ZVIAGIN, Boris Borisovich; PINSKER, Z.G., doktor khim. nauk, prof.,
otv. red.

[Electrography and structural crystallography of clay
minerals] Elektronografiia i strukturnaia kristallografiia
glinistykh mineralov. Moskva, Izd-vo "Nauka," 1964.   281 p.
(MIRA 17:8)

"Connection of lattice symmetry and generalized symmetry in reciprocal space."
report submitted for 6th Gen Assembly, Intl Union of Crystallography, Rome,
9 Sep 63.

Inst of Crystallography, AS USSR, Moscow.

Effect of the elongated form of crystals on the intensity of reflexes
in electron diffraction pictures of laminated textures. Kristallografiia
7 no.6:958-959 N-D '62.

(MIRA 16:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut.
(Election diffraction examination)   (Crystallography);

ZVIAGIN, B. B., kand. geol.-mineral. nauk

"Electron microscopy of metals; apparatus, research methods and preparation of specimens" by G. S. Gritsaenko, E. S. Rudnitskaia, A. I. Gorshkov. Reviewed by B. B. Zviagin. Vest. AN SSSR 33 no.1:135-136 Ja '63.   (MIRA 16:1)

(Bibliography—Electron microscopy)
(Gritsaenko, E. S.)
(Rudnitskaia, E. S.)
(Gorshkov, A. I.)

MISHCHENKO, K.S.

Electron diffraction data on the structure of phlogopite-biotite.
Kristallografiia 7 no.4:623-627 Jl-Ag '62.   (MIRA 15:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut.
   (Electron diffraction examination) (Phlogopite) (Biotite)

ZVYAGIN, B.B.; SHAKHOVA, R.A.; SHITOV, V.A.

Some characteristics of the distribution of clay formations
based on structural and mineralogical indicators as revealed
by electronographic data. Trudy VSEGEI 72:57-73 '62.

(Clay—Analysis)   (MIRA 15:9)

ZVYAGIN, B.B.; FRANK-KAMENETSKIY, V.A.

Concerning E.N. Eliseev's article "Determination of the sizes of clay elementary cells by the X-ray powder pattern (debyegrams)." Min.sbor. no.14:399-402 '60.   (MIRA 15:2)

1. Vsesoyuznyy geologicheskiy nauchno-issledovatel'skiy institut, Leningrad, 1. 2. Gosudarstvennyy universitet imeni A.A. Zhdanova, Leningrad.

(Clay)
(X-ray crystallography)
(Eliseev, E.N.)

FRANK-KAMENETSKIY, V.A.

In regard to E.N. Eliseev's response to our remarks. Min. sbor.
no.15:406-409 '61.

(MIRA 15:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut,
Leningrad, i Gosudarstvennyy universitet imeni A.A. Zhdanova,
Leningrad.

   (Clay--Analysis)   (X-ray crystallography)

AUTHOR: Zvyagin, B.B.

TITLE: The effect of the elongated shape of crystals on the distribution of the intensity of reflections in the electronograms derived from platelike textures

PERIODICAL: Kristallografiya, v.7, no.6, 1962, 958-959

TEXT: The author observed the above phenomena on sepiolite and palygorskite crystals and found that the elongated form of crystallites is also indicative of the intensity distribution of reflections derived during the electronographic study of the texture.   Assuming the direction of elongation coincident with the principal axis, the inclinations of the crystallites towards the plane of the base of the texture take place chiefly due to the rotation around the principal axis.   Hence, it is concluded that each point of the inverse lattice is formed as a result of such a rotation under a certain angle.   In this way a spherical belt is generated.   The author develops in detail the relations existing in a geometrical model describing such mechanism and formulates the conditions of reflections for the orthogonal and monoclinic lattices.   It is suggested that the above model may

Card 1/2

The effect of the elongated ...   S/070/62/007/006/020/020
                                                    E202/E492

also be used in the identification of electronogram reflections.
There is 1 figure.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy
             institut (All-Union Scientific Research Institute of
             Geology)

SUBMITTED: April 19, 1962

Card 2/2

Theory of the polymorphism of micas. Kristallografiia 6
no.5:714-726 S-O '61.

(MIRA 14:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut.
              (Mica)   (Crystallography)

ZVIAGIN, B.B.

Theory of the polymorphism of two-layer (kaolin-like) minerals. Kristallografiia 7 no.1:51-65 Ja-F '62. (MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut.

(Crystallography)

S/070/62/007/004/010/016
E073/E335

AUTHORS: Zvyagin, B.B. and Mishchenko, K.S.

TITLE: Electron-diffraction data on the structure of
               phlogopite-biotite

PERIODICAL: Kristallografiya, v. 7, no. 4, 1962, 623 - 627

TEXT: In preliminary experiments no individual differences
could be detected between X-ray diffraction patterns of the
variants of these minerals which would reflect the peculiarities
in the chemical composition. This was taken as proof of stati-
stical distribution of the isomorphous cations. Therefore, only
the properties which are generally characteristic were studied,
on electron-diffraction patterns of the textures of one specimen
from a collection. 59 reflexions $h0\ell$ and 40 reflexions $0k\ell$
were observed and indexed. The distribution of the reflexions
on the electron-diffraction pattern satisfies the monoclinic cell
with the parameters: a = 5.28; b = 9.16; c = 10.3 Å;
$\beta = 99°50'$ and the trigonal cell with c = 30.5 Å. After two
synthesis cycles, the R-factors, which reached values of 17.2%
for the reflexions $h0\ell$ and 20.4% for the reflexions $0k\ell$,
ceased to improve. The atom coordinates of the phlogopite-biotite
Card 1/3

Electron-diffraction data S/070/62/007/004/010/016
                                    E073/E335

structure corresponding to this stage as well as the interatomic
distances are tabulated and a sketch is given of the structure
(normal projection onto the plane xy). The accuracy of determin-
ation of the coordinates, evaluated according to the formula of
Vaynshteyn, was 0.02 for K atoms, 0.03 for Si, Al and Mg atoms and
0.04 Å for O atoms. From the ideal model the real structure
differed by the fact that the tetrahedra formed a motive with
ditrigonal loops, corresponding to a shift of the tetrahedra
about the vertical by an angle of $5.5°$ relative to the base, as
compared with the position of strictly hexagonal loops. On the
other hand, the top and the base of the octahedron did not show
any shift relative to the positions corresponding to cubic packing
but the octahedra themselves were strongly flattened. Since the
Al atoms are probably statistically distributed among the tetra-
hedral positions, it was not possible to establish the structural
distortions caused by them. Probably, in the same way as in musco-
vite, such substitutions bring about certain shifts of O atoms but,
due to their statistical nature, this does not lead to a change in
the monoclinic angle as compared with its ideal value.

Card 2/3

Electron-diffraction data S/070/62/007/004/010/016
                                        E073/E335
                  There are 4 figures and 3 tables.
ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy
                  geologicheskiy institut   (All-Union Scientific
                  Research Geological Institute)
SUBMITTED: June 13, 1961

Card 3/3

ZVYAGIN, B.B.; SHCHEGLOV, A.D.

Nacrite from the fluorite deposit of western Transbaikalia and its structural characteristics according to the data of electron diffraction examination. Dokl. AN SSSR 142 no.1:185-188 Ja '62.
(MIRA 14:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut. Predstavleno akademikom N.N. Belovym.
(Novo-Pavlovka—Nacrite)
(Electron diffraction examination)

FRANK-KAMENETSKIY, V.A.

Purpose and principles of the complication and estimation of dif-
ferent classifications of clay minerals; in connection with the
discussion innitiated by the Clay Committee at the International
Geological Congress. Zap.Vses.min.ob-va 90 no.6:750-754 '61.

(Clay--Congresses)   (MIRA 15:2)

VAYNSHTEYN, B.K.; PINSKER, Z.G.; LOBACHEV, A.N.; ZVYAGIN, B.B.

Important problems in the theory of modern electron-
diffraction structure study; survey. Zav.lab. 27 no.6:673-682
'61.
(MIRA 14:6)

(Electron diffraction examination)

SYTAGIN, B.B.; DOLOMANOVA, Ye.I.; SOBOLEVA, S.V.; MOLEVA, V.A.

Dioctahedral Al-mica 1M from the Levo-Ingodinsk tin-tungsten
deposit in Transbaikalia. Dokl. AN SSSR 165 no.2:410-412
N '65.
                                                         (MIRA 18:11)

1. Submitted May 21, 1965.

ZAMYATIN, IU.V.; ZVIAGIN,B.I.

Method of determination of the depth of cementation of steel
alloys by isothermal hardening. Zav.lab.21 no.6:687-692 '55.
(Cementation (Metallurgy))   (MIRA 8:9)

Stroitel'noye chercheniye (Structural designing) 1 zd. 2., perer.
1 dop. Kiev, Mashgiz, 1955.
79 p. illus., diagrs., tables.
"Literatura": P. 73.

ZVYAGIN, B.K.; CHEBAYEVSKAYA, L.P., red.; SHVETSOV, S.V., tekhn. red.

[Structural drawing] Stroitel'noe cherchenie. Izd.3., perer. i dop. IAroslavl', Rosvuzizdat, 1963. 82 p.   (MIRA 16:5)
(Structural drawing)

ZVYAGIN, Boris Konstantinovich, kand.tekhn.nauk; MATS, L.I., inzh., nauchnyy
red.; KAPLAN, M.Ya., red.izd-va; VORONETSKAYA, L.V., tekhn.red.

[Manual on architectural drawing] Spravochnik po stroitel'nomu
chercheniiu. Leningrad, Gos.izd-vo lit-ry po stroit., arkhit. i
stroit. materialam, 1958. 167 p.   (MIRA 12:3)
                        (Architectural drawing)

ZVYAGIN, Boris Konstantinovich; KHAGEMEYSTER, Ye., red.

[Mechanical drawing; "Engineering and structural drawing"
section. Manual] Mashinostroitel'noe cherchenie; razdel
"Inzhenerno-stroitel'noe cherchenie." Uchebnoe posobie.
Leningrad, Severo-zapadnyi zaochnyi politekhn.in-t, 1959.
35 p.

(Mechanical drawing)   (MIRA 13:10)

ZVYAGIN, B.M.

General theory and methods for calculating the results of crushing and subsequent gravity concentration of rocks.   Zap. LGI   36   no.3:
43-64   '58.

(Rocks)

(MIRA 16:5)

BACHTIN, G.M., inzh.

Transfer of water over the crest of a curvilinear
spillway with a sharp rim. Izv. vys. ucheb. zav.;
energ. 5 no.10:115-123 O '62.   (MIRA 15:11)

1. Moskovskiy inzhenerno-stroitel'nyy institut. Predstavlena
kafedroy gidrotekhnicheskikh sooruzheniy.
                        (Spillways)

ZVIAGIN, G.Z.

Welding of rails for a continuous track. Put' i put.khoz. 5 no.4:
42-43 Ap '61.
(MIRA 14:7)

1. Nachal'nik rel'sosvarochnogo poyezda, st. Lodeynoye pole,
Oktyabr'skoy dorogi.
(Railroads—Rails—Welding)

S/137/61/000/011/053/123
A060/A101

AUTHOR: Zvyagin, G. Z.

TITLE: Welding of rails for a buttless track

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 11, 1961, 27, abstract
             11Ye169 ("Put' i putevoye kh-vo", 1961, no. 4, 42-43)

TEXT: In six months from October 1960 the rail-welding train of the
Oktyabr' railroad system welded 90 km of rails for a buttless track. The produc-
tion flow on the train is improved, and in particular, the length of the roller
path is increased, taking into account the space for checking the welded joints
using the defectoscope УЗД НИИМ-5 (UZD NIIM-5); the distance between the
welding location and the compartment where the normalization is carried out is
increased, allowing the weld to cool down sufficiently in passing from one
work-station to another. The rail-cutting mill for cutting out defects is set
up near the welding machine, however, the cutting may be carried out at any spot
of the line. Prior to welding the rails undergo trimming, the factory butt-cut-
off is carefully checked and is carried out again in case of necessity. The
welding proceeds on the resistance butt-welding machine МСГР-500-4 (MSGR-500-4)

Card 1/2

S/137/61/000/011/053/123
A060/A101

Welding of rails for a buttless track

from the factory "Elektrik". A productivity of 0.9 - 1.2 km of track is attained
in three-shift operation. The welding conditions are: setting pressure - 35
tons, flash magnitude - 20 mm. The stationary value of crushing load is 200 -
220 tons at a deflection of 30 - 50 mm. The continuous feed of the rails to the
welder has been introduced lately, for which purpose the rails are connected to
each other by small light grapples.

Ye. Terpugov

[Abstracter's note: Complete translation]

Card 2/2

AFANAS'YEV, A.A., ZVYAGIN, B.K.

Shoe Industry

Planning shoe factories. Leg.prom. 12, no. 7, 1952,

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

The theory of rock crushing. II. Division of the particles of the products of crushing into two fractions and the calculation of the average composition of these fractions. B. M. Zryagin, R. B. Rosenbaum, O. M. Todes, and A. Z. Yurovskii. Izvest. Akad. Nauk S.S.S.R., Otdel. tekh. Nauk 1951, 1218-20; cf. ibid. 1950, 1082.—A method is given for detg. the relative no. of floating and depositing particles by distributing them into 2 fractions. Also, a method for detg. the av. compn. of the floating and depositing fractions is provided. The discussion given is math.   C. S. Mary

S/044/62/000/006/067/127
B168/B112

AUTHORS: Todes, O. M., Zvyagin, B. M.

TITLE: A linear method of determining the distribution function of
                inclusions from their sizes

PERIODICAL: Referativnyy zhurnal. Matematika, no. 6, 1962, 15, abstract
                6V78 (Zap. Leningr. gorn. in-ta, v. 37, no. 3, 1959 (1961),
                58-63)

TEXT: The case where inclusions (impregnations) have a spherical form
(report 6V77) is investigated. A linear method of determining the size
distribution of inclusions, in which the lengths of segments of inter-
sections of inclusions are measured as arbitrary straight lines, is
proposed. It is noted that this method is simpler, both theoretically and
experimentally, than the planimetric method described, for instance, in a
work by Verzhbinskiy (:reportt 6V77), although of course it is less
accurate. [Abstracter's note: Complete translation.]

Card 1/1

TODES, O.M., prof.; ZVYAGIN, B.M., dots.; BOGORAD, Ye.A., nauchnyy sotrudnik

Petrographic method of determining the true size of impurities.
Izv.vys.ucheb.zav.; gor.zhur.   no.4:125-128   '58.

(MIRA 11:11)

1. Leningradskiy gornyy institut i Institut goryuchikh iskopa-
yemykh AN SSSR.

(Coal preparation)

AMOSOV, I.I.; ZVIAGIN, B.M.; TODES, O.M.; YUROVSKIY, A.Z.; MARCHENKO,
M.G., redaktor; TENNIS, I.G., redaktor; POLYAKOVA, T.V., tekhni-
cheskiy redaktor.

[Engineering calculations on the theory of exposing minerals in
the process of dressing coal.] Inzhenernye raschety k teorii
raskrytiia mineralov v protsesse obogashcheniia uglei. Moskva,
Izd-vo Akademii nauk SSSR. 1955. 157 p.   (MLRA 8:12)
        (Coal preparation)

ZVYAGIN, B. M.

USSR/Minerals - Ores, Dressing   Dec 51

"Theory of Rock Crushing. III. Separating Products of Coarse Crushing in Two Sizes," B. M. Zvyagin, O. M. Todes, A. Z. Yurovskiy

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 12, pp 1825-1840

Attempts to establish optimum conditions of crushing initial products for concn in form of comparatively coarse particles. Discusses distribution of crushed products according to compn, evaluation of final vol of inclusions, integral

205T82

USSR/Minerals - Ores, Dressing (Contd)   Dec 51

function of distribution and continuous distribution, sepn in 2 fractions, and yield and concn deg of floated product. Submitted A. M. Terpi-gorev.

205T82

ZVYAGIN, B. M.

USSR/Mining - Mineral Dressing, Wet -   Aug 51
Classification

"On the Theory of Rock Crushing. II. Separation of Crushed Products Into Two Fractions and Calculation of Their Mean Composition," B. M. Zvyagin, R. B. Rozenbaum, O. M. Todes, A. Z. Yurovskiy

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 8, pp 1218-1229

Develops method for detg relative number of floated and settled particles during sepn in liquid into 2 fractions. Suggests also method for detg mean compn of both fractions and presents

205T94

USSR/Mining - Mineral Dressing, Wet   Aug 51
Classification (Contd)

graphs for practical calcns. Gives numerical example of calcn. Submitted by Acad A. M. Terpi-gorev 16 Dec 50.

205T94

ZVYAGIN, B. M.

USSR/Minerals - Crushing

Jul 50

"Concerning the Theory of Rock Crushing," B. M. Zvyagin, R. B. Rozenbaum, O. M. Todes, A. Z. Yurovskiy, Inst of Fuel Resources, Acad Sci USSR

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 7, pp 1062-1070

Develops method for analytical calculation of relation between composition of crushed particles degree of crushing. Method permits finding function of distribution of crushed particles according to composition in process of fine curshing. Submitted by Acad A. M. Terpigorev.

168T56

FDD

ZVYAGIN, B. M.

FDD

Mining - Crushing
    Ores

Theory of Crushing of Mineral Rocks: The
Theory of Crushing of Mineral Grains," B. M. Zvyagin,
aking Open of Mineral Grains," B. M. Zvyagin,
B. Rozenbaum,O. M. Todes, A. Z. Yurovskiy

Ak Nauk SSSR, Otdel Tekh Nauk" No 7,
1052-1070

Formulas governing degree of breaking-up of minerals
ving crushing have been refined and verified. Authors have
phs of these formulas are drawn. Authors have
eloped method for solving more important problem:

Jul 50

162197

USSR/Mining - Crushing (Contd)   FDD

to find distribution function of crushed particles
according to their composition. Submitted 10 Feb 50
by Acad A. M. Terpigorev.

Jul 50

162197

ZVYAGIN, B.N.

New automatic match processing machine. Der. prom. 15 no.1:
4-5 Ja '66.   (MIRA 19:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut derevoobrabaty-
vayushchey promyshlennosti.

2 VYAGIN)

ZVYAGIN, Boris Konstantinovich, kand.tekhn.nauk, dots.; KRASIL'NIKOV, A.D.,
dots., retsenzent; LEUTA, V.I., inzh., red.; RUDENSKIY, Ya.V.,
tekhn.red.

[Architectural drqwing] Stroitel'noe cherchenie. Izd. 2-oe, perer.
i dop. Kiev, Gos.nauchno-tekhn.izd-vo mashino-stroit. lit-ry,
1955. 79 p.   (MIRA 11:2)
           (Architectural drawing)

ZVYAGIN, G.Z., inzh.

Rail welding on two production lines. Put' i put. khoz. 9 no.12:
17 '65.   (MIRA 19:1)

1. Stantsiya Lodeynoye Pole, Oktyabr'skoy dorogi.

24.7700

AUTHOR: Zvyagin, I. P.

TITLE: The position of the Fermi level in highly alloyed semiconductors

PERIODICAL: Fizika tverdogo tela, v. 5, no. 2, 1963, 581 – 585,

TEXT: The effect of high impurity concentrations on the position of the Fermi level is investigated for various degrees of electron gas degeneracy. Electron and impurity concentrations are assumed to be equal and the semi- conductor to be isotropic (cf. FTT, 3, 3009, 1961). State density and electron concentrations are calculated from

$$\rho(E) = \frac{4}{(2\pi)^3} \int \operatorname{Im} G(k, E)\, dk, \qquad (2a)$$

$$n = \int \frac{\rho(E)\, dE}{1 + \exp[\beta(E - \mu)]}, \qquad (2\delta)$$

where $\beta = (\kappa T)^{-1}$, μ – chemical potential, $G(\vec{k}, E)$ the retarded anticonmuta- tive Green function averaged over the positions of the impurities;

$$G^{-1}(\vec{k}, E) = G_o^{-1}(\vec{k}, E) + M(\vec{k}, E) \text{ and } M(\vec{k}, E) = M^{(1)}(\vec{k}, E) + M^{(2)}(\vec{k}, E); \; G_o \text{ is}$$

Card 1/4

The position of the Farmi level ...

the Green function of an ideal gas and $M^{(1)}, (2)$ are the mass operators of electron-impurity and electron-electron interactions. For a completely degenerate gas the operator $p = n\sigma(k_F)/k_F$ is very small and

$$\operatorname{Re} M^{(1)}(k, E) = M_1(k^2, E) =$$

$$= \begin{cases} c \dfrac{E - k^2 - a^2}{(E - k^2 + a^2)^2 + 4k^2a^2} & \text{при } E > 0, \\[2mm] -\dfrac{c}{k^2 + (a + \sqrt{-E})^2} & \text{при } E < 0; \end{cases} \tag{3a}$$

$$\lim_{\varepsilon \to +0} \operatorname{Im} M^{(1)}(k, E + i\varepsilon) = M_2(k^2, E) =$$

$$= \begin{cases} \dfrac{c_1 E^{1/2}}{(E + k^2 + a^2)^2 - 4k^2E} & \text{при } E > 0, \\[2mm] \dfrac{c_1 \chi^{1/2}(E)\,\theta\,[\chi\,(E)]}{(\chi\,(E) + k^2 + a^2)^2 - 4k^2E} \left[1 + \dfrac{v}{[\chi\,(E) + (a + \sqrt{-E})^2]} \right]^{-1} & \text{при } E < 0; \end{cases} \tag{3б}$$

$$M^{(2)}(k; E) = -\dfrac{2}{\pi}\left(\mu^{1/2} + \dfrac{\mu - k^2}{2k^3}\ln\left| \dfrac{\mu^{1/2} + k}{\mu^{1/2} - k} \right| \right). \tag{6}$$

Card 2/4

The position of the Fermi level ...   S/181/63/005/002/032/051
B102/B186

where $c = 8\pi n\chi^{-1}$, $c_1 = 16\pi n$, $k^2 = \chi(E)$ is the solution of $k^2 - E + M_1(k^2, E) = 0$.

The electron concentration is obtained as

$$n_1 = (6\pi^2)^{-1} c^{3/2},$$ (5a)

$$n_2 = (3\pi^2)^{-1} \mu^{3/2} \left[1 + 1.3 \left(\frac{c}{\mu^2}\right)^{3/2}\right],$$ (5б)

$$n = (3\pi^2)^{-1} \mu^{3/2} [1 + 0.4 n^{-1/3}],$$ (5в)

and is interrelated with the Fermi level position by $\mu = \mu_0 (1 - 0.27 n^{-3/8})$

where $\mu_0 = (3\pi^2 n)^{2/3}$ is the ideal-gas Fermi level. If the correction for electron-electron interaction ($\Delta\mu = -2\mu^{1/2}/\pi$) is taken into account this relation changes over to $\mu = \mu_0(1 - 0.2 n^{-1/3})$. Thus, the electron-electron interaction predominates in a completely degenerate semiconductor. The results obtained are generalized for $T \neq 0$, $\beta^{-1} \lesssim \mu$; p is still small, therefore perturbation theory is also applicable.

$$n = (2\pi^3)^{-1} \beta^{-3/2} \left[F_{1/2}(\beta\mu) + 3.5 \frac{\lambda^{3/2}}{1 + \exp(-\beta\mu)} - 2\lambda^2 F_{1/2}''(\beta\mu)\right],$$ (11)

$$\mu = \mu_0 [1 - 0.27 n^{-3/8} - 0.82 (\beta\mu_0)^{-2}(1 - 0.1 n^{-3/8})].$$ (12)

Card 3/4

The position of the Fermi level ...   S/181/63/005/002/032/051
B102/B186

$$M^{(2)}(k,\ E) = -\frac{2}{\pi k}\int_0^\infty \frac{k'dk'\ \ln\left|\frac{k+k'}{k-k'}\right|}{1+\exp[\beta(k'^2-\mu)]} \quad (13),$$

$\lambda = 0.5 d^{1/2}\beta$; if $\beta\mu\gg1$, $M^{(2)}(k,\ E)\big|_{k=\mu_0^{1/2}} = -\frac{2}{\pi}\mu_0^{1/2}(1+0.5(\beta\mu_0)^{-2})$.   (14).   The re-

sult that the corrections for electron-electron interaction exceed those
for electron-impurity interactions (if $\beta^{-1}\lambda\mu$) holds both at low and at
medium temperatures. If in (12) and (14) are only those corrections are
taken into account that play a great role with $n\to\infty$,

$$\mu = \mu_0\left[1 - \frac{2}{\pi}\mu_0^{-1/2} - \frac{\pi^2}{12}(\beta\mu_0)^{-1} - \pi^{-1}\mu_0^{-1/2}(\beta\mu_0)^{-2}\right]. \quad (15)$$

is obtained; with $n\to\infty$ μ tends to μ_0, the chemical potential in the pure
semiconductor. When all corrections are taken into account, the degeneracy
temperature is obtained as $T_b = T_b^0(1-0.5\mu_0^{-1/2})$. There is 1 figure.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)
SUBMITTED: September 18, 1962
Card 4/4

ZVYAGIN, I.P.

Using diagrams in calculating kinetic coefficients. Vest.
Mosk. un. Ser. 3: Fiz., astron. 20 no.5:49-57 S-O '65.
(MIRA 18:11)

1. Kafedra poluprovodnikov Moskovskogo universiteta.
Submitted May 19, 1964.

AP6033543   SOURCE CODE: UR/0181/66/008/010/2835/2840   57

AUTHOR: Zvyagin, I. P.   56

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstven-
nyy universitet)

TITLE: Effect of thermoelectric current on the stability of the electric field and
the charge distribution in semiconductors

SOURCE: Fizika tverdogo tela, v. 8, no. 10, 1966, 2835-2840

TOPIC TAGS: electric field, electron gas, thermoelectric current, semiconductor,
temperature, instability

ABSTRACT: The stability of an electric field—charge—temperature—semiconductor
system is investigated by means of a set of complete phenomenological equations
which describe the distribution of these factors. It is shown that if the thermo-
electric current factor is ignored, and if the electron gas is not heated to too high a
degree, the conditions which ensue agree with those arrived at earlier by V. L.
Bonch-Bruyevich (Fizika tverdogo tela, no. 8, 1753, 1966). The resultant non-

Card 1/2

L 09894-67

ACC NR: AP6033543   /

homogeneity in the pattern of the temperature in the vicinity of the contacts is
restricted to an area close to these contacts, and is small in comparison with the
size of the sample. This nonhomogeneity does not induce a nonhomogeneous solu-
tion for the system's instability region. The author thanks V. L. Bonch-Bruyevich
suggesting the study and many valuable discussions of the problem. Orig. art. has:
16 formulas. [Author's abstract]

SUB CODE: 20/ SUBM DATE: 20Nov65/ ORIG REF: 003/ OTH REF: 002/

2/2

SABININ, Yu.A., kand. tekhn. nauk; BOCHAROV, V.I.; ZABOROVSKIY,
S.A., inzh.; ZVYAGIN, I.Ye.; inzh.; KULIKOV, S.N., inzh.; POPOV,
O.V., inzh.

A motor drive with wide-range smooth speed control. Elektrichestvo
no.12:20-23 D '57.   (MIRA 10:12)

1.Leningradskiy politekhnicheskiy institut im. Kalinina.
                    (Electric driving)

SOLTAMOV, Bek-Sultan Drisovich. Prinimali uchastiye:
PREOBRAZHENSKIY, L.N., inzh.; KASPAROV, G.D., inzh.;
ZVYAGIN, I.Ye., red.; KHIVRICH, Ye.D., red.izd-va;
AKOPOVA, V.M., tekhn. red.

[Automated electric drives in the woodpulp industry]
Avtomatizirovannye elektroprivody na predpriiatiiakh
tselliulozno-bumazhnoi promyshlennosti. Moskva, Gos-
lesbumizdat, 1963.   268 p.   (MIRA 16:12)
     (Woodpulp industry--Electric equipment)
          (Electric driving)

GOLOSHCHAPOV, Yu.N.; ZVIAGIN, I.V.

Veterinary medicine abroad. Veterinariia 40 no.11:73-79 N '63.

(MIRA 17:9)

AVAGIN, I.V.; ZURCHENKO, V.V.

Prospects for the production of dry immune serums. Veterinariia
42 no.5:104-105 My '65.   (MIRA 18:6)

1. Vsesoyuznyy trest biologicheskoy promyshlennosti Ministerstva
sel'skogo khozyaystva SSSR.

CHOPENKOV, V.P.; BAZHINOV, A.G.; ZVIAGIN, I.V.

Use of β-propiolactone in the production of veterinary biological preparations. Veterinariia 41 no.2:26-27 F '65.

(MIRA 18:3)

1. Vsesoyuznyy trest biologicheskoy promyshlennosti Ministerstva sel'skogo khozyaystva SSSR.

Zvyagin, I. V., Kolesov, S. G.,

"The Seventh International Congress of the Permanent Section on Standard-
ization of Biopreparations."

KOLESOV, S.G.; ZVYAGIN, I.V.

Seventh International Congress of the Permanent Section on
Standardization of Biological Preparations. Veterinariia 39
no.1:82-86 Ja '62.   (MIRA 15:2)
                  (Biological products--Standards)

CHUMAKOV, V.P.; BAZHINOV, A.G.; ZVYAGIN, I.V.

Testing the sterilizing action of beta-propiolactone in the preparation of biological products. Veterinariia 41 no.11: 23-24 N '64.   (MIRA 18:11)

1. Vsesoyuznyy trest biologicheskoy promyshlennosti Ministerstva sel'skogo khozyaystva SSSR.

BOYKO, A.A.; ZVYAGIN, I.V.

Veterinary service in the Czechoslovak Socialist Republic.
Veterinariia 41 no.11:112-114 N '64.   (MIRA 18:11)

DONSKOY, Aleksandr Vasil'yevich; LUTSKER, Il'ya Shulimovich;
ZVYAGIN, I.Ye., red.

[Automation of low-temperature electric-heating systems]
Avtomatizatsiia nizkotemperaturnykh elektronagrevatel'-
nykh ustroistv. Leningrad, 1964. 13 p.   (MIRA 17:12)

ZVYAGIN, I.Ye.

Servo drive of a regulated high-frequency system. Trudy LPI
240:103-109 '64.   (MIRA 17:11)

ZVYAGIN, L.

A new system of wages is needed for repair and service workers of the truck fleets. Avt.transp. 34 no.4:7-8 Ap '56.   (MLRA 9:8)

1. Nachal'nik otdela truda i zarabotnoy platy Leningradskogo tresta gruzovykh perevozok.
                                   (Wages)

ZVYAGIN, L.M., kand.med.nauk

Intra-osseous transfusions of hydrolysin. Akt.vop.perel.krovi no.7:
326-329 '59.   (MIRA 13:1)

1. Gospital'naya khirurgicheskaya klinika I Leningradskogo meditsin-
skogo instituta im. Pavlova (zav. klinikoy - prof. F.G. Uglov).
                    (BLOOD PLASMA SUBSTITUTES)

ZVYAGIN, L.M., kand. med. nauk (Leningrad)

"Special X-ray diagnosis of bone and joint disceases" by
A.E. Rubasheva. Reviewed by L.M. Zviagin. Klin. khir. no.10:83
O '62.   (MIRA 16:7)
(BONES—RADIOGRAPHY)   (JOINTS—RADIOGRAPHY)
(RUBASHEVA, A.E.)

ZVYAGIN, L.M.; kandidat meditsinskikh nauk; GIRSHOVICH, E.A.; SOMOVA, V.V.

Transfusion of N.G. Belen'kii's therapeutic serum in insufficient lactation. Akush. i gin. no.3:51-54 My-Je '55 (MLRA 8:10)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. kafedroy-prof. F.G.Uglov) i akushersko-ginekologicheskoy kliniki (zav.kafedroy-prof. I.I.Yakovlev) I Leningradskogo meditsinskogo instituta imeni akad. I.P.Pavlova)
      (LACTATION DISORDERS
          hypogalactia, ther.,serum of Belen'kii)
      (BLOOD SERUM
          serum of Belen'kii in ther. of hypogalactia)

ZVYAGIN, L.M., kandidat meditsinskikh nauk

Strangulation of inguinal hernia during labor. Akush. i gin. 33
no.2:104-105 Mr-Ap '57.   (MIRA 10:6)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. kafedroy - prof.
F.G.Uglov) i akushersko-ginekologicheskoy kliniki (zav. kafedroy -
prof. I.I.Yakovlev) I Leningradskogo meditsinskogo instituta
imeni akad. I.P.Pavlova.
            (PREGNANCY, COMPLICATIONS OF)   (HERNIA)

ZVYAGIN, L.M., kand. med. nauk (Leningrad P-154, Zverinskaya ul. d. 2/5,kv.50);
YAROSHEVSKAYA, Ye.N., kand. med. nauk

Abstracts of articles received by the editors. Ortop. travm. protez.
24 no.7:75 Jl'63   (MIRA 17:2)

1. Iz kafedry gospital'noy khirurgii (zav. - prof. F.G. Uglov)
I Leningradskogo meditsinskogo instituta imeni I.P.Pavlova i
Detskogo ortopedicheskogo institut. imeni G.I. Turnera (dir. -
prof. M.N.Goncharova).

ZVYAGIN, L.M., kand.med.nauk (Leningrad, pl. L.Tolstogo d.6.8)
NARBUT, Ye.I., kand.med.nauk

Clinical characteristics of hydrolsin L-103 [with summary in English]
Vest.khir. 81 no.8:50-54 Ag '58   (MIRA 11:9)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. - prof. F.G. Uglov)
1-go Leningradskogo meditsinskogo instituta im. I.P. Pavlova.
          (AMINO ACID MIXTURES, THER. use.
                hydrolysin L-103 (Rus))

SHEVYAKOV, Lev Dmitriyevich, akademik; ZVIAGIN, ___, otv.red.; KOROVENKOVA,
Z.A., tekhn.red.; PROZOROVSKAYA, V.L., tekhn.red.

[Principles of the theory of planning coal mines]   Osnovy teorii
proektirovaniia ugol'nykh shakht. Izd.2., perer.   Moskva, Ugle-
tekhizdat, 1958. 328 p.   (MIRA 12:3)
                       (Mining engineering)

KOROTKOV, P.A.; LITVINOVA, Ye.I.; Prinimali uchastiye: ZVYAGIN, M.I.;
ANDREYEV, N.F.; UDAVKOV, G.G.

Automatic recording of transformations in enameled cast iron during
heating and cooling. Izv. vys. ucheb. zav.; chern. met. 6 no.11:
194-199 '63.   (MIRA 17:3)

1. Leningradskiy tekhnologicheskiy institut im. Lensoveta.

Grease for guns, etc. M. M. Zvyagin. Russ. 52,435,

Jan. 31, 1938. A mixt. of rubber, mineral oil, soap and
butyl or amyl alcohols or other solvents is specified.

Treating cracked distillates with zinc chloride. A. VENTIKUS AND N. ZVYAGIN *Neftyanoe Khozyaistvo* 22, 136-9(1932).—A discussion on the com. possibilities of treatment with ZnCl₂, including yields of the finished product.   A. A. BORNTLINGR

ASM-SLA   METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

Economics of cracking. F. F. DUNAEV AND N. Z. ZYKAGIN. *Neftyanoe Khozyaistvo* 22, 69–80(1932).—The cost of one metric ton of gasoline is 14.53 roubles as compared with 10.80 roubles in the United States. The cost is 21.77 and 29.57 roubles in the Jenkins and Vickers units installed in Russia.

A. A. BORHTLINGK

A S M - S L A   METALLURGICAL LITERATURE CLASSIFICATION

KOVALENKO, Mikhail Pavel... Muksim KOVALENKO, Grigoriy Antonovich

Economic substantiation of the minimum workable thickness of
anthracite beds in the Donets Basin. Ugol! Ukr. 3 no.7:40-45
Jl '59.   (MIRA 12:11)
                    (Donets Basin—Anthracite coal)

ZVYAGIN, P.Z., kand. tekhn. nauk.

Minimum thickness required of coal seams for underground mining.
Ugol' 34 no.11:34-39 N '59   (MIRA 13:3)

(Coal mines and mining--Cost)

ZVYAGIN, Pavel Zakharovich; MAYZEL', Leonid Lazarevich; OSTROVSKIY,
S.B., retsenzent; GOLUBYATNIKOVA, O.S., red.izd-va; BERESLAVSKAYA,
L.Sh., tekhn.red.

[Economic justification for the minimum workable thickness of
coal seams; underground mining] Ekonomicheskoe obosrovanie minimal'noi
rabochei moshchnosti ugol'nykh plastov; pri podzemnoi razrabotke.
Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960.   143 p.
(MIRA 13:11)

(Coal mines and mining)

GARKAVI, S.M., kand.tekhn.nauk; ZVYAGIN, P.Z.

Comparative effectiveness of the panel and modified
longwall systems for mine development. Ugol' Ukr. 4
no.5:41-42 My '60.   (MIRA 13:8)

1. Institut gornogo dela AN SSSR.
          (Coal mines and mining)

ZVYAGIN, P.Z.; NILOVSKIY, V.A.

Coal mining industry could and should increase its labor
productivity; from results of the Conference of Ore and
Coal Mining Workers of the Krivoy Rog Basin. Ugol' 35
no.10:6-10 O'60.
                                                    (MIRA 13:10)
        (Krivoy Rog Basin--Coal mines and mining--Labor
                                            productivity)

_____, kand. tekhn. nauk; KAMINSKY, I.N., inzh.; POLYAKOV, N.V.;
KHARCHENKO, A.K., kand. tekhn. nauk

For a further upswing of labor productivity in mines of the
Rostovugol' Combine. Ugol' 35 no.11:13-17 N '60.   (MIRA 13:12)

1. Glavnyy inzhener kombinata Rostovugol'.
     (Donets Basin--Coal mines and mining--Labor productivity)

BAGASHEV, Mikhail Kapitonovich; KIRZHNER, David Mironovich; CHETYRKIN, Mikhail Ivanovich. Prinimal uchastiye SURMILO, G.V. ZVYAGIN, P.Z., otv.red.; GOLUBYATNIKOVA, G.S., red.izd-va; OSVAL'D, B.Ia., red. izd-va; GALANOVA, V.V., tekhn.red.

[Reference book on the economics of the coal industry] Spravochnik po ekonomike ugol'noi promyshlennosti. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1961. 418 p.

(Coal mines and mining)   (MIRA 14:4)

ZVYAGIN, P. Z., Doc Tech Sci, "Selection of output and *productivity*
life of coal mines." Moscow, 1961. (Min of Higher and
Sec Spec Ed RSFSR. Leningrad Orders of Lenin and Labor
Red Banner Mining Inst imeni G. V. Plekhanov). (KL-DV,
11-61, 216).

ZVYAGIN, L.A.; kand. tekhn. nauk

Effect of the factor of efficiency of capital investments
in determining the productivity of the mine. Ugol' 36
no.6:39-44 Je '61.
(MIRA 14:7)

1. Institut gornogo dela imeni A.A. Skochinskogo.
        (Mine valuation)
        (Coal mines and mining--Finance)

KHARCHENKO, A.K., kand. tekhn. nauk; ZVYAGIN, P.Z., kand. tekhn. nauk, red.; OSVAL'D, E.Ya., red.izd-va; IL'INSKAYA, G.M., tekhn. red.; SABITOV, A., tekhn. red.

[Labor expended per unit of production in coal mining and ways of reducing it] Trudoemkost' dobychi uglia i puti ee snizheniia. Rabota vypolnena pod obshchim rukovodstvom A.K.Kharchenko. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1962. 506 p.

(MIRA 15:5)

1. Akademiya nauk SSSR. Institut gornogo dela.
     (Mining engineering)   (Work measurement)

ZVYAGIN, B.Z.; kand.tekhn.nauk; MATSEL', L.L., kand.tekhn.nauk

Economic efficiency of hydraulic underground mining. Ugol'
37 no.1:38-43 Ja '62.
                                                    (MIRA 15:2)
                    (Hydraulic mining)

BABOKIN, Ivan Alekseyevich; ZVYAGIN, F.Z., doktor tekhn. nauk,
retsenzent; GAPANOVICH, L.N., kand. tekhn. nauk,
otv. red.

[Technical and economic evaluation of the loss of coal
during mining] Tekhniko-ekonomicheskaia otsenka poter'
uglia v nedrakh (pri razrabotke). Moskva, Nedra, 1964.
94 p.
                                                (MIRA 18:2)

KAGAN, P.Ya.; ZVIAGIN, P.Z.; MAYZEL', L.I.; ONUPRIYEV, L.N.; VOYNIK, I.A.

Greater scientific substantiation of planning in coal mines by introducing technical standards. Ugol' 40 no.9:41-45 S '65.
(MIRA 18:10)

1. Gosudarstvennyy komitet po toplivnoy promyshlennosti pri Gosplane SSSR (for Kagan). 2. Institut gornogo dela im. A.A. Skochinskogo (for all except Kagan).

EVTIAGIN, P.Z., doktor tekhn. nauk; SHAVRINA, R.F., red.

[Optimum solutions of mining problems; report at the Scientific Council on May 8, 1963] Ob odnom aspekte resheniia gornykh zadach na optimum; doklad na Uchenom sovete 8 maia 1963 g. Moskva, In-t gornogo dela im. A.A.Skochinskogo, 1963. 11 p.

(MIRA 18:3)

KHARCHENKO, A.K., doktor tekhn. nauk, otv. red.; ORLOVA, Ye.P., inzh otv. red.; ZVYAGIN, P.Z., prof., doktor tekhn. nauk, otv. red.

[New developments in the economics of coal and ore deposit mining] Novoe v ekonomike razrabotki ugol'nykh i rudnykh mestorozhdenii. Moskva, Nedra, 1965. 294 p.

(MIRA 18:4)

1. Moscow. Institut gornogo dela imeni A.A.Skochinskogo.

YEMEL'YANOV, A.S.; PILYUKHANOV, L.S.; ZVYAGIN, F.Z., dokter
        tekhn. nauk, retsenzent; KUZMICH, A.S., dektor tekhn.
        nauk, retsenzent; BUKHALO, S.M., doktor tekhn. nauk,
        otv. red.; GOLUBYATNIKOVA, G.S., ved. red.

        [Potentialities for improving the economics of coal mines]
        Rezervy uluchsheniia ekonomiki ugol'nykh shakht. Moskva,
        Nedra, 1964. 255 p.   (MIRA 18:2)

KURNOSOV, Anatoliy Mikhaylovich, kand. tekhn. nauk; ROZENTRETER,
Boris Aleksandrovich, doktor tekhn. nauk; USTINOV,
Mikhail Ivanovich, kand. tekhn. nauk. Prinimali ucha-
stiye: CHURILOV, A.A., kand. tekhn. nauk; CHERNITSIN,
Ye.A., gorn. inzh.; ZVYAGIN, P.Z., doktor tekhn. nauk;
POPOVA, Ye.G., gorn. inzh.; SELETSKIY, R.A., kand. tekhn.
nauk; GOLONOLZIN, V.I., kand. tekhn. nauk; SHEVYAKOV, L.D.,
akademik, otv. red. [deceased]; SUDOPLATOV, A.P., doktor
tekhn. nauk, otv. red.

[Scientific principles for the design of coal mines for
the mining of flat seams] Nauchnye osnovy proektirovaniia
ugol'nykh shakht dlia razrabotki pologikh plastov. Moskva,
Izd-vo "Nauka," 1964.   447 p.   (MIRA 17:6)

GARKAVI, S.M.; ZVYAGIN, P.Z.

Speed-up of the working of coal deposits and concentration of
mining operations is the most important factor in improving the
economics of the operation of coal mines. Gor. i ekon. vop.
razrab. ugol'. i rud. mest. no.1:291-309 '62.   (MIRA 16:7)
                    (Coal mines and mining—Labor productivity)

ZVYAGIN, Pavel Zakharovich, doktor tekhn. nauk; BOYKO, A.A., otv. red.;
OSVAL'D, E.Ya., red.izd-va; LOMILINA, L.N., tekhn. red.

[Selection of the capacity and operating period of coal mines;
effectiveness of capital investments in mines]Vybor moshchnosti
i srokov sluzhby ugol'nykh shakht; effektivnost' kapitalovlo-
zhenii na shakhtakh. Moskva, Gosgortekhizdat, 1963. 467 p.
(MIRA 16:4)

(Coal mines and mining--Finance)

BARDIN, I.P , akademik, otv. red.[deceased]; BELYANCHIKOV, K.P.,
    nauchnyy red.; YEROFEYEV, B.N., nauchnyy red.; ZVYAGIN, P.Z.,
    nauchnyy red.; KOSHELEV, V V., nauchnyy red.; MELESHKIN, S.M.,
    nauchnyy red.; MIRLIN, G.C., nauchnyy red.; MOSKAL'KOV, Ye.F.,
    nauchnyy red.; POKROVSKIY, M.A., nauchnyy red.; SLEDZYUK, P.Ye.,
    nauchnyy red.; FINKELSHTEYN, A.S., nauchnyy red.; KHARCHENKO,
    A.K., nauchnyy red.; SHEVYAKOV, L.D., akademik, nauchnyy red.;
    SHAPIRO, I.S., nauchnyy red.; SHIRYAYEV, P.A., nauchnyy red.;
    OKHRIMYUK, Ye.M., nauchnyy red.; YANSHIN, A.L., akademik,
    nauchnyy red.; MAKOVSKIY, G.M., red.izd-va; VOLKOVA, V.G.,tekhn.
    red.

[Oolitic iron ores of the Lisakovka deposit in Kustanay Province
and means for their exploitation]Oolitovye zheleznye rudy Lisa-
kovskogo mestorozhdeniia Kustanaiskoi oblasti i puti ikh ispol'-
zovaniia. Moskva, Izd-vo Akad. nauk SSSR, 1962. 234 p. (Zhe-
lezorudnye mestorozhdeniia SSSR [no.1])   (MIRA 15:12)

1. Akademiya nauk SSSR. Institut gornogo dela.
        (Kustanay Province—Iron ores)

④

MELNIKOV, N. V., AGOSHKOV, M. I., PROTODYAKONOV, M. M., SUDOPLATOV, A. P.,
and ZVYAGIN, P. Z.

"On principles of rational development of mining industry in the USSR"

report to be submitted for the United Nations Conference on the
Application of Science and Technology for the Benefit of the Less
Developed Areas - Geneva, Switzerland, 4-20 Feb 63.

ZVYAGIN, P.Z., kand.tekhn.nauk

        Synchronous factor of seam mining in the Donets Basin mines.
        Ugol' Ukr. 6 no.2:9-13 F '62.   (MIRA 15:2)

    1. Institut gornogo dela im. A.A. Skochinskogo.
                (Donets Basin—Coal mines and mining)

GOLOMOLZIN, Valerian Ivanovich; ZVYAGIN, P.Z., otv. red.;
KHARCHENKO, A.K., otv. red.; SUROVA, V.A., red, izd-va;
BOLDYREVA, Z.A., tekhn. red.; SHKLYAR, S.Ya., tekhn. red.

[Capacity and life of mines] Moshchnost' i sroki sluzhby
shakht. Moskva, Gosgortekhizdat, 1961. 161 p.
                                          (MIRA 15:7)
                (Coal mines and mining)

SHEYKHET, M.N., dotsent, kand.tekhn.nauk; ZVYAGIN, P.Z.

Letters to the editor. Ugol' 35 no. 4:63 Ap '60.   (MIRA 14:4)
(Rock pressure)

S/166/62/000/001/009/009
B125/B104

AUTHORS: Kist, A. A., Lobanov, Ye. M., Zvyagin, V. I., Bartnitskiy, I. N.

TITLE: Effect of gamma irradiation upon oxide films of germanium

PERIODICAL: Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 1, 1962, 88-90

TEXT: The effect of gamma rays on germanium monoxide and germanium dioxide films produced by etching was quantitatively measured with a Geirovskiy micropolarograph. The monoxide - dioxide mixture produced by etching germanium powder in standard etching agent did not change under gamma irradiation in air, carbon dioxide, and in vacuum (10^{-4} torr) with 20, 60, 100, 150, and 200 million r. In the subsequent irradiation of the weighed portion of germanium etched in a standard reagent with 20, 30, 50, and 100 million r, the amount of germanium dioxide increases at doses of up to 40-50 million r, and then decreases again. The oxide film produced in etching agent no. 5 contains monoxide and dioxide in a ~1 : 1 ratio. While etching agent no. 5 gives rise to germanium monoxide,

Card 1/3

S/166/62/000/001/009/009
B125/B104

Effect of gamma irradiation ...

germanium dioxide is contained in the film in an equal amount. The
anomalous current and the photocurrent are not exclusively due to the
germanium monoxide. Similar phenomena are also observed when exposing the
diodes to gamma irradiation (doses above 10^6 r). These anomalies disappear
either entirely or partially at doses of more than 10^8 r. The irradiated
photodiodes yield a photocurrent at such doses if the amount of germanium
dioxide on the surface increases. The upper limit of the anomalous
photocurrent shifts toward the visible region when etching agent no. 5 is
used. Gamma irradiation first causes the oxide film to grow more
considerably, but the secondary fast electrons then again partly destroy
the oxide film. As a result, the oxide film becomes eventually thinner.
If present considerations are correct, germanium diodes are made
insensitive also to intense radiations in that the oxide film is prevented
from growing all throughout the dose range. There are 1 figure, 1 table,
and 8 references: 2 Soviet and 6 non-Soviet. The four references to
English-language publications read as follows: S. I. Ellis, Appl. Phys.
1957, 11, 1262, 28; I. Everest, J. Chem. Soc., Febr. 1953, 660; I. Bardet,
Tchakarian A. C. R., 1928, 637, 186; L. Dennis, Xules R. J. Am. Soc., 1930,
3554, 52.

Card 2/3

S/166/62/000/001/009/009
B125/B104

Effect of gamma irradiation ...

ASSOCIATION: Akademiya nauk UzSSR (Academy of Sciences of the
               Uzbekskaya SSR)

SUBMITTED: August 25, 1961

Card 3/3

LEUSHKINA, G.V.; ZVYAGIN, V.I.; LOBANOV, Ye.M.; DUTOV, A.G.

Fluorescence of silicon carbide. Izv. AN Uz. SSR. Ser.
fiz.-mat.nauk 7 no. 6:98-99 '63.   (MIRA 17:6)

1. Institut yadernoy fiziki AN UzSSR.

ACCESSION NO: AP4013028

S/0166/63/000/006/0098/0099

AUTHORS: Leushkina, G. V.; Zvyagin, V. I.; Lobanov, Ye. M.; Dumov, A. G.

TITLE: Fluorescence of silicon carbide

SOURCE: AN UzSSR. Seriya fiziko-matematicheskikh nauk, no. 6, 1963, 98-99

TOPIC TAGS: fluorescence, lattice defect, radiation effect, neutron irradiation, gamma ray irradiation, alpha particle irradiation

ABSTRACT: Samples of SiC produced by vacuum recrystallization were irradiated with neutrons, gamma-rays, and alpha-particles to determine their influence on fluorescence of samples at room temperature. For neutron fluxes of $5 \cdot 10^{11}/cm^2$ the intensity of fluorescence decreased by a factor of 7 in the short (~ 6000 Å) and a factor of 2 in the longer wave length region of the spectrum. The fluorescence disappeared completely for a neutron flux of $2 \cdot 10^{17}/cm^2$. No significant difference was noted with or without cadmium filters, indicating that the effect is primarily due to fast neutrons. Irradiation of the samples with gamma rays of Co^{60} produced no noticeable change in intensity of fluorescence for doses of $5 \cdot 10^{17}$ photons/cm^2, and a slight decrease for doses of $10^{19}/cm^2$. Likewise, alpha

Card 1/2

ZVIAGIN, Boris Borisovich; PINSKER, Z.G., doktor khim. nauk, prof.,
otv. red.

[Electrography and structural crystallography of clay
minerals] Elektronografiia i strukturnaia kristallografiia
glinistykh mineralov. Moskva, Izd-vo "Nauka," 1964.   281 p.
(MIRA 17:8)

"Connection of lattice symmetry and generalized symmetry in reciprocal space."
report submitted for 6th Gen Assembly, Intl Union of Crystallography, Rome, 9 Sep 63.

Inst of Crystallography, AS USSR, Moscow.

Effect of the elongated form of crystals on the intensity of reflexes
in electron diffraction pictures of laminated textures. Kristallografiia
7 no.6:958-959 N-D '62.

(MIRA 16:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut.
(Election diffraction examination)   (Crystallography);

ZVIAGIN, B. B., kand. geol.-mineral. nauk

"Electron microscopy of metals; apparatus, research methods and preparation of specimens" by G. S. Gritsaenko, E. S. Rudnitskaia, A. I. Gorshkov. Reviewed by B. B. Zviagin. Vest. AN SSSR 33 no.1:135-136 Ja '63.   (MIRA 16:1)

(Bibliography—Electron microscopy)
(Gritsaenko, E. S.)
(Rudnitskaia, E. S.)
(Gorshkov, A. I.)

MISHCHENKO, K.S.

Electron diffraction data on the structure of phlogopite-biotite.
Kristallografiia 7 no.4:623-627 Jl-Ag '62.   (MIRA 15:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut.
   (Electron diffraction examination) (Phlogopite) (Biotite)

ZVYAGIN, B.B.; SHAKHOVA, R.A.; SHITOV, V.A.

Some characteristics of the distribution of clay formations
based on structural and mineralogical indicators as revealed
by electronographic data. Trudy VSEGEI 72:57-73 '62.

(Clay—Analysis)   (MIRA 15:9)

ZVYAGIN, B.B.; FRANK-KAMENETSKIY, V.A.

Concerning E.N. Eliseev's article "Determination of the sizes
of clay elementary cells by the X-ray powder pattern
(debyeograms)." Min.sbor. no.14:399-402 '60.   (MIRA 15:2)

1. Vsesoyuznyy geologicheskiy nauchno-issledovatel'skiy
institut, Leningrad, 1.   2. Gosudarstvennyy universitet imeni
A.A. Zhdanova, Leningrad.

                         (Clay)
                (X-ray crystallography)
                   (Eliseev, E.N.)

FRANK-KAMENETSKIY, V.A.

In regard to E.N. Eliseev's response to our remarks. Min. sbor.
no.15:406-409 '61.

(MIRA 15:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut,
Leningrad, i Gosudarstvennyy universitet imeni A.A. Zhdanova,
Leningrad.
(Clay--Analysis)   (X-ray crystallography)

AUTHOR: Zvyagin, B.B.

S/070/62/007/006/020/020
E202/E492

TITLE:

The effect of the elongated shape of crystals on the distribution of the intensity of reflections in the electronograms derived from platelike textures

PERIODICAL: Kristallografiya, v.7, no.6, 1962, 958-959

TEXT: The author observed the above phenomena on sepiolite and palygorskite crystals and found that the elongated form of crystallites is also indicative of the intensity distribution of reflections derived during the electronographic study of the texture.   Assuming the direction of elongation coincident with the principal axis, the inclinations of the crystallites towards the plane of the base of the texture take place chiefly due to the rotation around the principal axis.   Hence, it is concluded that each point of the inverse lattice is formed as a result of such a rotation under a certain angle.   In this way a spherical belt is generated.   The author develops in detail the relations existing in a geometrical model describing such mechanism and formulates the conditions of reflections for the orthogonal and monoclinic lattices.   It is suggested that the above model may

Card 1/2

The effect of the elongated ...

S/070/62/007/006/020/020
E202/E492

also be used in the identification of electronogram reflections.
There is 1 figure.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy
institut (All-Union Scientific Research Institute of
Geology)

SUBMITTED: April 19, 1962

Card 2/2

Theory of the polymorphism of micas. Kristallografiia 6
no.5:714-726 S-0 '61.

(MIRA 14:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut.
(Mica)   (Crystallography)

ZVIAGIN, B.B.

Theory of the polymorphism of two-layer (kaolin-like) minerals. Kristallografiia 7 no.1:51-65 Ja-F '62. (MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut.

(Crystallography)

S/070/62/007/004/010/016
E073/E335

AUTHORS: Zvyagin, B.B. and Mishchenko, K.S.

TITLE: Electron-diffraction data on the structure of
              phlogopite-biotite

PERIODICAL: Kristallografiya, v. 7, no. 4, 1962, 623 - 627

TEXT: In preliminary experiments no individual differences
could be detected between X-ray diffraction patterns of the
variants of these minerals which would reflect the peculiarities
in the chemical composition. This was taken as proof of stati-
stical distribution of the isomorphous cations. Therefore, only
the properties which are generally characteristic were studied,
on electron-diffraction patterns of the textures of one specimen
from a collection. 59 reflexions $h0\ell$ and 40 reflexions $0k\ell$
were observed and indexed. The distribution of the reflexions
on the electron-diffraction pattern satisfies the monoclinic cell
with the parameters: a = 5.28; b = 9.16; c = 10.3 Å;
β = 99°50' and the trigonal cell with c = 30.5 Å. After two
synthesis cycles, the R-factors, which reached values of 17.2%
for the reflexions $h0\ell$ and 20.4% for the reflexions $0k\ell$,
ceased to improve. The atom coordinates of the phlogopite-biotite
Card 1/3

Electron-diffraction data S/070/62/007/004/010/016
                                    E073/E335

structure corresponding to this stage as well as the interatomic
distances are tabulated and a sketch is given of the structure
(normal projection onto the plane xy). The accuracy of determin-
ation of the coordinates, evaluated according to the formula of
Vaynshteyn, was 0.02 for K atoms, 0.03 for Si, Al and Mg atoms and
0.04 Å for O atoms. From the ideal model the real structure
differed by the fact that the tetrahedra formed a motive with
ditrigonal loops, corresponding to a shift of the tetrahedra
about the vertical by an angle of 5.5° relative to the base, as
compared with the position of strictly hexagonal loops. On the
other hand, the top and the base of the octahedron did not show
any shift relative to the positions corresponding to cubic packing
but the octahedra themselves were strongly flattened. Since the
Al atoms are probably statistically distributed among the tetra-
hedral positions, it was not possible to establish the structural
distortions caused by them. Probably, in the same way as in musco-
vite, such substitutions bring about certain shifts of O atoms but,
due to their statistical nature, this does not lead to a change in
the monoclinic angle as compared with its ideal value.

Card 2/3

Electron-diffraction data S/070/62/007/004/010/016
                                       E073/E335
ASSOCIATION: There are 4 figures and 3 tables.
                  Vsesoyuznyy nauchno-issledovatel'skiy
                  geologicheskiy institut (All-Union Scientific
                  Research Geological Institute)
SUBMITTED: June 13, 1961

Card 3/3

ZVIAGIN, B.B.; SHCHEGLOV, A.D.

Nacrite from the fluorite deposit of western Transbaikalia and its
structural characteristics according to the data of electron
diffraction examination. Dokl. AN SSSR 142 no.1:185-188 Ja '62.
(MIRA 14:12)

1.   Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut.
Predstavleno akademikom N.N. Belovym.
(Novo-Pavlovka--Nacrite)
(Electron diffraction examination)

FRANK-KAMENETSKIY, V.A.

Purpose and principles of the complication and estimation of different classifications of clay minerals; in connection with the discussion innitiated by the Clay Committee at the International Geological Congress. Zap.Vses.min.ob-va 90 no.6:750-754 '61.

(Clay--Congresses)

(MIRA 15:2)

VAYNSHTEYN, B.K.; PINSKER, Z.G.; LOBACHEV, A.N.; ZVYAGIN, B.B.

Important problems in the theory of modern electron-
diffraction structure study; survey. Zav.lab. 27 no.6:673-682
'61.
(MIRA 14:6)

(Electron diffraction examination)

ZVIAGIN, B.B.; DOLOMANOVA, Ye.I.; SOBOLEVA, S.V.; MOLEVA, V.A.

Dioctahedral Al-mica 1M from the Levo-Ingodinsk tin-tungsten deposit in Transbaikalia. Dokl. AN SSSR 165 no.2:410-412 N '65.

(MIRA 18:11)

1. Submitted May 21, 1965.

ZAMYATIN, M.M.; SHILO, Iu.V.; ZVIAGIN,B.I.

Method of determination of the depth of cementation of steel
alloys by isothermal hardening. Zav.lab.21 no.6:687-692 '55.
(Cementation (Metallurgy))   (MIRA 8:9)

Stroitel'noye chercheniye (Structural designing) 1 zd. 2., perer.
1 dop. Kiev, Mashgiz, 1955.
    79 p. illus., diagrs., tables.
    "Literatura": P. 73.

ZVYAGIN, B.K.; CHEBAYEVSKAYA, L.P., red.; SHVETSOV, S.V., tekhn. red.

[Structural drawing] Stroitel'noe cherchenie. Izd.3., perer.
i dop. IAroslavl', Rosvuzizdat, 1963. 82 p.   (MIRA 16:5)
                    (Structural drawing)

ZVYAGIN, Boris Konstantinovich, kand.tekhn.nauk; MATS, L.I., inzh., nauchnyy
red.; KAPLAN, M.Ya., red.izd-va; VORONETSKAYA, L.V., tekhn.red.

[Manual on architectural drawing] Spravochnik po stroitel'nomu
chercheniiu. Leningrad, Gos.izd-vo lit-ry po stroit., arkhit. 1
stroit. materialam, 1958. 167 p.

(Architectural drawing)
(MIRA 12:3)

ZVYAGIN, Boris Konstantinovich; KHAGEMEYSTER, Ye., red.

[Mechanical drawing; "Engineering and structural drawing"
section. Manual] Mashinostroitel'noe cherchenie; razdel
"Inzhenerno-stroitel'noe cherchenie." Uchebnoe posobie.
Leningrad, Severo-zapadnyi zaochnyi politekhn.in-t, 1959.
35 p.

(Mechanical drawing)   (MIRA 13:10)

ZVYAGIN, B.M.

General theory and methods for calculating the results of crushing
and subsequent gravity concentration of rocks. Zap. LGI   36   no.3:
43-64   '58.

(Rocks)   (MIRA 16:5)

BACHIN, G.M., inzh.

Transfer of water over the crest of a curvilinear
spillway with a sharp rim. Izv. vys. ucheb. zav.;
energ. 5 no.10:115-123 O '62.   (MIRA 15:11)

1. Moskovskiy inzhenerno-stroitel'nyy institut. Predstavlena
kafedroy gidrotekhnicheskikh sooruzheniy.
                        (Spillways)

ZVIAGIN, G.Z.

Welding of rails for a continuous track. Put' i put.khoz. 5 no.4:
42-43 Ap '61.
(MIRA 14:7)

1. Nachal'nik rel'sosvarochnogo poyezda, st. Lodeynoye pole,
Oktyabr'skoy dorogi.
(Railroads—Rails—Welding)

S/137/61/000/011/053/123
A060/A101

AUTHOR: Zvyagin, G. Z.

TITLE: Welding of rails for a buttless track

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 11, 1961, 27, abstract
               11Ye169 ("Put' i putevoye kh-vo", 1961, no. 4, 42-43)

TEXT: In six months from October 1960 the rail-welding train of the
Oktyabr' railroad system welded 90 km of rails for a buttless track. The produc-
tion flow on the train is improved, and in particular, the length of the roller
path is increased, taking into account the space for checking the welded joints
using the defectoscope УЗД НИИМ-5 (UZD NIIM-5); the distance between the
welding location and the compartment where the normalization is carried out is
increased, allowing the weld to cool down sufficiently in passing from one
work-station to another. The rail-cutting mill for cutting out defects is set
up near the welding machine, however, the cutting may be carried out at any spot
of the line. Prior to welding the rails undergo trimming, the factory butt-cut-
off is carefully checked and is carried out again in case of necessity. The
welding proceeds on the resistance butt-welding machine МСГР-500-4 (MSGR-500-4)

Card 1/2

Welding of rails for a buttless track

S/137/61/000/011/053/123
A060/A101

from the factory "Elektrik". A productivity of 0.9 - 1.2 km of track is attained
in three-shift operation. The welding conditions are: setting pressure - 35
tons, flash magnitude - 20 mm. The stationary value of crushing load is 200 -
220 tons at a deflection of 30 - 50 mm. The continuous feed of the rails to the
welder has been introduced lately, for which purpose the rails are connected to
each other by small light grapples.

Ye. Terpugov

[Abstracter's note: Complete translation]

Card 2/2

AFANAS'YEV, A.A.,   ZVIAGIN, B.K.

Shoe Industry

Planning shoe factories.   Leg.prom. 12, no. 7, 1952,

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

The theory of rock crushing. II. Division of the particles of the products of crushing into two fractions and the calculation of the average composition of these fractions. B. M. Zryagin, R. B. Rosenbaum, O. M. Todes, and A. Z. Yurovskii. Izvest. Akad. Nauk S.S.S.R., Otdel. tekh. Nauk 1951, 1218-30; cf. ibid. 1950, 1082.—A method is given for detg. the relative no. of floating and depositing particles by distributing them into 2 fractions. Also, a method for detg. the av. compn. of the floating and depositing fractions is provided. The discussion given is math.   C. S. Mary

S/044/62/000/006/067/127
B168/B112

AUTHORS: Todes, O. M., Zvyagin, B. M.

TITLE: A linear method of determining the distribution function of inclusions from their sizes

PERIODICAL: Referativnyy zhurnal. Matematika, no. 6, 1962, 15, abstract 6V78 (Zap. Leningr. gorn. in-ta, v. 37, no. 3, 1959 (1961), 58-63)

TEXT: The case where inclusions (impregnations) have a spherical form (report 6V77) is investigated. A linear method of determining the size distribution of inclusions, in which the lengths of segments of inter- sections of inclusions are measured as arbitrary straight lines, is proposed. It is noted that this method is simpler, both theoretically and experimentally, than the planimetric method described, for instance, in a work by Verzhbinskiy (report 6V77), although of course it is less accurate. [Abstracter's note: Complete translation.]

Card 1/1

TODES, O.M., prof.; ZVYAGIN, B.M., dots.; BOGORAD, Ye.A., nauchnyy sotrudnik

Petrographic method of determining the true size of impurities.
Izv.vys.ucheb.zav.; gor.zhur.   no.4:125-128 '58.

(MIRA 11:11)

1. Leningradskiy gornyy institut i Institut goryuchikh iskopa-
yemykh AN SSSR.

(Coal preparation)

AMOSOV, I.I.; ZVYAGIN, B.M.; TODES, O.M.; YUROVSKIY, A.Z.; MARCHENKO,
M.G., redaktor; TENNIS, I.G., redaktor; POLYAKOVA, T.V., tekhni-
cheskiy redaktor.

[Engineering calculations on the theory of exposing minerals in
the process of dressing coal.] Inzhenernye raschety k teorii
raskrytiia mineralov v protsesse obogashcheniia uglei. Moskva,
Izd-vo Akademii nauk SSSR, 1955. 157 p.   (MLRA 8:12)
        (Coal preparation)

USSR/Minerals - Ores, Dressing   Dec 51

"Theory of Rock Crushing. III. Separating Prod-
ucts of Coarse Crushing in Two Sizes," B. M.
Zvyagin, O. M. Todes, A. Z. Yurovsky

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 12,
pp. 1825-1840

Attempts to establish optimum conditions of crush-
ing initial products for concn in form of com-
paratively coarse particles. Discusses distribu-
tion of crushed products according to compn-
evaluation of final vol of inclusions, integral

205T82

USSR/Minerals - Ores, Dressing (Contd)   Dec 51

function of distribution and continuous distribu-
tion, sepn in 2 fractions, and yield and concn
deg of floated product. Submitted A. M. Terpi-
gorev.

205T82

USSR/Mining - Mineral Dressing, Wet - Aug 51
Classification

"On the Theory of Rock Crushing. II. Separation
of Crushed Products Into Two Fractions and Cal-
culation of Their Mean Composition," B. M. Zvy-
agin, R. B. Rozenbaum, O. M. Todes, A. Z.
Yurovskiy

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 8,
pp 1218-1229

Develops method for detg relative number of
floated and settled particles during sepn in
liquid into 2 fractions. Suggests also method for
detg mean compn of both fractions and presents

205T94

USSR/Mining - Mineral Dressing, Wet Aug 51
Classification (Cont'd)

graphs for practical calcns. Gives, numerical ex-
ample of calcn. Submitted by Acad A. M. Terpi-
gorev 16 Dec 50.

205T94

ZVYAGIN, B. M.

USSR/Minerals - Crushing

Jul 50

"Concerning the Theory of Rock Crushing," B. M.
Zvyagin, R. B. Rozenbaum, O. M. Todes, A. Z.
Yurovskiy, Inst of Fuel Resources, Acad Sci USSR

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 7, pp 1062-1070

Develops method for analytical calculation of re-
lation between composition of crushed particles
degree of crushing. Method permits finding func-
tion of distribution of crushed particles accord-
ing to composition in process of fine curshing. Sub-
mitted by Acad A. M. Terpigorev.

168T56

FDD

ZVYAGIN, B. M.

FDD

Mining - Crushing
        Ores

Theory of Crushing of Mineral Rocks: The
aking Open of Mineral Grains," B. M. Zvyagin,
B. Rozenbaum, O. M. Todes, A. Z. Yurovskiy

Jul 50

Ak Nauk SSSR, Otdel Tekh Nauk" No 7,
1062-1070

ulas screening degree or breaking-up of minerals
ing crushing have been refined and verified.
phs of these formulas are drawn.   Authors have
eloped method for solving more important problem:

162197

Jul 50

FDD

USSR/Mining - Crushing (Contd)

to find distribution function of crushed particles
according to their composition. Submitted 10 Feb 50
by Acad A. M. Terpigorev.

Jul 50

162197

ZVYAGIN, B.N.

New automatic match processing machine. Der. prom. 15 no.1:
4-5 Ja '66.   (MIRA 19:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut derevoobrabaty-
vayushchey promyshlennosti.

2 VYAGIN

ZVYAGIN, Boris Konstantinovich, kand.tekhn.nauk, dots.; KRASIL'NIKOV, A.D.,
dots., retsenzent; LEUTA, V.I., inzh., red.; RUDENSKIY, Ya.V.,
tekhn.red.

[Architectural drqwing] Stroitel'noe cherchenie. Izd. 2-oe, perer.
i dop. Kiev, Gos.nauchno-tekhn.izd-vo mashino-stroit. lit-ry,
1955. 79 p.   (MIRA 11:2)
          (Architectural drawing)

ZVYAGIN, G.Z., inzh.

Rail welding on two production lines. Put' i put. khoz. 9 no.12:
17 '65.   (MIRA 19:1)

1. Stantsiya Lodeynoye Pole, Oktyabr'skoy dorogi.

24.7700

AUTHOR: Zvyagin, I. P.

TITLE: The position of the Fermi level in highly alloyed semiconductors

PERIODICAL: Fizika tverdogo tela, v. 5, no. 2, 1963, 581 – 585

TEXT: The effect of high impurity concentrations on the position of the Fermi level is investigated for various degrees of electron gas degeneracy. Electron and impurity concentrations are assumed to be equal and the semiconductor to be isotropic (cf. FTT, 3, 3009, 1961). State density and electron concentrations are calculated from

$$\rho(E) = \frac{4}{(2\pi)^3} \int \operatorname{Im} G(k, E)\, dk, \qquad (2a)$$

$$n = \int \frac{\rho(E)\, dE}{1 + \exp[\beta(E - \mu)]}, \qquad (2b)$$

where $\beta = (\kappa T)^{-1}$, μ – chemical potential, $G(\vec{k}, E)$ the retarded anticommutative Green function averaged over the positions of the impurities;
$G^{-1}(\vec{k}, E) = G_o^{-1}(\vec{k}, E) + M(\vec{k}, E)$ and $M(\vec{k}, E) = M^{(1)}(\vec{k}, E) + M^{(2)}(\vec{k}, E)$; G_o is

Card 1/4

The position of the Fermi level ...

the Green function of an ideal gas and $M^{(1)}, {(2)}$ are the mass operators of electron-impurity and electron-electron interactions. For a completely degenerate gas the operator $p = n\sigma(k_F)/k_F$ is very small and

$$\mathrm{Re}\, M^{(1)}(k,\ E) = M_1(k^2,\ E) =$$

$$= \begin{cases} c\, \dfrac{E-k^2-a^2}{(E-k^2+a^2)^2+4k^2a^2} & \text{при } E>0, \\ -\dfrac{c}{k^2+(a+\sqrt{-E})^2} & \text{при } E<0; \end{cases} \qquad (3a)$$

$$\lim_{s \to +0} \mathrm{Im}\, M^{(1)}(k,\ E+is) = M_2(k^2,\ E) =$$

$$= \begin{cases} \dfrac{c_1 E^{1/2}}{(E+k^2+a^2)^2-4k^2E} & \text{при } E>0, \\ \dfrac{c_1 \chi^{1/2}(E)\,\theta\,[\chi(E)]}{(\chi(E)+k^2+a^2)^2-4k^2E}\left[1+\dfrac{v}{[\chi(E)+(a+\sqrt{-E})^2]}\right]^{-1} & \text{при } E<0; \end{cases} \qquad (3\text{б})$$

$$M^{(2)}(k;\ E) = -\frac{2}{\pi}\left(\mu^{1/2}+\frac{\mu-k^2}{2k^3}\ln\left|\frac{\mu^{1/2}+k}{\mu^{1/2}-k}\right|\right). \qquad (6)$$

Card 2/4

The position of the Fermi level ...

where $c = 8\pi n\chi^{-1}$, $c_1 = 16\pi n$, $k^2 = \chi(E)$ is the solution of $k^2 - E + M_1(k^2, E) = 0$.

The electron concentration is obtained as

$$n_1 = (6\pi^2)^{-1}c^{3/2},\qquad (5a)$$

$$n_2 = (3\pi^2)^{-1}\mu^{3/2}\left[1 + 1.3\left(\frac{c}{\mu^2}\right)^{3/2}\right],\qquad (5\delta)$$

$$n = (3\pi^2)^{-1}\mu^{3/2}[1 + 0.4n^{-3/8}].\qquad (5\theta)$$

and is interrelated with the Fermi level position by $\mu = \mu_0(1 - 0.27n^{-3/8})$ where $\mu_0 = (3\pi^2 n)^{2/3}$ is the ideal-gas Fermi level. If the correction for electron-electron interaction ($\Delta\mu = -2\mu^{1/2}/\pi$) is taken into account this relation changes over to $\mu = \mu_0(1 - 0.2n^{-1/3})$. Thus, the electron-electron interaction predominates in a completely degenerate semiconductor. The results obtained are generalized for $T \neq 0$, $\beta^{-1} \leq \mu$; p is still small, therefore perturbation theory is also applicable.

$$n = (2\pi^3)^{-1}\beta^{-3/2}\left[F_{1/2}(\beta\mu) + 3.5 \frac{\lambda^2}{1 + \exp(-\beta\mu)} - 2\lambda^2 F_{1/2}''(\beta\mu)\right],\qquad (11)$$

$$\mu = \mu_0[1 - 0.27n^{-3/8} - 0.82(\beta\mu_0)^{-2}(1 - 0.1n^{-3/8})].\qquad (12)$$

Card 3/4

The position of the Fermi level ...

$$M^{(3)}(k,\ E) = -\frac{2}{\pi k} \int_0^\infty \frac{k' dk' \ln \left| \frac{k + k'}{k - k'} \right|}{1 + \exp[\beta(k'^2 - \mu)]} \quad (13),$$

$\lambda = 0.5 d^{1/2} \beta$; if $\beta \mu \gg 1$,

$$M^{(3)}(k,\ E)\big|_{k = \mu_0^{1/2}} = -\frac{2}{\pi} \mu_0^{1/2} (1 + 0.5 (\beta \mu_0)^{-2}). \quad (14).$$

The re-
sult that the corrections for electron-electron interaction exceed those
for electron-impurity interactions (if $\beta^{-1} \lambda \mu$) holds both at low and at
medium temperatures. If in (12) and (14) are only those corrections are
taken into account that play a great role with $n \to \infty$,

$$\mu = \mu_0 \left[1 - \frac{2}{\pi} \mu_0^{-1/2} - \frac{\pi^2}{12} (\beta \mu_0)^{-2} - \pi^{-1} \mu_0^{-1/2} (\beta \mu_0)^{-2} \right]. \quad (15)$$

is obtained; with $n \to \infty$ μ tends to μ_0, the chemical potential in the pure
semiconductor. When all corrections are taken into account, the degeneracy
temperature is obtained as $T_b = T_b^0 (1 - 0.5 \mu_0^{-1/2})$. There is 1 figure.

ZVYAGIN, I.P.

Using diagrams in calculating kinetic coefficients. Vest.
Mosk. un. Ser. 3: Fiz., astron. 20 no.5:49-57 S-0 '65.
(MIRA 18:11)

1. Kafedra poluprovodnikov Moskovskogo universiteta.
Submitted May 19, 1964.

AP6033543   SOURCE CODE: UR/0181/66/008/010/2835/2840

AUTHOR: Zvyagin, I. P.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Effect of thermoelectric current on the stability of the electric field and the charge distribution in semiconductors

SOURCE: Fizika tverdogo tela, v. 8, no. 10, 1966, 2835-2840

TOPIC TAGS: electric field, electron gas, thermoelectric current, semiconductor, temperature, instability

ABSTRACT: The stability of an electric field—charge—temperature—semiconductor system is investigated by means of a set of complete phenomenological equations which describe the distribution of these factors. It is shown that if the thermo-electric current factor is ignored, and if the electron gas is not heated to too high a degree, the conditions which ensue agree with those arrived at earlier by V. L. Bonch-Bruyevich (Fizika tverdogo tela, no. 8, 1753, 1966). The resultant non-

Card 1/2

L 09894-67

ACC NR: AP6033543   /

homogeneity in the pattern of the temperature in the vicinity of the contacts is
restricted to an area close to these contacts, and is small in comparison with the
size of the sample. This nonhomogeneity does not induce a nonhomogeneous solu-
tion for the system's instability region. The author thanks V. L. Bonch-Bruyevich
suggesting the study and many valuable discussions of the problem. Orig. art. has:
16 formulas. [Author's abstract]

SUB CODE: 20/ SUBM DATE: 20Nov65/ ORIG REF: 003/ OTH REF: 002/

2/2

SABININ, Yu.A., kand. tekhn. nauk; BOCHAROV, V.V.; ZABOROVSKIY,
S.A., inzh.; ZVYAGIN, I.Ye.; inzh.; KULIKOV, S.N., inzh.; POPOV,
O.V., inzh.

A motor drive with wide-range smooth speed control. Elektrichestvo
no.12:20-23 D '57.   (MIRA 10:12)

1.Leningradskiy politekhnicheskiy institut im. Kalinina.
                    (Electric driving)

SOLTAMOV, Bek-Sultan Drisovich. Prinimali uchastiye:
    PREOBRAZHENSKIY, L.N., inzh.; KASPAROV, G.D., inzh.;
    ZVYAGIN, I.Ye., red.; KHIVRICH, Ye.D., red.izd-va;
    AKOPOVA, V.M., tekhn. red.

    [Automated electric drives in the woodpulp industry]
    Avtomatizirovannye elektroprivody na predpriiatiiakh
    tselliulozno-bumazhnoi promyshlennosti. Moskva, Gos-
    lesbumizdat, 1963. 268 p.   (MIRA 16:12)
        (Woodpulp industry--Electric equipment)
            (Electric driving)

GOLOSHCHAPOV, Yu.N.; ZVIAGIN, I.V.

Veterinary medicine abroad. Veterinariia 40 no.11:73-79 N '63.
(MIRA 17:9)

AVYAGIN, I.V.; ZURCHENKO, V.V.

Prospects for the production of dry immune serums. Veterinariia
42 no.5:104-105 My '65.
(MIRA 18:6)

1. Vsesoyuznyy trest biologicheskoy promyshlennosti Ministerstva
sel'skogo khozyaystva SSSR.

CHOLENKOV, V.P.; BAZHINOV, A.G.; ZVIAGIN, I.V.

Use of β-propiolactone in the production of veterinary biological
preparations. Veterinariia 41 no.2:26-27 F '65.

(MIRA 18:3)

1. Vsesoyuznyy trest biologicheskoy promyshlennosti Ministerstva
sel'skogo khozyaystva SSSR.

Zvyagin, I. V., Kolesov, S. G.,

"The Seventh International Congress of the Permanent Section on Standardization of Biopreparations."

Veterinariya, Vol 39, no. 1, Jan 1962. pp 82

KOLESOV, S.G.; ZVYAGIN, I.V.

Seventh International Congress of the Permanent Section on
Standardization of Biological Preparations. Veterinariia 39
no.1:82-86 Ja '62.   (MIRA 15:2)
              (Biological products--Standards)

CHUMAKOV, V.P.; BAZHINOV, A.G.; ZVYAGIN, I.V.

Testing the sterilizing action of beta-propiolactone in the
preparation of biological products. Veterinariia 41 no.11:
23-24 N '64.   (MIRA 18:11)

1. Vsesoyuznyy trest biologicheskoy promyshlennosti Ministerstva
sel'skogo khozyaystva SSSR.

BOYKO, A.A.; ZVYAGIN, I.V.

Veterinary service in the Czechoslovak Socialist Republic.
Veterinariia 41 no.11:112-114 N '64.   (MIRA 18:11)

DONSKOY, Aleksandr Vasil'yevich; LUTSKER, Il'ya Shulimovich;
ZVYAGIN, I.Ye., red.

[Automation of low-temperature electric-heating systems]
Avtomatizatsiia nizkotemperaturnykh elektronagrevatel'-
nykh ustroistv. Leningrad, 1964. 13 p.   (MIRA 17:12)

ZVYAGIN, I.Ye.

Servo drive of a regulated high-frequency system. Trudy LFI
240:103-109 '64.   (MIRA 17:11)

ZVYAGIN, L.

A new system of wages is needed for repair and service workers of
the truck fleets. Avt.transp. 34 no.4:7-8 Ap '56.   (MLRA 9:8)

1. Nachal'nik otdela truda i zarabotnoy platy Leningradskogo tresta
gruzovykh perevozok.
                                (Wages)

ZVYAGIN, L.M., kand.med.nauk

Intra-osseous transfusions of hydrolysin. Akt.vop.perel.krovi no.7:
326-329 '59.   (MIRA 13:1)

1. Gospital'naya khirurgicheskaya klinika I Leningradskogo meditsin-
skogo instituta im. Pavlova (zav. klinikoy - prof. F.G. Uglov).
                        (BLOOD PLASMA SUBSTITUTES)

ZVYAGIN, L.M., kand. med. nauk (Leningrad)

"Special X-ray diagnosis of bone and joint diseases" by
A.E. Rubasheva. Reviewed by L.M. Zviagin. Klin. khir. no.10:83
O '62.   (MIRA 16:7)
(BONES—RADIOGRAPHY)   (JOINTS—RADIOGRAPHY)
(RUBASHEVA, A.E.)

ZVYAGIN, L.M.; kandidat meditsinskikh nauk; GIRSHOVICH, E.A.; SOMOVA, V.V.

Transfusion of N.G. Belen'kii's therapeutic serum in insufficient
lactation. Akush. i gin. no.3:51-54 My-Je '55 (MLRA 8:10)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. kafedroy-prof.
F.G.Uglov) i akushersko-ginekologicheskoy kliniki (zav.kafedroy-
prof. I.I.Yakovlev) I Leningradskogo meditsinskogo instituta imeni
akad. I.P.Pavlova)
        (LACTATION DISORDERS
            hypogalactia, ther.,serum of Belen'kii)
        (BLOOD SERUM
            serum of Belen'kii in ther. of hypogalactia)

ZVYAGIN, L.M., kandidat meditsinskikh nauk

Strangulation of inguinal hernia during labor. Akush. i gin. 33
no.2:104-105 Mr-Ap '57.   (MLRA 10:6)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. kafedroy - prof.
F.G.Uglov) i akushersko-ginekologicheskoy kliniki (zav. kafedroy -
prof. I.I.Yakovlev) I Leningradskogo meditsinskogo instituta
imeni akad. I.P.Pavlova.
        (PREGNANCY, COMPLICATIONS OF)   (HERNIA)

ZVYAGIN, L.M., kand. med. nauk (Leningrad P-154, Zverinskaya ul. d. 2/5, kv.50);
YAROSHEVSKAYA, Ye.N., kand. med. nauk

Abstracts of articles received by the editors. Ortop. travm. protez.
24 no.7:75 Jl'63   (MIRA 17:2)

1. Iz kafedry gospital'noy khirurgii (zav. - prof. F.G. Uglov)
I Leningradskogo meditsinskogo instituta imeni I.P.Pavlova i
Detskogo ortopedicheskogo institut imeni ?.I. Turnera (dir. -
prof. M.N.Goncharova).

ZVYAGIN, L.M., kand.med.nauk (Leningrad, pl. L.Tolstogo d.6.8)

NARBUT, Ye.I., kand.med.nauk

Clinical characteristics of hydrolsin L-103 [with summary in English]
Vest.khir. 81 no.8:50-54 Ag '58   (MIRA 11:9)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. - prof. F.G. Uglov)
1-go Leningradskogo meditsinskogo instituta im. I.P. Pavlova.
              (AMINO ACID MIXTURES, THER. use.
                   hydrolysin L-103 (Rus))

SHEVYAKOV, Lev Dmitriyevich, akademik; ZVIAGIN, ... otv.red.; KOROVENKOVA,
Z.A., tekhn.red.; PROZOROVSKAYA, V.L., tekhn.red.

[Principles of the theory of planning coal mines]   Osnovy teorii
proektirovaniia ugol'nykh shakht. Izd.2., perer.   Moskva, Ugle-
tekhizdat, 1958.   328 p.   (MIRA 12:3)
                        (Mining engineering)

KOROTKOV, P.A.; LITVINOVA, Ye.I.; Prinimali uchastiye: ZVYAGIN, M.I.;
ANDREYEV, N.F.; UDAVKOV, G.G.

Automatic recording of transformations in enameled cast iron during
heating and cooling. Izv. vys. ucheb. zav.; chern. met. 6 no.11:
194-199 '63.   (MIRA 17:3)

1. Leningradskiy tekhnologicheskiy institut im. Lensoveta.

Grease for guns, etc. M. M. Zvyagin. Russ. 52,435,

Jan. 31, 1938. A mixt. of rubber, mineral oil, soap and
butyl or amyl alcohols or other solvents is specified.

PROCESSES AND PROPERTIES INDEX

Treating cracked distillates with zinc chloride. A. Ventikus and N. Zvyagin *Neftyanoe Khozyaistvo* 22, 136-9(1932).—A discussion on the com. possibilities of treatment with ZnCl₂, including yields of the finished product.   A. A. Bokhtlingk

ASM-SLA   METALLURGICAL LITERATURE CLASSIFICATION

Economics of cracking. F. F. DUNAEV AND N. Z. ZYKAGIN. *Neftyanoe Khozyaistvo* 22, 69-80(1932).—The cost of one metric ton of gasoline is 14.51 roubles as compared with 10.80 roubles in the United States. The cost is 24.77 and 29.57 roubles in the Jenkins and Vickers units installed in Russia.

A. A. BOCHTLINGK

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PAVLOV, Iakhno, Bauke, KAVALLI, I.; redaktor Inzhener

Economic substantiation of the minimum workable thickness of
anthracite beds in the Donets Basin. Ugol' Ukr. 3 no.7:40-45
Jl '59.   (MIRA 12:11)
                    (Donets Basin--Anthracite coal)

ZVYAGIN, P.Z., kand. tekhn. nauk.

Minimum thickness required of coal seams for underground mining.
Ugol' 34 no.11:34-39 N '59   (MIRA 13:3)
(Coal mines and mining--Cost)

ZVYAGIN, Pavel Zakharovich; MAYZEL', Leonid Lazarevich; OSTROVSKIY,
S.B., retsenzent; GOLUBYATNIKOVA, G.S., red.izd-va; BERESLAVSKAYA,
L.Sh., tekhn.red.

[Economic justification for the minimum workable thickness of
coal seams; underground mining] Ekonomicheskoe obosrovanie minimal'noi
rabochei moshchnosti ugol'nykh plastov; pri podzemnoi razrabotke.
Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1960. 143 p.
(MIRA 13:11)

(Coal mines and mining)

GARKAVI, S.M., kand.tekhn.nauk; ZVYAGIN, P.Z.

Comparative effectiveness of the panel and modified
longwall systems for mine development. Ugol' Ukr. 4
no.5:41-42 My '60.   (MIRA 13:8)

1. Institut gornogo dela AN SSSR.
          (Coal mines and mining)

ZVYAGIN, P.Z.; NILOVSKIY, V.A.

Coal mining industry could and should increase its labor
productivity; from results of the Conference of Ore and
Coal Mining Workers of the Krivoy Rog Basin. Ugol' 35
no.10:6-10 O'60.
(MIRA 13:10)
(Krivoy Rog Basin--Coal mines and mining--Labor
productivity)

GORLOV, V.P., kand. tekhn. nauk; KAMINSKY, I.N., inzh.; POLYAKOV, N.V.;
KHARCHENKO, A.K., kand. tekhn. nauk

For a further upswing of labor productivity in mines of the
Rostovugol' Combine. Ugol' 35 no.11:13-17 N '60.   (MIRA 13:12)

1. Glavnyy inzhener kombinata Rostovugol'.
    (Donets Basin—Coal mines and mining—Labor productivity)

BALASHOV, Mikhail Kapitonovich; KIRZHNER, David Mironovich; CHETYRKIN,
Mikhail Ivanovich. Prinimal uchastiye SURMILO, G.V. ZVYAGIN, P.Z.,
otv.red.; GOLUBYATNIKOVA, G.S., red.izd-va; OSVAL'D, E.Ya., red.
izd-va; GALANOVA, V.V., tekhn.red.

[Reference book on the economics of the coal industry] Spravochnik
po ekonomike ugol'noi promyshlennosti. Moskva, Gos.nauchno-tekhn.
izd-vo lit-ry po gornomu delu, 1961. 418 p.

        (Coal mines and mining)   (MIRA 14:4)

ZVYAGIN, P. Z., DOC TECH SCI, "SELECTION OF OUTPUT AND *productivity* *service* LIFE OF COAL MINES." MOSCOW, 1961. (MIN OF HIGHER AND SEC SPEC ED RSFSR. LENINGRAD ORDERS OF LENIN AND LABOR RED BANNER MINING INST IMENI G. V. PLEKHANOV). (KL-DV, 11-61, 216).

ZVYAGIN, I.P.; kand. tekhn. nauk

Effect of the factor of efficiency of capital investments
in determining the productivity of the mine. Ugol' 36
no.6:39-44 Je '61.
(MIRA 14:7)

1. Institut gornogo dela imeni A.A. Skochinskogo.
          (Mine valuation)
          (Coal mines and mining—Finance)

KHARCHENKO, A.K., kand. tekhn. nauk; ZVYAGIN, P.Z., kand. tekhn. nauk, red.; OSVAL'D, E.Ya., red.izd-va; IL'INSKAYA, G.M., tekhn. red.; SABITOV, A., tekhn. red.

[Labor expended per unit of production in coal mining and ways of reducing it] Trudoemkost' dobychi uglia i puti ee snizheniia. Rabota vypolnena pod obshchim rukovodstvom A.K.Kharchenko. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1962. 506 p.

(MIRA 15:5)

1. Akademiya nauk SSSR. Institut gornogo dela.
   (Mining engineering)   (Work measurement)

ZVIAGIN, R.Z. kand.tekhn.nauk; MATSEL', L.L., kand.tekhn.nauk

Economic efficiency of hydraulic underground mining. Ugol'
37 no.1:38-43 Ja '62.

          (Hydraulic mining)   (MIRA 15:2)

BABOKIN, Ivan Alekseyevich; ZVYAGIN, P.Z., doktor tekhn. nauk,
retsenzent; GAPANOVICH, L.N., kand. tekhn. nauk,
otv. red.

[Technical and economic evaluation of the loss of coal
during mining] Tekhniko-ekonomicheskaia otsenka poter'
uglia v nedrakh (pri razrabotke). Moskva, Nedra, 1964.
94 p.   (MIRA 18:2)

KAGAN, F.Ia.; ZVIAGIN, P.Z.; MAYZEL', L.I.; ONUPRIYEV, L.N.; VOYNIK, I.A.

Greater scientific substantiation of planning in coal mines by
introducing technical standards. Ugol' 40 no.9:41-45 S '65.

(MIRA 18:10)

1. Gosudarstvennyy komitet po toplivnoy promyshlennosti pri
Gosplane SSSR (for Kagan). 2. Institut gornogo dela im. A.A.
Skochinskogo (for all except Kagan).

EVTAGIN, P.Z., doktor tekhn. nauk; SHAVRINA, R.F., red.

[Optimum solutions of mining problems; report at the Scientific Council on May 8, 1963] Ob odnom aspekte resheniia gornykh zadach na optimum; doklad na Uchenom sovete 8 maia 1963 g. Moskva, In-t gornogo dela im. A.A.Skochinskogo, 1963. 11 p.

(MIRA 18:3)

KHARCHENKO, A.K., doktor tekhn. nauk, otv. red.; ORLOVA, Ye.P., inzh otv. red.; ZVYAGIN, P.Z., prof., doktor tekhn. nauk, otv. red.

[New developments in the economics of coal and ore deposit mining] Novoe v ekonomike razrabotki ugol'nykh i rudnykh mestorozhdenii. Moskva, Nedra, 1965. 294 p.

(MIRA 18:4)

1. Moscow. Institut gornogo dela imeni A.A.Skochinskogo.

YEMEL'YANOV, A.S.; PILYUKHANOV, L.S.; ZVYAGIN, F.Z., doktor
        tekhn. nauk, retsenzent; KUZMICH, A.S., doktor tekhn.
        nauk, retsenzent; BUKHALO, S.M., doktor tekhn. nauk,
        otv. red.; GOLUBYATNIKOVA, G.S., ved. red.

        [Potentialities for improving the economics of coal mines]
        Rezervy uluchsheniia ekonomiki ugol'nykh shakht. Moskva,
        Nedra, 1964. 255 p.   (MIRA 18:2)

KURNOSOV, Anatoliy Mikhaylovich, kand. tekhn. nauk; ROZENTRETER,
        Boris Aleksandrovich, doktor tekhn. nauk; USTINOV,
        Mikhail Ivanovich, kand. tekhn. nauk. Prinimali ucha-
        stiye: CHURILOV, A.A., kand. tekhn. nauk; CHERNITSIN,
        Ye.A., gorn. inzh.; ZVYAGIN, P.Z., doktor tekhn. nauk;
        POPOVA, Ye.G., gorn. inzh.; SELETSKIY, R.A., kand. tekhn.
        nauk; GOLOMOLZIN, V.I., kand. tekhn. nauk; SHEVYAKOV, L.D.,
        akademik, otv. red. [deceased]; SUDOPLATOV, A.P., doktor
        tekhn. nauk, otv. red.

        [Scientific principles for the design of coal mines for
        the mining of flat seams] Nauchnye osnovy proektirovaniia
        ugol'nykh shakht dlia razrabotki pologikh plastov. Moskva,
        Izd-vo "Nauka," 1964.   447 p.   (MIRA 17:6)

GARKAVI, S.M.; ZVYAGIN, P.Z.

Speed-up of the working of coal deposits and concentration of
mining operations is the most important factor in improving the
economics of the operation of coal mines. Gor. i ekon. vop.
razrab. ugol'. i rud. mest. no.1:291-309 '62.   (MIRA 16:7)
(Coal mines and mining—Labor productivity)

ZVYAGIN, Pavel Zakharovich, doktor tekhn. nauk; BOYKO, A.A., otv. red.;
        OSVAL'D, E.Ya., red.izd-va; LOMILINA, L.N., tekhn. red.

        [Selection of the capacity and operating period of coal mines;
        effectiveness of capital investments in mines]Vybor moshchnosti
        i srokov sluzhby ugol'nykh shakht; effektivnost' kapitalovlo-
        zhenii na shakhtakh. Moskva, Gosgortekhizdat, 1963. 467 p.
                                                    (MIRA 16:4)
                (Coal mines and mining—Finance)

BARDIN, I.P , akademik, otv. red.[deceased]; BELYANCHIKOV, K.P.,
nauchnyy red.; YEROFEYEV, B.N., nauchnyy red.; ZVYAGIN, P.Z.,
nauchnyy red.; KOSHELEV, V V., nauchnyy red.: MELESHKIN, S.M.,
nauchnyy red.; MIRLIN, G.C., nauchnyy red.; MOSKAL'KOV, Ye.F.,
nauchnyy red.; POKROVSKIY, M.A., nauchnyy red.; SLEDZYUK, P.Ye.,
nauchnyy red.; FINKELSHTEYN, A.S., nauchnyy red.; KHARCHENKO,
A.K., nauchnyy red.; SHEVYAKOV, L.D., akademik, nauchnyy red.;
SHAPIRO, I.S., nauchnyy red.; SHIRYAYEV, P.A., nauchnyy red.;
OKHRIMYUK, Ye.M., nauchnyy red.; YANSHIN, A.L., akademik,
nauchnyy red.; MAKOVSKIY, G.M., red.izd-va; VOLKOVA, V.G.,tekhn.
red.

[Oolitic iron ores of the Lisakovka deposit in Kustanay Province
and means for their exploitation]Oolitovye zheleznye rudy Lisa-
kovskogo mestorozhdeniia Kustanaiskoi oblasti i puti ikh ispol'-
zovaniia. Moskva, Izd-vo Akad. nauk SSSR, 1962. 234 p. (Zhe-
lezorudnye mestorozhdeniia SSSR [no.1])   (MIRA 15:12)

1. Akademiya nauk SSSR. Institut gornogo dela.
         (Kustanay Province—Iron ores)

④

MELNIKOV, N. V., AGOSHKOV, M. I., PROTODYAKONOV, M. M., SUDOPLATOV, A. P.,
and ZVYAGIN, P. Z.

"On principles of rational development of mining industry in the USSR"

report to be submitted for the United Nations Conference on the
Application of Science and Technology for the Benefit of the Less
Developed Areas - Geneva, Switzerland, 4-20 Feb 63.

ZVYAGIN, P.Z., kand.tekhn.nauk

> Synchronous factor of seam mining in the Donets Basin mines.
> Ugol' Ukr. 6 no.2:9-13 F '62.   (MIRA 15:2)
>
> 1. Institut gornogo dela im. A.A. Skochinskogo.
>   (Donets Basin—Coal mines and mining)

GOLOMOLZIN, Valerian Ivanovich; ZVYAGIN, P.Z., otv. red.;
        KHARCHENKO, A.K., otv. red.; SUROVA, V.A., red. izd-va;
        BOLDYREVA, Z.A., tekhn. red.; SHKLYAR, S.Ya., tekhn. red.

        [Capacity and life of mines] Moshchnost' i sroki sluzhby
        shakht. Moskva, Gosgortekhizdat, 1961. 161 p.
                                                (MIRA 15:7)
                        (Coal mines and mining)

SHEYKHET, M.N., dotsent, kand.tekhn.nauk; ZVYAGIN, P.Z.

Letters to the editor. Ugol' 35 no. 4:63 Ap '60.
(Rock pressure)

(MIRA 14:4)

S/166/62/000/001/009/009
B125/B104

AUTHORS: Kist, A. A., Lobanov, Ye. M., Zvyagin, V. I., Bartnitskiy, I. N.

TITLE: Effect of gamma irradiation upon oxide films of germanium

PERIODICAL: Akademiya nauk Uzbekskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 1, 1962, 88-90

TEXT: The effect of gamma rays on germanium monoxide and germanium dioxide films produced by etching was quantitatively measured with a Geirovskiy micropolarograph. The monoxide - dioxide mixture produced by etching germanium powder in standard etching agent did not change under gamma irradiation in air, carbon dioxide, and in vacuum (10^{-4} torr) with 20, 60, 100, 150, and 200 million r. In the subsequent irradiation of the weighed portion of germanium etched in a standard reagent with 20, 30, 50, and 100 million r, the amount of germanium dioxide increases at doses of up to 40-50 million r, and then decreases again. The oxide film produced in etching agent no. 5 contains monoxide and dioxide in a~1 : 1 ratio. While etching agent no. 5 gives rise to germanium monoxide,

Card 1/3

Effect of gamma irradiation ...

S/166/62/000/001/009/009
B125/B104

germanium dioxide is contained in the film in an equal amount. The
anomalous current and the photocurrent are not exclusively due to the
germanium monoxide. Similar phenomena are also observed when exposing the
diodes to gamma irradiation (doses above 10^6 r). These anomalies disappear
either entirely or partially at doses of more than 10^8 r. The irradiated
photodiodes yield a photocurrent at such doses if the amount of germanium
dioxide on the surface increases. The upper limit of the anomalous
photocurrent shifts toward the visible region when etching agent no. 5 is
used. Gamma irradiation first causes the oxide film to grow more
considerably, but the secondary fast electrons then again partly destroy
the oxide film. As a result, the oxide film becomes eventually thinner.
If present considerations are correct, germanium diodes are made
insensitive also to intense radiations in that the oxide film is prevented
from growing all throughout the dose range. There are 1 figure, 1 table,
and 8 references: 2 Soviet and 6 non-Soviet. The four references to
English-language publications read as follows: S. I. Ellis, Appl. Phys.
1957, 11, 1262, 28; I. Everest, J. Chem. Soc., Febr. 1953, 660; I. Bardet,
Tchakarian A. C. R., 1928, 637, 186; L. Dennis, Xules R. J. Am. Soc., 1930,
3554, 52.

Card 2/3

S/166/62/000/001/009/009
B125/B104

Effect of gamma irradiation ...

ASSOCIATION: Akademiya nauk UzSSR (Academy of Sciences of the
Uzbekskaya SSR)

SUBMITTED: August 25, 1961

Card 3/3

LEUSHKINA, G.V.; ZVYAGIN, V.I.; LOBANOV, Ye.M.; DUTOV, A.G.

Fluorescence of silicon carbide. Izv. AN Uz. SSR. Ser.
fiz.-mat.nauk 7 no. 6:98-99 '63.   (MIRA 17:6)

1. Institut yadernoy fiziki AN UzSSR.

ACCESSION NO: AP4013028   S/0166/63/000/006/0098/0099

AUTHORS: Leushkina, G. V.; Zvyagin, V. I.; Lobanov, Ye. M.; Dumov, A. G.

TITLE: Fluorescence of silicon carbide

SOURCE: AN UzSSR. Seriya fiziko-matematicheskikh nauk, no. 6, 1963, 98-99

TOPIC TAGS: fluorescence, lattice defect, radiation effect, neutron irradiation, gamma ray irradiation, alpha particle irradiation

ABSTRACT: Samples of SiC produced by vacuum recrystallization were irradiated with neutrons, gamma-rays, and alpha-particles to determine their influence on fluorescence of samples at room temperature. For neutron fluxes of $5 \cdot 10^{11}/cm^2$ the intensity of fluorescence decreased by a factor of 7 in the short (~ 6000 Å) and a factor of 2 in the longer wave length region of the spectrum. The fluorescence disappeared completely for a neutron flux of $2 \cdot 10^{17}/cm^2$. No significant difference was noted with or without cadmium filters, indicating that the effect is primarily due to fast neutrons. Irradiation of the samples with gamma rays of Co^{60} produced no noticeable change in intensity of fluorescence for doses of $5 \cdot 10^{17}$ photons/cm^2, and a slight decrease for doses of $10^{19}/cm^2$. Likewise, alpha

Card 1/2