BUSLER, I.V.; SEMENOV, A.D.

Double-cascade amplifier for the potentiometric determination of the pH of solutions. Gidrokhim.mat. [illegible]:370-375 '62.

A field pH-meter. Ibid.:[illegible]

(MIRA 15:11)

1. Gidrokhimicheskiy institut, Novocherkassk. Submitted December 9, 1961.

BUSLIK, N.G.

BUSLIK, N.G.; KOVALEVSKIY, M.M.

[Factory testing of steam turbines and pumps]. Zavodskie ispytaniia parovykh turbin i nasosov. Sverdlovsk, 1954. 246 p. (MLRA 8:3D)

BUSLIK, N.G.

BUSLIK, N.G.; KOVALEVSKIY, M.M.; YANCHENKO, V.F., kandidat tekhnicheskikh nauk, retsenzent; BUTAKOV, S.Ye., doktor tekhnicheskikh nauk, redaktor ; DUGINA, N.A., tekhnicheskiy redaktor.

[Factory testing of steam turbines and pumps] Zavodskie ispytaniia parovykh turbin i nasosov. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. i sudostroit. lit-ry, 1954. 259 p. [Microfilm]
(Steam turbines--Testing) (MLRA 8:4)
(Pumping machinery--Testing)

BUSLIK, N.G., inzh.;KRIVOSHEIN, D.I., inzh.;SHTERN, V.A., inzh.

Special problems in assembling the VKT-100 turbine unit. Energ. stroi. no.2:19-23 '59 (MIRA 13:3)

1. Trest "Teploenergomontazh."
(Turbines) (Concrete footings)

BUSLIK, N.G., inzh.

From practices in the assembly and installation of the PVK-200-1 turbine unit at the Zmiyev State Regional Electric Power Plant. Energ.stroi. no.25:26-31 '61. (MIRA 15:4)

1. Trest montazhnogo teplosilovogo khozyaystva.
(Zmiyev--Electric power plants)

BUSLIK, N.G., inzh.

Blow-out of the steam lines of a boiler-turbine block. Elek. sta. 34 no.10:16-20 O '63. (MIRA 16:12)

12(SOV/175-58-6-41/41

AUTHOR: Buslov A., Technical Lieutenant

TITLE: A Cone for Expansion Joints

PERIODICAL: Tankist, 1958, Nr 6, p 64 (USSR)

ABSTRACT: The author describes briefly a simple device shown in a diagram. It is composed of a cone split along its center line. The diagram shows clearly how to slip an expansion joint over a tube. There is 1 diagram.

Card 1/1

Buslov, I

27-11-8/31

AUTHOR: Zaitsev, I., Director, Agricultural Mechanization School # 34, Gomel'; Buslov, I., Deputy Director for Practical Training Section

TITLE: The Mechanizers of Agriculture Are to Benefit From the Experience of Builders (Opyt stroiteley - mekhanizatoram sel'skogo khozyaystva)

PERIODICAL: Professional'no - Tekhnicheskoye Obrazovaniye, 1957, # 11, p 11-13 (USSR)

ABSTRACT: A number of agricultural mechanization schools are now by order of the Main Administration of Labor Reserves training tractor drivers and machinists in other supplementary trades, such as building trades, electrical engineering, etc. This was an entirely new task for the mechanization schools and required thorough preparation. The plan and program of training provided for a 2-year course. It was found that there is a demand for bricklayers and carpenters. The Oblast' Administration instructed the Agricultural Mechanization School # 34 at Gomel' to train 180 bricklayers and 90 carpenters. The article further describes what considerations were given

Card 1/2

The Mechanizers of Agriculture Are to Benefit From the Experience of Builders

to training in these professions, how the practical work was organized at the building sites, what electrical and other appliances had to be acquired and how special classrooms for the building trade and electrical engineering had to be organized, in addition to a laboratory.

ASSOCIATION: Agricultural Mechanization School # 34, Gomel' (Uchilishche mekhanizatsii sel'skogo khozyaystva # 34, Gomel')

AVAILABLE: Library of Congress

Card 2/2

27-58-6-4/35

AUTHOR: Buslov, I., Deputy Director, and Polotskiy, Senior Foreman

TITLE: The Instruction of Students at a Kolkhoz (Obucheniye uchashchikhsya v kolkhoze)

PERIODICAL: Professional'no-Tekhnicheskoye Obrazovaniye, 1958, Nr 6, p 3-5 (USSR)

ABSTRACT: The authors describe how the students of the School of Agricultural Mechanization Nr 34 in Gomel helped the kolkhoz "Za Rodinu" by taking over all work in engineering. The directors of the school and the management of the kolkhoz first established a plan and fixed dates for various tasks. The students took care of all machines and the workers could concentrate their efforts on other tasks. The productivity of the kolkhoz increased by 34 % in one year. Students working on different machines introduced many innovations to improve and increase the output of the machines. At the beginning of this cooperation, some directors of the school were afraid that it would take too much time and shorten the hours which the students could spend in the classroom, but practice showed that the results were excellent for both sides. Students

Card 1/2

The Instruction of Students at a Kolkhoz 27-58-6-4/35

acquired a practical knowledge of machines, and the kolkhoz workers improved their working methods.

ASSOCIATION: Uchilishche mekhanizatsii sel'skogo khozyaystva № 34, Gomel'skaya oblast' (The Gomel 34th School of Agricultural Mechanization of the Gomel'skaya oblast')

Card 2/2 1. Education-USSR 2. Engineering-Study and teaching-USSR

ZAYTSEV, I.; BUSLOV, I.; PEREPLETCHIKOV, M., prepodavatel'

Our practices in training machine operators. Prof.-tekh. obr. 19 no.6:10-11 Je '62. (MIRA 15:7)

1. Direktor Gomel'skogo sel'skogo professional'no-tekhnicheskogo uchilishcha No.34 (for Zaytsev). 2. Zamestitel' direktora po uchebno-proizvodstvennoy chasti Gomel'skogo sel'skogo professional'no-tekhnicheskogo uchilishcha No.34 (for Buslov).
(Farm mechanization—Study and teaching)

BUSLOV, K.P., kand. fil. nauk, red.; LEONENKO, I., red. izd-va; SIBERKO, N., tekhn. red.

[For the victory of communist labor]Za pobedu kommunisticheskogo truda; dokumenty i materialy. Minsk, Izd-vo Akad. nauk BSSR, 1962. 375 p. (MIRA 15:11)

1. Akademiya navuk BSSR, Minsk. Instytut filasofii.
(White Russia--Scoialist competition)

BUSLOV, L.I.; KOVALENKO, V.P.; SHESTOPALOV, V.N.

Receiving device of a multiple-message remote control system.
Trudy Inst. elektrotekh. AN URSR 20:190-197 '63.
(MIRA 17:11)

BUSLOV, M.M.
ZAVOYSKIY, Ye. K.; SMOLKIN, G. Ye.; PLAKOV, A. G.; BUSLOV, M. M.

"The Luminescent Chamber," Doklady Akademii Nauk Vol 100 No 2, pp 241-242.

Translation B-86067, 15 Jun 55

BUSLOV, S.P.

Some observations on the effect on tourists of the microclimate of the shores of Lake Baikal. Gig. i san. 21 no.11:92-93 N '56. (MLRA 10:2)
(BAIKAL REGION--MAN, INFLUENCE OF CLIMATE ON)

AZHAZHA, V., inzh.; BUSLOV, V., inzh.

Inspecting the state of concrete in the underwater zone by the acoustic pulse method. Mor. flot 25 no.10:39-40 O '65. (MIRA 18:11)

BUSLOV, V. P.

36795. Protivoepizooticheskiy plan sovkhoza. Veterinariya, 1949, No. 12, c. 48 - 49

SO: Letopis Zhurnal'nyk Statey, Vol. 50, Moskva, 1949

SUVOROV, N.I.; BUSLOV, V.V.

Analysis of the exploitation of D_2^V and D_3^{II} layers of the Sokolovogorsk field and recommendations for improving it. Nauch.-tekh. sbor. po dob. nefti no.1:71-74 '58. (MIRA 15:9)

1. Vsesoyuznyy neftegazovyy nauchno-issledovatel'skiy institut.
(Sokolovogorsk region--Oil fields--Production methods)

BUSLOV, V.V.

Geological characteristics of lower Shchiglov beds in the Volga Valley portion of Saratov Province. Geol. nefti i gaza 3 no.9: 35-43 S '59. (MIRA 13:1)

1.Vsesoyuznyy nefte-gazovyy nauchno-issledovatel'skiy institut.
(Saratov Province--Petroleum geology)

BUSLOV, V.V.

High-pressure gas drive in the Bitkov oil field. Neft.khoz. 43 no.4:52-57 Ap '65. (MIRA 18:4)

BUSLOV, V.V.

New concept of the tectonics of the Glubinnayya fold as a zone for h-p gas injection in the Bitkov field. Neftegaz. geol. i geofiz. no. 10:16-20 '65. (MIRA 18:12)

1. Vsesoyuznyy neftegazovyy nauchno-issledovatel'skiy institut.

OSYAKINA-ROZHDESTVENSKAYA, A.I., dotsent; BUSLOVA, D.L., assistent

Allergic reaction in the kidneys under the influence of placental protein. Trudy LSGMI 18:44-51 '55. (MIRA 14:3)

1. Leningradskiy sanitarno-gigiyenicheskiy meditsinskiy institut, kafedra akusherstva i ginekologii.
(ALLERGY) (KIDNEYS) (PROTEINS)

BLINOVSKIY, A.A.; BUSLOVA, N.A.; YEROKHOV, N.F.; IVANOV, K.A.; KITAYEVA, G.V.; LEYBOSHITS, L.M.; NEDELYAYEV, I.A.; PALLADIYEVA, M.V.; PEVZNER, L.M.; PETROVA, Ye.D.; ROGOVSKIY, N.M.; RUDNYY, M.M.; SMIRNOV, B.F.; DENISOVA, I.S., red.; RAKOV, S.I., tekhn.red.

[Through our land; tourist sites and itineraries of the Moscow Interprovince Tour Administration of the All-Union Central Council of Trade Unions] Po rodnoi zemle; turistskie bazy i marshruty Moskovskogo mezhoblastnogo turistsko-ekskursionnogo upravleniia VTsSPS. Moskva, Izd-vo VTsSPS Profizdat, 1959. 154 p. (MIRA 13:4)

1. Moskovskoye mezhoblastnoye turistsko-ekskursionnoye upravleniye Vsesoyuznogo tsentral'nogo soveta profsoyuzov (for all, except Denisova, Rakov).
(Tourism) (Steamboat lines)

KHOLMSKIY, V.G.; GALUSTOVA, L.A.; SHCHERBINA, Yu.V.; BUSLOVA, N.V.

Methods for selecting the optimum cross sections of an open 6 to 10 kv. distribution network. Trudy Inst. elektrotekh. AN URSR no.19:110-117 '62. (MIRA 16:5)

(Electric power distribution) (Electric lines—Overhead)

1ST AND 2ND ORDERS

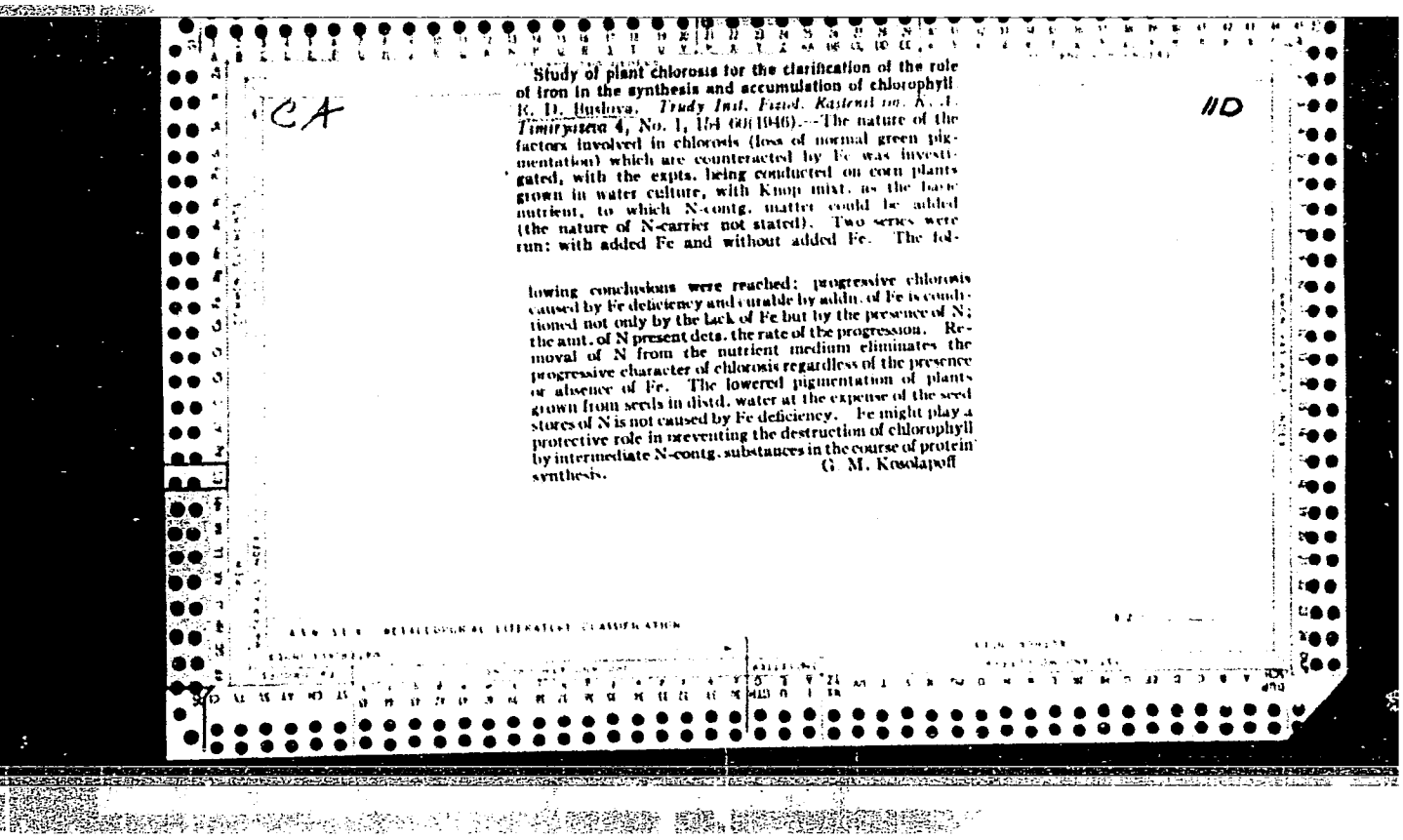
PROCESSES AND PROPERTIES INDEX

CA

11D

The diagnosis of mineral starvation of chlorotic plants. E. D. Buslova. *Zhur. Inst. Botan. Akad. Nauk U. R. S. R.* No. 23(31), 145-50(1939); *Herbage Abstracts* 11, No. 1, 32(1941).—Gris' iron test (for mineral deficiencies) gave pos. results irrespective of whether Fe was absent, alone or in combination with other substances, except N. When, in addn. to Fe, N was lacking in nutrition, Gris' test failed to intensify the color (green spots) unless the plants were capable of producing anthocyanin. The deficiency of N in the nutrition could be detected more reliably by treating the chlorotic leaves with a soln. of NH_4NO_3. The deficiency of Mg could be detected by the appearance of green spots on the chlorotic leaves treated with a $MgCl_2$ soln. Mazé's test (C. A. 8, 1020) on S deficiency gave neg. results when in addn. to S, N was absent in the nutrition. S. Solovreichik

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

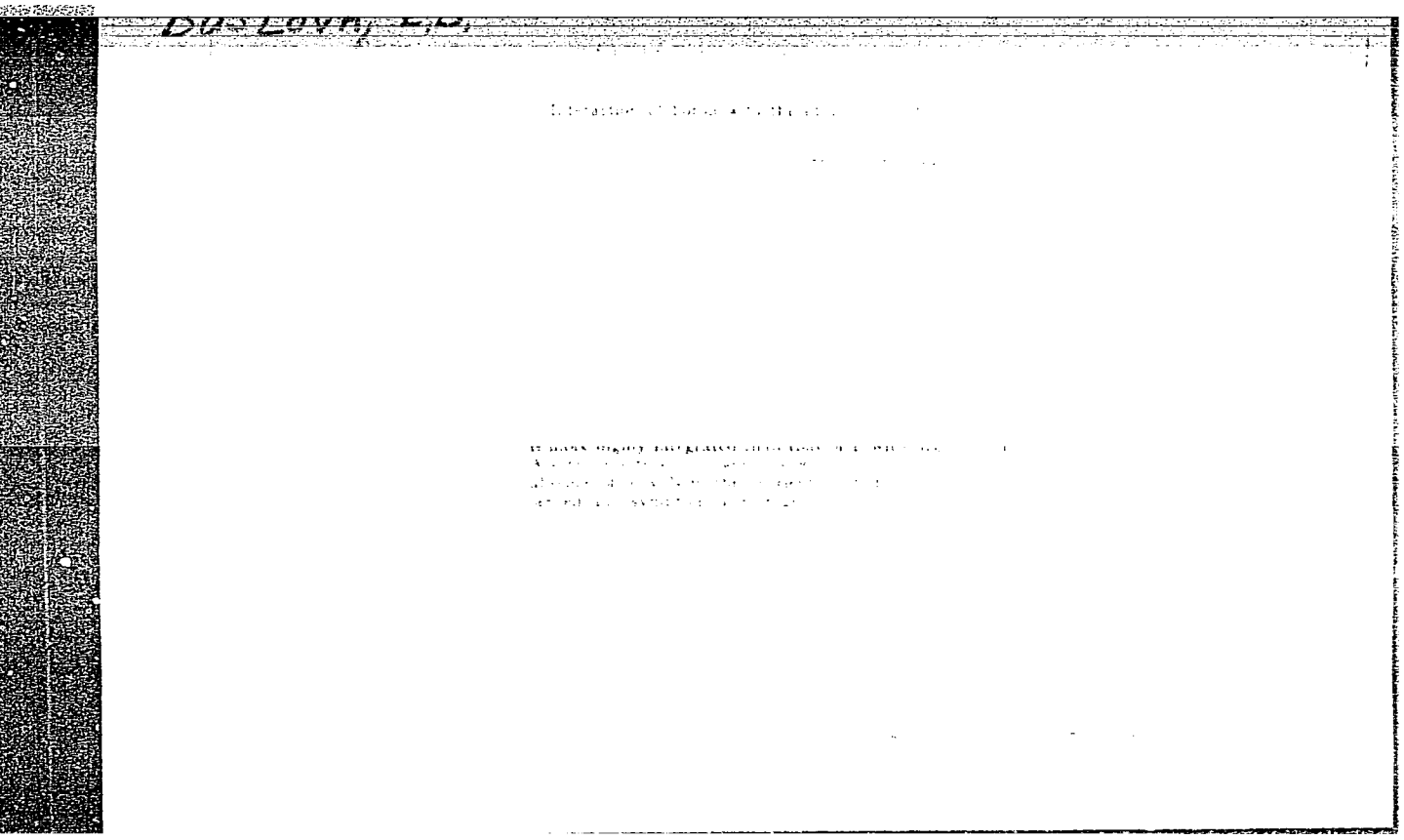


CA

IID

Study of plant chlorosis for the clarification of the role of iron in the synthesis and accumulation of chlorophyll. K. D. Rudova. *Trudy Inst. Fiziol. Rastenii im. K. A. Timiriazeva* 4, No. 1, 154-60(1946).—The nature of the factors involved in chlorosis (loss of normal green pigmentation) which are counteracted by Fe was investigated, with the expts. being conducted on corn plants grown in water culture, with Knop mixt. as the basic nutrient, to which N-contg. matter could be added (the nature of N-carrier not stated). Two series were run: with added Fe and without added Fe. The following conclusions were reached: progressive chlorosis caused by Fe deficiency and curable by addn. of Fe is conditioned not only by the lack of Fe but by the presence of N; the amt. of N present dets. the rate of the progression. Removal of N from the nutrient medium eliminates the progressive character of chlorosis regardless of the presence or absence of Fe. The lowered pigmentation of plants grown from seeds in distd. water at the expense of the seed stores of N is not caused by Fe deficiency. Fe might play a protective role in preventing the destruction of chlorophyll by intermediate N-contg. substances in the course of protein synthesis.

G. M. Kosolapoff



BUSLOVA, Ye. D.

Methodology of sterile cultures of higher plants. Bot. zhur., 37, No 4, 1952.

AUTHOR: Buslova, Ye.D. SOV-21-58-4-23/29

TITLE: Method of Reducing the Prefructiferous Period in Apple Seedlings (Sposob sokrashcheniya predplodonosyashchego perioda u seyantsev yabloni)

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1958, Nr 4, pp 448-451 (USSR)

ABSTRACT: From experiments by Kolomiyets [Ref. 1] it is known that it had been possbile to accelerate the commencement of fructification in apple-tree seedlings under vegetation experiment conditions by an increased concentration of mineral fertilizer solutions. The author has discovered a method for accelerating this commencement under conditions of cultivation in open soil. The method consists in changing the wintering conditions. Year-old seedlings of the snowy Calville variety were first left outdoors all winter, and the following year were kept under artificial conditions with a raised temperature of $\geq$ 15°C. Under these conditions, the seedlings formed fruit buds in their third year. The acceleration of the beginning of fructification may be explained by changes in their anatomic and morphological structure (the appearance of shortened shoots of the annular type) as

Card 1/2

Method of Reducing the Prefructiferous Period in Apple Seedlings

a result of wintering at a raised temperature. It is expedient to test this method in selection practice for accelerating the commencement of fructification in hybrid seedlings of other apple varieties.
There are 1 set of photos and 3 Soviet references.

ASSOCIATION: Institut botaniki AN UkrSSR (Institute of Botanics of the AS UkrSSR)

PRESENTED: By Member of the AS UkrSSR, D.K. Zerov
SUBMITTED: July 30, 1957

NOTE: Russian title and Russian names of individuals and institutions appearing in this article have been used in the transliteration.

1. Apple trees--Growth

BUSLOVA, Ye.D. [Buslova, IE. D.]

Role of potassium in the processes of plant growth and nutrition [with summary in English]. Ukr. bot. zhur. 15 no.2:15-26 '58. (MIRA 11:6)

1. Institut botaniki AN URSR, kafedra fiziologii roslin.
(Plants, Effect of potassium on)

BUSLOVA, Ye.D.

Qualitative changes in protochlorophyll (precursor of chlorophyll) in various plants. Fiziol. rast. 9 no.6:674-681 '62. (MIRA 15:12)

1. Institute of Botany, Academy of Sciences of Ukranian S.S.R., Kiyev.

(Chlorophyll)

LYUBIMENKO, Vladimir Nikolayevich (1873-1937); OKANENKO, A.S., otv. red. toma; BUSLOVA, Ye.D., red.; LYUBINSKIY, N.A., red.; MATSKOV, F.F., red.; MODILEVSKIY, YaS., red.; MATYASHEVSKAYA, T.I., red.; RAKHLINA, N.P., tekhn. red.

[Selected works in two volumes] Izbrannye trudy v dvukh tomakh. Kiev, Izd-vo AN USSR. Vol.1.[Works on photosynthesis and the adaptation of plants to light] Raboty po fotosintezu i prisposobleniiu rastenii k svetu. 1963. 612 p. (MIRA 17:2)

LYUBIMENKO, Vladimir Nikolayevich; LYUBINSKIY, N.A., otv. red. toma; BUSLOVA, Ye. D., red.; MATSKOV, F. F., red.; MODILEVSKIY, Ya. S., red.; OKANENKO, A. S., red.; MATYASHEVSKAYA, T.I., red. izd-va; RAKHLINA, I.P., tekhn. red.; DAKHNO, Yu. B., tekhn. red.

[Selected works in two volumes] Izbrannye trudy v dvukh tomakh. Kiev, Izd-vo AN USSR. Vol. 2. [Works on the photosynthesis and pigments of plants] Raboty po fotosintezu i pigmentam rastenii. 1963. 680 p. (MIRA 17:3)

BUSLOVICH, G., inzhener.

Asphalt floors in farm buildings. Sil'.bud.no.6:21-22 S '55.
(Farm buildings) (Asphalt) (MLRA 9:7)

ZAKHARCHENKO, V., inzh.; BUSLOVICH, G. [Buslovych, H.], inzh.

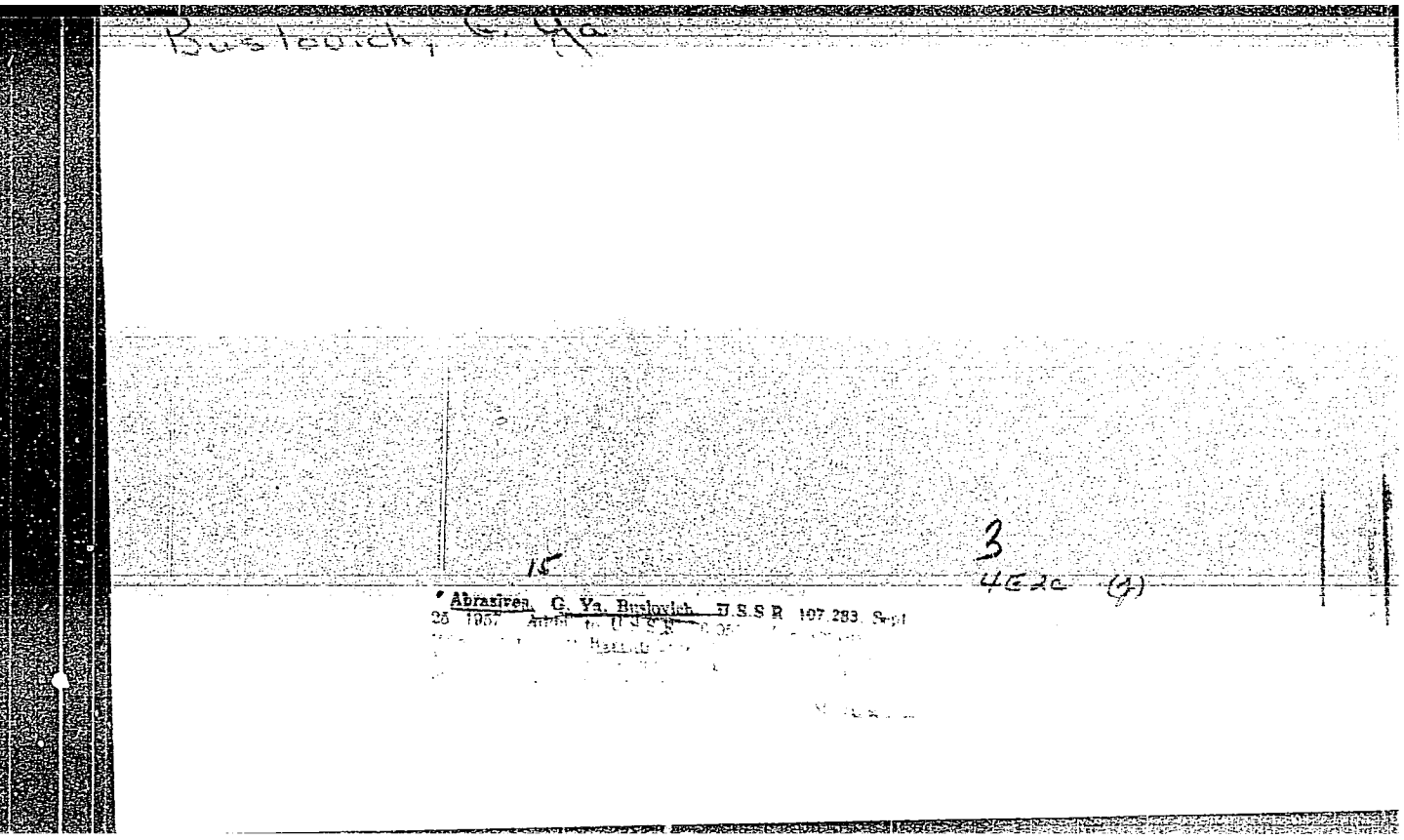
New-type farm buildings built without using wooden elements.
Sil'.bud. 9 no.7:10-11 Jl '59. (MIRA 12:9)
(Mykil'ska Borshchahivka--Dairy barns)

BUSLOVICH, G., konstruktor

Making a heat-insulating material using clay and straw. Sel'.stroi. 13 no.2:27 F '59. (MIRA 12:3)
(Insulating materials)

BUSLOVICH, G.Ya.; SOKOLOV, S.P., kandidat tekhnicheskikh nauk.

New abrasive tools used in honing. Vest.mash.36 no.12:49-51 D '56.
(Abrasives) (Grinding and polishing) (MLRA 10:2)



Abrasives, G. Ya. Buslovich. U.S.S.R. 107,283. Sept. 25, 1957. Appl. in U.S.S.R.

BUSLOVICH, G.Z.

Using pneumohydraulic amplifiers in clamping devices.
Mashinostroitel' no.9:37-38 S '64. (MIRA 17:10)

MOLDAVSKIY, B.L.; prinimali uchastiye : BLINOVA, M.V.; BABEL', V.G.; BUSIOVICH, Ye.Ya.; RUDAKOVA, R.I.; MELENT'YEVA, T.G.; USMANOVA, M.Sh.; RUBINSHTEYN, E.I.; ROZENBLIT, N.K.

Production of dicarboxylic acids from hydroxy acids. Khim.prom 2:112-115 My '60. (MIRA 13:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftyanoy khimii.

(Acids)

5.3400

77660
SOV/80-33-2-35/52

AUTHORS: Moldavskiy, B. L., Blinova, M. V., Babel', V. G., Buslovich, Ye. Ya, Usmanova, M. Sh.

TITLE: Production of Dicarboxylic Acids by Oxidation of "Oxy Acids" With Nitric Acid. Communication III

PERIODICAL: Zhurnal prikladnoy khimii, 1960, Vol 33, Nr 2, pp 463-467 (USSR)

ABSTRACT: The oxidation of paraffins with nitric acid can yield, depending on the reaction conditions, a series of oxygen-containing compounds such as alcohols, aliphatic acids, esters, as well as products of further oxidation of the aliphatic acids (hydroxy-, aldehyde-, and keto-acids and their derivatives), lactones, lactides, etc. Unlike paraffins, alcohols, aliphatic acids, and their esters which are soluble in petroleum ether, the products of further oxidation of aliphatic acids are insoluble in petroleum ether and

Card 1/4

can be easily separated. This insoluble fraction is called usually "oxy acids" (oksikisloty) in USSR, and it can be used for the synthesis of dicarboxylic acids. C. Paquot and F. Goursac reported (Bull. Soc. Chim., 1950, Vol 172) the auto-oxidation of saturated aliphatic acids with an even number of carbon atoms (C_6 to C_{18}) effected at 100-120° C, in the presence of nickel phthalocyanine. The above authors established that the oxidation of the chain took place chiefly in the β- position; the reaction yielded a monocarboxylic acid with a lower molecular weight (containing also an even number of C atoms), and oxalic acid. The chain became gradually shorter, until caproic acid was obtained and could not be oxidized anymore under the conditions of the reaction. The oxidation in δ and γ -positions was insignificant, and deeper oxidation of the β-atom only leads to the formation of malonic and

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oxalic acids. The authors of the present study do not agree with the above. The starting material for their investigation was a mixture of paraffins obtained from the urea deparaffinization of diesel oils. This mixture was oxidized with air at 130° and gave a product consisting of 52% "oxy acids," 28% aliphatic acids, and 20% paraffins and neutral oxygen containing compounds. The above starting material was oxidized easily with 57% nitric acid at 75-80° C and yielded chiefly pimelic, adipic, glutaric, and succinic acids, in 66% yield, based on the reacted "oxy-acids." Lower aliphatic acids, distilled together with nitric acid, consisted of acetic acid (46%), propionic acid (26%), butyric acids (14%), and valeric acids (14%). There are 2 tables; and 5 references, 1 French, 1 German, 2 U.S., 1 Soviet. The 2 U.S. references are: C. Zellner, F. Lister, Ind. Eng. Chem., 48, 10, 1938 (1956); J. Buckmann, U.S. Pat. 2801219 (1957).

Production of Dicarboxylic Acids by Oxidation of "Oxy Acids" With Nitric Acid. Communication III

77660
SOV/80-33-2-35/52

ASSOCIATION: All-Union Scientific Research Institute for Petrochemical Processes (Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov)

SUBMITTED: March 3, 1959

Card 4/4

L 31920-66 EWT(m)/EWP(j)/T IJP(c) RM

ACC NR: AP6007971 (A) SOURCE CODE: UR/0191/66/000/003/0054/0057

AUTHOR: Fotokhina, Ye. S.; Moldavskiy, B. L.; Molotkov, R. V.; Batalin, O. Ye.; Buslovich, Ye. Ya.; Rubinsteyn, E. I.; Ravkina, A. E.; Khanukova, E. S.; Slobina, A. V.; Lykova, T. A.; Bychkova, V. A.

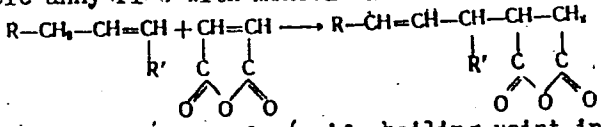
ORG: none

TITLE: Alkenylsuccinic acid anhydrides as hardening agents for epoxy resins

SOURCE: Plasticheskiye massy, no. 3, 1966, 54-57

TOPIC TAGS: epoxy plastic, hardening, solid mechanical property

ABSTRACT: The authors studied the synthesis and use of alkenylsuccinic acid anhydrides as liquid and low-toxic hardening agents for epoxy resins. The anhydrides were synthesized in an electrically heated steel autoclave with a mixing device by the reaction of maleic anhydride with monoolefins:



The following anhydrides were prepared: (acid, boiling point in C, at pressure in mm) crotylsuccinic, 122-147, 8; pentenylsuccinic, 135-148, 8; dodecenylsuccinic, 124-210,

Card 1/2 UDC: 678.643'42'5:678.043

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ACC NR: AP6007971 2

5; and a mixture of isooctenyl- and isononenylsuccinic (ASA), 155-169, 8. Epoxy resins ED-5, ED-6, and EDL were hardened by ASA at 140C for 24 hr, using 93-115, 73-93- and 47-57 g of ASA over 100 g of epoxy resins respectively. Using dimethylaniline or triethanolamine as the accelerators, the hardening process was accomplished within 1.5-2 hr at 100C. With the exception of thermal stability, which was 25-35C lower, the physicomechanical properties of the products obtained resembled very closely those obtained by the use of maleic anhydride as the hardening agent. Orig. art. has: 6 tables, 4 fig., and 1 formula.

SUB CODE: 11,07/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 003

Card MT 2/2

28223
S/194/61/000/005/064/078
D201/D303

9.2100(1153, 1385, 1482)

AUTHORS: Buslovskiy, O.Ye. and Chirkin, L.K.

TITLE: A controlled non-linear four-pole

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 5, 1961, 10, abstract 5 I73 (Izv. Leningr. elektrotekhn. in-ta, 1960, no. 43, 96-99)

TEXT: The non-linear semiconductor resistor (NSR) exhibits the properties of a controlled element; its dynamic resistance depends on a d.c. bias. A more pronounced effect of control may be obtained when using the NSR as part of a four-pole. An NSR four-pole is described in the form of a bridge, designed in the shape of a disc with four electrodes. The basic parameters of an NSR four-pole are the magnitudes of static resistance at min. and max. values of control voltages at nominal values of supply voltages and current. Since the NSR which constitute the four-pole are not completely identical - a certain unbalance of the bridge is observed. A high control

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28223
S/194/61/000/005/064/078
D201/D303

A controlled non-linear four-pole

efficiency and small bridge unbalance has been obtained with NSR made from ferrous carbide with superfine porcelain as a filter, the suggested NSR four-pole has found practical applications in automation circuits, telemechanics, measurement techniques, as amplitude modulators, d.c. to a.c. converters and phase sensitive discriminators. 3 references. [Abstracter's note: Complete translation.]

Card 2/2

BUSMANIENE,E.; MEDEISIENE,B.

Characteristics of the diet for children in boarding schools in the Lithuanian SSR. Sveik. apsaug. 8 no.4:35-37 Ap'63.

1. Vilniaus Epidemiologijos ir higienos m.t. institutas.

BUSMICH, R.S. (Moskva)

Polyneuritis and its treatment. Med.sestra 18 no.9:24-30 S '59. (MIRA 12:11)

(NEURITIS, MULTIPLE)

SPIRCHEZ, T., prof.; STOICHITA, S., dr.; GHEORGHESCU, B., dr.; BROSTEANU, E., dr.; MARINESCU, Eliza, dr.; TACORIAN, S., dr.; RUSSU, M., dr.; STECLACI, A., ing.; MERCULIEV, Elena, fiziciana; BUSNEAG, C., chim.; VASILESCU, V., fiz.; STOICA, M.

Contributions to the etiopathogenesis of the early postprandial syndrome in gastrectomized patients. Med. inter., Bucur 13 no.5: 749-758 My '61.

(GASTRECTOMY complications)

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Functional examination of the liver in cardiac insufficiency. (Considerations on dysproteinemia, serum transaminases, ammonemia and other function tests). Med. intern. 14 no.1:41-55 Ja '62.

1. Lucrare efectuata in Clinica a V-a medicala "V. Roaita".
(HEART FAILURE, CONGESTIVE physiology)
(LIVER FUNCTION TESTS) (BLOOD PROTEINS chemistry)
(TRANSAMINASES blood) (AMMONIA blood)

GROZA, P.; CORNEANU, Maria; RUSOVICI, Lelia; BUSNEAG, C.

Gastric secretion and motility in digitalis intoxication.
Stud. cercet. fiziol. 10 no.3:245-252 '65.

GROZA, P.; CIPLEA, Al.; OANA, Al.; CORNEANU, Maria; BUSNEAG,C.

Research on the sodium and potassium economy in the gastric juice of patients with duodenal ulcer. Stud. cercet. de fiziol. 10 no.2: 133-140 '65.

PAUN, L.; OPRESCU, Maria; DRAFTA, Denise; [redacted], Melania; FRUNZA, S.

Aldosterone and the study of electrolytes in 10 cases of a common clinical form of viral hepatitis. Stud. cercet. endocr. 15 no.5:481-484 '64.

T. BUSNITA

"Discussions in Soviet hydrobiology on problems of the biological productivity of aquatic basins." p. 80. (ANALELE ROMANO-SOVIETICE. SERIA BIOLOGIE., Vol. 7, seria a II-a, no. 14, July/Sept. 1952, Bucuresti, Rumania.)

SO: Monthly List of East European Accessions, L. C., Vol. 2, No. 7, July 1953, Uncl.

Busnita, Th.

Fish culture in the delta, and its prospects for the future. p. 339.

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Uncl.

BUSNITA, TH.

TECHNOLOGY

Periodicals: CELULOZA SI HIRTIE. Vol. 7, no. 6, June 1958

BUSNITA, TH. Study of the complex utilization of the Danube River delta. p. 211

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 2, February 1959, Unclass.

BUSNITA, T.; CHRISTIAN, A.

Different kinds of crucian carp Carassius arratus gibelio (Bloch) in Rumanian waters, and the factors causing their varieties. In Russian p. 129.

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Monthly list of Eastern European Accession Index (EEAI) LC Vol. 8, No. 11
November 1959
Uncl.

BUSNITA, Th.

Omagiu lui Traian Sayulescu cu prilejul implinirii a 70 de ani (Hommage Paid to Traian Savulescu On the Occasion of His 70th Birthday); a book review. Rev biol 5 no.1/2:155-159 '60.
(EEAI 10:9)

1. Membre correspondant de l'Academie de la Republique Populaire Roumaine; Comite de redaction, "Revue de Biologie".

(Savulescu, Traian) (Biology)

BUSHNITSE, T.[Busnita, T.]; BREZYANU, G.[Brezeanu, Gh.]; PRUNESKU-ARION, Yelena[Prunescu-Arion, Elena]

Hydrobiological study of the rivers Jiu and Olt and the role of the latter in the present life of the Danube River. Rev biol 6 no.3: 307-323 '61.

1. Biologicheskiy institut im. Tr. Sevulesku [Savulescu] Akademii RNR. 2. Membre du Comite de redaction, "Revue de biologie". Chlen korresp. Akademii RNR (for Busnita).

BUSNITA, Th. (Bucuresti)

On the 100th anniversary of the birth of Academician and Professor Paul Bujor, who passed away ten years ago. Natura Biologie 14 no.3:77-79 My-Je '62.

1. Membru corespondent al Academiei R.P.R.

RUMANIA

BUSNITA, Th., Corresponding Member of the RPR Academy (Membru Corespondent al Academiei RPR), Bucharest [affiliation not given]

"Fishing Prognosis in Sweet and Sea Water."

Bucharest, Natura. Seria Biologie, Vol 15, No 4, Jul-Aug 63, pp 26-34.

Abstract [Author's English summary modified]: The prediction of the results of fresh-water and sea fishing is very important because it forms the basis of the production, manpower and cost plans. The author deals with the technique of fish breeding prognoses as well as with prognoses for fishing in the lower Danube area and in the sea waters off the Rumanian coast. Prognosis formulae are presented and their use is illustrated by examples. The problems involved in accurate prognosis are discussed.

Includes 1 graph, 1 table and 8 Rumanian references.

BUSNITA, Th.

The opening allocution at the Symposium:"Biological Problems of the Danube Delta." Hidrologia 4:9-12 '63.

Professor Iacob Vladimirovici Roll (1887-1961); obituary. 561-568

Professor Franz Ruttner (1882-1961); obituary. 561-568

1. Membru corespondent al Academiei R.P.R.

BUSNITA, Th.; ENACEANU, Virginia; BANU, A.C.

Research on the Danube Delta in the period 1956-1960. Hidrologia 4:13-55 '63.

1. Membru corespondent al Academiei R.P.R. (for Busnita).

BUSNITA, Th.; ENACEANU, Virginia

Elements concerning the biological productivity of the Danube Delta. Hidrologia 4:163-180 '63.

1. Membru corespondent al Academiei R.P.R. (for Busnita).

BUSNITA, Th.

Fishing prognosis in fresh and sea water. Natura Biologie 15 no.4:26-34 Jl-Ag '63.

1. Membru corespondent al Academiei R.P.R., Bucuresti.

BUSNITA, Th.; PRUNESCU-ARION, Elena; BREZEANU, Ch.; ZAMFIR, V.; BALTAC, Margareta; ILIE, Maria

Hydrobiological and piscicultural study of ponds with river pumped water. Studii cerc biol anim 15 no.4:419-441 '63.

1. Membru corespondent al Academiei R.P.R. (for Busnita).

ANTONIU, R.; MIHAIL, M.; VAICUM, L.; MURGOCI, C.; CUTE, E.; HINCU, S.; BUSNITA, Th.; TALAU, V.; ARDELEANU, I.; RUSU-PANDELESCU, M.; PARASCHIVESCU, A.

Studies on the possibility of improving the sanitary conditions of the lakes surrounding Bucharest. Studii prot epur apelor 5:263-332 '64.

BUSNITA , Th.

"The U.S.S.R. fauna" by A. V. Ivanov. Reviewed by Th. Busnita. Rev biol 8 no. 4: 475-476 '63.

AVAKYAN, A.A.; AKOPYAN, A.T.; BUSNYUK, M.M.

Phase contrast microscopy in virusology. Biofizika 1 no.4:383-386 '56. (MLRA 9:9)

1. Institut virusologii imeni D.I.Ivanovskogo AMN SSSR, Moskva.
(PHASE MICROSCOPE) (VIRUS RESEARCH)

BUSNYUK, M. M.; AVAKYAN, A. A.

Structure, composition, and development of intracellular viral inclusions.

Report submitted at the 13th All-Union Congress of Hygienists, Epidemologists and Infectionists, 1959.

AVAKYAN, A.A.; LEVKOVICH, Ye.N.; BUSNYUK, M.M.

Morphology of nerve cells injured by viruses of tick-borne encephalitis and related diseases. Vop. virus. 5 no. 2:208-216 My-S '60. (MIRA 14:4)

1. Institut virusologii imeni D.I. Ivanovskogo AMN SSSR i Institut po izucheniyu poliomiyelita AMN SSSR, Moskva.
(ENCEPHALITIS) (EPIDEMIC HEMORRHAGIC FEVER)
(NERVOUS SYSTEM—DISEASES)

137-58-6-11540 D

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 41 (USSR)

AUTHOR: Busol, F.I.

TITLE: An Investigation of the Kinetics of the Process of Iodide Refining of Zirconium (Issledovaniye kinetiki protsessa iodidnoy rafinirovki tsirkoniya)

ABSTRACT: Bibliographic entry on the author's dissertation for the degree of Candidate of the Physical-Mathematical Sciences, presented to the B. m. zashchity (Bureau of Defense Materials), Khar'kov, 1957

ASSOCIATION: B. m. zashchity (Bureau of Defense Materials), Khar'kov

1. Zirconium--Processing 2. Iodides--Applications

Card 1/1

BUSOL, F.I.

AUTHOR: STEPANOVA, G. I., BUSOL, F. I. 89-10-19/36

TITLE: On Refining of Zirconium by the Iodide Method (K voprosu ob iodidnom metode ochistki tsirkoniya)

PERIODICAL: Atomnaya Energiya, 1957, Vol 3, Nr 10, pp 344-346 (USSR)

ABSTRACT: A new explanation of the dependence of the zirconium flux on the pressure of the tetraiodides which is used for the purpose of purification of zirconium, is theoretically derived. A proof of this theory is to be furnished in the near future by experimental investigations. There is 1 Slavic reference.

SUBMITTED: August 1, 1956
AVAILABLE: Library of Congress

Card 1/1

Busol, F.I.

AUTHORS: Sinel'nikov, K. D., Busol, F. I., Stepanova, G. I. 89-2-9/35

TITLE: On the Iodide Method of Purifying Zirconium (K voprosu ob iodidnom metode ochistki tsirkoniya).

PERIODICAL: Atomnaya Energiya, 1958, [illegible] Nr 2, pp. 169-174 (USSR).

ABSTRACT: A method is proposed for the determination of the equilibrium constants k and k' for the reaction $Zr + 2\ J_2 - ZrJ_4 = 0$ and $2J - J_2 = 0$. The method is based on the quantitative measurement of the amounts of iodine and zirconium, which are liberated at the decomposition of the teraiodide of zirconium on a heated surface during the development of the equilibrium state. The decomposition of the tetraiodide took place within the temperature range of from 900 to 1600°C at a heated tungsten wire. The temperature distribution between the wire and the walls of the reaction vessel was not taken into consideration. The dependence of the total sum of the pressure values of atomic and molecular iodine $p_J + p_{J2}$ on the pressure of the tetraiodide of zirconium p_{ZrJ_4} was determined at 1430°C. The same dependence was also measured for the temperature, when p_{ZrJ_4} amounted to about [illegible]

Card 1/2

of mercury. From the results obtained the factor $k.k'^2$ was determined to be 35 (mm mercury)^3 at 1430°C and k to be about 0'07 mm mercury at 400°C. These values found experimentally differ essentially from the values obtained by computation on the basis of the known thermodynamical data. On the other hand, these experimental data constitute a proof of the validity of the formula given and deduced in reference 1 for the course taken by the iodine process in the purification of zirconium.
There are 4 figures, 3 tables, and 7 references, 2 of which are Slavic.

SUBMITTED: April 11, 1957.

AVAILABLE: Library of Congress.

Card 2/2 1. Zirconium-Purification 2. Teraiodide of Zirconium-Decomposition

5(4)
AUTHOR: Busol, F. I.

SOV/76-33-4-8/32

TITLE: Kinetics of the Reduction of ZrJ_4 Vapors by Metallic Zirconium (Kinetika vosstanovleniya parov ZrJ_4 metallicheskim tsirkoniyem)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 4, pp 799-807 (USSR)

ABSTRACT: The formation of low zirconium iodides (I) in the reaction of tetraiodide vapors (II) with zirconium splinters in the temperature range of from 300-500° was investigated since the effect of this formation on the surface of Zr which was refined according to the iodide method considerably influences the accumulation rate of the metal on a glowing wire. A static and a dynamic method were applied. In the first method the Zr-splinters are treated with (II) in an evacuated glass vessel (Fig 1) and the (II)-content is determined before and after the experiment, i.e. the loss of (II) which reacted with Zr. The results represented graphically (Fig 2) show that the formation of (I) considerably depends on the temperature of the splinters. The dynamical method is based on a continuous checking of the pressure of (II) corresponding to the conversion in ZrJ_3 and ZrJ_2. It is carried out by means

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Kinetics of the Reduction of ZrJ_4 Vapors by Metallic Zirconium

of a U-shaped manometer (in the range 1-200 torr) filled with molten antimony in a corresponding apparatus (Fig 3). It was found that in the temperature range of from 380-530°C tetraiodide is mainly reduced to ZrJ_3 (Table) and apparently no ZrJ_2 forms at all. The rate of formation of the triiodide layer on the Zr-surface may be expressed by a parabolic equation $\Delta m^2 = kt + C$ (7). (k = velocity constant, C = constant). In this case k depends exponentially on the temperature. The activation energy $Q \approx 21{,}000$ cal/mol was computed from a diagram $\log k / \frac{1}{T}$. This value represents the activation energy of the atomic or ionic diffusion of Zr through the ZrJ_3-layer; the constant k is proportional to the diffusion coefficient. In conclusion the author thanks K. D. Sinel'nikov and V. I. Ivanov. There are 8 figures, 1 table, and 5 references, 1 of which is Soviet.

SOV/76-33-4-8/32

Kinetics of the Reduction of ZrJ_4 Vapors by Metallic Zirconium

ASSOCIATION: Akademiya nauk USSR. Fiziko-tekhnicheskiy institut, Khar'kov
(Academy of Sciences UkrSSR, Physico-technical Institute, Khar'kov)

SUBMITTED: August 12, 1957

Card 3/3

21.4230 21.1200
21.4240

S/057/61/031/004/010/018
B125/B202

AUTHORS: Borovik, Ye. S., Busol, F. I., and Grishin, S. F.

TITLE: Study of the possibility of producing steady magnetic fields in liquid hydrogen-cooled coils

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 4, 1961, 459-466

TEXT: The authors attempted to determine the maximum admissible thermal stress as well as to find rational constructions of the coils and of methods for their cooling. Furthermore, they demonstrate that a large amount of energy can be saved by cooling the coils used for the production of magnetic fields. This, however, is only possible with $A/Q < R_{300}/R_T$. In this case, A denotes the energy to be consumed for cooling, Q - the Joulean heat liberated in the coil, R_{300} the resistance at room temperature, and R_T the resistance at the very low operational temperature of the coil. By saving part of the energy consumed in the production of the magnetic field the realization of a thermonuclear reaction with usable energy yield

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can be rendered more easy. According to the authors, at present only liquid hydrogen is suited for cooling the coils. Metals of the first group Cu, Ag, Au in which only the electrical resistance decreases linearly with the field strength as well as alkali metals, indium, and aluminum are suited. Cu and Al proved to be most suited for practical purposes. The energy consumed in the production of the magnetic field can be reduced by about one fifth by using high-purity commercial aluminum. By improving the cooling machines and increasing the purity of the metal this ratio can be improved. The experiments were made with apparatus I and II (see Figs. 1, 2) with artificial flows of liquid hydrogen in apparatus I also with natural convection of hydrogen. If the critical stress is exceeded the resistance of the coil rapidly increases as a result of its heating. The solenoid of the first kind (SI) consisting of 18 double wire disks had 2520 windings. The solenoid of the second kind (SII) consisted of 48 double wire disks with altogether 5760 windings. Fig. 2 shows the scheme of apparatus II. After a previous cooling of the balloon and the coil to the boiling temperature of liquid nitrogen, about 15 to 20 l of liquid hydrogen are pressed into balloon 4, and 5 to 7 l into balloon 5. Balloon 4 is separated from the gas holder by a valve

Study of the possibility of ...

and the necessary pressure of the hydrogen vapors is produced by means of the heater 12. At a given instant valve 10 is opened and the current passing through the coil is switched on. A maximum current of 50 a passed through the coils. Results of experiments: Fig. 3 shows typical oscillograms for the amperage and the voltage in coil CIII. The initial "flash-up" of the voltage and the relatively slow increase of the amperage (~ 1.5 sec) are due to the inductivity of the coil. Figs. 4 and 5 show the time dependence of the magnetic field strength for the coils CII and CIII in the experiments with circulating hydrogen at different thermal stresses. A field strength of 43,000 oersteds was attained in the center of the coil with supercritical operation for a duration of time τ of the order of magnitude of one second; if the field strength was reduced to 36,000 oersteds, τ was 3 sec and 34,000 oersteds could be maintained for ~ 10 sec. On further reduction of the field strength by some percents, a steady state was observed. In coil CIII the maximum attainable field strength of 24,000 oersteds could be maintained for ~ 1 to 2 sec; 19,500 oersteds could be maintained for 10 sec, and 16,000 oersteds for an infinitely long period. In this case $q_{cr} = 0.24$ watt/cm^2. With natural

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convection, the critical thermal stresses and the corresponding maximum field strengths are essentially lower. Thus, in coil CII a delay time of $\sim$ 1 sec corresponds to a field strength of 31,000 oersteds, and $\tau \sim 10$ sec corresponds to 26,000 oersteds. In the hydrogen flow the thermal loads are independent of distribution which is not the case for natural convection. The main results of the experiments are shown in Table 2; they correspond to a pressure gradient of from 0.4 to 0.5 atmospheres. The thermal stresses in natural convection are about twice as low as in hydrogen flows under pressure. In all coils the critical thermal loads were considerably lower than in the preliminary experiments with one single slit. Besides, the values of q are gradually reduced when instead of coil CI, coils CII and CIII are used. The Reynolds numbers for CI, CII, CIII are 3500, 1000, and 500, respectively. These diverging experimental results are probably not due to the different construction of the coils but to the different conditions of circulation of hydrogen. With high-purity commercial aluminum, field strengths of up to 100,000 oersteds can be attained with coils of $\sim$ 1 m. The liquid hydrogen necessary for such a solenoid cannot be provided for even by the most up-to-date methods of liquefaction.

S/057/61/031/004/010/018
B125/B202

Study of the possibility of ...

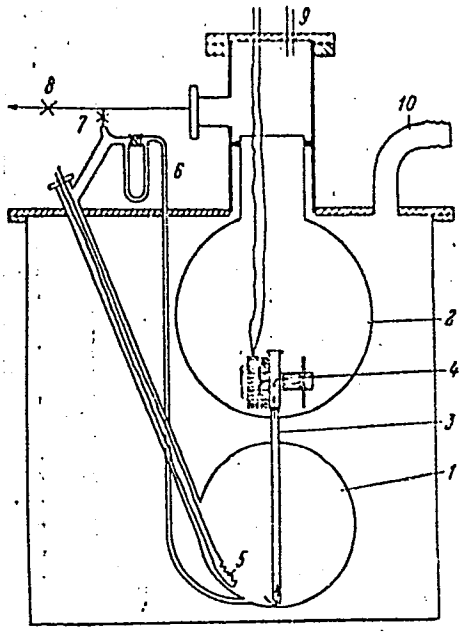
There are 7 figures, 2 tables, and 11 references: 5 Soviet-bloc and 6 non-Soviet-bloc. The two most recent references to English-language publications read as follows: V. G. Volotskaya, Nucleonics, 17, 147, 1959, H. K. Laquer, a. E. F. Hammel. Rev. Sci. Instr., 28, 875, 1957.

SUBMITTED: March 7, 1960

Card 5/9

Study of the possibility of ...

Legend to Fig. 1: scheme of the apparatus I: 1, 2 - spheres for liquid hydrogen, 3 - connection tube, 4 - solenoid, 5 - heater, 6 - level indicator, 7, 8 - terminals, 9 - electric lines, 10 - pipe connection for evacuation



Card 6/9

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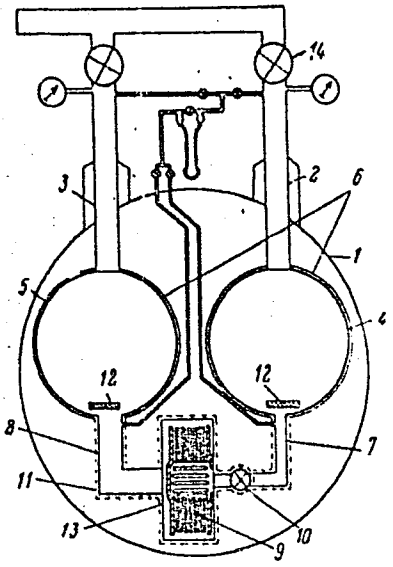
B125/B202

Study of the possibility of ...

Legend to Fig. 2: scheme of apparatus II



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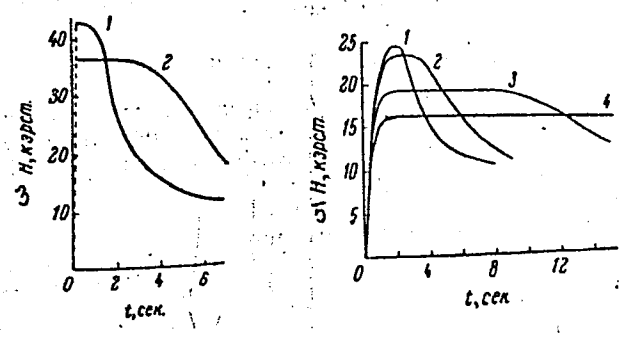
Legend to Fig. 4: time dependence of the magnetic field strength for coil CII. Δp = 0.5 at; q(watt/cm^2); 1 - 0.69, 2 - 0.50

Legend to Fig. 5: time dependence of the magnetic field strength for coil CIII. Δp = 0.5 at; q(watt/cm^2); 1 - 0.37, 2 - 0.34, 3 - 0.20, 4 - 0.15.



Study of the possibility of ...

Legend to Table 2: 1 - cooling method, 2 - natural convection, 3 - hydrogen flow

Таблица 2

1 Способ охлаждения	τ	CI: $d_1 = 2$, $d_2 = 6$, $l = 1.8$		CII: $d_1 = 2.2$, $d_2 = 7.0$, $l = 6.2$		CIIa: $d_1 = 2.2$, $d_2 = 7.0$, $l = 3.1$	CIIб: $d_1 = 2.2$, $d_2 = 7$, $l = 2.8$	CIII: $d_1 = 5$, $d_2 = 15$, $l = 5$	
		H_m	q	H_m	q	q	q	H_m	q
2 Естественная конвекция	10	—	—	26000	0.24	0.18	0.10	—	—
	1	—	—	31000	0.39	0.42	0.25	—	—
3 Поток водорода	10	20000	0.84	34000	0.45	0.49	0.45	19500	0.20
	1	—	—	43000	0.69	0.65	0.69	24500	0.37

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44753
S/057/63/033/001/012/017
B125/B186

No. 3371

AUTHORS: Borovik, Ye. S., Busol, F. I., and Kovalenko, V. A.

TITLE: The investigation of the possibility of using a helium condensation pump for evacuation of magnetic traps

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 33, no. 1, 1963, 100 - 104

TEXT: This report deals with the extreme thermal loads that arise in a helium condensation pump, operating under radiation condition at ~3°K, and with how to combine sufficiently effective thermal screening of the source with a sufficiently high pumping velocity. The experiments were carried out in a vacuum chamber enclosing small metallic containers of liquid helium. A surface cooled by liquid helium can evacuate hydrogen only if the heat added to this surface is considerably less than q_{crit} = (3 to 5)·10^{-4} w/cm^2. At the critical heat load the temperature of the walls of the container increases by jumps. The helium condensation pump constructed with a view to studying the possibility of screening such a pump against a large release of heat in the region of the heated plasma proved to be suitable for the evacuation of magnetic traps. It consists essentially of a cylindrical

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The investigation of the ... S/057/63/033/001/C12/017
B125/B186

tank containing several annular screens filled with liquid helium or hydrogen. It is protected by a copper screen, cooled by liquid nitrogen from the radiation of the walls of the vacuum chamber and by a water screen and a nitrogen screen from the radiation in the working volume. A helium condensation pump can be effectively protected against a rather intense radiation. The radiation transmissivity coefficient η can be brought down even below $3.5 \cdot 10^{-5}$ by a careful preparation of the "nitrogen screen". In the present model a pump velocity of 1.25 l/sec nitrogen or 4.68 l/sec hydrogen is attained per cm^2 of the inner surface of the water screen. This is about 1/g of the critical pump velocity. For more critical heat load, a helium condensation pump with continuous liquid current and simultaneous evacuation of the helium vapor should be designed. Preliminary experiments show promising results. There are 3 figures and 1 table.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR, Khar'kov (Physico-technical Institute AS UkrSSR, Khar'kov)

SUBMITTED: May 30, 1960

Card 2/2

S/781/62/000/000/031/036

AUTHORS: Borovik Ye. S., Busol F. I., Grishin S. F.

TITLE: Investigation of possibility of obtaining stationary magnetic fields in coils cooled with liquid hydrogen

SOURCE: Fizika plazmy i problemy upravlyayemogo termoyadernogo sinteza; doklady I konferentsii po fizike plazmy i probleme upravlyayemykh termoyadernykh reaktsiy. Fiz.-tekh. inst. AN Ukr. SSR. Kiev, Izd-vo AN Ukr. SSR, 1962. 148

TEXT: The possibility is discussed of reducing the energy consumed in the production of large stationary magnetic fields with the aid of coils made of pure copper and aluminum, cooled with liquid hydrogen. For the purest commercial aluminum the power excited in the cooled coil decreases by about 500 to 1000 times. The overall gain in energy, with allowance for modern liquefaction equipment, is five-fold. The maximum heat loads were investigated under different cooling conditions for coils made of copper wire, the resistance of which is 100 times less at 20.4°K than at room temperature. Passage of liquid hydrogen through the coil increases the heat removal by several times compared with natural convection.

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The increase rises with the Reynolds number. In the case of natural convection the heat load is approximately 0.2 watt/sq.cm and rises to 0.45 watt/sq.cm when liquid-hydrogen cooling is used. For a coil with inside diameter 2.2 cm, o.d. 7 cm, and length 6.2 cm a field of 43 kOe was maintained about 1 second, and 34 kOe was maintained more than 10 seconds. By replacing the winding in this coil with one made of pure aluminum and by lengthening the coil, a theoretical value of 80 kOe is attainable. Larger coils should yield not less than 100 kOe.

S/781/62/000/000/032/036

AUTHORS: Borovik, Ye. S., Busol, F. I., Kovalenko, V. A.

TITLE: Investigation of the possibility of using a helium condensation pump for magnetic traps

SOURCE: Fizika plazmy i problemy upravlyayemogo termoyadernogo sinteza; doklady I konferentsii po fizike plazmy i probleme upravlyayemykh termoyadernykh reaktsiy. Fiz.-tekh. inst. AN Ukr. SSR. Kiev, Izd-vo AN Ukr. SSR, 1962. 148-155.

TEXT: The investigation is devoted to the limiting heat loads that can be withstood by a helium condensation pump for a magnetic trap, and to a method for reliable heat shielding with maintenance of a sufficiently large evacuation rate. The maximum heat loads are determned for surfaces cooled with liquid helium, and it is concluded that a helium-cooled surface can serve as a pump for evacuation of hydrogen only if the rate of heat supply to this surface is much less than 2 to 5×10^{-4} watt/sq. cm. The possible shielding of a helium condensation pump against excessive heat release into the volume of a heated plasma while still maintaining a sufficient pumping rate was investigated by means of a model, the

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construction of which is described in detail. It is concluded that a helium condensation pump can be reliably protected against appreciable radiation and is thus well suited for pumping of magnetic trap. A preliminary project of magnetic trap with helium condensation pump and with coils cooled with liquid hydrogen is described. There are two figures. The only foreign work referred to is an article by Varnerin and Carmichael (ref. 1, J. Appl. Phys. 28, 913 (1957).

BOROVIK, Ye.S.; BUSOL, F.I.; KOVALENKO, V.A.

Possible use of a helium condensation pump in pumping out magnetic traps. Zhur.tekh.fiz. 33 no.1:100-104 Ja '63. (MIRA 16:2)

1. Fiziko-tekhnicheskiy institut AN UkrSSR, Khar'kov.
(Plasma (Ionized gases)) (Magnetic fields) (Liquid helium)

L 18483-63 EPR/EPA(b)/EWT(1)/BDS AEDC/AFFTC/ASD/AFMDC Ps-4/Pd-4 WW
ACCESSION NR: AP3005510 S/0057/63/033/008/0973/0981

AUTHOR: Borovik,Ye.S.; Busol,F.I.; Yuferov,V.B.; Skibenko,Ye.I. 70 67

TITLE: Investigation of a supersonic carbon dioxide jet as a target for ionic charge exchange

SOURCE: Zhurnal tekhnicheskoy fiziki, v.33, no.8, 1963, 973-981

TOPIC TAGS: high energy neutral beam , charge exchange target , CO_2, H, hydrogen

ABSTRACT: As part of a continuing program directed toward obtaining high energy beams of neutral hydrogen and deuterium atoms, the charge exchange between a high energy proton beam and a supersonic carbon dioxide jet was investigated. The proton beam was produced in an arc source of the type described by J.Kistemaker and H.L. Dowes Dekker (Physica, 16, 193, 1950); it was focused by a three element electrostatic lens and emerged through a 1 mm aperture. The beam current was about 1 mA and the proton energy was varied from 15 to 25 keV. After horizontally traversing the 30 cm diameter metal charge exchange chamber, the beam impinged on a calorimeter contained within a Faraday cup. Thus both the beam current and the beam energy flux could be measured and the fraction of neutral atoms present could be obtained.

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The jet of purified carbon dioxide issued from a Lavale nozzle below the proton beam and was caught on a condenser cooled with liquid nitrogen above it. When the carbon dioxide flux was increased from 0 to 15 cm^3/sec the pressure within the chamber rose from $(1-4)\times10^{-6}$ to $(8-10)\times10^{-5}$ mm Hg. This is ascribed to incomplete condensation of the carbon dioxide. A further small rise in pressure would occur when the beam was turned on; this is ascribed to the formation of CO and O_2 molecules, but the relevant cross sections could not be obtained. The fraction of neutral atoms in the beam rose with increasing carbon dioxide flux, and at a flux of 10-15 cm^3/sec it attained a saturation value of 70-75%, which agrees with the theoretical equilibrium value for a thick target. "In conclusion, we consider it our pleasant duty to express our deep gratitude to Ya.M.Fogel, D.V.Pilipenko and O.G.Konovalov who, at our request, measured the cross sections for capture and loss of electrons by fast protons and hydrogen atoms in CO_2." Orig.art.has: 10 formulas, 4 figures, and 1 table.

ASSOCIATION: none

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