

VASILEVICH, V.I.

Classification of lichen and mountain-cranberry pine forests. Vest.
LGU 16 no.9:5-15 '61. (MIRA 14:5)
(Russia, Northwestern--Forest ecology)
(Pine)

VASILEVICH, V.I.

Association of species and structure of phytocoenoses. Dokl.
AN SSSR 139 no.4:1001-1004 Ag '61. (MIRA 14:7)

1. Botanicheskiy institut im. V.L. Komarova AN SSSR. Predstav-
leno akademikom V.N. Sukachevym.
(Phytosociology)

VASILEVICH, V.I.

Quantitative criterion of the similarity between phytocoenoses.
Probl. bot. 6:83-94 '62. (MIRA 16:5)
(Phytosociology)

VASILEVICH, V.I.

"The phytosociology of boreal conifer-hardwood forests of the Great Lakes region" by P.F. Maycock and J.T. Curtis. Reviewed by V.I. Vasilevich. Bot. zhur. 47 no.5:755-757 My '62. (MIRA 16:5)

1. Botanicheskiy institut imeni V.L. Komarova AN SSSR, Leningrad.
(Great Lakes region—Forest ecology)

VASILEVICH, V.I.

Relationship between the reproduction of pine and the underwood. Bot.
zhur. 47 no.9:1383-1387 9 '62. (MIRA 16:5)

1. Botanicheskiy institut imeni V.L.Komarova AN SSSR, Leningrad.
(Pine) (Forest ecology)

VASILEVICH, V.I.

Statistical approach to a plant association. Trudy Bot. inst.
Ser. 3 no. 15:94-105 '63. (MIRA 17:5)

VASILEVICH, V.I.

Morphological analysis of the meadow continuum. Bot. zhur. 48
no.11:1653-1659 N '63. (MIRA 17:4)

1. Botanicheskiy institut imeni Komarova AN SSSR, Leningrad.

VASILEVICH, V.I.

Use of parital conjugation in analyzing the structure of phyto-
cenosis. Dokl. AN SSSR 148 no.1:214-216 Ja '63.

(MIRA 16:2)

I. Botanicheskiy institut im. V.L. Komarova AN SSSR. Predstavleno
akademikom V.N. Sukachevym.
(Plant communities)

VASILEVICH, V.I.

Review of the works on the use of interspecific correlations for
the classification of vegetation. Bot. zhur. 50 no.1:143-147 Ja
'65. (MIRA 18:3)

1. Botanicheskiy institut imeni Komarova AN SSSR, Leningrad.

KRASOVSKIY, L.I.; L'VOV, P.N.; VASILEVICH, V.I.

Reviews and bibliography. Bot.zhur. 50 no.11:1648-1650
N '65. (MIRA 19:1)

1. Arkhangel'skiy lesotekhnicheskiy institut. Submitted May 5,
1965 (for Krasovskiy, L'vov). 2. Botanicheskiy institut imeni
V.L.Komarova AN SSSR, Leningrad. Submitted May 4, 1965 (for
Vasilevich).

Vasilevich, Yu. A.
SMIRNOV, V.G.; VASILEVICH, Yu.A.

Testing burnt-out areas by borings with core extraction. Podzem.
gaz. ugl. no. 2:59-61 '57. (MLRA 10:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut Podzemgaz.
(Coal--Testing) (Boring)

SMIRNOV, V.G.; VASILEVICH, Yu.A.

Using a cumulative expolding pipe cutter for the underground repair
of boreholes. Podzem. gaz. ugl. no.1:62-64 '59.

(MIRA 12:6)

1. VNIIPodzemgaz.

(Gas producers--Maintenance and repair)
(Pipe cutting)

VASILEVOY, G.

"On an Island of Peat," (Na Ostrove Bolchogo Uglya), by N. Sviridov, G. Vasilevoy and S. Betsrum, Tekh. Molod., No. 12, 1953.

Abs. D210896, 29/4/55

USSR/Medicine - Poisons and Poisoning Jul 1946
Medicine - Nighthshade

PA 34757
"Contemporary Status of the Edibility and Toxicity of
Morels," B. P. Vasil'kov, 8 pp

"Priroda" No 7

As soon as the snow thaws all types of morels appear throughout the forests of the USSR. Many of these morels are edible and have for many years been used as food by the peoples of Russia, Europe, Asia and North America. There have also been some serious cases of poisoning, however, from eating these morels. The author states that there are edible as well as poisonous morels, and he goes on to give a brief

ID

34754

USSR/Medicine - Poisons and Poisoning (Contd) Jul 1946

description of each and the reasons for the toxicity or non-toxicity. He concludes by stating that this problem is far from being solved and there still remains much work for micrologists, chemists, and pharmacologists.

ID

34754

VASIL'KOV, B. P.

VASIL'KOV, B.P.

Pa23/49T92

USSR/Medicine - Fungi
Medicine - Literature, Medical

Nov 48

"Review of A. I. Molodchikov's Book, 'The Fungus
World,'" B. P. Vasil'kov, 2 pp

"Priroda" No 11

Reviews unfavorably. Author does not know his
fungi. Published by Goskol'tprosvetizdat,
Moscow, 1947, 40,000 copies, price 3 rubles,
20 kopeck.

FDB

23/49T92

VASIL'KOV, B. P.

PA5/49T83

USSR/Medicine - Mushrooms
Medicine - Nutrition

May 48

"A Critical Review of Articles on Mushroom Resources and Their Calculation," B. P. Vasil'kov,
3 pp

"Priroda" No 5

Gives summary of works on this subject from 1825 on, and various estimates of the amount of mushrooms in the USSR.

FDB

5/49T83

VASIL'KOV, B. P.

PA5/49T84

USSR/Medicine - Mushrooms
Medicine - Nutrition

May 48

"B. D. Golenzovskiy's 'Procurement and Processing of Mushrooms,'" B. P. Vasil'kov, 2 $\frac{1}{4}$ pp

"Priroda" No 5

Reviews unfavorably. Handbook for caterers discusses food value of mushrooms, structure of mushrooms and conditions for their growth. types of mushrooms, and pickling of mushrooms. Published by Vsesoyuz Ob'yed Tsentrolektkhsyr'e, Moscow, 1946, 20,000 copies printed.

FDB

5/49T84

VASILEVS'KA, Z.I. (K11v)

Photo-recording device. Prykl.mekh. 2 no.3:347-348 '56.
(Vibration--Measurement)(Physical instruments) (MIRA 9:10)

VASILEVSKAYA, A.

Extracurricular work of teachers. Prof.-tekh. obr. 22 no.7:
22-23 J1 '65. (MIRA 18:8)

VASILEVSKAYA, A. (Leningrad)

Education and training comprise the same process. Prof.-tekh. obr.
21 no.9:8-9 S '64. (MIRA 17:11)

VASILEVSKAYA, A.D.; ARTYUSHEVSKIY, G.N., red.

[Chemistry in the publications of White Russian scientists;
bibliography for 1945-1963] Khimia v izdaniakh uchenykh
Belorussii; bibliograficheskii ukazatel' literatury 1945-
1963 gg. Minsk, Nauka i tekhnika, 1964. 225 p.

(MIRA 17:12)

1. Akademiya navuk BSSR, Minsk. Fundamental'naya biblioteka.

VASILEVSKAYA, A.G.

✓ New data on formation of thenardite. N. I. Visyagin and A. G. Vasilevskaya. *Doklady Akad. Nauk S.S.S.R.* 86, 537-5 (1952). When a natural brine or a similar synthetic mixt. of proper $MgSO_4$ and $NaCl$ concn. contg. 0.02% Ca^{++} is cooled to 30° Be. at 25-40°, thenardite is formed indirectly. At first feebly hydrated white flakes ppt. on the surface, and then a ppt., which microscopically resembles sheaves of grain, collects on the bottom. The latter varies in compn. thus: $NaCl$ 14.77-25.43; Na_2SO_4 41.02-77.45; $CaSO_4$ 4.78-15.00; and $MgSO_4$ 2.18-6.55%, calcd. on dry wt. An analysis of the brine at the time of pptn. is also given. It forms only when the Ca^{++} is present and is composed of tables ($n = 1.404, 1.401, 1.468$), needles (1.491, 1.488), orthorhombic thenardite (1.473, 1.484), and halite (1.544). These sheaflike crystals gradually disappear to form orthorhombic thenardite with this compn.: moisture 0.98; $MgCO_3$ 0.40; $Mg(HCO_3)_2$ 0.30; $MgSO_4$ 0.74; Na_2SO_4 84.80; and $NaCl$ 2.60%. The higher the temp., within the range 25-40°, the faster this conversion. Photomicrographs of the different stages of crystn. are given, as well as a phase diagram of the system $MgSO_4-NaCl-H_2O$.

Malcolm Anderson

①

VISYAGIN, N.I. [deceased]; VASILEVSKAYA, A.G.

Experiments on the recovery of thernardite from the brine of lake
Bol'shoi Anzh-Bulat. Trudy Khim.-met.inst.Zap.-Sib.fil.AN SSSR
no.12:39-46 '58. (MIRA 14:6)
(Bol'shoi Anzh-Bulat, Lake--Thenardite)

NIKOL'SKAYA, Yu.P.; VASILEVSKAYA, A.G.

On the recovery of thenardite from the brine of lake Kuchuk.
Trudy Khim.-met.inst.Zap.-Sib.fil.AN SSSR no.12:65-75 '58.

(MIRA 14:6)

(Kuchuk, Lake--Thenardite)

VASILEVSKAYA, A.G., Cand Chem Sci -- (diss) "Physico-chemical
substitution of
basis for the formation of thenardite in ~~the~~ lakes of the
Kulundin^a steppe." Kazan', 1959, 14 pp (Min of Higher
Education USSR. Kazan' Order of Labor Red Banner State Univ
im V.I. Ul'yanov-Lenin) 150 copies (KL, 28-59, 123)

- 18 -

VASILEVSKAYA, A.G.

Binary compounds from calcium and sodium sulfates and their role in the formation of natural thenardite. Izv.Sib.ots. AN SSSR no.1:76-90 '59. (MIRA 12:4)

1. Zapadno-Sibirskiy filial AN SSSR.
(Thenardite) (Sulfates)

LEPESHKOV, I.N.; SOLOV'YEV, V.K.; MINKO, G.M.; KOLOSOV, A.S.;
YASILEVSKAYA, A.G.

Calcium content of natural salts of Krasnoyarsk Territory.
Izv. Sib. otd. AN SSSR no. 10:36-46 '60. (MIRA 13:12)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.
Kurnakova i Khimiko-metallurgicheskly institut Sibirskogo
otdeleniya AN SSSR.
(Krasnoyarsk Territory--Calcium salts)

AUTHOR: Sonin, A.S.; Penfilova, V.F.; Vasilevskaya, A.S.

SOURCE: AN SSSR. Izvestiya.Ser.Fizicheskaya, v.29, no.6, 1965, 969-972

TOPIC TAGS: ferroelectric crystal, ²¹ triglycine sulfate, double refraction

ABSTRACT: The electro-optical properties of triglycine sulfate were investigated both above and below the Curie point. Two Y-cut crystals were investigated that had different orientations of the crystallographic axes. It was found that the electro-optical properties of these crystals are similar to those of triglycine sulfate. The electro-optical properties of triglycine sulfate are investigated in detail. The electro-optical properties of triglycine sulfate are investigated in detail. The electro-optical properties of triglycine sulfate are investigated in detail.

Card 1/2

ACCESSION NOT AVAILABLE

mediated, electron transfer (ET) to the metal. Some experiments were also
performed with a metal electrode. The results show that the ET rate is
independent of the metal electrode potential. The ET rate is also
independent of the metal electrode area. The ET rate is independent of
the distance between the metal electrode and the metal electrode.
near the single point. The results show that the ET rate is independent
of the metal electrode potential. The ET rate is also independent of
the metal electrode area. The ET rate is independent of the distance
between the metal electrode and the metal electrode.

ASSOCIATION: none

NR REF SCV: 001

SIR ROBERT SCOTT

NR REF SCV: 001

OTHER: 008

Card 1 of 1

ACC NR: AP6032960

SOURCE CODE: UR/0070/66/011/005/0755/0759

AUTHOR: Vasilevskaya, A. S.

ORG: none

TITLE: Concerning the electro-optical properties of crystals of KDP type

SOURCE: Kristallografiya, v. 11, no. 5, 1966, 755-759

TOPIC TAGS: ammonium compound, potassium compound, rubidium compound, phosphate, electrooptic effect, electric polarization, pressure effect, *crystal property*

ABSTRACT: To ascertain the nature of the electrooptic effects in crystals, and also for practical applications, the author investigated the electrooptic coefficients of mechanically free and clamped crystals of ammonium dihydrophosphate (ADP), potassium dihydrophosphate (KDP), deuterated potassium dihydrophosphate (DKDP) and rubidium dihydrophosphate (RDP). The values of the electrooptic coefficients and their dispersion were determined in the wavelength interval from 4000 to 7250 Å. The experimental setup and the measurement procedure are described elsewhere (Kristallografiya, v. 10, no. 3, 1965). The measurements were made on 45° Z-cuts of crystals made in the form of prisms with the long dimension in the direction of the applied load (110). Three - four samples of each crystal were tested. The piezoelectric coefficients and their wavelength dependence were different for the different crystals, but exhibited a similar variation, the difference being mostly quantitative. It is shown that the electrooptic effect of mechanically clamped crystals is 90 - 94% of the electrooptic

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UDC: 548.0: 537.228

ACC NR: AP6032960

effect of free crystals in the case of KDP, RDP, and DKDP, and 60 - 70% for ADP. It is also shown that the ratio of the contribution of electronic to electron-ion polarization to the electrooptic effect, which amounts to about 50% in the case of free crystals, is altered by application of pressure to a small degree in KDP, DKDP, and RDP, but to a larger degree in ADP. The difference is related to the presence of a different system of hydrogen bonds. The author thanks A. S. Sonin for a discussion of the results, M. F. Koldobskaya for supplying the samples, and I. S. Rez and I. S. Zheludev for continuous interest and advice, as well as L. A. Shuvalov for supplying the data on the dielectric properties of the RDP crystals. Orig. art. has: 5 figures and 3 formulas.

SUB CODE: 20/ SUBM DATE: 19May65/ ORIG REF: 001/ OTH REF: 012

Card 2/2

KARASIK, M.A. [Karasyk, M.A.]; VASILEVSKAYA, A.Ye. [Vasylevs'ka, A.IE.];
PETROV, V.Ya.; RATEKHIN, Ye.A. [Ratiekhin, IE.A.]

Distribution of mercury in the fossil coal of the Tsentral'nyy
and Donets-Makeyevka regions of the Donets Basin. Geol.zhur. 22
no.2:53-61 '62. (MIRA 15:4)

1. Institut mineral'nykh resursov AN USSR.
(Donets Basin--Mercury)

VASILEVSKAYA, A.Ye.; SHGHERBAKOV, V.P.; KLIMENCHUK, V.P.

Determination of mercury in coals by dithizone. Zav.lab.
28 no.4:415 '62. (MIRA 15:5)

1. Institut mineral'nykh resursov AN USSR.
(Mercury--Analysis) (Dithizone)
(Coal--Analysis)

DVORNIKOV, A.G.; VASILEVSKAYA, A.Ye.; SHCHERBAKOV, V.P.

Some characteristics of the distribution of mercury dispersion
halos in the soils of the Nagol'nyy Range. *Goskhimiia* no.5:
478-483 My '63. (MIRA 16:7)

1. Institute of Mineral Resources of the Academy of Sciences,
U.S.S.R., Moscow.

(Nagol'nyy Range--Mercury ores)

VASILEVSKAYA, A. Ya. [Vasilovskaya, A. Ya.]; Ukrainian, U.S.S.R.

Forms of mercury compounds in Donets Basin coal. *Usp. Akad. Nauk
no. 11:1494-1496 1963.* (MIRA 17:14)

1. Institut mineral'nykh resursov Ak. Nauk SSSR.

VASILEVSKAYA, A.Ye.; SHCHERBAKOV, V.P.; LEVCHENKO, A.V.

Determination of small amounts of mercury in waters. Zhur.
anal.khim. 18 no.7:811-815 JI '63. (MIRA 16:11)

1. Institute of Mineral Resources, Academy of Sciences, Ukrainian
SSR, Simferopol.

DVORNIKOV, A.G.; VASILEVSKAYA, A.Ye.; SHCHERBAKOV, V.P.; SHVAKOVA, A.A.

Mercury dispersion halos in the soils of the Nagol'no-Tarasovka
and Mar'yevko-Dar'yevka complex metal deposits. Izv. AN SSSR.
Ser.geol. 28 no.5:96-100 My '63. (MIRA 17:4)

1. Institut mineral'nykh resursov AN UkrSSR, Simferopol'.

SHCHERBAKOV, V.P.; VASILEVSKAYA, A.Ye.

Determination of mercury in the products of coal processing.
Zhur. anal. khim. 19 no.3:308-311 '64. (MIRA 17:9)

1. Institut mineral'nykh resursov AN UkrSSR, Simferopol'.

VASILEVSKAYA, A.Ye.; BUCHENBAKOV, V.P.; KALEKONOVA, Ye.V.

New method for the determination of mercury in coals. Zhur. anal. khim.
19 no.10:1200-1203 '64. (MIRA 17:12)

1. Institute of Mineral Resources, Simferopol.

ACCESSION NR AP5016097

REF ID: A61704

AUTHOR: Vasilevskaya, A. Ye., Lenskaya, I. K.

13
B

TITLE: Determination of boron in certain natural substances by means of salicylic acid and crystal violet

SOURCE: Zhurnal analiticheskoy khimii, v. 20, no. 6, 1965, 747-749

TOPIC TAGS: boron determination; crystal violet; salicylic acid; water analysis

ABSTRACT: The authors propose a method for the determination of boron in some natural substances by means of salicylic acid and crystal violet. The method is based on the formation of a boron-salicylic acid complex which is colored by crystal violet. The method is simple and accurate. The detection limit is 0.1 mg/l. The method is applicable to the determination of boron in water, soil, and plants. The authors describe the determination of boron in water, soil, and plants. The method is simple and accurate. The detection limit is 0.1 mg/l. The method is applicable to the determination of boron in water, soil, and plants.

Card 1-2

L 58901-65

ACCESSION NR: AP5016097

Statistical treatment of the results showed a relative error of $\pm 8.7\%$ for the waters and
...
Orig. art. pag. 1 table.

ASSOCIATION: Institut mineral'nykh resursov Stalferopol' (Institute of Mineral Resources)

SUBMITTED: 11 Jun 64

ENCLOSURE

SUB CODE: IC

NO REF SOV: 005

OTHER: 002

Card

u
2/2

GONCHAROV, Yu.I.; VASILEVSKAYA, A.Ye.

Modes of the occurrence of boron in rocks. Dokl. AN BSSR 165
no.4:921-922 D '65. (MIRA 18:12)

1. Institut mineral'nykh resursov, Simferopol'. Submitted
March 15, 1965.

VASILEVSKAYA, A.Ya.; LENSKAYA, L.K.

Determination of boron in some natural materials by means
of salicylic acid and crystal violet. Zhur. anal. khim. 20
no.6:747-749 1955. (MIRA 18:7)

1. Institut Mineral'nykh resursov, Siferopol'.

KARASIK, M.A.; GONCHAROV, Yu.I.; VASILEVSKAYA, A.Ye.

Mercury in the mineralized waters and brines of the Permian halogene formation in the Donets Basin. Geokhimiia no.1:117-121 Ja '65.

(MIRA 18:4)

1. Institut mineral'nykh resursov Gosudarstvennogo geologicheskogo komiteta SSSR.

VASILEVSKAYA, D. P.

VASILEVSKAYA, D. P.: "Measurement of the ultraviolet radiation absorbed by the leaves of garden plants". Leningrad, 1955. Min Higher Education USSR. Leningrad Agricultural Inst. (Dissertations for the Degree of Candidate of Technical Sciences.)

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

05468

SOV/120-59-3-39/46

AUTHORS: Vasilevskaya, D. P. and Denisov, Yu. N.

TITLE: A Hall-effect Magnetometer (Magnitometr, osnovanny na effekte Kholla)

PERIODICAL: Pribery i tekhnika eksperimenta, 1959, Nr 3, pp 144-145 (USSR)

ABSTRACT: A piece of n-type Ge 2 x 1.5 x 0.7 mm is used to measure fields of strengths from 100 to 17,500 oersted to $\pm 1\%$. Fig 1 shows the circuit, in which '75' denotes a 75 μ A meter and the battery has an output of 15 V. Resistance R serves to set the zero. The output is 4.3 μ V per oersted with a main current of 1 mA (resistance of Ge in current circuit 47 ohms). The probe contains a thermistor and heater spiral (not shown in Fig 1), which raise the volume of the probe to 1.8 cm³; the temperature is stabilized (presumably at some value above 30°C, since the readings show very little temperature error in the range 16 - 30°C). The instrument has five ranges and is calibrated against a proton resonance meter. There is 1 figure and 3 references, 2 of which are Soviet and 1 English.

ASSOCIATION: Ob'yedinenny institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: May 4, 1958

Card 1/1

21(9)

SOV/89-6-6-7/27

AUTHORS: Vasilevskaya, D. P., Glazov, A. A., Danilov, V. I., Denisov, Yu. N., Dzheleпов, V. P., Dmitriyevskiy, V. P., Zamolodchikov, B. I., Zaplatin, N. L., Kol'ga, V. V., Kropin, A. A., ~~Mel'nik~~, Rybalko, V. S., Savenkov, A. L., Sarkisyan, L. A.

TITLE: Putting Into Operation a Cyclotron With a Spatially Varying Tension of the Magnetic Field (Zapusk tsiklotrona s prostranstvennoy variatsiyey napryazhennosti magnitnogo polya)

PERIODICAL: Atomnaya energiya, 1959, Vol 6, Nr 6, pp 657 - 658 (USSR)

ABSTRACT: In the present "Letter to the Editor" the authors report on some measurements and theoretical considerations concerning some parameters of the new cyclotron. In the Laboratoriya yadernykh problem Ob'yedinennogo instituta yadernykh issledovaniy (Laboratory for Nuclear Problems of the Joint Institute for Nuclear Research) in the town of Dubna the new cyclic accelerator was started in January 1959; this new type shows both an azimuthally and a radially periodically varying magnetic field. The diameter of the magnet of the accelerator is 1200 mm. The lines of constant field tension have the shape of spirals of Archimedes, $r = 16.2 \varphi$, periodicity of the field structure:

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Putting Into Operation a Cyclotron With a Spatially
Varying Tension of the Magnetic Field

SOV/89-6-6-7/27

$N = 6$. The mean value of the field tension increases radially according to the relativistic mass increase of the accelerated ions. Since the acceleration originates from the center of the magnet the fundamental frequencies of the free oscillations change accordingly $Q_z = 0$, $Q_r = 1$ (at $r=0$) to $Q_z = 0.2$,

$Q_r = 1.01$ (at $r = 52$ cm). It was shown theoretically that the

radial increase of the mean magnetic field tension which is necessary for the elimination of the nonlinear resonance effect occurring in the center of the accelerator may decrease with increasing N , according to

$N/2^N(N-1)!$ and with an increase of the radial spacing in the case of a fixed N as $(\lambda_1/\lambda_2)^{N-2}$. These investigation results

were taken into account in selecting the six-spiral structure of the magnetic field in the center of which no nonlinear resonance occurs. All measurements of the field tensions were carried out by means of a nuclear magnetometer (error ± 1.5 Oe). A resonance quarter-wave system with one D-shaped electrode was used for the ion acceleration. In the cyclotron deuterons

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Putting Into Operation a Cyclotron With a Spatially
Varying Tension of the Magnetic Field

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were accelerated up to 12 Mev and α -particles up to 24 Mev at a minimum amplitude of the acceleration tension on the dunt of 8 kv. The two methods which were used for measuring the energy in the case of a maximum orbital radius are briefly described. A picture shows the accelerating chamber of the cyclotron (Fig 2), another one an autograph of a neutron beam in the case of different radii. The investigation results prove the possibility of producing a relativistic cyclotron with a proton energy which equals that of a modern phasotron. There are 2 figures and 2 references, 1 of which is Soviet.

SUBMITTED: April 9, 1959

Card 3/3

82897

S/120/60/000/02/028/052
E032/E414

24,2300

AUTHORS: Aleksandru, G. and Vasilevskaya, D.P.¹
TITLE: Magnetometer Based on the Hall Effect and Working on Alternating Current

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, Nr 2, pp 107-110 (USSR)

ABSTRACT: A description is given of an instrument based on the Hall effect (Ref 1) in n-type germanium. The instrument has been designed for: a) measurement of the absolute magnitude of magnetic fields between 0.05 and 17000 Oe to an accuracy of $\pm 1\% \pm 0.5$ Oe; b) relative measurement of the topography of magnetic fields to an accuracy of 1 to 3% and c) measurement of fluctuations in the magnetic field at a given point. The probe is excited by an alternating current (4 mA) at 2500 cps. The Hall emf is amplified by a narrow-band amplifier having an overall amplification coefficient of 1.5×10^6 . The instrument was calibrated with the aid of a nuclear magnetometer. There are 1 figure and 17 references.

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82897

S/120/60/000/02/028/052
E032/E414

Magnetometer Based on the Hall Effect and Working on Alternating
Current

5 of which are Soviet, 10 English and 2 German.

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy
(Joint Institute of Nuclear Research)

SUBMITTED: February 18, 1959

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Card 2/2

21.2100

78317
SOV/89-8-3-2/32

AUTHORS:

Vasilevskaya, D. P., Glazov, A. A., Danilov, V. I.,
Denisov, Yu. N., Dzhelepov, V. P., Dmitriyevskiy, V. P.,
Zamolodchikov, B. I., Zaplatin, N. L., Kol'ga, V. V.,
Kropin, A. A., Lyu Ne-chuan', Rylalko, V. S., Savenkov,
A. L., Sarkisyan, L. A.

TITLE:

A Cyclotron With a Specially Varying Magnetic Field
Intensity

PERIODICAL:

Atomnaya energiya, 1960, Vol 8, Nr 3, pp 189-200 (USSR)

ABSTRACT:

The paper outlines the theory of charged particle motion in a magnetic field with periodic structure along its azimuth and radius, and describes investigations performed during the years 1955-58 on a cyclotron accelerator with spiral-ridged magnetic fields at Joint Institute for Nuclear Research (Ob'yednennyy institut yadernyh issledovaniy). The machine was built following the space stability theory developed at Dubno and Harwell. The authors first discuss the linear theory and investigate the particle oscillations with respect to a closed

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A Cyclotron With a Specially Varying
Magnetic Field Intensity

78317

SOV/89-8-3-2/32

orbit for the case of the field where the extreme values of the vertical component of the magnetic field follow the spiral of Archimedes:

$$H_z = H(r)[1 + \epsilon f(r, \varphi)], \quad (2)$$

$$f = \sin\left(\frac{r}{\lambda} - N\varphi\right), \quad (3)$$

where ϵ is depth of magnetic field variation; $2\pi\lambda$, radial pitch; N , periodicity of magnetic field structure. The authors note that a logarithmic spiral would not be convenient. In the cyclotron under consideration the basic focusing effect was due to terms containing the ratio R/λ , which for the choice of parameters by Kerst, Hausman, and others (see refs) exceeded unity in the whole radial region with the exception of the central part of the accelerator where the linear theory cannot be applied. The authors investigate radial and

Card 2/10

A Cyclotron With a Specially Varying
Magnetic Field Intensity

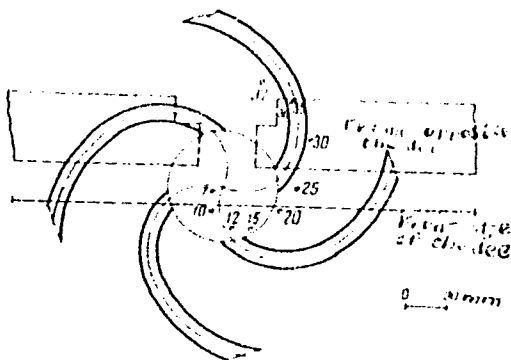
78317
SOV/89-8-3-2/32

vertical oscillations and discuss the limitations on proton energies due to resonant oscillations. Next, they note that the small parameter λ in Eqs. (2) and (7) magnify the nonlinear effects in such accelerators and develop equations permitting a choice of magnetic field parameters which do not produce nonlinear resonance. Experimental investigation of such resonance was produced on a model with $N = 4$, $\lambda = 1.34$ cm, $\epsilon = 0.02$, and shown on Fig. 1. The location of the centers of instantaneous orbits are denoted by points, while the numbers indicate their radii. Theoretical computations agree with experiments for $s > \lambda$, where s is radial coordinate of the center of curvature. The magnetic field of the cyclotron was then built with $N = 6$, $\lambda = 2.7$ cm, and $\epsilon = 0.066$. The displacements of orbits in this case were not larger than those due to the higher harmonics of the magnetic field structure and did not exceed 2 cm. The authors also discussed the phase relations and tested them experimentally during deuteron acceleration up to 13 mev. Minimum potential

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A Cyclotron With a Specially Varying
Magnetic Field Intensity

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Fig. 1. Location of centers of instantaneous orbits
for $N = 4$.

A Cyclotron With a Spacially Varying
Magnetic Field Intensity

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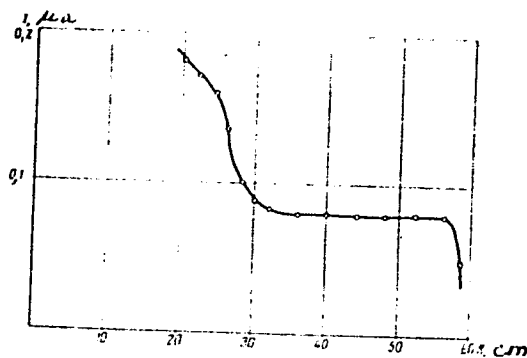
SOV/89-8-3-2/32

of the dees was 5 kv. Figure 4 shows the relation between inner beam intensity and accelerator radius with an accelerating dee voltage of 11 kv. The beam was well focused everywhere and the half-width of its vertical spread was less than 1 cm. Next, the authors describe the computations of the required magnetic field and compare them with experimentally measured values. Figure 7 shows results for a field with $N = 6$, $\lambda = 2.7$. The absolute values of the field were measured using the Hall and nuclear resonance effect magnetometers. In the region of 250-24,000 Oersted with a 5-10% gradient, the fields were measured with an accuracy of $\pm 0.01\%$. Volume of the magnetometer feeler was $2 \cdot 10^{-4} \text{ cm}^3$, and the gradients were measured with an accuracy of $\pm 1\%$. The cyclotron magnetic field intensity was stabilized accurately to 0.005% using a nuclear stabilizer as described by Denisov (Pribory i tekhnika eksperimenta (Instruments and Technics of Experiment), Nr 1, 35 (1959)). The h-f system was described earlier by Glazov and others (Radiochastotnaya

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A Cyclotron With a Specially Varying
Magnetic Field Intensity

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SOV/89-2-3-2/32



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Fig. 4. Particle beam currents at various radii
($v_0 = 11$ kv).

A Cyclotron With a Specially Varying
Magnetic Field Intensity

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SOV/89-8-3-2/32

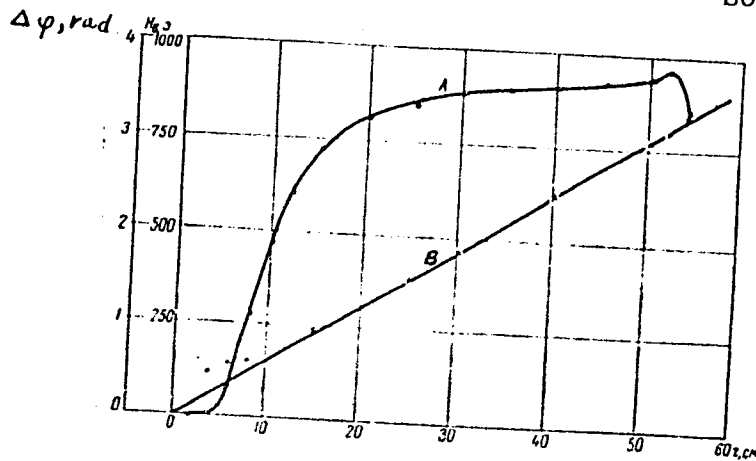


Fig. 7. (A) Amplitude of sixth harmonic of magnetic field H_6 versus radius. (B) Phase φ of spiral shim versus radius (full line--calculated; crosses--experimental data).

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A Cyclotron With a Specially Varying
Magnetic Field Intensity

78317

SOV/89-8-3-2/32

sistema modeli tsiklotrona s prostranstvennoy variatsi-
yey magnitnogo polya, Otchet Laboratorii yadernykh
problem OIYaI (Radiofrequency System for a Model of a
Cyclotron With Specially Varying Magnetic Field, Report
of the Laboratory of Nuclear Problems OIYaI (1959)).
The special feature is the existence of a single dee
with a radius of 57.5 cm and a small gap between the
dees and the chamber of 1.5-2 cm. Aperture of the dee
was 4 cm. The amplitude of the acceleration potential
was stabilized to an accuracy of 1.5%. To reduce the
background due to long-lived radioactive isotopes, the
cyclotron chamber was made from the "avial" alloy.
Working vacuum was 1 to $2 \cdot 10^{-5}$ mm Hg. The ion source
was of the Penning variety and could be displaced in
arbitrary direction with affecting the vacuum. Three
quartz targets with tungsten wire served as visual or
current measuring indicators of the beam. The authors
claim that all tests confirmed the linear theory of
spacial stability of the charged particle motion in
accelerators, and that the methods of creating necessary
magnetic field variations exhibit sufficient accuracy.

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A Cyclotron With a Specially Varying
Magnetic Field Intensity

78317
SOV/89-8-3-2/32

Theoretical and experimental investigation of the specially varying fields and the methods developed for shimming the central field enable one to obtain, on cyclotrons of appropriate size, resonant accelerations of particles up to energies achieved until now only in phasotrons and with beam currents of the order of hundreds of microamperes. K. A. Baycher, N. I. Frolov, M. F. Shul'ge, and F. V. Chumakov were the managers of various divisions of the OIYaI engaged in the construction of the cyclotron. D. I. Blokhintsev, D. V. Yefremov, K. N. Meshcheryakov, and V. N. Sergiyenko showed interest and helped accelerate the work. E. G. Komar, I. F. Malyshev, and L. N. Fedulov constructed the chamber and the accelerator magnet, while A. V. Chestnyy helped in the early stages of planning the technical problems. There are 9 figures; and 34 references, 22 Soviet, 3 U.K., 9 U.S. The 5 most recent U.K. and U.S. references are: N. King, W. Walkinshaw, Nucl. Instr. 2, 4 (1958); D. Kerst, H. Hausman, R. Haxby, L. Laslett, F. Milles, T. Ohkawa, F. Peterson, A. Sessler, J. Snyder,

Card 9/10

A Cyclotron With a Spacially Varying
Magnetic Field Intensity

78317
SOV/89-8-3-2/32

W. Wallenmeyer, Rev. Scient. Instrum., 28, Nr 11, 970
(1957); W. Walkinshaw, N. King, Linear Theory in S/R
Cyclotron Design, AERE, GP/R 2050 (1956); P. Dunn,
L. Mullett, T. Pickavance, W. Walkinshaw, J. Wilkins,
CERN Symposium, 1, 9 (1956); D. Derst, K. Terwilliger,
K. Symon, L. Jones, Bull. Amer. Phys. Soc., 30, Nr 1
(1955).

SUBMITTED: August 27, 1959

Card 10/10

VASILEVSKAYA, D.P.; DENISOV, Yu.N.

Device for measuring radial and azimuthal components of the permanent magnetic field intensity. Prib.i tekhn. eksp. 6 no.5:194-195 S-0 '61. (MIRA 14:10)

1. Ob"yedinennyy institut yadernykh issledovaniy. (Magnetic fields--Measurement)

VASILEVSKAYA, D.P.; VASIL'YEV, L.V.; DENISOV, Yu.N.

[Nuclear magnetometer for measuring highly non-uniform magnetic fields] IAdernyi magnitometer dlia izmereniia sil'no neodnorodnykh magnitnykh polei. Dubna, Ob"edinennyi in-t iadernykh issledovani, 1963. 12 p.
(MIRA 17:1)

L 45423-00

ACCESSION NR AP5007952

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ASSOCIATION
Research

SUBMITTED *VPES*

NO REF

212

L 34363-66

SOURCE CODE: UR/0115/66/000/005/0089/0090

ACC NR: AP6022212

AUTHOR: Vasilevskaya, D. P.; Denisov, Yu. N.; D'yakov, N. I.

31
29
B

ORG: none

TITLE: Hall magnetometer₁₀

SOURCE: Izmeritel'naya tekhnika, no. 5, 1966, 89-90

TOPIC TAGS: magnetometer, Hall effect, magnetic field measurement

ABSTRACT: The magnetometer described (see Fig. 1) was developed at the Joint Institute of Nuclear Research. The device is based on the Hall effect and is designed for

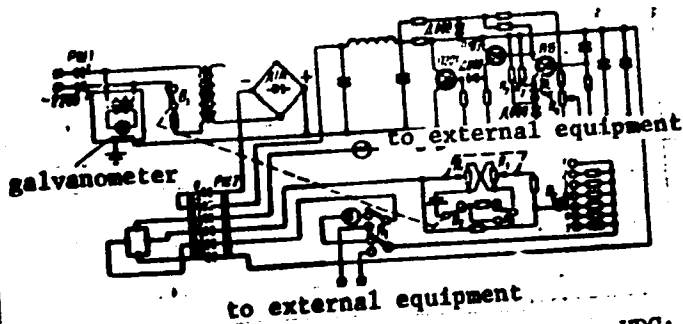


Fig. 1. Schematic diagram of Hall magnetometer

Card 1/2

UDC: 621.317.444

L 34363-66

ACC NR: AP6022212

measuring stationary magnetic fields and for determining their configurations. The device uses two InAs Hall pickups (5 x 3 x 0.2 mm in size) and is placed between felt paddings in ebonite housings 80 x 20 x 15 mm in dimensions. The sensitivity of the pickups is approximately 0.0015 uv/tesla and their longitudinal and transverse resistances are approximately 2 ohms. Power supply is provided from a stabilized d-c source, which has a voltage stabilization coefficient of 1000, a load stabilization coefficient of 500 and whose load current drift does not exceed $\pm 2 \cdot 10^{-3}\%$. The comparison circuit uses a P15 triode, while a P103 silicon transistor is used in the additional amplifying stage. The voltage drop across avalanche diode D808 is used as reference voltage. The excitation current is regulated by potentiometer R_4 within 50—150 mamp. The entire range of measured magnetic fields of 0—2 tesla is subdivided into 7 bands. Switch P_2 sets the desired measurement band. The maximal sensitivity of the device is $1.2 \cdot 10^{-5}$ tesla with the "operating" and $0.83 \cdot 10^{-5}$ tesla with "stand-by" pickup per one division on the galvanometer scale. When Hall emf is measured with the M95 galvanometer the error of magnetic field measurements is $\pm 0.8\%$. However, when Hall emf and the excitation current are controlled by the R307 potentiometer, the RMS measurement error is reduced to $\pm 0.3\%$. The authors thank I. A. Kaplin and P. P. Gavrish for their assistance in the development of the instrument. [DW]

Orig. art. has: 1 figure.

SUB CODE: 09/ SUBM DATE: none/ ORIG REF: 002/ ATD PRESS: 5033

Card

2/2 *py*

L 08497-67 EWT(1)/ECC (N) GW SOURCE CODE: UR/0120/66/000/005/0203/0206
ACC NR: AP6034239

AUTHOR: Vasilevskaya, D. P.; Denisov, Yu. N.; D'yakov, N. I.

ORG: Joint Institute of Nuclear Research, Dubna (Ob'yedinenny
institut yadernykh issledovaniy)

TITLE: A precision Hall magnetometer

SOURCE: Pribory i tekhnika eksperimenta, no. 5, 1966, 203-206

TOPIC TAGS: magnetometer, Hall effect

ABSTRACT: A magnetometer based on the Hall effect is described which comprises a thermostatically controlled InPAs Hall voltage detector (1.8 x 1.2 x 0.3 mm) in size (1), a Hungarian E149 ultra-sensitive thermostat (2), a stabilized current supply (3), a compensating circuit (4), and a potentiometer (5) (see Fig. 1). The thermostat, which is connected to the detector casing by two insulated rubber hoses, controls the temperature of the detector by circulating water around it. Detector temperature varies no more than $\pm 0.2-0.3C$ for ambient temperature changes of $\pm 5C$ and hose lengths of 7 and 14 m. The maximum measurement error for temperature changes of $\pm 5C$ does not exceed 0.008-0.012%. The stabilized current supply provides excitation current (nominal value, 50 amp) to the detector. This current is kept constant within about

UDC: 621.317.444

Card 1/2

L 08497-67

ACC NR: AP6034239

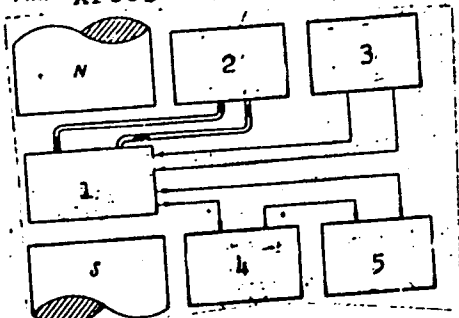


Fig. 1. Magnetometer block diagram

1 - Hall voltage detector; 2 - ultra-sensitive thermostat; 3 - stabilized current supply; 4 - compensating circuit; 5 - potentiometer.

10-3% by placing the critical control elements, which include a precision resistor used to generate a reference voltage and a comparison bridge, in the thermostat. The difference between the detected Hall voltage and the voltage across the precision resistor is measured with the potentiometer. The overall RMS measurement error, including calibration error, does not exceed 0.05%. The circuit, used since 1962, is built with solid-state components and can measure both uniform and varying magnetic fields with gradients up to 30 T/m. Orig. art. has: 4 figures.

SUB CODE: 08/ SUBM DATE: 12Nov65/ ORIG REF: 006/ ATD PRESS: 5103
Card 2/2 afs

VASILEVSKAYA, E. G.

SAENS, Visente [Saenz, Vicente]; MIKHAYLOV, L.R. [translator]; GONIONSKIY,
S.A., kand.istor.nauk, red.; VASILEVSKAYA, E.G., red.; BELEVA,
M.A., tekhn.red.

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Methods and apparatuses for the measurement of dynamic
magnetostriction parameters. Trudy inst. Kom. stand. mor i
izm. prib no. 64:311-320 '62. (MIRA 16:5)
(Magnetic measurements—Equipment and supplies)

VASILEVSKAYA, F.M.

23611

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MEDITSINA, 1949, No. 7, C. 49-55.--BIBLIOGR: C. 54-55.

SO: LETOPIS' NO. 31, 1949.

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Moskva 25 no.6:63-68 Nov-Dec 1953. (CML 25:5)

1. Of the Faculty Therapeutic Clinic (Acting Director --
Prof. T.S. Istamanova), First Leningrad Medical Institute
imeni I.P. Pavlov.

VASILEVSKAYA, F.M.; MASLOVA, N.P.; ISTAMANOVA, T.S., professor, ~~ispolnyayushchiy~~
~~obyazannost'~~ direktora kliniki.

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no.9:46-51 S '53. (MLRA 6:11)

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instituta im. akademika I.P.Pavlova.

(Hypertension) (Nervous system) (Sight)

VASILEVSKAYA, F. M.

VASILEVSKAYA, F. M. "The functional state of the central nervous system in hypertonic disease, based on data from chronaximetry."
First Leningrad Medical Inst imeni Academician I. P. Pavlov. Chair of Faculty Therapy. Leningrad, 1956.
(Dissertation for the Degree of Doctor in Sciences)
Medical

So: Knizhnaya Letopis', No. 18, 1956

Name: VASILEVSKAYA, Erida Moiseyevna

Dissertation: Functional state of the central nervous system during hypertonic disease (based upon data of chronaxymetry)

Degree: Doc Med Sci

Affiliation: [not indicated]

Defense Date, Place: 4 Jun 56, Council of the 1st Leningrad Med Inst imeni Pavlov

Certification Date: 11 May 57

Source: BIVO 15/57

VASILEVSKAYA, Galina [Vasilevskaia, H.]

It's never too late. Rab. i sial. 35 no.10:4-5 '59.

(MIRA 13:2)

(Gomel'--Women as engineers)

VASILEVSKAYA, Galina [Vasileuskaia, Halina]

Motherly care. Rab.1 sial. 36 no.1:18-19 Ja '60.
(MIRA 13:5)

1. Tal'kovskiy detskiy dom, Pukhovitskiy rayon.
(Pukhovichi District--Orphans and orphanages)

VASILEVSKAYA, Galina [Vasileuskaia, Halina]

Like pines in a forest. Rab.i stal. 36 no.5:18-19 My '60.
(MIRA 13:10)

(Pukhovichskiy District--Veterinarians)

VASILEVSKAYA, Galina [Vasileuskaia, H.]

On the Dnieper. Rab. i sial. 36 no.8:2-5 Ag '60. (MIRA 1):10)
(Dnieper Valley--Description and travel)

VASILEVSKAYA, Galina [Vasileuskaja, Halina] (g.Idda)

Ours is a family of workers. Rab.i sial. 36 no.12:2-3 D '60.

(White Russia--Women--Employment)

(MIRA 13:12)

VASILEVSKAYA, Galina [Vasileuskaja, Halina]

A few words about skillful hands and our furniture. Rab. i sial. 37
no.1:15 Mr '61. (MIRA 14:3)

(Bobruysk—Furniture industry)

VASILEVSKAYA, Galina [Vasileuskaia, Halina]

Maryia and her friends. Rab. i sial. 37 no. 4:8-9 Ap '61.

(MIRA 14:4)

(Efficiency, Industrial) :

VASILEVSKAYA, Galina [Vasileuskaja, Halina]

~~We have visited the "Kastrychnik" State Farm. Rab.1 soil.~~

37 no.6:4-5 Je '61.

(MIRA 15:2)

(Khoyniki District—Corn (Maize))

VASILEVSKAY, Galina [Vasileuskaia, Halina]

Great Achievements. Rab. i sial. 38 no.3:2-3 Mr '62.

(MIRA 15:2)

(Minsk Province—Dairying)

VASILEVSKAYA, G. [Vasileuskaia, H.] (Kobryn)

A "noisy factory." Rab.i sial. 38 no.6:6-7 Je '62. (MIRA 15:8)

(Kobrin---Poultry)

VASILEVSKAYA, Galina [Valileuskaia, Halina]

Stefanida's "commandments." Rab.i sial. 38 no.8:19 Ag '62.
(MIRA 15:9)

1. Sovkhoz "Krasnoye", Molodechenskogo rayona.
(Chicanery (Law)) (Molodechno District--Baptists)

VASILEVSKAYA, Galina [Vasileuskaia, Halina]

Evening gatherings on a collective farm. Rab.1 sial. 38
no.12:10-11 D '62. (MIRA 16:1)
(Grodno Province--Community centers)

VASILEVSKAYA, Galina [Vasilevskaia, Halina] (Minsk)

Her "laboring class." Rab. i sial. 39 no.5:10 My '63.
(MIRA 16:6)
(Minsk—Labor and laboring classes—Dwellings)

VASILEVSKAYA, Galina [Vasileuskaja, Halina]

They will understand you. Rab. i sial. 39 no.7:9-10

Jl '63.

(MIRA 16:11)

USSR/Safety Engineering - Sanitary Engineering. Sanitation. L.

Abs Jour : Ref Zhur - Khimiya, No 2, 1957, 7030

Author : Glushkov, L.A., Kogan, F.M., Vasilevskaya, G.A.

Inst :

Title : Effectiveness of Electric Filters for Purification of Air from Asbestos Dust.

Orig Pub : Sb. Vopr. gigiyeny truda, professional'noy patologii i toksikologii v prom-sti Sverdl. obl., Sverdlovsk, 1955, 73-79

Abstract : Description of the conditions, procedure and results of summer and winter tests of an experimental electric filter of industrial design for the removal of asbestos dust from air used in the recovery of asbestos fiber and the air of the suction draft system. The electric filter, is a dipolar plate filter with horizontal gas flow and rod-shaped precipitation electrodes, was operated as second stage (after the dust-settling chambers),

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USSR/Safety Engineering - Sanitary Engineering. SAnitation.

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Abs Jour : Ref Zhur - Khimiya, No 2, 1957, 7030

or third stage dust removal unit (after the settling chambers and a twine filter). With an initial dust concentration, at the ingress to the electric filter, of 0.8-2.4 g/m³ and air velocity, within the active zone, of 1.5 m/second, the degree of air purification in the electric filter was of 94-98%, and residual dust content of the air, prior to discharge to the atmosphere, of 20-100 mg/m³.

Card 2/2

S/062/60/000/009/013/021
B023/B064

AUTHORS: Shuykin, N. I. and Vasilevskaya, G. K.
TITLE: Catalytic Dehydration of Alpha Isobutyl Tetrahydrofurane
PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh
nauk, 1960, No. 9, pp. 1664-1667

TEXT: N. I. Shuykin, V. A. Tulupov, and I. F. Bel'skiy referred in their paper (Ref. 3) on the dehydration of tetrahydrosylvane on a titanium-alumina catalyst at 500-600°C and a pressure of 20-30 mm to the fact that this catalyst leads to the formation of both open and cyclic dienes. The authors studied the dehydration of a more complex tetrahydrofurane homolog, viz. α -isobutyl tetrahydrofurane. They carried out this reaction on the same catalyst and expected to obtain 6-methyl pentadiene-1,3 in the mixture with its dehydrocyclization products. At 600 and 550°, and a pressure of 20-30 mm, and a volume rate of 0.1 h⁻¹, α -isobutyl tetrahydrofurane underwent strong cracking, and, consequently, liquid catalyzates were obtained in a yield of 25-30% only. It was a complex mixture of rapidly resinifying hydrocarbons with a high boiling point. After the

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Catalytic Dehydration of Alpha Isobutyl
Tetrahydrofuran

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B023/B064

dehydration temperature had been reduced to 400°C and the contact time shortened, a liquid catalyzate was obtained in a yield of 95%. In individual fractions, with boiling points between 121.7-136°C, it contained between 81.0 and 92% diene hydrocarbons. Summing up: Considerable amounts of unsaturated hydrocarbons, especially dienes, may be obtained on the basis of a pentosan-containing initial substance and furfurole, furane homologs, and their tetrahydro derivatives. The finding of conditions for the catalytic dehydration of tetrahydrofuran homologs under the formation of complicated mixtures of dienes and alkenes is regarded as a further task; in this connection it is possible to isolate individual hydrocarbons. A formula of Ye. A. Timofeyeva, T. P. Dobrynina, and V. M. Kleymenova is mentioned. A determination method developed by G.P. Kaufman and G. D. Gal'pern is applied. There are 1 table and 9 references: 6 Soviet, 4 French, 1 US, 2 British, and 1 German.

ASSOCIATION: Institut organicheskoy khimii im. N.D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences USSR)

SUBMITTED: March 18, 1959

Card 2/2

S/020/60/132/04/35/064
B011/B003

5.0400

AUTHORS: Shuykin, N. I., Corresponding Member of the AS USSR,
Bel'skiy, I. F., Vasilevskaya, G. K.

TITLE: Catalytic Conversion of 2-Alkyl-5-acylfurans Into
Alkylphenols

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 4,
pp. 861-863

TEXT: The authors investigated the catalytic hydrogenation of the following alkylacylfurans on Pt-C in a continuous system and at usual pressure: 2-acetylfuran, 2-ethyl-5-acetylfuran, 2-methyl-5-propionylfuran, and 2-n-propyl-5-acetylfuran. Hydrogenation occurred at 300 - 310°. In all cases the furan ring was hydrogenated on the C—O bond which is adjacent to the carbonyl group. The resulting intermediates (1,5-diketones) were cyclized in the vapor phase in hydrogenation. Homologs of cyclohexenone formed, which were subsequently dehydrogenated to the corresponding phenol homologs. Carbocyclization of nonsymmetrical

4

Card 1/3

Catalytic Conversion of 2-Alkyl-5-acyl-
furans Into Alkylphenols

S/O20/60/132/04/35/064
B011/B003

1,5-diketones generally leads to the formation of two isomeric phenols, as illustrated by the conversion of octanedione-2,6 (see Scheme). The hydrogenolysis of 2-ethyl-5-acetylfuran and 2-methyl-5-propionylfuran yields as primary product exactly the same diketone, i.e., octanedione-2,6. It yields 3-ethylphenol, whereby the ring between the C-atoms 1 and 6 is closed. 2,3-dimethylphenol is formed, however, if the ring between the C-atoms 2 and 7 is closed. 3-n-propylphenol and 2-ethyl-3-methylphenol are similarly formed from 2-n-propyl-5-acetylfuran. The following corresponding aromatic hydrocarbons were obtained by reduction of phenols resulting from 2-methyl-5-propionylfuran and 2-n-propyl-5-acetylfuran: in the first case, ethylbenzene and orthoxylene, in the second, n-propylbenzene and 1-methyl-2-ethylbenzene. Thus, the cyclization of nonsymmetrical diketones, which were obtained as intermediates of the hydrogenation of 2-alkyl-5-acylfurans, may proceed in two directions. In all cases mono- and dialkylphenols are formed. Simultaneously with the main course of the reaction the carbonyl group is primarily reduced. Subsequently, the furan ring is subjected to hydrogenolysis on one of the C—O bonds, whereby corresponding aliphatic ketones (see Scheme) are formed. 2-acetylfuran

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Catalytic Conversion of 2-Alkyl-5-acyl-
furans Into Alkylphenols

S/020/60/132/04/35/064
B011/B003

holds a special position among the compounds investigated. By its hydrogenolysis on the C—O bond adjacent to the carbonyl group a ketoaldehyde forms. It may not be hydrogenated like a diketone, but is completely decarbonylated to form pentanone-2. There are 4 references, 3 of which are Soviet. ✓

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo
Akademii nauk SSSR (Institute of Organic Chemistry imeni
N. D. Zelinskiy of the Academy of Sciences, USSR)

SUBMITTED: February 22, 1960

Card 3/3