0

COUNTRY : USSR
CATEGORY : Plant Diseases. Diseases of Forest Species

ABS. JOUR. : RZhBiol., No. 23 1958, No. 104972

AUTHOR : Gulyayev, V. V.
INST. : Tatar Republic Scientific and Technical Society of •)
TITLE : Fungus Diseases of Acorns in Middle Povolzh'ye and Measures for Their Control.

ORIG. PUB. : Sb. statey po les. kh-vu. Tatarsk. resp. nauchn-tekhn. o-vo lesn. prom-sti, 1956, vyp. 12, 159-208

ABSTRACT : A number of fungi has been discovered causing diseases in the oak acorns in the environment of Middle Povolzh'ye. The majority of them are assigned to the group of imperfect fungi; ascomycetes, basidiomycetes and fungi-algae are represented in smaller numbers. Fungi affecting the oak acorns can develop on acorns remaining in the forest from the crop of the previous year, on living branches, leaves and trunks of the oak, on fallen leaves and dead

•) Lumber Industry

CARD: 1/2 7

INST. :
TITLE :

ABSTRACT : wood, on different kinds of organic matter and on different plants.
Conditions favoring the development of diseases in acorns are indicated. Oak acorns were treated with preparation NIUIF-2 granosan- ethylmercurochloride), with preparation AB, ethylmercurophosphate, with preparation No.? and $KMnO_4$. The best results were obtained with NIUIF-2 (at the rate of 1.5 grams/kg of the seeds). Along with the fungicidal treatment of the acorns, prophylactic measures are recommended having as their purpose the prevention of their affection during gathering, reauying, transportation and storage. -- A. A. Prisyazhnyuk

CARD: 2/2

GULYAYEV V.V.

COUNTRY : USSR
CATEGORY : Plant Diseases. Forest Trees.

0

ABS. JOUR. : RZhBiol., No.14, 1958, No. 63678

GOLOVANENKO, S.A.; CHERNOV, A.N.; SAPOZHNIKOV, V.M.; SINITSYN, V.G.; GULYAYEV, V.V.

Extrusion of bimetal shapes. Kuz.-shtam. proizv. 5 no.10: 7-9 O '63. (MIRA 16:11)

GOLOVANENKO, S.A.; CHERNOV, A.N.; GULYAYEV, V.V.

Hot extrusion of shaped steel and alloy parts. Kuz.-shtam. proizv. 5 no.11:7-10 N '63. (MIRA 17:1)

ACCESSION NR: AP4019027 S/0182/64/000/002/0045/0047

AUTHORS: Grishkov, A. I.; Chernov, A. N.; Gulyayev, V. V.

TITLE: Pressure indicator for high speed hydraulic presses

SOURCE: Kuznechno-shtampovochnoye proizvodstvo, no. 2, 1964, 45-47

TOPIC TAGS: hydraulic press, pressure indicator, stamping, manometer, recording manometer, foil indicator

ABSTRACT: A pressure indicator was designed by TsNIICHM for measuring the force applied and the pressing velocity in the 150-ton hydraulic press P664B used for hot stamping of ferrous metals and alloys at up to 300 mm/sec. The working principle of the indicator is based on the variation in the elastic deformation of a thin-walled container under the action of the internal pressure of the liquid inflowing from the main cylinder of the hydraulic press. The pressure indicator (see Fig. 1 of the Enclosure) consisted of a block (1) and a cup (5) with thin elastic walls and a rigid bottom. The cup is attached to (1) by the nut (2). Two foil indicators (4) are fixed to the thin wall and two (6) to the rigid bottom of the cup. All the indicators are lacquered and covered with lacquer-saturated

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ACCESSION NR: AP4019027

cloth. The terminals of the bridge so formed are led to a 4-prong junction on the casing(7). The measurements obtained with this device are quite accurate and the device itself is simple, compact, and stable. It can be used for measuring pressures in various hydraulic mechanisms with working speeds up to 300-400 mm/sec. Orig. art. has: 3 figures.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 27Mar64 ENCL: 01

SUB CODE: MM NO REF SOV: 001 OTHER: 000

Card 2/3

ACCESSION NR: AP4019027

ENCLOSURE: 01

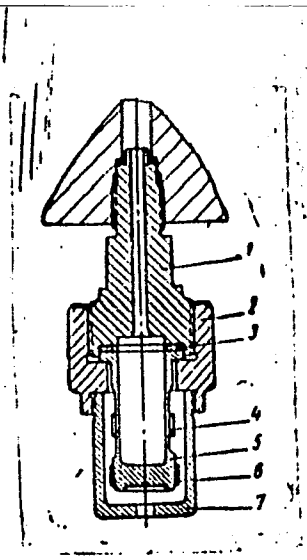

Fig. 1. Sectional view of the pressure indicator.

1. - block; 2. - nut; 3. - gasket; 4. - foil indicator; 5. - cup; 6. - compensating foil indicators; 7. - protective casing.

Card 3/3

CHERNOV, A.N.; GULYAYEV, V.V.

Method of determining the adhesive strength of layers in round bimetallic profiles. Zav. lab. 30 no.11:1394 '64 (MIRA 18:1)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii im. I.P. Bardina.

L 36139-66 EWP(e)/EWT(m)/EWP(v)/T/EWP(t)/ETI/EWP(k) IJP(c) JD/HM/HW

ACC NR: AT6016765 (N) SOURCE CODE: UR/2776/65/000/042/0092/0100

AUTHOR: Chernov, A. N.; Golovanenko, S. A.; Gulyayev, V. V.

ORG: none

TITLE: Features of the fabrication of bimetal shapes by the hot pressing method

SOURCE: Moscow. Tsentral'nyy nauchno- issledovatel'skiy institut chernoy metallurgii. Sbornik trudov, no. 42, 1965, Proizvodstvo bimetallov (Production of bimetals), 92-100

TOPIC TAGS: chromium steel, nickel steel, bimetal, metal extrusion, metal pressing / Kh18N9T steel, St. 3 steel

ABSTRACT: The article describes the experimental study of the hot pressing of bimetal shapes performed at the Scientific Research Institute of Ferrous Metallurgy in 1963. The technique employed was that of direct extrusion in an 800-ton vertical hydraulic press, from a container with an inside diameter of 80 mm. Rods measuring 50-25 mm in diameter, with various thickness of cladding layer, were thus produced from such materials as, chiefly, St. 3 steel as the core and Kh18N9T Ni-Cr steel as the cladding sheath. The extrusion was performed on using a container heated to 400°C and a die heated to 250-300°C. The pattern of distribution of the cladding layer along the length of the bimetal rods was investigated by comparing the variation in the cross-

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-sectional area of the base-metal core under various conditions of extrusion and correlating it with the formulas for the volumetric content of the cladding and base materials. It was thus found that the flow pattern of metal through the die hole is a major factor in determining the lengthwise pattern of distribution of the cladding sheath and hence also the geometry of the base-metal core; it can be optimized by retarding the flow of the core metal during the initial stage of extrusion. In view of the considerable advantages of the hot pressing of bimetal shapes as compared with their hot and cold rolling, it is expedient to organize this pressing on an industrial scale. This will make it possible to: 1) expand the current variety of bimetals; 2) obtain bimetal shapes with various combinations of metals, as well as with intricately shaped cross sections which cannot be obtained by rolling; 3) produce small lots of bimetal shapes at lower cost compared with rolling: 4) reduce by 40-50% the unit consumption of expensive and scarce metals and alloys. Orig. art. has: 6 figures, 1 table, 2 formulas.

SUB CODE: 13, 11/ SUBM DATE: none/ ORIG REF: 005

Sheath Rolling

Joining of Dissimilar Metals

Card 2/2

L 36140-66 EWP(e)/EWT(m)/EWP(w)/EWP(v)/T/EWP(t)/ETI/EWP(k) IJP(c) JD/HM

ACC NR: AT6016766 (N) SOURCE CODE: UR/2776/65/000/042/0101/0106

AUTHOR: Chernov, A. N.; Golovanenko, S. A.; Gulyayev, V. V.

ORG: none

TITLE: Investigation of the bonding strength of layers in hot-pressed bimetal

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii. Sbornik trudov, no. 42, 1965. Proizvodstvo bimetallov (Production of bimetals), 101-106

TOPIC TAGS: bonding property, chromium steel, nickel steel, metal pressing, adhesion, metal bonding, bimetal, metal cladding / St. 3 steel, Kh18N9T steel

ABSTRACT: By contrast with rolling, during pressing the core and sheath of a round bimetal shape get bonded together simultaneously over the entire contour in the presence of a uniform distribution of radial compressive stresses in the area of deformation. As a result, during pressing the shape of the core remains virtually undistorted and the adhesion (bonding) between the core and sheath is greater. In this connection, the authors investigated the strength of the adhesion of sheath to core for bimetal rods of St. 3 steel and Kh18N9T Cr-Ni steel produced by hot pressing in an 800-ton vertical hydraulic press. To this end, the rod specimens were subjected to core-extrusion and twisting tests. The extrusion tests and twisting showed that shear

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resistance depends not only on the degree of relative reduction in area but also on the content of the cladding layer. Thus, for rods of 25 mm diameter subjected to pressing with a 91% relative reduction in area, shear resistance increases with increase in volumetric content of cladding layer (Fig. 1). Reason: as the content of the

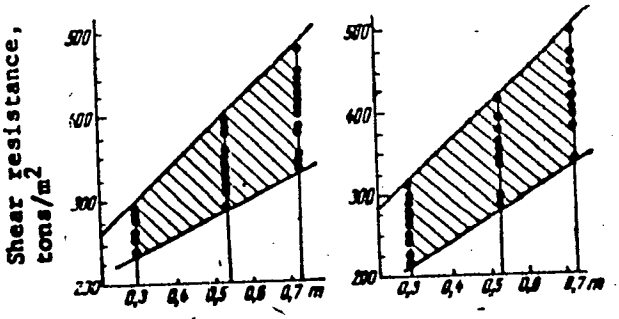

Fig. 1. Shear resistance as a function of volumetric content m of the cladding layer:

a - during extrusion of core; b - during twisting

L 36140-66
ACC NR: AT6016766

hard component increases, the pressure that must be exerted on the bimetal also increases and this, in its turn, contributes to increasing the adhesion between the layers. Adhesion strength is also markedly affected by such factors as the quality of surface treatment and the techniques of the assembling and welding of the original bimetal blanks. On the basis of these tests it may be concluded that the minimum required strength of the bonding between the layers, which for bimetal sheets of St. 3 and Kh18N9T steels amounts to 15 kg/mm^2, can be attained for rods with even a relatively thin cladding layer (m = 0.3) by applying a relative reduction area amounting to 70-80%, which corresponds to reduction by a factor of 3.3-5.0. As the volumetric content of the hard component (cladding material) increases from 0.3 to 0.7, bonding strength increases 1.3-1.4 times. Orig. art. has: 5 figures.

SUB CODE: 13, 11/ SUBM DATE: none/ ORIG REF: 002

Joining of Dissimilar Metals

Card 3/3

GULYAYEV, Ye.A.

Character of changes in the nonhemoglobin iron content of blood serum in lymphogranulomatosis. Probl. gemat. i perel. krovi no.2:36-37 '65. (MIRA 18:11)

1. Gospital'naya terapevticheskaya klinika (zav. - prof. A.I. Germanov) Kuybyshevskogo meditsinskogo instituta.

BLANK, E.M.; YUROVSKIY, Yu.I.; GULYAYEV, Yu.A., inzh., retsenzent; CHILIKINA, N.D., inzh., red.; STEPANCHENKO, N.S., red. izd-va; DEMKINA, N.F., tekhn. red.

[Handbook for mold makers] Spravochnik formovshchika. Moskva, Mashgiz, 1963. 182 p. (MIRA 17:2)

GULYAYEV, Yu.B. (Saratov)

Free torsional vibrations of a circular cone with a cylindrical special-type anisotropy. Inzh.zhur. 5 no.1:192-195 '65.
(MIRA 18:4)

ALEKSEYEVA, V.G.; GULYAYEV, Yu.V.

Second All-Union Conference on Photoelectric and Optical Phenomena in Semiconductors. Radiotekh. i elektron. 7 no.4: 722 Ap '62. (MIRA 15:3)

(Semiconductors--Congresses)

GULYAYEV, Yu.V.; PUSTOVOYT, V.I.

Amplification of surface waves in semiconductors. Zhur.eksp. i teor.fiz. 47 no.6:2251-2253 D '64. (MIRA 18:2)

1. Institut radiotekhniki i elektroniki AN SSSR i Institut fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy.

GULYAEV, Ya.

USSR/Miscellaneous - Radio clubs

Card 1/1 Pub. 89 - 6/32

Authors : Semenov, N., and Gulyaev, YA.

Title : DOSAAF radio clubs and other organizations

Periodical : Radio 2, page 10, Feb 1955

Abstract : The activities of the local radio club of the Khabarovsk province, development of radio skill by radio amateurs and the discussion of problems related to radio communications, are presented. Illustration.

Institution: .....

Submitted: .....

GULYAYEV, Ye.A.

Nonhemoglobin serum iron and total blood iron in normal subjects. Terap.arkh. 31 no.11:65-69 N '59. (MIRA 13:3)

1. Iz gospital'noy terapevticheskoy kliniki (zaveduyushchiy - prof. A.I. Germanov) Kuybyshevskogo meditsinskogo instituta i Kuybyshevskoy oblastnoy stantsii perelivaniya krovi (zaveduyushchiy M.F. Fedorovskaya). (IRON blood)

GULYAYEV, Yu.

New system in the accounting of transportation operations. Za rul. 17 no.10:25 O '59. (MIRA 13:2)

1.Starshiy gosavtoinspektor, Sverdlovsk.
(Traffic accidents)

GULIAYEV, Yu.F., starshiy tekhnik-leytenant

Flight preparation ourfit. Vest.Vozd.Fl. 41 no.2:60 F '59.
(MIRA 12:4)

(Airplanes--Maintenance and repair--Equipment and supplies)

L 26124-66 EPF(n)-2/EWT(1)/ETC(m)-6

ACC NR: AP6015806 SOURCE CODE: UR/0386/66/003/010/0410/0413

AUTHOR: Gulyayev, Yu. G.; Epshteyn, E. M.

ORG: Institute of Radio Engineering and Electronics, Academy of Sciences SSSR (Institut radiotekhniki i elektroniki Akademii nauk SSSR)

TITLE: Acousto-thermal effect in semiconductors

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 3, no. 10, 1966, 410-413

TOPIC TAGS: thermal acoustic effect, phonon drag, temperature gradient, semiconductor crystal

ABSTRACT: The authors show that excitation of a monochromatic flux of phonons in a crystal by an external source produces, besides the well known acousto-electric effect, also a temperature gradient under adiabatic conditions. In analogy with the acousto-electric effect, they call this phenomenon the acousto-thermal effect. The results of this effect are presented analytically for a non-piezoelectric crystal in which the carriers are characterized by an isotropic effective mass and a relaxation time that depend on the energy, and in which a hypersonic wave propagates. By regarding such a wave as a current of monochromatic phonons and by calculating the integral of the collisions between the electrons and the phonon current, the antisymmetrical part of the distribution function is obtained, from which the electric current density and the heat flux density are calculated. It is found that the effect

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L 26124-66
ACC NR: AP6015806

reverses sign when the frequency of the hypersound is raised. The magnitude of the effect is estimated at approximately 10^4 (deg/cm)/(w/cm^2). The authors thank V. L. Bonch-Bruyevich for a discussion of the work. Orig. art. has: 4 formulas.

SUB CODE: 20/ SUBM DATE: 25Mar66/ ORIG REF: 002

Card 2/2

L 40282-65 EWT(d)/EWT(m)/EWP(w)/EWA(d)/EWP(v)/EWP(k)/EWA(h) Pf-4/Peb EM
ACCESSION NR: AP5006171 S/0258/65/005/001/0192/0195

AUTHOR: Gulyayev, Yu. P. (Saratov)

TITLE: Free torsional vibrations of a circular cone with cylindrical anisotropy of a particular kind

SOURCE: Inzhenernyy zhurnal, v. 5, no. 1, 1965, 192-195

TOPIC TAGS: torsional cone vibration, cone natural frequency, anisotropic cone vibration, orthotropic cone vibration

ABSTRACT: The problem of determining the natural frequency of a circular cone possessing cylindrical anisotropy such that its axis coincides with the geometric axis of the cone and all its radial planes are elastic-symmetry planes is discussed. All points of the base of the cone are rigidly fixed. It is assumed that the cone cross sections are not distorted under torsional vibrations and that there are no radial displacements. The problem is reduced to an analogous one for an isotropic cone with a different meridional cross section by means of a corresponding transformation of variables. A general solution of the problem of free torsional vibrations is obtained from which the

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L 40282-65
ACCESSION NR: AP5006171

solutions for particular cases of an orthotropic cone and an isotropic cone are deduced. The results of numerical calculations plotted in a diagram show the effect of anisotropy on natural frequencies of an orthotropic cone for apex angles of 10, 20, and 30°. Orig. art. has: 1 figure and 25 formulas. [VK]

ASSOCIATION: none

SUBMITTED: 08Jul63 ENCL: 00 SUB CODE: AS

NO REF SOV: 002 OTHER: 001 ATD PRESS: 3193

Card 2/2

SOLNTSEV, Yu.P., kand. tekhn. nauk; GULYAYEV, Yu.P., kand. tekhn. nauk

Calculation of risers for steel ingots. Stal' 25 no.4:319-322 Ap '65. (MIRA 18:11)

GULYAYEV, Yu.V.

Scattering of current carriers on impurity centers. Fiz. tver. tela 1 no.3:422-431 Mr '59. (MIRA 12:5)

1.Institut radiotekhniki i elektroniki, Moskva.
(Crystal lattices) (Semiconducters)

81359

S/181/60/002/03/15/028
B006/B017

24.7700

AUTHORS: Bonch-Bruyevich, V. L., Gulyayev, Yu. V.

TITLE: On the Theory of Impact Recombination in Semiconductors

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 3, pp. 465-473

TEXT: In the introduction, the authors briefly discuss some papers dealing with the influence exercised by the Auger effect on recombination processes in semiconductors. The present paper deals with the problem of impact recombination in semiconductors, taking into account the interaction between free carriers. Furthermore, the authors attempted to estimate the amount of the exchange term on the capture of minority carriers as well as the influence exercised by Coulomb forces on the capture of such carriers by charged centers. First, the impact recombination coefficients in neutral impurity centers are calculated by using the same approximation methods as in Refs. 4 - 6. According to Ref. 8 $\Phi(r) = \frac{Ze}{r} \exp(-qr)\cos qr$ is chosen as interaction potential;

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On the Theory of Impact Recombination in Semiconductors

$q = \sqrt{2}\left(\frac{\pi n m e^2}{\varepsilon \hbar^2}\right)^{1/4}$, n is the concentration of free carriers. An n-type semiconductor is considered, i.e., recombination takes place at neutral centers. At a sufficiently high concentration of majority carriers, the recombination cross section is determined by the capture cross section of the minority carriers (holes). The processes contributing to the matrix element of the transition (from state n into state k) are schematically shown in Figs. 1 and 2. A general and some special expressions were obtained for the recombination coefficient. The capture cross section in n-type germanium at 300°K, $\beta = m/m_0$ (ratio between effective and true carrier mass) - $\beta = 0.2$, trap depth $E_t \simeq 0.3$ ev ($\Delta E = 0.66$ ev) is estimated to be $\sigma_p \simeq 10^{-34} n_0 cm^2$; $\sigma_p \simeq 10^{-17} cm^2$ at $n_0 = 10^{17}$ cm^{-3}. In the second chapter, the coefficient of impact recombination is again calculated by using another trap model ("trap radius" small compared with the thermal wavelength of the free carriers). In the third chapter, it is assumed that the recombination centers are charged, and the capture mechanism is investigated for this case. It was found that the charge sign of the trap exercises no influence on

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81359

On the Theory of Impact Recombination in Semiconductors

S/181/60/002/03/15/028
B006/B017

the impact-recombination mechanism. In a capture of carriers at charged centers, the recombination coefficient is reduced by the action of the Coulomb field (compared with neutral centers). This reduction is, however, within the error limits of the computations. There are 2 figures and 12 references: 6 Soviet, 3 US, 2 British, and 1 Polish.

ASSOCIATION: Institut radiotekhniki i elektroniki AN SSSR Moskva (Institute of Radio Engineering and Electronics of the AS USSR, Moscow)

SUBMITTED: May 23, 1959

Card 3/3

S/181/61/003/002/009/050
B102/B204

9.4300 (and 1035, 1143)

AUTHOR: Gulyayev, Yu. V.

TITLE: The statistics of the electron - hole recombination on impurity centers in semiconductors

PERIODICAL: Fizika tverdogo tela, v. 3, no. 2, 1961, 382-383

TEXT: The carrier recombination on multiply charged centers in semiconductors has recently been repeatedly investigated, but the physical sense of the trapping coefficients introduced in the case, in which to a given charge state of the trap there correspond several excited states, was insufficiently well explained. In the present paper, the lifetime of the minority carriers in the latter case was calculated, and the sense of the corresponding trapping coefficients was explained. A non-degenerate semiconductor with sufficiently small trap concentration was investigated under steady conditions. The index n numbers the various excited states of the trap which capture j electrons. For the trapping rate $U_{nj}^{(n)}$ for electrons from the conduction band in the nj-th state of the trap and

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The statistics of the electron - hole...

the trapping rate $U_{nj}^{(p)}$ of the holes in the same state

$$U_{nj}^{(n)} = \sum_m C(m,j-1|n,j)\left\{P_{m,j-1}n^{n-P_{nj}}n_{jmn}\right\} \quad (1)$$

$$U_{nj}^{(p)} = \sum_m D(n,j|m,j-1)\left\{P_{nj}p^{-P_{m,j-1}}p_{jnm}\right\} \quad (2)$$

is obtained. Here C(...) and D(...) are the ordinary quantum-mechanic trapping coefficients for electrons and holes respectively in the nj-th state of the trap, multiplied by the trap concentration and averaged over the states of the carriers in the corresponding bands (if before electron- or after hole-trapping the trap is in the state (m,j-1)); n and p denote the total concentrations of the electrons and holes and P_{nj} the non-equilibrium probability for the nj-th state, and

$$n_{jmn} = N_c \frac{g_{m,j-1}}{g_{nj}} \exp\left\{\frac{E_n(j) - E_m(j-1) - E_c}{kT}\right\}, \quad (3)$$

$$p_{jnm} = N_v \frac{g_{nj}}{g_{m,j-1}} \exp\left\{\frac{E_v - E_n(j) + E_m(j-1)}{kT}\right\} \quad (4).$$

Here $E_n(j)$ and g_{nj} are the energy and the multiplicity of the degeneration of the nj-th state in the trap, N_c and N_v the effective numbers of states in the bands. It is further assumed that the transition of the trap from one state to another without a change in the number of trapped electrons occurs within a considerably shorter time than a transition with change of the charge state of the trap. The Fermi quasilevel μ_j may then be introduced for the charge state of the trap, which permits simplifications. In the case of small deviations from equilibrium, the lifetime of the pairs thus results in

$$\frac{1}{\tau}=(n_0+p_0)\sum_{j=1}^{N}\sum_{n}\frac{P^0_{nj}}{D^{-1}_{nj}n_0+P^0_{nj}C^{-1}_{nj}p_0}. \quad (5)$$

$$C_{nj}=\sum_m P^0_{m,j-1}C(m,\,j-1\,|\,n,\,j), \quad (6)$$

$$D_{nj}=\sum_m D(n,\,j\,|\,m,\,j-1), \quad (7)$$

where P^0_{nj} is the equilibrium probability of the nj-th state of the trap.

S/181/61/003/002/009/050
B102/B204

Here C_{nj} is the quantum-mechanical coefficient of electron capture onto the nj-th trap level averaged over the different excited states of the trap with (j-1) electrons, i.e. over the initial states of the trap. As $P^{o}_{m,j-1}$ depends exponentially on temperature, the coefficient C_{nj} may also depend exponentially on temperature. D_{nj} is the trapping coefficient of the holes onto the nj-th level of the trap, summated over the various states of the trap with (j-1) electrons, i.e. over the final states. C_{nj} and D_{nj} have a clear physical sense: they are averaged quantum-mechanical trapping coefficients. The author thanks S. G. Kalashnikov and V. L. Bonch-Bruyevich for discussion. There are 5 references: 1 Soviet-bloc and 4 non-Soviet-bloc.

ASSOCIATION: Institut radiotekhniki i elektroniki AN SSSR Moskva
(Institute of Radioengineering and Electronics of the AS USSR, Moscow)

SUBMITTED: April 7, 1960

GULYAYEV, Yu.V.

Statistics of electrons and holes in semiconductors with dislocations. Fiz.tver.tela 3 no.4:1094-1100 Ap '61. (MIRA 14:4)

1. Institut radiotekhniki i elektroniki AN SSSR, Moskva.
(Semiconductors) (Dislocations in crystals)

24.4400

S/181/62/004/005/031/055
B108/B112

AUTHOR: Gulyayev, Yu. V.

TITLE: On the theory of carrier recombination on linear dislocations in semiconductors

PERIODICAL: Fizika tverdogo tela, v. 4, no. 5, 1962, 1285 - 1289

TEXT: The effect of the Coulomb barrier at a dislocation on the electron capture upon a charged linear dislocation is calculated by a quantum mechanical method (V. L. Bonch-Bruyevich. FTT, sb. II, 182, 1959) in quasi-classical approximation. Owing to the tunnel effect, the Coulomb barrier is rather weak when the temperatures are not too low ($\gtrsim 100^{\circ}K$) in the linear dislocation case, as well as in the case of impurity centers. At low temperatures the effect of the Coulomb barrier at the dislocation increases considerably. This is due to the change in shape of the barrier at low temperatures owing to deionization of the donor impurities and increase of the screening radius. When the temperature is lowered from 100 to $12.5^{\circ}K$, the electron capture coefficient may decrease by some orders of magnitude. There is 1 table.

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S/181/62/004/005/031/055
B108/B112

On the theory of carrier ...

ASSOCIATION: Institut radiotekhniki i elektroniki AN SSSR (Institute of Radio Engineering and Electronics AS USSR) Moscow

SUBMITTED: January 2, 1962

Card 2/2

L 18393-63 EWT(1)/EWG(k)/EDS/ES(w)-2 AFFTC/ASD/ESD-3/IJP(C)/SSD/AFWL
Pi-4/Po-4/Pab-4/Pz-4 AT
ACCESSION NR: AP3003718 S/0109/63/008/007/1179/1186

82
79

AUTHOR: Bonch-Bruyevich, V. L.; Gulyayev, Yu. V.

TITLE: Mechanism of generating plasma oscillations in a semiconductor

SOURCE: Radiotekhnika i elektronika, v. 8, no. 7, 1963, 1179-1186

TOPIC TAGS: plasma oscillation, semiconductor

ABSTRACT: Transformation of energy supplied to a semiconductor into plasma-oscillation energy was investigated by D. Pines and J. R. Schrieffer (Phys. Rev., 1961, 124, 5, 1387). The present article deals with the subject on a wider scale; it considers theoretically all possible types of oscillations with an allowance for recombination of carriers. Bipolar-plasma waves in an isotropic homeopolar semiconductor are generated by a stream of electrons. The hydrodynamic approximation is used in setting up the initial differential equations describing concentrations and average velocities. Both types of plasma oscillations,

Card 1/2

L 18393-63
ACCESSION NR: AP3003718

3

"optical" and "acoustical," are dealt with. Conditions of excitation of oscillations are examined, and the critical drift velocity (10^6 - 10^8 cm/sec) is found. Effective mass of donors is determined. It is inferred that: (1) generation of low-frequency plasma oscillations is easily realizable; (2) the possibility of generating high-frequency oscillations is not clear. "The work was resumed on the initiative of S. G. Kalashnikov to whom the authors are greatly indebted for his support and discussing the results and the possibility of experimental verification. The authors are thankful to M. Ye. Gertsenshteyn and V. I. Pustovoyt for their permission to read their work before its publication." Orig. art. has: 33 formulas.

ASSOCIATION: none

SUBMITTED: 26Jun62 DATE ACQ: 02Aug63 ENCL: 00

SUB CODE: GE NO REF SOV: 006 OTHER: 003

Card 2/2

L 22186-65 EWA(h)/EWG(k)/EWT(l)/T/ Peb/Pu-6A SDA-5/AFWL/ESD/ESD/AFMDT/ESDC/ESD(s)
IJP(c) AT

ACCESSION NR: AP5001848 S/0056/64/047/006/2251/2253

AUTHOR: Gulyayev, Yu. V.; Pustovoyt, V. I.

TITLE: Amplification of surface waves in semiconductors

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 6, 1964, 2251-2253

TOPIC TAGS: surface wave, wave amplification, semiconductor, carrier density, carrier mobility, sound speed, piezoelectricity

ABSTRACT: It is shown by a quasihydrodynamic analysis that surface waves can be amplified in a layered system consisting of a thin semiconducting layer and a semi-infinite piezoelectric (or vice versa), using the phenomenon whereby the electric field that accompanies an elastic wave in the piezoelectric penetrates into the semiconductor, in which the carriers move in a definite direction. This is analogous to the amplification of acoustic waves observed in semiconductors when the carrier drift velocity exceeds the phase velocity of the acoustic wave. In the case considered here amplification will take place when the directional velocity of the carriers in the superconductor exceeds the phase velocity of the

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L 22186-65

ACCESSION NR: AP5001848

surface waves. If amplification is effected, the power per unit volume of the semiconductor can be markedly reduced by using a semiconductor with large carrier mobility. For example, for pure InSb with approximate carrier density 10^{12} cm^{-3} and mobility 10^4 $cm^2/V \cdot sec$ the power dissipation is about 0.1 W/cm^3, which is much lower than in the case of CdS. It is pointed out in the conclusion that a similar analysis can be applied to other types of surface waves, particularly plasma waves. "We thank V. L. Ginzburg, S. G. Kalashnikov, V. L. Bonch-Bruyevich, and L. V. Keldy*sh for a discussion of the work." Orig. art. has: 4 figures.

ASSOCIATION: Institut radiotekhniki i elektroniki Akademii nauk SSSR (Institute of Radio Engineering and Electronics, Academy of Sciences SSSR); Institut fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy (Institute of Physicotechnical and Radio Measurements).

SUBMITTED: 20Jun64 ENCL: 00

SUB CODE: GP, SS NR REF SOV: 004 OTHER: 001

Card 2/2

L 65261-65 EWT(1)/T/EWA(h) IJP(c) AT

ACCESSION NR: AP5014233 UR/0386/65/001/003/0011/0015

AUTHOR: Sulyayev, Yu. V.

TITLE: The Faraday effect on "hot" electrons in semiconductors

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 1, no. 3, 1965, 11-15

TOPIC TAGS: semiconductor theory, electron gas, Faraday effect, electric polarization

ABSTRACT: The various characteristics of a semiconductor (electrical conductivity, magnetoresistance, thermomagnetic effect, etc.) may be considerably altered by heating the electron gas in the semiconductor. The author examines the effect which heating of the electron gas has on Faraday rotation of the plane of polarization of an electromagnetic wave passing through the semiconductor. The degree of "hotness" of the electron gas is given by the electron temperature T which differs from the lattice temperature T_0. It is assumed that the magnetic field is weak, and that the frequency of the electromagnetic wave is rather low, so that quantum effects may be disregarded. A unipolar semiconductor is considered in which the cur-

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L 65261-65

ACCESSION NR: AP5014233

15

rent carriers have an isotopic effective mass m^4, and the inverse pulse relaxation time is related to the carrier velocity by the expression $\tau(v) \sim v^3$. The author limits himself to an examination of weak heating of the electron gas. It is found that the polarization plane may be rotated on the order of 1°/cm (under optimum conditions) in extremely weak fields (e.g. in InSb at 4°K, at about 10^{-4} v/cm). A weak external electric field causes a rotation in the polarization plane of the electromagnetic wave which is proportional to the square of the field strength. "The author thanks S. G. Kalashnikov, V. L. Bonch-Bruyevich, I. M. Lifshits and Sh. M. Kogan for discussing the work." Orig. art. has: 3 formulas.

ASSOCIATION: Institut radiotekhniki i elektroniki Akademii nauk SSSR (Institute of Radio Engineering and Electronics, Academy of Sciences, SSSR)

SUBMITTED: 19Mar65 ENCL: 00 SUB CODE: SS, EM

NO REF SOV: 002 OTHER: 002

Card 2/2

L 1424-66 EWT(1) / IJP(c)

ACCESSION NR: AP5021138 UR/0386/65/002/001/0003/0006

AUTHOR: Gulyayev, Yu. V. 44,55

TITLE: Possible existence of "second" spin waves in ferromagnets 21,44,55

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 2, no. 1, 1965, 3-6

TOPIC TAGS: spin wave theory, sound wave, spin phonon interaction, ferromagnetism, collision integral

ABSTRACT: The author examines the possible existence of secondary excitations in the system of magnons in a ferromagnet. In analogy with second sound, these secondary excitations are called "second spin waves" to distinguish them from the "first" waves, the magnons themselves. Neglecting magnetic dipole-dipole interaction between the spins of the atom and the spin-orbit interaction, it is shown that in some temperature range above the Curie point the magnon gas in the ferromagnet is perfectly analogous to a gas of molecules that collide relatively frequently with one another and rarely experience inelastic collisions accompanied by a change in the number of particles. Just as second sound waves can propagate in such a gas, second spin waves can propagate in the magnon. The velocity of the spin waves at room temperature is estimated to be of the order of 10^6 cm/sec for

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L 1424-66
ACCESSION NR: AP5021138

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most ferromagnets. Relaxation times of the order of 10^{-13} and 10^{-6} are estimated for intermagnon collisions in which the number of magnons is conserved, and for scattering involving a change in the number of magnons (in the total magnetic moment of the system), respectively. It is also shown that the dispersion of the second spin waves is linear, and that these waves should manifest themselves as macroscopic waves of the magnetization, of the spin specific heat (or the spin temperature), and of similar thermodynamic quantities. Measurement of the velocity of second spin waves could yield independent information on the magnitude of the exchange integral I. In addition, one can apparently expect a unique resonant interaction in a crystal between second spin waves and ordinary sound waves that also possess a linear dispersion law and a nearly equal propagation velocity. "The author is grateful to V. L. Bonch-Bruyevich, S. G. Kalashnikov, A. V. Vashkovskiy, and Ya. A. Monosov for a discussion of the work." Orig. art. has: 6 formulas. [02]

ASSOCIATION: Institut radiotekhniki i elektroniki Akademii nauk SSSR (Institute of Radio Engineering and Electronics, Academy of Sciences, SSSR)

SUBMITTED: 14May65	ENCL: 00	SUB CODE:	EM, SS
NO REF SOV: 003	OTHER: 001	ATD PRESS:	4099

Card 2/2

L 9253-66 EWT(1)/EWA(m)-2 IJP(c) AT

ACC NR: AP5022722 SOURCE CODE: UR/0181/65/007/009/2772/2779

AUTHOR: Gulyayev, Yu. V.; Zil'berman, P. Ye.

ORG: Institute of Radio Engineering and Electronics, Moscow (Institut radiotekhniki i elektroniki)

TITLE: Resonance amplification of Rayleigh ultrasonic waves by a beam of charged particles passing close to the surface of a crystal

SOURCE: Fizika tverdogo tela, v. 7, no. 9, 1965, 2772-2779

TOPIC TAGS: semiconductor theory, Rayleigh wave, ultrasonic amplification, cadmium sulfide, plasma charged particle, plasma resonance, electron beam

ABSTRACT: The authors study the interaction between surface (Rayleigh) waves in a CdS type crystal and a beam of electrons passing through fissures of arbitrary width inside the crystal. When a fissure is wide, the curve for amplification as a function of frequency is a set of non-overlapping spikes. Under optimum conditions, the amplification may be as high as ~400 db/cm. However, in practical instances it is of the order of 1 db/cm at ~1 Mc. It is shown that convective instability may appear at resonance (coincidence of frequencies and phase velocities) of the Rayleigh and plasma waves in the beam. Dispersion curves are plotted for studying the nature of this instability. It is found that the maximum amplification is reached at the lowest re-

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L 9253-66

ACC NR: AP5022722

3

sonance frequency. The authors are grateful to V. L. Bonch-Bruyevich for discussing the work. Orig. art. has: 2 figures, 22 formulas.

SUB CODE: 20/ SUBM DATE: 12Apr65/ ORIG REF: 004/ OTH REF: 003

Card 2/2

L 36546-66 EWT(1) IJP(c) WW
ACC NR: AP6016836 (N) SOURCE CODE: UR/0046/66/012/002/0253/0255

AUTHOR: Gulyayev, Yu. V.

ORG: Institute of Radio Engineering and Electronics, AN SSSR (Institut radiotekhniki i elektroniki AN SSSR)

TITLE: Rotation of the plane of polarization of sound in a magnetic field in piezoelectric semiconductors

SOURCE: Akusticheskiy zhurnal, v. 12, no. 2, 1966, 253-255

TOPIC TAGS: piezoelectric crystal, cadmium sulfide, ultrasonic wave propagation, dispersion equation, dielectric constant, semiconductor carrier, carrier scattering, SOUND WAVE, ELECTROMAGNETIC WAVE

ABSTRACT: The semiconductor considered is CdS oriented in such a way that its crystallograpic axes coincide with the coordinate axes. A plane-polarized transverse ultrasonic wave propagates along the Z axis, and constant magnetic and electric fields H_0 and E_0 are applied along the same axis. A dispersion equation is obtained for the coupled electromagnetic and sound waves in terms of the left- and right-hand polarization components of the plane-polarized wave and the complex dielectric constant for these waves. The strong interaction between the electromagnetic and the sound waves occurs when the separate dispersion curves for the sound

Card 1/2 UDC: 534-16: 537.311.33

wave and for the electromagnetic waves intersect. In view of the weak coupling between the sound and helicon waves, a resonant interaction between them is possible only in a sufficiently large constant electric field. An expression is obtained for the rotation of the plane of polarization of the sound wave under such conditions. It is concluded that observation of this rotation by experiment would yield information on the piezoelectric constants, on the carrier scattering mechanism, and other data. The author thanks S. G. Kalashnikov and V. L. Bonch-Bruyevich for a discussion of the work. Orig. art. has: 4 formulas.

SUB CODE: 20/ SUBM DATE: 05Apr65/ ORIG REF: 003

ACC NR: AP6036986 (A, N) SOURCE CODE: UR/0181/66/008/011/3366/3372

AUTHOR: Gulyayev, Yu. V.

ORG: Institute of Radio Engineering and Electronics AN SSSR, Moscow (Institut radiotekhniki i elektroniki AN SSSR)

TITLE: Contribution to the theory of transport phenomena connected with the dragging of electrons by ultrasonic waves in solids

SOURCE: Fizika tverdogo tela, v. 8, no. 11, 1966, 3366-3372

TOPIC TAGS: transport phenomenon, kinetic theory, electron interaction, phonon drag, electron gas, ultrasonic effect, electron mobility, acoustic propagation

ABSTRACT: The author develops the kinetic theory of certain transport phenomena connected with the transfer of momentum from sound waves to conduction electrons and the resultant dragging of the latter in the direction of the sound. The analysis is confined to wavelengths which are much longer than the electron mean free path. The sound waves are excited in a crystal situated in an external magnetic field perpendicular to the direction of the sound flux. The sound intensity is assumed weak and heating of the electron gas by the wave is neglected. In view of the fact that the ultrasound wave exerts a different dragging force on electrons with different energies, this leads to violation of the relations derived for this effect by G. Weinreich (Phys. Rev. v. 107, 327, 1957), since the latter were based on collective action of the electrons, whereas actually at each instant of time there exist in the crystal

ACC NR: AP6036986

spatially separated groups of electrons of different energy, characterized in general by different relaxation times, and consequently by different mobilities. The possibility that a propagating sound wave in a degenerate conductor can give rise to a longitudinal temperature gradient is predicted. It is shown that in the case of a degenerate electron gas, the acousto-electric effects of Ettingshausen and Peltier (and similar effects which are connected in principle with the energy scatter of the electrons) differs from the magnitude of the effects predicted in this paper by the square of the ratio of the Fermi energy to the thermal energy. The author thanks V. L. Bonch-Bruyevich, L. V. Keldysh, A. I. Morozov, and E. M. Epshteyn for a discussion of the work. Orig. art. has: 16 formulas.

SUB CODE: 20/ SUBM DATE: 28Mar66/ ORIG REF: 004/ OTH REF: 005

Card 2/2

SHEREDEKO, V.M., inzh.; GULYAYEVA, A.G., inzh.

Two-stage filtration of fats without intermediate receiver.
Masl.-zhir. prom. 24 no.10:38-39 '58. (MIRA 11:10)

1. Kuybyshevskiy zhirovoy kombinat.
(Kuybyshev--Filters and filtration) (Kuybyshev--Oil and fats)

GUBIAILVA, A. I.

"Treatment of Superior Prognathism," Stomatologiya, No. 3, 1948. Chair Orthopedic Stomatol. Moscow Stomatological Inst.

ALEKSANDROV, B.M., nauchnyy sotrudnik; ALEKSANDROVA, T.N., nauchnyy sotrudnik; BELYAYEVA, K.I., nauchnyy sotrudnik; GORBUNOVA, Z.A., nauchnyy sotrudnik; GORDEYEVA-PERTSEVA, L.I., nauchnyy sotrudnik; GORDEYEVA, L.N., nauchnyy sotrudnik; GULYAYEVA, A.M., nauchnyy sotrudnik; DMITRENKO, Yu.S., nauchnyy sotrudnik; ZABOLOTSKIY, A.A., nauchnyy sotrudnik; MAKAROVA, Ye.F., nauchnyy sotrudnik; NOVIKOV, P.I., nauchnyy sotrudnik; POKROVSKIY, V.V., nauchnyy sotrudnik; SMIRNOV, A.F., nauchnyy sotrudnik; STEFANOVSKAYA, A.F., nauchnyy sotrudnik; URBAN, V.V., nauchnyy sotrudnik. Prinimali uchastiye: BALAGUROVA, M.V., nauchnyy sotrudnik; VEBER, D.G., nauchnyy sotrudnik; POTAPOVA, O.I., nauchnyy sotrudnik; SOKOLOVA, V.A., nauchnyy sotrudnik; FILIMONOVA, Z.I., nauchnyy sotrudnik; POPENKO, L.K., nauchnyy sotrudnik. ZYTSAR', N.A., red.; PRAVDIN, I.F., red.; PANKRASHOV, A.P., red.; SHEVCHENKO, L.V., tekhn.red.

[Lakes of Karelia; natural features, fishes, and fisheries] Ozera Karelii; priroda, ryby i rybnoe khoziaistvo; spravochnik. Petrozavodsk, Gos.izd-vo Karel'skoi ASSR, 1959. 618 p. (MIRA 13:8)

(Continued on next card)

ALEKSANDROV, B.M. --- (continued) Card 2.

1. Russia (1917- R.S.F.S.R.) Karel'skiy ekonomicheskiy administrativnyy rayon. Sovet narodnogo khozyaystva. 2. Karel'skoye otdeleniye Vsesoyuznogo nauchno-issledovatel'skogo instituta ozernogo i rechnogo rybnogo khozyaystva (for Aleksandrov, Aleksandrova, Belyayeva, Gorbunova, Gordeyeva-Pertseva, Gordeyeva, Gulyayeva, Dmitrenko, Zabolotskiy, Makarova, Novikov, Pokrovskiy, Smirnov, Stefanovskaya, Urban). 3. Karel'skiy filial AN SSSR (for Balagurova, Veber, Potapova, Sokolova, Filimonova, Popenko).

(Karelia--Lakes)

GULYAYEVA, A.M.; DMITRIYENKO, Yu.S.; KUDERSKIY, L.A.

Results of the introduction of the Baikal whitefish in Lake Ukshozero (southern Karelia). Zool. zhur. 42 no.6: 877-881 '63. (MIRA 16:7)

1. Karelian Department of the State Research Institute of the Lake and River Fishery Management, Petrozavodsk.
(Ukshozero, Lake--Whitefishes)
(Fish introduction)

KORNEYEV, A.M., doktor ekon. nauk; VIL[illegible], [illegible], [illegible]
nauk; SHOKIN, I.A., kand. ekon. nauk; [illegible], [illegible]
doktor ekon. nauk; KOZLOV, Yu.K., kand. ekon. nauk;
VAKANKIN, V.V., kand. ekon. nauk; KOZLOVSKIY, Sh.L., doktor
ekon. nauk; OLAYNIK, L.V., doktor ekon. nauk; NAKOVETSKAYA,
V.S., red.; GOLUBEVA, A.N., red.

[Industry in the administrative complex of the economic regions of the U.S.S.R.] Promyshlennost' v administrativnom kompleksе ekonomicheskikh raionov SSSR. Moskva, Nauka, 1965. (MIRA 18:1)
566 p.

1. Akademiya nauk SSSR. Institut ekonomiki.

L 06431-67 EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6026708 SOURCE CODE: UR/0181/66/008/008/2472/2473

AUTHOR: Gulyayeva, A. S.; Ivleva, V. S.; Iglitsyn, M. I.

ORG: State Scientific Research and Design Institute of the Rare Metal Industry, Moscow (Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promyshlennosti)

TITLE: Lifetime of excess charge carriers in InSb single crystals with Ge and Au impurities

SOURCE: Fizika tverdogo tela, v. 8, no. 8, 1966, 2472-2473

TOPIC TAGS: indium compound, antimonide, carrier lifetime, recombination

ABSTRACT: The object of the work was to determine the effect of doping InSb single crystals with Ge and Au impurities on the recombination of excess carriers. p-Type samples were obtained from the original n-type material (electron concentration 10^{14} cm^{-3}) by this doping. The carrier lifetimes τ_n were measured at 77-300°K by stationary methods of measurement of the photomagnetic effect (τ_{pm}) and photoconductivity (τ_{pc}). The lifetime of electrons is inversely proportional to the concentration of traps. At 77°K, in samples doped with Ge, the quantity $\tau_n = \tau_{pm}$ changes by less than an order of magnitude as the Ge concentration increases by a factor of 200. This indicates that the recombination does not take place on Ge atoms. The lifetime data show that the Ge impurity does not affect the recombination of excess carriers. In the 77-170°K

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L 06431-67

ACC NR: AP6026708

range, the lifetimes in samples doped with Ge and Au are approximately the same. It is concluded that in this range, Ge and Au have no effect on the recombination of excess carriers, which takes place either on structural defects or on a residual impurity. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 31Jan66/ ORIG REF: 002/ OTH REF: 003

Card 2/2

ACCESSION NR: AP4034947 S/0181/64/006/005/1552/1554

AUTHORS: Gulyayeva, A. S.; Iglitsy*n, M. I.; Petrova, L. V.

TITLE: The lifetime of charge carriers in disequilibrium in single crystals of indium antimonide

SOURCE: Fizika tverdogo tela, v. 6, no. 5, 1964, 1552-1554

TOPIC TAGS: charge lifetime, temperature dependence, photogalvanometric determination, photoconductive determination, charge carrier adhesion, Auger recombination

ABSTRACT: The temperature dependence of the lifetime of nonequilibrium charge carriers in InSb was investigated. Naturally alloyed (zone-melting) single crystals of both p and n types having a basic carrier concentration of $7 \times 10^{13} - 4.5 \times 10^{14}$ per cm^3 were studied in the 78-300K temperature range. Measurements were made by photogalvanometric (FM) and photoconductive (PC) methods. A 500-watt tungsten light source was modulated at 1100 cps. The magnetic field was 0.205 webers/m^2. The samples were $14 \times 4 \times 1.5$ mm^3 parallelograms polished and cleansed with CP-4A. Comparison was made with theoretical relationships presented by S. Kurnick and R. Zitter (J. Appl. Phys., 27, 278, 1956) and by R. Zitter, A. Strauss, and A. Attard (Phys. Rev., 115, 226, 1959). Typical results are shown in Figures 1 and 2 on the

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ACCESSION NR: AP4034947

Enclosures. The character of the curves was the same for both measurement methods. For all samples (except a few n-type ones near the liquid nitrogen temperature) results differed ($\tau_{FC} > \tau_{FM}$) due to the adhesion of secondary carriers. At higher temperatures the difference disappeared, and the lifetime reached a maximum τ_{max} of 4×10^{-7}-7×10^{-7} sec between 170 and 200K. The results, when analyzed together with the general theory of recombination and the previous experimental data, showed that it was necessary to consider two separate temperature ranges. Below 250K, recombinations of local centers predominated. The defining parameters were charge concentration, energy state, and degeneracy multiple. In this study samples contained uninvestigated residual contaminants, so that the parameters remained unknown. By assuming that recombinations occurred at the centers with the same parameters as those given by R. Laff and H. Fam (Phys. Rev., 121, 53, 1961), calculations were made to give electron τ_n and hole τ_p lifetimes. Experimental values and theoretical calculations differed by a value greater than could be explained by normal error. At temperatures above 250K Auger recombinations are most important. Orig. art. has: 2 figures.

ASSOCIATION: Gosudarstvenny*y nauchno-issledovatel'skiy i proyektny*y institut redkometallicheskoy promy*shlennosti, Moscow (State Scientific Research and Design

Card 2/5

ACCESSION NR: AP4034947

Institute of the Rare Metal Industry)

SUBMITTED: 21Dec63 DATE ACQ: 20May64 ENCL: 02

SUB CODE: SS NO REF SOV: 001 OTHER: 004

Card 3/5

ACCESSION NR: AP4034947

ENCLOSURE: 01

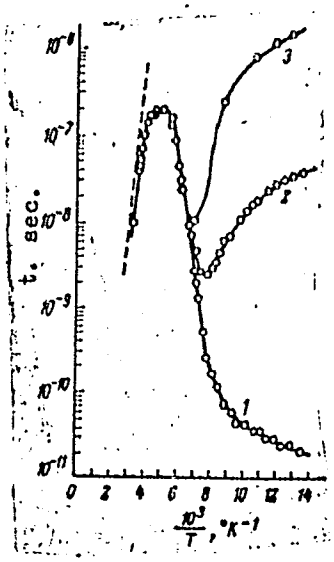

Fig. 1. Temperature characteristics of lifetime in p-type InSb.
(1) τ_{FM} and τ_n; (2) τ_{FC}; (3) τ_p.
$N_A - N_D = 2.5 \times 10^{14}$ cm^{-3}; $\tau_{FM} = \tau_n$.

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ACCESSION NR: AP4034947

ENCLOSURE: 02

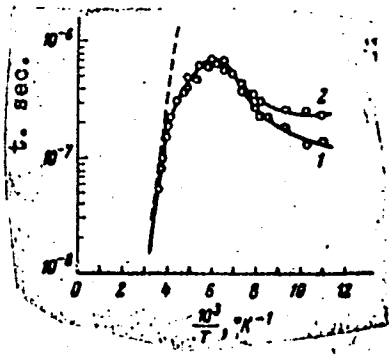

Fig. 2. Temperature characteristics of lifetime in n-type InSb.
(1) τ_{FM}; (2) τ_{FC}.
$N_D - N_A = 1.2 \times 10^{14}$ cm^{-3}.

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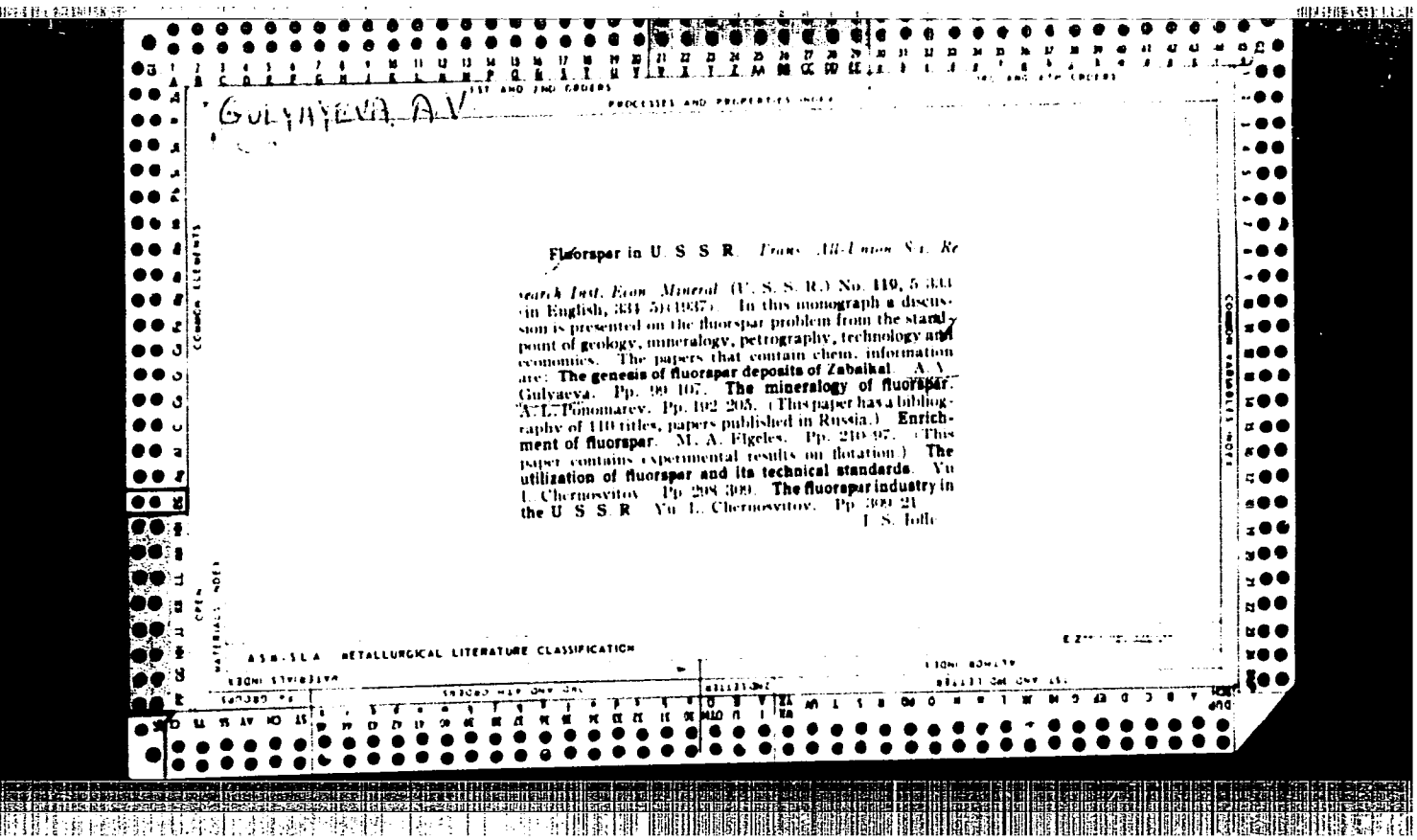

GULYAYEVA, A.V.

Fluorspar in U S S R. *Trans. All-Union Sci. Research Inst. Econ. Mineral.* (U. S. S. R.) No. 119, 5-331 (in English, 331-50 (1937). In this monograph a discussion is presented on the fluorspar problem from the standpoint of geology, mineralogy, petrography, technology and economics. The papers that contain chem. information are: **The genesis of fluorspar deposits of Zabaikal.** A. V. Gulyaeva. Pp. 99-107. **The mineralogy of fluorspar.** A. L. Ponomarev. Pp. 192-205. (This paper has a bibliography of 110 titles, papers published in Russia.) **Enrichment of fluorspar.** M. A. Figeles. Pp. 210-97. (This paper contains experimental results on flotation.) **The utilization of fluorspar and its technical standards.** Yu. I. Chernosvitov. Pp. 298-309. **The fluorspar industry in the U S S R.** Yu. I. Chernosvitov. Pp. 309-21.

J. S. Jolly

A.S.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

GULYAYEVA, A. V.

Gulyayeva, A. V. - "On certain prospectin indications of flourspar", Trudy Vsesoyuz. nauch.-issled. in-ta mineral. syr'ya, Novaya seriya, Issue 1, 1949, p. 3-6, - Bibliog: 7 items.

SO: U-4631, 16 Sept. 1953, (Letopis 'nykh Statey, No. 24, 1949).

USSR / Cultivated Plants. Cereal Crops. M-3

Abs Jour : Ref Zhur - Biologiya, No 13, 1958, No. 58548

Author : Gulyayeva, E.
Inst : Not given
Title : The Importance of Alien Pollen in Growing Self-Pollinating Strains of Corn

Orig Pub : Zemledeliye i zhivotnovodstvo Moldavii, 1957, No 5, 41-46

Abstract : The pollens of sorghum, African millet, winter rye, wheat, sunflower, squash, hibiscus and orache were used as alien pollens in the self pollination of local Moldavian varieties and Dnepropetrovsk variety in experiments which took place during 1953-1956. The experiments were conducted under conditions of strict isolation. 3-4 days old corn stigmas were subjected to pollination. The foreign pollen increased the percentage of germinated grains in the cob in all variances, particularly in dry

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USSR / Cultivated Plants. Cereal Crops. M-3

Abs Jour : Ref Zhur - Biologiya, No 13, 1958, No. 58548

Abstract ... morphological variations, caused by pollination by foreign pollen, were found in the cobs. Sprouts caused by pollination by pollens of sunflower and winter rye developed much faster than the control barch. Sprouts resulting from pollination by the pollen of sorghum, African millet and squash were depressed. Differences were noticed in the amounts of leaves and cobs, the shape of the staminate flowers, the coloration of the grains and so on. The yield increased in comparison with self-pollinating strains by 1.8-2.3 times, depending on variances, and was 60-83% of the initial variety. The strains resulting from pollination with hibicus and orache pollen were characterized by their vegetative mass. -- I. N. Zaikina

Card 2/2

GULYAYEVA, E.G.; KALANTAROV, K.D.

Protection from radiation of beta applicators. Nov. med. tekh. no. 1:54-56 '60. (MIRA 14:2)

KRASNOV, M.L., prof.; GRISHINA, V.I.; SIVOSHINSKIY, O.S.; MILOVIDOVA, I.A.; AGRANAT, V.Z.; GULYAYEVA, E.G.; KOLONTAROV, K.D.

Clinical method of diganosing intraocular tumors using radioactive phosphorus. Vest.oft. no.3:3-9 My-Je '62. (MIRA 15:8)

1. Kafedra glaznykh bolezney i kafedra meditsinskoy radiologii TSentral'nogo instituta usovershenstvovaniya vrachey (for Krasnov, Grishina, Sivoshinskiy). 2. Moskovskaya glaznaya klinicheskaya bol'nitsa (for Milovidova). 3. Vsesoyuznyy nauchno-issledovatel'skiy instituta meditsinskogo instrumentariya i oborudovaniya (for Agranat, Gulyayeva, Kolontarov).

(EYE--TUMORS) (PHOSPHORUS--ISOTOPES)

GULYAYEVA, F.Ye.

Changes in the rate of blood flow under the influence of neurotropic substances. Terap. arkh. 28 no.4:41-44 '56. (MLRA 9:9)

1. Iz gospital'noy terapevticheskoy kliniki (dir.-deystvitel'nyy chlen AMN SSSR prof. A.L.Myasnikov) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M.Sechenova.

(BLOOD CIRCULATION
flow rate, eff. of CNS funct., determ. with aminoacetophenetidin & amobarbital sodium)
(CENTRAL NERVOUS SYSTEM, physiol.
eff. on blood flow rate, determ. with aminoacetophenetidin & amobarbital sodium)
(ACETOPHENETIDIN, deriv.
aminoacetophenetidin, eff. on CNS in determ. of CNS regulation of blood flow)
(BARBITURATES, eff.
amobarbital sodium, on CNS in determ of CNS regulation of blood flow)

30469

24.2200

S/139/61/000/005/005/014
E194/E135

AUTHORS: Dunayev, F.N., and Gulyayeva, G.P.

TITLE: The influence of elastic compression on the initial reversible magnetic susceptibility of ferro-magnetics

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, no.5, 1961, 44-48

TEXT: On the basis of Ye.I. Kondorskiy's theory, S.V. Vonsovskiy (Ref.2: ZhETF, Vol.17, 1094, 1947) developed a theory of initial reversible magnetic susceptibility which took account of weak magnetic fields as well as of elastic stresses, which also displace the domain boundaries. The theory has been checked in tests made with tensile stresses but hitherto compressive loads have not been tried, and this is the object of the present article. The experimental materials were chosen to cover a range of constants of magnetic anisotropy and of magnetostriction. The samples were mechanically worked and heat treated in various ways. The initial tests were made on work-hardened samples with high internal stresses. The work hardening was set up by rolling or forging. Then all samples were given

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No.1 annealing for 6 hours at 600 °C in a vacuum of 10^{-4} mm Hg and reinvestigated. All the samples were then given No.2 annealing, two hours at 900 °C in vacuum, and retested. Samples of 66-permalloy were also given annealing No.3 at 550 °C for 20 min, cooling at a rate of 100 °C/hour in a longitudinal magnetic field of 25 oersted, to set up a magnetic texture. Table 1 gives the composition of the materials investigated, the sample sizes and coercive force in various conditions. The magnetic permeability was measured by the ballistic method and the initial permeability was determined by extrapolating the permeability measured in weak fields to zero field. The maximum error of determination of permeability was about 6%. A special rig was devised to apply compressive stresses to the samples, most of the samples being covered with tubular guides to avoid bending. The error in determination of the stress was about 1%. The coercive force was determined to give a qualitative assessment of the influence of internal stresses after the various heat treatments. Curves of magnetic induction and magnetostriction were determined to find the character of the magnetic texture. The magnetostriction

curves were determined by means of wire strain gauges. Fig.2 shows curves of the initial permeability of transformer steel with 4.1% Si as function of the compressive loading in kg/mm^2. Curve 1 relates to the work hardened specimen, curve 2 after No.1 annealing, and curve 3 after No.2 annealing. It will be seen that the two annealings considerably relieve the internal stresses and increase the initial permeability. Similar curves were obtained for transformer steel containing 3.4% Si, for the dynamo steels and for the armco iron. Similar relationships are also obtained for the 66-permalloy which was not subject to thermal magnetic treatment except that the initial susceptibility of the work-hardened specimen was practically independent of the load. In the initial part of the curve for armco iron there is a clearly expressed maximum. These results are explained in terms of Vonsovskiy's theory; they correspond to the results that would be expected for materials with a positive magneto-striction constant λ_{100} and an axis of easy magnetisation of the type [100].

Fig.4 shows the relationship between the initial permeability of electrolytic nickel and the compressive load. Curve 1 is for the

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work hardened condition, curve 2 after No.1 annealing, and curve 3 after No.2 annealing: again the load is given in kg/mm^2. Nickel has negative magnetostriction and an axis of easy magnetisation of the type [111] and for this case Vonsovskiy's theory indicates the presence of a maximum in the curve of the initial permeability of the nickel as function of the compressive load, as is indeed observed. Curve 4 on Fig.4 was obtained on a specimen which had received No.2 annealing and was then slightly work hardened by bending, and it will be seen that this reduces the value of the initial permeability and displaces the maximum relative to curve 3 towards higher loads, as is predicted by Vonsovskiy's theory. It is concluded that the experimental data are in good qualitative agreement with Vonsovskiy's theory. Ya.S. Shur and D.D. Mishin are mentioned in the article for their contributions in this field.

There are 4 figures, 1 table and 9 references: 8 Soviet-bloc and the following English language reference:

Ref.5: E. Williams, Phys. Rev., Vol.52, 747, 1004, 1937.

Card 4/7 5

30469
The influence of elastic compression... S/139/61/000/005/005/014
E194/E135

ASSOCIATION: Ural'skiy gosuniversitet imeni A.M. Gor'kogo
(Ural State University imeni A.M. Gor'kiy)

SUBMITTED: July 19, 1960

Card 5/7 5

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S/137/62/000/002/144/14..
A052/A101

5 5400

AUTHORS: Korzh, P. D., Gulyayeva, G. P.

TITLE: The thermoelectric method of determining Sb in Pb-Sb alloys

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 2, 1962, 14, abstract 2K69 ("Sb. nauchn. tr. Magnitogorskiy gornometallurg. in-t", no. 23, 1961, 12-19)

TEXT: The thermoelectric method of determining Sb in Pb-Sb alloys is described. The method is based on measuring the relation between the thermoelectromotive force and Sb concentration. Three methods of contacting samples with a comparison element were tried. 1) Sn soldering, 2) a contact by means of mechanical clamps, 3) a contact through a molten metal. By the third method the alloy sample and the comparison element were submerged, with one end, into a molten Wood's alloy. The thermoelectromotive force of Pb-Sb samples was measured on the ППТВ -1 (PPTV-1) direct current potentiometer by the compensation method. Bi was used as comparison element. The Sb content was studied in binary alloys containing 4.7 - 8.5% Sb. The calibration curve is plotted as follows: one "junction" formed by the sample and Bi electrode was heated in

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boiling water, other ends being at 18°C. The thermoelectromotive force was measured 10 - 15 times. It was found that the thermoelectromotive force of Pb-Sb alloys decreases with an increased Sb content by the linear law. The deviation of individual determinations from the mean value did not exceed ± 0.18%. There are 6 references.

V. Pedanova

[Abstracter's note. Complete translation]

KORZH, P.D.; GULYAYEVA, G.P.; GINIYATULIN, I.N.

Thermoelectric method for determining antimony in lead-antimony alloys. Zav.lab. 29 no.3:289-291 '63. (MIRA 16:2)

1. Magnitogorskiy gorno-metallurgicheskiy institut.
(Antimony--Analysis) (Lead-antimony alloys)
(Thermoelectricity)

Bab GULYAYEVA, I. Ye.

C-2 Organic Chemistry
(Pharm)

3287. Photo-colorimetric determination of pyramidone. I. E. Gulyaeva (*J. anal. Chem., USSR*, 1950, 5, 163—165).—In saturated Na_2CO_3 solution pyramidone gives with the Folin-Denis reagent (0·4 g. of $2H_2O$ phosphomolybdate and 20 g. of Na tungstate refluxed for 2 hr. with 10 ml. of 87% H_3PO_4 and 150 ml. of water, and diluted to 200 ml.) a dark blue coloration, the intensity of which is of the pyramidone content. To 1 ml. of the solution containing 10—80 μg of pyramidone are added 4 ml. of the reagent, 4 ml. of saturated Na_2CO_3 solution, and 4 ml. of water, and the absorption is determined after 6—15 min. G. S. Smith

GULYaYeVA, I. P., Cand Med Sci -- (diss) "Blood viruses in [illegible] region," Khar'kov, 1960, 8 pp (Khar'kov State Medical Institute) (KL, 37-60, 140)

L 28537-66 EWP(j)/EWT(m)/T/EWP(t)/ETI IJP(c) RM/WN/JD/WB/GD

ACC NR: AT6013804 SOURCE CODE: UR/0000/65/000/000/0296/0304

57

AUTHOR: Rozenfel'd, I. L.; Persiantseva, V. P.; Gulyayeva, I. P.

ORG: none

TITLE: Protective properties of inorganic inhibitors in the presence of extraneous ions

SOURCE: Korroziya metallov i splavov (Corrosion of metals and alloys), no. 2. Moscow, Izd-vo Metallurgiya, 1965, 296-304

TOPIC TAGS: corrosion inhibitor, ion, sodium compound, sulfate, chloride, electrolyte

ABSTRACT: Inorganic inhibitors, which chiefly include sodium and potassium salts of acids whose anions contain atoms of elements V, IV and VII of the periodic table, are widely used to protect metals against corrosion in neutral media. Yet despite the numerous studies of these inhibitors, the interaction between inhibiting and aggressive media still has not been adequately investigated and hence the effectiveness of the inhibitors in various electrolytes cannot be predicted. To fill this gap, the authors investigated the corrosion rate of Fe as a function of inhibitor concentration for a fixed concentration of aggressive ions (Cl^-, SO_4^{2-}). In addition the protective concentrations of inhibitors for various concentrations of aggressive ions were investigated; this made it possible to derive a mathematical relation for

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calculating the required amount of inhibitor for real systems. Thus the dependence of the protective concentration of such compounds as Na_2WO_4, Na_3PO_4, Na_2MoO_4, NaH_2PO_4 on the content of sulfate ions (SO_4^{2-}) in the solution is expressed by the equation: $Y = 0.17X + 0.003$, where Y is molal inhibitor concentration, and X is molal concentration of aggressive ion. For the aggressive ion Cl^- the corresponding relation is: $Y = 0.38X + 0.005$. The accompanying electrochemical tests pertained to electrode impedance which, as was anticipated, differed depending on whether the inhibitor forms phase layers or adsorption layers at the surface of the protected metal. The corrosion rate of metal as a function of inhibitor concentration in a solution of 30 mg/liter NaCl and 70 mg/liter Na_2SO_4 was found to decrease in all cases -- except monosubstituted phosphate and sodium vanadate -- with increasing inhibitor concentration (Fig. 1). Thus, the investigated inhibitors may be arranged in the following series of increasing protective capacity:

$$Na_3PO_4 \approx Na_2HPO_4 > Na_2WO_4 > Na_2MoO_4 > NaH_2PO_4 > Na_2VO_4.$$

It is found that these inhibitors markedly alter impedance when the current applied is small, do not affect capacitance characteristics in the presence of high frequencies but somewhat reduce ohmic resistance at these frequencies. Such changes in impedance indicate that inhibitors of this type (XO_4^{n-}) alter the polarization characteristics of the system. Orig. art. has: 9 figures.

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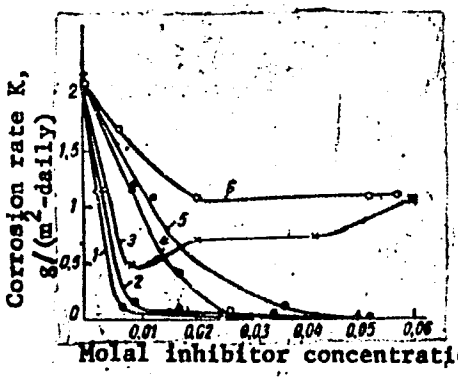

Fig. 1. Metal corrosion rate as a function of inhibitor concentration in solution containing 30 mg/liter NaCl and 70 mg/liter Na_2SO_4:

1 - trisodium phosphate; 2 - sodium tungstate; 3 - monosubstituted sodium phosphate; 4 - disubstituted sodium phosphate; 5 - sodium molybdate; 6 - sodium vanadate

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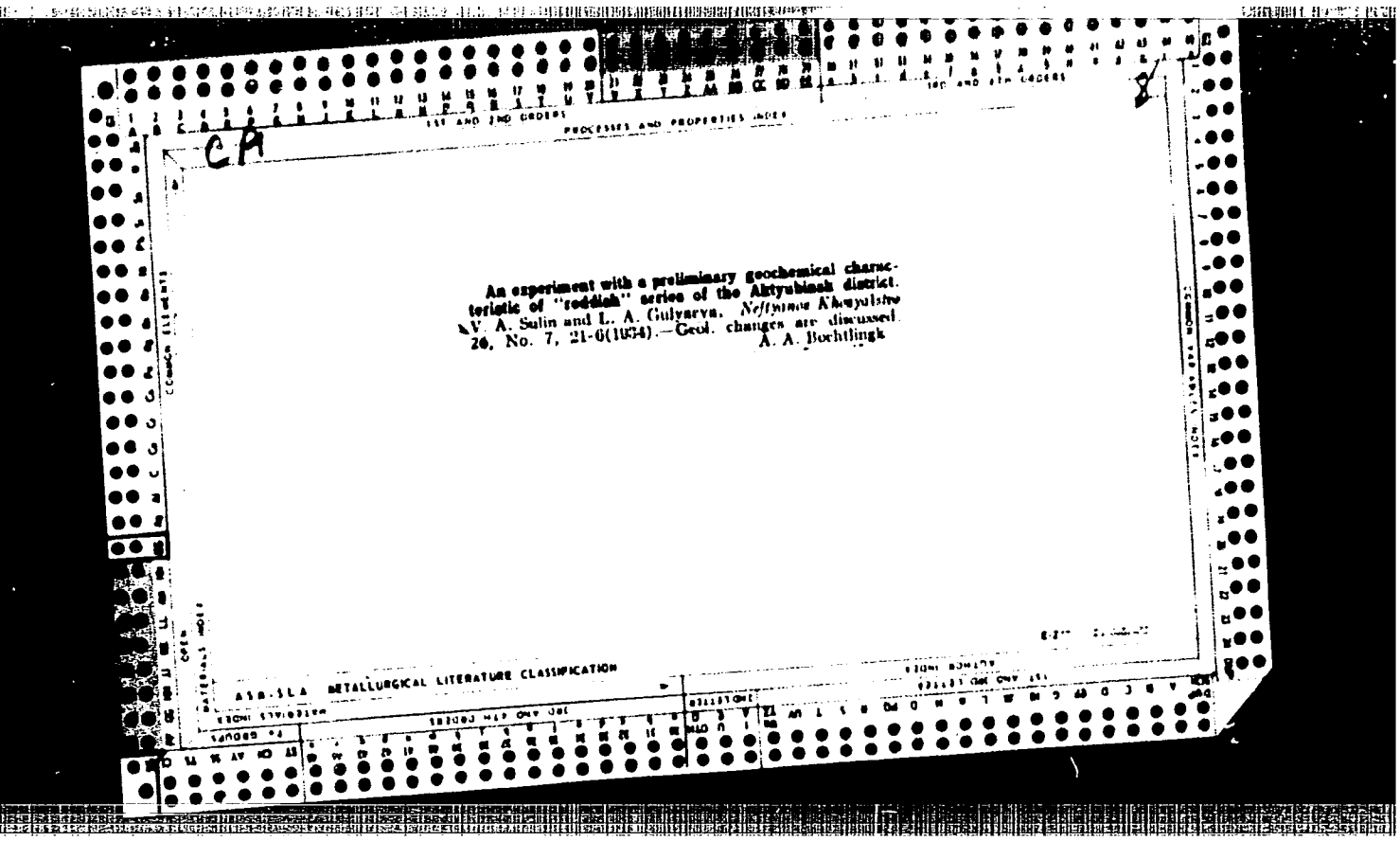
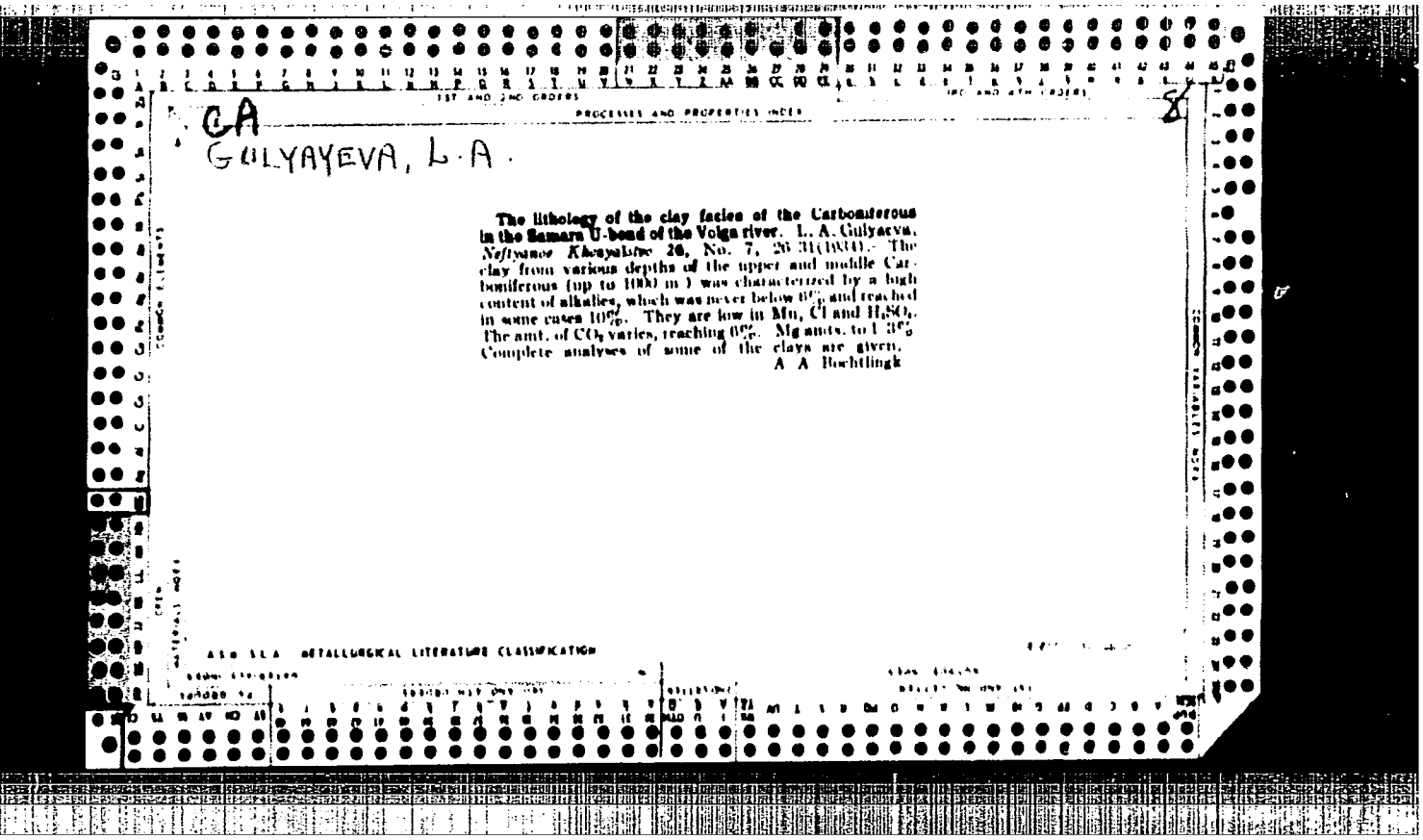




CA

GULYAYEVA, L. A.

The lithology of the clay facies of the Carboniferous in the Samara U-bend of the Volga river. L. A. Gulyaeva. *Neftyanoe Khozyaistvo* **26**, No. 7, 26-31(1948).—The clay from various depths of the upper and middle Carboniferous (up to 1000 m.) was characterized by a high content of alkalies, which was never below 6% and reached in some cases 10%. They are low in Mn, Cl and H_2SO_4. The amt. of CO_2 varies, reaching 6%. Mg amts. to 1.3%. Complete analyses of some of the clays are given.
A. A. Berhtlingk

C A

Boron in mud volcanoes. I. A. [illegible] *Izvestiya* [illegible] *and Prevention* **1939**, [illegible] **1939**, No. 9, 24. B, detd. by the method of [illegible] Lageeva (*J. Applied Chem.* U. S. S. R. **10**, No. 8 1936), was found in all volcanic waters in [illegible] from 2.4 [illegible] Kila Kupri, Georgia [illegible] Balganok, Kerch region. Results of [illegible] given. A stratigraphic regularity in the distribution of B was found, an increased content of B_2O_3 was found in the chalk volcanoes (above 0.1% for the Kerch region and [illegible] 0.017% for Georgia). For volcanoes of the [illegible] Prolukhtivnaya and Shirakhan thickets a low content of B_2O_3 was characteristic (0.01% and lower). No parallelism between the B content and the mineralization was found. In their B contents the mountain waters did not differ from the waters of the corresponding petroleum horizons. A comparison of the compn. of mineral springs connected with volcanism and springs originating in the sedimentary formations showed that there exists a connection between B with I and Br in sea sediments and their waters, especially in the petroleum and mountain waters, and an absence of such a connection in the volcanic waters. Org. substances play a considerable role in the concn. of B. A content of 0.025% B was found in the residual formations of the Crimea-Caucasus province.

W. R. Henn

METALLURGICAL LITERATURE CLASSIFICATION

GULYAYEVA, L. A.

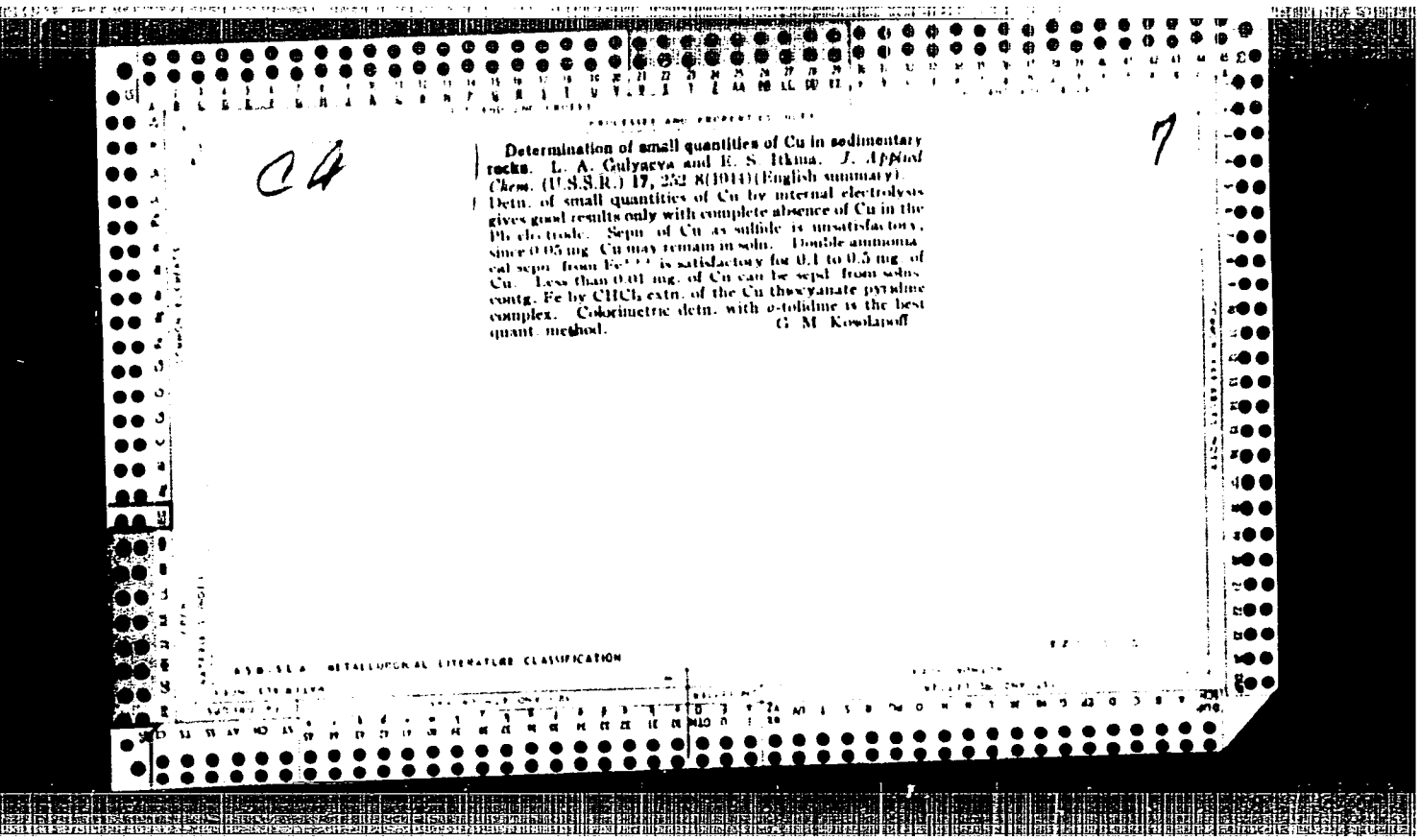
"Vanadium, Nickel, and Copper in Petroleum of the Urals and Volga Region" Dok AN, 32, No. 6, 1941. Inst. Mineral Fuels, Acad Sci, USSR.

GULYAYEVA, L. A.

"Disbribution of Boron in the Waters of Azerbaydzhan Oil-Fields and its Correlational Value, Dok. AN, 35, No. 3, 1942.

GULYAYEVA, L. A.

"Boron Distribution in Recent Organogenic Deposits," Dok AN. 37, No. 1, 1942.



C4

7

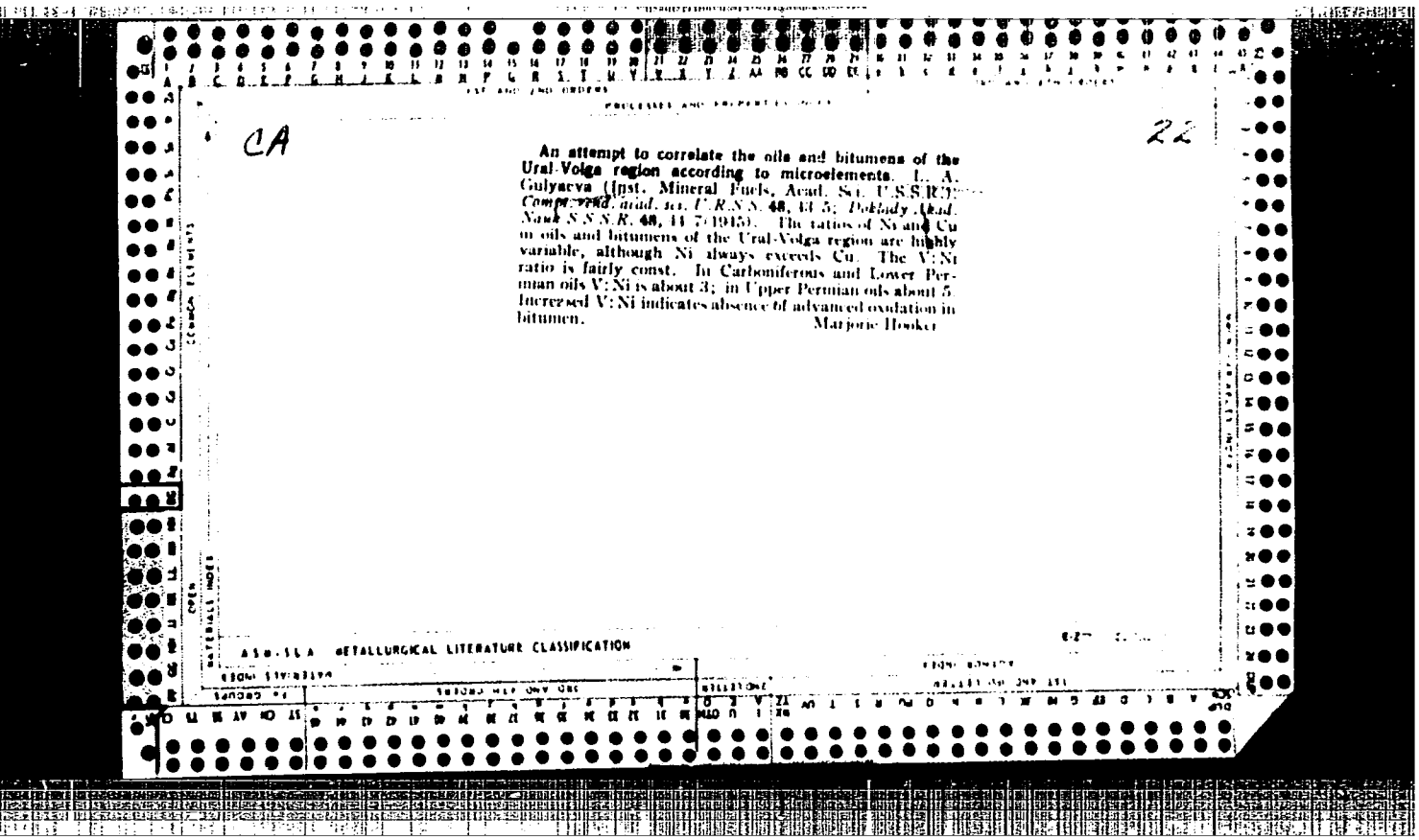
Determination of small quantities of Cu in sedimentary rocks. L. A. Gulyaeva and E. S. Itkina. *J. Applied Chem.* (U.S.S.R.) **17**, 252–8(1944)(English summary). Detn. of small quantities of Cu by internal electrolysis gives good results only with complete absence of Cu in the Pb electrode. Sepn. of Cu as sulfide is unsatisfactory, since 0.05 mg. Cu may remain in soln. Double ammoniacal sepn. from Fe^{+++} is satisfactory for 0.1 to 0.5 mg. of Cu. Less than 0.01 mg. of Cu can be sepd. from solns. contg. Fe by $CHCl_3$ extn. of the Cu thiocyanate pyridine complex. Colorimetric detn. with o-tolidine is the best quant. method.
G. M. Kosolapoff

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

Determining small quantities of nickel in sedimentary rocks. [illegible] 10, [illegible] to detect the colorimetric dimethylglyoxime method for detg. Ni in sedimentary rocks. The red Ni ppt. gives colored solns. in alk. soln. contg. oxidizing agents—I, Br, or PbO_2. The color developed is very intense and as little as 0.005 mg. of Ni can be detd. I. S. Ioffe

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

22

An attempt to correlate the oils and bitumens of the Ural-Volga region according to microelements. L. A. Gulyaeva (Inst. Mineral Fuels, Acad. Sci. U.S.S.R.). *Compt. rend. acad. sci. U.R.S.S.* **48**, 13-5; *Doklady Akad. Nauk S.S.S.R.* **48**, 11 7 (1945). The ratios of Ni and Cu in oils and bitumens of the Ural-Volga region are highly variable, although Ni always exceeds Cu. The V:Ni ratio is fairly const. In Carboniferous and Lower Permian oils V:Ni is about 3; in Upper Permian oils about 5. Increased V:Ni indicates absence of advanced oxidation in bitumen.

Marjorie Hooker

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

GULYAYEVA, I.

Boron content of recent marine sediments. Dokl. AN SSSR 60 no.5: 833-835 My '48. (MLRA 10:8)

1. Institut goryuchikh iskopayemykh Akademii nauk SSSR. Predstavleno akademikom S.S. Nametkinym.
(Boron) (Sedimentation and deposition)

CA

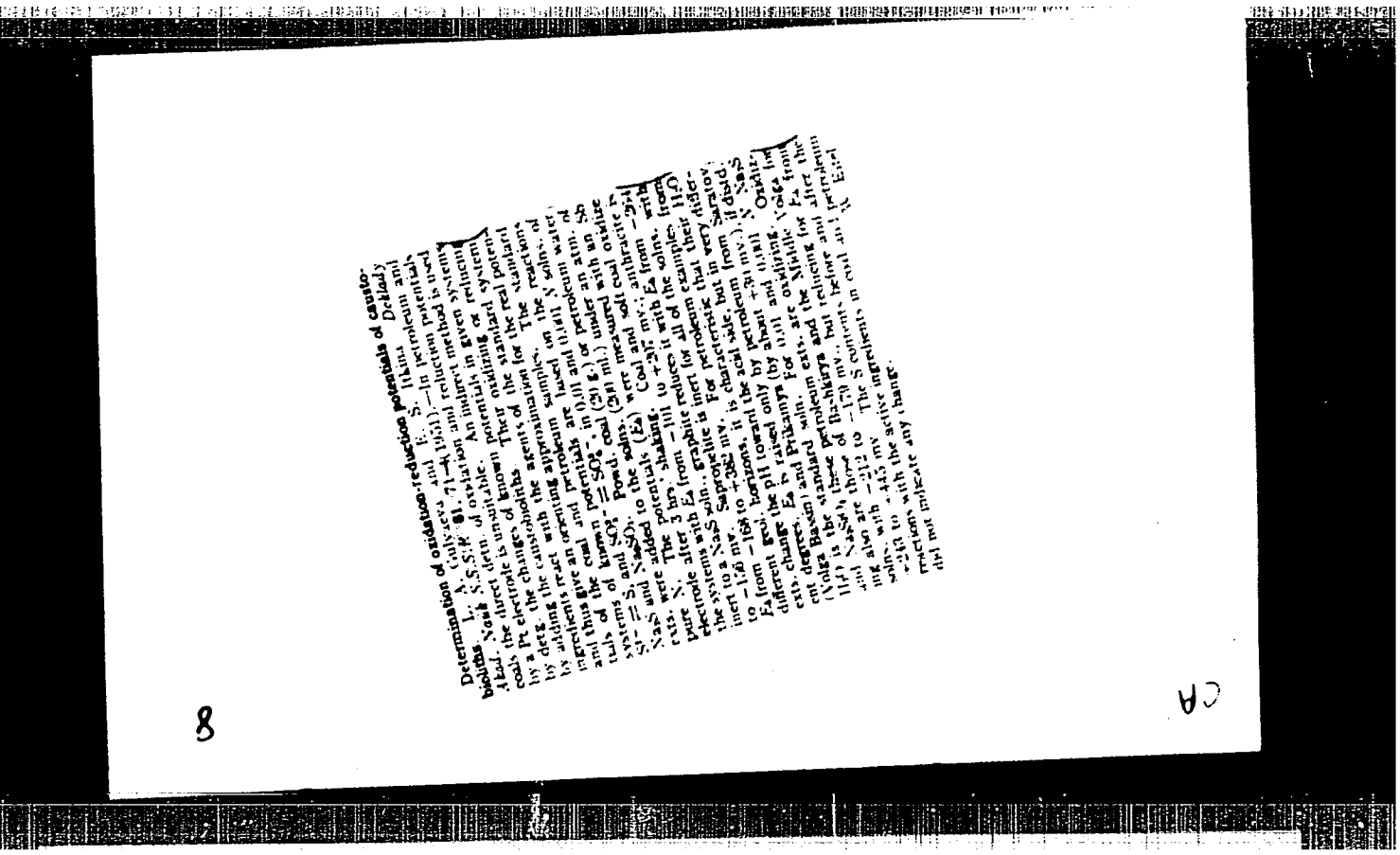
8

Distribution of small amounts of nickel and copper in Upper Permian deposits of Tatar A.S.S.R. L. A. Gulyaeva and E. S. Itkina (Acad. Sci., U.S.S.R.). *Doklady Akad. Nauk S.S.S.R.* 70, 663-5(1950).—Analytical results are given for small amts. of Cu and Ni. Samples rather high in Cu (above 30–50 × 10^{-5}%) do not show an enrichment (relative) in Ni, and as a matter of fact, Cu-enriched carbonate rocks show a decline of Ni to 10^{-5}% levels; only in deposits of clay type does a relatively high Ni level accompany Cu. In carbonates the Ni/Cu ratio is 0.008-0.3, while in clays it is unity or higher. Ni is thus bound to the terrigenous fascia; carbonates form a zone in which a sepn. of Cu from Ni takes place during the secondary mineral processes. G. M. Kosolapoff

Petroleum Inst, AS USSR

GULYAEVA, L.A.

Chloride content in Devonian sediments. Doklady Akad. Nauk S.S.S.R. 80,911-13 '51. (MLRA 4:10)
(CA 47 no.13:6318 '53)



GULYAYEVA, L.A.

Chemical Abst.
Vol. 48
Apr. 10, 1954
Mineralogical And Geological Chemistry

Vanadium and nickel in petroleum of the Devonian period. L. A. Gulyaeva. *Trudy Tatr. Neftyan. Akad. Akad. Nauk S.S.S.R.* 2, 73-8(1953).—Analysis of Volga-Ural petroleums showed that the V:Ni ratio of Devonian petroleum varied from 2 to 3, while that of the Carboniferous period varied from 4 to 6. Rupta. revealed that petroleum does not ext. V or Ni on contact with the earth strata, but on the contrary, a small portion of these metals is adsorbed by the strata. Because of the constancy of the V:Ni ratio, a genetic concept was assigned to this coeff. A comparison of the org. components of petroleum from these geol. periods, supplemented by the genetic coeff., gave a basis for the assumption that Devonian and Carboniferous petroleum are genetically not related. A. P. Kotlaby

GULYAYEVA, L.A.

USSR

Deposits of hydrogen sulfide basins in the geological past. L. A. Gulyaeva. *Doklady Akad. Nauk S.S.S.R.* 92, 1010–12(1953).—Geol. deposits of H_2S basins have attracted special attention since A. D. Arkhangel'skii (C.A. 21, 3864) assigned to H_2S poisoning the principal role in the accumulation of petroleum-forming org. matter. This idea has not been accepted by later Soviet petroleum geologists and lithologists. G.'s own geochem. investigations, described in this paper, of the Devonian and Carboniferous deposits in the Ural-Volga provinces, have not confirmed A.'s viewpoint; nevertheless G. considers that the H_2S basins retain their significance as one of the facets in the accumulation of petroleum-forming material under obviously reducing conditions. The characteristics of H_2S basins are an abundance of pyrite and an absence of ground fauna. The absence of ground fauna may be caused by other factors than an excess of H_2S as has been shown by N. M. Strakhov.

V. H. Gottschalk

G L KITOVA, LA

Gulyayeva, L.A. -- "Geochemistry of Terrigenous Deposits of the Devonian Period in the Urals Along the Volga." Dr Geol-Min Sci, Petroleum Inst, Acad Sci USSR, 26 Jan 54. (VECHERNYAYA MOSKVA, 19 Jan 54)

Source: SUM 168, 22 July 1954

GULYAYEVA, L.A.

The oxidation-reduction potentials and the pH of caustobiolites. L. A. Gulyaeva and E. S. Lukina. *Trudy Inst. Nefti, Akad. Nauk S.S.S.R.* 3, 176-87, 1954).—A comparison of coal and petroleum behavior in analogous oxidation-reduction systems leads to the conclusion that there are strongly oxidized active components in all humic coals, which are reduced in the pos. range of the oxidation-reduction potentials (E_h) of up to +230 mv. The coals differ therein from most oils, which are oxidized in that range. This oil behavior indicated the presence of reduced compds. in petroleum, with a lower E_h than that of media in which the oil interacts. Perfectly inert sapropelites and the Kama field oil and the Lower Volga field oils, which are unoxidized in mdns. of fairly high E_h, are the exceptions. W. H. S.

GULYAYEVA, L.A.

"Microelements" of petroleum and bitumen of the Permian and Carboniferous of the Ural-Volga Valley region. Trudy Inst. nefti 3:188-206 '54. (MLRA 8:6)
(Volga Valley--Petroleum--Analysis) (Ural Mountain region--Petroleum--Analysis)