands involves "crossed relaxation times", changes the distribution function of light holes more than that of heavy ones, and likewise changes the contribution of the various types of carriers to the kinetic coefficients. Owing to the small contribution of light holes to the electrical conductivity, the effects due to light and heavy holes make about the same contributions. The relaxation times of longitudinal vibrations for $\gamma \to 0$ are given by

Card 1/5

Galvanomagnetic effects in ...

$$\left.\begin{aligned}\frac{1}{\tau_{11}^{(L)}} &= \frac{1}{\tau_0^{(L)}}(1-\eta)^2,\\ \frac{1}{\tau_{22}^{(L)}} &= \frac{1}{\tau_0^{(L)}}\left[(1-\eta)^2+\frac{3}{4}\eta^2\right],\\ \frac{1}{\tau_{12}^{(L)}} &= -\frac{1}{\tau_0^{(L)}}\frac{4}{5}\eta(1-\eta).\end{aligned}\right\} \qquad (2.14)$$

with $\eta = b/a$ and $\gamma^2 = \gamma_{12}^2 = m_1/m_2$. Here, a and b are the constants of the deformation potential, m_1 and m_2 are the effective masses of light and heavy holes, respectively with $\eta \neq 0$ and small values of γ, the relaxation time τ_{22} of heavy holes will always be a little shorter than the relaxation time τ_{11} of light holes. In the case of scattering by acoustic vibrations of the lattice at $\gamma \to 0$, the inverse relaxation times are given by

Card 2/5

Galvanomagnetic effects in ...

$$\left.\begin{aligned}
\frac{1}{\tau_{11}} &= \frac{1}{\tau_{11}^{(L)}} + \frac{1}{\tau_{11}^{(T)}} = \frac{1}{\tau_0^{(L)}}\left[(1-\eta)^2 + \frac{3}{2}\frac{C_L^2}{C_T^2}\eta^2\right], \\
\frac{1}{\tau_{22}} &= \frac{1}{\tau_{22}^{(L)}} + \frac{1}{\tau_{22}^{(T)}} = \frac{1}{\tau_0^{(L)}}\left[(1-\eta)^2 + \frac{3}{4}\eta^2\left(1+\frac{C_L^2}{C_T^2}\right)\right], \\
\frac{1}{\tau_{12}} &= -\frac{1}{\tau_0^{(L)}}\frac{\eta}{5}\left[4(1-\eta)+3\eta\frac{C_L^2}{C_T^2}\right].
\end{aligned}\right\} \quad (2.18)$$

τ_{11} and τ_{22} may differ considerably. τ_{22} reaches a maximum at $\eta \simeq 0.75$. Using the transition probabilities for scattering inside and between the bands one obtains the relaxation times

Card 3/5

Galvanomagnetic effects in ...

$$\frac{1}{\tau_{ij}(\varepsilon)}=\frac{e^4\pi N}{\sqrt{2}\,\varepsilon_0^2 m_i^{1/2}\varepsilon_i^{3/2}}\left(\Phi(\lambda_i)+\varphi_6(\gamma_{ij})\right)\quad(j\neq i),$$

$$\frac{1}{\tau_{12}(\varepsilon)}=\frac{1}{\tau_{21}(\varepsilon)}=\frac{e^4\pi N}{\sqrt{2}\,\varepsilon_0^2 m_i^{1/2}\varepsilon_i^{3/2}}\varphi_7(\gamma),\qquad (3.7)\text{ and}$$

$$\Phi(\lambda)=\frac{1}{4}\left((1-3\lambda)^2\ln\frac{1+\lambda}{1-\lambda}+\frac{2}{1+\lambda}(2-3\lambda-9\lambda^2)\right),$$

$$\varphi_6(\gamma)=\frac{12\gamma}{(1-\gamma^2)^2}\varphi_4(\gamma),\quad \varphi_7(\gamma)=\frac{3\gamma}{(1-\gamma^2)^2}\varphi_3(\gamma).\qquad (3.8)\text{ with}\quad (3.9)$$

for scattering from ionized impurities. In (3.7) $i \neq j$ and $\lambda = 1+(\kappa^2\hbar^2/4m_i\varepsilon)$. In the case $\kappa^2\hbar^2/4m_i\varepsilon_i \ll 1$, which is important in practice, $\Phi(\lambda)$ is reduced to $\Phi(\lambda) = \ln(8m\varepsilon/\kappa^2\hbar^2)-5/2$.

$$\frac{1}{\tau(\varepsilon)}=\frac{e^4\pi N}{\sqrt{2}\,\varepsilon_0^2\varepsilon^{3/2}m^{1/2}}\left\{\ln\frac{8m\varepsilon}{\kappa^2\hbar^2}-1\right\}.\qquad (3.12)$$

holds for a simple band if $\kappa^2\hbar^2/4m^*\varepsilon \ll 1$. Heavy holes make the greatest contribution to the electrical conductivity. The contribution of light holes amounts to $\gamma\tau_{11}/\tau_{22}$ of the share of heavy holes, viz. 36% at $\tau_{11} = \tau_{22}$ for $\eta = 0$, and 21% for $\eta = 0.75$%. For $b = 0$, the hole mobility

Card 4/5

Galvanomagnetic effects in ...

calculated with the aid of the present theory is twice that obtained by the simple theory. In the case of weak fields and for $\eta = 0$ and $\eta = 0.75$, the contributions of heavy holes are 26 and 64%, respectively, and increase with increasing magnetic field strength. At 80°K and a concentration of centers of about 10^{13} cm^{-3}, scattering from impurities is negligible. The calculations are to be continued. Average values for the constants of the deformation potential are given in an appendix. There are 6 figures and 1 table. The most important English-language reference is: C. Herring, E. Vogt. Phys. Rev., 101, 944, 1956.

ASSOCIATION: Institut poluprovodnikov AN SSSR, Leningrad (Institute of Semiconductors AS USSR, Leningrad).
Institut fiziki i matematiki AN Lit. SSR, Vil'nyus (Institute of Physics and Mathematics AS Litovskaya SSR, Vil'nyus)

SUBMITTED: December 23, 1961

Card 5/5

S/181/62/004/010/008/063
B108/B186

24760

AUTHORS: Normantas, E., and Pikus, G. Ye.

TITLE: Thermomagnetic effects in semiconductors with degenerate bands

PERIODICAL: Fizika tverdogo tela, v. 4, no. 10, 1962, 2692-2707

TEXT: The thermomagnetic coefficients in p-type semiconductors with degenerate bands are calculated on the basis of the exact theory of carrier scattering (G. L. Bir, G. Ye. Pikus. FTT, 2, 2287, 1960). In this way it is possible to consider band-to-band transitions and their effect upon entrainment and relaxation processes. For easier calculation the isoenergetic surfaces of light and heavy holes are approximated by certain median spheres, the constants b and d of the deformation potential are replaced by their mean values, and the crystal is assumed to be elastically isotropic with the constant c_{44}. Scattering of phonons from holes is taken to be negligible. Results: the thermo-e. m. f. α, the Nernst-Ettinghausen coefficient Q, and the change of the thermo-e. m. f., $\Delta\alpha_H$, in a magnetic field consist of two parts, one of which is due only to

Card 1/5

interaction of the carriers with the equilibrium phonons (superscript p) and the other only to the entrainment (superscript ph). The hole parts of the coefficients have the form

$$\alpha^p = \frac{k_0}{e}\left(2 - \frac{\mu}{k_0 T}\right), \tag{7}$$

$$Q^p = -\frac{3\pi}{16}\frac{k_0 u_2}{eo}\frac{1}{1+\gamma^2\frac{\tau_{11}}{\tau_{12}}}\frac{L^{(1)}A^{(1)} - L^{(2)}A^{(2)}}{\left\{[A^{(2)}]^2 + \frac{\pi}{4}\beta_2[A^{(1)}]^2\right\}}, \tag{8}$$

$$\Delta\alpha_H^p = \frac{k_0}{e}\left\{\frac{1}{2}\frac{L^{(1)}A^{(2)} + \frac{\pi}{4}\beta_2 L^{(2)}A^{(1)}}{\left\{[A^{(2)}]^2 + \frac{\pi}{4}\beta_2[A^{(1)}]^2\right\}} - 2\right\}. \tag{9}$$

The subscripts 1 and 2 refer to light and heavy holes, respectively. The parts of the coefficients due to longitudinal phonons are

Card 2/5

$$\alpha^{ph(L)} = \frac{\sqrt{\pi}}{2} \frac{G^{(L)}}{G_0} \frac{C_1^0}{eT}, \tag{16}$$

$$Q^{ph(L)} = -\frac{C_1^0}{eT} \frac{1}{H} \frac{A^{(T)}B^{(T)} - \frac{\pi}{4}\beta_2 A^{(L)}B^{(T)}}{\sqrt{\beta_2}\left\{[A^{(T)}]^2 + \frac{\pi}{4}\beta_2 [A^{(L)}]^2\right\}}, \tag{17}$$

$$\frac{\Delta\alpha_H^{ph(L)}}{\alpha^{ph(L)}} = \frac{G_0}{G^{(L)}} \frac{B^{(L)}A^{(L)} + B^{(T)}A^{(T)}}{\left\{[A^{(T)}]^2 + \frac{\pi}{4}\beta_2 [A^{(L)}]^2\right\}} - 1, \tag{18}$$

and the total phonon parts are

Thermomagnetic effects in ...

$$\alpha^{\beta\Delta} = \alpha^{\beta\Delta(L)}\left(1 + \frac{\alpha_2}{\alpha_1}\zeta \cdot \frac{2}{\sqrt{\pi}}\right), \quad (25)$$

$$Q^{\beta\Delta} = Q^{\beta\Delta(L)}\left(1 + \frac{\alpha_2}{\alpha_1}\zeta\Lambda(H)\right), \quad (26)$$

$$\Delta\alpha_{ik}^{\beta\Delta} = \Delta\alpha_{ik}^{\beta\Delta(L)}\left(1 + \frac{\alpha_2}{\alpha_1}\zeta\Sigma(H)\right), \quad (27).$$

The quantities β, A, L, C, and B involve the relaxation times τ_{11} and τ_{22} as well as τ_{12}. Λ and Σ are complicated functions of H. The entrainment due to transverse phonons plays a minor role and can therefore be neglected in making comparisons with experimental data (C. Herring. Phys. Rev., 95, 954, 1954). There are 8 figures.

Card 4/5

S/181/62/004/010/008/063
B108/B186

Thermomagnetic effects in ...

ASSOCIATION: Institut poluprovodnikov AN SSSR Leningrad (Institute of Semiconductors AS USSR, Leningrad); Institut fiziki i matematiki AN Litovskoy SSR, Vil'nyus (Institute of Physics and Mathematics AS Litovskaya SSR, Vil'nyus)

SUBMITTED: April 28, 1962

Card 5/5

RASHKOVSKIY, S.; NORMANTAS, E.; EVA, V.; GUDONITE, M. [Gudonyte, M.]

In the Department of Physicotechnical and Mathematical Sciences.
Trudy AN Lit. SSR. Ser. B. no. 4:223-228 '65 (MIRA 19:2)

NORMANTAS, P. K.:

NORMANTAS, P.K.: "Training racing skiers in the younger classes under twilight and nighttime illumination (in the basic training period(". Leningrad, 1955. State Order of Lenin and Order of Labor Red Banner I st of Physical Culture imeni P. F. Lesgaft. (Dissertations for the Degree of Candidate of Pedagogical Sciences.)

So. Knizhnaya letopis'. No. 49, 3 December 1955. Moscow.

NAZAROV, S.N.; KUCHKAROV, D.K.; NORMATOV, A.

Cementing low-temperature gas wells. Neft. khoz. 42 no.7:26-28 Jl '64. (MIRA 17:8)

SUKHOTINA, G.G.; NORMATOV, A.; SHAKHPARONOV, M.I.

Velocity and absorption of ultrasound in pyridine-paraxylene solutions. Vest. Mosk. un. Ser. 2: Khim. 20 no.1:71-72 Ja-F '65. (MIRA 18:3)

1. Kafedra fizicheskoy khimii i laboratoriya molekulyarnoy akustiki Moskovskogo oblastnogo pedagogicheskogo instituta.

L 45804-66 EWT(1)/T/EWP(k) JW

ACC NR: AR6023306 SOURCE CODE: UR/0058/66/000/003/H0T1/H0T2

68

B

AUTHOR: Normatov, A.; Nozdrev, V. F.; Belinskiy, B. A.

TITLE: Investigation of the coefficient of absorption and propagation velocity of ultrasonic waves in the quaternary system acetic acid -- ethyl acetate -- ethyl alcohol -- water

SOURCE: Ref zh. Fizika, Abs. 3Zh499

REF. SOURCE: Tr. 1-y Mezhvuz. nauchn. konferentsii po primeneniyu molekul. akust. k issled. veshchestva i v nar. kh-ve. Tashkent, 1964, 161-164

TOPIC TAGS: ultrasonic velocity, ultrasound absorption, aqueous solution, absorption coefficient, temperature dependence, acetic acid, frequency characteristic, relaxation process

ABSTRACT: An investigation was made of the coefficient of absorption and the velocity of ultrasound in a system consisting of acetic acid (79.2%), ethyl acetate (0.8%), ethyl alcohol (20%), and 1 -- 80% water added. The component liquids were subjected to chemical purification. The accuracy of measurement of the absorption coefficient was from 5 to 2% at frequencies 5 -- 85 Mcs, that of the velocity was 0.3%, and that

Card 1/2

ACC NR: AR6023306

of the temperature 0.1C. Relaxation absorption was observed in the mixtures regardless of the nature of the relaxation processes in the components. The absorption in mixtures with 23% water increases with temperature. At frequency ~ 20 Mcs, the absorption os ultrasound in the mixtures does not depend on the water concentration (at 10 -- 50% water). A minimum of the temperature dependence of the coefficient of absorption is observed at 80% water concentration. At large water concentrations, the frequency dependence of the coefficient of absorption and the velocity of ultrasound in the mixture are determined by the behavior of the acetic acid -- water mixture. The relaxation parameters and the velocity of ultrasound are given for different water concentrations at 20C. The frequency of the relaxation does not depend on the concentration of the water within the limits of experimental error. L. Dikarev. [Translation of abstract]

SUB CODE: 20

Card 2/2

AID P - 4921

Subject : USSR/Electronics

Card 1/1 Pub. 89 - 5/17

Authors : Raudsepp, Yu. and Normet, A.

Title : Radio receiver "ESTONIYA"

Periodical : Radio, 7, 21-25, Jl 1956

Abstract : The authors describe in detail a new superheterodyne receiver of the "ESTONIYA" type produced by the Tallin Factory "PUNANE RET" of the Ministry of the Radio Engineering Industry. The receiver has 12 vacuum subminiature tubes. A detailed connection diagram and several components are explained at length. Seven diagrams and drawings, 2 tables of specifications.

Institution : None

Submitted : No date

NORMETS, V.A.

Coordination of work in the field of electric meters. Priborostroenie no.4:29 Ap '63. (MIRA 16:4)
(Electric meters)

NORMUHAMMEDOV, A.

Cotton Baling

Expanding the standard dimensions of baling areas. Khlopkovodstvo no. 4, 1952

9. Monthly List of Russian Accessions, Library of Congress, August 1952. ~~1953~~, Uncl.

NORMUKHAMEDOV, N.; TADZHIYEV, F.Kh.

Possibility of expanding the sintering interval of loess brick during firing. Uzv. khim. zhur. no.1:80-85 '61. (MIRA 14:1)

1. Sredneaziatskiy politekhnicheskiy institut i Institut khimii AN UzSSR.

(Bricks) (Loess)

NORMUKHAMEDOV, N.; TADZHIYEV, F.Kh.

Effect of calcium carbonate on the physicomechanical properties of a calcined wood crack. Uzb.khim.zhur. no.4:79-84 '61. (MIRA 14:8)

1. Institut khimii AN UzSSR.
(Forest products)

Agranovskiy, B. I.

RINKEVICH, A.A., professor, doktor tekhnicheskikh nauk, zasluzhennyy deyatel' nauki i tekhniki; IVANOV, V.I., professor, doktor tekhnicheskikh nauk; FREMKE, A.V., doktor tekhnicheskikh nauk; RAZUMOVSKIY, M.N., doktor tekhnicheskikh nauk; DMITRIYEV, A.N., dotsent, kandidat tekhnicheskikh nauk; AGRANOVSKIY, B.I., dotsent, kandidat tekhnicheskikh nauk; BASHARIN, A.V., dotsent, kandidat tekhnicheskikh nauk; MANOYLOV, V.Ye., dotsent, kandidat tekhnicheskikh nauk; RYZHOV, P.I., dotsent, kandidat tekhnicheskikh nauk; KAPPERMAN, A.G., kandidat tekhnicheskikh nauk; PARYSHNIKOV, V.D., kandidat tekhnicheskikh nauk

On the article "Development of automatic control and telemechanics in the fifth five-year plan". Avtom. i telem. 15 no.1:78-79 Ja-F '54. (MLRA 10:3)

1. Leningradskiy elektrotekhnicheskiy institut im. V.I.Ul'yanova-Lenina.

(Automatic control) (Remote control)

KHOMYAKOV, N.M.; KORNEVSKIY, B.I., retsenzent; SIVERS, P.L., redaktor; VOLCHOK, K.M., tekhnicheskiy redaktor

[Selection of electric motors for powered deck machinery] Vybor elektrodvigatelei palubnykh elektroprivodov. Leningrad, Izd-vo "Morskoi transport," 1955. 267 p. (MLRA 9:7)
(Electric motors)

NORNEVSKIY, B.I

ALEKSEYEV, A.Ye.; BAYKO, V.F., kand.tekhn.nauk; BOLDYREV, G.L., inzh.
NORNEVSKIY, B.I., kand.tekhn.nauk, dots.; ROSIN, Ye.I., inzh.

Comparing the static and dynamic characteristics of two and three-stage longitudinal field rotary amplifiers. Elektrichestvo no.12: 24-26 D '57. (MIRA 10:12)

1.Leningradskiy elektrotekhnicheskiy institut im. Ul'yanova (Lenina). 2.Chlen-korrespondent AN SSSR (for Alekseyev).
(Electric generators)

HORNEVSKIY, B.I., kand. tekhn. nauk; BAYKO, V.F., kand. tekhn. nauk; SAMOILOVSKIY, G.K., kand. tekhn. nauk; KUROPATKIN, P.V., insh.

Selecting circuit parameters for automatic control windings of diesel electric propulsion equipment. Sudostroenie 22 [i.e.23] no.10:28-31 O '57. (MIRA 11:2)

(Marine diesel engines) (Ship propulsion, Electric)

NORNEVSKIY, Boris Ivanovich; TARATYNOV, Ivan Afanas'yevich; MURATOV, I.I., red.; VOLCHOK, K.N., tekhn.red.

[Electric power plants and networks for ships] Sudovye elektricheskie stantsii i seti. Leningrad, Izd-vo "Rechnoi transport," 1958. 267 p. (MIRA 11:12)

(Electricity on ships)

AUTHORS: Nornevskiy, B. I., Docent, Candidate of Technical Sciences, Bayko, V. F., Candidate of Technical Sciences, Malishevskiy, V. Ye., Candidate of Technical Sciences, Kuropatkin, P. V., Engineer, Rosin, Ye. I., Engineer 105-58-3-?/31

TITLE: Comparison of Two- and Three-Stage Rototrols (Sravneniye dvukh- i trekhstupenchatykh elektromashinnykh usiliteley s prodol'nym polem)

PERIODICAL: Elektrichestvo, 1958, Nr 3, pp. 9-14 (USSR)

ABSTRACT: In recent time a series of works with the three-stage amplifier with longitudinal field were carried out in the laboratories of LETI, LVIMU and LIIZhT. The results of these investigations are given here. At first the operation principle of the three-stage amplifier is given and by the example of a fourpole machine it is shown, how the amplification stages are formed in a three-stage amplifier. In the second part a comparative evaluation between the three-stage amplifier with longitudinal field and a two-stage amplifier is carried out. On the strength of the given

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experimental data it is shown that in the case of one and the same magneto system, of approximately equal weight of the effective materials, of one and the same ε - and i_y - the velocity increase of the electromotive force at the output of the three-stage amplifier is higher by the two- to 2,5 fold than in the case of a two-stage amplifier, ε is the compensation degree of the armature reaction by the compensating current i_{24} between the brushes 2-4 in the amplifier armature. On the other hand, the three-stage amplifiers in comparison to the two-stage amplifier are more inclined toward fluctuations and toward self-excitation which is due to the increase of the total amplification factor and the phase lagging. The three-stage amplifier has a somewhat simpler system compared to the two-stage amplifier, Comprisingly it is said that the three-stage amplifier in the case of one and the same control output is more quickly effective compared to the two-stage amplifier and that in the case of one and the same quick effect the three-stage amplifier is controlled by a lower putput.

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There are 8 figures and 7 references, 4 of which are Soviet

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut imeni Ul'yanova (Lenina)
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SUBMITTED: May 21, 1957

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NORNEVSKIY, B.I.

ALEKSEYEV, A.Ye., prof.; BAYKO, V.F., kand.tekhn.nauk; NORNEVSKIY, B.I., kand. tekhn.nauk, dots.; MAYOROV, V.N., inzh.; YUDINA, I.F., inzh.

Selecting parameters for two-stage longitudinal field rotating amplifiers. Sbor.LIIZHT no.159:207-222 '58. (MIRA 12:2)

1. Chlen-korrespondent AN SSSR (for Alekseyev).
(Rotating amplifiers)

ALEKSEYEV, A.Ye., prof.; BAYKO, V.F., kand.tekhn.nauk; BOLDYREV, G.L., inzh.; NORMEVSKIY, B.I., kand.tekhn.nauk, dots.; ROSIN, Ye.I., inzh.; CHUPYATOV, I.N., kand.tekhn.nauk, dots.

Internal feedbacks in multistage amplifiers with various numbers of terminal pairs. Sbor.LIIZHT no.159:232-235 '58. (MIRA 12:2)

1. Chlen-korrespondent AN SSSR (for Alekseyev).
(Rotating amplifiers)

BEDIN, V.V.; MAKSIMOV, Yu.I.; MERZLYUTIN, Yu.B.; MIKHAYLOV, V.A.; HORNEVSKIY, B.I.

Self-excited synchronous generators with direct phase compounding. Biul.tekh.-ekon.inform. no.5:48-50 '59. (MIRA 12:8)

(Electric generators)

SOV/110-59-8-10/24.

AUTHORS: Bedin, V.V., Maksimov, Yu.I., Engineers. Gilerovich, Yu.M., Student, Nornevskiy, B.I., Candidate of Technical Sciences.

TITLE: Improvements to the Static Characteristics of Synchronous Alternators with Compounded Self-excitation.

PERIODICAL: Vestnik elektropromyshlennosti 1959, Nr 8, pp 42-46 (USSR)

ABSTRACT: For power and high-frequency supplies, extensive use is now being made of low-output synchronous alternators with compounded self-excitation derived from metal rectifiers. This article compares the static and dynamic characteristics of an alternator type ChS-7 230 V, 200 c/s, 14 kVA, using the excitation circuit of S.B.Yuditskiy and a new circuit developed by the Leningrad Electro-Technical Institute imeni Lenin. Yuditskiy's circuit is given in Fig 1 and it will be seen that the metal rectifiers that provide the excitation are supplied from a three-winding transformer. There are two primary windings, one connected in parallel with the generator terminals and the second in series with the load. The voltage winding is separated from the secondary and current windings by a magnetic shunt.

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Improvements to the Static Characteristics of Synchronous Alternators with Compounded Self-excitation.

The external characteristics of a synchronous generator with this method of excitation are plotted in dotted lines in Fig 2, which shows that the voltage variation is about ± 6% when the load is raised from zero to rated value and when the power factor alters from unity to 0.3. Fig 3 shows an oscillogram of the current and the generator terminal voltage when rated load at 0.3 power factor is suddenly applied; the greatest voltage-drop is about 22%, and rated voltage is restored in less than 0.1 seconds. With this circuit a remanent voltage of the order of 20 to 25% of the rated value is necessary to ensure reliable self-excitation, and so the rotor must be made of special steel of high coercivity. The oscillograms in Figs 4a and b show the process of self-excitation under various conditions of remanent voltage. Table 1 gives values of generator remanent voltage at which self-excitation occurs, and it will be seen that if the remanent voltage is less than 10 to 15% of rated voltage the generator does not excite.

Improvements to the Static Characteristics of Synchronous Alternators with Compounded Self-excitation.

More reliable excitation may be obtained by altering the position of the magnetic shunt, but this has disadvantages. This defect of the system of excitation may be overcome by the improved excitation circuit shown in Fig 5. It differs from the previous circuit in having a capacitance connected in series with the voltage winding and in having no magnetic shunt. Because of the capacitance, self-excitation occurs with a remanent voltage of the order of 1% of the rated value. Consequently, this circuit does not entail the use of special steel in the rotor. The oscillograms of Figs 6 to 8 display the process of self-excitation for various values of remanent voltage and show that the generator fails to excite only if the remanent voltage is less than 1%. A method of design has been derived by which the circuit conditions may be adapted to suit the available remanent voltage. Characteristics of some stabilising transformers designed for different values of remanent voltage are given in Table 2. The presence of capacitance in the circuit of the summating

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transformer also improves the regulation at heavy load and low power-factor. The bold lines in Fig 2 show the external characteristics of a synchronous generator type ChS-7; the circuit of the excitation system is given in Fig 5. When the load is altered from zero to full load and the power factor from unity to 0.3, the voltage variations do not exceed ± 5%. Fig 9 shows an oscillogram illustrating the sudden application of 100% load at 0.3 power factor. It will be seen that the voltage drop was 22% and that voltage was restored to the rated value in about 0.02 seconds. The characteristics of the systems investigated, their weights and dimensions, are given in Table 3 and indicate that both the original and new voltage regulators are of approximately the same weight and dimensions. There are 9 figures and 3 tables.

SUBMITTED: February 25, 1959.

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Normevskiy B. I.

ALEKSEYEV, A.Ye.; ASHCHEULOV, V.P., inzh.; MAKSIMOV, Yu.I., inzh.; MERZLYUTIN, Yu.B., inzh.; MIKHAYLOV, V.A., kand.tekhn.nauk; NORMEVSKIY, B.I., kand. tekhn.nauk

System of self-excitation and compounding for synchronous generators used on ships. Sudostroenie 25 no.1:58-62 Ja '59. (MIRA 12:3)

1. Chlen - korrespondent AN SSSR (for Alekseyev).
(Electric generators) (Electricity on ships)

VASIL'YEV, D.V.; MIKHAYLOV, V.A.; NORNEVSKIY, B.I.; DEMCHENKO, O.P., starshiy nauchnyy sotr., kand. tekhn. nauk, retsenzent; MURATOV, I.I., dots., kand. tekhn. nauk, retsenzent; REYNGOL'D, Yu.A., kand. tekhn. nauk, dots., retsenzent; BAYKO, V.F., kand. tekhn.nauk, dots., nauchnyy red.; KLIMINA, Ye.V., red.; KRYAKOVA, D.M., tekhn. red.

[Automatic control systems for ships] Sudovye avtomatizirovannye ustanovki. Leningrad, Gos. soiuznoe izd-vo sudostroit. promyshl., 1961. 595 p. (MIRA 15:2)
(Marine engineering) (Automatic control)

BEDIN, Vladimir Vasil'yevich; ILYASOV, Viktor Andreyevich; MAKSIMOV, Yuriy Ivanovich; MERZLYUTIN, Yuriy Borisovich; MIKHAYLOV, Vladimir Aleksandrovich; NORNEVSKIY, Boris Ivanovich; YEVSEYEV, V.I., red.

[Automatic control of marine synchronous generators; systems of direct compounding; static conditions] Avtomatizatsiia sudovykh sinkhronnykh generatorov; sistemy priamogo kompaundirovaniia: staticheskie rezhimy: Uchebnoe posobie po kursu "Elektroenergeticheskie ustanovki sudov." Leningrad, Leningr. elektrotekhn. in-t im. V.I. Ul'ianova (Lenina), 1962. 91 p. (MIRA 16:10)
(Electricity on ships) (Automatic control)

KONOVALOV, N., inzh.; KUROPAT[redacted], P., kand.tekhn.nauk; NOSKEVSKIY, B., prof.; NIKEL'SHPURG, I., inzh.; CHERNUKHA, V., inzh.

Automatic regulation of voltage and the distribution of loads during the parallel operation of suspended ship generators. Mor. flot 23 no.11:27-30 N 63. (MIRA 16:12)

1. Leningradskoye vysshoye inzhenernoye morskoye uchilishche im. admirala Makarova.