

MEL'NIKOV, T.I.; TITOVA, I.D.

Operating a hydraulic transportation system for tailings
from the Magnitogorsk ore dressing plants. *ibid.* 1954, no. 6:
41-49 '59. (MIRA 14:8)
(Hydraulic conveying)
(Magnitogorsk--Tailings (Metallurgy))

MEL'NIKOV, T.I., inzh.

Nomographic charts from the calculations of the formulae of G.N. Roer for determining the critical speed and hydraulic incline of partially silt-filled pulp pipelines. Izv. vys. ucheb. zav.; gor. zhur. no. 3:90-99 '60. (MIRA 14:5)

1. Magnitogorskiy gornometallurgicheskiy institut. Rekomendovana kafedroy gornykh mashin i rudnohnogo transporta. (Hydraulic mining) (Nomographs)

MEL'NIKOV, T.I., inzh.

Nomograms for calculating silt-free and partially silted pulp lines. Izv. vys. ucheb. zav.; gor. zhur. no.5:122-130 '61.
(MIRA 16:7)

1. Magnitogorskiy gornometallurgicheskiy institut imeni G.I. Nosova. Rekomendovana kafedroy gornoy mekhaniki.
(Hydraulic conveying)
(Nomography(Mathematics))

MEL'NIKOV, T. I., inzh.

Operating conditions in transporting pulp by pipe in ore-dressing plants. Izv. vys. ucheb. zav.; gor. zhur. no.9: 163-172 '61.

(MIRA 15:10)

1. Magnitogorskiy gornometallurgicheskiy institut imeni Nosova. Rekomendovana kafedroy obogashcheniya poleznykh iskopayemykh.

(Ore dressing) (Hydraulic conveying)

MEL'NIKOV, T.I., starshiy prepodavatel'

Characteristics of tailings of Magnitogorsk ore-dressing plants
and their effect on the control of the operation of pulp pipelines.
Izv.vys.ucheb.zav.; gor.zhur. 5 no.2:149-157 '62. (MIRA 15:4)

1. Magnitogorskiy gornometallurgicheskiy institut imeni G.I.Nosova.
Rekomendovana kafedroy gornoy mekhaniki.
(Magnitogorsk--Tailings (Metallurgy))
(Hydraulic conveying)

MEL'NIKOV, T.I., inzh.

Determination of the location of suction pumping stations
for plant tailing pipelines. Gor. zhur. no.12:42-47
D '62. (MIRA 15:11)

1. Gornoye upravleniye Magnitogorskogo metallurgicheskogo
kombinata.
(Hydraulic conveying) (Pumping machinery)

MEL'NIKOV, T.I., inzh.

Effect of solid-fluid mixtures on changes in the characteristics of suction dredges. Izv. vys. ucheb. zav.; gor. zhur. 7 no.3:111-117 '64 (MIRA 17:8)

1. Magnitogorskiy gorno-metallurgicheskiy institut imeni G.I. Nosova. Rekomendovana kafedroy gornoy mekhaniki.

MEL'NIKOV, T.I., inzh.

Deriving formulas for determining the hydraulic slope of a pulp duct. Izv. vys. ucheb. zav. gor. zhur. no. 4:119-124 '64. (MIRA 17:7)

1. Magnitogorskiy gornometallurgicheskiy institut imeni G.I. Nosova. Rekomendovana kafedroy mekhanizatsii gornyykh rabot i rudnichnogo transporta.

SHTOKMAN, I.G., doktor tekhn.nauk; MEL'NIKOV, T.V., inzh.; POLUYANSKIY, S.A.,
gornyy inzhener

Experimental research on increasing the speed of the chains of
scraper conveyers. Vop. rud. transp. no.2:9-14 1957,

(MIRA 14:4)

1. Dnepropetrovskiy gornyy institut (for Shtokman). 2. Khar'kovskiy
zavod "Svet shakhtera" (for Mel'nikov). 3. Institut gornogo
dela AN USSR (for Poluyanskiy).

(Conveying machinery--Testing)

L 25946-66 EWT(d)/ES(m)/EWT(1)/EWP(m)/EWT(m)/EWA(d)/T-2/EWP(h)/EWA(1) WW

ACC NR: AP6011677 SOURCE CODE: UR/0209/66/000/004/0056/0057

AUTHOR: Mel'nikov, V. (Engineer, Colonel)

61
B

ORG: None

TITLE: Conditions for rolling of fighter aircraft at supersonic speeds

SOURCE: Aviatsiya i kosmonavtika, no. 4, 1966, 56-57

TOPIC TAGS: fighter aircraft, supersonic aircraft, ^{supersonic} aerodynamics, ~~aircraft wing~~, ~~aircraft tail~~

ABSTRACT: The aerodynamic conditions affecting the weathercock stability of a fighter flying at supersonic speed are explained. This stability diminishes with the increase of supersonic speeds and angles of attack. The measures taken for improving the weathercock stability were enumerated, such as the enlargement of the fin rudder unit, addition of ventral rudder fins, use of plane-wedge profile and non-obstructed twin-fins tail unit, etc. However, in case of modern aircraft with swept or delta wings, the lateral stability increases with the angle of attack at high speeds and altitudes while

Card 1/2

2

L 25946-66

ACC NR: AP6011677

the weathercock stability continues to decrease. Such unfavorable correlation between two stabilities can originate an intensive rolling of the fighter aircraft regardless of deflections of ailerons and rudder. An example of a right-wing rolling was examined by means of a diagram, and the aerodynamic forces actuating the rolling were considered. The decrease in weathercock stability initiated a considerably side-slipping at vertical overloads, while the increase in lateral stability lead to the development of great velocities. In general, the efficiency of ailerons decreases at high supersonic speeds. Their actions and effect on the weathercock stability and the aircraft rolling was discussed. In order to avoid the rolling it is recommended to follow strictly the instructions established for piloting fighter aircraft. Orig. art. has: one figure.

SUB CODE: 01 / SUBM DATE: None / ORIG REF: 000 / OTH REF: 000

Card 2/2 *das*

Melnikov, V.

AID P - 4472

Subject : USSR/Aeronautics - Aircraft (helicopters)

Card 1/1 Pub. 58 - 9/10

Authors : Babenko, A., and V. Melnikov

Title : Helicopters over the North Pole

Periodical : Kryl. rod., 2, 18-19, F 1956

Abstract : Description of the flight of two Soviet helicopters from Moscow to the Soviet polar bases "North Pole 3" and "North Pole 4". The article gives information on the navigation difficulties the crews had to overcome, and indicates the route followed by the helicopters. Three photos. The article is to be continued.

Institution : None

Submitted : No date

AID P - 4671

Subject : USSR/Aeronautics - Helicopters

Card 1/1 Pub. 58 - 11/14

Author : Babenko, A. and V. Melnikov (photo from *Soviet Journal*)

Title : Helicopters over the North Pole

Periodical : Kryl. rod., 3, 18-19, Mr 1956

Abstract : The second and last installment of the article begun in the periodical's February issue narrates the life of a crew of a Soviet helicopter attached during the winter of 1955-1956 to the Soviet polar base "North Pole 3" established on a drifting floe somewhere north of Greenland. This second installment contains no factual data of informative value. One photo.

Institution : None

Submitted : No date

YEREMIN, S.; USKOV, V., pilot 1 klassa, komandir korabliya;
MEL'NIKOV, V. (Ul'yanovsk); KONYUKHOV, V., dispatcher;
SHARKOV, V.; LUN'KOV, N.; AVDOSHKO, M.; BOCOYAVLENSKAYA, N.

Aeronautical kaleidoscope. Grazhd. av. 21 no.6:16-17 Ja '64.

(MIRA 17:8)

1. Tselinogradskiy aeroport (for Konyukhov).

L 44419-66 EWT(d)/EWT(m)/EWP(w)/T-2/EWP(k)/EWP(h) WW/EM

ACC NR: AP6010048 SOURCE CODE: UR/0209/66/000/003/0067/0072

AUTHOR: Mel'nikov, V., (Colonel Corps of Engineers)

57
B

ORG: none

TITLE: Intensive rotation modes of a delta-wing aircraft 4

SOURCE: Aviatsiya i kosmonavtika, no. 3, 1966, 67-72 26

TOPIC TAGS: superconis aircraft, aircraft maneuver, aerodynamic stability, aerodynamic force, delta wing aircraft, rotation mode

ABSTRACT: The author supplies some information on techniques and procedures in piloting a supersonic delta-wing aircraft. The roll, yaw, angular velocity, and moment of inertia are analyzed. Aerodynamic, lateral, and longitudinal stabilities are described. Aerodynamic forces affecting the stabilizer during a sliding motion of the aircraft are given. Orig. art. has: 5 figures. 26 [NT]

SUB CODE: 01/ SUBM DATE: none/

Card 1/1 20

MEL'NIKOV, V.A.

Paleozoic formations in Northern Caucasus and the genetic characteristics of pyrite deposits associated with them. Izv. vys. ucheb. zav.; tsvet. met. 5 no.6:3-13 '62.

(MIRA 16:6)

1. Severokavkazskoye geologicheskoye upravleniye. Rekomendovana kafedroy poleznykh iskopayemykh i poiskovo-razvedochnogo dela Severokavkazskogo gornometallurgicheskogo instituta.
(Caucasus, Northern--Geology, Stratigraphic)
(Ore deposits)

13,2530

28959
S/146/61/004/003/008/013
D217/D301

AUTHORS: Korolev, V.I., Makarychev, Yu.K., Mel'nikov, V.A.,
and Permyakov, N.V.

TITLE: An instrument for recording the angles of roll and
pitch angular velocities and accelerations

PERIODICAL: Izvestiya vysshnikh uchebnykh zavedeniy. Priboro-
stroyeniye, v. 4, no. 3, 1961, 75 - 82

TEXT: The author describe an instrument used for registering both
the roll and trim of ship angles. The system consists of a gyros-
copic element producing the input coordinate angle $\varphi(t)$ connected
to series-connected summing device, amplifier, servomotor, slylus
carriage with the position feedback loop between the slylus carriage
and adder. The sensing element is the vertical reference gyro
АГН-1 (AGI-1) or ДК-6М (DK-6M). Linear wire pickups fixed at the
axes of the gimbols serve as transducers. The voltage from the
pick-ups is added to the feedback signal and the signal error is

Card 1/4

An instrument for recording ...

28959
S/146/61/004/003/008/013
D217/D301

applied to the amplifier. The output of the amplifier feeds the control winding n_c of a two phase asynchronous motor type ЭМ-1 (EM-1). The output stages is built around tubes types 6П1П (6PIP) with anodes fed in antiphase from a transformer, whose center tap is connected through the n_y winding of the servo to the cathodes, so that a pulsating current is produced at the anode load, at a frequency double that of the supply (400 c/s). The grid winding n_c of the servo EM-1 connected directly to the supply 115V at 400 c/s through a phase shifting capacitor c_3 . The a.c. component of the pulsating current makes the rotor of the servo oscillate at the frequency of the 1st harmonic and the amplitude of oscillations depends on the relationship between the electromechanical constant of the servo and the period of the 1st harmonic of pulsating current. Thus oscillations result in the linearization of the system with coulomb friction and backlash in gear and pinion drives. To obtain signals proportional to the angular velocity of the ship roll or of the roll of ship models, two stage gyroscopes type

Card 2/4

28959

S/146/61/004/000/008/013
D217/D301

An instrument for recording ...

ЭУП -53 (EUP-53) are used. The zero-set level with input signal equal to zero is obtained by changing the voltage of one of the output valves. The instrument is moduli-built and consists of the following main blocs: 1) Gyroscopic angle pick-up; 2) Gyroscopic velocity pick-up; 3) Amplifiers; 4) Spooling mechanism and time marker; 5) Power supplies. The basic technical specification of the instrument is as follows: 1. Range of frequencies reproduced without distortion for roll and trim 0 to 1.2 c/s; 2. Maximum angles: roll $\pm 40^\circ$; trim $\pm 120^\circ$ (when using DK-6M as sensing elements both angles go up to $\pm 60^\circ$). 3. Maximum stylus deflection; 60 mm for roll and 40 mm for trim. 4. Accuracy of recording on paper tape 1° . 5. Range of measurements of angular velocities, roll, ships 0-40 deg/sec, models 0-200 deg/sec, trim, ships 0-20 deg/sec, models 0-100 deg/sec. 6. The range of measurements of angular accelerations, roll, ships 0-40 deg/sec², models 0-8000 deg/sec², trim, ships 0-40 deg/sec², models 0-800 deg/sec². 7. Time marker intervals on paper tape 0.5 sec. 1 sec. 2 sec. with accuracy 1%. 8. Speed of feed of paper tape at recording: 2 mm/sec, 4 mm/sec, 8 mm/

Card 4

An instrument for recording ...

S/146/61/004/003/008/013
D217/D301

sec. 9. Power supply d.c. mains 27 V and a.c. mains 127-220 V. 10. Dimensions of the instrument 630 x 420 x 350 mm. 11. Weight without the power supplies does not exceed 20 kg. There are 6 figures and 1 Soviet-bloc reference.

ASSOCIATION: Issledovatel'skiy, fiziko-tekhnicheskii institut Gor'-kovskogo gosudarstvennogo universiteta im. N.I. Lobachevskogo Rekomendivana GIFTL (Physics and Technology Research Institute of the Gor'kiy State University im. L.I. Lobachevskiy. Recommended by GIFTL)

SUBMITTED: December 14, 1960

Card 4/4

S/724/61/000/000/003/020

AUTHORS: Kolobnev, I. F., Mishin, G. Ya., Aristova, N. A., Shvyreva, L. V.,
Mel'nikov, V. A.

TITLE: Smelting and casting procedures for the AL19 alloy.

SOURCE: Liteynnye alyuminiyevyye splavy; svoystva, tekhnologiya plavki, lit'ya i termicheskoy obrabotki. Sbornik statey. Ed. by I. N. Fridlyander and M. B. Al'tman. Moscow, Oborongiz, 1961, 28-35.

TEXT: The paper describes the equipment and procedures employed in the smelting and casting of the AL19 alloy. While all types of standard furnaces can be employed, electric resistance furnaces, and especially inductance furnaces, are most effective in producing strong castings with a minimal porosity in the shortest possible time. The preparation of the preliminary alloy is described in detail, with due consideration to the burn-off of metals in various types of charges and in two types of furnaces. The charging order, including the principal components and the ligatures, is listed, and the refining of the melt by gaseous Cl or dehydrated chlorous Mn is described. A maximum smelting T of 720°C is recommended. This is followed by a step-by-step explanation of the sequence of the preparation of the working alloy. It is noted that, in the preparation of AL19 alloy, liquation and

Card 1/2

Smelting and casting procedures for the AL19 alloy. S/724/61/000/000/003/020

elevated porosity can be prevented only by thorough mixing and refining. In designing the process equipment for the casting of AL19 parts, it is necessary to provide a forced feed, a decentralized input of metal, and the application of input rods. Bottom pouring is established as the basic system of pouring cast AL19 alloy. For tall cylindrical castings it is recommended that a vertical-slot system with two pits be used. For large ingots the following basic parameters of the pouring system are specified: (a) The diameter of the risers is 18-25 mm; it is desirable to set up casting screen underneath the risers, also to provide a sufficient metal-receiver and slag-catcher volume; (b) the cross-section of the collectors must exceed the cross-section of the riser by 2-3 times; the number of slag catchers in the collector is determined by the metal volume of the mold and its size and complexity; (c) the total cross-section of the feeders must exceed the cross-section of the riser by 3 or 4 times, and the width of the feeder must not exceed 6-8 mm. The number and size of the overflow gates must be selected with due consideration of the most massive portions of the casting; the overflow system applicable for Silumin-type alloys is not suitable for the casting of AL19 alloy; the AL19 alloy has twice the viscosity of Silumin, so that especially high overflow gates do not operate satisfactorily; it is advisable to establish low overflow gates having an elliptic cross-section. There are 4 figures, and 3 tables; no references.

Card 2/2

MEL'NIKOV, V.A.

Geological and structural features of complex metal deposits in
the eastern part of the central Caucasus. Sov.geol. 5 no.4:
15-27 Ap '62. (MIRA 15:4)

1. Severo-Kavkazskoye geologicheskoye upravleniye.
(Caucasus--Ore deposits)

MEL'NIKOV, V.A.

Paleozoic stratigraphy of the northwestern Caucasus. Sov. geol.
7 no.11:129-134 N '64. (MIRA 18:2)

1. Severo-Kavkazskoye geologicheskoye upravleniye.

MELNIKOV, V.A.

1. Glavnyy upravleniye razvedki (GRU) - 1948. April. 1948. 1948.

1. Glavnyy upravleniye razvedki (GRU) - 1948. April. 1948. 1948.

MEL'NIKOV, V.A.

Use of furazolidone with feed antibiotics in poultry raising. Veterinariia 42 no.8:75-76 Ag '65.

(MIRA 18:11)

1. Glavnyy veterinarnyy vrach Ptitsevozoda "Ptichnoye",
Moskovskaya oblast'.

MEL'NIKOV, V.A.

Unit for the mass irradiation of poultry. Veterinariia 38
no.10:61 0 '61. (MIRA 16:2)

1. Glavnyy veterinarnyy vrach plemennogo ptitsevoda "Ptichnoye"
Moskovskoy oblasti.

(Ultraviolet rays—Therapeutic use)
(Poultry houses and equipment)

MEL'NIKOV, V. A. (Head Veterinary Surgeon of the breeding poultry farm "Ptichnoe",
Moscow Oblast)

"Utilization of urotropine in chicken coccidiosis"

Veterinariya, vol. 39, no. 4, April 1962 p. 47

MEL'NIKOV, V. A.

Potatoes

The square nest method of potato planting. Sad i og. no. 3: 1952.

Monthly List of Russian Accessions, LIBRARY OF Congress May 1952 UNCLASSIFIED.

PEL'NECV, V. A.

Harvesting Machinery

Mechanization of the potato harvest. Dost. sel'khoz, no. 6, 1952.

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

MEL'NIKOV, V.

Kvadratno-gnezdovaia posadka kartofe-
lia (Checkrowing potatoes). Moskva, "Molodaia gvar-
diia", 1953. 72 p. (Lessedy uchenykh o sel'skom kho-
ziaistve)

SO: Monthly List of Russian Accessions, Vol. 7, No. 5, August 1954

MEL'NIKOV, V. A.

Machinery for potato cultivation. Iss. 3., don. i perer. Moskva, Gos. izd-vo sel'khoz. lit-ry, 1953. 207 r. (Uchebniki i uchebnye posobie po rabote sel'skokhoziaistvennykh kadrov massovoi kvalifikatsii) (54-2 077)

SB211.PPMF 1953

MEL'NIKOV, V.A.

[Machinery for cultivating potatoes] Mashiny dlia vozdelevaniia
kartofelia. Izd.5., dop. i perer. Moskva, Gos.izd-vo sel'khoz.
lit-ry, 1959. 317 p. (MIRA 13:8)
(Potatoes) (Agricultural machinery)

BORDUKOVA, M.V., kand. sel'khoz. nauk; MEL'NIKOV, V.A., kand. sel'khoz. nauk; KOMKOVA, M.N., kand. sel'khoz. nauk; ALEKSEYEV, L.Z., agronom; MARSIMOVA, S.A., agronom; FAYATSYK, V.V., agronom; KHAYKEVICH, A.M., agronom; BYKOVA, M.G., red.; DEYEVA, V.M., tekhn. red.

[Handbook for the potato grower] Spravochnik kartofelelevoda.
Moskva, Sel'khozizdat, 1962. 335 p. (MIRA 16:2)
(Potatoes)

MELNIKOV, V. A.

"The High-Speed Electronic Computer of the USSR Academy of Sciences, BESM,
Its Reliability and Methods of Checking," 1956

Photostat copy available in Library

MEL'NIKOV, V. A. (Eng.)

"Certain Problems of Technical Operation of the BESM Electronic Computer of the Academy of Sciences USSR" a paper presented at the Conference on Methods of Development of Soviet Mathematical Machine-Building and Instrument-Building, i2-i7 March 1956.

Translation No. 596, 8 Oct 56

MEL'NIKOV, V; POZDIAKOV, S.

The BESM fast electronic calculating machine. Tekh.mol.24 no.3:
30-33 Nr 156. (MIRA 9:7)
(Electronic calculating machines)

MEL'NIKOV, V.A.

PHASE I BOOK EXPLOITATION

SOV/4096

Lebedev, Sergey Alekseyevich, and Vladimir Andreyevich Mel'nikov

Obshcheye opisaniye BESM i metodika vypolneniya operatsiy (General Description of the BESM Computer and Its Method of Performing Operations) Moscow, Fizmatgiz, 1959. 208 p. (Series: Elektronnaya tsifrovaya vychislitel'naya mashina BESM, 1) 15,000 copies printed.

Ed.: Yu. M. Bezborodov; Tech. Ed.: S. N. Akhlamov.

PURPOSE: This book is intended for persons working in computing centers, for students, aspirants, and scientific workers in the field of computational mathematics.

COVERAGE: The book is the first volume of a three-volume work on the BESM computer and its units. The book discusses fundamental parameters of the machine, the principles and mathematics on which it is based, and the relation between various fundamental units during the execution of machine operations. Operational principles and a general description of the arithmetic unit, control unit, memory unit, and input and output units are given.

Card 1/82

General Description of the BESM (Cont.)

SOV/4096

The book discusses arithmetic foundations and sequencing of machine operations. The second volume discusses in detail the arithmetic and control units and fundamental elements of the BESM. The third volume studies core storage and external storage on tapes and drums. The BESM is a high-speed digital computer developed by the Institute of Precision Mechanics and Computer Technology of the Academy of Sciences USSR, and has been in use since the fall of 1952. At the present time the BESM-2 is being readied for serial production. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

Foreword	7
Introduction	9
Fundamental Characteristics of the BESM	22
PART I. GENERAL DESCRIPTION OF THE BESM	
Ch. 1. Representation of Numbers	24
1. Coding numbers	24

Card 2/52

MEL'NIKOV, VA

PHASE I BOOK EXPLOITATION

SOV/3769

Lebedev, Sergey Alekseyevich, Academician, and Vladimir Andreyevich Mel'nikov

Elektronnaya tsifrovaya vychislitel'naya mashina BESM. [vyp.] 1: Obshcheye opisaniye BESM i metodika vypolneniya operatsiy (The Electronic Digital Computer BESM /High-Speed Electronic Computer/. No. 1: General Description of the BESM and Operation Methods) Moscow, Fizmatgiz, 1959. 208 p. 15,000 copies printed.

Ed. (Title page): S.A. Lebedev, Academician; Ed. (Inside book): Yu.M. Bezborodov; Tech. Ed.: S.N. Akhlamov.

PURPOSE: This book is intended for personnel of computing centers. It will also be of interest to students and scientific workers in computational mathematics.

COVERAGE: This book is the first volume of a 3-volume work on the BESM (High-Speed Electronic Computer) which was designed by the Institute of Precision Mechanics and Computing Engineering of the Academy of Sciences of the USSR. This volume provides a general description of the machine and its operating principles. Basic parameters of the machine as well as the mathematical basis of its

Card 1/5

The Electronic Digital Computer (Cont.)

SOV/3769

operation are given. A structural flow diagram is given and the interrelation between the basic units of the machine is explained. The arithmetical, control, input, and output units are described. An Appendix contains a list of abbreviations used. Volume II will provide a more detailed description of the arithmetical and other units. Volume III will treat in detail the memory units. No personalities are named. No references are given.

TABLE OF CONTENTS:

Foreword	7
Introduction	9
Main Characteristics of the BESM (High-Speed Electronic Computer)	22
PART I. GENERAL DESCRIPTION OF THE HIGH-SPEED ELECTRONIC COMPUTER	
Ch. 1. Representation of Numbers	24
1. Coding the numbers	24
2. Representation of numbers, taking into account their order	26

Card 2/ 5

The Electronic Digital Computer (Cont.)

80V/3769

3. Representation of negative numbers and negative orders	28
4. Conditionally infinitely large numbers and zero	30
5. Summary of data on the representation of numbers on the High-Speed Electronic Computer	32
Ch. 2. System of Instructions	34
1. Operation of the High-Speed Electronic Computer	34
2. Additional information on operations	35
Ch. 3. Block Diagram of the High-Speed Electronic Computer	56
1. Basic units	56
2. Typical sequence of operations	64
3. The sequence of operations involved in control transfer	67
4. Sequence of operations involved in transfer to MZU (Magnetic Core Storage)	71
5. Machine operation control	

Card 3/5

The Electronic Digital Computer (Cont.)

80V/3769

Ch. 4. Principles of Constructing the Basic Units	78
1. Standard blocks	78
2. Arithmetical unit	84
3. Control unit	90
4. Internal memory unit	96
5. External memory unit	102
6. Input of initial data and printing the computation results	107

PART II. METHODS OF PERFORMING OPERATIONS

Ch. 5. Arithmetical Operations	110
1. Addition and subtraction	110
2. Multiplication	136
3. Division	149
4. Changing the order of numbers	162
5. Double precision multiplication	165
6. Division with the determination of remainder	168
Ch. 6. Operations for Transfer of Instructions	174
1. Transfer of numbers	174
2. Transfer of the order of numbers	178
3. Exchange of instructions between memory units	181

Card 4/5

The Electronic Digital Computer (Cont.)

Ch. 7. Logical Operations	185
1. Shifting the instructions	185
2. Addition of instruction codes	187
3. Cyclical addition	189
4. Separation of the integral part of the number	190
5. Logical multiplication	194
Ch. 8. Operations for Conditional and Unconditional Transfers and Control Transfer	198
1. Comparison of numbers	198
2. Operations for transfer of control and unconditional transfers	202
3. Operations for stopping the machine	204
Appendix 1. List of Abbreviated Symbols	205
Appendix 2. Functional Diagram of Arithmetical Number Unit	209
Appendix 3. Functional Diagram of Arithmetical Order Unit	210

AVAILABLE: Library of Congress

JA/mas

Card 5/5

6-9-60

M. E. L. N. K. O. V. V. A.

28(2) PHASE I BOOK EXPLOITATION SCW/2673

Moscow. Dom nauchno-tekhnicheskoy prognozdy is. P. S. Dzerzhinskoye
Yuzhnoye tsekhovaya tekhnika i yeye primeneniye. (Computation Technique and Its
Application) Moscow, Gosenergoizdat, 1959. 306 p. (Series: Chabhestro
po rasprustraneniyu politicheskoyh i nauchnyh yadnyh razvitiy) 5,000 copies
printed.

M. (Title page); G. A. Lebedev, Izdatel'stvo; V. I. Serebryakov,
Tech. Ed.; G. I. Matveyev.

PURPOSE: This collection of articles is intended for scientific, engineering
and technical personnel engaged in research, design and operation of digital
and analog computers. It may also be used by students of vuzs specializing
in computers.

COVERAGE: The authors present fundamentals of digital computers, their elements
and units such as arithmetic units, internal and external memory and control
devices. They discuss the possibilities of constructing computers using serial-
conductor elements and consider the fundamentals in the theory of logical
circuits. They also consider problems of programming and explain the operation
of analog computers and their elements. Brief discussion of mathematical
models is also presented. The articles were presented at a computer semi-
nar arranged by Moskovskiy dom nauchno-tekhnicheskoy prognozdy iseni P. S.
Dzerzhinskoy (Moscow Center for Scientific and Technical Propaganda Iseni
P. S. Dzerzhinskoy) in 1957. No personalites are mentioned. References
appear at the end of some articles.

Melnikov, V. A., Engineer. Control Devices of Universal High-speed
Computers. The author discusses the principle of operation computer control devices
and describes the control panel. He also explains methods of checking
computer performance. There is 1 Soviet reference. 67

Reznish, V. V., Candidate of Technical Sciences. Operational Magnetic Memory 105
The author discusses the principle of using magnetic cores with the
rectangular hysteresis loop for operational memory units and describes
methods of storing, reading and recording information. He also discusses
the matrix method of connecting cores and explains the operation of
various matrix circuits such as those with a dynamic bias and with a
transfluor. Memory units for multichannel computers are also discussed.
There are 8 references: 2 Soviet and 6 English.

Laut, V. E. Operational Memory Units Using Cathode-ray Tubes 133
The author discusses the operation of memory units and presents a block
diagram of a parallel-connected memory circuit. He also discusses the
operation of various types of tubes used in memory circuits and describes
cathode-ray grid storage tubes and its operation. There are 1 reference,
both Soviet.

Rutakov, L. V., Engineer. Operational Memory Unit Using Capacitors and
Semiconductor Elements 156
The author discusses the principle of operation of memory units using
capacitors and semiconductor devices and describes their matrix circuits.
He discusses the construction of crystal diodes and presents the results
of an experiment conducted with a memory unit using a DiDa-f type diode.
He also discusses problems of increasing speed of operation of a memory
unit and considers the possibility of using transistors in memory cir-
cuits. There are 10 references: 1 Soviet and 9 English.

Vysokin, M. V. External Devices of Universal High-speed Computers 164
The author discusses input and output devices of high-speed computers
and describes methods of feeding information to computers and obtaining
calculated results. He also explains the operation of the external me-
mory. There are no references.

V. A. MEL'NIKOV

General description of the BESM electronic computer and the methods of executing the operations, by S. A. Lebedev and V. A. Mel'nikov. New York, USJPRS, 1961.

127 p. tables (JPRS: R-1730-D)

Translated from the original Russian: Obshcheye opisaniye BESM i metodika vpolneniya operatsiy, Moscow, 1959.

L 38254-66 EWT(m)

ACC NR: AP6028647

SOURCE CODE: UR/0020/66/166/006/1480/1483

AUTHOR: Popov, V. V.; Mel'nikov, V. A.; Kozlov, Yu. P.

ORG: Moscow State University im. L. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Certain physico-chemical changes in irradiated skin¹⁹ in connection with its formative peculiarities

SOURCE: AN SSSR. Doklady, v. 166, no. 6, 1966, 1480-1483

TOPIC TAGS: radiation biologic effect, skin physiology, tissue transplant, free radical, dermatology

ABSTRACT: The authors studied this question: if intensification of reactivity of irradiated skin is accompanied by a reduction in the level of radical processes taking place in it, then is the lower reactivity of sound-treated transplants not associated with an increase in the content of free radicals? Comparing the periods of the beginning and end of secondary induction of the horny layer in sound-treated, irradiated and normal skin with the dynamics of free radical reactions taking place, they concluded that there is a certain functional relation between physico-chemical or sub-microscopic processes in the cells of the epidermis and formative properties of skin transplants. This article was presented by Academician

A. N. Belozerskiy on 25 August 1965. Orig. art. has: 2 tables. [JPRS: 36,932]

SUB CODE: 06 / SUBM DATE: 25Aug65 / ORIG REF: 004 / OTH REF: 001

Card 1/1 MLP

UDC: 592.3

BARKIN, R.L.; MEL'NIKOV, V.B.

Plunger-type colorimeter for studying weakly colored solutions.
Zav.lab. 26 no.1:114-116 '60. (MIRA 13:5)

1. Vostochnyy filial Vsesoyuznogo teplo tekhnicheskogo nauchno-
issledovatel'skogo instituta imeni F.E. Dzerzhinskogo.
(Colorimeters)

MEL'NIKOV, V.D.

Use of antiphagic substances in the bacteriological study
of the feces of dysentery patients. Zhur. mikrobiol., epid.
i immun. 40 no.3:124-125 Mr '63. (MIRA 17:2)

1. Iz Leningradskogo sanitarno-gigiyenicheskogo meditsinskogo
instituta.

KOLESNEV, S.G., akademik, red.; LAPTEV, I.D., red.; LOZA, G.M., prof., red.;
MEL'NIKOVA, V.E., kand.ekon.nauk, red.; MOISEYEV, M.I., red.;
IVANOVA, A., red.; SMIRNOVA, Ye., tekhn.red.; PEVZHER, V., tekhn.red.

[Triumphs of socialist agriculture in the U.S.S.R.] Pobedy sotsia-
listicheskogo sel'skogo khoziaistva SSSR. Moskva, Gos.izd-vo sel'khoz.
lit-ry, 1958. 430 p. (MIRA 11:12)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk im.V.I. Lenina
(for Kolesnev). 2. Chlen-korrespondent Vsesoyuznoy akademii sel'sko-
khozyaystvennykh nauk im.V.I.Lenina (for Moiseyev).
(Agriculture)

VCZIYANOV, A.F.; BUZIN, V.A.; MEL'NIKOV, V.F.; SUSLIN, Yu.V.;
GEORGIYEVSKIY, V.S.

Ventilation of shielded working faces in steep seams of the
Donets Basin. Trudy Inst.gor.dela AN URSR no.11:53-65 '62.
(MIRA 16:2)

(Mine ventilation)

ALEKSEYEV, A.I.; Primali uchastiye: IVANOV, A.D.; LEBEDEV, D.F.;
DARENSFIKH, P.V.; BABKIN, N.I.; MEL'NIKOV, V.G.; NIKITIN, V.V.;
MUKHAMELOV, K.A.

Automatic welding of the cylindrical part of a decomposer shell.
Avtom. svar. 14 no.8:78-82 Ag '61. (MIRA 14:9)

1. Trest "Uralstal'konstruktsiya."
(Electric welding)
(Aluminum industry--Equipment and supplies)

MEL'NIKOV, V.G.

Progressive practices in reducing production costs. Tekst.prom.
17 no.6:55-57 Je '57. (MLRA 10:7)
(Textile industry--Costs)

MEL'NIKOV, V.G.

General incidence of disease among the rural population of
Volozhin District in 1959. Zdrav. Bel. 9 no.1:20-23 J'63.
(MIRA 16:8)

1. Iz kafedry organizatsii zdravookhraneniya i istorii me-
ditsiny (zav. kafedroy - dotsent D.P.Belyatskiy) Minskogo
meditsinskogo instituta.
(VOLOZHIN DISTRICT--MEDICAL STATISTICS)

GRINTSEVICH, Valentin Osipovich; IVANOV, Vladimir Nikolayevich; MEL'NIKOV, Vladimir Ivanovich; SOKOLOV, L.S., inzh., red.; BOBROVA, Ye.N., tekhn. red.

[Repair of the generators of mobile electric power plants and electric machinery for railroads; experience of electric repair shops of the October Railroad; Remont generatorov peredvizhnykh zheleznodorozhnykh elektrostantsii i elektroispolnitel'nogo putevogo instrumenta; opyt elektromekhanicheskikh masterskikh Oktiabr'skoi dorogi. Moskva, Vses. izdatel'sko-poligr. ob"edinenie M-va putei soobshchenia, 1961. 56 p. (MIRA 14:7)
(Railroads—Electric equipment) (Electric power plants)

MEL'NIKOV, V.I., inzh.

Experimental investigation of three-stage two-collector rotating
amplifiers of the "Magnavolt" type. Sbor. LITZET no. 159:223-231
'58. (MIRA 12:2)

(Rotating amplifiers)

34971

S/080/62/035/002/009/022
D204/D302

IP.3100
AUTHORS:

Delimarskiy, Yu. K., Pavlenko, I. G., Roms, Yu. G.
and Melnikov, V. I.

TITLE:

Electrolytic preparation and refinement of Bi in melts

PERIODICAL:

Zhurnal prikladnoy khimii, v. 35, no. 2, 1962, 317-321

TEXT: Direct production and purification of Bi were carried out in (a) a ternary eutectic of 48 mol.% $PbCl_2$, 35 KCl and 17 NaCl, and (b) a eutectic of 36 mol.% NaCl, 47 $CaCl_2$ and 17 $BaCl_2$, by the method of anodic solution. The apparatus used is illustrated and described. The experiments were carried out at $500 \pm 20^\circ C$, in porcelain or alumina crucibles, using Mo cathodes, while the Bi alloys were melted and served as anodes. A description of the procedure is given. Study of the removal of Pb from $85Bi15Pb$ alloys, using electrolyte (a) showed that the time of purification decreased (from $3 \frac{1}{2}$ to 1 hour) when the current density was raised from 0.25 to 0.83 amp/cm². The current efficiency was 80 - 90%. Practically all

Card 1/3

Electrolytic preparation and ...

S/080/62/035/002/009/022
D204/D302

Ag and Cu in the original alloy were removed together with the Pb. Measurements of the anode potential showed this quantity to be accurately determined by the extent of purification, increasing from 0.08 - 0.14 V to 0.36 - 0.4 V as the Pb was removed. It is, therefore, believed that the process could be controlled automatically by a simple potentiometric method. Transfer of Bi to the cathode was also investigated, at 0.5 amp/cm², on a 75Bi25Pb alloy, finding that the Bi increased at first slowly and then rapidly, up to 1% in the cathode Pb, when ~92 - 98% of the anode Pb was dissolved, decreasing thereafter to 0.6 - 0.9%. The results are discussed. Using electrolyte (b) and commercial Bi containing 2.5% Pb, 0.3% Ag and 0.007% Cu, at 0.17 amp/cm² and at 550°C, it was found that higher purifications could be achieved. The lead was reduced to < 0.001%, Cu to ~0 and Ag to 0.01%. The results were confirmed on repeating the process on a larger scale with commercial lead containing 16.8% Bi and admixtures of Ag, Cu and Sb. There are 5 figures and 13 references: 9 Soviet-bloc and 4 non-Soviet-bloc. The references to the English-language publications read as follows: G. Cleary and D. Cubicciotti, J. Am. Chem. Soc., 74, 557, (1952);

Card 2/3

Electrolytic preparation and ... 3/080/62/035/002/003/022
D204/D302

F. I. Keneshea and D. Cubicciotti, J. Phys. Chem., 62, 7, 843,
(1958); I. Corbett, ibid., 62, 9, 1149, (1958).

ASSOCIATION: Institut obshchey i neorganicheskoy khimii AN USSR
(Institute of General and Inorganic Chemistry of the
AS UkrSSR)

SUBMITTED: March 19, 1961

X

Card 3/3

USSR/Cultivated Plants - Fruits. Berries.

M

Abs Jour : Ref Zhur Biol., No. 12, 1958, 53830

Author : Mel'nikov, V.I.

Inst : -

Title : On the Fruit Bearing Ability of the Main and Suckering
Shoots.

Orig Pub : Vinodeliye i vinogradarstvo SSSR, 1957, No 3, 27-37

Abstract : This article cites data confirming the feasibility of
achieving fruit bearing, not only on the shoots which
have grown on the cane of the preceding year, but also
on the shoots from any perennial part of the plant. The
highest yield was obtained from the sprouts of those
suckers specially formed on the growing shoots in the
previous year. -- Ye.A. Makarevskaya

Card 1/1

- 135 -

ACC NR: AP6033663

SOURCE CODE: UR/0119/66/000/010/0011/0013

AUTHOR: Verbitskiy, I. P. (Engineer); Mel'nikov, V. I. (Engineer); Rozen, Yu. V. (Engineer); Trotsko, G. G. (Engineer)

ORG: none

TITLE: Frequency adders | 66

SOURCE: Priborostroyeniye, no. 10, 1966, 11-13

TOPIC TAGS: frequency analyzer, transistorized circuit, frequency meter, *FREQUENCY CONVERTER*

ABSTRACT: A device that converts frequencies in the 4—8 kc range into pulses and counts these pulses is described. The input signal frequency is divided 80 times. The resultant frequency, 50—100 kc, is then applied to a circuit that subtracts 50 cycles. The 0—50 cps, output frequency is subsequently divided 180 times, applied to a monostable multivibrator, and counted either with a fast acting counter or an automatic recorder. The operating temperature range of the device is 5—50 C; supply voltage tolerances are +10—15%. The circuitry of the device is transistorized and packaged in modular form. Orig. art. has: 5 figures.

SUB CODE: 014/ SUBM DATE: none/ ORIG REF: 004

Card 1/1

UDC: 681.142.642.2

MEL'NIKOV, V. I., Engineer

"Investigation of the Kinematics of Cables in Movable Rope Roads with
Rocking (Floating) Supports." Sub 12 Feb 51, Moscow Forestry Engineering Inst

Dissertations presented for science and engineering degrees in
Moscow during 1951.

SC: Sum. No. 480, o May 55

SOV/124-57-4-4840

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 4, p 135 (USSR)

AUTHOR: Mel'nikov, V. I.

TITLE: On the Bending of Beams With Reference to Logging Transportation
(Ob izgibe balok, primenitel'no k usloviyam vyvozki lesa v khlystakh)

PERIODICAL: Sb. tr. Povolzhsk. lesotekhn. in-t, 1956, Nr 50, pp 69-84

ABSTRACT: Bibliographic entry

Card 1/1

MIRA 11:2, Lumber--Transportation

MEL'NEKOV, Valentin Ivanovich, dots., kand.tekhn.nauk; SERGEYEV, Petr
Grigor'yevich, dots., kand.tekhn.nauk; ZHURAVLEV, B.A., red.;
SOKOL'SKAYA, Zh.M., red.izd-va; BRATISHKO, L.V., tekhn.red.

[Hauling tree-length logs] Vyvozka lesa v khlystakh. Moskva,
Goslesbumizdat, 1957. 98 p. (MIRA 11:2)
(Lumber--Transportation)

MEL'NIKOV, Valentin Ivanovich; BEZBORODOV, Gennadiy Aleksandrovich; ZEYEST,
M.B., red.; PLESKO, Ye.P., red. izd-va; PARAKHINA, N.L., tekhn. red.

[Mechanization of the laying of portable narrow-gauge railroad tracks]
Mekhanizatsiia stroitel'stva perenosnykh uskokoleinykh putei. Moskva,
Goslesbumizdat, 1961. 110 p. (MIRA 14:11)
(Lumbering) (Railroads, Industrial)

MEL'NIKOV, Valentin Ivanovich, dots., kand. tekhn. nauk; SERGEYEV, Petr Georgiyevich, dots., kand. tekhn. nauk; DMITRIYEV, Yuriy Yakovlevich, kand. tekhn. nauk; SELIN, M.F., retsenzent; DOIL'NITSINA, A.G., retsenzent; IONOV, B.D., retsenzent; KISHINSKIY, M.I., otv. red.; PLESKO, Ye.F., red. izdava; GRECHISHCHEVA, V.I., tekhn. red.

[Land transportation of timber and lumber floating] Sukhoputnyi lesotransport i lesosplav. Moskva, Goslesbumizdat, 1962. 314 p. (MIRA 15:12)

1. Petrozavodskiy lesotekhnicheskii tekhnikum (for Ionov). (Lumber—Transportation)

MEL'NIKOV, V.I.

Apparatus for mixing gases and liquids. Patent U.S.S.R. 77,940, Dec. 31,
1949.
(CA 47 no.19:9661 '53)

MEL'NIKOV, V.I., inzhener.

Some hydrodynamic characteristics in the performance of mixers.
Sbor. st. NIIKHIMMASH no.16:88-104 '54. (MLRA 8:6)
(Mixing machinery) (Fluid dynamics)

SOV:124-57-4-4220

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 4, p 53 (USSR)

AUTHOR: Mel'nikov, V. I.

TITLE: On the Motion of a Fluid in a Mixer (O dvizhenii zhidkosti v meshalke)

PERIODICAL: V kn.: Issledovaniya sublimatsionnykh i distillyatsionnykh apparatov i gidrodinamiki meshalok (Vses. n.-i. i konstruktor in-t khim. mashinostr., sb. st. 16). Moscow, 1954. pp 105-120

ABSTRACT: On the strength of a theoretical analysis of the motion of a fluid in a mixer and an experimental investigation for the determination of the flow velocities it is shown that the motion of the fluid in the mixer may be regarded as a combined vortex motion possessing static and dynamic regions of fluid rotation. A helical motion with a constant excess energy is in this case the basic state of the fluid motion. The kinematic structure of the flow and the characteristics of velocity distribution in the flow are similar to those in a bent pipe line of rectangular section. As a result of the formation of secondary flows the region of the maximum velocities of the cross section of the mixer then shifts toward the walls of the vessel, and with a diameter of the mixer blade equal to 0.6 of the diameter of the vessel the maximum of the velocities

Card 1/2

SOV/124-57-4-4220

On the Motion of a Fluid in a Mixer

is located at a distance of 0.75 of the blade radius from the axis of rotation

L P.

Card 2/2

Mel'nikov, V. I.

Reactor. V. I. Mel'nikov. U.S.S.R. 103,403, Aug. 25, 1953. The reactor consisting of consecutively joined sections provided with mech. or pneumatic mixers is built as a hexagon and divided by radial partitions into 6 sections. In the hexagonal shaft in the center are installed gas ducts. *Phyo* 1
M. Hosen

MEL'NIKOV, V.I., kand.tekhn.nauk

Considering some structural and hydrodynamic factors in designing
mixers. Trudy NIKHIMMASH no. 29:126-150 '59. (MIRA 14:5)
(Mixing machinery)

MEL^oNIKOV, V.I., kand.tekhn.nauk

Investigating the performance of the rocking mixing unit of a vacuum filter. Trudy NIIKHIMMASH no. 29:151-168 '59. (MIRA 14:5)
(Mixing machinery)

ACC NR: AR6036990 (A,N) SOURCE CODE: UR/0181/66/008/011/3379/3382

AUTHOR: Gribnikov, Z. S.; Mel'nikov, V. I.; Sorokina, T. S.

ORG: Institute of Semiconductors, AN UkrSSR, Kiev (Institut poluprovodnikov AN UkrSSR)

TITLE: Size effect in the electric conductivity of semiconductors upon heating of the electron gas

SOURCE: Fizika tverdogo tela, v. 8, no. 11, 1966, 3379-3382

TOPIC TAGS: semiconductor carrier, relaxation process, electron gas, semiconductor conductivity, electron scattering, inelastic scattering

ABSTRACT: The authors show that a size effect which is different from that due to diffuse electron scattering from the surface can occur in a semiconductor situated in a heating electric field, in the case when the electron energy relaxation length greatly exceeds the mean free path. This effect takes place in semiconductor plates with a thickness of the order of the energy relaxation length ($2d \gg l$, where $2d$ is the thickness of the semiconductor and l is the mean free path). If this condition is satisfied, the size effect does not depend on the diffuseness of the surface reflection and is determined exclusively by the inelasticity of the reflection. The inelastic size effect can be due to scattering by surface oscillations of the semiconductor lattice or to scattering by lattice vibrations of a dielectric crystal which is in surface contact with the semiconductor. Without describing specifically the scattering mechanism, the authors deal with the limiting case when this scattering is

Card 1/2

ACC NR: AP6036990

so intense that the electron distribution function is in equilibrium at the surface and the size effect is maximal. The results of earlier papers (FTT v. 7, 1997 and 2912, 1965) are used to calculate the components of the distribution function, the dependence of the maximum electron temperature on the field, and the volt-ampere characteristics. The results show that, unlike the usual size effect, the conductivity of the plate increases with decreasing thickness. The authors thank E. I. Rashba for interest in the work and useful remarks. Orig. art. has: 2 figures and 9 formulas.

SUB CODE: 20/ SUBM DATE: 07May66/ ORIG REF: 003/ OTH REF: 001

Card 2/2

ACC NR: AF7003232

SOURCE CODE: UR/0056/66/051/006/1909/1913

AUTHOR: Gribnikov, Z. S.; Mel'nikov, V. I.

ORG: Institute of Semiconductors, Academy of Sciences, Ukrainian SSR (Institut poluprovodnikov Akademii nauk Ukrainskoy SSR)

TITLE: Size effect in magnetoresistance of semiconductors

SOURCE: Zh eksper i teor fiz, v. 51, no. 6, 1966, 1909-1913

TOPIC TAGS: semiconductor conductivity, magnetoresistance, electron temperature, electron distribution

ABSTRACT: The article deals with changes in the resistivity of a semiconductor in a magnetic field, which depend under certain conditions on the thickness of the semiconductor (size effect), and contains calculations of the effect for a monopolar (electronic) nondegenerate semiconductor with a specified scalar electron effective mass. The size effect is shown to come into play in the samples in which the lattice temperature changes much less than the electron temperature. An expression is obtained for the electron distribution function, from which the change in resistivity in the magnetic field is calculated in a form that presents explicitly the contribution due to the gradient of the electron temperature and is responsible for the size effect. The mechanism of the size effect is explained in some detail. Conditions under which the size effect can arise in the absence of a magnetic field are also discussed. Orig. art. has: 13 formulas and 1 tabl.:

SUB CODE: 20/ SUBM DATE: 08Jul66/ ORIG REF: 007/ OTH REF: 001

Card 1/1

SHEYKO, I.N.; KIKHNO, V.S.; MEL'NIKOV, V.I.

Melting diagram of the ternary system NaF - KF - ZrF₄. Ukr.khim.
zhur. 29 no.12:1259-1264 '63. (MIRA 17:2)

1. Institut obshchey i neorganicheskoy khimii AN UkrSSR.

SHEVKO, I.N.; MEL'NIKOV, V.I.; SUPRUNCHUK, V.I.

Melding diagram of the system NaM - KOL - K.2-2 - Na.2
Ukr. khim. zhur. 30 no.7:688-69, '61 (1961)

1. Institut obshchey khimii i neorganichesk y khimii AN UkrSSR.

L 26639-66 EWT(1) IJP(c) AT

ACC NR: AP5025364

SOURCE CODE: UR/0181/65/007/010/2912/2920

AUTHOR: Gribnikov, Z. S.; Mel'nikov, V. I.

53
B

ORG: Institute of Semiconductors, AN UkrSSR, Kiev (Institut poluprovodnikov AN UkrSSR)

TITLE: Injection and extraction of hot electrons in m-heterotransitions during quick maxwellization of electron gas

SOURCE: Fizika tverdogo tela, v. 7, no. 10, 1965, 2912-2920

TOPIC TAGS: electron gas, semiconductivity, crystal lattice, electron, semiconducting material

ABSTRACT: With sufficiently high concentrations of electrons in semiconductors forming heterotransitions, the electrons injected into one of them during a flow of current in distances of the order of maxwellian length transfer their energy to the entire electron gas of the semiconductor causing it to be heated. Simultaneously, in another semiconductor, extraction of hot electrons leads to cooling of the electron gas. The ranges of differences of electron temperatures from crystal lattice temperature extend to distances on the order of "cooling off" lengths, which significantly exceed maxwellian lengths in the case being examined.

Card 1/2

L 26639-66

ACC NR: AP5025364

To solve the kinetic equation the electron gas in the semiconductors is divided into a subsystem of electron temperature and into an injection subsystem. Investigation of these subsystems makes it possible to obtain an approximate formula of the volt-ampere characteristic of heterotransition in which the distinctive feature is an important retardation of growth of current in the forward direction due to the extraction cooling of the electron gas. In the system with two heterotransitions, between which the distance is smaller than the cooling off lengths, the warming up of electron gas owing to injection of hot electrons by heterotransition with a higher barrier can lead to a column of strong electron emission over a lower barrier, which in the system forms S-type negative resistance. Orig. art. has: 3 figs., 37 equations.

SUB CODE: 20/ SUBM DATE: 27Mar65/ ORIG REF: 003/ OTH REF: 001

Card 2/2 *KV*

L 3350-66 EWT(1)/EPA(w)-2/T/EWA(m)-2/EWA(h) TJP(c) AT

ACCESSION NR: AP5017289

UR/0181/65/007/007/1997/2006

AUTHORS: Gribnikov, Z. S.; Mel'nikov, V. I.

TITLE: Diffusion of 'hot' electrons in n-n heterojunctions

SOURCE: Fizika tverdogo tela, v. 7, no. 7, 1965, 1997-2006

TOPIC TAGS: semiconductor rectifier, junction diode, kinetic equation, electron distribution, distribution function, phonon scattering, electron scattering, acoustic scattering

ABSTRACT: The authors obtain the distribution of the electrons displaced by application of an electric field on the junction between two different semiconductors of n-type conductivity. In the quasi-neutral regions of the junction, the electron distribution function is obtained in the form of a series in the eigenfunction of the cooling lengths, defined as the distances from the junction at which equilibrium is restored. The cooling lengths are obtained in explicit form for the case when the electron energy is scattered by acoustic and optical phonons under very simple dispersion laws. In the space

Card 1/2

59
53
B

L 3350-66

ACCESSION NR: AP5017289

-charge region, the kinetic equation is solved in the approximation wherein the diffusion flux cancels the field-induced flux. Approximate volt-ampere characteristics are obtained for both types of electron scattering. These characteristics show that the non-equilibrium electron distribution can be accounted for by correction factors ranging from 1/30 to 30. The limits of the rectification theory considered in this paper are discussed. 'The authors thank E. I. Rashba for useful consultations and for interest in the work.' Orig. art. has: 1 figure and 56 formulas.

ASSOCIATION: Institut poluprovodnikov AN UkrSSR Kiev (Institute of Semiconductors AN UkrSSR)

SUBMITTED: 25Dec64

ENGL: 00

SUB CODE: *NR, EC*

NR REF SOV: 001

OTHER: 001

Card

2/2

OP

IVANOV, N.I.; DZYUBA, Yu.S.; NCRENKO, N.A.; YEVDOKIMOV, F.I.; ARABADZHEV,
A.M.; MEL'NIKOV, V.I.

Efficiency of overall mechanization in Donets Basin mines.

Biul.tekh.ekon.inform.Gos.nauch.-issl.inst.nauch.i tekh.

inform. 17: ~~no. 10: 13-16~~ O '64.

(MIRA 18:4)

GRIBNIKOV, Z.S.; MEL'NIKOV, V.I.

Injection and extraction of hot electrons in heterojunctions
with rapid maxwellization of the electron gas. Fiz. tver.
tela 7 no.10:2912-2920 0 '65. (MIRA 18:11)

1. Institut poluprovodnikov AN UkrSSR, Kiyev.

MANGULIS, Kh.A.; MEL'NIKOV, V.K.; STAPANS, V.E.

Temperature conditions of the process involving the manufacture
of phonograph records from tableted plastics. Plast.massy no.2:
34-39 '61. (MIRA 14:2)
(Phonorecords) (Plastics)

MEL'NIKOV, V.K.; BLUMS, E.Ya.

Investigating domestic heat sources and their effect on the heating
of bottled gas units. Gaz.prom. 5 no.10:17-22 0 '60. (MIRA 13:10)
(Liquefied petroleum gas) (Heat--Transmission)

MEL'NIKOV, V.K.

Design and calculation of coordinated equipment for grain elevators in the eastern area of the country. *Izv.vys.ucheb.-zav.; pishch.tekh. no.4:110-113 '62.* (MIRA 15:11)

1. Altayskiy politekhnicheskiy institut, kafedra mashin i tekhnologii pererabotki zerna.
(Grain elevators--Design and construction)

MEL'NIKOV, V. K.

Analysis of the effect of the technical and economic indices
on the overhead expenses of the grain receiving stations of
the Altai Territory. Izv. vys. ucheb. zav.; pishch. tekhn.
no.5:9-11 '62. (MIRA 15:10)

1. Altayskiy politekhnicheskiy institut, kafedra mashin i
tekhnologii pererabotki zerna.

(Altai Territory--Granaries--Costs)

MEL'NIKOV, V.K.

Stability of the center during periodical perturbations. Trudy
Mosk. mat. ob-va 12:3-52 '63. (MIRA 16:11)

MEL'NIKOV, V.K., inzh.

Modification of the norms of the technological design and planning
of grain receiving stations and elevators. Trudy MTIPP no.19:
49-52 '62. (MIRA 17:4)

MEL'NIKOV, V.K.

Radiophosphorus as an indicator of the physiological condition
of woody plants. Izv. Sib. otd. AN SSSR no.3:112-123 '59. b
(MIRA 12:8)

1. Bashkirskiy filial Akademii nauk SSSR.
(Phosphorus--Isotopes) (Trees)

17(1)

AUTHORS:

Sergeyev, L. I., Sergeyeva, K. A.,
Mel'nikov, V. K.

SOV/20-125-5-57/61

TITLE:

The Isoelectric Point of the Protoplasm and the Peculiarities of the Physiological State of the Generative Buds in the Arboreal Plants (Izoelektricheskaya tochka protoplazmy i osobennosti fiziologicheskogo sostoyaniya generativnykh pochetk drevesnykh rasteniy)

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 5, pp 1162-1165 (USSR)

ABSTRACT:

The isoelectric point (IEP) of the protoplasm shifts in the case of aging of animal tissues towards the less acid region (Ref 6). A similar shift takes place in the plants in spite of contrary statements (Ref 6). This may be caused as well by unfavorable environmental conditions (Refs 6, 12). The IEP shifts in the cells of the generative buds of the trees already before the occurrence of morphological differences more towards the more acid region than it is the case with the vegetative buds (apple tree, Ref 13). In the case of the grapevine a contrary behaviour of the generative and vegetative buds was observed (Ref 5). There is a connection between the existence of the ribonucleic acid (RNA)

Card 1/3

The Isoelectric Point of the Protoplasm and the Peculiarities SOV/20-125-5-57/61
of the Physiological State of the Generative Buds in the Arboreal Plants

and the position of the IEP (Ref 14). The authors investigated the periodicity of the annual development cycle of the trees in connection with their resistivity and productivity by means of the complex morpho-physiological method (Refs 8, 9). The IEP dynamics of the cell protoplasm of the generative buds was investigated as well (method of the Refs 3, 4). The simplification of the references 10 and 16 is bound to reduce the accuracy of the determinations. Table 1 gives the results for the Bashkirskiy krasavets apples and for the sour cherry Zakharovskaya. This shows that the IEP of the protoplasm of the generative buds shifts towards the less acid region during the period of "full stationary state". The IEP tends towards the end of this period towards the more acid region if the temperature of the air is still reduced. This corresponds in the case of the mentioned sour cherry (pH 3.7 in October, 3.2 in November) and later in the case of the mentioned apple tree as well (pH 3.8 in November, 3.4 in December) to the duration of the period of "full stationary state". The now occurring processes increase the potential of the physiological activity. These processes cause the end of the full stationary state of the generative buds. During springtime (February - May) the IEP shifts

Card 2/3

The Isoelectric Point of the Protoplasm and the Peculiarities SC7/20-125-5-57/61
of the Physiological State of the Generative Buds in the Arboreal Plants

first rapidly, then gradually towards the more acid region. The curves of the IEP-dynamics are to a certain extent interrelated to other physiological indices of the generative buds (Fig 1). The experimental results under the application of radioactive phosphorus confirm the mentioned IEP shifts (Table 2). The absorption of P^{32} in the generative buds of the apple- and sour cherry tree causes changes of the IEP. Thus was proved that the IEP shift towards the more acid region is connected with the increase of the metabolism intensity. Finally the authors make the attempt of interpreting these results. An organic connection between the negative electrokinetic potential and the structure of the living protoplasm and the metabolism taking place in it may be assumed. There are 1 figure, 2 tables, and 17 references, 14 of which are Soviet.

ASSOCIATION: Institut biologii Akademii nauk SSSR Bashkirskego filiala
(Institute of Biology of the Academy of Sciences USSR of the
Bashkiriya Branch)

PRESENTED: September 24, 1958, by A. L. Kursanov, Academician

SUBMITTED: September 24, 1958
Card 3/3

MEL'NIKOV, V. K., CAND BIO SCI, "PECULIARITIES OF THE
ANNUAL ^{cycle of} DEVELOPMENT ~~CYCLE~~ OF WOODY PLANTS IN RELATION TO
THEIR WINTER ^{resistance} ~~RESISTANCE~~." UFA, 1960. (MIN OF AGR RSFSR,
LENINGRAD AGR INST). (KL, 3-61, 210).

SERGEYEV, Leonid Ivanovich; SERGEYEVA, Klavdiya Alakeseyevna;
MEL'NIKOV, Valeriy Konstantinovich; SUKHORUKOV, K.T.,
doktor biol. nauk, prof., otv. red.; GAFUROVA, T.I., red.;
VALEYEV, G.G., tekhn. red.

[Morphological and physiological periodicity and winter
hardiness of woody plants] Morfo-fiziologicheskaya periodichnost'
i zimostoikost' drevesnykh rastenii. Ufa, Akad. nauk SSSR.
Bashkirskii filial, In-t biologii, 1961. 221 p. (MIRA 15:7)
(Bashkiria--Woody plants)
(Bashkiria--Plants--Frost resistance)

CHUVASHINA, N.P.; MEL'NIKOV, V.K.

Physiological and biochemical characteristics of sterile pollen
from remote hybrids of fruit and berry plants. Fiziol. rast. 11
no.2:330-333 Mr-Ap '64. (MIRA 17:4)

1. I.V.Michurin Central Genetics Laboratory, Michurinsk.

16(1),16(2),24(5)

SOV/42-4-4-4/27

AUTHOR: Mel'nikov, V.K.

TITLE: On Approximate Methods in the Reversion Problem of the Quantum Theory of Scattering

PERIODICAL: Uspekhi matematicheskikh nauk, 1959, Vol 14, Nr 4, pp 121-132 (USSR)

ABSTRACT: As it is well-known, the rigorous solution of the reversion problem can not be directly applied for the investigation of experimental data, since the S-matrix is not defined for all k^2 -values. There appears the problem: Which data on the potential in the finite interval of energy can be obtained from the knowledge of the scattering, and how large is the exactness? The author gives a short summary of known results in this domain. He mentions I.M.Gel'fand, B.M.Levitan, M.G.Kreyn, V.A.Marchenko, and L.D.Faddeyev. There are 12 references, 10 of which are Soviet, 1 American, and 1 Danish.

SUBMITTED: April 6, 1959

Card 1/1

46(4) 16.3400

AUTHOR: Mel'nikov, V.K. (Dubna)

SOV/39-49-4-1/6

TITLE: Determination of the Coherence Range for an Equation of Second Order Which Differs Little From a Conservative one

PERIODICAL: Matematicheskii sbornik, 1959, Vol 49, Nr 4, pp 353-380 (USSR)

ABSTRACT: The author considers the equation

$$(*) \quad \frac{d}{dt} [m(\varepsilon, t) \dot{x}] + k(\varepsilon, t) p'(x) = \varepsilon f(\varepsilon, t, x, \dot{x}) \dot{x},$$

where $\varepsilon > 0$ is a small parameter and the functions $m(\varepsilon, t)$ and $k(\varepsilon, t)$ for $\varepsilon = 0$ do not depend on t . By the coherence range for a given moment t_0 and a given position of equilibrium x_r the author understands the set of the initial conditions (x_0, \dot{x}_0) for which the solutions of (*) oscillate stably with respect to x_r . The position of equilibrium x_r is called of the saddle point type, if $p''(x_r) < 0$ and of the vortex point type, if $p''(x_r) > 0$. The author assumes that

Card 1/2

Determination of the Coherence Range for an SOV/39-49-4-1/6
Equation of Second Order Which Differs Little from Conservative one

a solution can tend monotonely only to a saddle point equilibrium, whereby, among others, cases with strong friction are excluded. For the determination of the coherence range under the above assumptions and some further (less incisive assumptions) the author considers certain curves which are analogous to the separatrices and which separate the different possible motions from each other. He gives a method for the practical determination of these curves. The considered problem can be used for calculating accelerators of charged particles. The paper consists of five chapters with 17 theorems and lemmata. The author mentions the scientific guide of the paper, Yu.S. Sayasov, and S.V. Fomin, L.A. Chudov and V.V. Nemytskiy.

There are 8 references, 3 of which are Soviet, 3 American, 1 German, and 1 English.

SUBMITTED: February 10, 1958

Card 2/2

S/058/62/000/003/013/092
AC61/A101

24.5200
16.4500

AUTHOR: Mel'nikov, V. K.

TITLE: Application of Fourier's method to solve the inverse problem of the diffusion theory

PERIODICAL: Referativnyy zhurnal, Fizika, no. 3, 1962, 23, abstract 3A231
("Tr. Vses. soveshchaniya po differentsial'n. uravneniyam, 1958, Yerevan, AN ArmSSR," 1960, 117-130)

TEXT: Experimental data may serve to find the phases of diffusion in a certain energy range only. This is of essential importance when solving the inverse problem of diffusion. In distinction from other authors (RZhFiz, 1956, no. 8, 21782; 1957, no. 8, 18957), who assumed the phases for all energy values as being known, the author of the present paper shows the way of finding low-frequency harmonics of potential and wave functions by the phase of S-diffusion, known for the finite energy range. The case of the centrally symmetric potential is examined, where the potential is considered to be vanishing at $r > r_0$. The wave functions of diffusion in the S-state may be represented in the form:

$$\varphi(r, k) = \sin r k + \int_0^r R(r, t) \sin k t dt$$
 where $R(r, t)$ satisfies the

Card 1/2

Application of Fourier's method ...

S/058/62/000/003/013/032
A061/A101

nonlinear wave equation $R''_{rr}(r, t) - R''_{tt}(r, t) = 2 R(r, t) \frac{d}{dr} R(r, r)$. The way of determining $R(r, t)$ and $R'_r(r, t)$ by the S-phase and related states is indicated. Cauchy's wave equation problem arising in this connection is solved by Fourier's method.

V. Buslayev

[Abstracter's note: Complete translation]

Card 2/2

24.6730

3/024/62/000/002/022/032
0111/0555

AUTHORS: Mal'nikov, I. A., Shadrin, Yu. S.

TITLE: On the stability of the stability loci in the (x, \dot{x}) -plane of systems with slow time

PERIODICAL: Izvestiya Akad. Nauk Arm. SSR, Matematika, no. 2, 1972, 40, abstract ZBL67. ("Tr. Vses. Soveshchaniya po differentsial'n. uravneniyam, 1972", Yerevan, AN Arm. SSR, 1970, 151-152)

TEXT: Consider the equation

$$\frac{d}{dt} (m(t, t) \dot{x}) + p(t, x, \dot{x}) \dot{x} + k(t, t) p'(x) = 0$$

which occurs in the theory of the acceleration of charges in tubes; $m(t, t) \neq 0$, $p'(x) \neq 0$, $k(t, t) \neq 0$. The authors investigate the positions of equilibrium of saddle type (then, where $p''(x) < 0$) and of focus type (where $p''(x) > 0$), as well as stability domains of these positions in the (x, \dot{x}) -plane. Under certain assumptions the solution approximating the position of equilibrium of saddle type for $t \rightarrow \infty$, is expanded into a series in powers of ϵ . Proofs are not given. [Abstractor's note: Complete translation.]

Card 1/1