

GILTKA, Marian; GUTKOWSKA, Jadwiga; LANGER, Hanna

Causes of failure in the treatment of staphylococcal infections in children. *Pediat. Pol.* 39 no.5:511-518 My '64.

1. Z Kliniki Terapii Chorób Dzieci Akademii Medycznej w Warszawie (Kierownik: doc. dr. med. H. Zapasnik-Kobierska) i z Laboratorium Zespołu Klinik Pediatrycznych Wydziału Pediatrycznego Akademii Medycznej w Warszawie (Kierownik: dr. med. L. Tomaszewski).

POLAND

GUTKOWSKA, Jadwiga; Central Laboratory, Pediatric Clinics of the
Medical College (Laboratorium Zespołu Klinik Pediatrycznych AM), Warsaw.

"Bactericidal Activity of Rabbit Sera."

Warsaw, Medycyna Doswiadczalna i Mikrobiologia, Vol 17, No 4, 1965;
pp 277-281.

Abstract [English summary modifie]: Alpha-hemolysis toxoid and
staphylococcal vaccine immunization of rabbits made no difference in the
activity of the sera against two coagulase-positive and one coagulase-
negative strains of Staphylococcus aureus: only the latter was inhibited
in both nonimmunized and immunized rabbits. 6 tables, 4 Polish, and
13 Western references.

1/1

GUTKOWSKA, Krystyna, Second Clinic of Internal Diseases (II
Klinika Chorob Wewnętrznych), SDL [Studium Doskonalenia Le-
karzy, Physicians' Refresher Course], AM [Akademia Medyczna,
Medical Academy] in Warsaw (Director: Prof. Dr. med. E.
RUZYLKO)

"Therapy Problems in Treatment of Herpes Zoster."

Warsaw, Polski Tygodnik Lekarski, Vol 18, No 24, 10 Jun 63,
pp 865-868

Abstract: Review article in which author discusses the treat-
ment of herpes zoster by various methods, of which ultrasound
proved generally most successful. She reviews heretofore
findings of in vitro studies on the effect of ultrasound and
notes the hypotheses proposed for its mechanism. For cases
where ultrasonic treatment is contra-indicated, among them
herpes zoster ophthalmicus, she reviews results of treatment
with corticoids and corticosteroids, as well as other cases
of treatment with aureomycin, gynergen, x-rays, etc. There
are 10 references, of which seven (7) are Polish, two (2)
German, and one English.

1/1

GUTKOWSKA, Wanda (Warsaw)

Information and discussion meetings organized by the Center of
Technical and Economic Information on Building. Przegl budowl
i bud mieszk 36 no.11:657-658 N '64.

GIERAK, Jerzy; GUTKOWSKI, Jerzy (Warsaw)

Measurements of angular accelerations in unstable states. Archiw
bud masz 11 no.2:235-266 '64

GUTKOWSKI, Kazimierz, inż.

Problem of efficiency increase of steamers in modern cooling systems. Przegl techn no.46:8,11 18 N '62.

GUTKOWSKI, Kazimierz, inż.

Calculation of steam-proof insulation of cold-store partitions.
Inz i bud 19 no.4:155-160 Ap '62.

GUTKOWSKI, Kazimierz, inż.

Appropriate type selection of the air-conditioning condenser
for refrigeration equipment. Przegl mech 21 no.3:80-82 10 F
'62.

1. Sekcja Chłodnicza Stowarzyszenia Inżynierów Mechaników
Polskich, Warszawa.

POLAND

GUTKOWSKI, Marek

Dept. of Electronic Devices, Warsaw Polytechnic (Katedra
Przyrzadów Elektronicznych)

Warsaw, Przegląd elektroniki, No 7, July 1966, pages 329-337

"An investigation of the influence of different gases and their
pressures on cylinder T-B-tube parameters."

Gutkowski, Seweryn
Category: Poland/General Division. The Conservation of Nature.

A-5

Abs Jour: Referat Zh.-Biol., No 9, 10 May, 1957, 34975

Author : Gutkowski, Seweryn

Inst : not given

Title : New Forms of Preserving Nature in the German Democratic Republic

Orig Pub: Chronmy przyr. ojcz., 1956, 12, No 1, 55-57

Abstract: In 1954 a law concerning the preservation of nature similar to that passed in Poland in 1949, came into effect in the GDR. The new principle for the preservation of nature in the people's democracies consisted of this, that for the first time nature was being preserved for man; it was the first place where there was a general preservation of wild plants and animals. It provided for the organization of reservations and the preservation of monuments of nature. The preservation of nature demands the cooperation of executive-managing organs, scientific institutions, and the public. It supposes a broad participation by the workers. The German Academy of Agricultural Sciences was entrusted with the coordination

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-7-

Category: Poland/General Division. The Conservation of Nature.

A-5

Abs Jour: Referat Zh.-Biol., No 9, 10 May, 1957, 34975

of work on the preservation of nature conducted by all scientific research organizations. A fault in the German law lies in giving the general leadership in the preservation of nature to an organ which is interested in its economic exploitation, i.e. the Ministry of Agriculture and Forestry.

Card : 2/2

-8-

Gutkowski, T.

Gutkowski T., Wagnerowski T. The Problem of Nonastigmatic Spectacles

"Zagadnienie szkielek okularowych nieastygmatycznych". (Prace Gl. Inst. Mechan. No. 1), Warszawa, 1950, Gl. Inst. Mechan., 12.5 pp. 5 figs., 4 tabs.

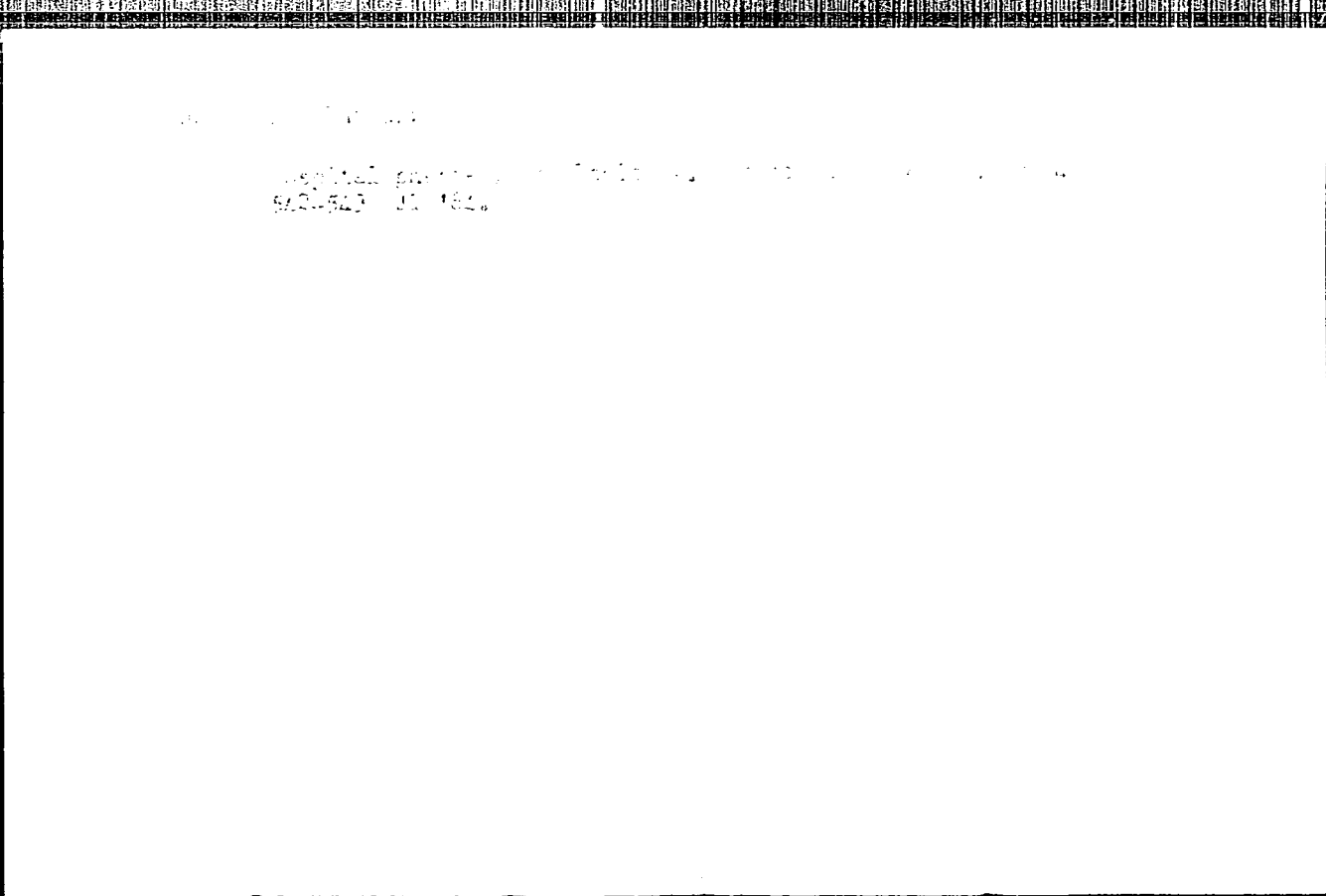
It is common knowledge that it is impossible to converge spectacle lenses in such a manner as to eliminate astigmatism; this applies in the case of objects both distant and near. The authors have solved the problem of what shape should be given to spectacle lenses in order to restrict astigmatism to the sharpness of eyesight for objects distant and near. They have proved this to be feasible within from -20 dioptres to +11.5 dioptres. Spectacles with lenses of more than +11.5 dioptres are seldom required, and there is no demand for lenses of less than -20 dioptres.

GUTKOWSKI, Tadeusz

Activities of Polish pharmacists in German POW camps. Farmacja
Pol 18 no.1:10-11 Ja '62.

GUTKOWSKI, Tadeusz

Mieczyslaw Frenkiel and pharmacy. Farmacja Pol 19 no.11/12:
268 25 Je '63.



P/006/61/009/003/002/002
D265/D304

AUTHOR: Gutkowski, Witold

TITLE: Structural analysis and stability of prismatic-lattice shells

PERIODICAL: Rozprawy inżynierskie, v. 9, no. 3, 1961, 455-493

TEXT: In this paper the equations are derived for the internal forces, deformations and the stability conditions for a rectangular latticed frame work shown in Fig. 2 which finds application in the construction of towers or masts. A new theory is devised for determining these equations which is based on treating the structure as a shell with rectangular network or bars. Large deflection of the frame members are assumed and as particular cases the behavior of the shell is considered for small deflections. The analysis comprises the statics of the axially symmetric shell with rectangular bars, the general case of deformation of this structure, and the buckling of the shell of square cross-section under the action of an axially applied compressive force. The latticed shell

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Structural analysis and ...

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under consideration consists of longitudinal bars parallel to each other carrying axial forces and bending moments, transverse bars forming the system of isosceles triangles, transmitting axial forces and bending moments in their own planes only and skewed bars carrying only axial forces. The theoretical results presented in this paper are verified by the worked example for an axially loaded shell of square cross-section, for which the critical buckling force is calculated. The model of this framework was then subjected to axial compressive loading on a testing machine and the deflection was read off at four characteristic points, for the increasing load. Results of deflections thus obtained were plotted against the loading applied and results revealed that the actual critical buckling force was only 3.2% larger than that calculated by the above theory. It is also shown that for practical considerations the measure of the framework stability limit is given by the Euler's critical force $P = \frac{\pi^2 EJ}{h^2}$ for a rod of length h and hinged at

Card 2/4

Structural analysis and ...

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both ends. The observations of the deflected framework confirm also the theoretical results which prove that the deformations of the members of the lattice work are directed outwards and that the axial compression is accompanied by torsion. There are 21 figures, 1 table and 17 references: 8 Soviet-bloc and 9 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: S. Timoshenko, I. Woinowsky-Krieger, Theory of Plates and Shells, McGraw-Hill, New York, 1959; L. A. Pipes, Appl. Math. Engineers Phys., McGraw-Hill, New York, 1958; F. Bleich, Buckling strength of metal structures, McGraw-Hill, New York, 1952; T. Karman, M. A. Biot, Mathematical methods in engineering, McGraw-Hill, New York, 1940.

SUBMITTED: February 9, 1961

Card 3/4

Structural analysis and ...

P/006/61/009/003/002/002

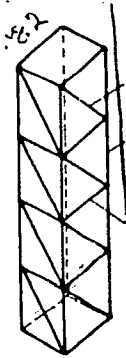


Fig. 2

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CUTKOWSKI, Witold (Warszawa)

Stability of an apparently nonrigid frame-lattice shell
axially compressed. Rozpr. inz. PAN 11 no.3:425-433 '63

GUTKOWSKI, W.

Unitstrut plates. Bul Ac Pol tech 12 no. 3:219-226 '64.

1. Department of Mechanics of Continuous Media, Institute of
Basic Technical Problems, Polish Academy of Sciences, Warsaw.

GUTKOWSKI, W.

Plane polygonal bars. Bul Ac Pol Tech 12 no.9:623-630 '64.

1. Laboratory of the Theory of Structures of the Department of Continuous Media of the Institute of Basic Technical Problems of the Polish Academy of Sciences, Warsaw. Submitted May 4, 1964.

OSKIN, M. I.

Framed steel structure composed of beams in the form of a
B no. 1:43-54 '65.

1. Department of Mechanics of Structures in the Institute
of Basic Technical Problems of the USSR Academy of Sciences,
Moscow. Submitted January 1, 1965.

GUTLING, R.

"From the history of our drugs." (p.122). VEDA A TECHNIKA MLADÉZI. (Ceskoslovenský svaz mládeže) Praha. No. 4, 1954.

SO: East European Accessions List, Vol. 3, No. 8, Aug 1954.

I. 14501-66 EWT(d) IJP(c)

ACC NR: AP6002412

SOURCE CODE: UR/0020/65/165/005/0983/0986

AUTHORS: Aleksandrov, I. A.; Gutlyanskiy, V. Ya. 14

ORG: Tomsk State University im. V. V. Kuybyshev (Tomskiy gosudarstvennyy universitet)

TITLE: Extremal problem in classes of analytic functions having structured formula
12.44, 53

SOURCE: AN SSSR. Doklady, v. 165, no. 5, 1965, 983-986

TOPIC TAGS: complex variable, calculus of variations

ABSTRACT: The main results of this study are contained in a set of theorems which show that boundary functions with respect to $I(f)$ (bounded complex valued functional) are contained in a given class of functions. The method of variations of the Stieltjes integral due to G. M. Goluzin (Uch. zap. LGU, No. 144, v. 23, 1952) is used. These results are applied to extremal problems posed for classes of star-shaped holomorphic bounded functions, usually real, and others as well. This paper was presented by academician M. A. Lavrent'yev on 13 April 1965. Orig. art. has: 8 formulas.

SUB CODE: 12/ SUBM DATE: 07Apr65/ ORIG REF: 006

FW
Card 1/1

UDO: 517.34

ALEKSANDROV, I.A.; GUTLYANSKIY, V.Ya.

Extremum problems on classes of analytic functions having a structural formula. Dokl. AN SSSR 165 no.5:983-986 D '65.
(MIRA 19:1)

1. Tomskiy gosudarstvennyy universitet im. V.V.Kuybysheva.
Submitted April 13, 1965.

JONIAK, Jan, inz.; GUM, Warszawa

The V12 12-channel carrier telephone system. Przegl telekom
35 [i.e. 36] no.10:305-310 0 '63.

S/193/60/000/004/003/006
A004/A001

AUTHOR: Gutmakher, M.K.

TITLE: The Gang Machining of Components

PERIODICAL: Byulleten' tekhniko-ekonomicheskoy informatsii, 1960, No. 4, pp. 16 - 18

TEXT: The author presents a survey on the development and expediency of component gang machining and refers in this connection to the works of N.A. Porvato-
tov and S.P. Mitrofanov, the former dealing with the increase in labor producti-
vity and efficient utilization of equipment in lot production, the latter using
for the first time the term "gang method" in his suggestions on the standardization
of technological processes and classification of components. The Chief Technolo-
gist of the Yaroslavskiy motornyy zavod (Yaroslavl' Motor Plant), A.A. Kuzovkov,
has developed a gang machining flow system of components during big-lot production ✓
without the machine tools being reset. A group of components with analogous pro-
cessing routes were selected, taking into account their output program and a suf-
ficient load of equipment. The components are tooled in multi-position gang fix-
tures, ensuring a simultaneous and subsequent setting of all components without

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The Gang Machining of Components

S/193/60/000/004/003/006
A004/A001


readjustment. At some Moscow plants a so-called unified equipment was developed whose design utilizes the principles used in gang and multipurpose setting fixtures. These fixtures make it possible to combine in one technological gang still more different components. The equipment has been developed on the basis of standardized and typed processes and assembled from standardized components and units. The author refers to the work of V.V. Boytsov on the complex standardization of production process elements. The Vsesoyuznyy proyektno-tehnologicheskii institut (All-Union Planning and Technological Institute) (VPTI) employs the method of preliminary calculation which makes it possible to determine prior to planning all necessary parameters: the most expedient tooling methods and organization of production for the given program and local conditions, the optimum variant of the technological process, composition and load of equipment up to the assignment of operations to the machine tools, etc. By using the preliminary calculation system the "Metallorukav" Plant was able to employ the six-spindle 1261 M automatic for the machining of certain components, which, at an output of 1,400-2,800 pieces annually, were formerly machined on turret and other lathes. At the Pervyy avtogenny zavod (First Autogenous Plant) eight multispindle unit-head machine tools with gang setting have been developed for the machining of 22 items. These machines are paid off within less than one year. The author points out that

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The Gang Machining of Components

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A004/A001

The VPTI accumulated an extensive experience in the use of multipurpose setting fixtures in big-lot and small-batch production. 41 types of multipurpose setting fixtures have been developed and are utilized in industry, being brought out in 120 sizes, with simple interchanging setting. The VPTI is planning automated fixtures, particularly for the "Metallorukav" Plant. Two automatic readjustable gang lines have been developed at the "Borets" Plant on the basis of the multi-purpose metal cutting machine tools 1261П (1261P), 3486, 2706 and МШ-100 (MSh-100) fitted with automatic loading devices, such as vibration hoppers, vibration elevators with chutes and vibration conveyers. There are 4 Soviet references.



Card 3/3

SHENKER, S.: GUTMAN, A.; ZAKHAROV, N.

Plasticizers for synthetic leather. Prom. koop. 12 no.9:10-11 S
'58. (MIRA 11:10)

1. Tsentral'naya nauchno-eksperimental'naya kezhobuvnaya laborateriya,
Moskva. (Leather, Artificial) (Plasticizers)

GUTMAN, A.A.

Machines are our reliable helpers. Transp. stroi. 13 no.6:48
Je '63. (MIRA 16:9)

1. Brigadir kompleksnoy brigady kommunisticheskogo truda
stroitel'no-montazhnogo upravleniya No.232 tresta Omsktransstroy.
(Construction industry)

GUTMAN, A.A., polkovnik med.sluzhby., KHEYFETS, S.L., mayor med.sluzhby

Expanded consultations within the hospital. Voen.-med.zhur.
no.11:72-73 N'56 (MIRA 12:1)
(DIAGNOSIS)

YAKOVLEV, Yaroslav Ivanovich, преподаvatel'; GUTSMAN, A.A., red.;
BALLOD, A.I., tekhn.red.

[Handbook of practical work on pharmacology and prescription
writing] Rukovodstvo k prakticheskim saniatiim po farmako-
logii s retsepturoi. Moskva, Gos.isd-vo sel'khoz.lit-ry.
1958. 311 p. (MIRA 12:7)

1. Volokolamskiy veterinarnyy tekhnikum (for Yakovlev).
(Veterinary materia medica and pharmacy)

SULIMOV, A.D.; LOBEYEV, M.V.; KOZHINA, I.N.; AL'TSHUL'ER, A.Ye.; GUTMAN, A.B.;
SATYUGOV, V.M.

Hydrofining of distillate fractions from Eastern petroleums without
introducing hydrogen from an external source. Khim.i tekh.topl.no.9:
1-11 S '56. (MLBA 9:10)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut Neftyanoy promyshlen-
nosti, Novokuybyshevskiy neftepererabatyvayushchiy zavod.
(Petroleum--Refining)

GUTMAN A.B.

11(A) PHASE I BOOK EXPLOITATION 808/1319

Abdumiyazov AN SSSR. Bashkirskiy filial

Khimiya sere-organicheskikh soedineniy, sodershaashchikhaya v neftyakh i nefteproduktakh; materialy II nauchnoy sessii (Chemistry of Sulfur-Organic Compounds Contained in Petroleum Products; Papers of the 2nd Scientific Session) v. 1. Ufa, Izd. Bashkirskogo filiala AN SSSR, 1958. 228 p. 1,500 copies printed.

Ed.: Susharina, K.I.; Editorial Board: Ayzarov, B.B., Mashkin, A.V., Obolentsov, B.D. (Resp. Ed.), Roshdestvenskiy, V.F., and Shania, L.L.; Tech. Ed.: Rabinov, N. Sh.

PURPOSE: This book is intended for petroleum specialists of scientific research establishments, educational institutions, and petroleum refining plants.

COVERAGE: This collection is the first of a multivolume publication on the results of scientific research work carried out in the Soviet Union on the chemistry and technology of sulfur- and nitrogen-organic compounds during the period 1954-1955; and according to a coordinated research project outlined in 1956 by the sponsoring agency (Bashkir Branch, AN SSSR).

Card 1/15

Salimov, A.D., N.V. Lobayev, I.N. Koshina, A.Ye. Al'tabaler, A.B. Gutman, and V.M. Satragov, Hydrogen Purification of Distilled Fractions of Eastern Petroleum Without the Introduction of Hydrogen From Without (avtogradirovka) is described which consists in the use of hydrogen separated during the dehydrogenation of naphthene hydrocarbons, as proposed by F.W.B. Porter (Ref's 1, 2). Desulfurization of kerosene distillates with initial sulfur content up to 0.8 percent was 90-95 percent after boiling at temperatures ranging from 180 to 300°C for 1000 hours; whereas, desulfurization of gas oil fractions of ~1 percent sulfur content was 60-80 percent after 200 hours at 200-350°C.

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SOV/138-59-3-3/21
AUTHORS: Krasnov, B.P., Milovanov, L.V. and Gutman, A.I.
TITLE: Purification of Waste Water Formed in Antimony Production
(Ochistka stochnykh vod, obrazuyushchikhsya pri
poluchenii sur'my)

PERIODICAL: Tsvetnyye Metally, 1959, Nr 3, pp 8 - 12 (USSR)

ABSTRACT: In antimony production waste water arises in the following stages: ore flotation, leaching of antimony sulphide from the concentrate with sodium sulphide and electrolysis (spent electrolyte). The flotation tailings water contains (Table 1) relatively coarse solids, flotation reagents and is somewhat toxic. The authors point out that slaked lime cannot be used as a coagulant, since it will dissolve antimony sulphide from the tailing waste and make the water more toxic and recommend aluminium sulphate. Non-phenolic frothing agents should be used because of the difficulties of phenol removal. The water from the re-pulping of the cake (composition shown in Table 2) is very toxic and difficult to purify because of the simultaneous presence of large quantities of sulphides, sulphites, arsenic and coarse particles.

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Purification of Waste Water Formed in Antimony Production

The authors recommend that mechanical methods should be adopted for removing the cake, thus avoiding the formation of this waste water. The spent electrolyte purification is based on the dissociation of antimony-sulphide salts to form sulphide-ion; by adding iron ions (as FeSO_4)

the sulphide is combined as the hardly-soluble FeS and the equilibrium is favourably displaced. The authors found that arsenic is removed simultaneously, the Na_3AsS_3 being converted to the insoluble As_2S_3 . Their experiments were

carried out on industrial waste waters and it was found that for complete purification enough ferrous sulphate must be added to precipitate both sulphides and hydroxyl ions. The authors propose a flowsheet (figure) with regeneration of antimony (by leaching the antimony sulphide - iron sulphide precipitate with return electrolyte and electrolysis) and production of sulphur and iron hydroxide by aerial oxidation of iron sulphide. This has been tested in the laboratory. For hot climates evaporation of spent electrolyte with dumping of the solid

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Purification of Waste Water Formed in Antimony Production

SOV/136-59-3-3/21

under special conditions is possible.
There are 1 figure, 3 tables and 9 references, 8 of
which are Soviet and 1 English.

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GUTMAN, A.I.; PLOTNIKOV, N.I.; KOGAN, B.I.

Purification of waste waters from gold recovery plants using
various flowsheets. TSvet.met. 34 no.10:28-33 0 '61.
(MIRA 14:10)

1. TsNIIolovo.
(Gold--Metallurgy) (Sewage--Purification)

GUTMAN A. L.

AUTHOR: Gutman, A. L.

108-9-3/11

TITLE: On the Computation of Wave Guides with Gradually Varying Cross Sections (K raschetu volnovodov s postepenno izmenyayushchimsya secheniyem).

PERIODICAL: Radiotekhnika, 1957, Vol. 12, Nr 9, pp. 20-28 (USSR)

ABSTRACT: Formulae which express the elementary waves in the wave guide with a gradually changing cross section are derivated here. These formulae are used for the derivation of the formulae for the transformation of the power of resistance and conductivity in such a wave guide as well as for the exterior parameter of a quadrupole to which the wave guide section with gradual alternation of the cross section is equivalent. An integral equation is obtained which determines the longitudinal profile of the wave guide transition which is the less distorting, i.e. the wave guide section with gradual alternation of the cross section. There are 6 Slavic references.

SUBMITTED: October 10, 1956.

AVAILABLE: Library of Congress
Card 1/1

6(4), 7(7)

SOV/108-13-12-2/12

AUTHOR: Gutman, A. L.

TITLE: Calculation of the Transitions From Rectangular to Π and H-Shaped Waveguides (Raschet perekhodov ot pryamougol'nykh volnovodov k Π - i H-volnovodam)

PERIODICAL: Radiotekhnika, 1958, Vol 13, Nr 12, pp 11-19 (USSR)

ABSTRACT: It is assumed that the fundamental wave only can propagate in a rectangular waveguide and the direction of energy transmission coincides with that of the z-axis. The reflection coefficient in the section $z = 0$ can then be expressed by the formula (1) (Ref 3) if the conditions of adaptation in the zone III (the so-called actual input reflection coefficient) are satisfied. Diagrams for the calculation of the external parameters of the transition are plotted. The obtained formulae and diagrams give the possibility of finding the quantities contained in formula (1) and the actual reflection coefficient and the other transition parameters (Ref 3). In order to accelerate the reflection factors the formula (1) may be transformed into formula (17). The optimum longitudinal cross section of the transition is determined. In this connection, the integral equation (19)

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SOV/108-13-12-2/12

Calculation of the Transitions From Rectangular to Π and H-Shaped Waveguides

(Ref 3) is solved. The obtained results permit the scheme for the calculation of the transition for engineering purposes to be shown. Such a scheme is suggested by the author. There are 4 figures and 6 references, 4 of which are Soviet.

SUBMITTED: May 15, 1957

Card 2/2

9(9)

AUTHOR:

Gutman, A. I.

SOV/20-125-6-21/61

TITLE:

The Application of the Asymptotic Integration of the Wave Equation to the Solution of Some Wave-guide- and Resonator Problems (Primeneniye asimptoticheskogo integrirvaniya volnovogo uravneniya k resheniyu nekotorykh volnovodnykh i rezonatornykh zadach)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 6, pp 1252-1255 (USSR)

ABSTRACT:

The longitudinal distribution of a field in wave guides of complicated shape is described by an infinite system of linear differential equations for the amplitude coefficients of the various types of waves (Refs 3,5). If the transversal parameters of the wave guide vary with sufficient slowness along the propagation direction (z), the bond between the various wave types may, in general, be neglected. In this case the system decomposes, and for each wave a linear differential equation of the second order may be written down:

$$d^2 f/dz^2 = p(z) f. \text{ Here it holds that } f = h_e, e_h; \int = kz, \text{ and}$$

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h_e - denotes the amplitude coefficient of the magnetic field of

The Application of the Asymptotic Integration of
the Wave Equation to the Solution of Some Wave-
guide- and Resonator Problems

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the E-wave; e_h - denotes the amplitude coefficient of the electric field of the H-wave, $k = 2\pi/\lambda$ - the wave number; $p(\xi)$ may vary in form according to the degree of approximation used. In the case of a consistent neglect of the terms which are small in the second order, it holds that

$$p(\xi) = -1 + \frac{\chi_{e,h}^2}{k^2}, \text{ where } \chi_e \text{ and } \chi_h \text{ are the}$$

critical numbers of the E- and H-waves respectively. $p(\xi)$ is in all cases a slowly variable function, and therefore the equation $d^2 f/d\xi^2 = p(\xi)f$ can be solved by approximation by the method of Brillouin-Wentzel-Kramers (BWK-method). The BWK-method is no longer applicable as soon as the function $p(\xi)$ becomes equal to zero within the interval under investigation, i.e. if the investigated section of the wave guide has a critical cross section. In this case the above equation may be integrated within a wider range by means of asymptotic methods, in which case the above equation is compared with the

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The Application of the Asymptotic Integration of
the Wave Equation to the Solution of Some Wave-
guide- and Resonator Problems

SOV/20-125-6-21/61

so-called coordinated equation $d^2y/dt^2 = I(t)y$, the solution of which can be explicitly determined. The author then gives a rather detailed report on 2 resonance problems to which asymptotic integration is best applied in the extended range. The computation method discussed gives satisfactory results in spite of the simplifying assumptions. The author thanks B. M. Mashkovtsev for placing at his disposal the experimental data used in the course of this investigation. There are 2 figures and 7 references, 5 of which are Soviet.

PRESENTED: January 15, 1959, by V. A. Fok, Academician

SUBMITTED: January 13, 1959

Card 3/3

ACC NR: AP5022421

L 8890-66 EWT(d)/EWT(1)/T IJP(c) GG

SOURCE CODE: UR/0109/65/010/009/1583/1593

AUTHOR: Gutman, A. I.

~~44,55~~

28
B

ORG: none

TITLE: Application of the cross-section method to the problem of diffraction of an electromagnetic wave by a heterogeneous sphere

~~21,40,55~~

SOURCE: Radiotekhnika i elektronika, v. 10, no. 9, 1965, 1583-1593

ABSTRACT: According to the provisions of the cross-section method, the field of an irregular waveguide is represented by vector eigen-function series formed on the basis of the diaphragm functions of a corresponding regular waveguide. As applied to the sphere-diffraction case, the method will operate with full spheres, instead of cross-sections, and with spherical functions, instead of diaphragm functions. Equations for corresponding expansion coefficients are developed, and the D. Arnush equations (IEEE Trans., AP-12, 1964, 1, 86) are cited for the case of radially symmetrical inhomogeneity. The use of the cross-section method is considered expedient when the sphere (meridional and azimuth) parameters as a function of coordinates vary slowly. Orig. art. has: 82 formulas.

SUB CODE: 09, 17 / SUBM DATE: 01Jul64 / ORIG REF: 003 / OTH REF: 001

Card 1/1 *sds*

UDC: 621.371.16

VENSLAUSKAS, M.I.; GUTMAN, A.M.

Two fusion thresholds of light stimuli in the visual analyzer
of man. Dokl. AN SSSR 153 no.5:1202-1203 D '63.

(MIRA 17:1)

1. Kaunasskiy meditsinskiy institut. Predstavleno akademikom
V.N. Chernigovskim.

GUTMAN, A.M.

Effect of the amplitude on the period of the electroencephalogram. Biofizika 7 no.6:717-718 '62. (MIRA 17:1)

1. Kaunasskiy gosudarstvennyy meditsinskiy institut.

HUTMAN, A.M. [Gutmanas, A.]; BUDRITE, S.D. [Budryte, S.]

Classification of $3nj$ -coefficients. Liet ak darbai B no.4:3-9:
159 (SEAI 9:3)

1. Institut fiziki i matematiki AN Litovskoy SSR.
(Angular momentum (Nuclear physics))

BUDRYTE, S.D. [Budryte, S.]; GUTMAN, A.M. [Gutman, A.]

Graphic discussion of 18j-coefficients. Liet ak darbai B no.4:
11-26 '59 (EBAI 9:3)
(Angular momentum (Nuclear physics))

VANINA, V.I.; GUTMAN, A.M.; ZAKOSHCHIKOV, A.P.; ZAKOSHCHIKOV, S.A.; ROTLEYDER,
V.M.

Hydrolytic lignin used as an active filler for polyvinyl chloride
resin and microporous rubbers. *Gidroliz i lesokhim.* prom. 12 no.5:
8-9 '59.

(Lignin)

(MIRA 12:10)

VANINA, V.I.; GUTMAN, A.M.; ZAKOSHCHIKOV, A.P.; ZAKOSHCHIKOV, S.A.;
ROTLEYDER, V.M.

Adsorption properties of hydrolytic lignin. Koll.zhur. 22 no.1:
9-15 Ja-F '60. (MIRA 13:6)

1. Vysshaya shkola promyslovoy kooperatsii st. Cherkizovo, Moskovskoy
oblasti.

(Lignin)

(Adsorption)

24.3400

78011
SOV/33-37-1-11/31

AUTHORS: Gutman, A. M., Levinson, I. B.

TITLE: Non-Uniform Vector Couplings in Atomic Spectra

PERIODICAL: Astronomicheskij zhurnal, 1960, Vol 37, No. 1,
pp 86-87 (USSR)

ABSTRACT: At present only uniform couplings of the type LS and jj are well known. The nonuniform couplings are used only in exceptional cases: the j1 coupling in the spectra of the inert gases, and Jj coupling in configurations f^m s of the lanthanides. It appears that inside a shell of equivalent electrons only uniform coupling is possible, while various nonuniform couplings may take place between the shells; these appear especially in configurations which consist of an unexcited or slightly excited ground shell and a highly excited electron. An important condition is that G, the interchange interaction l' of the electron with ground shell, be small. A table gives the

Card 1/3

Non-Uniform Vector Couplings in Atomic Spectra

78011

SOV/33-37-1-11/31

classification of $2p^2(3P)4f$ OII levels by means of J1 coupling. Other examples of astrophysical interest are $4f^7(8S)6p$ Eu II, $4f^7(8S)6s^26p$ Gd I and $4f^7(8S)6s6p$ Gd II; for the first of these, the computed levels are close to those found experimentally. A detailed account of this work will be published in the Publications of the Academy of Sciences of the Lithuanian SSR. The authors thank A. P. Yutits and A. A. Nikitin for a valuable discussion of the problem. There are 2 tables; and 3 U.S. references. The U.S. references are: G. Racah, Phys. Rev., 61, 537, 1942; G. Harrison, W. Albertson, N. Hosford, JOSA, 31, 439, 1941; Ch. E. Moore, Atomic Energy Levels, Nat. Bur. Stand., Washington: 1, 1949, 2, 1952.

ASSOCIATION:

Vil'nyus State University and Institute of Physics and Mathematics of the Academy of Sciences of the Lithuanian SSR (Vil'nyusskiy gosudarstvennyy universitet,

Card 2/3

Non-Uniform Vector Couplings in Atomic Spectra

75011

SOV/33-37-1-11/31

Institut fiziki i matematiki Akademii nauk Litovskoy
SSR)

SUBMITTED: July 29, 1959

Card 3/3

24.6200

S/081/61/000/020/003/089
B119/B147

AUTHORS: Levinson, I. B., Gutman, A. M.

TITLE: Problem of vector linkage in atomic spectra

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 20, 1961, 8, abstract
20B53 (Tr. AN LitSSR, B, 1(24), 1961, 85 - 94)

TEXT: The problem of introducing different types of vector linkage of moments in atomic spectra is discussed. The l^{m1} configuration is dealt with in detail. The authors find in each case a certain order of moment linkage, where the energy matrix is, the closest to the diagonal matrix, and has sufficient accuracy. [Abstracter's note: Complete translation.]

✓B

Card 1/1

GUTMAN, A. M.[Gutmanas, A.]; LEVINSON, I. B.[Levinsonas, J.]

Genealogical coefficients for nonhomogeneous vector relations.
List ak darbai B no.2:95-104 '61. (EEAI 10:9)

1. Institut fiziki i matematiki Akademii nauk Litovskoy SSR;
Vil'nyusskiy gosudarstvennyy universitet im. V. Kapsukasa i Kaunasskiy
gosudarstvennyy meditsinskiy institut.

(Vector analysis) (Matrices) (Atomic spectra)

GUTMAN, A.M.

Vector bond in X-ray spectra. Opt. i spektr. ll no.2:277-278 Ag
'61.

(MIRA 14:8)

(Chemical bonds)
(X-Ray spectroscopy)

LEVINSON, Ioshua Ben'yaminovich; NIKITIN, Aleksey Alekseyevich.
Prinimal uchastiye GUTMAN, A.M., nauchnyy sotr.; TSAR'KOVA,
Z.I., red.; YELIZAROVA, N.A., tekhn. red.

[Handbook on the theoretical calculation of line intensities
in atomic spectra]Rukovodstvo po eoreticheskomu vychisleniu
intensivnostei linii v atomnykh spektrakh. Leningrad, Izd-vo
Leningr. univ., 1962. 358 p. (MIRA 16:3)
(Spectrum, Atomic)

VENSLAUSKAS, M.I.; GRINYAVICHUS, K.A. [Grinevicius, K.]; GUTMAN, A.M.

Statistical electroencephalogram model. Zhur. vys. nerv.
deiat. 14 no. 4:726-731 Ji-Ag '64. (MIRA 17:12)

1. Kaunas Medical Institute, Lithuanian S.S.R.

GUTMAN, B.B.

CA

23

High wet strength paper. B. B. Gutman and D. M. Rivate. U.S.P. 2,608,879, Dec. 31, 1947. To impart wet strength to paper, the pulp is treated with 5-7% (of the dry fiber wt.) of a colloidal soln. in HCl having a 2.2% concn. of a resin obtained as follows: to 100 g. of melamine, 60 g. CH_2O , and 1 cc. of 100% AcOH add 140 ml of H_2O . Boil at 65-70° with const. stirring until aropy, hydrophobic product is obtained. Dry and grind to a powder. Or, to 100 g. of melamine and 75-80 g. of CH_2O add 250 ml. of H_2O and condense at 65-70°. M. Hosh

GUTMAN, B. B.

Wet strength paper. B. P. Gutman, *Ind. Eng. Chem. Anal. Ed.*, 29, No. 3, 12-16, 1957. The methylene formaldehyde resins (I) have been found to adhere to the surface of the fibers more firmly than do the urea-formaldehyde resins. The paper treated with I kept wet strength (II) after a prolonged soaking in H₂O and did not suffer a loss in breaking and tearing resistance as did the paper treated with the latter. Solns. with 12% I contg. 1-2% HCl, were aged 12 hrs. During this aging the particles grew larger, the elec. potential is lowered, and the stability decreased. I am added in the heater. To elucidate the nature of the II formation a bleached kraft pulp was treated with 0-14% I. An optimum, with regard to the phys. strength of the paper, was reached with 6% I. Breaking strength, stretch, and folding resistance increased with the increasing amt. of I, but tearing strength dropped to about half its original value. Zero-span breaking strength showed no difference between the treated and untreated fibers, but I lowered the swelling capacity of the fibers. Soaking in H₂O lowered II initially, but did not diminish it afterwards. The mechanism of II formation was studied by means of electron and ultraviolet microscopy. The microscopical investigations by means of the visible, visible-polarized light, and x-rays were not successful. The electron beams were heavily scattered by the fibers treated with I, but the microfibrillar structure of the untreated fibers was shown distinctly. On the ultraviolet photographs the method of Brumberg was applied. Three black-and-white photographs are taken at 313, 365, and 354-280 m μ , the diapositive is projected on a screen by means of a chromoscope; applying red, blue, and green filters gives a colored picture. The fibers treated with I showed a characteristic absorption at 254-80 m μ , and ap-

(11)

B. B. GUTMANN

appeared blue on the surface, while the untreated fibers exhibited only transparent contours. The microphotographs of the fibers split lengthwise showed dark-blue edges, but the middle of the fibers was not stained, which indicated that only the surface was covered with I. The untreated fibers were dissolved completely in cuprammonium soln. in 24 hrs., but from the treated fibers around 90% was left undissolved after 72 hrs., because I protected the fibers from the attack by the soln. That I form water-resistant bonds was shown by the addn. of 250 and 500% kaolin to I treated and untreated pulp. The untreated paper had 2.1% II, paper treated with 3% I and kaolin (ash 53.4%) had 5.2% II, that with 6% I and a lesser amount of kaolin (ash 39.1%) had 9.8% II, and one with 6% I and no kaolin had 32.8% II.

T. Jurcic

3/2

GUTMAN, B.B., kandidat tekhnicheskikh nauk.

Electrically conductive paper. Bum.prom. 31 no.6:12-15 Je '56.

(MLRA 9:8)

1. Tsentral'nyy nauchno-issledovatel'skiy institut tsellyuloznoy i bumazhnoy promyshlennosti.

(Paper)

2(1) PRAVE I NOK REPRODUCTION SOV/ZITS

Abstrakts nauch Upravlyaniya'boy ISR. Instytut matematiky
 Zastoyaniya metoda elektrodinamicheskoy analogii do raznykh raznykh
 slyuchayev resheniya zadach (Application of the Method of Electrodynamic
 Analogy to the Solution of Various Engineering Problems) Kyiv,
 Vyd-vo AN USSR, 1959. 160 p. 1,000 copies printed.

M. of Publishing House: T.K. Remennik; Tech. Ed.: O.O. Matviyuk;
 Editorial Board: P.F. Fil'chakov (Resp. Ed.), V.M. Ostapenko (Resp.
 Secretary), Yu.V. Blahoveshchens'kiy, I.B. Pohreb'skiy, and
 V.S. Shmans'kiy.

PURPOSE: This book is intended for scientific workers, engineers,
 Agrigants and students.

COVERAGE: This book is a collection of articles on the application of the
 electrodynamic analogy method to the solution of various engineering
 problems. Among the topics covered are: the solution of problems of
 problems on statics by the electrodynamic analogy method. Special
 attention is given to the study of various problems of filtration, in both
 homogeneous and nonhomogeneous ground, problems of plane bending, heat en-
 gineering problems, modelling electro-osmotic water level fall, and the con-
 formal mapping problem. Problems of the physical and technical properties of
 resistance paper and the accuracy of the electrodynamic analogy method
 are studied and the new, more universal model of the EDA integrator is de-
 scribed. All the articles end with summaries in Russian and English.

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PEREPELKINA, M.D.; GUTMAN, B.M.

Increasing the operative capacity of carding machines in
wool spinning. Tekst. prom. 22 no.7:33-35 JI '62.

(MIRA 17:1)

1. Nachal'nik laboratorii netkanykh materialov Leningradskogo
nauchno-issledovatel'skogo instituta tekstil'noy promysh-
lennosti (for Perepelkina). 2. Starshiy inzh. tekhnicheskogo
otdela Kombinata tonkikh i tekhnicheskikh sukon imeni Tel'mana
(for Gutman).

Wool Carding

Mechanical removal of burdock hairs from wool. Tekst. pron. no. 5, (1952)

Monthly List of Russian Accessions, Library of Congress, August, 1952. UNCLASSIFIED

ACC NR: AP6034241

(N) SOURCE CODE: UR/0120/66/000/005/0211/0214

AUTHOR: Koval', A. G.; Braude, P. A.; Gutman, B. V.

ORG: Khar'kov State University (Khar'kovskiy gosudarstvennyy universitet)

TITLE: Application of ion beams for the micromachining of thin metal film on a dielectric

SOURCE: Pribory i tekhnika eksperimenta, no. 5, 1966, 211-214

TOPIC TAGS: ion beam, ion beam focusing, thin film

ABSTRACT: Equipment for generating thin ion beams was designed, constructed, and tested on thin metal films deposited on insulating substrates. This process is specifically intended for the manufacture of microcircuits. Electron beam machining has the severe disadvantage of removing material due to heat generation, which results in modification of thin film properties, especially in multilayer devices of the type used in microcircuits. The ion beam removes material due to cathodic sputtering, without any substantial generation of heat. The application of ion beam machining techniques so far has been hindered by the difficulty of generating thin collimated beams about 0.05 mm in diameter. Figure 1 shows the new ion-beam generator designed to produce such beams. The final beam collimation is accomplished using two diaphragms which have ap-

UDC: 621.3.032.26:621.791.94

Card 1/3

ACC NR: AP6034241

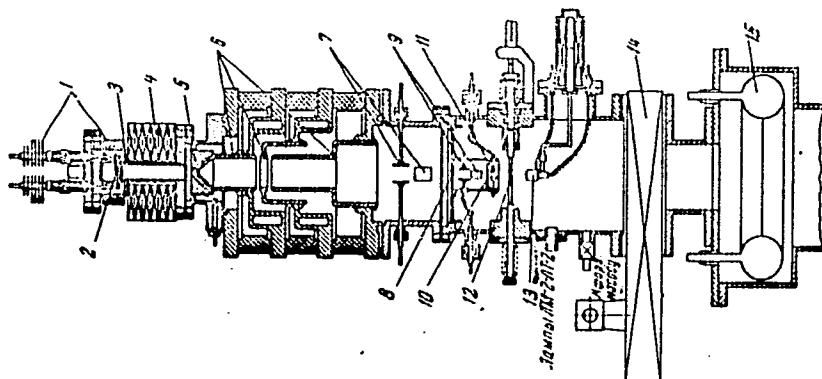


Fig. 1. 1--anode; 2--heated cathode; 3--radiators; 4--magnetic coil; 5--cold cathode with the emission aperture; 6--electrodes of the three-electrode lens; 7--first corrector; 8--first collimating diaphragm; 9--second corrector; 10--second collimating diaphragm; 11--plane condenser which steers the collimated beam; 12--movable sample stage; 13--Faraday cylinder; 14--vacuum valve; 15--nitrogen trap.

Card 2/3

ACC NR: AP6034241

pertures smaller than 0.1 mm, pierced with a ruby laser beam. The experiments involved beam current densities of 1 to 25 mA/cm². Hydrogen, neon, argon, and nitrogen were used as gas sources of ions. The cathode is in the form of a magnetic arc. The same cathode was used with all gases. Experiments included material removal from Au, Cu, Al, Cr, Ta, and Ag films on dielectric substrates. It was shown that close control of these operations was possible with satisfactory results. The authors thank Ya. M. Fogel for his constant interest in this work and useful discussion. Gratitude to V. S. Ravin for a series of useful discussions is also expressed. Orig. art. has: 3 figures.

SUB CODE: 19,20/

SUBM DATE: 02Oct65/

ORIG REF: 004/

OTH REF: 002

Card 3/3

GUTMAN, D.I.

Role of the Leningrad party organization in the purification of the city. Trudy LSGMI no.68:16-23 '61. (MIRA 15:11)

1. Kafedra marksizma-leninizma Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo instituta (zav. kafedroy - dotsent A.F.Kamyshanov).

(LENINGRAD--AIR--POLLUTION)
(LENINGRAD--COMMUNIST PARTY OF THE SOVIET UNION)

Gutman, D. S.

44-1-27

TRANSLATION FROM: Referativnyy zhurnal, Matematika, 1957, Nr 1, p 2 (USSR)

AUTHOR: Gutman, D.S.

TITLE: N.I. Lobachevskiy and the Kazan' Economic Society
(N.I. Lobachevskiy i Kazanskoye Ekonomicheskoye Obshchestvo)

PERIODICAL: V sb.: Istoriko-Matem. issledovaniya, Nr 9, Moscow, Gostekhizdat, 1956, p 77-100

ABSTRACT: Lobachevskiy was, from the time of the founding of the Society (1839), one of its leading members. In addition to his varied direct work on inventions and efficiency in the field of agriculture, he, striving for the fullest development of the productive forces of Russia, performed in the society extensive everyday organizational-administrative work. Thanks to his energetic participation, the society was able to develop research into the economic needs of the region, organize agricultural and industrial exhibitions, conduct propoganda for the introduction of scientific achievements and economic experimentation, discuss the forms of professional education, etc. A number of unpublished archival documents are utilized.

B.L. Laptev

Card 1/1

GUTMAN, B.M., starshiy inzh.

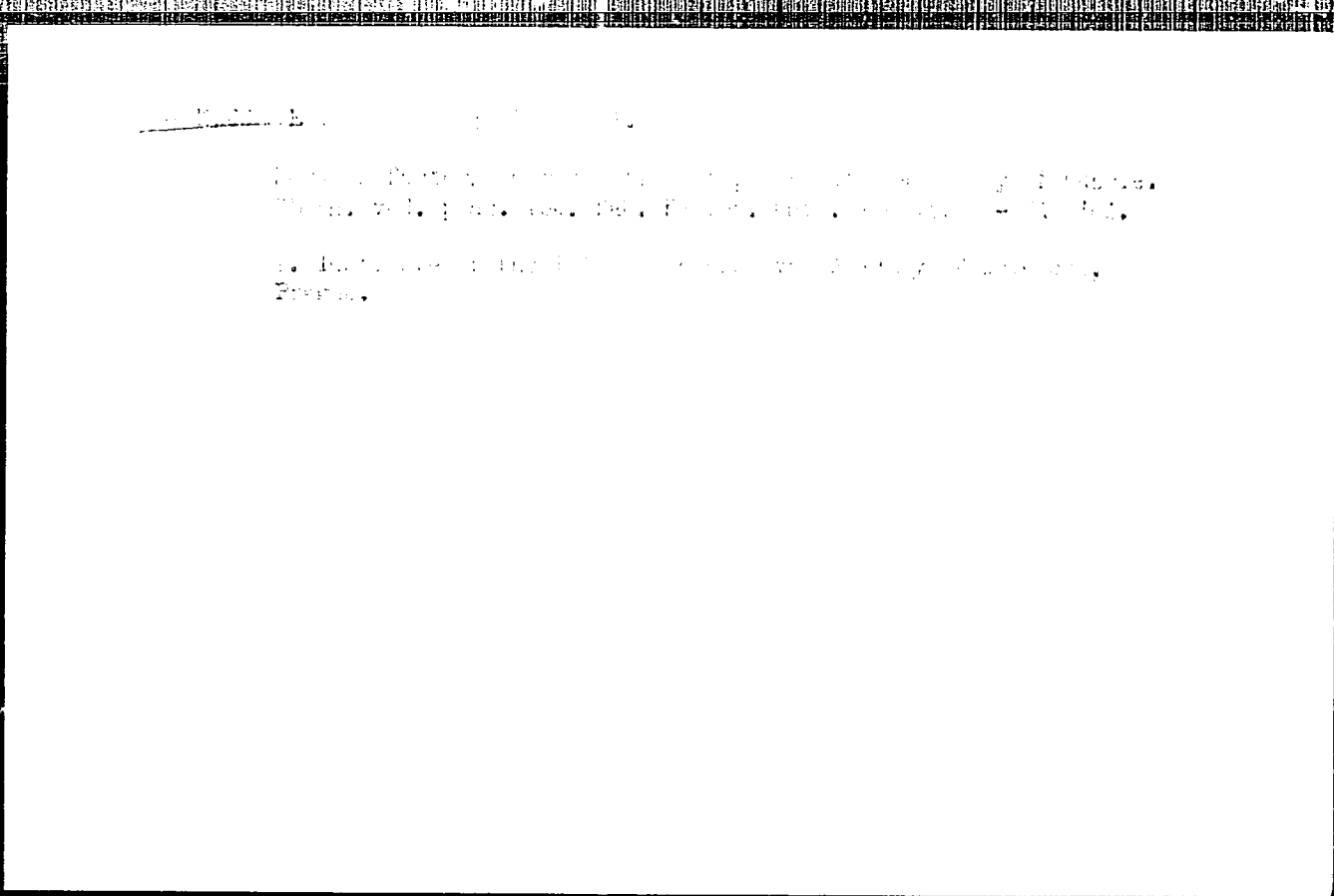
Consultation. Tekst.prom. 22 no.8:96 Ag '62.

(MIRA 15:2)

1. Tekhnicheskiiy otdel kombinata imeni Tel'mana.
(Dyes and dyeing---Wool)

GUTMAN, Z.

Shortening of work day and physiological research. Cesk. fysiол.
9 no.4:321-325 J1 '60.
(INDUSTRIAL MEDICINE)



AUTHOR: Gutman, E.M., Engineer

98-58-7-11/21

TITLE: Application of an Electrometric Method for Measuring the Ground Porosity in the Dilution Process. (Primeneniye elektrometricheskogo metoda dlya izmereniya poristosti grunta v protsesse razzhizheniya.)

PERIODICAL: Gidrotekhnicheskoye stroitel'stvo, 1958, Nr 7, pp 37-39 (USSR)

ABSTRACT: The electrometric method for determining the porosity of water logged ground, elaborated by B.F. Rel'tov and others from the VNIIG (ref. 2), is based on measuring the active ground resistance by a sound from a diode system with the help of a four-pole bridge of active resistances working on sine wave current of audio frequency. This bridge is balanced for static measurements and unbalanced for the analysis of kinetics of porosity alterations. The same, but slightly modified method was used for determining the porosity of water logged ground in the process of dilution caused by an explosive wave. The method is described in detail. There is 1 schematic drawing, 1 table and 3 Soviet references.

1. Earth--Porosity--Measurement 2. Electrometers--Applications

Card 1/1

GUTMAN, E.M.

Studying filtration transfer in capillary porous systems.
Inzh.-fiz.zhur. no.10:62-68 0 '58. (MIRA 11:11)

1. Institut inzhenerov zheleznodorozhnogo transporta, g.
Dnepropetrovsk.

(Permeability)

5(4)

SOV/69-21-3-4/25

AUTHORS: Gol'dshteyn, M.N. and Gutman, E.M.

TITLE: The Effect of an Ultrasonic High Frequency Field on Plastic Pastes

PERIODICAL: Kolloidnyy zhurnal, 1959, Vol XXI, Nr 3, pp 272-275 (USSR)

ABSTRACT: The authors describe the results of an investigation intended to determine the effect of high-frequency ultrasound oscillations on changed mechanical properties of different clayey pastes in disperse phases. For the sake of comparison, the investigation was extended to coarse-grained sand. For the experiments a special dilatometer was used, the scheme of which is illustrated by a diagram (Figure 1). The piezoelectric ultrasound radiator was barium titanate. The pastes were under a vertical load (porous piston) of 2 kg/cm². The experiments have shown that high-frequency ultrasound oscillations cause an increase

Card 1/3

SOV/69-21-3-4/25

The Effect of an Ultrasonic High Frequency Field on Plastic Pastes

in volume of highly dispersed pastes, which proceeds approximately in a linear direction during the ultrasound treatment. In a series of experiments the dilatations of montmorillonite pastes reached 0.074 mm/min in a vertical direction. During the investigation of coarse-grained earth (sands) the described effect could not be observed; ultrasound causes a solidification. The same could be observed with regard to dry powders of highly-dispersed clays. An increase of the soakage of the clay samples and of the intensity of the vibrations causes an increase in dilatation. The presence of Na⁺ ions in the porous solution strengthens this effect. At a diminution of the polarity of the liquid, which fills the pores of the paste, the described effect becomes considerably weaker and wholly disappears for non-polar liquids. The effect of dilatation, apparently, is caused by the fact that ultrasound intensifies the linkage processes of polar molecules of the liquid and, in the case of montmorillonite, also increases the "access-

Card 2/3

30V/69-21-3-4/25
The Effect of an Ultrasonic High Frequency Field on Plastic Pastes

ible" surface of the particles. There are 4 graphs,
1 diagram and 6 references, 4 of which are Soviet and
2 English.

ASSOCIATION: Dnepropetrovskiy institut inzhenerov transporta
(Dnepropetrovsk Institute of Transport Engineers)

SUBMITTED: 24 June, 1957

Card 3/3

2(1)

AUTHOR:

Gozman, E. M.

SOV/32 25-4-50/71

TITLE:

Electrolytic Bridge for Testing the Electric Osmosis in the Presence of a Hydrostatic Pressure (Elektroliticheskiy mostik dlya issledovaniy elektroosmosa pri nalichii gidrostaticheskogo davleniya)

PERIODICAL:

Zaviskaya Laboratoriya, 1959, Vol 25, Nr 4, pp 486-489 (USSR)

ABSTRACT:

The glass siphons filled with an agar-agar gel, which are used as electrolytic bridges, cannot be employed at an increased pressure. An electrolytic bridge was designed (Figure) which withstands a greater pressure difference and can work at a passage of current of 40 ma. The device consists of a glass siphon in which there is the agar-agar solution and which opens from below into the glass vessel; this vessel holds a copper spiral as electrode, and has on top a small funnel with a glass cock by which the saturated copper-sulphate solution is filled in. The glass siphon has a ball-shaped bulge to increase the adhesion of the agar-agar gel to the glass walls. The described device was used with success in investigations of the filtration process, and can also be used for work in the vacuum if a small

Card 1/2

SOV/50-25 4 50/71
Electrolytic Bridge for Testing the Electrical Osmosis in the Presence of a
Hydrostatic Pressure

modification has been carried out. There is 1 figure.

ASSOCIATION: Dnepropetrovskiy Institut Avtomaticheskogo Transporta (Dnepropetrovsk
Institute of Transport Engineering)

Car 1 2/3

VASILEVSKIY, Ye.V., inzh.; GUTMAN, E.M.

Planning the protection of underground pipes against stray currents.
Stroi. truboprov. 6 no.6:11-12 Je '61. (MIRA 14:7)

1. Institut Ukgipromez g. Dnepropetrovsk.
(Cathodic protection)
(Pipe)

131

S:226 62 000 001,001,014
1003,1201

1. / 600
Author: Gutman, E. M.

Title: THE STATISTICAL CRITERION OF THE DEGREE OF DISPERSION AND THE INFLUENCE OF THE PARTICLE SHAPE ON THE PERMEABILITY AND COMPRESSIBILITY OF METAL POWDERS.

Periodical: *Poroshkovaya metallurgiya*. no. 1 (7). 1962, 3-9

Text: An attempt is made to apply statistics to the evaluation of the degree of dispersion of loose powders as a function of the particle shape. On the basis of the concept of the statistical criterion of the degree of dispersion, formulae are theoretically obtained for the permeability and compressibility of metal powders. The formulae agree well in special cases with similar empirical formulae, taking into account the shape of the particles and the structural characteristics of the powder. There is 1 diagram.

✓

Association: Ukgipromez g. Dnepropetrovsk (Ukgipromez, Dnepropetrovsk).

Submitted: August 29, 1961.

Card 1/1

VOLOTKOVSKIY, S.A., prof.; GUTMAN, E.N., inzh.

Study of electrolytic corrosion of underground installations by
vagrant currents in mining enterprises with open-pit mining. Izv.
vys. ucheb. zav.; gor. zhur. 6 no.4:136-143 '63. (MIRA 16:7)

1. Dnepropetrovskiy ordena Trudovogo Krasnogo Znameni gornyy
institut imeni Artema (for Volotkovskiy). 2. Ukrqipromex (for
Gutman). Rekomendovana kafedroy gornoy elektrotekhniki
Dnepropetrovskogo otdena Trudovogo Krasnogo Znameni gornogo
instituta imeni Artema.

(Electricity in mining) (Electrolytic corrosion)

VOLOTKOVSKIY, Sergey Andronikovich, doktor tekhn.nauk; VASILEVSKIY,
Yevgeniy Viktorovich, inzh.; GUTMAN, Emmanuil Markovich,
kand. tekhn. nauk; VIRGSLAVSKIY, V.N., kand. tekhn.nauk,
retsensent

[Protection of underground structures from electrolytic cor-
rosion] Zashchita podzemnykh sooruzhenii ot elektrokorrozii.
Kiev, Tekhnika, 1964. 134 p. (MIRA 17:10)

L 62532-65 EPP(c)/EWP(z)/ENA(c)/EWT(m)/EWP(i)/EWP(b)/T/EMA(d)/EWP(t) MJW/JD/MB

ACCESSION NR: AP5012651

UR/0369/65/001/002/0172/0101

334
33
B

AUTHOR: Karpenko, I. V.; Gutman, E. M.; Mindyuk, A. K.

TITLE: The electrochemical properties and chemical resistance of the white layer

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 1, no. 2, 1965, 172-181

TOPIC TAGS: white layer, electrochemistry, chemical resistance, corrosion resistance, steel, metal chemical property

ABSTRACT: A white layer is formed on the surface of steel in certain cases: during mechanical finishing operations, during electric-spark and electric-arc hardening, when there is friction, and also in the case of pulsed action by gases during explosive forming. This white layer is very difficult to etch in ordinary metallographic reagents. The white layer is a part of the base metal which undergoes structural and phase transformations. The density and uniformity of the layer depend to a great extent on how it is formed. In this article the electrolytic potential of various samples with white layers and the corrosion resistance of the white layer in various media are studied. Hypoeutectoid 40Kh steel and hypereutectoid ShKh15 steel are investigated. Metallographic analysis was done on white layers produced

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ACCESSION NR: AP5012651

by various methods. Electrolytic potentials were measured in a 3% solution of NaCl (imitation sea water); an aqueous solution of 0.01% HCL + 0.02% H₂O, with no hydrogen bubbles, which disturb the stability of the electrolytic potential; aqua regia; and a mixture of concentrated solutions of HCL and HNO₃ in 3.6:1 proportions. It was found that the white layer in all the investigated cases had a more positive electrode potential than the original metal. Samples with maximum thickness of the white layer had the most positive potential. Surface particles of a metal with white layer and without it form microcells and macrocells in which the white layer is the cathode. The white layer greatly increases the general corrosion resistance of steel under the test conditions. Attempts were made to explain the electrochemical properties of the white layer from X-ray structure and metallographic data analysis. It is suggested that there is a possible analogy between the protective electrochemical action of the white layer and the protective action of a loose cathode coating. Orig. art. has: 7 figures, 2 tables.

ASSOCIATION: FMI AN UkrSSR, Lvov

SUBMITTED: 08Dec64

ENCL: 00

SUB CODE: NM

NO REF SOV: 009

OTHER: 000

Card ^{KC} 2/2

L 3590-66

ACCESSION NR: AP5022409

the structure components coagulate, thus decreasing the active area of microgalvanic pairs and, correspondingly, the corrosion rate. In isothermal aging, the corrosion rate increased with exposure time, e.g., at 500C from 0.123 to 0.140 mm per year for 2 and 100 hr, respectively. The corrosion incubation period of identically aged VT3-1 alloy increased with the exposure time and decreased with increasing acid concentration. The alloy had high corrosion rates at acid concentrations of 40-70 and 78% and a minimum rate at a 53% concentration. In fatigue and corrosion fatigue tests, unnotched and notched alloy specimens were subjected to rotating bend test at 40C in air (10^7 cycles) and in humid air (97% humidity) and in a 3% NaCl solution ($5 \cdot 10^7$ cycles). The test results (see Fig. 1 of Enclosure) showed that the alloy fatigue strength in air was 52 dan/mm². Under the action of 3% NaCl solution, the conditional endurance limit continuously decreased to 48 dan/mm² at $5 \cdot 10^7$ cycles. Aging at 500C for 2 hr had no effect on the endurance limit of the alloy in all investigated media. In corrosive media, the effect of stress concentrators on fatigue strength was negligible. Previous corrosion decreased the fatigue strength of VT3-1 alloy in air from 52 to 39.5 dan/mm². In 3% NaCl solution, the conditional endurance limit stress at the $5 \cdot 10^7$ cycle basis was 48 and 38 dan/mm² for virgin and pre-corroded specimens, respectively. The VT3-1 alloy appears to be a suitable material

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ACCESSION NR: AP5022409

for parts working under stresses in aggressive media. Orig. art. has: 1 figure
and 1 table. 3

[MS]

ASSOCIATION: Fiziko-mekhanicheskiy institut AN UkrSSR, L'vov (Physicomechanical
Institute, AN UkrSSR) -

SUBMITTED: 04Apr65 44,35

ENCL: 01

SUB CODE: MM

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OTHER: .000

ATD PRESS: 4114

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ACCESSION NR: AP5022409

ENCLOSURE: 01

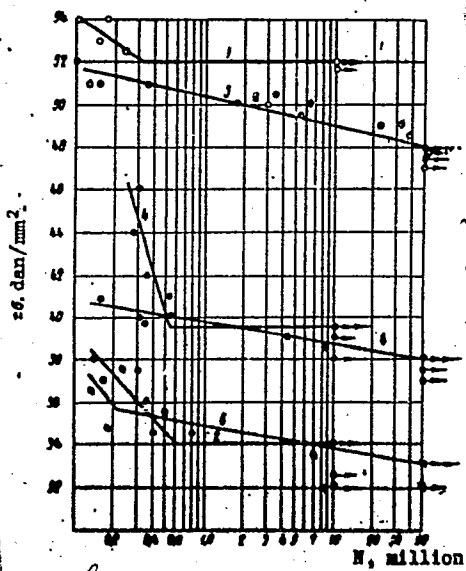


Fig. 1. Fatigue and corrosion-fatigue strength of VT3-1 titanium alloy

1a - Unnotched specimens; 2δ - notched specimens; 3 - specimens tested in humid air at 40C; 4c - pre-corroded specimens; 1, 2, 4 - tests in air; a, δ, b - tests in a 3% NaCl solution.

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4/4

GUTMAN, E.M.

Comparison of methods for calculating cathodic protection.
Stroi. truboprov. 10 no.8:19-20 Ag '65. (MIRA 18:11)

1. Fiziko-mekhanicheskiy institut AN UkrSSR, L'vov.

(A) L 13020-66

ACC NR: AP502836B

EWT(m)/EWP(w)/EWA(d)/EWP(j)/T/EWP(t)/EWP(z)/EWP(b)
SOURCE CODE: UR/0369/65/001/005/0535/0538

MJW/JD/WN/WB/

RM

55
B

AUTHOR: Gutman, E.M.; Mindyuk, A.K.; Karpenko, G.V.

ORG: Physics-engineering Institute, AN UkrSSR, L'vov (Fiziko-mekhanicheskii institut AN UkrSSR)

TITLE: Effectiveness of some corrosion inhibitors under load

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 1, no. 5, 1965, 535-538

TOPIC TAGS: corrosion inhibitor, corrosion rate, corrosion resistant steel, sulfuric acid, aqueous solution, stretch forming, mechanical fatigue

ABSTRACT: This work presents the results of an investigation into certain inhibitors of acid corrosion on the strength of steel subjected to uniaxial static stretching in aqueous solutions of sulfuric acid. The effect of thiourea, PB-8/2, KPI-2, N-phenyltrihydroxypyridinium chloride, and KPI-1 on the corrosion cracking of 30Kh steel in 6 n. H₂SO₄ subjected to a load of 120 dan/mm² showed that the greatest protective effect is produced by KPI-1; the time to failure was increased 340 times. The test of the effect of acid corrosion inhibitors on the static corrosion fatigue of 30Kh steel showed a high and relatively stable effectiveness of KPI-1 in protection from corrosion cracking at different levels of load (from 120 to 60 dan/mm²) and a test base of 10⁴ min. The increase in the effectiveness of KPI-1 at low loads is due,

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ACC NR: AP5028368

apparently, to the development of processes of adsorption with time, which indicates a certain shift of the potential toward positive values. Orig. art. has: 2 figures.

SUB CODE: //, 13 / SUBM DATE: 16Jun65 / ORIG REF: 010 / OTH REF: 004

Card

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L 10269-66 EWT(m)/EWP(w)/EPE(n)-2/EWA(d)/T/EWP(t)/EWP(z)/EWP(b) JJP(c)
ACC NR: AP5028377 JD/JW/JG/WB SOURCE CODE: UR/0369/65/001/005/059E/0595

AUTHOR: Gutman, E. M.; Gavrilenko, L. M. 44.55

ORG: Physics-engineering Institute, AN UkrSSR, L'vov (Fiziko-mekhanicheskiy institut AN UkrSSR)

TITLE: Determination of the chemical resistance and electrochemical properties of steels in corrosion-fatigue test samples

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 1, no. 5, 1965, 592-595

TOPIC TAGS: corrosion resistant steel, corrosion resistance, sea water corrosion, fatigue test, electrochemical analysis

ABSTRACT: The authors describe an assembly designed by them for automatic measurement and recording of data required in determining the corrosion resistance and the electrochemical properties of materials in a medium used for fatigue tests. The requirements for the determination of the chemical resistance are: 1) the technologic history and the treatment given to the samples being studied should be identical to that of corrosion-fatigue test samples, and 2) the method should be a fast one. The method used is based on the determination of the current of self-diffusion i_c ma/cm² along the polarizing curves, employing samples prepared for corrosion-fatigue tests (e.g., on the NU machines); the "differential polarization" principle is applied according to G. V. Akimov (Teoriya i metody issledovaniya korrozii metallov, Izd. AN SSSR, 1945.). The polarization curves presented show that the corrosion

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ACC NR: AP5028377

of SN3 steel, for example, proceeds with considerable anode control due to the intensive passivation of the surface. It is caused by the presence of molybdenum in the steel (3.14%), decreasing the depassivation effect of the chlorions. Anode control is less pronounced in the corrosion of Kh17N2 steel, and almost disappears in steels No. 45 and ShKh15. In the latter case the corrosion process is determined by the concentration of oxygen in the medium. Therefore, the results of the corrosion-fatigue tests will depend on the methods of admission of the medium to the sample. In the experiment conducted the fixed potential of SN3 steel was 175 mv more positive than that of Kh17N2 steel, and 230 mv more positive than of steel No. 45, which also testifies to the increased thermodynamic resistance of SN3 steel to sea water corrosion. The assembly described makes it possible to perform investigations of electrochemical reactions in samples made of structural steel without external load and under conditions closely approximating those of corrosion-fatigue tests. Orig. art. has: 3 figures and 4 formulas.

SUB CODE: 11 / SUBM DATE: 24Apr65 / ORIG REF: 005
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Card 2/2

L 10872-66 EWT(m)/EWA(d)/EWP(j)/I/EWP(t)/EWP(b) JD/VH/WB/EM

ACC NR: AP5028383

SOURCE CODE: UR/0369/65/001/005/0626/0628

AUTHOR: Mindyuk, A. K.; Gutman, E. M.

ORG: Physics-engineering Institute, AN.UkrSSR, L'vov (Fiziko-mekhanicheskiy institut, AN UkrSSR)

TITLE: The surface activity of some inhibitors of acid corrosion

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 1, no. 5, 1965, 626-628

TOPIC TAGS: corrosion inhibitor, corrosion protection, metal surface

ABSTRACT: The effectiveness of the protection of a metal from corrosion (including under tension) by means of an inhibitor depends on the adsorption capabilities of the inhibitor, which, in turn, determines the decrease in surface tension and may cause a loss in the strength of the metal. This paper presents the results of an investigation of the surface activity of several acid corrosion inhibitors in 6 n of sulfuric acid. These results may serve as the initial data for the evaluation of the effectiveness of the protective effect of inhibitors according to the L. I. Antipov method (Sb. "Ingibitory kislotnoy korrozii," Izd. ITI, Kiev, 1965, 3.). These data also clarify the behavior of inhibitors in conditions of combined protection (by means of inhibitors and electrochemical polarization from an external power source). Ye. L. Svist took part in the measurements. Orig. art. has: 2 figures.

SUB CODE: 13/ SUBM DATE: 16Jun65/ ORIG REF: 004

Card 1/1

GUTMAN, E.M.; MINDYUK, A.K.

Charge forming on metal surfaces under the action of the working medium. Fiz.-khim. mekh. mat. 1 no.1:22-26 '65.

(MIRA 19:1)

1. Fiziko-mekhanicheskiy institut AN UkrSSR, L'vov. Submitted July 23, 1964.