MILOSLAVOV, V.K.

Mechanization and automatization of operations in the motion-picture printing industry. Tekh.kino i telev. 4 no.9:11-13 S '60. (MIRA 13:9)

1. Leningradskiy filial Giprokinopoligrafa.
(Motion-picture industry)

LITTEROV, S.M., insh.; MILOSLAVOV, Yu.K., inzh.

Lighting of Moscow's subway stations. Svetotekhnika 4 no.6:7-14 Je '58. (MIRA 11:6)

1.Gosudarstvennyy proyektno-izyskatel'nyy institut.
(Moscow--Subways) (Lighting)

LITTKROV, S.M., inzh.; MILOSLAVOV, Yu.K., inzh.

Lighting of the new Moscow subway stations. Svetotekhnika 4 no.9: 8-10 S '58. (MIRA 11:8)

1. Gosudarstvennyy proyektno-izyskatel'nyy institut (metro).
(Moscow--Subways) (Fluorescent lighting)

VOLOVIK, A.A., starshiy nauchnyy sotrudnik; NIKITIN, Yu., mladshiy nauchnyy sotrudnik; MILOSLAVOVA, T., mladshiy nauchnyy sotrudnik; SIVENKOVA, A., mladshiy nauchnyy sotrudnik

Potato wart and nitrafen preparation. Zashch. rast. ot vred. i bol. 9 no.8:42 '64. (MIRA 17:12)

1. Nauchno-issledovatel'skiy institut kartofel'nogo khozyaystva.

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Gi[illegible]protrombinemiya I vita in K v K linike vnutrye[illegible]kh bolyenyy. Klinich [illegible]yelitstva, 1949, No. [illegible] s. 61-6[illegible]

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BILICH, I.L.; MILOSLAVSKAYA, A.M. (Kazan')

"Concise manual on emergency diagnosis and treatment of internal diseases" by N.IA. Cherviakovskii. Reviewed by I.L. Bilich, A.M. Miloslavskaia. Kaz.med.zhur. 40 no.5:122-124 S-O '59. (MIRA 13:7)

(MEDICINE, INTERNAL)

MARAKOV, V.T.; MILOSLAVSKAYA, G.M.

Dynamics of organic matter in turf-Podzolic soils plowed by different methods. Nauch.dokl.vys.shkoly: biol.nauki no.4:211-214 '60.
(MIRA 13:11)

1. Rekomendovana kafedroy zemledeliya Moskovskogo gosudarstvennogo universiteta im. M.V.Lomonosova.
(PODZOL)
(HUMUS)
(PLOWING)

MAKAROV, V.T.; MILOSLAVSKAYA, G.M.

Dynamics of organic matter in turf-Podzolic soils during the period marked by the aftereffect of different plowing methods. Nauch. dokl. vys. shkoly; biol. nauki no. 1:207-212 '61. (MIRA 14:2)

1. Rekomendovana kafedroy zemledeliya Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova.
(HUMUS) (PODZOL) (PLOWING)

MILOSLAVSKAYA, L. I.: Mantor Med Sci (diss) -- "The effect of barbiturates on the activity of asparaginase and glutaminase of the brain". Ryazan', 1958. 11 pp (Ryazan' Med Inst im Acad I. P. Pavlov), 200 copies (KL, No 5, 1959, 157)

MILOSLAVSKAYA, L.I.

Effect of barbiturates on asparaginase and glutaminase activity of the brain. [with summary in English]. Biokhimiia 23 no.3:347-350 My-Je '58 (MIRA 11:8)

1. Kafedra biokhimii Ryazanskogo meditsinskogo instituta im. I.P. Pavlova.

(BRAIN, metabolism.
asparaginase & glutaminase, eff. of barbiturates in rats (Rus))
(AMIDASES,
asparaginase & glutaminase in brain, eff. of barbiturates in rats (Rus))
(BARBITURATES, effects,
on brain asparaginase & glutaminase in rats (Rus))

YAKIMCHUK, P.P., kand.med.nauk; MILOSLAVSKIY, Ya.M., kand.med.nauk;
MILOSLAVSKAYA, L.I., kand.med.nauk

Effect of nitrogen dioxide on the adrenal cortex in white rats in chronic intoxication. Gig.i san. 26 no.12:79-80 D '61.
(MIRA 15:9)

1. Iz kafedry gigiyeny, kafedry fakul'tetskoy terapii Ryazanskogo meditsinskogo instituta.
(ADRENAL CORTEX) (NITROGEN OXIDES--PHYSIOLOGICAL EFFECT)

1. MILOSLAVSKAYA, N. M.

2. USSR (600)

4. Murmansk - Mocoma Baltica

7. Changes in weight of Macoma baltica in different conditions of habitation. Dokl. AN SSSR 89, No. 6, 1953.

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

[redacted]
MILOSLAVSKAYA, N.M.

USSR/Biology - Ecology

Card 1/1 Pub. 22 - 38/45

Authors : Miloslavskaya, N. M.

Title : Distribution of bivalvia mollusks in eastern Murman in connection with the temperature fluctuations of the habitation medium

Periodical : Dok. AN SSSR 99/4, 633-635, Dec 1, 1954

Abstract : The effect of seasonal temperature fluctuations of the water on the habitation and distribution of sea-bottom fauna of bivalvia mollusks of different zoogeographical origin was investigated. Six references: 3-USSR; 1-Norwegian; 1-Danish and 1-German (1878-1951). Table; graph.

Institution : Academy of Sciences USSR, The S. M. Kirov Kol'sk Branch, Biological Station, Murmansk

Presented by: Academician E. N. Pavlovskiy, September 9, 1954

MILOSLAVSKAYA, N.M

USSR/ Biology - Marine zoology

Card 1/1 Pub. 22 - 45/49

Authors : Miloslavskaya, N. M.

Title : On the ecology of Macoma Baltica (L.)

Periodical : Dok. AN SSSR 101/3, 565-567, Mar 21, 1955

Abstract : Biological data are presented on the nature of the mollusk Macoma Baltica living in the northern seas of Europe and in the far eastern seas. Three references: 2 USSR and 1 German (1926-1953). Table; graph.

Institution : Acad. of Sc., USSR, The S. M. Kirov Kolsk Branch, The Murmansk Biological Station

Presented by : Academician E. N. Pavlovskiy, December 25, 1954

CHERNOVSKAYA, Ye.N.; MILOSLAVSKAYA, N.M., kandidat biologicheskikh nauk, otvetstvennyy redaktor; GOLOVNIN, M.I., redaktor izdatel'stva; TVERITINOVA, K.S., tekhnicheskiy redaktor

[Hydrological and hydrochemical characteristics of the littoral zone of the eastern Murman Coast and the White Sea] Gidrologicheskie i gidrokhimicheskie usloviia na litorali Vostochnogo Murmana i Belogo moria. Moskva, Izd-vo Akademii nauk SSSR, 1956. 113 p. (MLRA 9:11)
(White Sea] (Murman Coast)

MILOSLAVSKAYA, N.M.

Temperature as a factor influencing the distribution of bivalvular mollusks of Eastern Murman. Trudy Murm. biol. sta. 4:140-150 '58. (MIRA 11:5)

1. Murmanskaya biologicheskaya stantsiya Kol'skogo filiala AN SSSR.
(Murman Coast—Lamellibranchiata) (Ocean temperature)

MILOSLAVSKAYA, N.M.

Some considerations on the benthos of Eastern Murman and its role in the life of the codfish Gadus aeglefinus L. Trudy Murm. biol. sta. 4:151-156 '58. (MIRA 11:5)

1. Murmanskaya biologicheskaya stantsiya Kol'skogo filiala AN SSSR.
(Murman Coast—Codfish) (Fishes--Food)

MILOSLAVSKAYA, N.M.

New warm-water molluska in the fauna of Eastern Murman [with summary in English]. Zool. zhur. 37 no. 6:939-942 Je '58. (MIRA 11:7)

1. Murmanskaya biologicheskaya stantsiya Kol'skogo filiala AN SSSR.
(Murman Coast--Mollusks)

MILOSLAVSKAYA, N.M.

Applying the concepts of interspecific relationships to the study of deep-sea benthic fauna. Trudy MMBI no.3:131-146 '61. (MIRA 15:3)

1. Laboratoriya gidrobiologii Murmanskogo morskogo biologicheskogo instituta.

(Marine fauna)

MILOSLAVSKAYA, N.M.

Interspecific relations on the bottom of the sea. Trudy MMBI no.5:63-124 '64. (MIRA 17:4)

1. Laboratoriya gidrobiologii Murmanskogo morskogo biologicheskogo instituta.

MILOSLAVSKAYA, Ye.

Economic efficiency of high-speed, dry-cargo ships. Mor. flot 23 no.7:7-8 Jl '63. (MIRA 16:8)

1. Starshiy inzh. Dal'nevostochnogo filiala TSentral'nogo nauchno-issledovatel'skogo instituta morskogo flota.

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[redacted]

L 05317-67 EWP(J)/EWT(m) RM

ACC NR: AM6021383 Monograph UR/

Magula, Valentin Emmanuilovich; Druz', Boris Ivanovich; Kulagin, Vitaliy Dmitriyevich; Miloslavskaya, YEketerina Petrovna; Novoselov, Mikhail Vasil'yevich

Flexible shipboard containers (Sudovyye myagkiye yemkosti) Leningrad, Izd-vo "Sudostroyeniye," 1966. 287 p. illus., biblio., 2000 copies printed.

TOPIC TAGS: containers, packaging, flexible containers, disposable shipboard containers

PURPOSE AND COVERAGE: This book is intended for engineering, technical, and scientific personnel of the shipbuilding industry, and of the marine, river and fishing fleets. It contains general information on the latest types of shipboard packages, disposable elastic containers, including their design, materials, and special uses. The authors acknowledge the following contributors: I. I. Korobkin, A.S. Babayev, Yu. F. Andrianov, S. D. Knoring, A. R. Lekhtsiyer, Ye. P. Pokromkin, V. V. Moroz, L. M. Mal'tsev, F. R. Nitochkin, and P. V. Marchenko.

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ACC NR: AM6021383

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ACC NR: AM6021383

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Card 3/3

MILOSLAVSKIY, A.I., inzhener; TRAKHTENBERG, I.M., inzhener

Experience in working soils in winter. Mekh.stroi.12 no.11:23-24 N'55. (MLRA 9:1)

(Frozen ground)

GOL'DIN, A.M.; MILOSLAVSKIY, A.I.

Using the S-222 diesel-powered hammer mounted on the D-157 bulldozer in ripping frozen ground. Mekh. stroi. 16 no.1:29-30 Ja '59. (MIRA 12:1)

(Frozen ground) (Hammers)

MILOSLAVSKIY, A.M., inzh.; ROMANOV, Ye.S., inzh.

Substation with a deep lead-in using isolators in lieu of 6 kv. cutouts. Elek.sta. 32 no.6:85-86 Je '61. (MIRA 14:8)
(Electric substations)

VASSERMAN, I.M.; YEVDOKIMOVA, M.I.; MARAMZIN, A.I.; MILOSLAVSKIY, A.S.; TOLSTOGUZOV, A.D.; FOMINA, Ye.A.

Continuous method of precipitating basic nickel carbonate with complex automation of the process. TSvet. met. 37 no.12: 25-31 D '64 (MIRA 18:2)

MILOSLAVSKIY, I.L., inzhener.

Ways of economising metals in forging shops (from experience of the forging shop of the Moscow Stalin Automobile Plant). (In: Ryzhkov,D.A., ed. Ekonomiia metallov v kuznechno-shtampovochnom proizvodstve. Moskva, 1953, p.109-131) (MLRA 7:1)

(Forging) (Punching machinery)

NEYMAN, Pavel Pavlovich; MILOSLAVSKIY, I.L., inzhener, retsenzent; KASHNKOV, M.A., kandidat tekhnicheskikh nauk, redaktor; SHMEL'KINA, S.I., tekhnicheskiy redaktor; UVAROVA, A.F., tekhnicheskiy redaktor.

[Heating furnaces in forge shops] Nagreval'shchik pechei kuznechno-shtampovochnykh tsekhtov. Moskva, Ges. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1956. 122 p. (MLRA 9:6)
(Furnaces, Heat treating)

MASSEN, V.A.; MILOSLAVSKIY, I.L.; PAVLOV, S.P.; POGODILOV, M.N.; SHEVELEV, A.Ye.; KUNITSA, S.S.; YAKOVLEV, V.G.; CHESNOKOV, V.K.; KRYLOV, B.F.; SHIKHANOVICH, B.A.; YAITSKOV, S.A.

Proposals awarded prizes at the 16th All-Union Contest for Electric Power Economies. Prom.energ. 17 no.10:12-14 O '62. (MIRA 15:9)
(Technological innovations--Competitions)

MILOSLAVSKIY, I. M.

"Clinical Significance of Bronchography in Nonspecific Suppurations of the Lungs." Cand Med Sci, Dnepropetrovsk State Medical Inst, Khar'kov, 1954. (KL, No 2, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

MILOSLAVSKIY, I.M., kand.med.nauk

Importance of bronchography in making a differential diagnosis of various nonspecific pulmonary suppurations. Vrach.delo no.8:863-865 Ag '58 (MIRA 11:8)

1. Kafedra fakul'tetskoy khirurgii (zav. - prof. A.Z. TSeytlin) Khar'kovskogo meditsinskogo instituta i Oblastnaya klinicheskaya bol'nitsa.
(BRONCHI--RADIOGRAPHY)
(LUNGS--DISEASES)

MILOSLAVSKIY, I.M., kand.med.nauk

Bronchography as a method for controlling the course and efficacy of treatment of nonspecific lung suppurations. Sov.med. 22 no.11:121-123 N'58 (MIRA 11:11)

(LUNG DISEASES, ther.
suppurative dis., bronchography in determ. of efficacy of ther. (Rus))

MILOSLAVSKIY, I.M., kand.med.nauk

Remote result of one-stage excision of the bladder in cancer.
Urologiia 24 no.3:61-62 My-Je '59. (MIRA 12:12)

1. Iz khirurgicheskogo otdeleniya (zav. I.M. Miloslavskiy) Khar'kovskogo oblastnogo onkologicheskogo dispansera.
(BLADDER, neoplasms,
surg., result of 1-stage excis. (Rus))

MILOSLAVSKIY, I.M., kand.med.nauk

Our experience with total gastrectomy in cancer of the cardia of the stomach. Nov. khir. arkh. no.3:80-84 My-Je '60. (MIRA 15:2)

1. Khirurgicheskoye otdeleniye (zav. - I.M.Miloslavskiy) Khar'kovskogo oblastnogo onkodispansera.
(STOMACH--CANCER)

MILOSLAVSKIY, I.M., kand.med.nauk (Khar'kov, ul.Artema, d.6, kv.4)

Total removal of the colon and rectum in polyposis with malignization of polypi. Nov. khir. arkh. no.4:102-104 Jl-Ag '60. (MIRA 15:2)

1. Khirurgicheskoye otdeleniye (zav. - I.M.Miloslavskiy) Khar'kovskogo oblastnogo onkologicheskogo dispansera.
(INTESTINES--SURGERY) (INTESTINES--CANCER)

MILOSLAVSKIY, I.M.

Total and subtotal combined resections of the stomach in cancer.
Vop.onk. 6 no.2:33-37 F '60. (MIRA 14:2)
(STOMACH--SURGERY)

MILOSLAVSKIY, I.M.

Surgical treatment of cancer of the rectum. Vop. onk. 6 no.4:90-94 Ap '60. (MIRA 14:3)
(RECTUM—CANCER)

MILOSLAVSKIY, I.M., kand.med.nauk

Role of bronchography in the diagnosis of nonspecific pulmonary suppuration. Kaz.med. zhur. no.1:22-26 Ja-F'61 (MIRA 16:11)

1. Fakul'tetskaya khirurgicheskaya klinika (direktor-prof. A.Z. TSeytlin) Khar'kovskogo meditsinskogo instituta i Khar'kovskogo oblastnogo onkologicheskogo dispansera (glavvrach-Stanislavskaya).

MILOSLAVSKIY, I.M.

Combined surgery in gastric cancer. Kaz. med. zhur. no.2: 34-37 Mr-Ap '62. (MIRA 15:6)

1. Khirurgicheskoye otdeleniye (zav. - kand.med.nauk I.M. Miloslavskiy) Khar'kovskogo oblastnogo onkologicheskogo dispansera (glavnyy vrach - N.G. Stanislavskaya).
(STOMACH--CANCER) (STOMACH--SURGERY)

MILOSLAVSKIY, I.M., kand.med.nauk (Khar kov,ul.Artema,d.6 kv.4);
KOSTYUKOVSKIY, I.M.

Morphological changes in the region of the esophago-intestinal anastomosis after gastrectomy. Klin.khir. no.8:18-22 Jl '62.
(MIRA 15:11)

1. Khirurgicheskoye otdeleniye (zav. - kand.med.nauk I.M. Miloslavskiy) Khar'kovskogo oblastnogo onkologicheskogo dispansera.
(STOMACH--SURGERY)

MILOSLAVSKIY, I. M.

Comparative evaluation of some types of anesthesia in transperitoneal total gastrectomy. Vop. onk. 8 no.3:39-48 '62.
(MIRA 15:4)

1. Iz khirurgicheskogo otdeleniya (zav. - kand. med. nauk I. M. Miloslavskiy) Khar'kovskogo oblastnogo onkologicheskogo dispansera.

(STOMACH—SURGER) (ANESTHESIA) (STOMACH—CANCER)

MILOSLAVSKIY, I.M.

Late observations following gastrectomy for cancer of the cardia.
Sov.med. 28 no.4:19-22 Ap '65. (MIRA 18:6)

1. Khirurgicheskoye otdeleniye (nav. - doktor med.nauk I.M. Miloslavskiy) Khar'kovskogo oblastnogo onkologicheskogo dispansera (glavnyy vrach - zasluzhennyy vrach UkrSSR N.T.Stanislavskaya).

ZAYTSEV, N.D., VYTRIKUSH, Ye.V., MILOSLAVSKIY, K.V.

Use of fluorescent lights for illumination in microscopic studies. Lab.delo 4 no.5:48-50 S-O '58 (MIRA 11:11)

1. Iz kafedry gistologii i embriologii (zav. - prof. N.D. Zaytsev) Stanislavskogo meditsinskogo instituta.
(MICROSCOPY--TECHNIQUE)
(FLUORESCENT LIGHTING)

MILOSLAVSKIY, K.V.; YEVDOKIMOV, V.P.

Support for spectrographs. Zav. lab. 31 no.1:131-132 '65.
(MIRA 18:3)

1. TSentral'naya nauchno-issledovatel'skaya laboratoriya L'vovskogo soveta narodnogo khozyaystva.

MIKHEYEV, M. N., ZIMNEV, P. N., MILOSLAVSKIY, K. Ye.

Control with the Help of a Coercion Meter of the Case-hardening Depth and of the Quality of Heat-Treatment of Motor Parts. Vestnik Mashinostroyeniya No 6-7, 30, 1945.

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(Radio--Congresses)

MILOSLAVSKIY, L.P.

Electrolytic bath. Tekh. kino i telv. no. 8:60-61 Ag '58.
(MIRA 11:8)

1. Moskovskaya kinostudiya nauchno-popularnykh fil'mov.
(Cinematography--Developing and developers)

MILOSLAVSKIY, M.G.

The technique of wood architecture in Russia during the 16th and 17th centuries. Trudy Inst.ist. est. i tekh. 7:44-111 '56. (MLRA 9:9)
(Architecture--History) (Building, Wooden)

MILOSLAVSKIY, M.G., kand.arkhitektury

Work of Russian inventors of the beginning and middle of the 19th century in the field of brick manufacture. Mat. po ist. stroi. tekh. no.2:120-144 '62. (MIRA 16:5)
(Brickmaking)

MILOSLAVSKIY, M.Ya., kand.med.nauk; GUSHCHINA, L.S.; MARIM'YAN, L.S.

Case of extremely premature puberty. Akush. i gin. 40 no.3:127-129 My-Je '64. (MIRA 18:6)

1. Ukrainskiy institut okhrany materinstva i detstva imeni Krupskoy (dir. - kand.med.nauk A.I.Kornilova), kafedra akusherstva i ginekologii pediatricheskogo fakul'teta (zav. - prof. V.F. Matveyeva) Khar'kovskogo meditsinskogo instituta i Ukrainskiy institut eksperimental'noy endokrinologii (dir. - kand.med.nauk S.V.Maksomov).

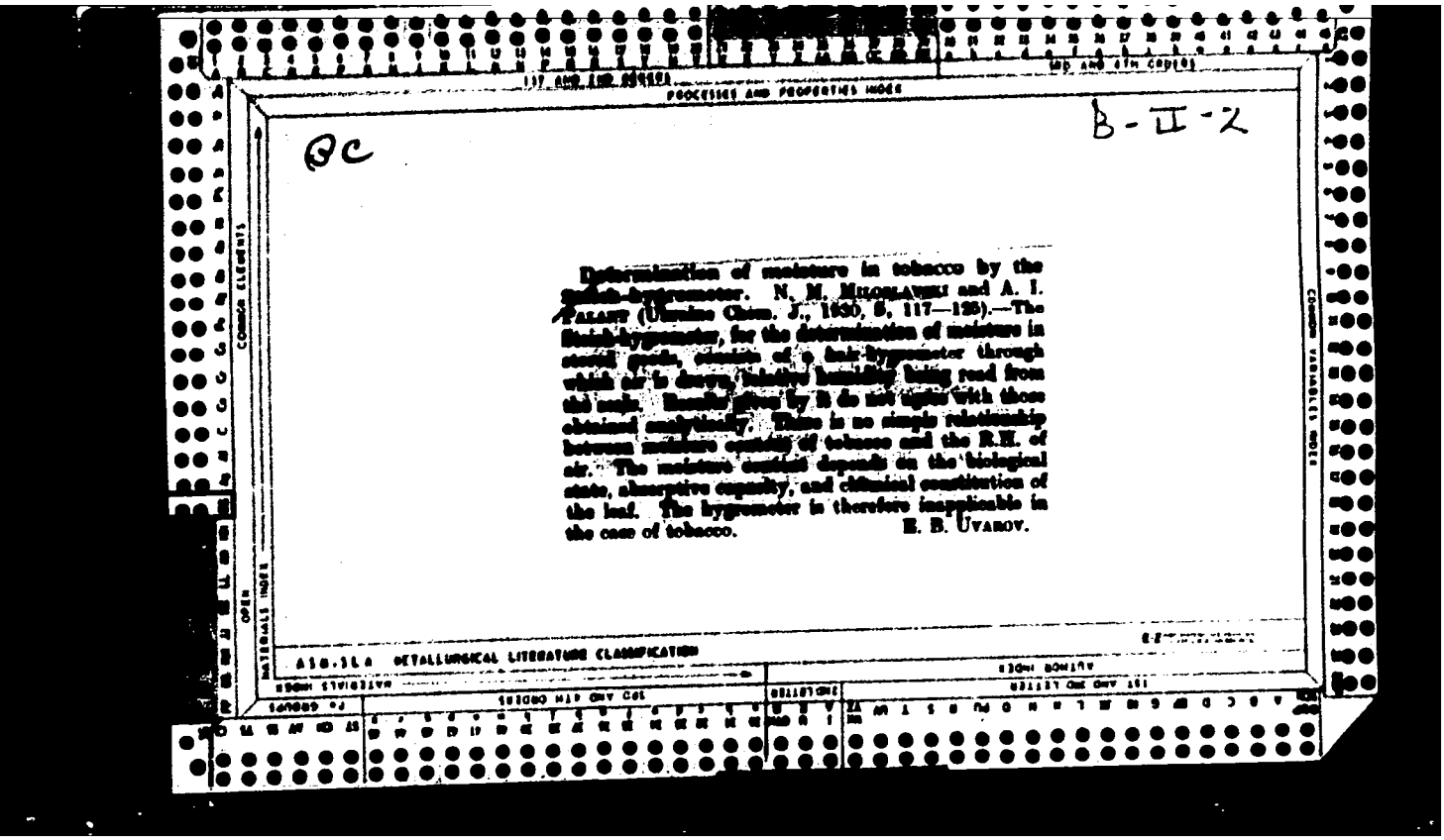
MILOSLAVSKIY, M.Ya.; ZHUROVA, M.V.

Detection and treatment of disorders of sexual development in girls. Trudy Ukr.nauch.-issl.inst.eksper.endok. 18:323-327 '61.
(GENERATIVE ORGANS, FEMALE--ABNORMITIES AND DEFORMITIES)

NEPOROZHNIY, P.S. (Moskva); BELYAKOV, A.A. (Moskva); RUSSO, G.A. (Moskva); BOROVOY, A.A. (Moskva); NEKRASOV, A.M. (Moskva); MILOSLAVSKIY, M.A. (Moskva); ROKOTYAN, S.S. (Moskva); RAZGON, V.N., inzh.; TSVERAVA, G.K., inzh. (g.Boksitogorsk)

Principal trends in over-all electrification. Elektrichestvo no. 11:87-90 N '60. (MIRA 13:12)

1. Mosenergo (for Razgon).
(Electrification)



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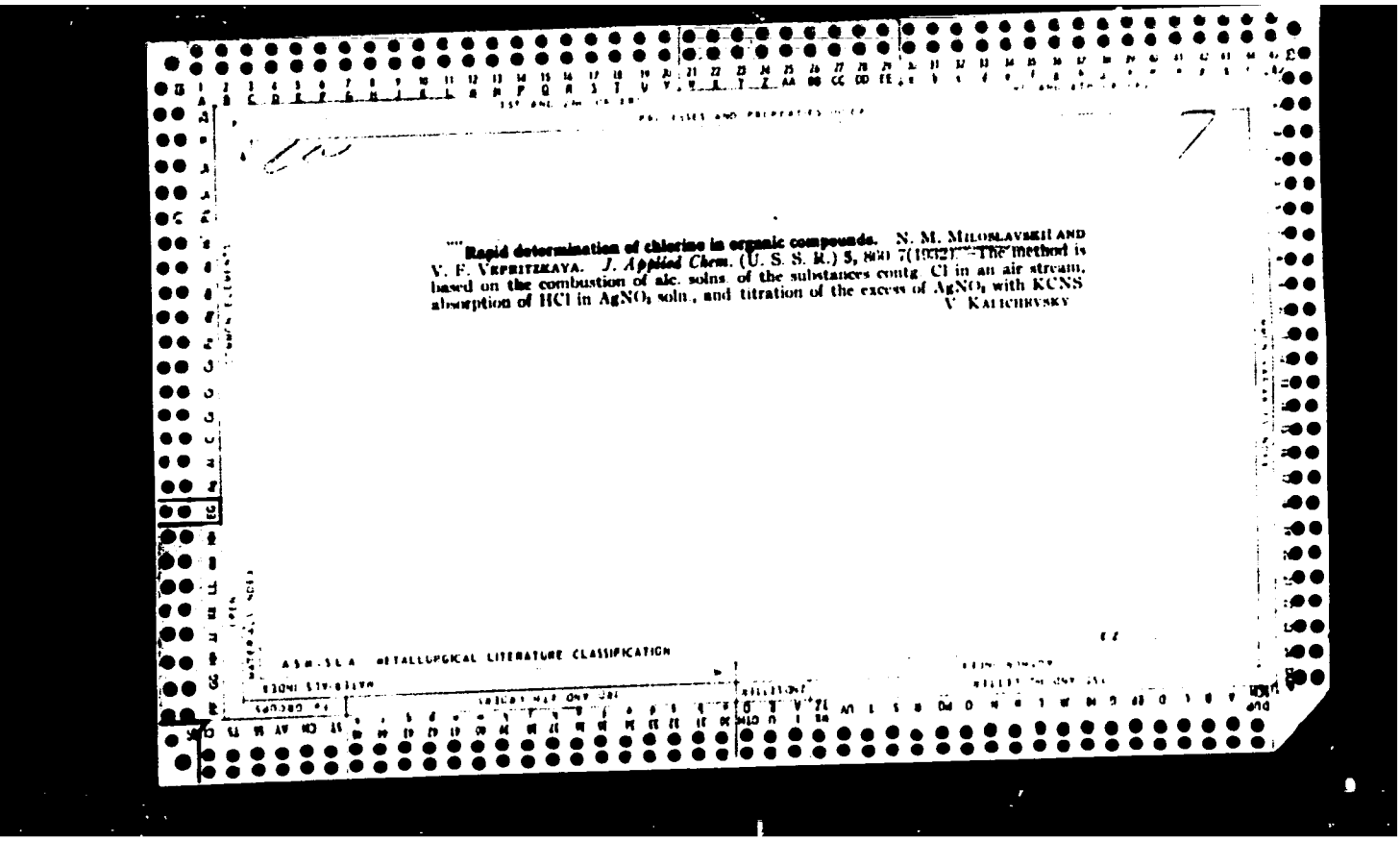
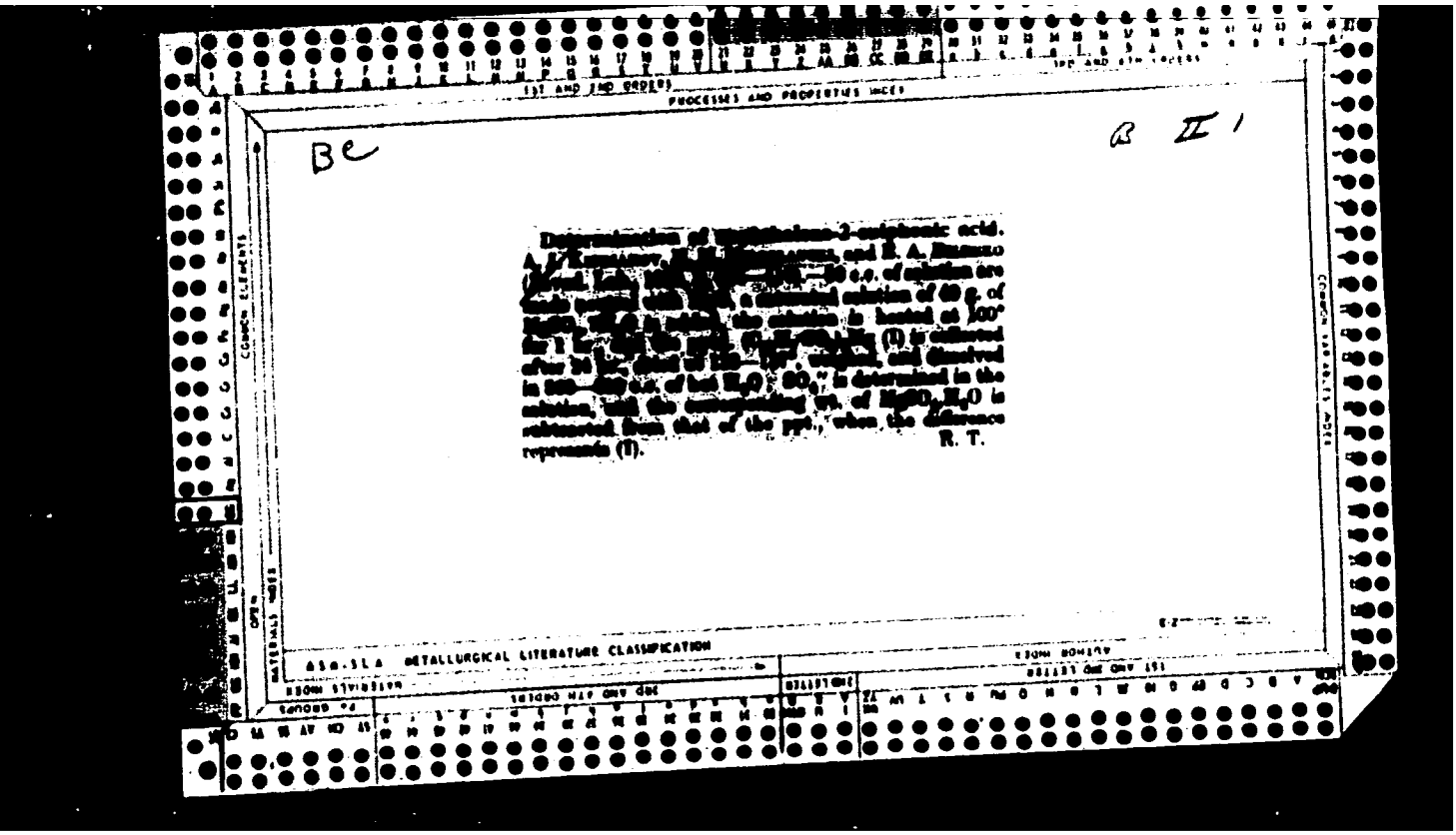
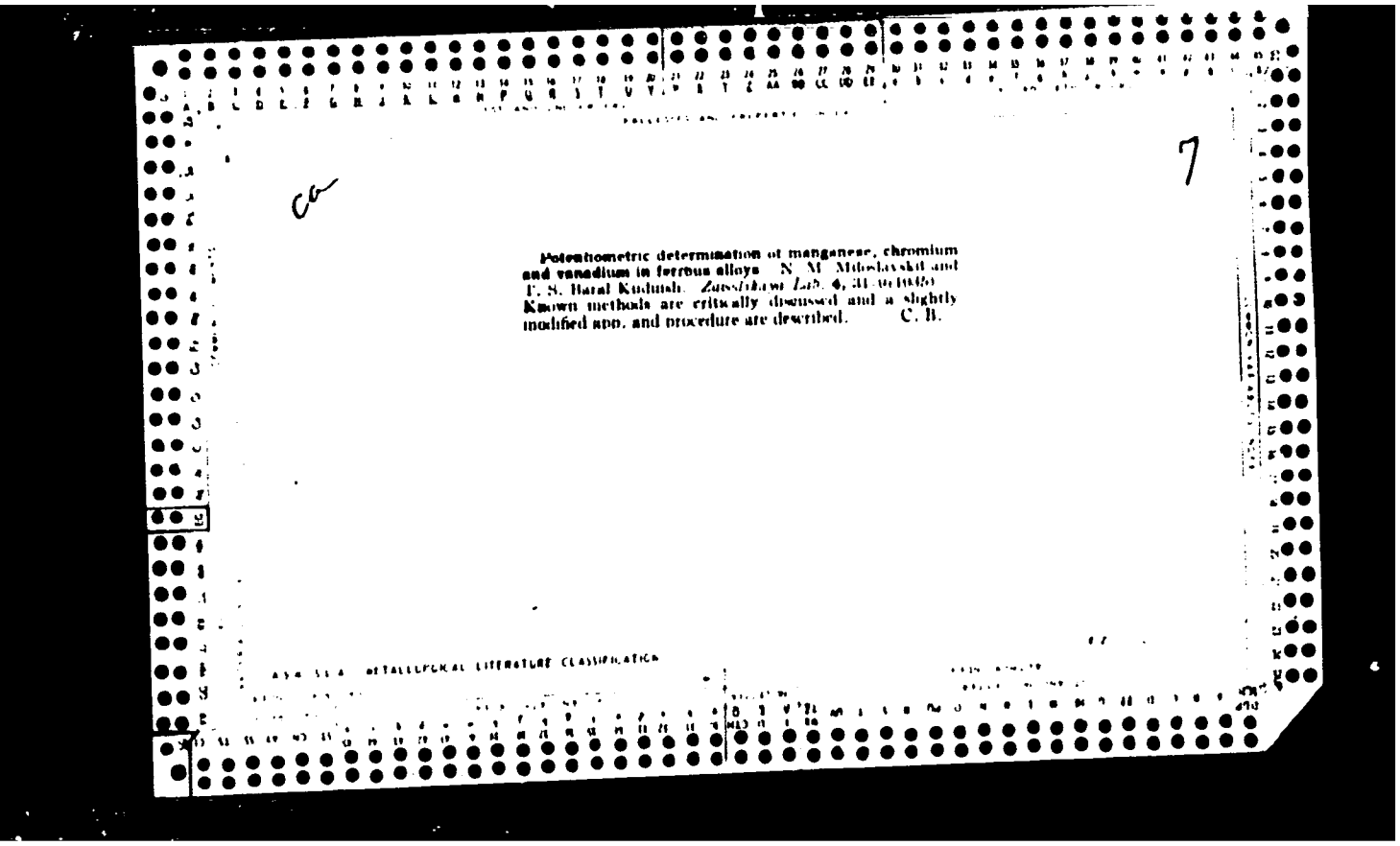
B-II-2

Determination of moisture in tobacco by the [illegible]-hygrometer. N. M. Mitoslavski and A. I. Palaev (Ukraine Chem. J., 1930, 5, 117—126).—The [illegible]-hygrometer, for the determination of moisture in [illegible] grain, consists of a hair-hygrometer through which air is drawn, relative humidity being read from the scale. Results given by it do not agree with those obtained analytically. There is no simple relationship between moisture content of tobacco and the R.H. of air. The moisture content depends on the biological state, absorptive capacity, and chemical constitution of the leaf. The hygrometer is therefore inapplicable in the case of tobacco. E. B. Uvarov.

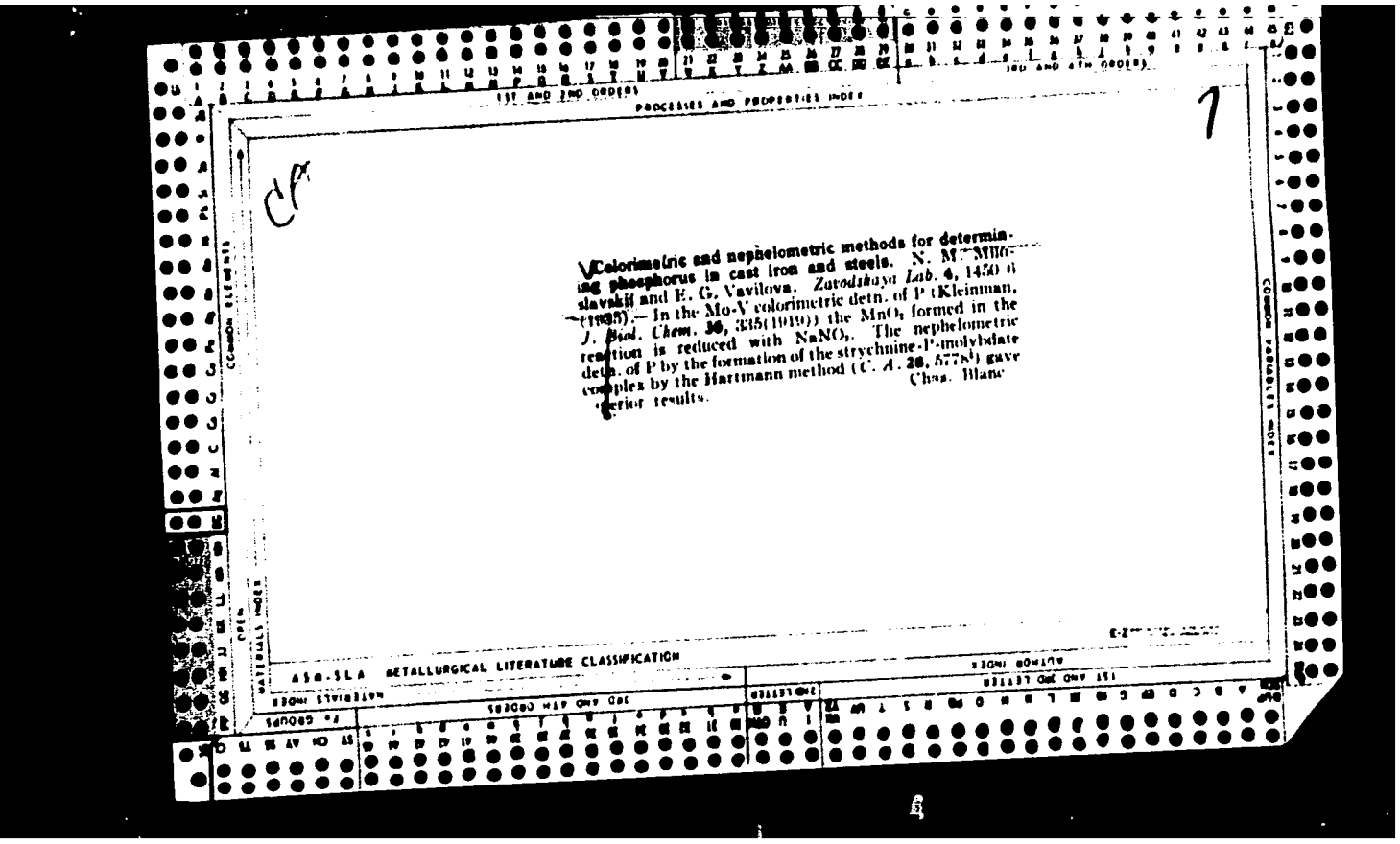


"Rapid determination of chlorine in organic compounds. N. M. Miloslavskii and V. F. Vepritzkaya. *J. Applied Chem.* (U. S. S. R.) 5, 800 7(1932). The method is based on the combustion of alc. solns. of the substances contg. Cl in an air stream, absorption of HCl in $AgNO_3$ soln., and titration of the excess of $AgNO_3$ with KCNS
V. Kaichevsky

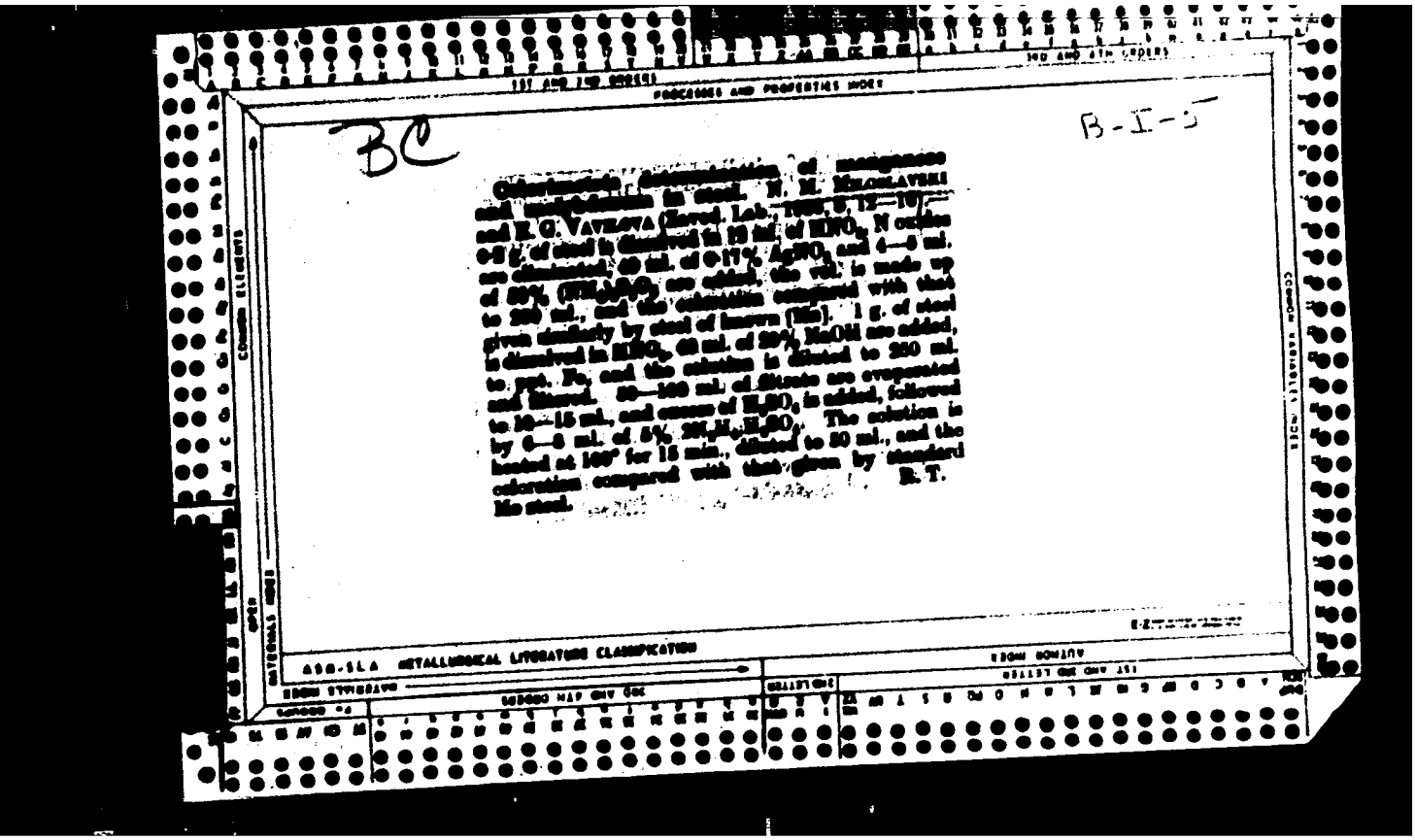


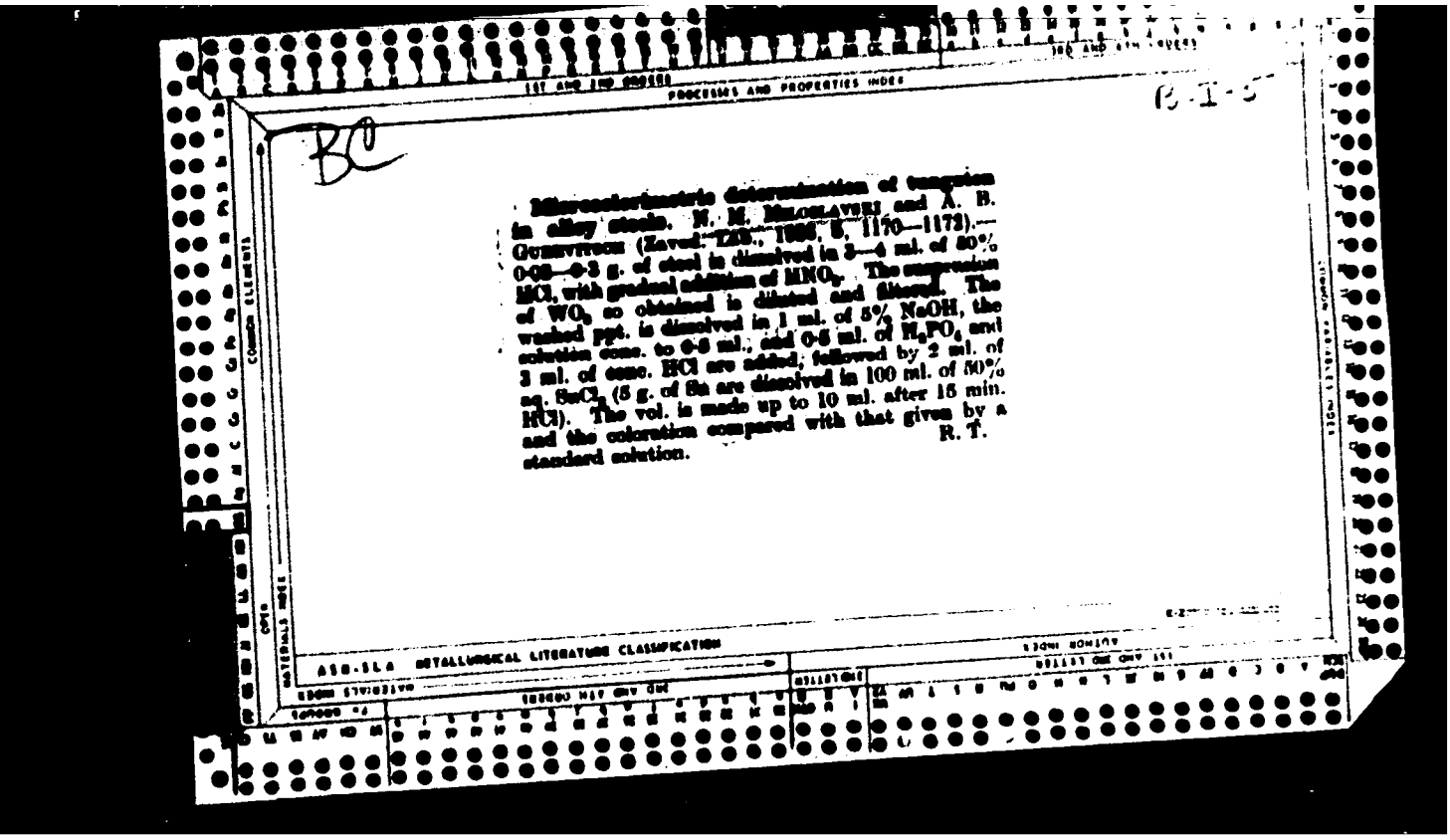


Potentiometric determination of manganese, chromium and vanadium in ferrous alloys. N. M. Miloslavskii and T. S. Baral Kudinah. *Zavodskaya Lab.* 6, 31 (1937). Known methods are critically discussed and a slightly modified app. and procedure are described. C. B.



Colorimetric and nephelometric methods for determining phosphorus in cast iron and steels. N. M. Milovslavskii and E. G. Vavilova. *Zavodskaya Lab.* 4, 1450 (1935).—In the Mo-V colorimetric detn. of P (Kleinman, *J. Biol. Chem.* 36, 335(1919)) the MnO_4 formed in the reaction is reduced with $NaNO_2$. The nephelometric detn. of P by the formation of the strychnine-P-molybdate complex by the Hartmann method (*C. A.* 28, 5778) gave superior results. Chas. Blanc





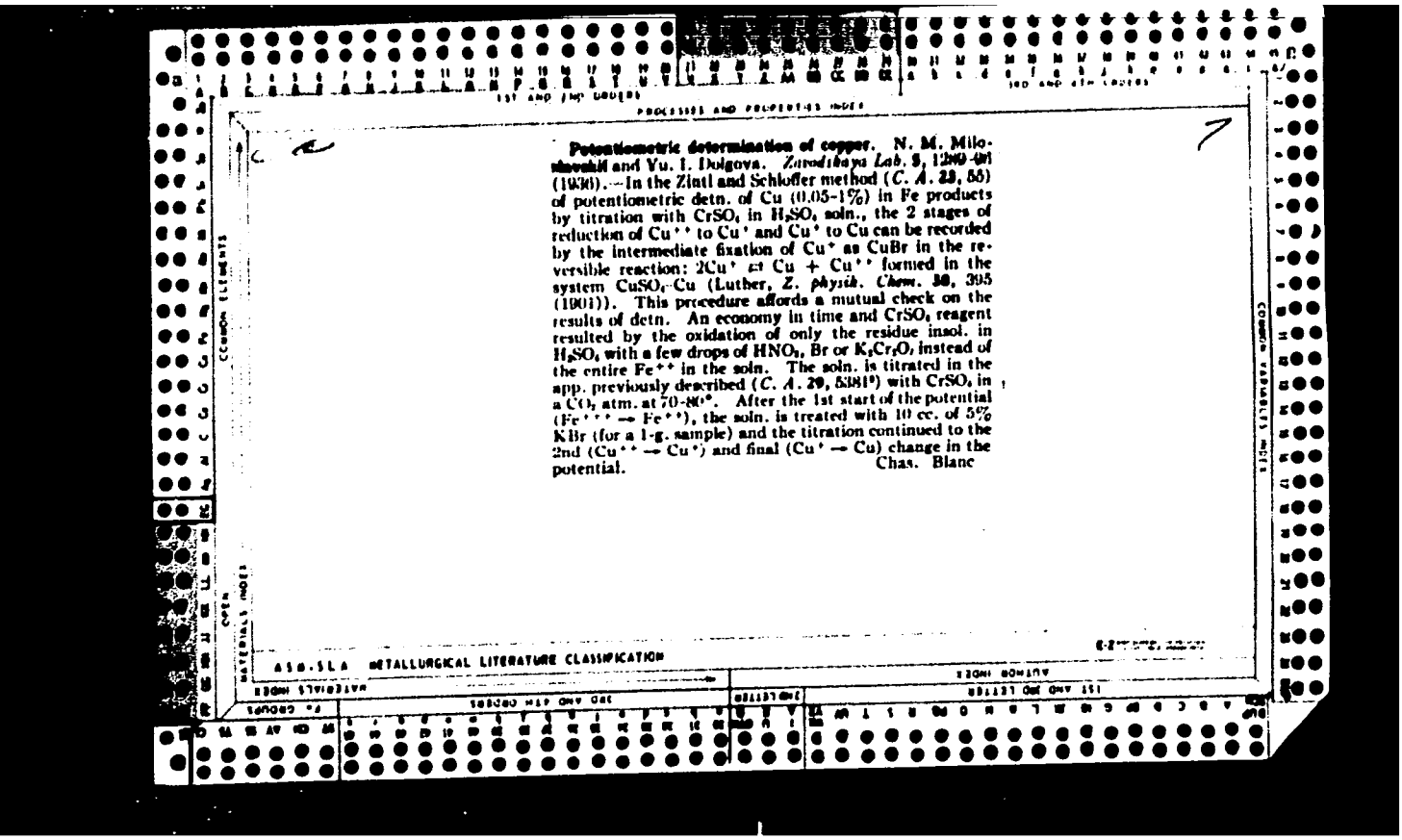
PROCESSES AND PROPERTIES INDEX

B-I-5

BC

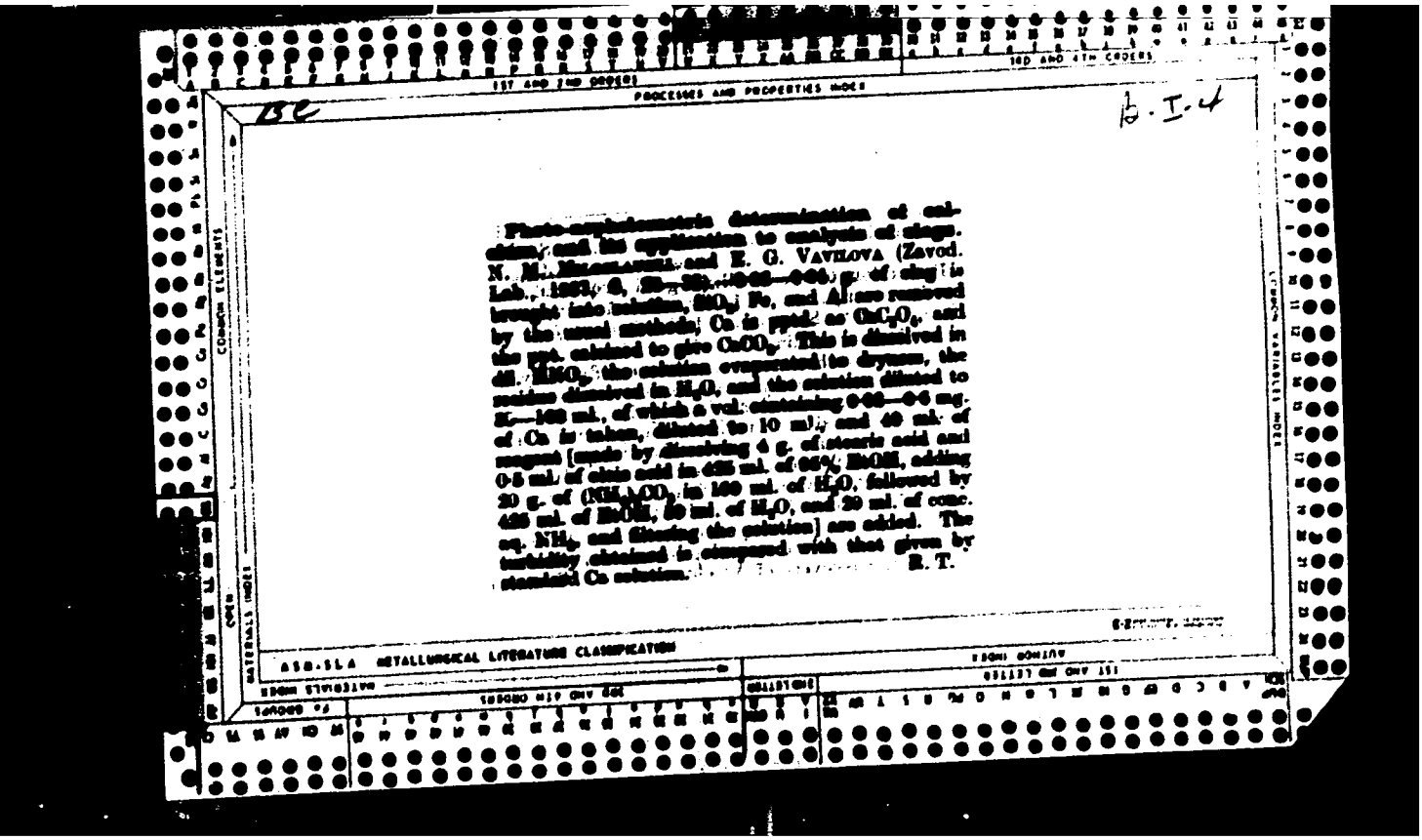
Microcolorimetric determination of tungsten in alloy steels. N. M. MIKOLAYEVA and A. B. GUSEVITSKII (Zavod. Lab., 1956, 5, 1170—1173).—0·02—0·3 g. of steel is dissolved in 3—4 ml. of 50% HCl, with gradual addition of HNO_3. The suspension of WO_3 so obtained is diluted and filtered. The washed ppt. is dissolved in 1 ml. of 5% NaOH, the solution conc. to 0·5 ml., and 0·5 ml. of H_3PO_4 and 3 ml. of conc. HCl are added; followed by 2 ml. of aq. $SnCl_2$ (5 g. of Sn are dissolved in 100 ml. of 50% HCl). The vol. is made up to 10 ml. after 15 min. and the coloration compared with that given by a standard solution. R. T.

A58-5L4 METALLURGICAL LITERATURE CLASSIFICATION



Potentiometric determination of copper. N. M. Milo-slavskii and Yu. I. Dolgova. *Zavodskaya Lab.* 9, 1289-91 (1940).—In the Zintl and Schloffer method (*C. A.* 23, 55) of potentiometric detn. of Cu (0.05-1%) in Fe products by titration with $CrSO_4$ in H_2SO_4 soln., the 2 stages of reduction of Cu^{++} to Cu^{+} and Cu^{+} to Cu can be recorded by the intermediate fixation of Cu^{+} as CuBr in the reversible reaction: $2Cu^{+} \rightleftarrows Cu + Cu^{++}$ formed in the system $CuSO_4$–Cu (Luther, *Z. physik. Chem.* 38, 395 (1901)). This procedure affords a mutual check on the results of detn. An economy in time and $CrSO_4$ reagent resulted by the oxidation of only the residue insol. in H_2SO_4 with a few drops of HNO_3, Br or $K_2Cr_2O_7$ instead of the entire Fe^{++} in the soln. The soln. is titrated in the app. previously described (*C. A.* 29, 5381[9]) with $CrSO_4$ in a CO_2 atm. at 70-80°. After the 1st start of the potential ($Fe^{+++} \rightarrow Fe^{++}$), the soln. is treated with 10 cc. of 5% KBr (for a 1-g. sample) and the titration continued to the 2nd ($Cu^{++} \rightarrow Cu^{+}$) and final ($Cu^{+} \rightarrow Cu$) change in the potential.

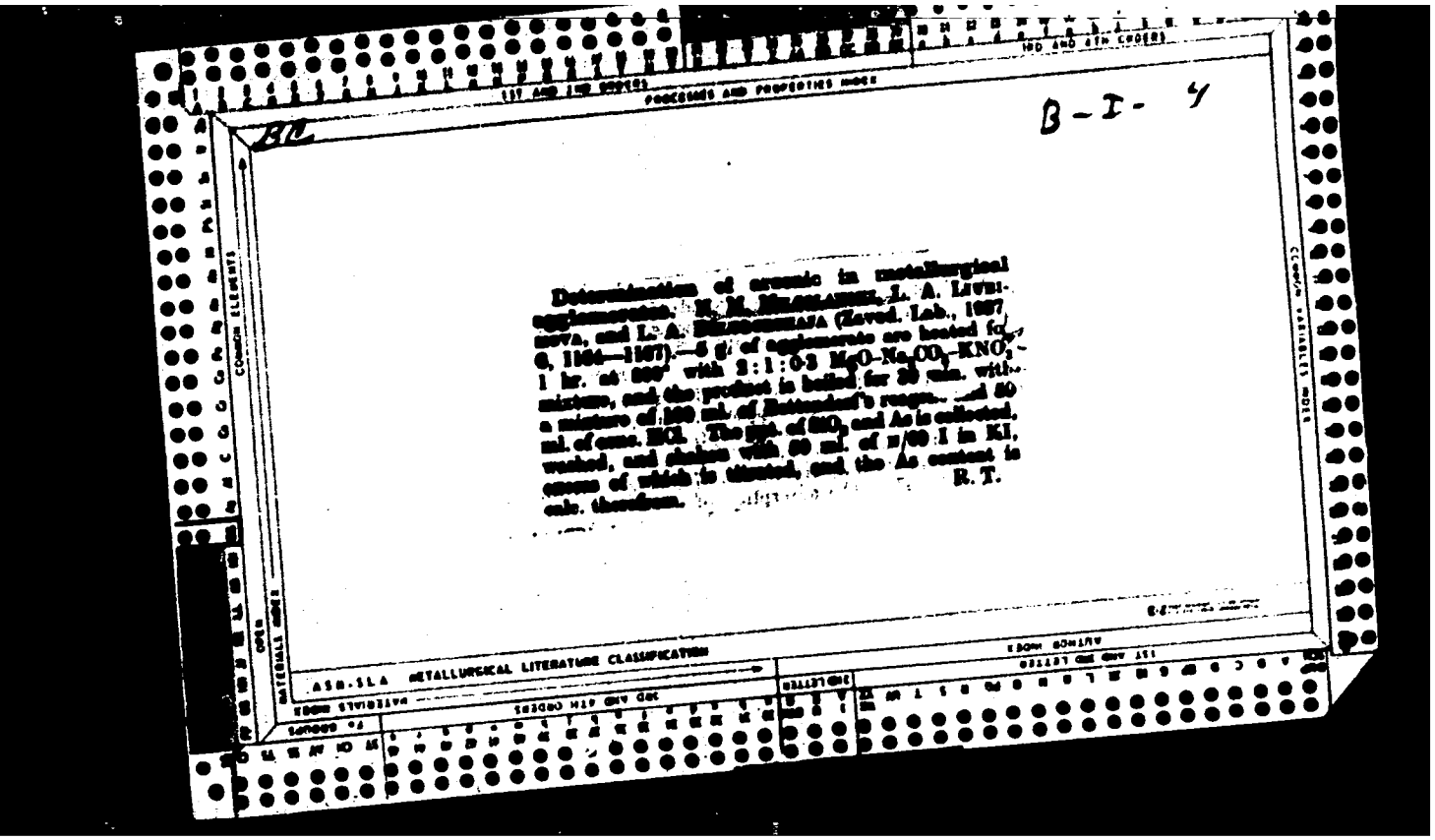
Chas. Blanc



BC

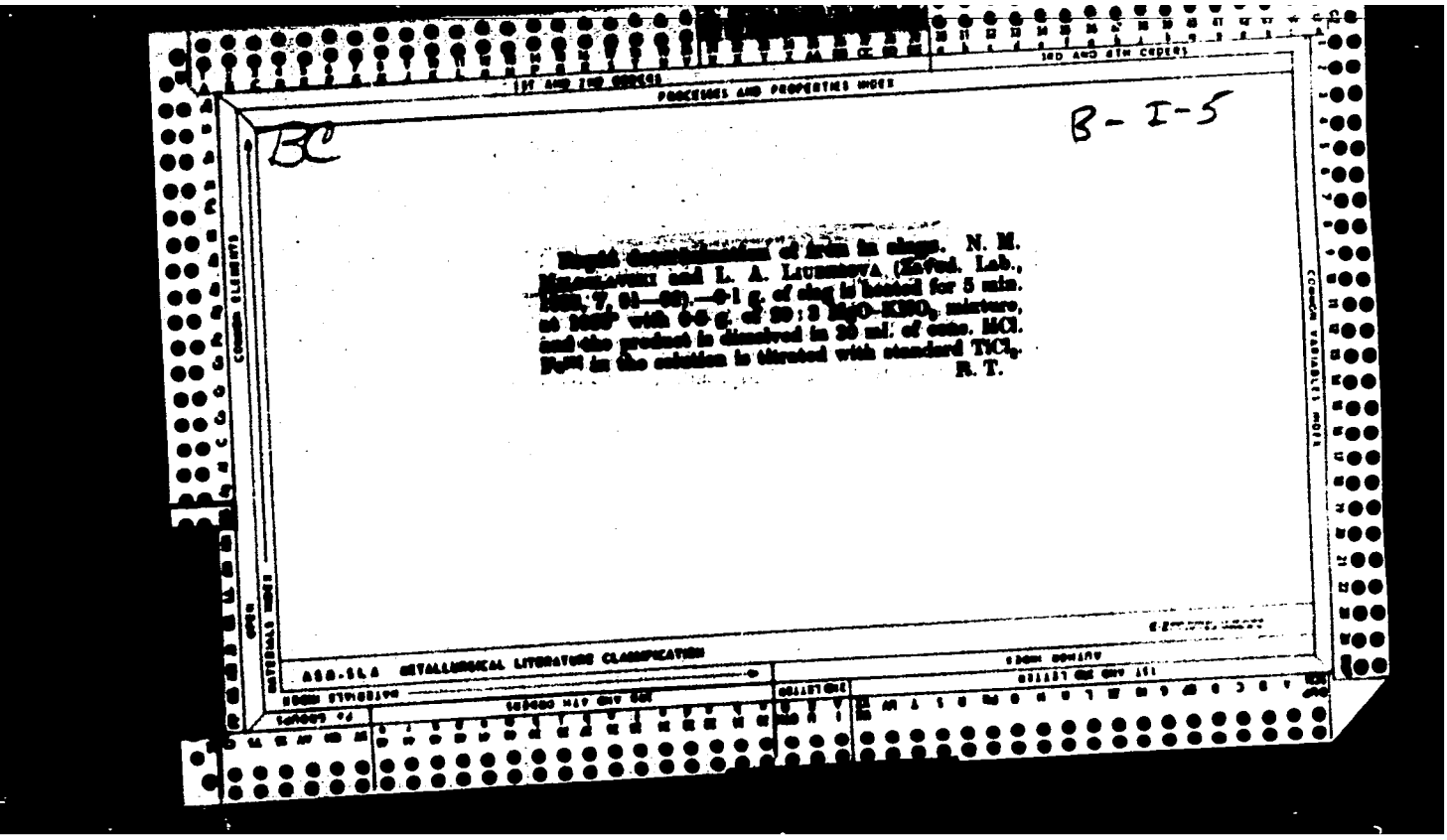
B-I-4

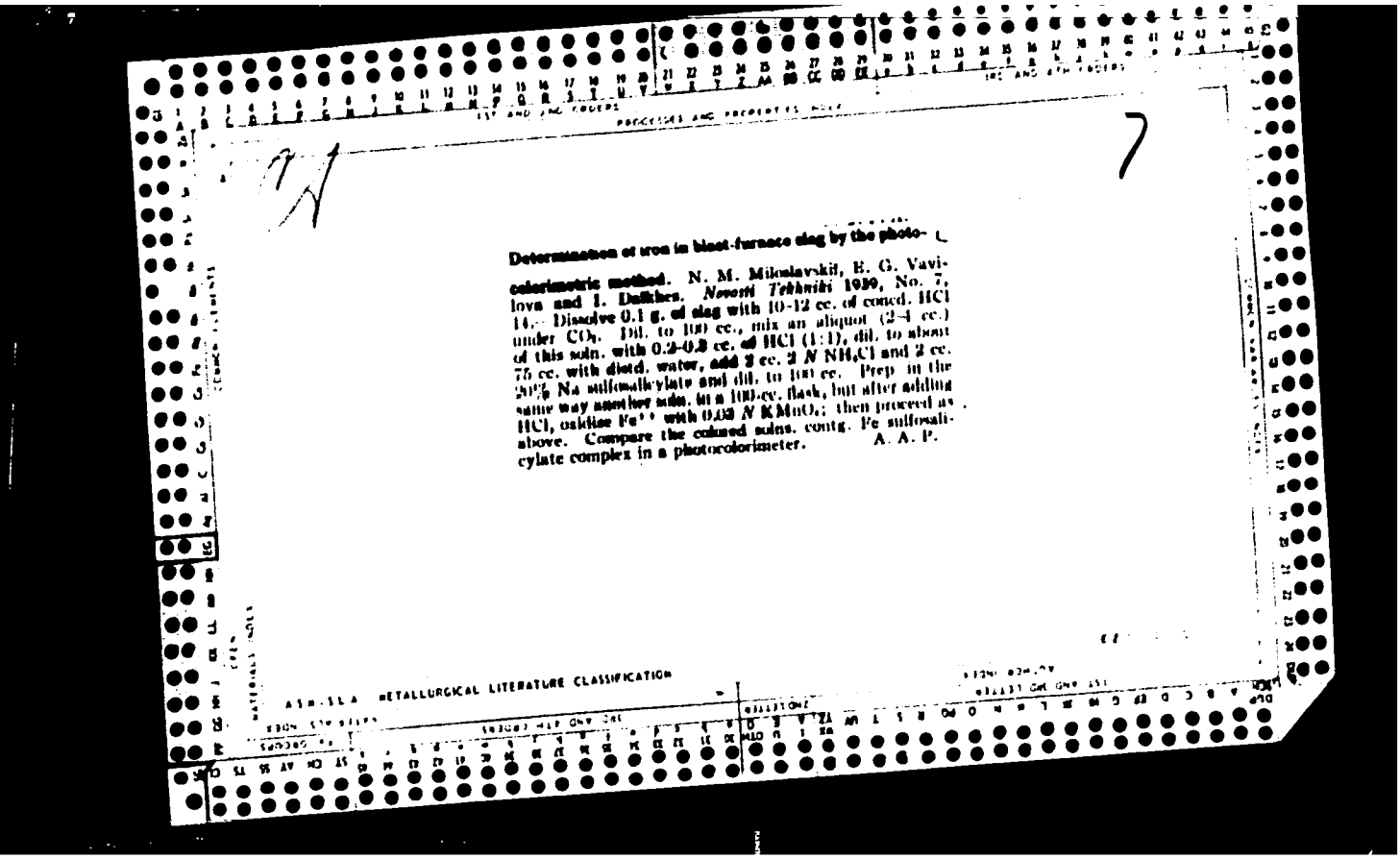
Photo-amperometric determination of calcium, and its application to analysis of slags. N. M. [illegible] and E. G. Vavilova (Zavod. Lab., 1955, 21, [illegible]). [illegible] g. of slag is brought into solution, SiO_2, Fe, and Al are removed by the usual methods; Ca is ppted. as CaC_2O_4, and the ppt. calcined to give CaO. This is dissolved in dil. HNO_3, the solution evaporated to dryness, the residue dissolved in H_2O, and the solution diluted to [illegible]—100 ml., of which a vol. containing 0·03—0·6 mg. of Ca is taken, diluted to 10 ml., and 40 ml. of reagent [made by dissolving 4 g. of stearic acid and 0·5 ml. of oleic acid in 425 ml. of 95% EtOH, adding 20 g. of $(NH_4)_2CO_3$ in 100 ml. of H_2O, followed by 425 ml. of EtOH, 10 ml. of H_2O, and 20 ml. of conc. aq. NH_3, and filtering the solution] are added. The turbidity obtained is compared with that given by standard Ca solutions. R. T.



B-I- 4

Determination of arsenic in metallurgical
agglomerates. M. M. [illegible], L. A. Levi-
nova, and L. A. [illegible] (Zavod. Lab., 1957,
6, 1164—1167).—5 g. of agglomerate are heated for
1 hr. at 600° with 2 : 1 : 0·3 MgO–Na_2CO_3–KNO_3
mixture, and the product is boiled for 30 min. with
a mixture of 100 ml. of Rotondaro's reagent and 50
ml. of conc. HCl. The ppt. of SiO_2 and As is collected,
washed, and shaken with 50 ml. of n/60 I in KI,
excess of which is titrated, and the As content is
calc. therefrom. R. T.





Determination of iron in blast-furnace slag by the photo-colorimetric method. N. M. Miklaiavskii, E. G. Vavilova and I. Dalkhes. *Novosti Tekhniki* 1939, No. 7, 14.—Dissolve 0.1 g. of slag with 10-12 cc. of concd. HCl under CO_2. Dil. to 100 cc., mix an aliquot (2-4 cc.) of this soln. with 0.2-0.3 cc. of HCl (1:1), dil. to about 75 cc. with distd. water, add 2 cc. 2 *N* NH_4Cl and 2 cc. 50% Na sulfosalicylate and dil. to 100 cc. Prep. in the same way another soln. in a 100-cc. flask, but after adding HCl, oxidize Fe^{++} with 0.02 *N* $KMnO_4$; then proceed as above. Compare the colored solns. contg. Fe sulfosalicylate complex in a photocolorimeter. A. A. P.

SOV/97-57-11-4/10

AUTHOR: Miloslavskiy, N.M., Candidate of Technical Sciences

TITLE: Concrete and Reinforced Concrete used for Constructions of Hydro-electric Power Stations (Beton i zhelezobeton v gidroenergeticheskom stroitel'stve).

PERIODICAL: Beton i Zhelezobeton, 1957, Nr 11, pp 437-447.

ABSTRACT: This is an historical survey of various schemes of hydro-electric power stations built since the revolution. The total output of these stations reached 8.4 million kw during 1957, i.e. 20% of the total output of the country. During the 5th 5-year plan the following power stations were constructed in: Wingechaur, Ust'-Kamenogorsk, Gor'kiy, Tsimlyansk, Gyumushskaya, Verkhne-Svirskaya, Kuybyshev and Kakhovka. According to the directives of the 20th Congress of the KPSS, the following power stations are planned or are under construction, for the years 1956-1960: Irkutsk, Novosibirsk, Votkinsk, Kremenchug, Stalingrad, Bratsk and Krasnoyarsk. During the 4th 5-year plan 2.7 million m^3 of concrete was used in connection with the construction of power stations and 16 million m^3 during the 5th 5-year plan. During the 6th 5-year plan 30 million m^3 of concrete and reinforced con-

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Concrete and Reinforced Concrete used for Constructions of Hydro-electric Power Stations.

crete will be used for the same purpose. Technical details are given of various early power stations, e. g. Volkhov, Dneprovskaya and Nizhne-Svirskaya. The application of reinforced concrete for hydro-electric power stations has considerably changed and advanced since 1940 (see details Figures 5A and B). New constructions and building material have been introduced, e.g. the cable crane in conjunction with the conveyer belt. Professor A.M. Senkov designed slabs from aerated concrete which could be used for small hydro-electric power stations. Professor S.G. Gutman is investigating stress conditions of these slabs using the method developed by Professor V.P. Skril'nikov and Academician B.G. Galerkin. The mechanization of concreting is rapidly increasing as shown hereunder: In 1955 during the construction of the Kuybyshev power station, 3,150,000m^3 of concrete was laid. The largest amount of concrete laid per month was 389,000m^3 and per 24-hour shift 19,050m^3. The concrete is unloaded from railway trucks by means of a pneumatic

Concrete and Reinforced Concrete used for Constructions of Hydro-electric Power Stations.

installation S-362 or S-347. Their output is 20-30 and 30-50 tons per hour respectively. For the transportation of large volumes of concrete mix pneumatic installations S-296, S-252 and S-284, with outputs of 10, 20 and 40 tons per hour respectively, were used during the erection of the Narva, Kayrak-Kum and Kuybyshev hydro-electric power stations. The prestressed concrete construction of Sluice design by Professor A.Z. Basevich was used in the Kachov, Novosibirsk and Stalingrad hydro-electric power stations,,and is increasing in application. Winter concreting was used in the construction of the Kama power station with the "Thermos" and electric heating methods. There are 13 figures.

1. Power plants--Construction 2. Concrete--Applications 3. Reinforced concrete--Applications

Card 3/3

AVAILABLE:

BECHIN, Alekseĭ Petrovich, MILOSLAVSKIY, N.M., kand.tekhn.nauk, red.; MORSKOY, K.L., red.izd-va.; MEL'NICHENKO, F.P., tekhn.red.

[Ways of shortening construction periods and lowering labor consumption in concrete work; from experience in the construction of sluices for the Upper Svir' and Kakhovka Hydroelectric Power Stations] Puti sokrashcheniia srokov stroitel'stva i snizheniia trudoemkosti betonnykh rabot; iz opyta stroitel'stva shliuzov Verkhne-Svirskoi i Kakhovskoi GES. Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i stroit. materialam, 1958. 43 p. (MIRA 11:9)
(Concrete construction)
(Hydroelectric power stations)

NEPOROZHNIY, P.S. (Moskva); BELYAKOV, A.A. (Moskva); RUSSO, G.A. (Moskva); BUROVOY, A.A. (Moskva); NEKRASOV, A.M. (Moskva); ROKOTYAN, S.S. (Moskva); MILOSLAVSKIY, N.M. (Moskva); SYROMYATNIKOV, I.A., doktor tekhn. nauk, prof.

Principal trends in the realization of over-all electrification. Elektrichestvo no.8:77-82 Ag '63. (MIRA 16:10)

MILOSLAVSKIY, P.E., inzhener.

Reconstructing a Trubkin feed water regulator. Elek.sta. 24 no.8:53-54 Ag '53. (MLRA 6:8)
(Feed water)

MILOSLAVSKIY P.Z.

Miloslavskiy P. Z., "Modification of the Feed Regulator in the Trubkin System," Elektricheskiye Stantsii, 1953, No 8, Pages 53-53, 2 figures.

AUTHOR: Miloslavskiy, P. Z., Engineer SOV/119-58-9-17/19

TITLE: Percentual Barometric Vacuummeter (Protsentnyy barovakuummetr)

PERIODICAL: Priborostroyeniye, 1958, Nr 9, pp. 31-32 (USSR)

ABSTRACT: L. I. Trzhaskal, the Head of the Department of Heat Control of the Laboratory of the Lenenergo, designed and built a device which graphically records the degree of vacuum in a direct manner. This device is produced from the parts of the normal mercury float differential manometer DP-610. The dimensions of the "minus vessel" and the connection to the float chamber are illustrated in two figures. The float chamber of the differential manometer is by a tube connected with the condenser of the turbine. The "minus vessel" is closed on top, and it is completely evacuated above the mercury level. Hence the pressure is zero and the reading of the differential manometer is proportional to the absolute pressure in the condenser of the turbine. There are 3 figures.

Card 1/1

MILOSLAVSKIY, S.; FLEYER, A.; ANDRIYEVSKAYA, A.

Objectives of the seven-year plan are being fulfilled ahead of time. Stroitel' no.10:3-8 O '60. (MIRA 13:9)

1. Glavnyy inzhener upravleniya stroitel'stva Dnepropetrovskogo sovnarkhoza (for Miloslavskiy). 2. Glavnyy tekhnolog upravleniya Dnepropetrovskogo sovnarkhoza (for Fleyer). 3. Spetsial'nyy korrespondent zhurnala "Stroitel'" (for Andriyevskaya).

(Dnepropetrovsk Province--Metallurgical furnaces)

MILOSLAVSKIY, S.L.; KHOKHOLEV, K.I.; DUDNIK, F.S.

Use of large-size reinforced concrete slabs for walls of industrial buildings. Stroi.prom. 33 no.3:10-12 Mr '55. (MLRA 8:5)

1. Dneprovskpromstroy (for Miloslavskiy).
2. Dnepropetrovskiy filial YuZhNII (for Khokholev and Dudnik).
(Walls) (Reinforced concrete construction)

KHOKHOLEV, K.I., inzhener; MILOSLAVSKIY, S.L., inzhener; LAPSHIN, N.G., inzhener.

Experience with making and erecting precast reinforced concrete elements for oxygen plants. Bet.i shel.-bet. no.6:202-205 Je '56. (MLRA 9:8)

(Precast concrete construction)

MILOSLAVSKIY, S.L.; SHMAKOV, V.P.

Rapid method of reconstructing blast furnaces. Prom. stroi. 42 no.4:4-11 '65. (MIRA 18:4)

1. Zamestitel' nachal'nika Glavpridneprovstroya (for Miloslavskiy).
2. Glavnyy inzh. tresta "Dzerzhinskstroy" (for Shmakov).

Miloslavskiy, V. K.

USSR/ Physics - Interferometry of scattering FD-1034

Card 1/1 : Pub. 153 - 5/23

Authors : Shklyarevskiy, I. N., and Miloslavskiy, V. K.

Title : Interferometric method for determining the dispersion of liquids and solids

Periodical : Zhur. tekh. fiz., 24, 1387-1391, Aug 1954

Abstract : Describe newly developed interferometric method of measuring dispersion of liquids and solids which is freed of the deficiencies of the OBREIMOV method. Give results of measurements by new method. State that attempts are being made to extend the interferometric method to the ultraviolent region of the spectrum. Thank Prof. K. D. Sinel'nikov, Active Member of Academy of Sciences of Ukrainian SSR. Seven references 5 USSR (e.g. N. V. Rapp and I. N. Shklyarevskiy, Kharkov State University, 1950-1953.

Institution : - -

Submitted : 28 December 1953

SHKLYAREVSKIY I.N.
MILOSLAVSKIY V.K.

Category : USSR/Optics - Physical Optics K-5

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 4938

Author : Shklyarevskiy, I.N., Miloslavskiy, V.K., Pakhomova, O.S., Ryazanov, A.N.
Title : Interferometric Method for Determining the Dispersion of Liquids in the Ultraviolet Region

Orig Pub : Uch. zap. Khar'kovsk. un-ta, 1955, 6, 147-150

Abstract : The previously described (Referat Zh. Fizika, 1955, 23123) interferometric method for determining the dispersion of liquids and solids, based on the application of the lines of equal chromatic order, has been expanded to determine the dispersion of liquids in the ultraviolet region. The investigated liquid is introduced into a gap between aluminized quartz plates, which are attached to the slit of an ISP-22 quartz spectrograph. The thickness of the gap is regulated by means of screws. The resultant spectrogram is used to determine the wavelengths of many interference lines, to determine their interference order, and knowing the thickness of the gap, to calculate the index of refraction for many wavelengths. The order of the interference is determined by filling the gap half with

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Category : USSR/Optics - Physical Optics K-5

Abs Jour : Ref Zhur - Fizika, No 2, 1957, No 4938

liquid and half with air and obtaining on the spectrogram two systems of lines. The accuracy of the measurement is 5×10^{-4}. The above method requires small amounts of substance and is applicable to absorbing liquids.

Card : 2/2

Miloslavskiy, V. K.

51-3-8/14

AUTHOR: Miloslavskiy, V. K.

TITLE: Optical Properties of Thin Layers of Cadmium Oxide in the Infrared Spectral Region. (Opticheskiye svoystva tonkikh sloyev okisi kadmiya v infrakrasnoy oblasti spektra.)

PERIODICAL: Optika i Spektroskopiya, 1957, Vol.III, Nr.3, pp.251-257. (USSR)

ABSTRACT: This paper reports results of studies of absorption by cadmium oxide (CdO) in the infrared spectral region from 1 to 16 μ using samples of different electrical conductivities. Thin layers of cadmium oxide were prepared by sputtering. A disc of metallic cadmium served as a cathode. Sputtering was carried out in air and oxygen. It was found that electrical conductivity and colour of the films obtained depended strongly on the conditions under which they were prepared. Conductivities in the range from $0.01\text{-}10^3$ $ohm^{-1}cm^{-1}$ were obtained. With increase of the sputtering rate and improvement of vacuum the probability of oxidation of

Card 1/5

Optical Properties of Thin Layers of Cadmium Oxide in the Infrared Spectral Region.

cadmium atoms on their way from the cathode to the deposition base decreases, i.e., the excess of metal in semi-conducting CdO increases. This is accompanied by a rise in electrical conductivity and a change of optical properties. The absorption coefficient was measured on layers with low conductivity (1.2 $ohm^{-1}cm^{-1}$) and of grey colour. The results are given in Fig.1. From the absorption maxima shown there it is concluded that these maxima correspond to excess of cadmium in the crystal lattice of CdO. The excess of cadmium is in the atomic state. Its energy spectrum consists of a series of levels which approach the conduction band of the semi-conductor (Fig.2). The most intense absorption band corresponds to the transition from the 5s ground-state level to the lower edge of the conduction band. This transition bridges a 0.410 eV energy gap. At temperatures above 200°C the CdO layers are gradually decomposed, in a gaseous medium or in a vacuum, producing excess cadmium. On decomposition the electrical and optical properties are altered. Electrical conductivity

Optical Properties of Thin Layers of Cadmium Oxide in the Infrared Spectral Region.

increases with increase of temperature. Concentration of conduction electrons increases also and the colour of the layers changes from grey to yellow. Absorption of samples with low initial electrical conductivity, subsequently heated to 250-400°C in air was measured. Electrical conductivity was measured also. The results are shown in Fig.3. Curve 1 represents an untreated sample with low electrical conductivity (0.8 $ohm^{-1}cm^{-1}$). Curves 2-5 give absorption of the same sample after treatment at 250°C (curve 2), 300°C (curve 3), 350°C (curve 4) and 400°C (curve 5). The initial sample had absorption due to electron transitions from the ground-state level to higher levels and to the conduction band. With increase of the amount of excess cadmium and electrical conductivity, absorption increases in practically the whole spectral region studied (curve 2). Absorption due to the impurity atoms of cadmium increases particularly strongly. Concentration of conduction

Optical Properties of Thin Layers of Cadmium Oxide in the Infrared Spectral Region.

electrons also increases from 10^{20} to 6×10^{20}. With further increase of temperature (above 250°C) increase of electrical conductivity is accompanied by increase of absorption in the long-wavelength part of the spectrum (curves 3, 4, 5). A decrease of absorption in the impurity band region now occurs. At these very high concentrations of impurity atoms (more than 10^{21} cm^{-3}) almost complete ionization occurs. The semi-conductor acquires metallic properties and absorption by conduction electrons is the predominant feature. 3-electron theory calculations yield the curve shown dotted in Fig.3. This agrees well with the curve 5 for wavelengths greater than 12 μ. Disagreement between the theoretical curve and curve 5 below 12 μ is due to cadmium-impurity electron transitions. It was found that absorption at 15 μ in various samples of Fig.3 rises monotonically and almost linearly with increase of electrical conductivity. This is shown by the continuous line in Fig.4; the dotted line is a theoretical curve. The author thanks Academician of the

51-3-8/14

Optical Properties of Thin Layers of Cadmium Oxide in the Infrared Spectral Region.

Ukrainian SSR K.D. Sinel'nikov for direction of this work. There are 4 figures and 9 references, 1 of which is Slavic.

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

SUBMITTED: January 4, 1957.

AVAILABLE: Library of Congress

Card 5/5

MILOSLAVSKIY, V.K.

51-4-11/26

AUTHORS: Shklyarevskiy, I. N. and Miloslavskiy, V. K.

TITLE: A New Modification of the Polarization Method of Measurement of the Optical Constants of Metals. (Novaya modifikatsiya polyarizatsionnogo metoda izmereniya opticheskikh postoyannykh metallov.)

PERIODICAL: Optika i Spektroskopiya, 1957, Vol.III, Nr.4, pp.361-367. (USSR)

ABSTRACT: The present authors review briefly the variants of the classical Drude's method of measurement of the optical constants of metals (Refs.1-7). The method described here is based on multiple reflection of light incident on identical parallel samples (Refs.6, 7). It can be used both in the visible and infrared regions. The angle of incidence which makes the phase difference between the p and s components (polarized in the plane of incidence and at right-angles to the plane of incidence respectively) equal to -180° is used. Elliptically polarized light becomes then linearly polarized. The authors derive Eqs. 6 and 7 (p.362)

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A New Modification of the Polarization Method of Measurement of the Optical Constants of Metals.

for the refractive index μ and the absorption coefficient $\mu\chi$ in terms of measurable quantities: angle of incidence φ, azimuth of reduced (relative) polarization ψ, and phase difference between the p and s components after one reflection Δ. The apparatus used is shown in Fig.1. A monochromatic, parallel, linearly polarized (by polarizer P, at an angle of 45° to the plane of incidence) beam falls on plates (1) and (2) with mirrors of the studied metal deposited on them. The two plates are attached to a goniometer table; one of them is fixed and the other can be moved parallel to it. The light, reflected three times by the metallic surfaces, falls on an analyser, A, whose angle of rotation can be read down to 2 minutes of arc. P is a receiver of radiation. First the second plate is in the position 2'. Its displacement to position 2 makes it possible to obtain quintuplet reflection if necessary. In the visible region the source of light is the exit slit (5) of a monochromator YM-2. Glan prisms serve as the

A New Modification of the Polarization Method of Measurement of the Optical Constants of Metals.

polarizer and the analyser. In visual observations an eyepiece focussed at infinity is used instead of the receiver, T. In the infrared region the source of light is the slit of a monochromater ЗМР-2. Glan prisms are replaced by selenium piles consisting of 6 plates placed at an angle of 68° to the incident beam. The optical constants of metals for light emerging from glass were measured using the apparatus shown in Fig.2. This is a prism-like piece of glass in which triple reflection of light at the boundary glass-metal occurs (surfaces AA' and CC' have metal layers deposited on them). Angles A'AB and AA'B' are both 45°. This arrangement is used for the study of metals which, on vacuum deposition, do not produce specular surfaces; or for metals on which thin oxide layers are present. Measurements were made by rotation of the goniometer table until an angle of incidence was found at which by rotation of the analyser it was possible to extinguish completely the beam reaching

A New Modification of the Polarization Method of Measurement of the Optical Constants of Metals.

the receiver. This angle of incidence was measured several times, and a mean value was taken. Mean values of Ψ were also obtained. Knowing φ, Ψ and $\Delta = -60^{\circ}$, the optical constants of the metal could be calculated from Eqs. 6 and 7. Measurements of the optical constants of metals for light falling from the glass side (Fig.2) did not differ in principle from measurements using light falling from the air side. The authors applied the method to measurement of the optical constants of aluminium in the visible region. These constants were measured earlier by O'Bryan (Ref.1), in vacuo because a layer of oxide is always present on aluminium in air. To exclude the effect of oxide the present authors used the apparatus of Fig.2. Aluminium layers were deposited on the surfaces AA' and CC' at 5×10^{-5} mm Hg. To avoid any contamination, for the first few moments aluminium was evaporated on a special screen and only then on the surface of the prism of Fig.2. Table 1 gives the results of measurements thus obtained (triple reflection with $\Delta = -60^{\circ}$). This table gives (in

A New Modification of the Polarization Method of Measurement of the Optical Constants of Metals.

addition to ϕ , ψ , μ and $\mu\chi$) μ_0 which is the refractive index of glass used for construction of the prism of Fig.2. Identical results were obtained on measurement of the optical constants after one month. One of the present authors (Ref.8) described earlier an interferometric method of measurement of phase-shift dispersion at the boundary ZnS-Al. Fig.3 shows the results of Ref.8 by a continuous curve with open circles. In the same figure the dashed curve represents O'Bryan's results, while crosses represent values obtained by the methods described in the present paper. Table 2 gives the results of measurements of the optical constants of aluminium from the air side. The values in Columns marked 1 refer to samples 6 hours after deposition of the mirror and the removal from the vacuum chamber. Columns 2 give the same quantities measured on the same samples after 50 days in a desiccator. Optical constants of Table 2 differ considerably from those given in Table 1.

Card 5/7

[illegible] several times higher than those calculated by Hass (Ref.10). This is because Hass did not take into account the oxide layer formed in vacuo. The authors thank Professor K.D. Sinel'nikov for valuable discussions and his interest. There are 2 figures, [illegible] which are Slavic.

51-4-11/26

A New Modification of the Polarization Method of Measurement of the Optical Constants of Metals.

ASSOCIATION: Khar'kov State University. (Khar'kovskiy gosudarstvennyy universitet).

SUBMITTED: February 5, 1957.

AVAILABLE: Library of Congress.

Card 7/7

SOV/51-5-5-18/23

AUTHORS: Miloslavskiy, V.K. and Kovalenko, N.A.

TITLE: Absorption by Zinc Oxide in the Infrared Spectral Region (Pogloshcheniye okisi tsinka v infrakrasnoy oblasti spektra)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol 5, Nr 5, pp 614-617 (USSR)

ABSTRACT: ZnO layers were produced by sputtering in an atmosphere containing oxygen. These layers exhibit high electrical conductivity and are transparent in the visible region. Their high conductivity is due to excess of Zn. Conductivities of the layers depend strongly on the rate of sputtering. At high sputtering rates (10^{-4} cm/hour) the layers possess resistances of 100-500 ohm/cm^2. Layers produced at lower sputtering rates have higher resistance: 10^5 to 10^6 ohm/cm^2. The higher conductivity is exhibited by layers produced by sputtering in nitrogen, argon or in mercury vapours. Lower conductivities are obtained on sputtering in atmospheric air. The initial resistance of the layer may be altered by subsequent treatment, e.g. by exposure to air. This change of resistance, which occurs at room temperature, is due to adsorption of oxygen and other electro-negative molecules on the surface of ZnO. These layers absorb fairly strongly in the infrared.

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Layers of high resistance (greater than 10^6 ohm) are transparent in the region from 1 to 16 μ. Layers with lower resistances exhibit continuous absorption from 3 to 16 μ with a sharp fall of absorption at the short-wavelength end. There is no simple relationship between the coefficient of absorption and resistivity of layers prepared under different conditions. On the other hand, if the sample resistence is altered by some treatment, then the absorption of this sample changes monotonically with the change in the resistance. Measurements of absorption were carried out using an infrared spectrometer IKS-2 working in the region from 1 to 16 μ. The layers were deposited on rock-salt plates. The absorption coefficient K (Fig 1, continuous curve) rises rapidly between 1 and 4 μ, then passes through a maximum at 5.5 μ ($K_{max} = 2 \times 10^4 cm^{-1}$) and finally slowly falls with increase of wavelength. Calculations of the absorption coefficient using the classical Drude theory gave values which are shown by the dashed curve in Fig 1. The calculated curve departs strongly from experiment in the 1-10 μ region. Measurements of the optical absorption by ZnO as a function of adsorption showed that on adsorption of oxygen and other molecules on thin layers the optical absorption and electrical conductivity decrease monotonically with time. Irradiation with ultraviolet light increases both electrical

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conductivity and optical absorption. Fig 2 gives a series of optical density curves (-log T) as functions of wavelength, which were obtained during adsorption. The curves were recorded after equal intervals of time. Simultaneously with recording of these curves resistance of the sample was also measured. When curve I was recorded the resistance was 6300 ohms; when curve IX was recorded the resistance rose to 30000 ohms. All these measurements were made within 1.5 hours. By constructing the dependence of (-log T) on (1/R), where R is the electrical resistance, we can find the change in the conduction electron density N (taken to be proportional to 1/R) as a function of changes in optical absorption. This is shown in Fig 3 where the lines 1, 2, 3 and 4 were obtained at 5.4, 7.3, 11.2 and 15 μ wavelengths respectively. The proportionality between absorption and conductivity shown by Fig 3, indicates that absorption in the infrared region is due mainly to

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conduction electrons. The authors thank K.D. Sinel'nikov for his advice and I.N. Shklyarevskiy for discussions of this subject. There are 3 figures and 6 references, 4 of which are Soviet, 1 German and 1 American.

SUBMITTED: March 26, 1958

1. Zinc oxide films--Spectra 2. Zinc oxide films--Electrical properties
3. Infrared spectroscopy

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MILOSLAVSKIY, V. K., Candidate Phys-Math Sci (diss) -- "The optical and electrical properties of semiconductor layers of CdO, ZnO, and SnO_2". Khar'kov, 1959. 15 pp. (Min Higher Educ Ukr SSR, Khar'kov Order of Labor Red Banner State U im A. M. Gor'kiy), 120 copies (KL, No 24, 1959, 126)

SOV/51-7-2-16/34

AUTHOR: Miloslavskiy, V.K.

TITLE: Infrared Absorption by Thin Layers of Tin Dioxide (Infrakrasnoye pogloshcheniye tonkikh sloyev dvuokisi olova)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 2, pp 244-248 (USSR)

ABSTRACT: Thin layers of SnO_2 were obtained by pyrolytic decomposition of $SnCl_2$ and $SnCl_4$ vapours which occurred at the surface of a glass plate heated to 500-600°C. The tin chlorides were prepared in the form of solutions in various media; the solvent used affected the conductivity of the final layer of SnO_2. Thickness of the SnO_2 layers was controlled by means of their interference colours. The refractive index of the layers was found interferometrically; it was $n = 1.98 \pm 0.02$ at 5900 Å. Absorption spectra were determined for layers deposited on thin rocksalt plates, using a spectrophotometer IKS-2 in the wavelength region 1-18 μ. In all layers two absorption bands (Fig 1) were observed: a narrow band at 16.4 μ and a wide band with a maximum at 8.5-9 μ. Samples of SnO_2 prepared by oxidation of thin vacuum-deposited layers of tin were found to have a much lower conductivity (~d $ohm^{-1}cm^{-1}$) than the layers prepared in the way described above; SnO_2 layers prepared by oxidation

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differed also in their optical properties: they were transparent in the whole range of wavelengths studied here. Appearance of absorption bands in SnO_2 produced by pyrolytic decomposition of chlorides is probably due to a large number of impurity atoms introduced during the preparation stage. These impurities affect also the electrical properties of SnO_2. To find out more about the nature of the impurity bands shown in Fig 1 the author studied the temperature dependence of absorption in the infrared region and of the electrical conductivity (samples used in the conductivity studies were deposited on glass plates). It was found that with decrease of temperature (from +220 to -140°C) the absorption coefficient of both bands rose considerably (the long-wavelength band intensity rose more rapidly than that of the short-wavelength band, Fig 2). Both bands are ascribed to electron transitions from the ground level of the impurity centre into higher energy states: the long-wavelength band corresponds to a transition of an impurity atom to an excited state and the short-wavelength band indicates a transition to the conduction band. The temperature dependence of the electrical conductivity was determined between -150 and +300°C: above +350°C the resistance of the layers was found to increase irreversibly. Below +150°C the resistance of the layers was practically constant in a wide range of temperatures but