

SILIN, P.M.
SILIN, P.M.

Viscosity nomograms for sugar solutions and molasses. Sakh. prom.
31 no.12:37-40 D '57. (MIRA 11:1)

1. Moskovskiy tekhnologicheskij institut pishchevoy promyshlennosti.
(Sugar industry) (Viscosity)

SILIN, P.

A new nomograph for the operation of the diffusion apparatus and its application.
Tr. from the Russian.

P. 98 (Listy Cukrovarnicke) Vol. 73, No. 5, Mar. 1957, Czechoslovakia

NO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EEAI) LC. - VOL. 7, NO. 1, JAN. 1958

SILIN, Pavel Mikhaylovich; KAL'MENS, R.I., red.; CHEBYSEVA, Ye.A.,
tekhn.red.

[Beet sugar technology and white sugar refining] Tekhnologii
sveklosakharnogo i rafinadnogo proizvodstva. Moskva, Pishche-
promizdat, 1958. 600 p. (MIRA 11:6)
(Sugar manufacture)

CZECHOSLOVAKIA / Chemical Technology. Carbohydrates H-26
and Their Processing.

Abs Jour: Ref Zhur-Khimiya, No 23, 1958, 79232.

Author : Silin, P. M.

Inst : Not given.

Title : Nomograms on the viscosity of Sugar Solutions
and Molasses.

Orig Pub: Listy cukrovarn, 1958, No 5, 105-107.

Abstract: See R. Zh. Khim., 1958, 58936.

Card 1/1

60

SOV/3-58-11-5/38

AUTHOR: Silin, P.M., Professor, RSFSR Honored Worker in Science and
Engineering

TITLE: The "Cooperative Method" of Education ("Koooperativnyy metod"
obucheniya)

PERIODICAL: Vestnik vysshey shkoly, 1958, Nr 11, pp 17 - 18 (USSR)

ABSTRACT: In the USSR there are 3 basic forms of higher education:
resident (regular daytime), correspondence, and evening
tuition. Each of them has its advantages and disadvantages.
Efforts are being made to eliminate the drawbacks, but it
is difficult to remove them completely. Moreover, such a
treble system is rather complicated and expensive. The author
outlines a method which he calls the "cooperative method"
of practical-theoretical education and may be recommended
in a somewhat altered form. While a student, the author
worked during the entire fall season at a sugar factory,
and conducted his theoretical studies during the spring se-
mesters. The system existing at that time permitted this
form of study, which required an additional year. He made

Card 1/2

1911, I.

TECHNOLOGY

Periodical: JOURNAL Vol. 11, no. 12, Dec. 1918.

1911, I. Technology of beet-sugar manufacture and refinement; a partial
abstract. Instillation of after products and formation of molasses;
Factors hindering crystallization. Tr. from the German, p. 321.

Monthly list of East European Accessions (EMEA) 10, Vol. 8, No. 5,
May 1959, include.

SILIN, P. N.

Scientific work in the production of sugar in Czechoslovakia.
Sakh. prom. 32 no.2:66-67 F '58. (MIRA 11:3)
(Czechoslovakia-- Sugar research)

SILIN, P.M.

New technical literature on the manufacture of sugar in Czecho-
slovakia and Poland. Sakh. prom. 32 no.3:75-76 Nr '58. (NIRA 11:4)
(Bibliography--Sugar)

SILIN, P.M.

Sugar losses in the diffusion battery as a result of faster
operation of the sugar factory. Sakh. prom. 32 no.11:5-7 N '58.
(MIRA 11:12)

1. Moskovskiy tekhnologicheskiy institut pishchevoy promyshlennosti.
(Sugar manufacture)

Silina, I. M.

"The Theoretical and Experimental Investigations of the Author in the Field of
Saccharose Crystallization"

report presented at the Section on Colloid Chemistry, VIII Mendeleyev Conference of
General and Applied Chemistry, Moscow, 16-23 March 1959.
(Koll. Zhur. v. 21, No. 4, pp. 509-511)

SHIN, P.

Beet-sugar manufacturing and the technological of refining. Pt. 2, p. 12.

CUKORIPAR. (Mezőgazdasági és Élelmiszeripari Tudományos Egyesület.
Cukoripari Szakosztály) Budapest, Hungary, Vol. 12, No. 1, Jan. 1959.

Monthly list of East European Accessions (EEAT) LC, Vol. 8, No. 7, July 1959.
Uncle.

SILLY, P.

Beet-sugar manufacturing and the technology of refining. Pt. 3. (To be contd.)
p. 30.

CUKORIPAR. (Mezőgazdasági és Élelmiszeripari Tudományos Egyesület.
Cukoripari Szakosztály) Budapest, Hungary, Vol. 12, No. 2, Feb. 1959.

Monthly list of East European Accessions (EEA) LC, Vol. 8, No. 7, July 1959.
Uncla.

Silin, P.

Beet-sugar manufacturing and the technology of refining.
Pt.4. Tr. from the Russian. n.60
Budapest, Hungary. Vol. 12, no.3. March 1959

Monthly List of East European Accessions (EFAI) LC, Vol. 8, no. 11
November 1959
Uncl.

SILIN, P.M.

Work and learn! Sakh. prem. 33 no.1:20-21 Ja '59. (MIRA 12:1)

1. Moskovskiy tekhnologicheskii institut pishchevoy promyshlennosti.
(Sugar manufacture) (Education, Cooperative)

SILIN, P.M., prof.; VORONKO, A.I.

Book summarizing the experience in the automatization of beet-sugar manufacture ("Automatic control in beet-sugar manufacture" by V.P. Mitrofanov, A.A. Rudzitskii. Reviewed by P.M. Silin, A.I. Voronko).
Sakh. prom. 33 no.2:73-74 P '59. (MIRA 12:3)
(Sugar manufacture) (Automatic control)
(Mitrofanov, V.P.) (Rudzitskii, A.A.)

SZILIN, P.M. [Silin, P.M.]; SZABO, Lajosne [translator]

Technology of beet sugar manufacture and of its
refining. II. Cukor 12 no.1:12-18 Ja '59.

SZILIN, P.M. [Silin, P.M.]; SZABO, Lajosne [translator]

Technology of beet sugar manufacture and of its refining.
III. (To be contd.) Cukor 12 no.2:30-33 F '59.

SZILIN, P.M. [Silin, P.M.]; SZABO, Lajosne [translator]

Technology of beet sugar manufacture and of its refining. IV.
Cukor 12 no.3:60-62 Mr '59.

SILIN, P.M.

Continuous boiling of massecuites. Sakh. prom. 33 no.5:6-11
My '59. (MIRA 12:7)

1. Moskovskiy tekhnologicheskiy institut pishchevoy promyshlennosti.
(Sugar manufacture)

SILIN, P.M.

Problems of accelerated operation of a diffusion battery. Sakh.
prom. 33 no.6:7-10 Je '59. (MIRA 12:8)

1. Moskovskiy tekhnologicheskii institut pishchevoy promyshlennosti.
(Sugar manufacture)

KLEYMAN, B.M., inzh.; IVANOV, P.Ya., inzh.; SILIN, P.M., prof.;
LEPESHKIN, I.P., spetsred.; BUKINA, L.M., vedushchiy red.

[Operating experience of sugar factories of the R.S.F.S.R. under intensified conditions in the 1958-1959 production season; methods recommended for the processing of sugar beets] Opyt raboty sakharnykh zavodov RSFSR na forsirovannom reshii v sezon 1958/59 g.; rekomendatsii po uskorennoi pererabotke sakharnoi svekly. Moskva, Gos.nauchno-issl.in-t nauchn. i tekhn.informatsii, 1960. 65 p.
(MIRA 13:6)

1. Moscow. Vsesoyuznyy institut nauchnoy i tekhnicheskoy informatsii.

(Sugar industry)

SILIN, Pavel Mikhaylovich; SILINA, Nina Pavlovna; VOYKOVA, A.A., red.;
SOKOLOVA, I.A., tekhn.red.

[Chemical control of beet-sugar manufacture] Khimicheskii
kontrol' sveklosakharnogo proizvodstva. Izd.3., perer. i dop.
Moskva, Pishchepromizdat, 1960. 266 p.

(MIRA 14:4)

(Sugar manufacture) (Sugar--Analysis and testing)

AGEYEV, Leonid Mikhaylovich, dots.; IVANOV, Sergey Zakharovich, prof.;
SMIRNOV, Valentin Aleksandrovich, prof.; SILIN, P.M., prof.,
red.; MURASHOVA, O.I., red.; SOKOLOVA, I.A., tekhn. red.

[Technology of sugar substances; general course] Tekhnologiya
sakharrykh veshchestv; obshchii kurs. Pod red. P.M.Silina.
Moskva, Pishchepromizdat, 1961. 488 p. (MIRA 15:3)
(Sugar) (Starch)

ZOTOV, V.P.; MAKHINYA, M.M.; PAISHIKOV, M.Ya.; GAVRILOV, A.N.; SILIN, P.M.;
GOLOVIN, P.V.; KHEYZE, N.V.; BUZANOV, I.F.; KHELEMSKIY, M.Z.;
YAPASKURT, V.V.; SHARKO, A.P.; SANOV, N.M.; LITVAK, I.M.; IVANOV,
S.Z.; LEPESHKIN, I.P.; KLEYMAN, B.M.; YEPISHIN, A.S.; GOLUB, S.I.;
GERASIMOV, S.I.; GEUBE, V.R.; PASHKOVSKIY, F.M.; LITVINOV, Ye.V.;
BENIN, G.S.; IVANOV, P.Ya.; VINOGRADOV, N.V.; PONOMARENKO, A.P.;
ZHIDKOV, A.A.; KOVAL', Ye.T.; KARTASHOV, A.K.; NOVIKOV, V.A.

Sixtieth birthday of A.N.Shakin, Director of the Central
Scientific Research Institute of the Sugar Industry. Sakh.
prom. 35 no.7:33 J1 '61. (MIRA 14:7)

(Shakin, Anatolii Nikitovich, 1901-)
(Sugar industry)

SHIN, P.M.

Molasses forming coefficient of nonsugars produced from clarified
beet juice. Sakh. prom. 35 no.11:11-13 N '61. (MIRA 15:1)

1. Moskovskiy tekhnologicheskii institut pishchevoy promyshlennosti.
(Molasses) (Sugar--Analysis and testing)

SILIN, P.M.

Technological evaluation of sugar beets. Sakh. prom. 35 no.11:
14-17 N 1/1. (MIRA 15:1)

1. Moskovskiy tekhnologicheskii institut pishchevoy promyshlennosti.
(Sugar beets)

SILIN, P.M.; LITVAK, I.M.; BARABANOV, M.I.; LIKHITSKIY, M.Kh.;
BODNAR', S.G.; ROSTRIPENKO, I.A.; SOFRONYUK, L.P.;
YAROVENKO, O.A.; MIROSHNIK, A.P.; IVASENKO, G.

Accelerating the sedimentation in settlers. Sakh. prom. 36
no.7:9-17 JI '62. (MIRA 17:1)

1. Moskovskiy tekhnologicheskoy institut pishchevoy promysh-
lennosti (for Silin). 2. Kiyevskiy tekhnologicheskoy institut
pishchevoy promyshlennosti imeni Mikoyana (for Litvak,
Barabanov, Likhitskiy). 3. Lannovskiy sakharney zavod (for
Bondar', Ivashenko). 4. 2-y im. Petrovskogo sakharney zavod
(for Rostripenko). 5. Gindeshitskiy sakharney zavod (for
Sofronyuk). 5. Krasnyanskiy sakharney zavod (for Yarovenko,
Miroshnik).

SILIN, P. M.

Iodometric determining of the amount of saccharose content.
Sakh. prom. 36 no.10:77 0 '62. (MIRA 15:10)

(Sugar—Analysis and testing) (Iodometry)

SILIN, P.M.

"Technology of sugar manufacture" by S.Nikel. Reviewed by P.M.Silin.
Sakh.prom. 36 no.11:77 N '62. (MIRA 17:2)

CHEN' I-SYAN' [Ch'ŋn I-hsien]; SILIN, P.M., prof., rukovoditel' raboty

Slow processes of the crystallization of saccharose. Sakh.prom. 36
no.11:12-14 N '62. (MIRA 17:2)

1. Moskovskiy tekhnologicheskij institut pishchevoy promyshlennosti.

SILIN, P.M.

Water balance of sugar factories taking sewage waters into
account. (from "Zucker." 14, 1961). Sakh. prom. 36 no.12:47
D '62. (MIRA 16:6)

(Germany, West—Sugar factories)

SILIN, P.M.; CHEN' I-SYAN' [Ch'ên I-hsien]

New rapid method for determining the normal quality factor of
molasses. Sakh. prom. 37 no.3:17-21 Mr '63. (MIRA 16:4)

1. Moskovskiy tekhnologicheskii institut pishchevoy promyshlennosti.
(Molasses--Testing)

GOLOVNYAK, Yu.D.; SILIN, P.M.

Twelfth International Congress on Sugar organized by the
International Commission of Sugar Technology. Sakh. prom.
37 no.10:59-63 0 '63. (MIRA 16:12)

1. Tsentral'nyy nauchno-issledovatel'skiy institut sakharnoy
promyshlennosti (for Golovnyak). 2. Moskovskiy tekhnologicheskiy
institut pishchevoy promyshlennosti (for Silin).

SHIN, P.M.

Evaluation of the technological properties of sugar beet for breeding. Trakt. biohim. i mikrobiol. 1 no.1:90-91 Ja-F '65.
(MIRA 18:5)

1. Tekhnologicheskii institut pishevoy promyshlennosti, Moskva.

FD-1506

USSR/Physics - Servomechanism, Antistalling

Card 1/1 : Pub 129-9/18

Author : Silin, R. A.

Title : ~~Reduction of the stalling zone in a following system by creation of an initial clearance~~

Periodical : Vest. Mosk. un., Ser. fizikomat. 1 yest. nauk, 9 No 6, 75-79, Sep 54

Abstract : Method of reducing the stalling zone occurring due to friction consists in introducing of a new nonlinear term into the circuit of the follow-up system. This nonlinear term is so selected as to compensate the harmful effect of dry friction and therefore it may be called the method of initial clearance. Indebted to Prof. S. P. Strelkov.

Institution : Chair of oscillations, Moscow University

Submitted : October 27, 1953

R. A. CHIN

"Analysis of the Disversion of Multicycle Resonator Delay Systems"
from Annotations of Works Completed in 1965 at the State Union Sci. Res. Ind.

So: B-3,080,964

06484

SOV/141-1-5-6-28/28

AUTHORS: Strelkov, S. P. and Silin, R. A.

TITLE: Book Review

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, 1958, Vol 1, Nr 5-6, pp 188 - 189 (USSR)

ABSTRACT: Review of the book by V.I. Kalinin and G.M. Garshteyn - "Introduction to Radiophysics". Gostekhizdat, 1957. The book gives a short and systematic exposition of the phenomena which take place during the reception, transmission, formation, transmission and generation of electromagnetic vibrations. The book is intended for students who need an introduction to radio. It is not suitable for universities and schools of advanced technology. In spite of a number of errors and misprints, it is suggested that the book would be very useful and it is hoped that in the second edition these errors will be rectified.

Card1/2

SILIN, R. A.

SOV/5292

PHASE I BOOK EXPLOITATION

Konferentsiya po elektronike sverkhvysokoy chastoty

Trudy (Transactions of the Conference on Superhigh-Frequency Electronics) Moscow, Gosenergoizdat, 1959. 271 p. 3,500 copies printed.

Sponsoring Agency: Vsesoyuznyy nauchnyy sovet po radiofizike i radio-tekhnike AN SSSR.

Eds. (Title page): I. S. Dzhigit, Professor, and Ye. G. Solov'yev, Candidate of Technical Sciences; Ed.: S. Akalunin; Tech. Ed.: G. Ye. Larionov.

PURPOSE: This book is intended for scientific and technical personnel concerned with the development and operation of superhigh-frequency devices.

COVERAGE: The book contains a number of papers dealing with the more important problems of superhigh-frequency electronics. The papers

Card 1/5

Transactions of the Conference (Cont.)

SOV/5292

were submitted at the Conference on Electronics called by the Vsesoyuznyy nauchnyy sovet po radiofizike i radiotekhnike AN SSSR (All-Union Scientific Council for Radiophysics and Radio Engineering, AS USSR) and the Byuro novoy tekhniki MO SSSR (Bureau of Modern Engineering, Ministry of Defense, USSR) and held in Moscow in 1957. The reports deal with the following topics: problems of the theory and calculation of the delay systems of traveling-wave and backward-wave tubes; certain phenomena occurring in a cylindrical electron beam finding itself in a uniform magnetic field; the focusing of long beams by means of periodic magnetic and electric fields; and some problems concerning reflex klystrons. Modern types of cathodes for superhigh-frequency devices are described. No personalities are mentioned. References accompany most of the reports.

TABLE OF CONTENTS:

Slutskaya, A. V. Investigation of the Properties of Traveling-Wave Tubes With a Delay System in the Shape of a Double-Helical Line 3

Card 2/5

Transactions of the Conference (Cont.) SOV/5292

Ol'derogge, Ye. B., and L. N. Loshakov. Computation of the Coupling Factor in a Bifilar-Helix Backward-Wave Oscillator 23

Solov'yev, Ye. G. "Counter-Line Stretchers in a Rectangular Waveguide" Delay System 35

Silin, R. A. Analysis of Multistage and Polyserial Line Stretchers of Delay Systems 45

Afonskaya, M. N., V. G. Gabyshev, A. S. Dunayev, S. A. Zusmanovskiy, M. L. Lyubimov, A. G. Mishkin, and G. P. Shchelkunov. Klystron Amplifier of the 10-Centimeter Band With 20-Milliwatt Pulse Power 58

Ovcharov, V. T. Cylindrical Electron Beam in a Uniform Magnetic Field 80

Kozel', I. Sh. Concerning the Problem of Focusing a Cylindrical Hollow Electron Flow in a Periodic Magnetic Field 90

Card 3/5

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S/109/60/005/04/024/028

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AUTHOR: Silin, R.A.

TITLE: On the Dispersive Properties of Two-Dimensional and Three-Dimensional Periodic Systems (Artificial Dielectrics)

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol 5, Nr 4, pp 688-691 (USSR)

ABSTRACT: The constant-frequency loci of two-dimensional periodic systems (artificial dielectrics) are plotted in the wave-vector plane. It is shown that the dispersion and optical properties obtained are extremely varied and may be such as are unknown in ordinary dielectrics. In particular, they may have negative dispersion, ie the phase and group velocities of the waves may be directed opposite to each other. There are 2 figures and 6 references, 3 of which are Soviet, 2 French and 1 English.

SUBMITTED: September 23, 1959

Card 1/1

ACC NR: AM6029191

Monograph

UR/

Silin, Robert Andreyevich; Sazonov, Vilior Pavlovich

Delay structures (Zamedlyayushchiye sistemy) Moscow, "Sovetskoye radio," 1966. 631 p. illus., biblio. Errata slip inserted. 4600 copies printed.

TOPIC TAGS: delay circuit, propagation, waveguide, waveguide element, *superhigh frequency*

PURPOSE AND COVERAGE: This book is intended for scientists, engineers, and students concerned with super-highfrequency (SHF) techniques, radio physics, the design of linear acceleration systems using SHF delay lines and antennas, and solid state physics. The properties of unidimensional and two-dimensional periodic delay structures used in SHF devices are presented and the methods of their calculation described. Formulas, tables and graphs facilitating the design of delay structures are given. Materials published in the Soviet and non-Soviet press have been used in the book. Chapters I, II, III, VII—XV and appendices I, II, X—XVIII were written by R. A. Silin; chapters IV—VI, XVI and appendices III—IX were written by V. P. Sazonov; §7, Ch. III was written jointly by the authors. O. N. Aristarkhova, G. V. Kurilov, L. A. Pinchuk, Z. N. Pasechnik, M. I. Poygina, I. Sh. Beluga and S. S. Samokhin participated in the measurements and processing of the results. Z. D. Kovtunova assisted

Card 1/3

UDC: 621.372.825

ACC NR: AM6029191

in calculating of the concrete systems and in editing the manuscript. I. Sh. Beluga, V. M. Dashenkov, V. N. Ivanov, V. S. Il'yin, V. P. Kiryushin, Yu. A. Kovalev, B. P. Kutenin, V. M. Lopukhin, V. S. Mikhalevskiy provided comments and advice. References follow each chapter.

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SUP CODE: 09/ SUBM DATE: 21Feb66/ ORIG REF: 150/ OTH REF: 190

Card 3/3

25(1,2)

SOV/117-59-4-5/36

AUTHORS: Povidaylo, V.A., Candidate of Technical Sciences,
and Silin, R.I., Engineer

TITLE: An Automatic Vibrational Charging Device.

PERIODICAL: Mashinostroitel' 1959, Nr 4, pp 14-16 (USSR)

ABSTRACT: Illustrated design and operational information is given on a new automatic vibrational charging device to a machine tool for polishing the outer cylindrical surface of threading dies. The device was designed at the Chair "Technology of Machine Building, Machine Tools and Tools" of the L'vovskiy politekhnicheskii institut (L'vov Polytechnical Institute). It consists of a bunker on vertical coil springs, an additional funnel-shaped 'pre-bunker' on the top designed to increase the capacity, three electromagnetic vibrators placed tangentially and vibrating the bunker in a spiral

Card 1/2

SOV/117-59-4-5/36

An Automatic Vibrational Charging Device

motion. The speed of the motion of die blanks into the machine is controllable by means of the screws on which the top funnel is suspended (Figure 2). The device includes a protective mechanism switching-in, when a die blank exceeds the set size, or if a blank fails to roll down into the receiver leading to the machine. The retarded blank will be jammed by a pusher and then released to roll down into the receiver. The electric arrangement of the device is described and shown in a block diagram. There are 3 diagrams and 1 photo.

Card 2/2

POVIDAYLO, V.A.; SILIN, R.I.

Vibratory feed hoist. Mashinostroitel' no.6:10-11
Je '60. (MIRA 13:8)
(Feed mechanisms)

1. The first of these is the fact that the Commission has not yet received any information from the Government of the United States regarding the results of its investigation of the activities of the "Black Panther Party" in the United States.

POVIDAYLO, Vladimir Aleksandrovich; SILIN, Radomir Ivanovich;
SHCHIGEL', Viktor Abramovich; KOMAROV, M.S., doktor tekhn.
nauk, red. vypuska; FURER, P.Ya., red.; GORNOSTAYPOL'SKAYA, M.S.,
tekhn. red.

[Vibratory devices in the manufacture of machinery] Vibratsionnye
ustroistva v mashinostroenii. Moskva, Mashgiz, 1962. 109 p.
(MIRA 15:6)

(Machinery industry)

(Vibrators)

POVIDAYLO, V.A., kand.tekhn.nauk; SILIN, R.I.

Induction vibrometer with a mechanical system for measuring
vibration amplitude. Avtom.i prib. no.1:62-64 Ja-Mr '62.
(MIRA 15:3)

1. L'vovskiy politekhnicheskii institut.
(Vibration--Measurement)

SILIN, R.I., inzh.

Electronic system of automatic high-speed counters.
Priborostroenie no.6:22-23 Je '61. (MIRA 14:6)
(Electronic instruments)
(Counting devices)

POVIDAYLO, V.A.; SILIN, R.I.

Automation of centerless tap grinding. Stan.1 instr. 29 no.11:23-24
N '58. (MIRA 11:11)
(Grinding and polishing) (Automatic control)

NIKUSIN, A.I., inzh.; SILIN, S.I., inzh.

Tuning of diesel locomotive circuit systems with a vibratory power
governor. Elek.i tepl.tiaga. 6 no.1:40-41 Ja '62. (MIRA 15:1)
(Diesel locomotives--Equipment and supplies)

SMIRNOV, YE. V., SILIN, S. I.

Stock and Stockbreeding

Plan for wintering livestock on the collective farm "Builder of Communism."

Sots. zhiv. 14 no. 2, 1952

9. Monthly List of Russian Accessions. Library of Congress, June 1952, 2 Uncl.

SILIN, S.I.

LEGANTSEVA, V.I., nauchnyy sotrudnik.; TRONIN, A.A., kandidat veterinarnykh nauk[deceased].; SILIN, S.I.

Prevention of pulmonary diseases in sheep. Veterinariia 33 no.10:
71-73 O '56. (MLA 9:10)

1. Vologodskaya nauchno-issledovatel'skaya veterinarnaya opyt'naya stantsiya (for Legantseva)
2. Starshiy veterinarnyy vrach Vologodskoy Mashinno-traktornoy stantsii (for Tronin).
3. Glavnyy zootekhnik Vologodskoy Mashinno-traktornoy stantsii (for Silin).

(Sheep--Diseases) (Lungs--Diseases)

SILIN, S.S. Cent Tech Sci (diss) "Investigation of thermal
phenomena in ^{cylindrical} ~~surface~~ surface grinding." Mos, 1956 16 pp 20 cm.
(USSR Min Higher Ed, ^{just} ~~USSR~~ Mos Aviation Technol^{Inst}) 100 copies
(KL,11-57, 98)

122-5-19/35

AUTHORS: Isayev, A.I. (Dr.Tech.Sc., Professor) and Silin, S.S. (Engineer)

TITLE: Computation Procedure for the Surface Temperature in Grinding.
(Metodika rascheta temperatur pri shlifovanii)

PERIODICAL: Vestnik Mashinostroyeniya, 1957, Nr 5, pp.54-59 (USSR)

ABSTRACT: An analysis of the temperature field proceeds from the differential equation of heat conduction solved for the case of a plane heat source at the boundary of a semi-space. A heat source of limited duration is introduced and yields a temperature field at the end of the process. The variables of grinding, combined in a power formula for the grinding force, according to E.N.Maslov (Ref.2), yield a heat balance for the total heat distributed between the component, the wheel and the chip. The variation of this balance is shown at different depths of grinding and workpiece surface speeds. 60 to 85% of the total heat are retained in the workpiece. The percentage diminishes with increasing depth and speed. With abundant coolant, the resulting heat expansion does not exceed a small fraction of a micron. The analysis also yields the maximum contact temperatures. The computed values are plotted against the grinding depth, the rate of feed and the

Card 1/2

AS. 1981.

determine thermophysical constants for grinding wheels.

by 1.7. 19.32 16.16. 19.32.

(HLM 10:2)

(grinding wheels)

ISAYEV, A.I., doktor tekhnicheskikh nauk, professor; SILIN, S.S., inzhener.

Calculating quantities of heat due to grinding. Vest.mash. 37
no.5:54-59 My '57. (MLRA 10:5)
(Grinding and polishing)

5.1.1.1, S.S.
25(1) P. 2

PHASE I BOOK EXPLOITATION SOV/3090

Moscow. Aviatsionnyy tekhnologicheskii institut

Issledovaniye protsessov vysokoproizvoditel'noy obrabotki metallov rezaniyem
(Analysis of High-productivity Metal-cutting Processes) Moscow, Oborongiz,
1959. 130 p. (Series: Its: Trudy, vyp. 38) 3,600 copies printed.

Sponsoring Agency: Ministerstvo vysshego obrazovaniya SSSR.

Ed. (Title page): A.I. Isayev, Doctor of Technical Sciences, Professor; Ed.
(Inside book): S.I. Bumshteyn, Engineer; Ed. of Publishing House:
P.B. Morozova; Tech. Ed.: N.A. Pukhlikova; Managing Ed.: A.S. Zaymovskaya,
Engineer.

PURPOSE: This collection of articles is intended for designers and engineers
in the field of machine-tool equipment and mechanical machining. It may
also be useful to workers at scientific research institutes and aspirants.

COVERAGE: This collection of articles deals with problems arising in high-
productivity metal-cutting processes. Emphasis is given to grinding operations
for parts made from constructional alloys. Machining regimes and methods

Card 1/3

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Analysis of (Cont.)

of improving machining operations are presented. No personalities are mentioned. References follow each article.

TABLE OF CONTENTS:

Preface

Isayev, A.I. [Doctor of Technical Sciences], and S.S. Silin [Candidate of Technical Sciences]. Investigation of Forces and Temperatures During Grinding
The authors describe the method and technique used in an investigation of the effect and relationship of forces and temperatures during grinding. Experimental data are presented.

Isayev, A.I., and S.S. Silin. Effect of the Temperature at Grinding on Changes in the Properties of the Surfaces of the Parts Being Worked
The authors discuss thermal processes, phase transformations, and stresses in the surface layers of metals during grinding.

Isayev, A.I., and A.F. Nesmelov [Candidate of Technical Sciences]. Cutting Constructional Gold Alloys

Card 2/3

VK/jb
1-29-60

00513R001550610009-4

SILIN, S.S.

Calculation of temperature fields under the action of moving
heat sources. Inzh.-fiz. zhur. no.12:73-80 D '63.
(MIRA 17:2)

1. Vecherniy aviatsionnyy tekhnologicheskii institut, Rybinsk.

SILIN, S.S.

Calculation of temperature fields in the thermal boring of glacial strata. Inzh.-fiz. zhurn. 8 no 10105-109 Ja '65. (MIRA 18:3)

1. Vecherniy aviatsionnyy tekhnologicheskii institut, Vybinak.

ACC NR: AH6032372

Monograph

UR/

Belousov, A. I. (Docent, Candidate of Technical Sciences); Bobrik, P. I. (Docent, Candidate of Technical Sciences); Rakhman-Zade, A. Z. (Candidate of Technical Sciences); Silin, S. S. (Docent, Candidate of Technical Sciences); Uspenskiy, N. V. (Docent); Khvorostukhin, L. A. (Docent, Candidate of Technical Sciences); Sheryshev, V. I. (Candidate of Technical Sciences)

Thermal phenomena and machinability of aircraft materials (Teplovyie yavleniya i obrabatyvayemost' rezaniyem aviatsionnykh materialov) Moscow, Izd-vo "Mashinostroyeniye," 1966. 178 p. illus., biblio. (At head of title: Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya RSFSR) Errata slip inserted. 2400 copies printed.

Series note: Moscow. Aviatsionnyy tekhnologicheskiy institut. Trudy, vyp. 64

TOPIC TAGS: heat-resistant steel, heat-resistant alloy,
heat generation, heat phenomena, gear threading, thread grinding, aircraft material, material machinability, metal machining

Cord

1/3

LL0C: 621.910.71:669.14.018.45

ACC NR: AM6032372

PURPOSE AND COVERAGE: This book is intended for engineering personnel of machine-building plants, scientific research institutes and plant laboratories. It may also be useful for students of schools of high technical education specializing in technology. The book reviews the most important problems of heat generation in the process of machining various aircraft materials and its effect on material machinability. New methods of machining procedure are discussed on the basis of analysis of physical and mechanical properties of materials. Theoretical analysis of heat-affected zones in machining is presented along with examples of its calculation. Also discussed are specific thermal phenomena and the process of machining light-weight and copper alloys at a speed up to 10,000 m/minute. Separate chapters are devoted to an analysis of thermal phenomena and machinability relative to gear threading at thread grinding. Chapters I and IV are written by Docent P. I. Bobrik, Cand. of Tech. Sciences; Ch. II. by Docent A. I. Belousov, Cand. of Tech. Sciences; Ch. III by Docent L. A. Khvorostukhin, Cand. of Tech. Sciences; Ch. V. by Docent S. S. Silin, Cand. of Tech. Sciences; Ch. VI. by Docent N. V. Uspensky; Ch. VII by V. I. Sheryshev, Cand. of Tech. Sciences; and Ch. VIII by A. Z. Rakhman-Zade, Cand. of Tech. Sciences.

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ACC NR: AH6032372

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Ch. II. Thermodynamic Calculation of Machined Zones -- 49

Ch. III. Plastic Deformation and Heat Generation in the Shear Zone -- 86

Ch. IV. Summary of Experimental Methods of Investigating Heat-Affected Zones in Machining -- 95

Ch. V. Establishing Criterion in Metal Machining on the Basis of Studies of Heat Phenomenon -- 102

Ch. VI. Effect of the Quality of Disk Strengthening on the Temperature in Grinding Threads of Aircraft Material -- 138

Ch. VII. Temperature Dependence in Gear Milling of Heat-Resistant Alloys and Titanium Alloys -- 148

Ch. VIII. Heat Phenomena in Ultra-speed Machining of Wrought Aluminum Alloys -- 159

SUB CODE: 13/ SUBM DATE: 05Mar66/ ORIG REF: 065/ OTH REF: 007/

Cord 1/3

SILIN, V., inzh.

Hoist for delivering heavy loads to a railroad platform. Miss.
ind. SSSR 29 no. 449 '58. (MIRA 11:8)

1. Astrakhanskiy myasokombinat.
(Packing houses--Equipment and supplies)

SILIN, V., inzh.

Inclined hoist for carrying meat. Mas. ind. SSSR 29 no. 4,48 '58.
(MIRA 11:8)

1. Astrakhanskiy myasokombinat.
(Packing houses--Equipment and supplies)

SILIN, V.

Dehorning with a head cleaver. Mias. ind. SSSR 30 no.3:47 '59.
(MIRA 12:9)

1. Astrakhanskiy myasokombinat.
(Astrakhan--Slaughtering and slaughterhouses--Equipment and supplies)

SILIN, V.

Efficiency promoters and M. ind. USSR 31 Nov 50 61
1960. (MIRA 14:7)

1. Astrakhanskiy myasokombinat.
(Meat industry--Equipment and supplies)

SILIN, V.

New design of an electric saw for sawing breastbones. Mias.
Ind. SSSR 31 no.5:41-42 '60. (MIRA 13:9)

1. Astrakhnaskiy myaskombinat.
(Astrakhan--Packing houses--Equipment and supplies)

SILIN, V.

Fork lift for slaughterhouse by-products. Mias.ind. SSSR 31
no.6:44 '60. (MIRA 13:12)

1. Astrakhanskiy myasokombinat
(Meat industry--Equipment and supplies)

SILIN, V.

Screw conveyer for removing of kanyga (stomach contents of ruminants). Mias. ind. SSSR 32 no. 1:45-46 '61. (MIRA 14:7)

1. Astrakhanskiy myasokombinat.
(Slaughtering and slaughterhouses)
(Conveying machinery)

SILIN, V.

Device for testing the strength of shackle chains. Mas.ind.
S.S.S.R. 33 no.6144 '62. (MIRA 16:1)

1. Astrakhanskiy myasokombinat.
(Meat industry—Equipment and supplies)

SILIN, V.

Protection against corrosion of steam pipe systems. *Mias.ind.* SSSR 33
[i.e.34] no.2:54 '63. (MIRA 16:4)

1. Astrakhanskiy myasokombinat.
(Steampipes—Corrosion)

SILIN, V.

Guards for the VO-150 pressure rollers. Mias.ind. SSSR 34 no.1:56
'63. (MIRA 16:4)

1. Astrakhanskiy myasokombinat.
(Food machinery—Safety appliances)

SILIN, V.

Bins for the collection of wet feathers of water fowl. Mias.
Ind. SSSR 34 no.4:48 '63. (MIRA 16:10)

1. Astrakhanskiy myasnoy kombinat.

SILIN, V.A.; DUBROVSKIY, Ye.Ya.

Transfer of molasses and sugar-beet pulp by means of pump designed by the Scientific Research Institute of the Local Industry. Sakh. prom. 35 (MIRA 14:3)
no.2:28-20 W '61.

1. Nauchno-issledovatel'skiy institut mestnoy i toplivnoy promyshlennosti.
(Sugar machinery)

BREYEV, M.V., doktor ekon. nauk; ~~STILIN, V.A.~~; BYCHEK, N.R., kand.
ekon. nauk; GREBTSOV, G.I., kand. ekon. nauk; ITKINA, A.S.,
kand. ekon. nauk; KOKOREV, M.V., kand. ekon. nauk; KOMIN,
A.N., kand. ekon. nauk; LIPSITS, V.B., kand. ekon. nauk;
OZORNOV, A.K., kand. ekon. nauk; ORLOV, N.M., st. prepod.;
SEREDNITSKAYA, Ye.K., kand. ekon. nauk; SMEKHOV, B.M.,
doktor ekon. nauk; FEL'D, S.D., kand. ekon. nauk; LISOV,
V.Ye., red.; TARASOVA, T.K., mlad. red.; GERASIMOVA, Ye.S.,
tekhn. red.

[Planning the national economy of the U.S.S.R.] Planirovanie
narodnogo khoziaistva SSSR. Moskva, Ekonomizdat, 1963. 621 p. -
(MIRA 16:8)

1. Moscow. Institut narodnogo khozyaystva.
(Russia--Economic policy)

KUTUSHEV, F. Kh, (Leningrad, K-156, pr. Engel'sa, d.28, kv.150); KOLESOV,
Ye.V.; UVAROV, B.S.; ZORIN, A.B.; SILIN, V.A.

Angiocardiography in cardioplegia and control of the cardiac
rhythm. Vest. khir. 91 no.8:17-26 Ag'63 (MIRA 17:3)

1. Iz 1-y khirurgicheskoy kliniki usovershenstvovaniya vrachey
i kafedry anesteziologii (nachal'nik - prof. P.A. Kupriyanov
[deceased]) Voenno-meditsinskoy ordena Lenina akademii imeni
Kirova.

Cand Tech Sci

CHIL, V. A., Engineer

Dissertation: "Theoretical and Experimental Investigation of Screw Conveyor
and Feat Press."

31/1/50

Peat Inst

80 Vecheryaya Moskva
Sum 71

CA

21

Study of the elastic and residual deformation of peat V. A. Shinn. *Kolloid. Zhur.* 13, 51-4(1951). -Cylinders of peat (diam. 4.5, height 9.0 cm.) were compressed along the axis and allowed to expand again, and the hysteresis loops of the relative compression against time were detd. From the elastic part of the deformation, the modulus of elasticity E was calcd. For a peat contg. 85% H_2O with 10% ash, E was 3 kg. wt./sq. cm. both parallel and across the stratification. The cylinder collapsed at 0.5 kg./sq. cm. when the pressure was normal, and at 0.1 kg./sq. cm. when it was along the layers. A peat contg. 82% H_2O had $E = 10, 1.2$, and 0.75 before, after one, and after 10 passages through a meat grinder.

J. J. Bikerman

190

SILIN, V.A., kandidat tekhnicheskikh nauk.

Study of the press screws of peat machines. Trudy Inst.torf. AN
BSSR 4:138-149 '55. (MLBA 9:3)

1. Ukrainskiy nauchno-issledovatel'skiy institut mestnykh vidov
topliva.

(Peat machinery)

SOV/124-58-5-6117

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 5, p 155 (USSR)

AUTHOR Silin, V.A.

TITLE Stress-strain Distribution in Specimens Under Compression, Tension, and Torsion (Raspredeleniye napryazheniy i deformatsiy v obraztsakh pri ikh szhatii, rastyazhenii i kruchenii)

PERIODICAL Tr. Ukr. n.-i. in-ta mestn. i toplivn. prom-sti, 1956, Nr 10, pp 98-109

ABSTRACT A graphoanalytical method of solution is presented enabling the author to determine the wedgelike regions of nondeformation of the specimen material under compression, the slip surfaces, and the regions of chipping. The angle of shearing as obtained from the specimen on failure is used to obtain an approximated relationship for the determination of the coefficient of transverse deformation of the metal. Experimental data are given. An attempt is made to apply the graphoanalytical method to the study of stress distribution in the vicinity of grooves, fillets, and holes. Bibliography: 6 references.

Card 1/1 1. Metals--Stresses 2. Stress analysis A.M. Sinyukov
3. Metals--Test methods

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 9, p 4 (USSR) SOV/124-57-9-9856

AUTHOR: Silin, V. A.

TITLE: Analog Simulation of Physical Processes (Modelirovaniye fizicheskikh protsessov)

PERIODICAL: Tr. Ukr. n. -i. in-ta mestn. i toplivn. prom-sti, 1956, Nr 11, pp 190-212

ABSTRACT: Bibliographic entry

Card 1/1

SILIN, V.A., dots., kand.tekhn.nauk

Analytical calculations of pressure screws on screw presses. Nauch.
dokl. vys. shkoly; gor. delo no.3:176-183 '58. (MIRA 11:9)

1. Predstavlena kafedroy tekhnologii torfodobyvaniya Kiyevskogo instituta
inzhenerov vodnogo khozyaystva.
(Power presses)

SILIN, V.A., inzh.

The PBK-3 suspended pneumatic screwdriver used in oil well drilling.
Bezop.truda v prom. 5 no.6:22-23 Je '61. (MIRA 14:6)
(Screwdrivers)

VERBEE, V.I.; GEKKER, I.R.; GOL'TS, E.Ya.; DELONE, G.A.; KONONOV, B.P.;
KUDREVATOVA, O.V.; IUK'YANCHIKOV, G.S.; RABINOVICH, M.S.; SAVCHENKO,
N.M.; SARKISYAN, K.A.; SERGIYCHEV, K.F.; SILIN, V.A.; TSOPP, L.E.

Interaction between plasma clots and electromagnetic waves. Atom.
energ. 18 no.1:14-18 Ja '65. (MIRA 18:2)

POLOV, D.P.; SCHAYAN, F.A.; SHIN, V.A.; TSOL, L.L.

Acceleration of a plasma by a type H₁₁ electromagnetic wave in
a circular wave guide. Zhur. tekhn. fiz. 35 no.1:51-55 Ja '65.
(MIRA 18:3)

IATKIN, M.Ya.; PARATUN, V.N.; SILIN, V.A.; MODLIN, A.G.

New method for the control of the impurity of spinnerets.

Khim. volok. no.2:58-59 '65.

(MIPA 18:6)

1. Mogilevskiy zavod im. Kuybysheva.

L 4241-66 INT(1)/ETC/EPF(n)-2/ENG(m)/EPA(w)-2 LJP(c) 06/AT
ACCESSION NR: AT5007972 S/0000/64/000/000/1017/1022
AUTHOR: Veksler, V. I.; Gekker, I. R.; Gol'ts, E. Ya.; Delone, G. A.; Kononov, B. P.; Kudrevatova, O. V.; Lyk'yanchikov, G. S.; Rabinovich, M. S.; Savchenko, M. S.; Sarksyay, K. A.; Sergeychev, K. V.; Silin, V. A.; Tsopp, L. E.; Levin, M. L.; Muratov, N. Z.

TITLE: Radiational acceleration of plasma 21.44.55
Particle Accelerators. Subna, 1963.

TITLE: Radiational acceleration of plasma 21. 04.55
SOURCE: International Conference on High Energy Accelerators. Subna, 1963.
Trudy. Moscow, Atomizdat, 1964, 1017-1022
radiation acceleration, plasma waveguide

SOURCE: International Atomic Energy Agency, 1964, 1017-1022
Trudy. Moscow, Atomizdat, 1964, 1017-1022

TOPIC TAGS: high energy accelerator, plasma acceleration, plasma waveguide
the radiational method of plasma ac

TOPIC TAGS: high energy accelerator, plasma acceleration.

ABSTRACT: The practical realization of the radiational method of plasma acceleration (Veksler, V. I. CERN Symposium, 1956; *Atomnaya energiya* 2, 427, 1957) is connected with the utilization of a different kind of waveguide structure, within which a plasma bunch moves under acceleration by an electromagnetic field. Two such waveguide structures, differing in type of accelerating wave and in method of plasma injection, were produced recently in the Physics Institute, AN SSSR. Initial experiments showed that radiational acceleration of plasma was achieved in both of the structures. At the same time the Radiotechnical Institute, AN SSSR,

Card 1/2

L 4241-66

ACCESSION NR: AT5007972

carried out a theoretical study of the possibilities of the radiational method. The present report contains a brief exposition of all these investigations, under the two headings of: experimental results and theory of radiational acceleration. Both waveguide structures employed one and the same super high-frequency oscillator of 10 cm range which operated in the single-stage pulse regime of 8 microseconds duration; the average density of power flux through tube cross-section did not exceed $8 \cdot 10^3$ watts/cm², and the KSVN of the entire waveguide system (without plasma) was not worse than 1.3. The accelerating waveguides were tubes of circular cross-section with walls of noncorroding steel 1 mm thick; the vacuum in the tubes was of the order of 10^{-7} to 10^{-6} mm of mercury. The forces of the radiational pressure which act upon the plasma bunch are found by proceeding from the conservation laws. In the plane electromagnetic wave propagated in free space the density of pulse flux equals the average energy density. Orig. art. has: 7 figures, 26 formulas.

ASSOCIATION: Fizicheskiy institut imeni P. N. Lebedeva AN SSSR (Physics Institute, AN SSSR); Radiotekhnicheskiy institut AN SSSR (Radio Engineering Institute, AN SSSR)

SUBMITTED: 26 May 64
NO REF SOV: 008

ENCL: 00
OTHER: 003

SUB CODE: NP.

dVK
Card 2/2

PAVLOV, M.YA.; LITVIN, V.A.; KILPNITSKAYA, L.P.

Guide for simplified quality control of viscose. Khim. volok.
no. 5:69-70 '65. (MIRA 18:10)

1. Mogilevskiy zavod iskusstvennogo volokna.

L 10402-67 EWT(1) IJP(c) AT
ACC NR: AT6033036

SOURCE CODE: UR/2504/66/032/000/0060/0079
29

AUTHOR: Vekslor, V. I.; Gakker, I. R.; Gol'ts, E. Ya.; Kononov, B. I.; Luk'yanchikov, G. S.; Rabinovich, M. S.; Sarkisyan, K. A.; Serkerchev, K. F.; Silin, V. A.; Tsyp, L. E.

ORG: none

TITLE: Radiation acceleration of a plasma

SOURCE: AN SSSR. Fizicheskii institut. Trudy, v. 32, 1966. Fizika plazmy (Plasma physics), 60-79

TOPIC TAGS: plasma acceleration, HF oscillator

ABSTRACT: The article is of the review type (41 literature references) and surveys work done in the field in the Soviet Union, Japan, the United States and France. After a general mathematical introduction to the subject, the authors describe the first experiments on the radiation acceleration of plasmas using superhigh frequency generators. Detailed diagrams are given of two such systems. Detailed consideration is given to the investigation of the special characteristics of the interaction of superhigh frequency oscillations in a plasma, including the effect of plasma resonance, and the acceleration of a plasma by the action of the gradient of a superhigh frequency field. The two final sections deal respectively with the acceleration of a plasma in

Card 1/2

L 10402-67

ACC NR: AT6033036

a longitudinal magnetic field, and the injection of pure hydrogen plasma clusters of small size. Orig. art. has: 15 formulas and 17 figures.

SUB CODE: 20/ SUBM DATE: none/ ORIG REF: 026/ OTH REF: 015

Card 2/2

L 23868-65 EWT(1)/EWG(k)/EPA(sp)-2/EPA(w)-2/EEC(t)/T/EEC(b)-2/EWA(m)-2
Fz-6/Po-4/Pab-10/Pi-4 IJP(c) DM/AT

S/0089/65/018/001/0014/0018 B

ACCESSION NR: AP5003998

AUTHOR: Vekselor, V. I.; Gekkor, I. R.; Gol'ts, E. Ya; Delone, G. A.; Kononov, B. P.;
Kudroyatova, O. V.; Luk'yanchikov, G. S.; Rabinovich, M. S.; Savchenko, M. N.; Surkov, M. A.;
K. A.; Sergeychev, K. P.; Silin, V. A.; Tsopp, L. E.

TITLE: Interaction of plasma bunches with an electromagnetic wave

SOURCE: Atomnaya energiya, v. 18, no. 1, 1965, H-18

TOPIC TAGS: plasma clot, plasma clot acceleration, plasma clot
radiative acceleration, H sub 01 wave, H sub 11 wave

ABSTRACT: Preliminary experimental results are given of an investigation of the radiative acceleration of plasma in circular waveguides. The investigation was conducted in a 10-cm range with H₀₁ and H₁₁ waves. Different plasma injectors were used. Plasma bunches with an initial particle concentration of 10¹² cm⁻³ and higher were injected with a 5 x 10⁶ cm/sec velocity from a spark source or were generated directly on the axis of the waveguide by means of a plasma source at a pressure drop of 10⁻⁷—10⁻⁶ mm Hg of the operating vacuum in an accelerator. Electric detectors, superhigh-frequency methods, and an electrostatic analyzer of particle energy were used for the investigation.

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ACCESSION NR: AP5003998

tion. External magnetic fields with various configurations were used to confine the plasma. Accelerated ions with energies exceeding 10 kev were obtained regardless of the type of wave in the waveguide or the kind of plasma injector. The energy of the accelerated ions increased as the superhigh-frequency power increased. The total number of accelerated particles was of the order of 10^{12} . Maximum energy was 50 kev. The application of nonhomogeneous fields for the stabilization of the transverse dimensions of plasma bunches was shown to be feasible. There were practically no plasma losses on the waveguide walls when quadrupole or sextupole magnetic fields were used. Orig. art. has: 7 figures. [JA]

ASSOCIATION: none

SUBMITTED: 22Apr64

ENCL: 00

SUB CODE: ME,EM

NO REF SOV: 008

OTHER: 001

ATD PRESS: 3178

Card 2/2

L 23060-65 EWT(d)/EWT(l)/EWG(k)/EPA(sp)-2/EEC(k)-2/EEC-4/EPA(w)-2/EEC(t)/T/
 EEC(b)-2/EWA(m)-2 Pg-4/Pi-4/Pk-4/Pl-4/Po-4/Pq-4/Pz-6/Pab-10 IJP(c) AT

S/0057/65/035/001/0051/0055

ACCESSION NR: AP5003236

AUTHOR: Kononov, B. P.; Sarksyayn, K. A.; Silin, V. A.; Tsopp, L. E.

TITLE: Plasma acceleration with the aid of an electromagnetic H_{11} -type wave in a circular waveguide

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 1, 1965, 51-55

TOPIC TAGS: plasma, plasma acceleration, plasma bunch, circular waveguide, electromagnetic wave

ABSTRACT: The acceleration of plasma bunches with the aid of a strong electromagnetic H_{11} wave in the decimeter range in a circular waveguide has been experimentally investigated. The plasma was generated by a source with a pressure drop. An external magnetic field was used to confine the plasma bunch. The experimental setup consisted of a superhigh-frequency generator, a plasma source, an accelerating waveguide with a focusing magnetic field, and measuring devices. The generator produced single 1.5 Mw pulses of 10 usec duration. An H_{01} wave from a rectangular waveguide was transformed into an H_{11} wave in a circular waveguide. The pressure in the waveguide was $1-2 \times 10^{-6}$ mmHg.

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L 23060-65

ACCESSION NR: AP5003236

The measurements showed that during a radiative plasma acceleration the ions acquired different energies. The character of the interaction of the wave with the plasma depends on the relationship between the frequency of the incident wave (ω) and the frequency of the Langmuir oscillations in the plasma (ω_e). At $\omega > \omega_e$ the plasma bunch is transparent, and if its size is smaller than the wavelength a coherent interaction takes place and the total acting force is proportional to the number of electrons in the plasma bunch. It is suggested that ions with energies of 50 kev and higher appear as a result of resonance acceleration of plasma bunches of small effective size. Such bunches can appear during plasma decay. Orig. art. has: 5 figures.

[JA]

ASSOCIATION: none

SUBMITTED: 16Feb64

ENCL: 00

SUB CODE: ME,EM

NO REF SOV: 006

OTHER: 002

ATD PRESS: 3173

Card 2/2 .