TEBYAKINA, A.Ye.; CHAYKOVSKAYA, S.M.

Biological characteristics and a method for determining the activity
of a new antifungal antibiotic albofungin.   Antibiotiki 5 no.1:26-
29 Ja-F '60.   (MIRA 13:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
                    (ANTIBIOTICS)

TEBIAKINA, A.E.; CHAĬKOVSKAĬA, S.M.

Production of nystatin-resistant struins of Candida and a
description of their properties. Antibiotiki 5 no.2:91-95 Mr-
Ap '60.   (MIRA 14:5)

1. Vsesoyuznyy nauqhno-issledovatel'skiy institut antibiotikov.
        (NYSTATIN)   (CANDIDA)

CHAYKOVSKAYA, S.M.

Penicillinase synthesis by certain sporogenous microorganisms.
Antibiotiki 6 no.4:360-363 Ap '61.   (MIRA 14:5)

1. Laboratoriya mikrobiologicheskikh metodov kontrolya (zav. A.Ye.
Tebyakina) Vsesoyuznogo nauchno-issledovatel'skogo instituta
antibiotikov.
          (BACILLUS SUBTILIS)   (PENICILLINASE)

TEBYAKINA, A.Ye.; CHAYKOVSKAYA, S.M.; VENKINA, T.G.

Stability of dry samples of nystatin and its medicinal forms.
Antibiotiki 6 no.6:547-551 Je '61.   (MIRA 15:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
(NYSTATIN)

TEBYAKINA, A.Ye.; CHAYKOVSKAYA, S.M.

Antibiotics in combination with gamma globulin in experimental
pertussis infection of chicken embryos. Antibiotiki 6 no.9:53-58
S '61.   (MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
        (ANTIBIOTICS)   (GAMMA GLOBULIN)
                (WHOOPING COUGH)

LEVITOV, M.M.; INOZEMTSEVA, I.I.; TEBYAKINA, A.Ye.; BUYANOVSKAYA, I.S.;
SHNEYERSON, A.N.; CHAYKOVSKAYA, S.M.; KOMOKINA, Z.F.; DRUZHININA, Ye.N.

New type of penicillin —α-phenoxyethylpenicillin and study of
its microbiological properties. Antibiotiki 7 no.2:104-108 F '62.
(MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
(PENICILLIN)

CHAYKOVSKAYA, S.M.; TEBYAKINA, A.Ye.; VENKINA, T.G.

Formation of penicillinase by Bac. cereus strain No. 569.
Antibiotiki 7'no.4:318-321 Ap '62.   (MIRA 15:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut
antibiotikov.
(BACILLUS CEREUS)
(PENICILLINASE)

CHAYKOVSKAYA, S.M.; VENKINA, T.G.

Modified iodometric method for determining the activity of penicillinase.
Antibiotiki 7 no.5:453-456 My '62.   (MIRA 15:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
        (IODOMETRY)   (PENICILLINASE)

KORCHAGIN, V.B.; KOROBITSKAYA, A.A.; CHAYKOVSKAYA, S.M.

Colorimetric method for determining kanamycin. Antibiotiki 7 no.6:
562-566 Je '62.   (MIRA 15:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.
        (KANAMYCIN)   (COLORIMETRY)

STRUKOV, I.T.; TEBYAKINA, A.Ye.; INOZEMTSEVA, I.I.; KOSTROMINA, O.Ye.; KAMOKINA,
    Z.F.; BUYANOVSKAYA, I.S.; SHNEYERSON, A.N.; CHAYKOVSKAYA, S.M.;
    DRUZHININA, Ye.N.

    2,6-dimethoxyphenyl penicillin (methycillin) and its microbiological
    study. Antibiotiki 8 no.8:690-694 Ag '63.   (MIRA 17:5)

    1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.

CHAYKOVSKAYA, S.M.

Characteristics of the inactivation of benzylpenicillin with
penicillinases of various origins. Antibiotiki 8 no.9:782-787
S '63.   (MIRA 17:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.

TEBYAKINA, A.Ye.; BUYANOVSKAYA, I.S.; CHAYKOVSKAYA, S.M.; SHNEYERSON, A.N.

Studies on the antibacterial spectrum and determination of the
biological activity of florimycin (viomycin). Antibiotiki 8 no.10:
901-905 O '63.   (MIRA 17:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.

SIDOROVA, A.I.; CHAYKOVSKAYA, S.M.

Colorimetric method for the determination of florimycin (viomycin).
Antibiotiki 8 no.10:917-920 O '63.   (MIRA 17:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.

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SHNEYERSON, A.N.; CHAYKOVSKAYA, S.M.; DRUZHININA, Ye.N.;
BRAGINSKAYA, P.S.; VENKINA, T.G.

5-methyl-3-phenyl-4-isoxazole pencillin (oxacillin) and its
microbiological study. Antibiotiki 8 no. 11:989-994 N '63.
                                                    (MIRA 17:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.

STRUKOV, I.T.; VIKHROVA, N.M.; NIKITINA, N.M.; TEBYAKINA, A.Ye.; BUYANOVSKAYA,
I.S.; SHNEYERSON, A.N.; CHAYKOVSKAYA, S.M.

Phenoxybenzylpenicillin (phenbenicillin) and its microbiological
study. Antibiotiki 9 no.1:3-7 Ja '64.

(MIRA 18:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov,
Moskva.

CHAYKOVSKAYA, S.M.

Induction of sta; vlococcal penicillinase synthesis by new peni-
cillins. Antibioiiki 9 no.1:7-13 Ja '64.

(MIRA 18:3)

1. Laboratoriya mikrobiologicheskikh metodov issledovaniya (zav,
A.Ye.Tebyak¹ⁿ⁰¹ Vᵉᵃsoyuznogo nauchno-issledovatel'skogo instituta
antibiotiko., Moskva.

CHAYKOVSKAYA, S.M.; VENKINA, T.G.

Comparative resistance of semisynthetic penicillins to penicillinase
of various origins. Antibiotiki 9 no.4:329-334 Ap '64.
(MIRA 19:1)

1. Laboratoriya mikrobiologicheskikh metodov issledovaniya (zav. –
A.Ye. Tebyakina) Vsesoyuznogo nauchno-issledovatel'skogo instituta
antibiotikov, Moskva.

CHAYKOVSKAYA, S.M.; TEBYAKINA, A.Ye.; BYCHKOVA, M.M.; ISAYEVA, G.K.

Penicillinase formation by Bacillus cereus 5/B strains under submerged fermentation conditions. Antibiotiki 9 no.2:121-126 F '64.

(MIRA 17:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov, Moskva.

CHAYKOVSKAYA, S. M.

"Inductive properties of semisynthetic penicillins and factors determining the degree of penicillin sensitivity in penicillinase -- producing strains of BAC. subtilis."

report submitted for Antibiotics Cong, Prague, 15-19 Jun 64.

All-Union Sci Res Inst of Antibiotics, Moscow.

VIKHROVA, N.M.; STRUKOV, I.T.; TEBYAKINA, A.Ye.; CHAYKOVSKAYA, S.M.;
SHMEYERSON, A.N.; DUBOVA, V.G.

Nafcillin and its microbiological properties. Antibiotiki 10
no.1:3-9 Ja '65.

(MIRA 18:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov,
Moskva.

CHAYKOVSKAYA, S.M.; TEBYAKINA, A.Ye.

Highly active penicillinase-producing strain 749/C of Bacillus licheniformis and some properties of penicillinase produced by it. Antibiotiki 10 no.11:977-982 N '65.

(MIRA 19:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov, Moskva. Submitted April 16, 1965.

CHAYKOVSKAYA, S.M.

Relation between the sensitivity to penicillin of penicillinase-forming strains of Bacillus subtilis and the rate of spore germination. Mikrobiologiia 34 no.5:840-844 S-O '65.

(MIRA 18:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov, Moskva.

ACC NR: AP6034134   SOURCE CODE: UR/0297/66/011/010/0924/0933

AUTHOR: Chaykovskaya, S. M.

ORG: Laboratory for Microbiological Research Methods/headed by A. Ye. Tebyakina/All-Union Antibiotics Research Institute, Moscow (Laboratoriya mikrobiologicheskikh metodov issledovaniya Vsesoyuznogo nauchno-issledovatel'skogo instituta antibiotikov)

TITLE: Induction regularities of enzyme synthesis by penicillinase-producing cultures of *Staph. aureus, Bac. cereus* 509, and *Bac. subtilis*

SOURCE: Antibiotiki, v. 11, no. 10, 1966, 924-933

TOPIC TAGS: microbiology, bacteriology, enzymology, enzyme, synthesis, penicillinase

ABSTRACT: Induction regularities of penicillinase synthesis in *Bac. cereus, Bac. subtilis,* and staphylococci depend on the strain and on the properties of the inducer. Benzylpenicillin induced synthesis more actively in the bacilli than in the staphylococci, where it was less effective than the semisynthetic penicillins. When staphylococci were grown in media without an inducer, synthesis ceased; in *Bac. subtilis* cultures it increased for two hours before stopping and in *Bac. cereus* cultures, synthesis increased slightly. The greatest increase

Card 1/2   UDC: 576.8.095.58:577.16.062

ACC NR: AP6034134

in induction occurred when the inducer was added during the logarithmic growth phase and reached its highest level when a 12-hr inoculum was used. Orig. art. has: 11 figures and 3 tables.   [W.A. 50]

SUB CODE: 06/ SUBM DATE: 21Jan66/ ORIG REF: 002/ OTH REF: 018

Card 2/2

CHAYKOVSKAYA, T.Ya.

Reflection of tidal waves from rectilinear shores. Trudy Okean.kom.
11:74-82 '61.

(MIRA 14:7)

(Tides)

CHAYKOVSKAYA, T.Ya.

Effect of basin rotation on the transformation of standing
oscillations in traveling waves. Trudy MGI 24:105-116 '61.
(MIRA 14:6)

(Waves)

CHAYKOVSKAYA, T.Ya.

Determining deep currents by well-known surface currents.
Trudy GOIN no.85:5-11 '65.   (MIRA 19:1)

L 35998-66   EWT(1)   GW

ACC NR: AT6016534 (N) SOURCE CODE: UR/2634/65/000/085/0005/0011

AUTHOR: Chaykovskaya, T. Ya.

ORG: None

TITLE: The determination of deep currents from known surface currents

SOURCE: Moscow. Gosudarstvennyy okeanograficheskiy institut. Trudy, no. 85, 1965. Teoriya i metody raschetov techeniy i neperiodicheskikh kolebaniy urovnya i prilivov (Theory and methods of calculating currents and acyclic fluctuations of water level and tides),5-11

TOPIC TAGS: ocean current, ocean dynamics, fluid flow, steady flow

ABSTRACT: The author studies theoretically the flow of sea water, and starting from hydrodynamic and continuity equations derives expressions for the velocities of various subsurface water layers as a function of the known surface current rates. The equations are applied to the steady flow of the Gulf Stream and theoretical predictions are given for velocity components at depths of 100, 200, 500, and 1,000 m. Orig. art. has: 16 formulas and 2 figures.

SUB CODE: 08, 20/ SUBM DATE: 00/ ORIG REF: 001

Card 1/1

5.3400
5(3)

AUTHOR: Chaykovskaya, V.A.

67842
S/153/59/002/06/014/029
B115/B000

TITLE: The Chloromethylation Reaction in the Series of Aryl Aliphatic Ketones

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1959, Vol 2, Nr 6, pp 895-898 (USSR)

ABSTRACT: The introduction of the chloromethyl group into the aliphatic chains of aromatic compounds could not yet be successfully performed (Refs 2,3). This method could be used in technology to prepare vinyl-aryl ketones. In a previous paper published by the author (Ref 5), monochloromethyl ether was used as a chloromethylating agent, and BF$_3$ etherate as catalyst, whereby a successful chloromethylation into the chain of propiophenone was made possible. In this paper, chloromethylation into the chains of acetophenone, 4-methyl acetophenone, and 3,4-dimethyl acetophenone is described. When the chloromethyl derivatives of the ketones mentioned are distilled in vacuum, HCl is liberated, and a conversion to easily polymerizable phenyl-vinyl ketones takes place. This fact obviously causes the resinification and the low yields of β-chloroketones. The

Card 1/2

CH~~~~~~~~~~~, kand. tekhn. nauk; SHMYGLYA, A.A., inzh.;
VODYANITSKAYA, N.I., inzh.

Methods for recording the changes in pressure during compressor
testing. Khol. tekh. 39 no.5:11-15 S-O '62.   (MIRA 16:7)

1. Odesskiy tekhnologicheskiy institut pishchevoy i kholodil'noy
promyshlennosti.   (Compressors—Testing)

S/080/62/035/008/004/009
D202/D308

AUTHORS: Ksenzhek, O.S., and Chaykovskaya, V.M.

TITLE: The anodic oxidation of graphite

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 8, 1962,
              1786 - 1790

TEXT: A continuation of a previous work; in the present study the
authors attempted to obtain fundamental data concerning the veloci-
ty of the anodic process, when its effect is the evolution of O_2 or
formation of the reaction products of O_2 with graphite. The method
consisted of plotting temperatures and low current density (20 -
80°C and 15 μa/cm² respectively), and node polarization curves at
40° and 5 x 10-5 - 4 x 10-4 a/cm³. During anodic polarization of
graphite a gradual oxidation of its surface takes place, which is
accompanied by a rise of potential. After prolonged polarization
(up to 80 h) a stationary potential is established, which is
approximately 150 mv more negative than that of oxygen in the same
solution (in the pH range of 0-5). Further polarization causes a
Card 1/2

The anodic oxidation of graphite
S/080/62/035/008/004/009
D202/D308

change of this potential owing to the decrease of the rate of O_2 evolution or that of the decomposition of surface oxides. The fundamental kinetic characteristics of this process were: exchange current $- 3.5 \times 10^{-12}$ a/cm^2 at 20°C and 4.2×10^{-10} a/cm^2 at 80°C; the energy of activation $- 16.6$ kcal; pH of the solution (in the range 0-5) and the presence of Cl ions have no appreciable effects. There are 3 figures and 1 table.

ASSOCIATION: Dnepropetrovskiy khimiko-technologicheskiy institut imeni F.E. Dzerzhinskogo (Dnepropetrovsk Institute of Chemical Technology, imeni F.E. Dzerzhinskiy)

SUBMITTED: July 7, 1961

Card 2/2

KSENJEK, O.S. [Ksenzhek, O.S.]; CEAIKOVSKAIA, V.M. [Chaykovskaya, V.M.]

Study of anodic oxidation process of graphite. Analele chimie 18
no.2:190-196 Ap-Je '63.

CHAYKOVSKAYA, Ye.K.

International Seminar on Using Foreign Standards as Sources of Information.
NTI no.5:10 '65.
(MIRA 18:7)

CHAYKOVSKAYA, Ye. V., Cand Med Sci -- (diss) "The Pharmacology of
Quaternary Derivatives of Diphacyl". Len 1958, 17 pp (Ministry
of Health RSFSR. Len. Sanitary and Hygiene Med. Inst.) 200 copies.
(KL 34-58, 102)

39

CHAIKOVSKAIA, E. V.

"The Pharmacology of Quaternary Derivatives of Diphacyl (diphenylacetic acid diethylaminoethyl ester)."

report presented at the 761st meeting of the Pharmacology and Toxicology Section of the I. M. Sechenov Leningrad Society of Physiologists, Biochemists and Pharmacologists, 28 Mar. 1958.

Leningrad Medical Institute of Sanitary Hygiene

(Farmakologiia i Toksikologiia, 21, no 6, Nov-Dec 58, p. 620)

CHAYKOVSKAYA, Ya.V.

Pharmacology of quaternary derivatives of difacil. Trudy
LSGMI   37:153-162 '58.   (MIRA 12:8)

1. Kafedra farmakologii Leningradskogo sanitarno-gigiyeniche-
skogo meditsinskogo instituta (zav.kafedroy - deystvitel'nyy
chlen AMN prof. S.V.Anichkov).
            (PARASYMPATHOLYTICS
                adiphenine, pharmacol. of quaternary deriv.
                (Rus))

CHAYKOVSKAYA, Ye.V.

Effect of spasmolytin (diphacil) and its quaternary derivatives on
experimental hyperkinesis induced by nicotine and arecoline [with
summary in English]. Farm. i toks. 22 no.1:58-61 Ja-F '59.

(MIRA 12:4)

1. Kafedra farmakologii (zav. - deystvitel'nyy chlen AMN SSSR prof.
S.V. Anichkov) Leningradskogo sanitarno-gigiyenicheskogo meditsin-
skogo instituta.
(PARASYMPATHOLYTICS, eff.
adiphenine & quaternary deriv., on exper. hyperkinesis
induced by nicotine & arecoline (Rus))
(CONVULSIONS, exper.
eff. of adiphenine & quaternary deriv. on nicotine &
arecoline convulsions (Rus))

CHAYKOVSKAYA, Ye.V.

Central effects of quaternary derivatives of spasmolytin. Farm.i
toks. 23 no.2:113-118 Mr-Ap '60.   (MIRA 14:3)

1. Kafedra farmakologii (zav.-deystvitel'nyy chlen AMN SSSR prof.
S.V.Anichkov) Leningradskogo sanitarno-gigiyenicheskogo meditsin-
skogo instituta.
                        (ADIPHENINE)

SLOBODKINA, K.V.; CHAYKOVSKAYA, Ye.V.

Tissue respiration and copper content of the thyroid glands in
goiter. Probl. endok. i gorm. 11 no.5:14-18 S-O '65.

(MIRA 19:1)

1. Kafedra biologicheskoy khimii (:av. - dotsent K.V. Slobodkina)
Orenburgskogo meditsinskogo instituta. Submitted December 9, 1963.

GORIN, D.I., kand.tekhn.nauk; VLASOV, P.S., kand.tekhn.nauk; RUDEL'SON, V.G.,
    inzh.; PRESNOV, G.B., inzh.; CHAYKOVSKIY, A.A., inzh.

Pneumatic caterpillar treads. Trakt. i sel'khozmash. 33 no.12:14-
16 D '63.   (MIRA 17:2)

1. Belorusskiy institut mekhanizatsii sel'skogo khozyaystva.

ANTOSHKO, D.; CHAYKOVSKIY, A. [Chaikovs'kyi, A.]

Poultry plant with a capacity of 300,000 chickens. Sil'.bud. 9
no.10:6-7 O '59.   (MIRA 13:3)

1. Predsedatel' soveta Kagarlitskoy meshkolkhoznoy stroitel'noy
organizatsii (for Antoshko). 2. Glavnyy inzhener mezhkolkhoznogo
stroitel'stva (for Chaykovskiy).
            (Kagarlyk District--Poultry plants)

CHAYKOVSKIY, A. F.

6848/ Chaykovskiy, A. F. Postanovleniye sentyab'skogo (1953 G.)
Plenuma Tsk KPSS- boyevaya programma krutogo pod'ema zhivotnovodstva.
Kiyev. Izd-vo Akad. nauk Ukr. SSR, 1954. 96 s. 20 sm. (Akad. nauk
Ukr. SSR. Sovet nauch. -tekhn. Propagandy). 17.000 ekz. 1r 25K.-
Na ukr. yaz.-(55-2005)   338.1:636(47.71)

SO: Knizhnaya Letopis' No. 6, 1955

CHAYKOVSKIY, A.F., kand. ekon. nauk; LOGVINENKO, A.Ye., nauchnyy sotrudnik.

"Development of productive livestock farming in the Ukrainian S.S.R."
by I.N. Romanenko. Reviewed by A.F. Chaikovskii and A.E. Logvinenko.
Zhivotnovodstvo 20 no.1:93-95 Ja '58.   (MIRA 11:1)

1. Nauchno-issledovatel'skiy Ukrainskiy institut ekonomiki i organi-
zatsii sel'skogo khozyaystva (for Logvinenko).
                    (Ukraine--Stock and stockbreeding)
                        (Romanenko, I.N.)

KOVTUN, I.G.[Kovtun, I.H.], kand. okonom. nauk; CHAYKOVSKIY, A.F.
[Chaikovs'kyi, A.F.], otv. za vypusk; KVITKA, S.P., tekhn.
red.

[Methodology for determining the economic efficiency of new
machinery in agriculture]Metodyka vyznacheniia ekonomichnoi
efektyvnosti novoi tekhniky v sil's'komu hospodarstvi. Kyiv,
Vyd-vo Ukrains'koi Akad. sil's'kohospodars'kykh nauk, 1961.
40 p.   (MIRA 15:7)
1. Kiev. Ukrains'ka Akademiia sil's'kohospodars'kykh nauk.
Ukrains'kyi naukovo-doslidnyi instytut ekonomiky i organiza-
tsii sil's'koho hospodarstva. 2. Chlen-korrespondent Ukrain-
skoy akademii sel'skokhozyaystvennykh nauk (for Chaykovskiy).
                    (Agricultural machinery)

NIZHNIY, M.I.[Nyzhnii, M.I.], kand ekon. nauk; SEREDENKO, B.M., kand.
tekhn. nauk; VASILENKO, P.V., nauchnyy sotr.; CHAYKOVSKIY,
A.F.[Chaikovs'kyi, A.F.], otv. za vypusk; PALIYENKO, G.D.
[Paliienko, H.D.], otv. za vypusk; ONOPRIYENKO, M.M.
[Onopriienko, M.M.], red.; KVITKA, S.P., tekhn. red.

[Basic regulations on establishing work norms on collective
farms] Osnovni metodychni polozhennia normuvannia pratsi v
kolhospakh. Kyiv, Vyd-vo UASHN, 1961. 82 p. (MIRA 16:6)

1. Kiev. Ukrains'ka Akademiya sil's'kohospodars'kykh nauk.
Ukrains'kyi naukovo-doslidnyi instytut ekonomiky i organiza-
tsii sil's'koho hospodarstva. 2. Ukrainskiy nauchno-issledo-
vatel'skiy institut ekonomiki i organizatsii sel'skogo kho-
zyaystva (for Nizhniy, Seredenko, Vasilenko). 3. Chlen-
korrespondent Ukrainskoy akademii sel'skokhozyaystvennykh
nauk (for Chaykovskiy). 4. Nachal'nik otdela Ministerstva
sel'skogo khozyaystva Ukr.SSR (for Paliyenko).
        (Collective farms--Production standards)

ROMANENKO, I.N., prof.; CHAYKOVSKIY, A.F. [Chaikovs'kyi, A.F.], kand.
     ekon. nauk; MEL'NIK, O.K. [Mel'nyk, O.K.], st. nauchnyy sotr.;
     USTINOVSKAYA, L.T. [Ustynovs'ka, L.T.], kand. sel'khoz. nauk;
     SERIDKO, A.M., kand. biol. nauk; ZHADAN, I.I., kand. sel'khoz.
     nauk; SEREDENKO, B.M., kand. tekhn.nauk; NIZHNIY, M.I., kand.
     ekon. nauk; OBZHELYANSKIY, S.Ya. [Obzhelians'kyi, S.IA.], kand.
     ekon. nauk; PUDENKO, G.I. [Pudenko, H.I.]; LYSYY, Yu.B.
     [Lysyi, IU.B.], red.; POTOTSKAYA, L.A. [Pototska, L.A.], tekhn.
     red.

     [Intensified specialization of farm production within a district
     as exemplified by Khorol District, Poltava Province] Ukrains'kyi
     naukovo-doslidnyi instytut ekonomiky i organizatsii sil's'koho
     hospodarstva. Vnutriraionna pohlyblena spetsializatsiia sil's'-
     kohospodars'koho vyrobnytstva; na prykladi Khorol's'koho raionu,
     Poltavs'koi oblasti. Kyiv, Vyd-vo UASHN, 1962. 222 p.
                                         (MIRA 16:5)
     1. Kiev. Ukrains'ka Akademiya sil'skohospodars'kykh nauk.
     2. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyaystven-
     nykh nauk im. V.I.Lenina (for Romanenko). 3. Nachal'nik
     Khorol'skogo teritorial'nogo proizvodstvennogo kolkhozno-
     sovkhoznogo upravleniya, Poltavskaya oblast' (for Pudenko).
               (Khorol District--Agriculture)

RODIONOV, G.V.; VLADIMOROV, V.M.; CHAYKOVSKIY, E.G.; MATTIS, A.R.

Principle layouts and basic elements of earthmoving machines, using the effect of soil caving. Trudy Inst. gor. dela Sib. otd. AN SSSR no.7:14-24 '62.   (MIRA 16:9)

CHAYKOVSKIY E.G.; TROFIMOV, V.K.

Selection of some parameters for the working part of a caving excavator.
Trudy Inst. gor. dela Sib. otd. AN SSSR no.7:53-63 '62.

(MIRA 16:9)

CHAYKOVSKIY, E.G.

Problems in the technology of open-pit mining operations using excavators, based on the caving method. Trudy Inst. gor. dela Sib. otd.
AN SSSR no.7:86-96 '62.   (MIRA 16:9)

CHAYKOVSKIY, E.G.; TISHKOV, A.Ya.

Parameters of the system of overburden removal in inclined layers.
Trudy Inst. gor. dela Sib. otd. AN SSSR no.7:97-107 '62.
(MIRA 16:9)

CHAYKOVSKIY, E.G.

Selection of the means for mechanized recovery of bottom sediments
of mirabilite-stekletz under conditions found at Lake Kuchuk. Trudy
Inst. gor. dela Sib. otd. AN SSSR no.7:159-169 '62. (MIRA 16:9)

CHAYKOVSKIY, E. F.

CHAYKOVSKIY, E. F.: "X-ray determination of the coefficients of heterodiffusion in
    binary alloys of metals forming hard substitution solutions". Knar'kov, 1955.
    Min Higher Education Ukrainian SSR. Khar'kov Order of Lenin Order of Labor Red
    Banner state U imeni A. M. Gor'kiy. (Dissertations for the Degree of Candidate
    of Physicomathematical Sciences.)

So: Knishnaya letopis' No. 49, 3 December 1955. Moscow.

CHAYKOVSKIY, Ye. F.

√*Latent Energy of Deformation of Metals [Cadmium, Lead, and Copper] at Low Temperatures. V. I. Khotkovich, E. F. Chaikovsky, and Y. V. Zaelikvara (Doklady Akad. Nauk S.S.S.R., 1954, 98, (3), 483–486).—[In Russian]. The latent energy of deformation of Cd and Pb at −196° C. and of Cu at room temp. was measured by the method of K. and Bagrov (ibid., 1951, 81, 1055). The method was based on the measurement of a differential current, I_x, passing between the mid-points of a bridge, two branches of which are formed by a deformed and an undeformed specimen of identical compn., shape, and size; the I_x is due to the difference in resistance between the deformed and the undeformed specimen. The latent energy of deformation was released during annealing, causing an increase in temp. of the deformed specimen and a corresponding change of I_x, which was recorded. The method was capable of measuring quantities of heat of the order of 10^{-3} cal., with an error of 7%. The abs. magnitude of the latent heat of deformation increased with the degree of deformation, and for 65-8% deformation amounted to 1·13 cal./g. for Cd, 0·53 for Pb, and 0·77 for Cu. The ratio of the latent heat of deformation to the total energy expended in effecting deformation was ≅1 for small deformations and decreased rapidly with increase in the degree of deformation. This indicated that the initial stage of plastic deformation occurs with the formation of imperfections in the cryst. metal lattice, stable at the temp. of deformation, and that the work of deformation is stored in the form of the potential energy of imperfections. At a later stage, macroscopic displacements accompanied by the evolution of heat decrease the ratio of the latent energy to the work of deformation.—S. K. L.]

TRANS - B-82533, 2 Feb 55

CHAYKOVSKIY, E.F.

Energy absorption during low-temperature deformation of metals. V. I. Khotkevich, E. F. Chaikovskii, and V. V. Zashkvara (A. M. Gor'kii State Univ., Kharkov). Fiz. Metal. i Metalloved. 1, 200–18(1955).—A deformed specimen was connected in series with a fully annealed standard having the same shape and dimensions, forming 2 branches of a Wheatstone bridge. A strong d.c. was passed through the bridge for 0.01–0.02 sec., and differential current was recorded oscillographically. The current was selected to cause annealing of the deformed sample, which released the latent heat of deformation; thus its temp. was slightly increased over that of the annealed standard when the current was passed. The difference was expressed as $\Delta W = I_d I(4R_d + 2R + r)$ $(2R - r)/4R$, where I_d and R_d are current and resistance in the specimen branch of the bridge, I and R those in the standard branch, r total resistance of the circuit. Latent heat of deformation Q was then obtained from the equation $Q = \int_{T_2}^{T_1} c \, dT - (1/m) \int_0^t (W_1 - W_2) dt$, where T_1 and T_2 are temp. of the test and of the standard specimens at the end of the impulse, t time, c heat capacity, m mass of the sample, T temp. Since the impulse caused a complete annealing of the sample, it was possible to hold that its temp. coeff. of elec. resistance at this time was the same as of the unde-

V. I. Ahotkevich

formed metal. If the resistance of specimens at the end of the impulse and their temp. coeff. of resistance were known, the temp. of each could be detd. and their heat capacity for the T_1-T_2 interval; thus one member of the equation was detd., and the 2nd was obtained by graphic integration. Working scheme and operational steps are fully described. Curves for Cd, Pb, and Cu show the changes of latent heat of deformation with its increase up to 75%, the max. values being 1.13, 0.53, and 0.77 cal./g., resp. During the initial stages of plastic deformation, distortion of space lattice, stable at the deformation temp., takes place. Further deformation lowers activation energy of its elimination so that some distorted lattices are partially eliminated; thus a corresponding latent heat is released. This is helped by macroscopic motion of the body along the slippage planes; again with release of some heat. The theory is developed in detail.   J. D. Gat

CHAYKOVSKIY, Ye.F.

AUTHOR: PINES,B.JA., ČAJKOVSKIJ,E.F.   PA - 2001
TITLE: The X-Ray Method for the Determination of the Coefficients of
             Heterodiffusion in Alloys forming Solid Supplementary Solutions.
PERIODICAL: Doklady Akademii Nauk SSSR, 1956, Vol 111, Nr 6, pp 1234-1237
             (U.S.S.R.(
             Received: 2 / 1957   Reviewed: 3 / 1957

ABSTRACT: The determination of the dependency of concentration of the dif-
fusion coefficient D necessitates the explanation of the distribution of con-
centrations in the sample. This problem can be solved successfully in a system
in which the lattice constant shows a noticeable dependence on concentration.
Such dependence mostly exists in the case of metal alloys which form supplemen-
tary solutions. By realizing a one-dimensional distribution of concentration for
reasons of simplicity, the problem can be solved in the following manner: on to
a plane massive plate of the component I a plane layer of the component II of the
thickness $l < 1/\mu$ is applied. In this connection μ denotes the absorption
coefficient of the X-ray radiation used. It is possible to obtain an X-ray pic-
ture with the interference lines of both components from such a sample. If both
components have a homogeneous lattice with a different lattice constant, two
lines with equal reflection indices can be observed in each case in the X-ray
picture. If the composed plate is heated to such temperatures as are sufficient
for diffusion, a certain distribution $c = c(x)$ of concentrations over the
depth occurs in the plate as a consequence of diffusion and an equivalent change
of the lattice constant a occurs corresponding to depth. From the linear depend-
CARD 1 / 2

PA - 2001

The X-Ray Method for the Determination of the Coefficients of
Heterodiffusion in Alloys forming Solid Supplementary Solutions.

ence of the lattice constant on concentration in first approximation the modifi-
cation of the angle of an interference line can easily be determined. The total
X-ray reflection of a given line on the layers in different depth corresponds to
the superposition of interferences at different angles. If, in a layer of the
thickness l, the entire gamma of concentration from 0 to 1 is obtained, a smeared
out band within the range between the lines of the two components can be observed
on the X-ray picture. Data for the construction of the curve x = x(c) can easily
be determined from the experimental curve of intensity distribution and from this
the distribution c = c(x) can be found. A formula for the direct determination of
concentration gradients at points of different x is then given. By means of this
formula dc/dx can be determined without differentiation of the distribution curve
c = c(x).
The method described here is particularly suited for the determination of diffusion
coefficients in samples with thin films of a thickness of a layer absorbing half
of the radiation. An example deals with the computation of the coefficients of
heterodiffusion for a sample of the Cu-Ni system.

ASSOCIATION: State University of Charkov
PRESENTED BY:
SUBMITTED:
AVAILABLE/Library of Congress.
CARD   2 / 2

CHAYKOVSKIY, E.F.

USSR/Solid State Physics - Diffusion. Sintering   E-6

Abs Jour : Ref Zhur - Fizika, No 1, 1958, 1011

Author   : Chaykovskiy, E.F.

Inst   : Khar'kov University

Title   : Certain Data on the Coefficients of Heterodiffusion in
             Alloys Cu-Ni, Fe-Ni, Fe-Cr With Distorted and Undistorted
             Crystalline Lattice.

Orig Pub : Dokl. AN SSSR, 1957, 112, No 4, 716-719

Abstract : An X-ray-diffraction was made of the coefficients of hete-
             rodiffusion (D) in the systems Cu-Ni, Fe-Ni, and Fe-Cr,
             using the method previously described (Referat Zhur Fizika,
             1957, 19961). Specimens investigated were taken: (1) in
             the form of an electrolytic film, deposited on a massive
             disk; (2) comprising two electrolytic films, deposited in
             sequence, and (3) comprising an electrolytic film, obtained

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USSR/Solid State Physics - Diffurion. Sintering   E-6

Abs Jour   : Ref Zhur - Fizika, No 1, 1958, 1011

in the free state and first annealed at a sufficiently
high temperature, after which it was clamped to a massive
annealed disk so as to make an external contact with it.
Preliminary X-ray diffraction investigation has shown
that directly after the electrolysis, the films produce
on the X-ray photographs smeared lines, i.e., such films
are in non-equilibrium state. Thus, the heterophase dif-
fusion was realized: (a) in specimens, where both compo-
nents were in the state close to equilibrium; (b) in spe-
cimens with both non-equilibrium components in the initial
state, and (c) in specimens with one equilibrium and one
non-equilibrium component. The procedure employed to de-
termine D made it possible to use small durations of dif-
fusion annealing, which, in turn, made it possible to ob-
serve the difference in the coefficient of diffusion in
specimens with equilibrium and distorted lattices. As fol-
lows from the data obtained, the coefficient of

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USSR/Solid State Physics - Diffusion. Sintering

E-6

Abs Jour   : Ref Zhur - Fizika, No 1, 1958, 1011

heterodiffusion for "non-equilibrium" and for previously annealed specimens differ quite noticeably (for example, in the Cu-Ni system the difference is by a factor of 20 times, while the maximum permissible experimental error is 200%).

Card 3/3

PIMES, B.Ya.; CHAYKOVSKIY, E.F.

X-ray investigation of the kinetics of reaction diffusion in the system Al - Sb. Fiz. tver. tela 1 no.6:946-951 Je '59.
(MIRA 12:10)

1.Khar'kovskiy gosudarstvennyy universitet im. A.M. Gor'koge.
(Aluminum-antimony alleys) (Diffusion)

YEZERSKIY, V.I.; PLUZHNIKOV, V.Kh.; CHAYKOVSKIY, E.F.

Observation of artificial earth satellites at the Kharkov
Station. Biul.sta.opt.nabl.isk.sput.Zem.   no.8:15-16
'59.   (MIRA 13:6)

1. Khar'kovskaya stantsiya nablyudeniya iskusstvennykh
sputnikov Zemli.
          (Artificial satellites--Tracking)

GARAZHA, V.I.; CHAYKOVSKIY, E.F.

Reconstruction and investigation of the shutter of the RAFA
3s/25 camera in Kharkov. Biul.sta.opt.nabl.isk.sput.Zem.
no.8:6-8 '60.   (MIRA 14:3)

1. Astronomicheskaya abservatoriya Khar'kovskogo gosuniversiteta.
            (Photographic shutters)

S/126/60/009/03/010/033
E091/E435

AUTHORS: Pines, B.Ya. and Chaykovskiy, E.F.

TITLE: Influence of Plastic Deformation of Nickel on the Diffusion Rate in the Ni-S System

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol 9, Nr 3, pp 369-373 (USSR)

ABSTRACT: Specimens of the shape of rectangular blocks,
               5 x 5 x 10 mm, were made from technically pure nickel.
               In order to remove distortions due to mechanical working,
               the specimens were annealed in a reducing atmosphere of
               hydrogen at 1000°C for one hour. They were then deformed
               in compression and the degree of deformation δ was
               determined from the formula

$$\delta = \frac{H - h}{H} \cdot 100\% \qquad (1)$$

               where H is the initial thickness of the specimen and
               h is the final thickness after compression. The
               maximum degree of deformation was 80%. After deformation,
               the specimens were subjected to diffusion annealing in
               sulphur vapours. Several specimens with various degrees
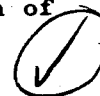
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S/126/60/009/03/010/033
E091/E435

Influence of Plastic Deformation of Nickel on the Diffusion Rate in
the Ni-S System

of deformation were annealed simultaneously. In order
to determine the diffusion rate of sulphur in nickel,
the thickness of the layer of Ni-S compounds formed
during isothermal annealing was measured by means of a
MIM-6 metallurgical microscope or with a micrometer.
Two methods of annealing were tried, the first as
outlined by Presnyakov's paper (Ref 6) and the other by
annealing nickel in sulphur vapours. The first method
proved to be unreliable. The second method, which was
adopted by the authors, involved annealing in a special
simple vacuum apparatus in which the vapour pressure of
S could be fairly accurately attained and controlled
independently of the diffusion annealing temperature of
the specimen. The apparatus has two nichrome heaters
mounted on one vertical porcelain tube. The lower
heater volatilizes the S and the upper one is a
furnace for diffusion annealing in the middle portion of
which the nickel specimens were placed on a holder.
Card 2/5   Above the second heater is a cooler on which the S

S/126/60/009/03/010/033
E091/E435

Influence of Plastic Deformation of Nickel on the Diffusion Rate
in the Ni-S System

vapours condense. After each annealing, the S
was scraped off the walls of the cooler and thrown
into the lower volatilizing furnace. The quantity of
S in the volatilizer was chosen so that this element
should not be able to volatilize completely during the
maximum annealing time. The upper portion of the
porcelain tube,through which the ends of the thermocouple
were led to a hermetic seal, were connected to the tube
for evacuation and pressure control in the apparatus.
Evacuation by means of a vacuum pump reduced the pressure
in the apparatus above the cooler during annealing to
approximately 10^{-2} mm Hg. The temperature of the
volatilizing furnace was maintained at 300°C which
ensured a S vapour pressure in the working space of
the furnace of approx 50 mm Hg (Ref 7); the temperatures
of the volatilizing furnace and the diffusion annealing
furnace were controlled by two nickel-nichrome
thermocouples. The lay-out of the apparatus is shown
in Fig 1. Diffusion annealing was carried out at 440°C

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E091/E435

Influence of Plastic Deformation of Nickel on the Diffusion Rate
in the Ni-S System

for one hour, at 500°C for one hour and at 600°C for
15 and 30 minutes. Control runs were carried out at an
annealing temperature of 700°C. The results are shown
in Fig 2. The dependence of the thickness of the Ni-S
compound layer on the degree of deformation δ, which
can be found experimentally, enables the change of the
diffusion coefficients D of S through this layer
with increase in δ to be determined. For the
evaluation of D, Pines' ratio $D = \ell^2/4t$ was used
(Ref 5), where ℓ = thickness of the phase layer forming
as the result of uniform diffusion, t = time of
isothermal annealing. In Fig 3, the values of diffusion
coefficients thus found in relation to degree of
preliminary deformation are shown for Ni specimens
annealed in S vapours at 600°C for 30 minutes. From
the values of D found, the activation energy of
diffusion of S vapours through the layer of nickel
sulphides formed were determined from the relationship

Card 4/5 $\log D - \frac{1}{T}$.   There are 3 figures and 9 references.

S/126/60/009/03/010/033
E091/E435

Influence of Plastic Deformation of Nickel on the Diffusion Rate
in the Ni-S System

8 of which are Soviet and 1 German.

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet
im. A.M.Gor'kogo (Khar'kov State University imeni
A.M.Gor'kiy)

SUBMITTED: July 16, 1959

Card 5/5

PLUZHNIKOV, V.Kh.; SINCHESKUL, B.F.; CHAYKOVSKIY, E.F.

Determining the individual error of the observer in evaluating
the passing of an artificial earth satellite through the AT
thread. TSir.Astron.obser.Khar.un. no.24:33-35 no.24:33-35
                                                        (MIRA 15:3)
'61.   (Artificial satellites--Tracking)

S/126/61/011/001/003/019
E111/E452

AUTHORS: Pines, B.Ya. and Chaykovskiy, E.F.

TITLE: Investigation of the Kinetics of the Recrystallization of Cold-Deformed Iron

PERIODICAL: Fizika metallov i metallovedeniye, 1961, Vol.11, No.1, pp.34-39

TEXT: The authors, with Kaluzhinova (Ref.1), have shown that in the initial stage of low-temperature annealing of copper very rapid block growth occurs, explicable on the basis of a dislocation mechanism (polygonization); further block growth after high temperature annealing is due to diffusional collective recrystallization. The object of the present work was to see whether similar effects occur in other metals, particularly Armco iron. Zh.V.Skuratovskaya, G.V.Ptitsyn and V.G.Krivko participated in the work, which was carried out as before (Ref.1). In the first part the relation between linear block size (e.g. L,μ) and the degree of plastic deformation (ϵ,%) was found. This is shown in Fig.1 for deformations up to about 70%. In the next stage, block growth kinetics in isothermal annealing at 600 to 1000°C of specimens plastically deformed approximately to 50% were studied.
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S/126/61/011/001/003/019
E111/E452

Investigation of the Kinetics of the Recrystallization of Cold-Deformed Iron

Before X-ray examination, specimens were etched with 5% alcoholic nitric acid.   200-micron diameter capillaries were used for specimens annealed up to 890°C and larger diameters (up to 560 microns) for higher temperatures.   The work showed that specimens 50% deformed and having an initial block size of about 0.4 microns showed, after annealing at 600, 700, 800 or 890°C for periods of 5 seconds to 20 hours, effects similar to those found for copper (Ref.1);   in the initial stages, blocks of about 4 microns are rapidly formed.   The activation energy for this rapid block growth is estimated at 41000 cal/g atom.   As with copper, further block growth or prolonged high-temperature annealing is diffusional in character.   Fig.2 shows dependence of block dimension (L, μ) on isothermal annealing time (Vt, hrs);   the graphs 1, 2 and 3 relate to the annealing temperatures 890, 950 and 1000°C respectively.   Activation energies for this process are 51 kcal/g.at at 700, 800 and 890°C and 68.4 at 950 and 1000°C.   Changes in secondary extinction accompanying the diffusional growth were measured as previously (Ref.1) with a type УPC-50И (URS-50I)
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S/126/61/011/001/003/019
E111/E452

Investigation of the Kinetics of the Recrystallization of Cold-Deformed Iron

apparatus. Fig.3 shows changes in integral intensity I for (110) and (220) lines with respect to block size (L,μ) at 700, 800 and 890°C.(curves 1, 2 and 3 respectively). Block size was found by the micro-beam method; the authors discuss the inherent errors. Fig.4 shows relative errors as functions of block size (L,μ) for two sizes of capillary used in the determination and for two different absolute errors (Curve 1, $\Delta N = 3$, capillary 200 μ; Curve 2, $\Delta N = 1$, capillary 200 μ; Curve 3, $\Delta N = 3$, capillary 56 μ; Curve 4, $\Delta N = 1$, capillary 560 μ). As the dimension rises from 3 to 5.5 microns, the error rises tenfold. There are 4 figures, 1 table and 7 references: 5 Soviet and 2 non-Soviet.

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet im. A.M.Gor'kogo
            (Khar'kov State University imeni A.M.Gor'kiy)

SUBMITTED: May 26, 1960

Card 3/5

S/126/61/011/001/003/019
E111/E452

Investigation of the Kinetics of the Recrystallization of Cold-
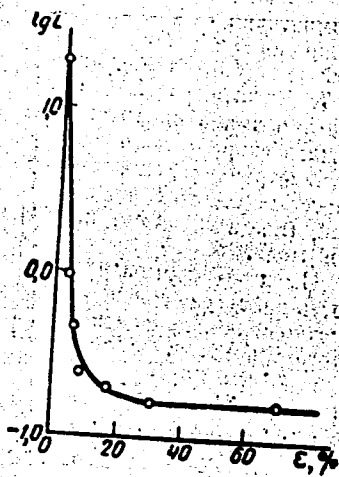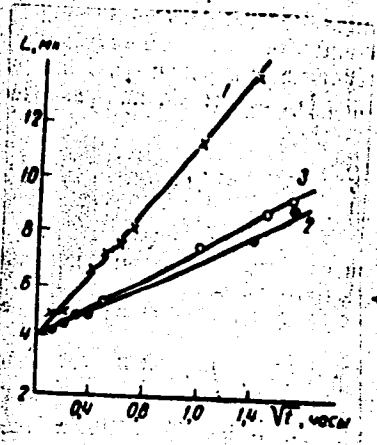Deformed Iron

Fig.1.

Fig.2.

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Investigation of the Kinetics of the Recrystallization of Cold-Deformed Iron
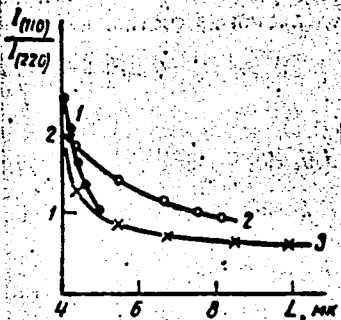
Рис. 3. Изменение интегральной интенсивности I линий (110) и (220) в зависимости от размера блока для различных температур отжига:
$1 - 700°$; $2 - 800°$; $3 - 890°$.

Fig.3.

Рис. 4. Изменение относительной погрешности $\frac{\Delta V}{V}$ в зависимости от заданных размеров L блока при различных значениях величины A (освещаемой поверхности образца) и абсолютной погрешности числа пятен ΔN:
$1 - \Delta N = 3$, капилляр 300 мк; $2 - \Delta N = 1$, капилляр 300 мк; $3 - \Delta N = 3$, капилляр 500 мк; $4 - \Delta N = 1$, капилляр 500 мк.

Fig.4.

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PINES, B.Ya.; CHAYKOVSKIY, E.F.

Does diffusion in metals accelerate or retard plastic deformation?
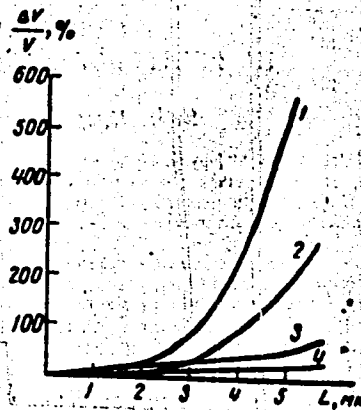Fiz. met. i metalloved. 11 no. 5:812-841 My '61.   (MIRA 14:5)

1. Khar'kovskiy gosudarstvennyy universitet imeni A.M. Gor'kogo.
        (Metallography)   (Deformations (Mechanics))

ACCESSION NR: AP4040315   S/0057/64/034/006/1092/1100

AUTHOR: Chaykovskiy, E.F.; Pyatigorskiy, G.M.

TITLE: On determining the heat of desorption of positive ions in the surface ioni-
zation of alkali metal atoms

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.6,1964, 1092-1100

TOPIC TAGS: ionization, surface ionization, ionization phenomena, desorption, ad-
sorption, alkali metal, potassium

ABSTRACT: The relation between the surface ionization current and the temperature
of the adsorbing surface is discussed in considerable detail on the basis of the
equation

$$n = \sigma\left[C\exp\left(-\frac{\lambda_+}{kT}\right) + D\exp\left(-\frac{\lambda_0}{kT}\right)\right].$$

relating the flux n of incident atoms, the surface density σ of adsorbed atoms, and
the heats of desorption λ_+ and λ_0 of the adsorbed ions and atoms, respectively; C
and D are constants proportional to the statistical weights of the ions and atoms,
and it is further assumed that λ_+ is a linear function of σ and the degree of ioni-

Card 1/3

ACCESSION NR: AP4040315

zation of the adatoms decreases rapidly with increasing σ. The threshold effect is
derived. The occurrence of hysteresis is explained, and the conditions under which
it may be expected are derived. The influence of the oven temperature is also dis-
cussed. The ionization of potassium on a tungsten surface was investigated experi-
mentally. The 8 mm diameter adsorber-emitter was made of rolled tungsten sheet and
was found by x-ray diffraction to be highly oriented with the (001) faces exposed.
The collector was located 0.5 mm from the emitter, with a grid between the two el-
ectrodes to suppress secondary emission. The electrodes and the oven for evaporat-
ing the potassium were enclosed in a vessel with heated walls, which could be open-
ed without breaking the vacuum. The usual aging and outgassing procedures were fol-
lowed, after which the ion current and degree of ionization were measured as func-
tions of the emitter temperature. The results are presented graphically. The rela-
tion between ion current and emitter temperature in the threshold region was found
to be close to that reported by J.H.Childs (Paper Ins.Aeronaut.Sci.103,45,1959).
The heat of desorption of the potassium ions was calculated from the data and was
found to be 2.2 ± 0.15 eV/ion; in this calculation the values 4.34 V and 4.52 eV
were adopted for the ionization potential of potassium and the work function of the
(001) tungsten surface, respectively. Two possible sources of systematic error are
mentioned: 1) the vacuum (10^{-7} tor) may not have been sufficiently high to prevent

Card 2/3

ACCESSION NR: AP4040315

oxidation of the tungsten surface and consequent increase of its work function; 2) the published values of the vapor pressure of potassium are not as accurate as is necessary for adequate reduction of the data. The errors from these sources may have partially compensated each other, for the measured degrees of ionization were below those calculated from the Saha-Langmuir equation. "In conclusion the authors consider it their pleasant duty to express their gratitude to Doctor of Physico-mathematical Sciences, Prof.N.I.Ionov, Doctor of Physico-mathematical Sciences,Prof. E.Ya.Zandberg, and Candidate in Physico-mathematical Sciences N.D.Potekhinaya for very valuable advice and discussions." Orig.art.has: 21 formulas and 5 figures.

ASSOCIATION: none

SUBMITTED: 18Jun62   DATE ACQ: 19Jun64   ENCL: 00

SUB CODE: NP   NR REF SOV: 014   OTHER: 005

Card 3/3

T/EWP(t)/EWA/EWP(b)/EWA(m)-2   Po-6/Pab-10/Pr-4/Pad/Pu-4   IJP(c)   JD/HW/
HW/JG/AT

ACCESSION NR: AP5000040   S/0057/64/034/012/2194/21

AUTHOR: Chaykovskiy, E...; Ptitsyn, G.V.

TITLE: Use of the effect of positive surface ionization for investigating cathode sputtering of metals

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.12, 1964, 2194-2196

TOPIC TAGS: cathode sputtering, surface ionization, platinum, nickel

ABSTRACT: One of the experimental problems encountered in studying cathode sputtering is that of obtaining ion beams of different intensity, but in each case monoenergetic and incident at a definite angle. In the present work to obtain the requisite beams there was used the phenomenon of positive surface ionization. The positive potassium ions thus produced were employed to investigate sputtering of platinum and nickel. The measurements were carried out by means of equipment previously used to study positive surface ionization and diagramed in Fig. 1 of the Enclosure. The emitter and collector were made of platinum and nickel ribbon and measured 0.002 x 0.4 x 1.25 cm. The spacing between them was 0.03 to 0.04 cm. A potential of from 100 to 500 V was maintained between the emitter and collector.

1/3

L 23829-65

ACCESSION NR: AP5000849

In preliminary measurements there was determined the dependence of the sputtering coefficient (yield in terms of atoms per ion) on the density of the ion beam; it was found that this dependence is nil, which indicates that the preheated, bombarded surfaces were clean. Then there were obtained the ion energy dependences of the sputtering coefficient. The results are shown in Fig.2 of the Enclosure. It will be evident that in the investigated energy range (100 to 500 V) the dependences are linear. Orig.art.has: 1 formula and 2 figures.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov, Khar'-kov (All-Union Scientific Research Institute of Single Crystals)

SUBMITTED: 19May64   ENCL: 01
                                                           SUB CODE: EM, EC
NR REF SOV: 003   OTHER: 004

2/3

L 35502-65   EWT(1)/EWT(m)/EPF(c)/EWA(d)/EPA(w)-2/EEC(t)/T/EWA(m)-2   Pab-10/Pr-4
ACCESSION NR: AP5007302   IJP(c)   WW/JW   S/0057/65/035/003/0528/0534

AUTHOR: Chaykovskiy, E. F.; Ptitsyn, G. V.

TITLE: Positive surface ionization of potassium on texturized ribbons of platinum

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 3, 1965, 528-534

TOPIC TAGS: ionization, surface ionization, potassium surface ionization, surface atom ionization, alkali metal surface ionization, positive surface ionization, surface ionization coefficient

ABSTRACT: An experimental investigation was made to clarify the causes of discrepancies in the results of earlier investigations concerning the positive surface ionization of alkali metals on Pt. The experiment was arranged to minimize the number of uncontrollable parameters. Potassium was selected because the Datz and Taylor data on that element (J. Chem. Phys., v. 25, 1956, 389) deviated considerably from the solutions of the Saha and Langmuir equation. The polycrystalline surfaces tested in earlier experiments were replaced by wholly texturized platinum ribbon. The surface of rolled and heat-treated ribbons was a mosaic of the (111) faces of Pt crystals. Platinum plates 0.01 x 0.4 x 1.25 cm were used both as emitter and collector, with a gap between them of 0.04 cm. The emitter and collector were heated at 1600C for one hour with a subsequent short heating at 1700C. The vapor

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emitter. The deposits were found to retain their texture of (111) faces. The
ionization coefficient dropped considerably when different materials were used for
the collector and emitter. The low value of the ionization coefficient obtained in
earlier experiments might be explained by the deposition of atomized foreign material
on the emitter. Orig. art. has: 3 figures and 5 formulas.   [FP]

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov (All-
Union Scientific Research Institute of Single Crystals)

SUBMITTED: 19May64   ENCL: 00   SUB CODE: SS,GC

NO REF SOV: 013   OTHER: 005   ATD PRESS: 3215

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ACCESSION NR: AP5007302

method of measurement was used. The temperature of the potassium evaporizer was kept 20—30C below the temperature of the other parts of the measuring device. The vacuum of the system was maintained at better than 1×10^{-6} mm Hg. The experiment established the dependence of ion current on the emitter temperature at various magnitudes of potassium vapor pressure, which was varied within a wide range yielding ion current densities from 30 $\mu amp/cm^2$ to 80 $mamp/cm^2$. The resulting curves show the typical form for positive surface ionization of easily ionizing elements. The hysteresis in the dependence of ion current on emitter temperature, which was pronounced at lower potassium vapor pressures, diminished as the pressure increased and disappeared completely at a certain critical pressure. The desorption heat of K^+ ions from Pt was 2.5 ± 0.2 ev. The ionization coefficient of K atoms at 1600K was found to be $90 \pm 5\%$, with the corresponding work function value of 4.8 ± 0.2, which is somewhat lower than the 5.3 ev derived from Richardson curves for polycrystalline platinum. The difference may be due to the use of a texturized surface in the experiment. An investigation was made of the cause for the substantially higher (25%) value of the ionization coefficient as compared to that obtained by Datza and Taylor. The assumption of a combination of Pt and K to form an intermetallic compound with a low work function was abandoned because experiments showed that no such reaction takes place. Greater significance is ascribed to atomization of the collector and the deposition of its material on the emitter. It was established experimentally that up to 400 monolayers per second may be deposited on the

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L 54752-65   EWT(1)/EPA(s)-2/EWT(m)/EPF(c)/EPF(n)-2/EPA(w)-2/T/EWP(t)/EWP(z)/EWP(b)/
EWA(m)-2   Pab-10/Pr-4/Pad/Pt-7/Pu-4   IJP(c)   JD/WW/HW/JG
ACCESSION NR: AP5015639   UR/0057/65/035/006/1132/1138

AUTHOR: Chaykovskiy, E.F.; Pyatigorskiy, G.M.; Ptitsyn, G.V.

TITLE: Temperature hysteresis of positive surface ionization and the
work function of a uniform emitter

SOURCE: Zhurnal tekhnicheskoy fiziki, v.35, no.6, 1965, 1132-1138

TOPIC TAGS: surface ionization, alkali metal, hysteresis, work func-
tion, platinum, molybdenum, nickel, rubidium, potassium, cesium

ABSTRACT: The authors calculate the critical threshold temperature
T_c above which hysteresis of the threshold temperature for positive
surface ionization on a uniform emitter does not occur. By using the
known linear dependences of the ionic heat of adsorption and the emit-
ter work function on the degree of surface coverage when the coverage
is small, they obtain the relation $e(F - V)/kT_c = 2 + \log(g_a/g_i)$,
where F is the work function, V is the ionization potential, and g_a
and g_i are the statistical weights of the electron in the atom and
ion, respectively. Corrections to this formula were calculated with

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the nonlocalized adsorption model of E.F.Chaykovskiy and G.M.Pyati-
gorskiy (DAN SSSR 153,401,1963) and the localized adsorption model of
V.M.Gavrilyuk (Ukr.fiz.zh.4,734,1959; Kinetika i kataliz 2,No.4,497,
1961) and found to be small (the calculations with the nonlocalized
adsorption model are given). It is proposed that the correction be
evaluated empirically for a given adsorption mechanism by employing
an emitter with a known work function and that the empirical correc-
tion be used to derive the work functions of other emitters from sur-
face ionization threshold hysteresis measurements. Surface ioniza-
tion threshold temperature hysteresis measurements were made with Rb
on W, Rb on Ni, K on Pt and Cs on Mo by the vapor method of E.Ya.
Zandberg and N.I.Ionov (UFN 67,No.4,581,1959) using equipment that
has been described elsewhere (E.F.Chaykovskiy, Yu.B.Skrynnik and G.M.
Pyatigorskiy, PTE,1965). The 14 x 4 x 0.1 mm electrodes were made of
well-oriented foil and were mounted with a 0.4 mm gap between them.
Both electrodes were made of the same metal to avoid contamination of
the emitter by sputtering. The surface ionization current was mea-
sured as a function of temperature (with both increasing and decreas-
ing temperatures) for different values of the alkali metal vapor

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pressure. The threshold temperature at that vapor pressure above
which threshold temperature hysteresis ho longer occurs was deter-
mined by graphical interpolation. The data for Rb on W were used to
obtain the correction term, and this correction was employed to de-
rive the work functions of the other emitters from the remaining data.
The work functions for the (111) face of Ni, the (111) face of Pt and
the (100) face of Mo were thus found to be 4.57, 4.82 and 4.26 eV,
respectively. The limit of error of these work functions is estimat-
ed to be 0.05 eV. "In conclusion, the authors consider it their
pleasant duty to express their gratitude to Professor N.I.Ionov, Doc-
tor of Physico-mathematical Sciences, and E.Ya.Zandberg, Doctor of
Physico-mathematical Sciences, for very valuable discussions." Orig.
art.has: 19 formulas and 3 figures.

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L 54752-65
ACCESSION NR: AP5015639

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut monokris-
tallov, Khar'kov (All-Union Scientific Research Institute for Single
Crystals

SUBMITTED: 22Aug64   ENCL: 00   SUB CODE: EM, EC

NR REF SOV: 011   OTHER: 005

Card 4/4

L 54770-65   EWT(1)/EPF(c)/EPA(w)-2/T/EWA(m)-2   Pab-10/Pr-4   IJP(c)
ACCESSION NR: AP5015645   UR/0057/65/035/006/1158/1159

AUTHOR: Chaykovskiy, E.F.; Ptitsyn, G.V.

TITLE: Positive surface ionization of sodium on oriented platinum strips

SOURCE: Zhurnal tekhnicheskoy fiziki, v.35, no.6, 1965, 1158-1159

TOPIC TAGS: surface ionization, work function, platinum, sodium

ABSTRACT: The authors have previously investigated the surface ioni-
zation of K on oriented Pt strips and obtained the value 4.7 ± 0.2
eV for the work function of the (111) face of Pt (ZhTF 35,No.3,1965).
In the present paper they report results of similar measurements
with the same apparatus of the surface ionization of Na on Pt. The
measurements were undertaken to provide data for a case in which the
ionization potential exceeds the work function. The measurements
were made by the vapor method with $0.4 \times 1.8 \times 0.01$ cm Pt electrodes
separated by an 0.04 cm gap in a vacuum of 10^{-6} mm Hg. The elec-

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ACCESSION NR: AP5015645   2

trodes were cleaned by prolonged heating at 1800°K, and x-ray inves-
tigations showed the surface to consist of outcroppings of (111)
planes. The temperature dependence of the ion current was determin-
ed for Na vapor pressures from 2 x 10^{-5} to 6 x 10^{-3} mm Hg and from
these data the value of 4.77 ± 0.07 eV was derived for the work func-
tion of the (111) face of Pt. This result is in good agreement with
the value obtained similarly from measurements with K (cited above)
and with that obtained by the authors (ZhTF 35,1122,1965) from mea-
surements of the temperature above which surface ionization thresh-
old temperature hysteresis does not occur. The small scattering of
the experimental points showed that the contrast of the investigated
platinum surface was low. "In conclusion, the authors consider it
their pleasant duty to express their gratitude to Professor N.I.Io-
nov, Doctor of Physics-mathematical Sciences, and E.Ya.Zandberg,
Doctor of Physico-mathematical Sciences, for very valuable discus-
sions." Orig.art.has: 1 figure.

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L 54770-65
ACCESSION NR: AP5015645

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut mono-
kristallov, Khar'kov (All-Union Scientific Research Institute for
Single Crystals)

SUBMITTED: 21Nov64   ENCL: 00   SUB CODE: EM,IC

NR REF SOV: 004   OTHER: 001

Card 3/3 MB.

L 62228-65   EPF(n)-2/EWP(e)/EWT(m)/EWP(t)/EWP(b)   IJP(c)   MJW/CI/JD/HW/JG

ACCESSION NR: AP3020740

UR/0057/65/035/008/1493/1500

AUTHOR: Chaykovskiy, E.F.; Pyatigorskiy,G.N.; Ptitsyn,G.V.

TITLE: Thresholds and optimum conditions for positive surface ionization

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 8, 1965, 1493-1500

TOPIC TAGS: surface ionization, heat adsorption, positive ionization, emission threshold, alkali metal, tungsten, nickel, platinum, molybdenum

ABSTRACT: The theory of surface ionization is discussed and a method is devised for deriving the heat of adsorption of the ion from the envelope of the family of surface ionization curves (ion current versus surface temperature for constant incident atom flux) obtained by varying the incident atom flux. This method is applicable regardless of whether the ionization potential is greater or less than the work function. It is suggested that the point at which the ionization curve is tangent to the envelope be regarded as the threshold point. Experimental surface ionization curves were obtained for K on W, Ni, and Pt, for Rb on W and Ni, for Cs on Mo, and for Na on Pt with an apparatus that has been described elsewhere by two of the authors (ZhTF 35, 1158, 1965). The emitter and collector were oriented polycrystalline strips separated by approximately 0.35 mm. The W and Mo surfaces

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ACCESSION NR: AP5020740

consisted mainly of (100) faces, and the Ni and Pt surfaces of (111) faces. The alkali metal vapor pressure was varied from 10^{-6} to 10^{-3} mm Hg; this caused a shift of 350 to 450° in the threshold temperature. The experimental data were processed by the method developed in the first part of the paper, and the following values for the heat of adsorption of the ions were found: for K on W, Ni, and Pt - 2.3, 2.4, and 2.6 eV, respectively; for Rb on W and Ni - 1.8 and 2.1 eV; for Cs on Mo - 1.9 eV; and for Na on Pt - 3.1 eV. The probable error in each case was 0.1 eV. These findings are in satisfactory agreement with data in the literature, although the latter were obtained with unoriented polycrystalline emitters. It is suggested that this agreement may be due to the predominance of the electrostatic image force in determining the heat of adsorption. "In conclusion, the authors consider it their pleasant duty to express their gratitude to Doctor of Physico-mathematical Sciences Professor N.I.Ionov and to Doctor of Physico-mathematical Sciences E.Ya.Zandberg for very valuable suggestions." Orig. art. has: 36 formulas and 1 figure. [15]

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov, Khar'kov (All-Union Scientific Research Institute of Single Crystals)

SUBMITTED: 21Nov64   ENCL: 00   SUB CODE: EM, NP

NO REF SOV: 011   OTHER: 004   ATD PRESS: 4076

Card 2/2

CHAYKOVSKIY, E.F.; SKRYNNIK, Yu.B.; PYATIGORSKIY, G.M.

Device for studying the positive ionization of vapors of
alkali metals and their salts on the surface of single-crystal
emitters. Prib. i tekh.eksp. 10 no.5:164-169 S-O '65.
(MIRA 19:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov,
Khar'kov. Submitted August 7, 1964.

CHAYKOVSKIY, E.F.; PYATIGORSKIY, G.M.

Adsorption energy during ionization of atoms on a metal surface.
Dokl. AN SSSR 153 no.2:401-404 N '63.   (MIRA 16:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov,
stsintillyatsionnykh materialov i osobo chistykh khimicheskikh
veshchestv. Predstavleno akademikom P.A.Rebinderom.

CHAYKOVSKIY, G. N.

Book—378. Kubalskii, M. M., Krivoshei, V. D., Savickii, N. I.,
and Chaikovskii, G. N., Typical problems in theoretical mechanics
and their solutions [Tipovlye zadachi po teoreticheskoi mekhanike
i metody ich reshenlya], Kiev, Gos. Izdat. Tekh. Lit. USSR, 1956,
511 pp. 11 r. 90 k.

No solid familiarity with theoretical mechanics can be gained
without solving completely a large number of problems. On the
other hand, a beginner is only seldom able to find, in concrete
cases, the most convenient approach to the problem in question
and he often does much unnecessary work. The aim of the present
volume is to help the students in surmounting such difficulties by
showing with typical examples from separate branches of mechan-
ics how one has to proceed in treating actual questions.

Subject is divided traditionally into three main sections: statics,
kinematics and dynamics. Statics contains 8 chapters (in all, 37
worked examples) on the plane and 4 chapters (21 problems) on the
space systems of forces. Kinematics opens with a brief chapter on
elementary motions of a particle (12 typical examples), then come
two sections dealing with fundamental cases of motion of a rigid
body and with complicated types of motion of material points (in
all, 24 problems), whereas the remaining three chapters (26 ex-
amples) are devoted to combined motions of rigid bodies. Dy-
namics is divided into two main parts: four chapters on dynamics

Kabicek, M. M., Kucmerka, V. D Sivicka, Nal . . .

of a particle (33 completely solved problems) and nine chapters on dynamics of mechanical systems (61 examples).

Separate chapters are of the following standard structure: first of all comes a brief theoretical account of related facts, then an exact statement of all axioms and basic theorems, methodical hints to solving problems of the group in question, and, finally, typical worked out examples, taken for the most part from current Russian collections. The text is abundantly provided with instructive figures. Mathematical presuppositions do not surpass that modest measure known from usual courses of theoretical mechanics.

Paper and print are adequate to the aim of this book, which is recommended also to every one who will or must recapitulate the subject in question.   V. Vodicka, Czechoslovakia

2/2

OLEKHNOVICH, V.A., kand. tekhn. nauk; CHAYKOVSKIY, G.N., kand. tekhn. nauk, dots.

Investigating water-flow conditions in models of circular culvert
pipes. Trudy Kiev. avt.-dor. inst. no.3:121-128 '57.   (MIRA 11:5)
                          (Hydraulic models)

CHAYKOVSKIY, G.N. (Nizhniy Tagil, ul. Parkhomenko, d.9, kv.29);
RYZHKOV, M.N.

Massive hemorrhage from the duodenum and upper segment of the
small intestine. Vest. khir. 91 no.9:104-105 S'63.
(MIRA 17:4)

1. Iz khirurgicheskogo (zav.-kand. med. nauk T.A. Grasmik) i
patologoanatomicheskogo (zav.-M.N. Ryzhkov) otdeleniy 3-y
gorodskoy bol'nitsy (glavnyy vrach-M.M. Fomin) goroda Nizhnego
Tagila.

RYZHKOV, M.N.; CHAYKOVSKIY, G.N. (Nizhniyy Tagil)

Traumatic rupture of a nonparasitic cyst in the spleen. Arkh.
pat. 26 no.2:78-80 '64.
(MIRA 17:8)

1. Patologoanatomicheskoye i 1-ye khirurgicheskoye otdeleniye
3-y Nizhne-Tagilskoy gorodskoy bol'nitsy (glavnyy vrach M.M.
Fomin).