

MATSENKO, P.A., dotsent

Surgical therapy of diseases of the thyroid gland. Sov. med.
24 no. 5:88-91 My '60. (MIRA 13:10)

1. Glavnyy khirurg Irkutskogo oblzdravotdela.
(THYROID GLAND—SURGERY)

MATSENKO, P.A., dotsent

Treatment of strangulated hernias (from data of medical institutions in Irkutsk Province). Vest.khir. no.5:67-71 '61.

(MIRA 15:1)

1. Glavnyy khirurg Irkutskoy oblasti.
(IRKUTSK PROVINCE—HERNIA)

MATSENKO, P. A. (Irkutsk, ul. Krasnogo Vosstaniya, d. 5, kv. 38)

Cancer of the lung; from data of Irkutsk clinics. Grad. Khir.
4 no.3:9-13 My-Je '62. (MIRA 15:7)

(LUNGS—CANCER)

MATSENKO, P.A.

Head injuries in children. Sovet. med. 26 no.5:146-147 My'63
(MIRA 17:1)

BELOUSOV, V.M.; MATSENKO, S.P.; GRAFENBERGER, A.S.

[Radar technology; survey of foreign patents] Radioloka-
tsionnaia tekhnika; obzor inostrannykh patentov. Moskva,
TSentr. nauchno-issl. in-t patentnoi informatsii i tekhniko-
ekon. issledovani, 1963. 33 p. (MIRA 18:5)

FATSEYCK, A. I.

"The Checkrow Method of Planting Different Varieties of Potatoes When the Tubers are of Different Sizes." *Sov. Agr. Sci.*, Leningrad Agricultural Inst, Leningrad, 1953. (RZhBiol, No 1, Sep. 54)

SO: Sum 432, 2 Mar 55

Partial solution of the properties of the mixed and the individual solutions. I. The heat capacities of mixed solutions. A. B. Zdanovskii. *J. Phys. Chem. (U. S. A. R.)* 11, 829-831 (1938).—The heat capacities of mixed solns. of KCl, NaCl and MgCl₂ were divided into their component ionic solns. were detd. from $C = a_1C_1 + a_2C_2 + a_3C_3$, where a_1, a_2 and a_3 are the heat capacities of the solns., and a_1, a_2 and a_3 are their partial fractions. The exptl. values used were those obtained by Shubert, Kogan and Ogorodnikov (*C. A.* 31, 1629⁷). The heat capacities of the mixed solns. with similar vapor pressures can be added with resulting errors not exceeding 0.5% if the dissolved substances do not react chemically. For solns. of salts forming double salts (sulfate), and also for some equal systems with different ions, the observed deviations did not exceed 0.3-0.5%. The deviations exceeding 0.5% (the max. deviations in some cases were 3-3.5%) were evidently due to exptl. errors. 10 references are given. II. The heat capacities of mixed solutions in the system NaCl-MgCl₂-H₂O at 25°. A. B. Zdanovskii and S. A. Matveeva. *Ibid.* 31-3.—The investigation was undertaken in order to det. the additive character of the heat capacities in solns. with equal vapor pressures. The expts. were first performed with two, and later with one calorimeter of the Bunsen-Vrevel type. A comparison

of the energy loss in the wires was made. The calorimeter made from $C = ((K_1 + V/\Delta T) - W)/2t$, where I is current, V = voltage, M = wt. of the salt. (200 cc. was taken in the first calorimeter, and 400 cc. in the 2nd). W = water wt., ΔT = change of temp. in unit of time. For practical purposes ΔT was taken as the mean value corresponding to two periods of time 1 and 2 min. after the main heating period. For the first series of expts. were taken solns. of NaCl and MgCl₂ at 25° with a vapor pressure $\Delta P/P = 0.267$. For the other three series were taken solns. with concns. having vapor pressures equal to $1/2, 1/3$ and $1/4$ of the first soln. The results of the expts. with NaCl, 2MgCl₂ + 1MgCl₂, 1NaCl + 1MgCl₂ + 2MgCl₂ and MgCl₂ are tabulated. The mean heat capacities for the different concns. of NaCl and MgCl₂ in resp. percentages are for the first series: 25.3 and none-0.757, 19.7 and 5.2-0.776, 13.1 and 10.1-0.764, 6.6 and 15.5-0.781, none and 21.1-0.737; for the 2nd series: 21.5 and none-0.811, 16.4 and 3.5-0.816, 10.5 and 8.9-0.798, 5.5 and 13.5-0.775, none and 17.5-0.770; for the 3rd series: 16.3 and none-0.845, 12.3 and 3.6-0.834, 8.2 and 7.2-0.825, 4.1 and 10.8-0.814, none and 14.4-0.816; for the fourth series: 9.3 and none-0.859, 6.9 and 2.3-0.852, 4.6 and 4.5-0.852, 2.3 and 6.9-0.874, none and 9.3-0.886. The results obtained prove that the simple additive rule can be applied to the heat capacities of solns. NaCl-MgCl₂-H₂O with equal vapor pressures for all concns. The deviations of the calcd. values from the exptl. values were 0.5%.
W. R. Hess

MATSENOK, YE A.

137-58-5-9272

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 5, p 70 (USSR)

AUTHORS: Bernshteyn, V.A., Matsenok, Ye.A.

TITLE: Interaction of FeCO_3 and MgCO_3 With an Alkali-aluminate Solution During Leaching of Bauxite in the Bayer Process (O vzaimodeystvii FeCO_3 i MgCO_3 so shcheloche-alyuminatnym rastvorom pri vishchelachivanii boksita po Bayeru)

PERIODICAL: Tr. Vses. alyumin. -magn. in-ta, 1957. Nr 39, pp 72-74

ABSTRACT It was established, as a result of experiments performed on siderite rock and MgCO_3 , that even at small concentrations the alkali-aluminate solution participates in irreversible reactions with siderite and magnesite during which sodium carbonate compounds are formed. In order to avoid an increase of CO_2 in solutions employed for leaching of bauxite, it is advisable that the amount of Ca(OH)_2 be increased so as to caustify the additional Na_2CO_3 , the formation of which accompanies the reaction of siderite and magnesite with lye.

- I. P.
1. Bauxite--Processing 2. Alkali-aluminate--Chemical reactions
3. Magnesite--Chemical reactions 4. Siderite--Chemical reactions

Card 1/1

MATSENOK, Ye. A.

AUTHORS: Bernshteyn, V.A. and Matsenok, Ye.A. 136-58-3-10/21

TITLE: Influence of the nature of diaspore in bauxites on the degree of its extraction by leaching (Vliyaniye prirody diaspora v boksitakh na stepen' ego izvlecheniya pri vyshchelachivanii)

PERIODICAL: Tsvetnyye Metally, 1958, Nr.3. pp. 55-60 (USSR)

ABSTRACT: The authors suggest that improvement in the effectiveness of leaching aluminium oxide from bauxites requires a systematic study of the mineralogy of the minerals and micro and macro-structural features. They refer to the importance of diaspore bauxites and discuss the opinions and work on such materials of S.I. Beneslavskiy, Ye.V. Rozhkova (VINS) and O.I. Arakelyan (VAMI). Two forms of diaspore of sufficient purity were used in the authors' own investigation; vein diaspore was isolated from other minerals in which it occurs in the form of small plates; finely crystalline flaky diaspore was obtained from bauxite by the method developed by M.F. Kompaneys (UAZ). The former contained 82.6 and the latter 72.7 - 76.1 or 64.9% Al_2O_3 depending on which of two bauxites were its source. A.M. Dmitriyeva (VAMI) made a crystallo-optical study of the two bauxites. The vein diaspore was found by the authors to have a lower specific surface (by Tovarov's air-flow resistance method) than similarly sized flaky diaspore, and they attribute to this the slower solution of the vein fraction. Leaching experiments were carried out with heating rates (223°C in the autoclaves in 8-10 minutes) resembling those in full-scale

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136-58-3-10/21

Influence of the nature of diaspore in bauxites on the degree of its extraction by leaching.

installations and continued for 2 or 3 hours. They showed (table 3) mixtures of the two forms of diaspore to dissolve more slowly than either taken single under the same conditions. The authors suggest that specific surface rather than size grading of bauxite is the important criterion for leaching and that statistical data should be assembled for selecting optimal values. There are 3 tables, 2 figures and 4 Slavic references.

AVAILABLE: Library of Congress.

1. Aluminum hydroxide-Structural analysis
2. Bauxite-Processing
3. Aluminum-Production
4. Aluminum oxides-Preparation

Card 2/2

AUTHORS: Bernshteyn, V.A. and Matsenok, Ye.A. SOV/136-58-12-13/22

TITLE: Possibility of Decreasing Chemical Losses of Alkali in the Production of Alumina by the Bayer Method (Vozmozhnost' umen'sheniya khimicheskikh poter' shchelochi v proizvodstve glinozema po sposobu Bayera)

PERIODICAL: Tsvetnyye Metally, 1958, Nr 12, pp 61 - 66 (USSR)

ABSTRACT: The method of treating with lime the washed waste sludge from the Bayer process to regenerate caustic soda from the sodium aluminosilicate proposed in 1940 by Professor I.S. Lilev is not economic under Soviet conditions. The work of the authors at VAMI and that of M.P. Kompaniyets at the Ural'skiy alyuminiyevyy zavod (Ural Aluminium Works) suggests a more suitable way of using lime in which larger quantities of lime are added in the leaching of diasporic bauxites. The results obtained (Table 1) when average samples of such bauxites were leached with up to 7% CaO (instead of the 3-4% generally used) showed approximately 25% reduction of alkali loss and were confirmed with other samples and up to 8% CaO. Optical and X-ray structural examinations were carried out by O.I. Arakelyan and M.S. Beletskiy at VAMI of the solid phases obtained as a result of the

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SOV/ 136-58-12-13/22

Possibility of Decreasing Chemical Losses of Alkali in the
Production of Alumina by the Bayer Method

reaction of opal and chalcedony with alkali-aluminate solution in the presence of various quantities of CaO. The effect of increasing CaO additions on the depth of replacement of sodium by calcium in alumino-silicate was found to depend on the molar CaO : SiO₂ ratio, the effect of a given addition being more favourable with lower-SiO₂ bauxites. Increased lime additions accelerated the leaching of diasporic bauxite and this would enable more stable Al₂O₃ extraction to be attained from various bauxites in the time available in practice (2-2 1/2 hours). Alumina losses through the addition of large quantities of lime could be avoided (Table 2) by introducing it into the washing system. Because of the caustification of the soda, the causticity modulus of the wash water rises sufficiently to prevent hydrolysis when aluminate solutions with a causticity modulus of the order of 1.65:

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SOV/136-58-12-13/22
Possibility of Decreasing Chemical Losses of Alkali in the
Production of Alumina by the Bayer Method

this will eliminate losses through hydrolysis, estimated at 1.5%. The authors state that they have, since the publication of the article, obtained similar results with bemitic bauxites.

There are 2 figures and 2 tables.

Card 3/3

BERNSHTEYN, V.A.; MATSENOK, Ye.A.

Equilibrium in the interaction of diaspora with sodium
hydroxide solutions at 250° and 300°C. Zhur.prikl.khim.
38 no.9:1935-1938 S 165.

(MIRA 18:11)

1. Vsesoyuznyy alyuminiyevy-magniyevyy institut.

MATSEPON, P. F.

166T13

USSR/Electricity - Demand Factor Sep 50
Repair Shops, Railroad

"Method of Determining the Demand Factor," Doc-
cents, I. Ya. Ryshkovskiy, P. F. Matsepon, Dne-
propetrovsk Inst of RR Engineers

"Prom Energet" No 9, pp 8-9

Describes mathematical determination of demand
factor and details rated capacity and demand
factor worked out for motors used in pumps, com-
pressors, presses, lathes, hammers, and cranes
of typical railroad car repair plant. Demand
factors were calculated for 60-min load maxi-
mums.

166T13

MATSEPOV, P.F.

IVANOV, A.A., kandidat tekhnicheskikh nauk; TANATAR, A.I., kandidat
tekhnicheskikh nauk; MATSEPOV, P.F., dotsent, kandidat
tekhnicheskikh nauk

Automatization of a mine load hoist with an asynchronous
motor. Gor.shur. no.5:61-64 Ny '55. (MIRA 8:7)
(Mine hoisting)

MATSEPOH, V. D. Cand Med Sci -- (diss) "Glands of the trachea in norm and experiment." Dnepropetrovsk, 1959. 17 pp (Min of Health UkSSR. Dnepropetrovsk State Med Inst), 250 copies (KL, 46-59, 140)

67
~~68~~

SHUSHLEBIN, B.A., inzh.; MATSEPON, Yu.A.; KHASIN, G.A.; DAVIDYUK, V.N.

New developments in research. Stal' 25 no.8:824 S '65. (MIRA 18:9)

MATSEPURO, M.; ZHILIN, A.; OGLOBLIN, K.S., red.; MAYBORODA, M.I.,
tekhn. red.

[Over-all mechanization of the procurement of peat for
fertilizing] Kompleksnaia mekhanizatsiia sagotovki torfa
na udobrenie. Moskva, Goskul'tprosvetizdat, 1954. 14 p.
(MIRA 16:7)

(Peat) (Fertilizers and manures)

MATSEFURO, M.~~S~~.

42463. K Voprosu Mekhanizatsii Iskustvennoy Sushki Zelenykh Kormov. Izvestiya Akad. Nauk BSSR, No. 4, 1948, S. 65-70.

MATSEPURO, M. Ye.

27221 MATSEPURO, M. Ye. Sovremennoe Sostoyanie I Zadachi Mekhanizatsii
Kul'tutekhnicheskikh Rabot I Prokladki Melkoy Osushitel'noy Seti V sb: K
Voprosu Osvoeniya I Razvitiya Proizvodit. Sil. Poles'ya. Minsk, 1949,
s. 30-50.

SO: Letopis' Zhurnal'nykh Statey, Vol. 36, 1949

MATSEPURO, M. Ye.

MATSEPURO, M. Ye. "The scientific principles of designing potato-harvesting machines", In the collection: Materialy noyabr'skoy sessii Akad. nauk BSSR, 1949 g., Minsk, 1949, p. 126-39.

SO: U-4393, 19 August 53, (Letopis 'Zhurnal 'nykh Starey', No. 22, 1949).

MATSEPURO, M.YE.

Matsepuro, M.Ye. "The mechanization of agriculture as one of the chief factors in providing for high and constant yields", Izvestiya Akad. nauk S.S.S.R., No. 1, 1949, p. 79-91.

SO: U-3861, 10 April 53, (Letopis 'zhurnal 'nykh Starey, No. 12, 1949)

MATSEPURG, M. YA.

Matsepuro, M. Ya. and Tarkhov, Ye. S. - "On the problem of the selection of grain-drying equipment", (Certain results of investigations of grain-drying equipment under laboratory-agricultural conditions), *Izvestiya Akad. nauk SSSR*, 1949, No. 2, p. 19-32.

SO: U-411, 17 July 53, (*Letopis 'Zhurnal 'nykh Statey*, No. 20, 1949).

MATSEPURO, M. E.

22565. MATSEPURO, M. E. Mekhanizatsiya kul'tury kok-sagyza. izvestiya akad. nauk
bssr, 1949, No 3, S. 79-88

SO: LETOPIS' No. 30, 1949

MATSEFURO, M. Ye.

36284. Mekhanizatsiya protsessov osvoyeniya Polot. Izvestiya Akad. Nauk
BSSR, 1949, No. 5, s. 39-53

SO: Letopis' Zhurnal'nykh Statey, No. 48, 1949

MATSEPURA, M.Ye., laureat Stalinskikh premiy; **TURBTSKI, R.L.**, nauko-
v/ supratsoynik.

Mechanization of construction of reclamation canals. Vestsi
AN BSSR no.2:74-83 Nr-Ap '52. (MLRA 7:8)

1. Pravadseyny chlen AN BSSR (for Matsapura, M.Ye.)
(Excavating machinery--Irrigation canals and flumes)

1. MITSEFURO, M.YE., PROF.
2. USSR (600)
4. Drainage
7. Machinery for draining and reclaiming swampy and marshy land.
Dost. sel'khoz. No. 4. 1952.

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

MATSEPURO, M. YE.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

| <u>Name</u> | <u>Title of Work</u> | <u>Nominated by</u> |
|---------------------------|---|---|
| <u>Matsepuro, M. Ye.</u> | "Local Power Resources of the Belorussian SSR and a Plan for Their Utilization for the Wide Electrification of Agriculture" | Department of Physicomathematical and Technical Sciences, Academy of Sciences Belorussian SSR |
| <u>Sazonov, N.A.</u> | | |
| <u>Timchuk, I.M.</u> | | |
| <u>Tyulpanov, A.I.</u> | | |
| <u>Kandybovich, A.S.</u> | | |
| <u>Krivodubskiy, I.P.</u> | | |
| <u>Pekelis, G.N.</u> | | |
| <u>Smirnov, I.S.</u> | | |

SO: W-30104, 7 July 1954

MATSEFUD, M.Ye., professor.

**Objectives of science in the further expansion of the mechanization
of agriculture. Izv. AN BSSR, no. 6:13-25 N-D '53. (MLRA 9:1)**

**1. Deystvitel'nyy chlen Akademii nauk BSSR.
(Farm mechanization)**

MATSEURO, M.Ye.

Future of Poles'ye. Nauka i shizn' 20 no.11:9-11 N '53. (MLBA 6:11)

1. Deystvitel'nyy chlen Akademii nauk Belorusskoy SSR, laureat Stalinskikh
premiy. (Polesye--Reclamation of land) (Reclamation of land--Polesye)

MATSEPURO, M. Ye., professor; **ZHILIN, A. P.**, kandidat tekhnicheskikh nauk;
OSYKO, F. A., professor, redaktor; **ALEXANDROVICH, Kh.**, tekhnicheskii redaktor.

[Over-all mechanisation of swamp drainage and of the preparation of peat for fertiliser] Kompleksnaya mekhanizatsiya osvusheniya bolot i sagotovki torfa na udobrenie. Minsk, Izd-vo Akademii nauk BSSR, 1954. 186 p. [Microfilm] (MLRA 8:2)

1. Deystvitel'nyy chlen AN BSSR (for Matsepuro).
(Drainage) (Peat)

MATSEPURO, M.Ye., akademik; KATSYGIE, V.V., redaktor; ALEKSANDROVICH, Kh.,
vychislitel'skiy redaktor

[Productive application of Academician V.P.Goriachkin's teachings
in research on the mechanisation of agriculture] Tvorcheskoe pri-
menenie uchenia akademika V.P.Goriachkina v nauchnykh issledovaniyakh
po mekhanizatsii sel'skogo khoziaistva. Minsk, Izd-vo Akademii nauk
BSSR, 1956. 207 p. (MLRA 9:11)

1. Akademiya nauk BSSR (for Matsepuro)
(Goriachkin, Vasilii Prokhorovich, 1868-1935)
(Agricultural machinery)

MATSEPURO, M.Ye.

[Theory of plough-type ditch diggers and marsh ploughs] Voprosy
teorii plushtnykh kanavokopatelei i bolotnykh plugov. Minsk,
Izd-vo Akademii nauk BSSR, 1957. 223 p. (MIRA 15:10)
(Agricultural machinery--Design)
(Plows--Design)

MATSEURO, M.Ye., akademik.

Important tasks of scientific institutes in the development of
agricultural machinery. Mekh. i elek. sots. sel'khoz. 15 no.1:
1-7 '58. (NIRA 11:3)

1. AN BSSR.
(Agricultural research) (Agricultural machinery)

MATSEURO, M.Ye.

Problems of over-all mechanization in stockbreeding. Zhivotnovodstvo
20 no. 10:7-18 0 '58. (MIRA 11:10)

1. Deystvitel'nyy chlen AN BSSR i Akademii sel'skokhozyaystvennykh
nauk BSSR.

(Stock and stockbreeding)
(Agriculture machinery)

MATSEPURO, Mikhail Yefremovich, akademik, red.; LARIN, V.D., red.;
ZUYKOVA, V.I., tekhn. red.

[Transactions of the 1958 Scientific Conference] Trudy Nauch-
noi konferentsii 1958 goda. Pod red. M.E.Matsepuro. Minsk,
Izd-vo Akad. sel'khoz. nauk BSSR, 1959. 199 p. (MIRA 14:5)

1. Akademiya sel'skhaspadarenykh nauk BSSR. Navukova
dasledchy instytut mekhanizatsey i elektryfikatsyi sel'skai
haspadarki. 2. AN BSSR i Akademiya sel'skokhozyaystvennykh
nauk BSSR (for Matsepuro)
(Farm mechanization) (Electricity in agriculture)

MATSEPURO, M. Ye., akademik

Improving the organization of scientific research planned for the current seven-year period. Zhivotnovodstvo 21 no.11:3-9 N '59

(MIRA 13:3)

1. AN i Akademiyas sel'skokhozyaystvennykh nauk BSSR.
(Agricultural research)

MATSEPURO, M., prof., akademik, red.; YANUSHKEVICH, B.N., kand.
tekh. nauk, red.; LAZARCHIK, K., red.

[Problems of agricultural machinery] Voprosy zemledel'che-
skoi mekhaniki. Pod red. M. Matsepuro i B.N. Yanushkevicha.
Minsk, Gos. izd-vo sel'khoz. lit-ry BSSR. Vol. 3. 1960. 401 p.
(MIRA 17:4)

1. Akademiya sel'skha padarchykh nauk BSSR. Navukova-
dasledchy instytut mekhanizatsyi i elektryfikatsyi sel'skai
haspadarki. 2. Nauchnyye sotrudniki Instituta mekhanizatsii
i elektrifikatsii sel'skogo khozyaystva Akademii sel'sko-
khozyaystvennykh nauk BSSR (for Matsepuro, Yanushkevich).

MATSEPURO, M.Ya., prof., akademik, red.; YANUSHKEVICH, B.N., kand.
tekh. nauk, red.; BOROVIKOVA, R.P., red.; YERMILOV, V.M.,
tekh. red.

[Problems of agricultural mechanics] Voprosy semeledel'cheskoi
mekhaniki. Pod red. M.E.Matsepuro i B.N.Iamshkevicha. Minak,
Gos. izd-vo sel'khoz. lit-ry BSSR. Vol.7. 1961. 291 p.

(MIFA 15:1)

1. Akademiya sel'skhaspadarchykh nauk BSSR. Navukova-
dasledchy instytut mekhanizatsyi i elektryfikatsyi sel'skai has-
padarki. 2. Akademiya nauk BSSR (for Matsepuro).
(Agriculture) (Mechanics)

MATSEURO, M.Ye., akademik, laureat Leninskoy premii; TURETSKIY, R.L.
kand.tekhn.nauk

Concerning the continued development of machinery for the
reclamation of land. Trakt.i sel'khoz mash. no.8:20-22 Ag '62.
(MIRA 15:8)

1. Tsentral'nyy nauchno-issledovatel'skiy institut mekhanizatsii i
elektrifikatsii sel'skogo khozyaystva.
(Agricultural machinery) (Reclamation of land)

MATSEPURO, M.Ye., akademik; STAROVYBORNYI, P.T., red.; DIL, V.M.,
tekhn. red.

[Work results in 1961 and tasks for 1962] Itogi raboty za
1961 i zadachi na 1962. Minsk, Gos.isd-vo Sel'khoz.lit-ry
BSSR, 1962. 73 p. (Farm mechanization) (MIRA 16:7)
(Electricity in agriculture)

MATSEPURO, M. Ya., akademik, red.; YANUSHKEVICH, B.N., kand. tekhn. nauk, red.; BURCVNIKOVA, R.P., red.; YERMILOV, V.M., tekhn. red.

[Transactions of the Scientific Conference of 1960] Trudy Nauchnoi konferentsii 1960 goda. Pod red. M.E. Matsepuro i B.N. Ianushkevycha. Minsk, Gos izd-vo sel'khoz. lit-ry BSSR, 1962. 369 p. (MIRA 16:9)

1. Akademiya sel'skhaspadarchykh navuk BSSR. Navukova-dasledchy instytut mekhanizatsyi i elektryfikatsyi sel'skai haspadarki.

(White Russia--Agricultural machinery)

(White Russia--Electricity in agriculture)

MATSEPURO, M. Ye., akademik, red.; KATSYGIN, V.V., kand. tekhn.
nauk, red.; KOVALENKO, A.G., red.; TIMOSHCHUK, R.S.,
tekhn. red.

[Transactions of the Scientific Conference of 1962] Tru-
dy nauchnoi konferentsii 1962 goda. Pod red. M.E. Matsepuro,
V.V. Katsygina. Minsk, Gos. izd-vo sel'khoz. lit-ry BSSR,
1963. 106 p. (MIRA 16:11)

1. Tsentral'nyy nauchno-issledovatel'skiy institut mekha-
nizatsii i elektrifikatsii sel'skogo khozyaystva nechernoy
zemnoy zony SSSR.

(Farm mechanization)

~~MATSEPURO, M.Ye.~~ prof.; KATSYGIN, V.V., kand. tekhn. nauk;
MAKAROVA, N.A., kand. tekhn. nauk; NOVICHIKHIN, V.A.,
kand. tekhn. nauk; YANUSHKEVICH, B.N., kand. tekhn.
nauk; POROVIKOVA, R., red.; REZNIK, T., red.;
TIMOSHCHUK, R., tekhn. red.

[Problems of the technology of mechanized farm produc-
tion] Voprosy tekhnologii mekhanizirovannogo sel'sko-
khozias'tvennogo proizvodstva. Minsk, Gos.izd-vo sel'-
khoz.lit-ry BSSR. Pt.1. 1963. 262 p. (MIRA 17:1)

1. Tsentral'nyy nauchno-issledovatel'skiy institut me-
khanizatsii i elektrifikatsii sel'skogo khozyaystva ne-
chernozemnoy zony SSSR. 2. Tsentral'nyy nauchno-
issledovatel'skiy institut mekhanizatsii i elektrifika-
tsii sel'skogo khozyaystva nechernozemnoy zony SSSR
(for Matsepuro, Katsygin, Makarova, Novichikhin,
Yanushekevich).

MATSEPURO, M.Ye., akademik, red.; ZAYTSEVA, T., red.; REZNIK, T.,
red.

[Contribution of science to agricultural production] Nauka -
sel'skokhoziaistvennomu proizvodstvu. Minsk, Nauka i
tekhnika, 1964. 275 p. (MIRA 17:12)

1. Tsentral'nyy nauchno-issledovatel'skiy institut mekhani-
zatsii i elektrifikatsii sel'skogo khozyaystva nechernozemnoy zony SSSR.

MATSEURO, VI.

Science scout. Grazhd.av. 18 no.11:4-5 N '61.
(Polar regions--Aerial exploration)

(MIRA 15:2)

I. 09856-67 JK

ACC NR: AP6035664 (AN) SOURCE CODE: PO/0086/66/000/004/0307/0314 16

AUTHOR: Macierewicz, Maria -- Matserevich, M.; Kaluzewski, Stanislaw --
Kaluzhevski, S.; Tyc, Zofia -- Tyts, Z.

ORG: Department of Bacteriology/headed by Prof. Dr. E. Wojciechowski,
PZH, Warsaw (Zaklad Bakteriologii PZH)

TITLE: Properties of Salmonella enteritidis strains isolated in Poland. I.
Sensitivity to antibiotics and nitrofuran

SOURCE: Medycyna doswiadczalna i mikrobiologia, no. 4, 1966, 307 314

TOPIC TAGS: antibiotic, streptomycin, tetracycline, microbiology, bacterial
antibiotic sensitivity, bacterial nitrofuran sensitivity, Salmonella enteritidis,
polypeptide antibiotic, nitrofuran, nitrofurantoin, Ampicillin, chloramphenicol,
colistin, paromomycin, polymixin

ABSTRACT: The sensitivity to antibiotics and nitrofuran of 612 strains of
Salmonella enteritidis, chosen at random from 5053 strains isolated in Poland,
was tested by the filter-paper-disk method. Group I (4.4%) was sensitive to
streptomycin, paromomycin, chloramphenicol, tetracyclines, polymyxin B,

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L 09856-67

ACC NR: AP6035664

0

colistin, and nitrofurantoin; group II (2.3%) to chloramphenicol, polypeptide antibiotics, and nitrofurantoin; group III (93.3%) only to polypeptide antibiotics and nitrofurantoin. Minimum inhibitory concentrations determined by the serial dilution method were 2.5-10 $\mu\text{g/ml}$ for colistin, and 12 $\mu\text{g/ml}$ for nitrofurantoin. Ampicillin (alpha-aminobenzylpenicillin) concentrations of 0.6-1.2 $\mu\text{g/ml}$ inhibited the growth of all group I strains and 2% of group II strains. The remaining strains were able to grow in 200 $\mu\text{g/ml}$ Ampicillin concentrations. The patients' age and geographic area distribution had an effect on strain sensitivity rating. Strains sensitive only to polypeptide antibiotics and nitrofurantoin, isolated from children two years old or younger, amounted to 96.3%. Orig. art. has: 5 tables. [W050]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 007/ SOV REF: 001/
OTH REF: 014/

Card 2/2 ^{4/10}

MATSESOVICH, S.I.

Innovations of efficiency promoters at the "Torfmash" Plant
in Velikiye Luki. Mashinostroitel' no.4:20-21 Ap'64
(MIRA 17:87)

MATSEVICH, B. (g.Miass, Chelyabinskaya oblast')

Innovations cause sensation but are stifled. Izobr.1 rats.
no.4:38-40 Apr '60. (MIRA 13:6)
(Miass--Automobile industry--Technological innovations)

MATSEVICH, B.

Plans and achievements of creative brigades. NTO 5 no.12:27-28
D '63. (MIRA 17:8)

1. Korrespondent gazety "Chelyabinskiy rabochiy".

1.13066 INT(a)/IMP(1) IJP(e) BR/CG

ACC NO: AF685363

SOURCE CODE: UR/0413/66/000/001/0109/0110

INVENTOR: Kopytyanskiy, B. V.; Matsyevich, B. V.

ORG: none

46
3

16.4
TITLE: Differentiator for obtaining derivatives in discrete systems. Class 42, no. 17728

SOURCE: Izobreteniya, promyshlennyye obratzy, tovarnyye znaki, no. 1, 1966, 109-110

TOPIC TAGS: automatic control, electron component

ABSTRACT: The proposed differentiator is designed to obtain derivatives in discrete automatic control systems or systems with a long-duration control process. It consists of a converter, two pulse counters with memory circuits, OR-NOT logical elements, two flip-flops, and a master oscillator. To obtain accurate differentiation and eliminate inertial components, the converter is connected through electronic switches to the pulse counters and logical elements. The latter are connected to the flip-flops, which in turn are connected to the electronic switches and the master oscillator. [DW]

SUB CODE: 09/ SOURCE DATE: 20Apr65/ ATD PRESS: 4/9/

PC
1/1

DOC: 621.374:621.3.078

L 45132-66 EWT(1)

ACC NR: AP6016303 (A) SOURCE CODE: UR/0380/66/000/001/0012/0021

AUTHOR: Matseyevich, B. V. (Moscow) 17

ORG: none B

TITLE: Relationships between the amplitude of the natural vibrations of a system with one degree of freedom and the law of mass change with time

SOURCE: Mashinovedeniye, no. 1, 1966, 12-21

TOPIC TAGS: variable mass system, vibration analysis

ABSTRACT: The article considers the vibrations of a point with a variable mass $m = m(t)$, dependent on the time, in the presence of an elastic restoring force. It is assumed that the force of viscous friction $R = -2bx$, where b is a proportionality coefficient. Selecting the origin of coordinates at the equilibrium point, we obtain the differential equation of motion:

$$m(t) \frac{d^2x}{dt^2} + 2b \frac{dx}{dt} + cx = Q_x \quad (1)$$

where Q_x is the projection of the reactive force $Q = -(\dot{m}/dt)v_x$ on the x axis; v_x is the velocity of motion of particles with varying mass

Card 1/2

UDC: 621/534

L 49132-66

ACC NO. AP6016303

relative to a point. It is assumed in the analysis that $\dot{v} = 0$. The analysis considers the case where the absolute velocity of the changing particles is equal to zero. In this case:

$$\Phi = -\frac{dm}{dt}t,$$

and the equation of motion will characterize the change in the momentum vector of the point. It is concluded from the mathematical analysis that: 1) a continuous change with time in the mass of a point brings about a change in the amplitude of the free vibrations which is proportional to the mass; 2) the presence of an external reactive force, corresponding to a zero absolute velocity of the particles, introduces a correction into the equations of motion. Orig. art. has: 19 formulas and 3 tables.

SUB CODE: 20/ SUBM DATE: 29Jun65/ ORIG REF: 014/ OTH REF: 001

Card 2/2

MATSEVICH, K.I.

Number of parameters of a N -terminal network balanced in respect
to the transverse axis. Trudy ucheb. inst. aviatsi. no.16:77-86
'63. (MIRA 17:10)

1. Odesskiy elektrotekhnicheskiy institut svyazi.

MATSEVA, I. I. (Ivanovich) nauchnyy inzhener

Establishing temperature norms for heated surfaces in the engine
and boiler rooms of ships. Mor. flot 24 no.12:36-37 5 '64.

(MIRA 18:8)

1. Otdel gigiyeny truda Tsentral'noy nauchno-issledovatel'skoy
laboratorii gigiyeny vodnogo transporta.

MATSEVICH, L.M. (Maskva)

Experimental investigation of the distribution of attention in a
ship's machine and boiler room staff. Vop. psikhol. no.5:113-117
S-0 '64 (MIRA 18&1)

ARKHANGEL'SKAYA, L.N., kand. med. nauk; MATSEVICH, L.M.

Materials on the hygienic characteristics of dust of a mixed composition at enterprises of the rubber industry. Trudy 1-go MMI 28:222-231 '64. (MIRA 17:11)

1. Kafedra gig'yeny truda (zav. - prof. Z.I. Izrael'son) 1-go Moskovskogo or'ana Lenina meditsinskogo instituta imeni Sechenova.

MATSEVICH, O.I.; PANCHENKO, N.I.

Casting the front cover of a roller bearing box. Lit. proizv.
no.2:44-45 F '63. (MIRA 16:3)

(Founding)

ZVEREV, Nikolay Vasil'yevich; ~~MATSKEVICH, Oleg Vasil'yevich,~~
PRIKHOD'KO, S., red.

[Kazakhstan, the country of eagle's wings] Kazakhstan -
strana orlinykh kryl'yev. Alma-Ata, "Kazakhstan", 1965.
172 p. (MIRA 18:12)

MATSEVICH, SOF'YA ABRAMOVNA

PHASE I BOOK EXPLOITATION

563

Matsevich, Sof'ya Abramovna, Engineer

Novoye v obrabotke izdeliy beskonechnymi abrazivnymi lentami; opyt zavoda "Krasnogvardeyets" (Innovations in the Machining of Parts by Continuous Abrasive Bands: Experience of the "Krasnogvardeyets" Plant) Leningrad, 1956. 11 p. (Series: Leningradskiy dom nauchno-tekhnicheskoy propagandy. Informatsionno-tekhnicheskiy listok, no. 41. Mekhanicheskaya obrabotka metallov) 6,000 copies printed.

Sponsoring Agencies: Leningradskiy dom nauchno-tekhnicheskoy propagandy, and Vsesoyuznoye obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy.

Ed.: Zhukova, V.I., Engineer; Tech. Ed.: Preger, D.P.

PURPOSE: This pamphlet is intended for machine-tool operators.

Card 1/2

Innovations in the Machining (Cont.)

563

COVERAGE: The pamphlet describes modifications suggested for a two-spindle polishing machine tool which would convert the latter from an exclusively wheel-polishing into a wheel-and band-polishing machine tool. The modification consist basically of mounting on the machine-tool stand of two identical cantilever brackets with two free-turning wheels on an axis joining the bracket ends. The polishing (driving) wheels are replaced with elastic wheels. Abrasive-coated bands (belts) running around the driver and driving wheels may be used either for polishing of flat surfaces or for conventional polishing of irregular surfaces. These modifications, the author claims, are inexpensive and economical. Specifications for these fixtures are listed and the manner of operating modified polishing machine tools is described. There are 4 Soviet and 1 English references. No personalities are mentioned.

TABLE OF
CONTENTS:

Calculation of Optimum Productivity Values for a Continuous Band 7

AVAILABLE: Library of Congress

Card 2/2

JG/ad
9-9-58

NEFEDOV, P.Ya.; CHERNOBROVKIN, V.P.; KATARIN, V.P.; ANAN'IN, A.A.;
BALBASHEV, V.K.; RYVKIN, I.Yu.; TSYNOVNIKOV, A.S.; KUZ'MIN, I.V.;
YAKOVLEV, S.Ye.; SHULAYEV, V.I.; MATSEVICH, S.I.; NARNITSKIY, A.P.;
BOKOV, O.K.; CHEREPANOV, V.Ye.

Coke briquets for cupola furnaces. Lit. proizv. no.3:6-7
Mr '65. (MIRA 18:6)

MATSEVICIUS, I.I.; POSHKA, A.L.

Determination of the reduction coefficient in empiric formulas for
calculating maximum discharges. Meteor. i gidrol. no.3:43-44 Nr
'56. (Stream measurements) (MLRA 9:7)

KAPINOS, V.M., kand. tekhn. nauk; BUBLIKOV, Ye.I., kand. tekhn. nauk;
MATSEVITNYY, Yu.M., inzh.; GOLOSHCHAPOV, V.N., inzh.;
PUSTOVALOV, V.N., inzh.

Temperature distribution in the rotor and internal cylinder of
a cooled steam turbine. Teploenergetika 11 no.7:32-37 J1 '64.
(MIRA 17:8)

1. Khar'kovskiy politekhnicheskiy institut im. V.I. Lenina.

KAPINOS, V.M., kand. tekhn. nauk; MATSEVITYY, Yu.M., inzh.

Solution of a problem on steady heat conduction with consideration of the dependence of the thermal conductivity coefficient on temperature using a diagram method. Izv. vys. ucheb. zav.; energ. 8 no.5:77-83 My '65. (MIRA 18:6)

1. Khar'kovskiy politekhnicheskii institut imeni Lenina.
Predstavlena kafedroy turbinostroyeniya.

MATSEVITYY, L. V.

"Some problems in structural theory of automata"

report submitted for the Intl. Symposium on Relay Systems and Finite Automata Theory (IFAC), Moscow, 24 Sep-2 Oct 1962.

ACCESSION NR: AT4019740

S/0000/63/000/000/0100/0103

AUTHOR: Matsevity*y, L. V.

TITLE: The synthesis of automata from elements with direct connection

SOURCE: AN UkrRSR. Insty*tut kibernety*ky*: Obchy*alyuval'na matematy*ka i tekhnika (Computer mathematics and engineering). Kiev, Vy*d-vo AN UkrRSR, 1963, 100-103

TOPIC TAGS: direct connection element, automata scheme, lag element

ABSTRACT: The author presents a method of constructing a scheme of automata which are free from the phenomenon of "haste" without using lag elements. Hence this method is suitable for constructing schemes from elements with a direct connection. Such schemes require a smaller consumption of apparatus in comparison with conventional methods.

ASSOCIATION: none

SUBMITTED: 19Sep63
SUB CODE: MM

DATE ACQ: 06Jan64
NO REF SOV: 000

ENCL: 00
OTHER: 003

Card 1/1

RABINOVICH, Z.I., ~~1963~~, tekhn. nauk; MATSEVITYY, L.V.; KARTASHEV, V.I.

Universal logical unit and its use. Avtom. i prib. no. 1:31-45
Ap-Je '63. (USSR 1963)

1. Institut kibernetiki AN UkrSSR.

ACCESSION NR: AP4015287

S/0280/64/000/001/0009/0019

AUTHOR: Matsevityy, L. V. (Kiev)

TITLE: Algorithm of minimization of microprogram schemes

SOURCE: AN SSSR. Izvestiya. Tekhnicheskaya kibernetika, no. 1, 1964, 9-19

TOPIC TAGS: discrete information, information conversion, information conversion algorithm, microprogram, microprogram scheme, microprogram minimization, computer, digital computer

ABSTRACT: A theoretical method of obtaining an algorithm for a minimum number of elementary operations in the conversion of discrete information is set forth. The realization of such an algorithm is referred to as a "microprogram." The conversion unit is considered as consisting of two parts: (1) The source information and intermediate information storage; (2) The unit that realizes the micro-operations. Computer-algorithm micro-operations are expressed by the

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ACCESSION NR: AP4015287

linear operators of a vector space. Elementary operations are described by matrices. Algorithms are specified by "graph-schemes," and two operations are performed with them: (1) Splitting operator apices and (2) Eliminating an operator apex. The microprogram is minimized by selecting the "words" having a maximum common terminal section. The method's use is illustrated by an example of a microprogram of the division of binary numbers without a remainder restoration. Orig. art. has: 2 figures and 30 formulas.

ASSOCIATION: none

SUBMITTED: 14Nov63

DATE ACQ: 12Mar64

ENCL: 00

SUB CODE: CG, IE

NO REF SOV: 003

OTHER: 000

Card 2/2

1 27492-66 EWT(d)/EWP(1) IJP(e) BB/GG
ACR NO. AP6016037 SOURCE CODE: UR/0030/66/000/004/0114/0116

AUTHOR: Matoevityy, L. V. (Candidate of technical sciences)

38
B

ORG: USSR

TITLE: A small digital differential analyzer 25

SOURCE: AN USSR. Vestnik, no. 4, 1966, 114-116

TOPIC TAGS: special purpose computer; digital differential analyzer

ABSTRACT: A small digital differential analyzer (DDA) designed and built by the Institute of Cybernetics of the Academy of Sciences USSR is shown in the figure. It operates with 6-place decimal numbers and is intended for solving non-linear integrodifferential equations. The machine contains 25 integrator units in which the iteration cycle is variable, since all integrators do not operate at the same time. In this machine integration is carried out only when the incremental value of the ordinate is other than zero. The machine is capable of 50 integrations per second. The initial conditions and input variables are introduced through the key-

L 27092-66

ACC NR. AP6016037

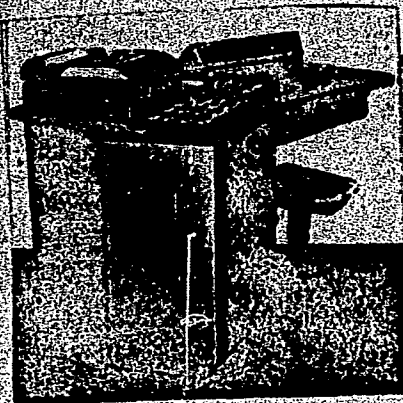


Fig. 1. DMA

0

board; output is visual and in printed form. By synthesizing the machine as a unit (without constraining the design to available modules), and by using a Kiev computer to design some phases, the designers obtained a simplified configuration. Failures were only encountered in initial debugging during installation. Orig. art. has: 1 figure. [BP]

SUB CODE: 09/ SYM DATE: none/ ATD PRESS: 4200

Case 212 B16

ACC NR: AP6030984 (N) SOURCE CODE: UR/0378/66/000/004/0025/0032

AUTHOR: Matsevityy, L. V.; Chayka, N. S.

ORG: none

TITLE: Coding the states of a sequential device on taking into account certain logic properties of the incorporated elements

SOURCE: Kibernetika, no. 4, 1966, 25-32

TOPIC TAGS: logic design, communication coding, computer coding, coding evaluation

ABSTRACT: The article deals with a method of coding which makes it possible, for a given number of coincidence-element inputs, to find the codes of internal states in such a way as to dispense with the need to construct multistage coincidence. This pertains to a sequential device for which each possible set of values of signals at its input terminals is denoted by a symbol of the alphabet X and each possible set of values of signals at the output terminals is denoted by a symbol of the alphabet Y. Since any device may be considered to consist of two parts of which one represents memory elements and the other the combinational scheme, any possible set of signal values at the input channel of any memory element will be denoted by a

UDC: 681.142.1.01

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ACC NR: AP6030984

symbol of the alphabet U and any possible set of signal values at the output channel of any memory element will be denoted by a symbol of the alphabet V. At such a notation each pair of symbols of the alphabets X and V corresponds to a pair of symbols of the alphabets U and Y. A particular case of binary memory elements is considered for which a symbol of the alphabet V at any time instant is uniquely determined by the set of states of these elements, a set which, on ordering, will be termed a code. Each symbol of the alphabet V uniquely corresponds to a code and in the general case for m memory elements the establishment of this correspondence requires examining the entire code of length m. Coincidence-realizing logic elements have a limited number g of input channels, which often is smaller than $m + p$ (where p is the number of channels used to code a symbol of the alphabet X). Therefore, it is of interest to develop such a coding of states as would result in assigning to each state a specific code segment with a length of not more than $n < m$, which differs from the same code segment of any other state, and where n is chosen so that the sum of $n + p$ would not exceed g. It is shown that this can be accomplished by subdividing the set of N states into disjoint subsets of 2^{n-1} states each. Suppose $N = s(2^{n-1}) + q$, where $q < (2^{n-1})$. Thus, we have s subsets of 2^{n-1} states each and one subset of q states. We code the states of one of the subsets by means of the sets of values of n variables and the single remaining set will correspond to all the sets not entering in the selected subset. The sets of values of n variables represent the first segment of the code of all states. This operation is repeated until the code segment of each state are determined, and a pertinent coding algorithm is described.

SUB CODE: 09, 12, 06/ SUBM DATE: 17Jul65/ ORIG REF: 004/ OTH REF: 004

Card 2/2

ACC NR: AR6023347

SOURCE CODE: UR/0271/66/000/004/B003/B003

AUTHOR: Matsevityy, L. V.

TITLE: Method of constructing counters from potential elements

SOURCE: Ref. zh. Avtomat telemekh i vychisl tekhn, Abs. 4B22

REF SOURCE: Sb. Vopr. teorii elektron. tsifrovyykh matem. mashin. Vyp. 8. Kiyev, 1965, 76-84

TOPIC TAGS: automation, counter, circuit design, automaton

ABSTRACT: A counter of potential elements with $2n$ number of states a_1, a_2, \dots, a_{2n} is defined as an abstract automaton with an input alphabet consisting of symbols x_1 and x_2 which correspond to the counting inputs and with adjusting inputs corresponding to the input symbols y_1, y_2, \dots, y_{2n} . The output alphabet is determined in relation to the specific purpose of the counter. The transfer functions are defined in the following manner: $\delta(a_i, y_k) = \delta(a_k, y_k) = a_k; i \geq 1, k < 2n; \delta(a_{2i-1}, x_1) = \delta(a_{2i}, x_1) = a_{2i}; \delta(a_i, x_2) = \delta(a_{2i+1}, x_2) = a_{2i+1} \neq n$. It is pointed out that the existing methods of constructing counters with $2n$ states at large n become practically unrealizable owing to the complexity of constructing the excitation function. A method is examined which permits constructing a counter with a large number of states. There is a counter with $q < 2n$ states. It is possible to find such p and $z < q$ at which $2n = pq + r$. With even q , r is always even. The composition of this

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UDC: 681.142.1

ACC NR: AR6023347

counter and a control device which r times triggers the counter for counting r is constructed. Such a composition is equivalent to a counter with $2n$ states. The control device is a counter with $p + 1$ states. The method of constructing the composition of counters with q states and with $p + 1$ states equivalent to a counter with $2n$ states is examined in detail. [Translation of abstract] Yu. U.

SUB CODE: 09

Card 2/2

MATSEVITYI, V.G.

Unitary characteristics of symmetric components of systems. Iss. (MIRA 11:3)
KPI 22:146-153 '57. (Electric networks)

MATSEVITYI, V.G.

Conductance of a branch in complicated electric circuits. Izv. KPI
26:501-506 '57. (MIRA 11:6)

1. Kafedra teoreticheskikh osnov elektrotehniki Kiyevskogo poli-
tehnicheskogo instituta. (Electric circuits) (Electric conductivity)

MATSEVITYI, V.G.

Method of contour currents used in complicated diagrams of electric circuits. Izv. KPI 26:507-516 '57. (MIRA 11:6)

1. Kafedra teoreticheskikh osnov elektrotehniki Kiyevskogo politehnicheskogo instituta.
(Electric circuits)

SOV/143-59-11-16/19

8(6)

AUTHOR: Kapinos, V.M., Candidate of Technical Sciences, and
Matsevityy, Yu.M., Engineer

TITLE: The Determination of the Stationary Temperature Field
Taking into Account the Dependence of the Heat-Con-
ductivity Factor on Temperature

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Energetika,
1959, Nr 11, pp 123-126 (USSR)

ABSTRACT: The authors try to prove that their new, simplified,
mathematical approach to the problem of determining
the plane stationary temperature field, described
by a linear differential heat-conductivity equation,
is as good as the calculations based on the method
of finite differences or the method of nets. The
results obtained by applying the simplifying approx-
imations of the authors differ only in a negligible
way from the results obtained by standard complicated
accurate calculations. A plate made of "EI612"

Card 1/2

SOV/143-59-11-16/19

The Determination of the Stationary Temperature Field Taking into Account the Dependence of the Heat-Conductivity Factor on Temperature

austenite steel has been used by the authors in their experiments. There are 1 graph and 2 Soviet references.

ASSOCIATION: Khar'kovskiy politekhnicheskiy institut imeni V.I. Lenina (Khar'kov Polytechnic Institute imeni V.I. Lenin)

SUBMITTED: July 1st, 1959

Card 2/2

L 8272-66 EWT(1)

ACC NR: AP5025571

SOURCE CODE: UR/0113/65/000/008/0101/0105

44, 55

AUTHOR: Matevityy, Yu. M. (Engineer)

ORG: Khar'kov Polytechnic Institute imeni V. I. Lenin (Khar'kovskiy politekhnicheskiy institut)

TITLE: New method of modelling nonlinear boundary conditions in solving stationary heat transfer problems

SOURCE: IVR. Energetika, no. 8, 1965, 101-105

TOPIC TAGS: heat transfer, heat transfer analog, heat transfer rate, electric analog

ABSTRACT: A method is presented for obtaining accurate solutions to the heat transfer equation

$$\frac{\partial}{\partial x} \left[\lambda(\theta) \frac{\partial \theta}{\partial x} \right] + \frac{\partial}{\partial y} \left[\lambda(\theta) \frac{\partial \theta}{\partial y} \right] = 0$$

by electric modelling without using successive approximation techniques. This method is based on a new way of modelling nonlinear boundary conditions (third order boundary conditions being considered as most general). After substituting

$$\theta = \theta^0 + (\theta - \theta^0)^3,$$

the heat transfer equation and the third order boundary conditions can be written in finite difference form as

$$\theta_{i+1, j} + \theta_{i-1, j} + \theta_{i, j+1} + \theta_{i, j-1} - 4\theta_{i, j} = 0,$$

Cont 1/3

UDC: 536.2

L 8272-66

ACC NR. AP5025571

2

and

$$a(\sqrt{\theta_M} - \sqrt{\theta_0}) = -\frac{\theta_M - \theta_0}{h}$$

respectively, (where h = grid spacing; θ_M and θ_0 = function θ on boundary and at half a spacing inside boundary respectively; $\theta_0 = a + bt_0$; t_0 = temperature of heating medium). The problem can be solved exactly if the algebraic non-linearity on the left side of the last equation can be modelled electrically. This can be done by using slowly saturating nonlinear ballast resistors (ordinary bulbs exhibit the same properties) for the first term on the left side and using a fast saturating resistor for the second term (see Fig. 1).

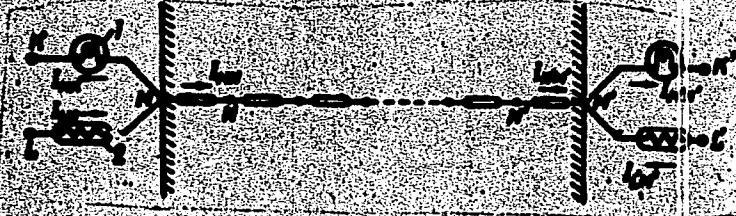


Fig. 1. Electric model: 1- slowly saturating resistors or bulbs; 2- fast saturating resistor (flat I-V curve)

By using non-dimensional groups, the heat transfer and electrical analog equations become

$$a(\sqrt{\theta_0} - \sqrt{\theta_M}) = \frac{\sqrt{\theta_M}}{h}(\theta_M - \theta_0)$$

Card 2/3

L 8272-66

ACC NO: AF5025571

$$A(\sqrt{V_1} - \sqrt{V_2}) = \frac{V_2}{V_1} (V_1 - V_2),$$

From which proper scaling coefficients can be determined. To check this method, a comparison was made with analytical results for an infinite slab in two temperature fields and for different heat transfer parameters. The results coincided quite well. Orig. art. has: 3 figures and 21 formulas.

SUB ORIG: NA, TR/ SUBM DATE: 25Aug64/ ORIG REF: 004/ CEN REF: 001

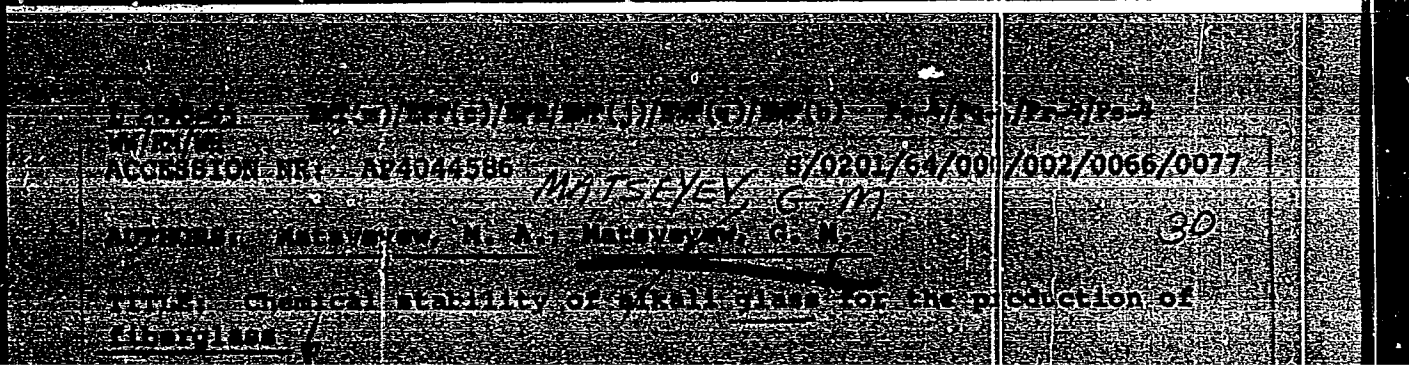
PC

Card 3/3

MATSEYCHIK, V.I.; IVAKHNIN, I.I.

Stability of long twisted rods under thermal stress. Izv. AN Arm.
SSR. Ser. fiz.-mat. nauk 17 no.3:141-144 '64. (MIRA 17:9)

1. Zaporozhskiy mashinostroitel'nyy institut imeni V.Ya.Chubaryna.

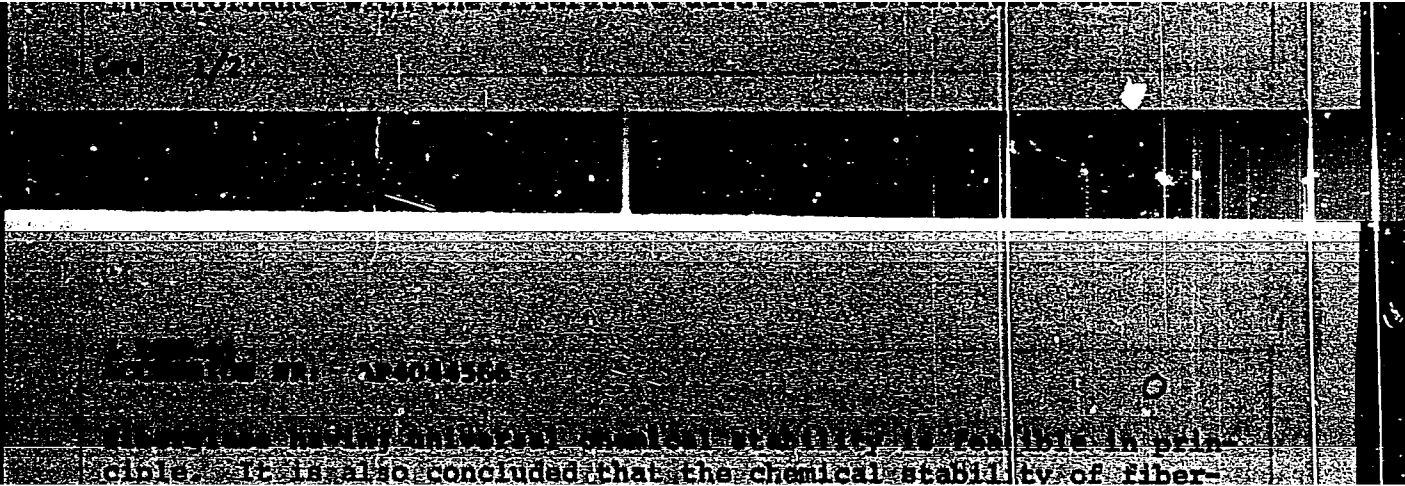


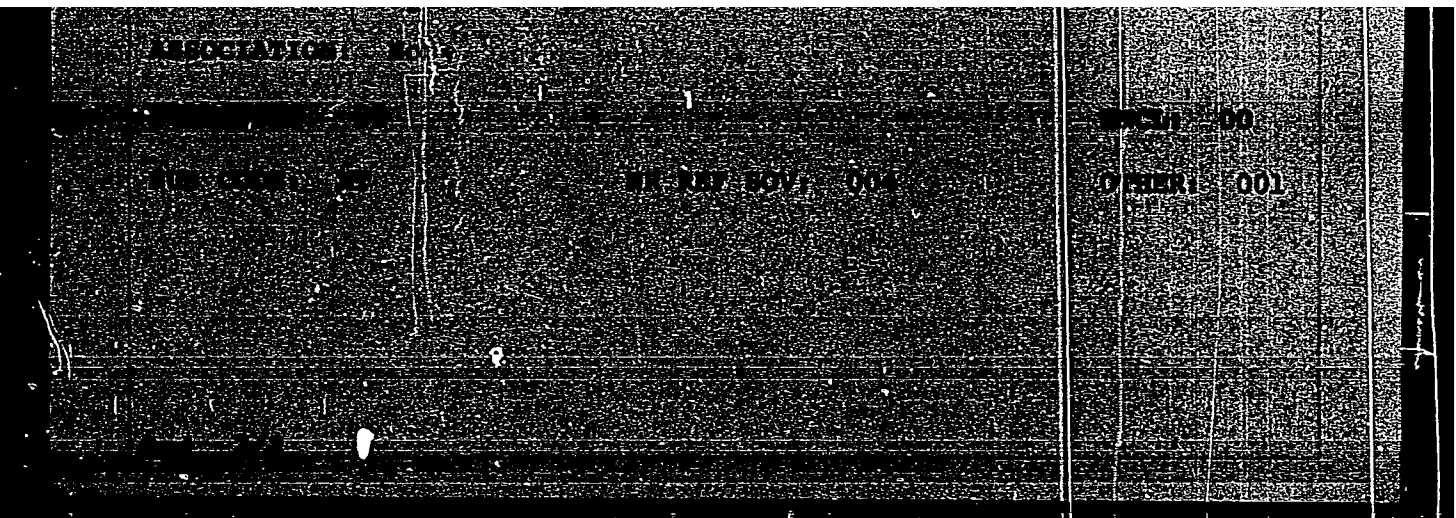
ИЗВЕСТИЯ АКАДЕМИИ НАУК ССРСР - ХИМИЯ НЕОРГАНИЧЕСКИХ ВЕЩЕСТВ

№ 2, 1964, 66-77

Исследование химической стойкости волокон из силикатного стекла, стабилизированного оксидом циркония

В работе рассмотрены вопросы взаимодействия между стеклом из силикатного стекла и различными веществами. Исследованы условия, при которых происходит химическая деградация стекла. На основании анализа экспериментальных данных, сделаны рекомендации по повышению химической стойкости волокон.





WATSEY, M. A.

Chemical stability of glass fibers for the production of fiber-reinforced plastics

Accession no: AP4044586

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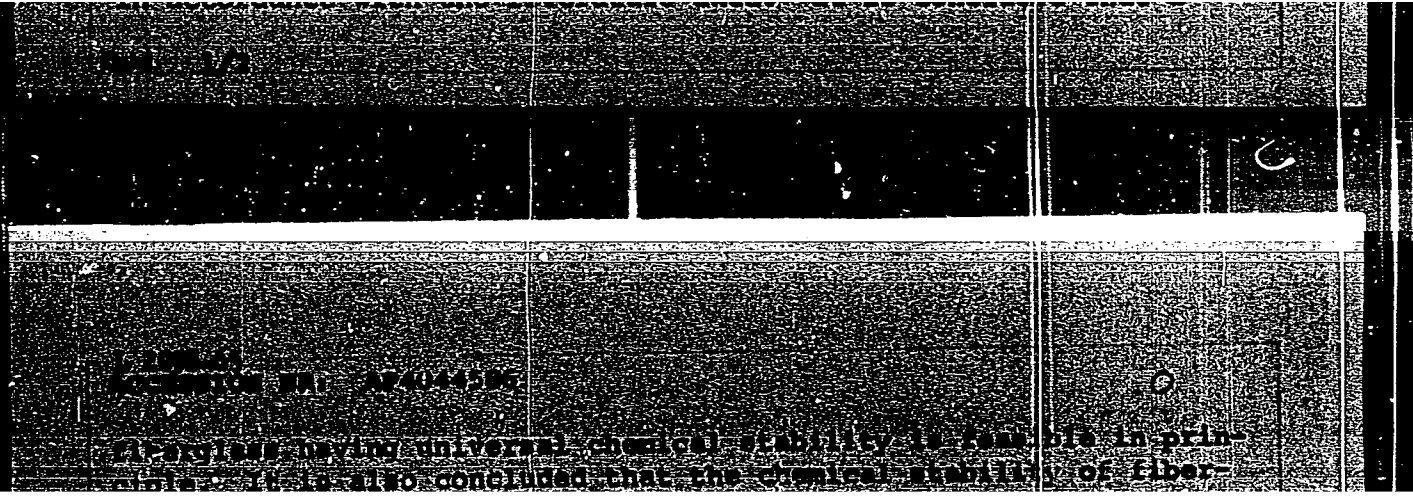
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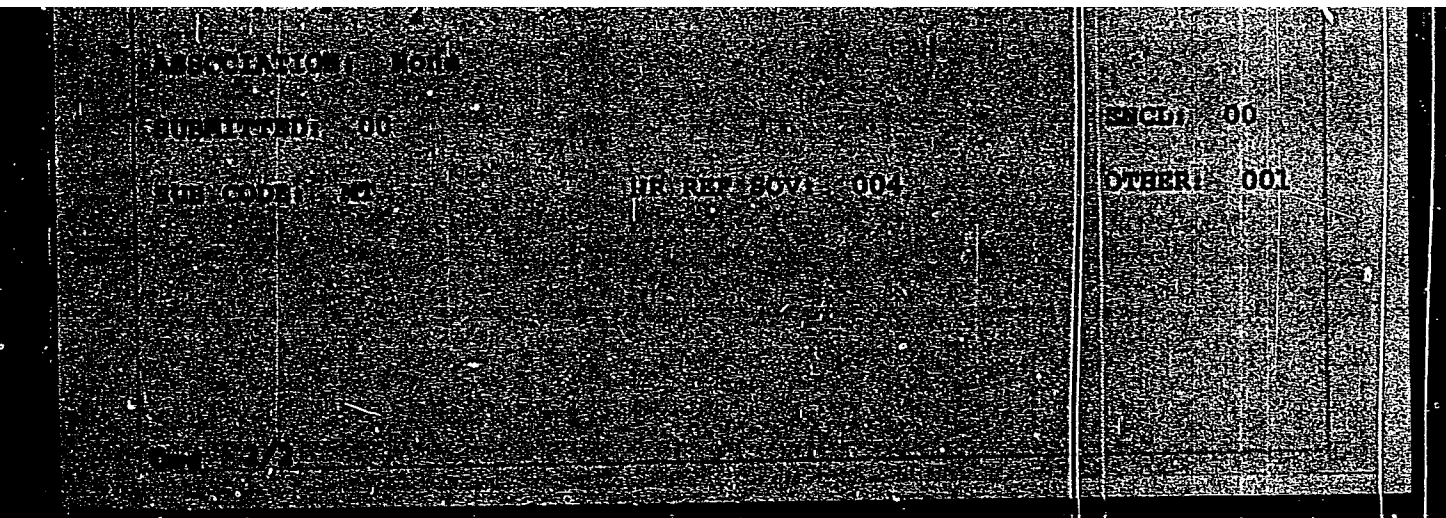
Chemical stability of glass fibers for the production of fiber-reinforced plastics

Source: Izvestiya Akad. Nauk SSSR, Seriya Khim. Tekhn. Nauki, no. 2, 1964, 66-77

Abstract: Glass fibers are chemically stabilized, and the mechanism of their resistance to different aggressive reagents is considered and recommendations

are given for the production of fiber-reinforced plastics. The mechanism of interaction between glass fibers and different aggressive reagents is considered and recommendations





MATSEYEVSKIY, B.; LIEPINA, L.

Automatic gasometric titration of water suspensions of ferric hydroxide
with oxygen. Vestis Latv ak no.12:79-82 '59. (EAI 9:11)
(Water) (Iron hydroxides) (Oxygen)

MATSEYEVSKIY, B.; LEPIN', L. [Liepina, L.]

Oxidation kinetics of water suspensions of ferrous hydroxide with
oxygen under dynamic conditions. Vestis Latv ak no.1:89-95 '60.

(IKAI 9:11)

(Oxygen) (Water) (Iron hydroxides)

MATSEYEVSKIY, B.(Riga); LEPIN', L.[Liepina, L.](Riga)

Oxidation kinetics of suspended ferrous hydroxide by oxygen in
ferrous (FEII) sulfate water solutions. Vestnik Latv ak no.6:85-88
'60. (KEAI 10:9)

1. Akademiya nauk Latvyskoy SSR, Institut khimii.

(Iron sulfates) (Oxygen) (Water) (Iron hydroxide)

MATSEYEVSKIY, B.; LEPIN, L. [Liepina, L.]

Kinetics of oxidation of iron(FeII) salts in aqueous solutions by
oxygen under dynamic conditions. Vestis Latv ak no.9:109-116 '60.
(KEAI 10:9)

(Iron) (Water) (Oxygen) (Solutions)