

Man Enters the Cosmos

SOV/4880

TABLE OF CONTENTS:

Into the Cosmos	3
Kaluga-Moon	8
Our Sputniks	16
Our Lunniks	21
On a Winged Dream	24
Principal Question	30
The Cosmos Waits for You, Young People!	35
Bibliography	39

AVAILABLE: Library of Congress

Card 2/2

AC/dwm/afh
3/8/61

PHASE I BOOK EXPLOITATION

SOV/4095

Lyapunov, Boris Valer'yanovich, Engineer

Raketa (Rocket) 2nd ed., rev. Moscow, Voenizdat, 1960. 233 p. (Series: Nauchno-populyarnaya biblioteka) No. of copies printed not given.

Ed.: M.I.Kopytov, Engineer-Colonel, Candidate of Technical Sciences; Ed. of Publishing House: Ya. M. Kader; Tech. Ed.: A.M. Krasavina.

PURPOSE: This book is intended for the general reader.

COVERAGE: The book gives the history of rocket and missile development, describes basic principles of rockets and jet engines, and cites some examples of contemporary rocket weapons. One chapter deals with problems of inter-planetary flight. No personalities are mentioned. There are 48 references, all Soviet(including 12 translations).

TABLE OF CONTENTS:

Introduction

3

Card 1/2

Rocket	SOV/4095	
I. Motion Due to Reaction and Reaction Engines		12
II. Missiles: Control and Guidance		39
III. From the History of Rockets and Guided Missiles		75
IV. Contemporary Rockets and Guided Missiles		110
V. Rockets in the Service of Science		146
VI. Rockets and the Interplanetary Flight		172
Conclusion		215
Bibliography		226

AVAILABLE: Library of Congress (TL784.L5 1960)

Card 2/2

AC/pw/gmp
8-11-60

LYAPUNOV, B.V., inzh.

Ships of the depths. Nauka i zhyttia no.11:57-59 N '61.
(MIRA 14:12)

(Submarine boats)
(Bathyscaphe)

LYAPUNOV, Boris

Earth as a planet. Nauka i zhizn' 28 no.10:22-28 0 '61.
(MIRA 15:1)
(Astronautics)

PHASE I BOOK EXPLOITATION SOV/5993

BR

Lyapunov, Boris Valer'yanovich, Engineer

Rakety i mezhplanetnyye polety (Rockets and Interplanetary Flights) Moscow, Voen. izd-vo M-va obor. SSSR, 1962. 121 p. (Series: Nauchno-populyarnaya biblioteka voyennogo izdatel'stva) 50,000 copies printed.

Ed.: Ya. M. Kader; Tech. Ed.: R. I. Chapayeva.

PURPOSE: This popular-science book is intended for the general reader.

COVERAGE: The book reviews modern technical and scientific achievements in space exploration, and considers its further development. Descriptions are given of Soviet earth satellites, ship-satellites, the Moon and Venus probes, and the Gagarin and Titov space flights. No personalities are mentioned. There are 35 references, all Soviet (4 translations). An unspecified number of non-Soviet sources is also mentioned.

Card 1/3

SOV/5993

Rockets and Interplanetary Flights

TABLE OF CONTENTS:

Publisher's Note

2

Introduction

3

1. History of the Development of Interplanetary Travel Concepts

10

2. Modern Rockets and Interplanetary Flights

25

3. Satellites and Space Rockets

41

4. Preparation of a Space Flight

61

5. Space-Travel Technique

103

Conclusion

114

Card 2/3

Rockets and Interplanetary Flights

SOV/5993

From the First Sputnik to Manned Space Flight

119

Bibliography

121

AVAILABLE: Library of Congress

SUBJECT: Aerospace

AD/wrc/mas
7-11-62

Card 3/3

PHASE I BOOK EXPLOITATION

SOV/6375

Lyapunov, Boris Valer'yanovich, and Nikolay Aleksandrovich Nikolayev

Skvoz' ternii k zvezdam (Through thorns to the stars) [Moscow] Izd-vo TSKVLKSM "Molodaya gvardiya," 1962. 174 p. 65,000 copies printed.

Ed.: V. Fedchenko; Tech. Ed.: I. Yegorova.

PURPOSE: The purpose of this booklet is to familiarize the general reader with the present status of space training and flight, and the space program for the future.

COVERAGE: This booklet describes the training of cosmonauts and the orbital flight of Vostok spaceships, gives some data on spacesuits, and discusses possible future space programs.

TABLE OF CONTENTS:

Space And Man	5
Before the Big Launch	13
Card 1/8	

ACCESSION NR: AI0001433

S/0000/63/000/0000/0001/0175

AUTHOR: Izapunov, Boris Valer'yanovich; Nikolayev, Nikolay Aleksandrovich

TITLE: Ad astra per aspera

SOURCE: Skvoz' tseli k svendam, Moskva, 1962. Izd. TsKVLKSI "Molodaya Gvardiya."

TOPIC TAGS: Spacesuit

TEXT: A spacesuit has been designed which weighs about nine and half kilograms and consists of several layers of nylon joined together by neoprene interlayers. The helmet is of special rubber and threads onto the suit. The power-source batteries for the spacesuit are located on the back. A liquid, which forms a shield against radiation, enters and interlayer when the cosmonaut passes through a radiation belt or during solar flares. Liquid oxygen circulating in another interlayer protects against overheating and at the same time absorbs carbon dioxide. This complicated spacesuit can be donned without help in about five minutes.

Card 1/2

ACCESSION NR: AN001433

sbs The authors state that the development of a spacesuit of this type cost "one...foreign [non-Soviet] firm half a million dollars." However, they make no definite statement as to whether the suit discussed above was developed by the USSR or by some other country.

SPAG - item no. 23

DATE ACQ: 02Apr63

Card 2/2

LYAPUNCV, B.

Winged dreams; Nauka i zhizn' 29 no.2:98-101 F '62.

(MIRA 15:3)

(Aircraft)

LYAPUNOV, B.V.

Facts and figures that you should know. Znan.sila 37 no.4:46
Ap '62. (MIRA 15:4)

(Science fiction)

LYAPUNOV, B.

In the world of phantasy. Nauka i zhizn' 30 no.3:110 Mr '63.
(MIRA 16:5)

(Bibliography--Science fiction)

LYAPUNOV, Boris Valerianovich; KOBLIKOV, V., red.

[On the wings of a dream] Na kryl'iakh mechty. Kaluga,
Kaluzhskoe knizhnoe izd-vo, 1963. 120 p. (MIRA 16:7)
(Interplanetary voyages)

LYAPUNOV, Boris Valer'yanovich

Rockets and interplanetary flights. Prepared by: Translation Division,
Foreign Technology Division. Wright-Patterson AFB, Ohio, 1963.

139 p. illus., diags. (FTD-TT-63-210/1 + 2)

Title page also in Russian.

Translated from the original Russian: Rakety i Mezoplanetnyye polety, Moskva,
1962.

Bibliography: p. 136-138.

1. Artificial satellites, Russian.

LYAPUNOV, Boris Valer'yanovich

Present and future aspects of space travel, by Boris V. Lyapunov and
Nikolay A. Nikolayev. Washington, USJPRS, 1963.

209 p. (JPRS: 20,892: OTS: 63-31666)

"...translation of the Russian-Language book... Skvoz'terni k zvezdam,
Moscow, 1962, pp 1-176."

1. Space flight. 1. Title.

LYAPUNOV, Boris Valer'yanovich; MEL'NIKOVA, Zh.M., red.; RAKITIN,
I.T., tekhn. red.

[Achievements of technology] Rekordy tekhniki. Moskva,
Izd-vo "Znanie," 1964. 39 p. (Novoe v zhizni, nauke,
tekhnike. IV Serii: Tekhnika, no.2) (MIRA 17:2)

LYAPUNOV, Boris Valerianovich, inzh.; KADER, Ya.M., red.; SRIBNIS,
N.V., tekhn. red.

[Space station] Stantsiia vne zemli. Moskva, Voenizdat,
1963. 151 p. (MIRA 17:2)

LYAPUNOV, Boris Valerianovich; GALITSKAYA, T.M., red.;
POLOZHENTSEVA, T.S., mlad. red.

[Our planet today and tomorrow; sketches on the way man
conquers the depths of the earth, the ocean, the atmos-
phere and space] Planeta segodnia i zavtra; ocherki o
tom, kak chelovek pokoriaet zemnye nedra, okean, atmosferu
i kosmos. Moskva, Mysl', 1964. 142 p. (MIRA 18:3)

L 1597-66 EWT(d)/FSS-2/EWT(1)/EWT(m)/FS(v)-3/EWP(w)/ECC(k)-2/EWP(v)/T-2/EWP(k)/
EWA(h)/ETC(m) TT/WW/DD/EM/GW

AM4042763

BOOK EXPLOITATION

UR/
523.2 L98

68
B+1

4455
Lyapunov, Boris Valerianovich (Engineer)

Space station (Stantsiya vne Zemli) Moscow, Voenizdat M-va obor. SSSR, 1963.
0151 p. illus., biblio. 35,000 copies printed. Nauchno-populyarnaya biblioteka
Voyennogo izdatel'stva

TOPIC TAGS: astronautics, space station, manned space station, extraterrestrial
base, spacecraft design, space platform 55

44 26
PURPOSE AND COVERAGE: The actuality and interest in the building of space
stations constantly increases. The inhabited space stations are designated to
serve as base both for scientific research and other spacecraft. The idea of
space station was suggested for the first time by K. E. Tsiolkovski. In this
book, B. V. Lyapunov describes the space stations of the future. They will serve
as sciences forrunners in universe and as intermediary bases for interplanetary
spacecraft. The time has arrived for the realization of the plans consisting in
the construction of space observatories. The idea believed to be a fantasy until
the accomplishment of the first historical space flight by Gagarin. In detail,
the book presents the history of space station concept, the present state of the
problem and its relation to the achievements in astronautics of latest years.
Card 1/2

L 1597-66
AM4042763

Special attention is dedicated to the possible construction and use of space stations. In clear and popular form the author describes the prospects for space stations and related problems. The problems are of great interest to reader, agitator and propogandist. The illustrations in the book are actual pictures or drawing as published in the soviet and foreign literature.

TABLE OF CONTENTS:

Introduction - - 3
Space station - - 8
The great progress of mankind - - 31
Satellites above the planet - - 43
Automation on interplanetary routes - - 79
Man in spacecraft - - 95
Designs of inhabited space stations - - 113
Conclusion - - 142

SUB CODE: SV

NR REF SOV: 031

Card 2/2

SUBMITTED: 03Sep63

OTHER: 002

LYAPUNOV, Boris Valerianovich; ZENKEVICH, L.A., red.; POZHIDAYEVA,
M.G., red.; MARAKASOVA, L.P., tekhn. red.

[Ahead of us lies the ocean] Vperedí - okean! Moskva, Izd-vo
"Sovetskaia Rossiia," 1961. 177 p. (MIRA 15:3)

1. Predsedatel' okeanograficheskoy komissii Akademii nauk SSSR,
chlen-korrespondent Akademii nauk SSSR (for Zenkevich).
(Ocean)

I 10340-63 EPA(b)/EWP(j)/EWT(l)/EWT(m)/BDS/FBD/FCG(w)/FS(b)/FS(v)/EEC-2/
 EEO-2/ES(v)/ES(a)/ES(b)/ES(c)/ES(k)/ES(t)-2 AFMTC/AFMDC/APGC/ASD/ESD-3/SSD Pd-l/
 Pc-l/Pe-l/Pb-l/Pi-l/Po-l/ PHASE I BOOK EXPLOITATION 117 SOV/6375
 Pq-l TT/RM/MAY/AR/RD/PT-2 109
Lyapunov, Boris Valer'yanovich, and Nikolay Aleksandrovich Nikolayev

Skvoz' ternii k zvezdam (Through thorns to the stars) [Moscow] Izd-vo TSKVLKSM "Molodaya gvardiya," 1962. 174 p. 65,000 copies printed.

Ed.: V. Fedchenko; Tech. Ed.: I. Yegorova.

PURPOSE: The purpose of this booklet is to familiarize the general reader with the present status of space training and flight, and the space program for the future.

COVERAGE: This booklet describes the training of cosmonauts and the orbital flight of Vostok spaceships, gives some data on spacesuits, and discusses possible future space programs.

TABLE OF CONTENTS:

Space And Man	5
Before the Big Launch	13
Card 1/8	

L 10340-63
Ad astra per aspera

D
SOV/6375

On the Way to the Universe

28

Two possible methods of compensating for g-forces are suggested. In one case, as the g-forces increase the spaceship cabin is automatically filled with water, which negates the increased weight of the cosmonaut's body and still permits him to maintain control of the vehicle. As the g-forces decrease, compressed air forces the water from the cabin. In the second case, the cabin, an anti-gravity capsule, automatically rotates so that at all times the cosmonaut withstands the g-forces from chest to back.

"Terrata"

49

- 1) It may be possible to design an electromagnetic cannon to destroy meteors threatening to damage the spaceship.

Card 2/8

L 10340-63

Ad astra per aspera

SOV/6375

- 2) Experiments have shown that direct radiation has stunted the growth, malformed, reduced the productivity, and even changed the color of seeds.
- 3) Several drugs for the prevention of radiation sickness have been developed and tested on animals. Antiradiation medicines were carried by Cosmonaut-3 and Cosmonaut-4.
- 4) The Vostok-3 and Vostok-4 had protective radiation shielding. In the future it may be necessary to design a special protected section where the cosmonaut could take cover during solar flares.
- 5) In the opinion of space medicine specialists, existing shielding is adequate to protect the cosmonaut against overheating in case of an emergency.

Card 3/8

L 10340-63

Ad astra per aspera

D
SOV/6375

- 6) During their flights, Nikolayev and Popovich made their own medical observations. In the future, cosmonauts will probably receive medical treatment automatically, without commands from earth. An automatic device will change the environmental conditions in the cabin as needed or, in an emergency, will land the spaceship.
- 7) Some of the electronic equipment aboard the spaceship is very compact, with up to 2000 parts in one cubic centimeter; the instrument package and power source for recording the functions of the brain and optic nerves is the size of a match box.

You - the Cosmonaut

73

Card 4/8

L 10340-63

Ad astra per aspera

4 SOV/6375

Multiday Group Flight...

103

The assembling of a station in outer space is completely feasible. The future space program may be scheduled as follows.

- 1) More flights will be made to investigate space in the proximity of the earth.
- 2) An orbital flight by a two-man crew will be made.
- 3) Two spaceships will try to rendezvous and an attempt will be made to assemble an interplanetary ship.
- 4) Three cosmonauts will spend a week in space in a flight around the moon, noting possible landing sites.

Card 5/8

L 10340-63

Ad astra per aspera

SOV/6375

- 5) Finally, two satellites will be launched: an automatic satellite with reserve fuel and a manned vehicle from which a ship will be assembled in orbit. This ship will deliver a man to the moon.

Very soon a Soviet spaceship will pass through the radiation belts near the earth.

Through Hardships to the Stars

117

This chapter includes the following information on the Vostok flights.

- 1) Each period of free-floating about the cabin was approximately 1 hr in duration. One of the physical exercises performed by the cosmonauts was bracing the head and feet against a stationary object and flexing the body muscles.

Card 6/8

L 10340-63

Ad astra per aspera

3

SOV/6375

- 2) The supply of provisions aboard the Vostoks was sufficient for a flight to the moon and back. At present, the problem is to provide cosmonauts with a supply of food and water sufficient to last months or even years. Presently developed food rations consist of paste in tubes and tablets, both [sic] with a caloric value of about 600-800 calories. Three tubes or one hundred tablets constitute one ration for a 24-hr period.
- 3) Authors describe a spacesuit which weighs about nine and one-half kilograms and consists of several layers of nylon joined together by neoprene interlayers. The helmet is of special rubber and screws onto the suit. Power-source batteries for the spacesuit are located on the back. A liquid, which forms a shield against radiation, enters an interlayer when the cosmonaut passes through

Card 7/8

L 10340-63

Ad astra per aspera

D 807/6375

a radiation belt or during solar flares. Circulating liquid oxygen in another interlayer protects against overheating and at the same time absorbs carbon dioxide. This complicated spacesuit can be donned without aid in about five minutes. In an earlier paragraph the authors refer to a spacesuit developed by a private foreign [non-Soviet] firm, which cost "nearly half a million dollars." Thus it is not clear whether the suit described above is of Soviet or non-Soviet design.

One Cannot Live Forever in the Cradle

145

AVAILABLE: Library of Congress

SUBJECT: Aerospace

ch/llb
Card 8/8

AD/dk/jw
7/31/63

22(1)

SOV/3-59-4-9/42

AUTHOR: Lyapunov, I.M., Docent

TITLE: The School is Waiting for an All-Round Educated Teacher

PERIODICAL: Vestnik vysshey shkoly, 1959, Nr 4, pp 29-31 (USSR)

ABSTRACT: When reorganizing the Soviet secondary school the training of teachers, who will be engaged in the students' vocational training, will apparently be carried out by technical and agricultural vuzes, or engineering and agricultural-pedagogical departments of pedagogical institutes. Teachers on subjects of general education will, as before, be trained in universities and pedagogical institutes. The principal task of the latter will be to train teachers for the mass 8-year school, while the universities will train instructors for the senior classes of the 8-year school and the 9th to 11th classes of secondary schools. A radical improvement in the training of teaching personnel will be necessary. The author mentions the measures which have been introduced in recent years by the Ministry of Higher Education for improving the pedagogical training of university students, and points out the problems

Card 1/2

SCV/3-59-4-8/42

The School is Waiting for an All-Round Educated Teacher

which still remain to be solved. They refer to programs, textbooks and visual aids. He emphasizes the importance of the students' scientific training in his specialty. The Chair of Pedagogics of the Gor'kiy university has worked out a long-term plan of its development, providing several measures for the improvement in the pedagogical training of prospective teachers. Among others, it is intended to establish workshops in pedagogy and psychology as well as in methods of: **Russian** language, literature and history, biology and chemistry, physics and mathematics. There are 2 Soviet references.

ASSOCIATION: Gor'kovskiy gosudarstvennyy universitet imeni N.I. Lobachevskogo (Gor'kiy State University imeni N.I. Lobachevskiy)

Card 2/2

ЛЯПУНОВ М. А.

FARBBER, Aleksandr Moyseyevich; GAL'PERIN, Ye.I., inzhener, retsenzent;
~~ЛЯПУНОВ, М.А.~~ kandidat tekhnicheskikh nauk, dotsent, retsenzent;
GLUFOSINSKIY, Is.V., kandidat tekhnicheskikh nauk, redaktor;
LEUTA, V.I., inzhener, redaktor izdatel'stva; RUDENSKIY, Ya.V.,
tekhnicheskiy redaktor

[Engineering precision of gear cutting machines and means of
improving it] Tekhnologicheskaya tochnost' zuboreznykh stankov i
sposoby ee povysheniya. Kiev, Gos.nauchno-tekhn.izd-vo mashinostrit.
lit-ry, 1957. 190 p. (MIRA 10:10)
(Gear-cutting machines)

LYAPUNOV, M.A.

Construction and geometry of shavers for finishing gear wheels.
Trudy KhPI. Ser.mash: 19 no.5:133-139 '59. (MIRA 14:9)
(Gear-cutting machines)

L 08518-67 EWT(d)/EWT(m)/EWP(c)/EWP(v)/EWP(t)/ETI/EWP(k)/EWP(h)/EWP(l) IJP(c) JD
 ACC NR: AM6019/51 Monograph UR/

Lyapunov, Mikhail Aleksandrovich (Candidate of Technical Sciences); Tsenta, Yevgeniy Leonidovich (Candidate of Technical Sciences); YUfa, Engel' Pavlovich (Docent) 23
 31

Electric pulse machining of tough metals and alloys (Elektroimpul'snaya obrabotka vysokoprochnykh metallov i splavov) Kiev, Izd-vo "Tekhnika", 65. 0149 p. illus.; biblio. 2,500 copies printed. P+1

TOPIC TAGES: metal finishing, metalworking machinery, electric metal finishing, high strength metal, high strength alloy, precision finishing

PURPOSE AND COVERAGE: This book gives the principles of electric pulse working of parts made from tough metals and alloys. Also presented is the technology of finishing sectional surface, production and reconditioning of rigging equipment. The equipment for electric pulse working (fuel supply, machinery) is described, and recommendations are made for its use. The book is considered useful to technical engineers dealing with problems in the technical preparation of the production of machine construction courses in technical institutes.

TABLE OF CONTENTS (abridged):

Preface—5

Ch. I. Main points and electrotechnical characteristics of electric pulse working—7

Ch. II. Equipment for electric pulse working—21

Card 1/2

L 08518-67

ACC NR: AY6019451

2

Ch. III. Principles of the technology of electric pulse working--46

Ch. IV. Precision and quality of the surface of parts finished by electric pulse methods--76

Ch. V. Electric pulse working of sectional ¹⁴surfaces, production and reconditioning of technological rigging equipment--86

Bibliography--143

refractory metals¹⁸

SUB CODE: 09 SUBM DATE: 29Oct65/ ORIG REF: 028

SOSIPATROV, T.M.; LYAPUNOV, M.F.

Obtaining thenardite from the brines of Lake Kuchuk under natural conditions. Izv. Sib. otd. AN SSSR no.6:59-68 '58. (MIRA 11:9)

1.Zapadno-Sibirskiy filial AN SSSR.
(Kuchuk, Lake--Thenardite)

VISYAGIN, N.I. [deceased]; LYAPUNOV, M.F.

Isothermal evaporation of brine from lake Bol'shoi Anzh-Bulat at
25°. Trudy Khim.-met.inst.Zap.-Sib.fil.AN SSSR no.12:47-54 '58.
(MIRA 14:6)

(Bol'shoi Anzh-Bulat, Lake--Brines)

VISYAGIN, N.I. [deceased]; NIKOL'SKAYA, Yu.P.; LYAPUNOV, M.F.

Methods for the industrial utilization of the salt resources of
lake Bol'shoi Anzh-Bulat. Trudy Khim.-met.inst.Zap.-Sib.fil.AN SSSR
no.12:55-64 '58. (MIRA 14:6)
(Bol'shoi Anzh-Bulat, Lake--Thenardite)
(Bol'shoi Anzh-Bulat, Lake--Sodium sulfate)

SOSIPATROV, T.M.; LYAPUNOV, M.F.

Variation in the chemical composition of natural brine from
Bolshoi Azhbulat Lake according to data from many years. Izv.
Sib. otd. AN SSSR no.3:76-82 '59. (MIRA 12:8)

1. Khimiko-metallurgicheskiy institut Sibirskogo otdeleniya Akademii
nauk.

(Bolshoy Azhbulat Lake—Water)

LYAPUNOV, M.F.

Formation of thenardite in Bol'shoy Azhbulat Lake. Izv. Sib. otd.
AN SSSR no.6:95-100 '59. (MIRA 12:12)

1.Khimiko-metallurgicheskiy institut Sibirskogo otdeleniya
AN SSSR.
(Bol'shoy Azhbulat, Lake--Thenardite)

LYAPUNOV, M. F., Cand Chem Sci -- (diss) "Formation of the chemical composition of brine from B. Azhbulat Lake and its hydrochemical conditions." Novocherkassk, 1960. 22 pp with graphs; (Ministry of Higher and Secondary Specialist Education RSFSR, Novocherkassk Order of Labor Red Banner Polytechnic Inst im Sergo Ordzhonikidze); 150 copies; price: one ruble; (KL, 22-60, 132)

LYAPUNOV, M.F.

Over-all utilization of the water and salt resources of the
Kulunda Steppe. Izv. Sib. otd. AN SSSR no. 3:54-60 '61.
(MIRA 14:5)

1. Khimiko-metallurgicheskiy institut Sibirskogo otdeleniya
AN SSSR, Novosibirsk.
(Kulunda Steppe--Water resources development)
(Kulunda Steppe--Salt deposits)

LYAPUNOV, M.F.

Hydrochemical features of the Ob River in the section near the
Novosibirsk Reservoir. *Izv.Sib.otd.AN SSSR no.2:76-85 '61.*
(MIRA 14:3)

1. ~~Khimiko-metallurgicheskiy~~ institut Sibirskogo otdeleniya AN
SSSR, Novosibirsk.
(Ob' River ~~Water~~ Analysis)

LYAPUNOV, M.F.

Formation of the chemical composition of brine in Lake Bol'shoy
Azbulat. Izv.Sib.otd.AN SSSR no.8:83-92 '61. (MIRA 14:8)

1. Khimiko-metallurgicheskiy institut Sibirskogo otdeleniya
AN SSSR, Novosibirsk.
(Azbulat, Lake—Brines)

NIKOL'SKAYA, Yu.P., kand.khim.nauk; LYAPUNOV, M.F., kand.khim.nauk

Artificial deposits of mineral salts. Priroda 51 no.4:68-70
Ap '62. (MIRA 15:4)

1. Khimiko-metallurgicheskiy institut Sibirskogo otdeleniya AN SSSR,
g. Novosibirsk.

(Kulunda Steppe--Salt deposits)

LYAPUNOV, M.F.

Problem of thenardite formation in Lake Kuchuk. Izv. Sib. otd.
AN SSSR no.2:118-120 '62. (MIRA 16:10)

1. Khimiko-metallurgicheskiy institut Sibirskogo otdeleniya
AN SSSR, Novosibirsk.

LYAPUNOV, M.F.

Salt flow in the Burla River and salt accumulation in lake
Aznbulat. Izv. Sib. otd. AN SSSR no.12:92-102 '62.

(MIRA 17:8)

1. Khimiko-metallurgicheskiy institut Sibirskogo otdeleniya
AN SSSR, Novosibirsk.

SOV/81-59-7-25424

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 7, p 531 (USSR)

AUTHOR: Lyapunov, M.I.

TITLE: Plastics on the Base of Aniline-Formaldehyde Resins ¹⁵

PERIODICAL: Prom.-ekon. byul. Sovnarkhoz Permsk. ekon. adm. r-na, 1958,
Nr 4, pp 24 - 27

ABSTRACT: The manufacture, properties and application of aniline-formaldehyde resins are briefly described, as well as their modifications by rubber and the production of articles by die casting. It was noted that the production of plastics on the base of aniline-formaldehyde resins is very promising in the Permskiy economic administrative rayon. ✓

A. Vavilova

Card 1/1

TIMOFEYEVA, Z.N.; LYAPUNOV, M.I., red.

[Utilization of chemical industry by-products] Ispol'zovanie
otkhodov khimicheskogo proizvodstva; sbornik statei. Perm',
Permskoe knizhnoe izd-vo, 1960. 62 p. (MIRA 17:5)

23725

S/057/61/031/006/009/019
E116/B203

9,1300

AUTHORS:

Sedykh, V. M., Zorkin, A. F., Dmitriyev, V. M., Lyapunov, N.V.,
and Yatsuk, L. P.

TITLE:

Parameters of H-shaped waveguides in millimeter and
centimeter wave bands

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 6, 1961, 699-703

TEXT: The authors divide the papers theoretically determining the
parameters of H-shaped waveguides into two groups: (1) papers by foreign
authors: S. Cohn (Ref. 1: Proc. IRE, 35, 783-788, August, 1947),
K. Tomiyasu, L. Swern (Ref. 2: Proc. Nat. Electr. Cont., 10, 76-82, 1954),
S. Hopfer (Ref. 3: Trans. IRE, LMT-3, no. 3, 1955), using the method of
equivalent schemes; (2) papers by L. N. Deryugin (Ref. 4: Radiotekhnika,
no. 6, 1948), A. Ya. Yashkin (Ref. 5: Uch. zap. MGPI imeni Lenina, 101,
1957), N. F. Funtova (Ref. 6: Uch. zap. MGPI imeni V. I. Lenina, 88, 1954),
using the more accurate electrodynamic method of determining the eigen-
value (critical frequency) of the H-shaped waveguide (working on the basic
wave H_{10}). The authors of the present paper calculated the main parameters

Card 1/5

23725



S/057/61/031/006/009/019
B116/B203

Parameters of H-shaped waveguides ...

of H-shaped waveguides: the critical frequency, the damping constant, the peak power, and the characteristic resistance, from a uniform standpoint, on the basis of the solution of the field equations. They present the scheme of calculation, the final formulas for calculating the parameters of H-shaped waveguides, and numerical data of these parameters for some H-shaped waveguides developed and tested at the Khar'kovskiy universitet (Khar'kov University). When determining the critical frequency (the eigenvalue) χ , they only study the two ranges I and II (Fig. 1), and

obtain
$$\frac{\text{tg } \chi a}{x} = \frac{g \text{ ctg } \chi b}{zh} + \frac{2}{gh} \sum_{n=1}^{\infty} \frac{\text{ctg } \chi_n b \sin^2 p_n g}{s_n^2 p_n^2} \quad (6)$$

for the calculation of χ in first approximation. $p_n = \frac{\pi}{h}$; $\chi^2 = p_n^2 + s_n^2$;

$n = 0, 1, 2, \dots$. In a similar way, they obtain the formula

$$\frac{\text{ctg } \chi a}{x} + \frac{g \text{ ctg } \chi b}{zh} = \frac{2}{gh} \sum_{n=1}^{\infty} \frac{\sin^2 s_n g \text{ ctg } p_n b}{s_n^2 p_n^2} \quad (7)$$

for an H_{20} wave. $s_n = \frac{\pi}{h} n$; $s_n^2 + p_n^2 = \chi^2$; $n = 0, 1, 2, \dots$. In the practice, the H_{20} wave is the wave nearest to the basic wave (and

Card 2/5

23725

S/057/61/031/006/009/019
B116/B203

Parameters of H-shaped waveguides ...

therefore the most dangerous one) for the dimensions of the cross section of H-shaped waveguides. Thus, the pass-band of the H-shaped waveguide is obtained by determining the critical frequencies of the waves H_{10} and H_{20} from (6) and (7). The other parameters of an H-shaped waveguide had been calculated in a paper by V. M. Sedykh (Ref. 7: Izv. vyssh. uchebn. zaved. MVO SSSR, Radiotekhnika, no. 3, 1959). Further studies, however, showed that more accurate results nearly equal to the test results were obtained by using the formula $W_s = \frac{1}{2} \operatorname{Re} \int_s [EH^*] ds$. (8)

for determining the power transmitted by a waveguide of complicated cross section. In this case, the damping constant α at frequencies higher than the critical one can be determined from

$$\alpha = \frac{1}{2} \frac{R_s \int_l |H_t|^2 dl}{\operatorname{Re} \int_s [EH^*] ds} \quad (9)$$

where $R_s = \sqrt{\frac{\pi f \mu}{\sigma}}$. For an H-shaped waveguide,

Card 3/5

23725

+

S/057/61/031/006/009/019
B116/B203

Parameters of H-shaped waveguides ...

$$\alpha = \frac{R_0 \left[\left(\frac{f_c}{f} \right)^2 V + U \right]}{r \sqrt{1 - \left(\frac{f_c}{f} \right)^2}} \quad (10)$$

is written down, where

$$V = \frac{g^2 \cos^2 \alpha a}{h^2 \sin^2 \alpha b} \left[\frac{\sin 2\alpha b}{\alpha} + 2(h + d \cos^2 \alpha b) \right] - \frac{\sin 2\alpha a}{\alpha},$$

$$U = a + \frac{\sin 2\alpha a}{2\alpha} + \frac{g^2 \cos^2 \alpha a}{h^2 \sin^2 \alpha b} \left(b - \frac{\sin 2\alpha b}{2\alpha} \right),$$

$$T = 240\pi g \left[a + \frac{\sin 2\alpha a}{2\alpha} + \frac{g}{h} \frac{\cos^2 \alpha a}{\sin^2 \alpha b} \left(b - \frac{\sin 2\alpha b}{2\alpha} \right) \right].$$

For the peak power of the waveguide, $|\hat{W}_r| = \frac{E^2}{2r} T \sqrt{1 - \left(\frac{f_c}{f} \right)^2} = \hat{W}_{r, \infty} \sqrt{1 - \left(\frac{f_c}{f} \right)^2}$. (12)

is obtained, where $\hat{W}_{t, \infty} = \frac{E^2 T}{2r}$ is the peak power at an infinitely high

frequency, and $r_0 = \sqrt{\mu_1 / \epsilon_1}$. In analogy to the rectangular waveguide, the

characteristic resistance Z is calculated from $Z = v_{\text{eff}}^2 / \hat{W}_t$ (13), where

v_{eff} is the maximum effective voltage between the steps and \hat{W}_t is the transmitted power. From (12) and (13), the authors obtain

Card 4/5

23725

S/057/61/031/006/009/019
B116/B203

Parameters of H-shaped waveguides ...

$$Z = \frac{Z_{\infty}}{\sqrt{1 - \frac{f_c^2}{f^2}}} \quad (14)$$

for the H-shaped waveguide, where $Z_{\infty} = \frac{4\epsilon^2 r^2}{\pi}$ is the characteristic resistance of the H-shaped waveguide at an infinitely high frequency ($f \rightarrow \infty$). From formulas (6), (7), (10), (12), and (14), they compute the parameters for six H-shaped waveguides, and plot the curves $a(f)$. There are 4 figures, 2 tables, and 9 references: 5 Soviet-bloc and 4 non-Soviet-bloc.

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet im. A.M. Gor'kogo (Khar'kov State University imeni A. M. Gor'kiy)

SUBMITTED: July 11, 1960

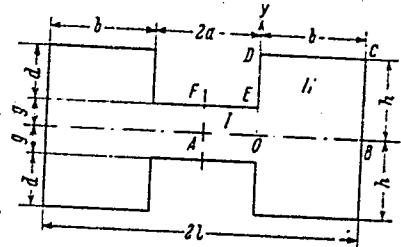


Fig. 1

Card 5/5

23727

S/057/61/031/006/011/019
B116/B203

9,1300

AUTHORS: Dmitriyev, V. M., Zorkin, A. F., Lyapunov, N. V., and Sedykh, V. M.

TITLE: Approximation method for calculating the eigenfrequencies of irregular limit resonators

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 6, 1961, 712-716

TEXT: The approximation method described in the present paper is based on the use of the cross-section method, and yields rather simple and sufficiently accurate formulas for determining the resonance wavelengths of irregular limit resonators. First, the problem is formulated and a general solution is given. The authors consider a section of a tapered irregular waveguide (Fig. 1) made of an ideally conducting metal. The other end of the waveguide is assumed to be closed with a stopper; the waveguide is excited at that end. At certain frequencies, such a device will behave like a resonator. The relation between the resonance wavelengths of such a resonator and its dimensions is to be determined. The cross-section method developed by B. Z. Katsenelenbaum (Ref. 3: DAN SSSR, Card 1/6

23727

X

Approximation method for calculating ...

S/057/61/031/006/011/019
B116/B203

102, no. 4, 1955) is used for the calculation. The authors study an element lying between the planes S_1 and S_2 and the lateral resonator surface, assuming that the lateral surface only slightly differs from a cylindrical one. Then, $dz/dt = v_{ph}(z)$ (1) holds with sufficient accuracy, where $v_{ph}(z) = v_0 / \sqrt{1 - [\lambda_0/\lambda_c(z)]^2}$ is the phase velocity of the wave in the cylindrical waveguide; $\lambda_c(z)$ is the critical wavelength of the cylindrical waveguide; and λ_0 is the wavelength in the free space. After separating the variables, (1) is transformed:

$$\int_0^{p \frac{T}{2}} dt = \int_0^{p \frac{\lambda_0}{2}} \frac{1}{v_0} \sqrt{1 - \left[\frac{\lambda_0}{\lambda_c(z)} \right]^2} dz. \quad (2)$$

where λ_0 is the wavelength in an irregular limit waveguide, T is the oscillation period, $p = 1, 2, 3, \dots$. It is assumed that the critical cross section totally reflects the electromagnetic waves like a metal wall.

Card 2/6

23727

S/057/61/031/006/011/019
B116/B203

Approximation method for calculating ...

In this case, the resonance condition reads: $\lambda_0 = \lambda_p = \lambda_c(z) \Big|_{z=p} \frac{\lambda_c}{2}$ (3),

$\lambda_p = \lambda_r$ is the resonance wavelength of an irregular limit resonator. If $\lambda_c(z)$ is known, the resonance wavelengths can be determined from (2) and (3). $\lambda_c(z)$ must be determined separately for every resonator shape. Now, the authors study a conical limit resonator of any cross-section shape. With the use of the similarity of the resonator cross sections, they

obtain the formula $\frac{p \lambda_c(0)}{2d} = \alpha - \arctan \alpha$ (6), where $\alpha = \left[\frac{\lambda_c(0)}{\lambda_0} \right]^2 - 1$.

If p , $\lambda_c(0)$, and d are known, it is possible to determine α , and, therefore, also the resonance wavelength, because $\lambda_p = \lambda_0 = \frac{\lambda_c(0)}{\sqrt{1 + \alpha^2}}$ (7),

where $\lambda_c(0)$ is the critical wavelength of the cylindrical waveguide of the cross-section S ; d is the cone height. With the use of (6) and (7), it is possible to determine the resonance wavelengths of conical resonators of any cross-section shape (H, \square , and others) for which the critical

Card 3/6

23727

3/057/61/031/006/011/019
B116/B203

J

Approximation method for calculating ...

wavelength is known. Conical resonators of rectangular and round cross section are studied as examples. For the former case,

$$\frac{abp}{d \sqrt{(mb)^2 + (na)^2}} = \alpha - \arctan \alpha \quad (8) \text{ and}$$

$$\lambda_r = \frac{2ab}{\sqrt{(mb)^2 + (na)^2} \sqrt{1 + \alpha^2}} \quad (9) \text{ are written down instead of (6)}$$

and (7). For the latter case, $\frac{\pi p \tan \theta}{u_{mn}} = \alpha - \arctan \alpha \quad (10) \text{ and}$

$$\lambda_r = \frac{2\pi a}{u_{mn} \sqrt{1 + \alpha^2}} \quad (11) \text{ are written down for E waves, and}$$

$$\frac{\pi \tan \theta}{u'_{mn}} = \alpha - \arctan \alpha \quad (12) \text{ and } \lambda_r = \frac{2\pi a}{u'_{mn} \sqrt{1 + \alpha^2}} \quad (13) \text{ for H waves,}$$

where u_{mn} are the roots of the Bessel function and u'_{mn} are the roots of the derivative of the Bessel function. To check the formulas obtained, the authors determined the resonance wavelengths of rectangular, irregular

Card 4/6

20727

Approximation method for calculating ...

S/057/61/031/006/011/019
B116/B203

limit resonators by experiment. They examined two resonators with $a = 20$ mm, $a_1 = 16.6$ mm, $d_1 = 280$ mm, $a = 23$ mm, $a_1 = 17$ mm, and $d_1 = 120$ mm, respectively, where the narrow cross section was unchanged over the length and equal to $b = 10$ mm. The resonators were excited by the H_{10} wave. Since λ_c does not depend on b in this case, formulas (8) and (9) could be checked with these resonators. Measurements were made by the "sucking-off" method in the three-centimeter band. The experimental test showed that the formulas obtained are usable for the practical calculation of conical limit resonators. There are 4 figures, 3 tables, and 5 Soviet-bloc references.

ASSOCIATION: Khar'kovskiy gosudarstvennyy universitet im. A.M. Gor'kogo
(Khar'kov State University imeni A. M. Gor'kiy)

SUBMITTED: July 27, 1960

Card 5/6

25727

Approximation method for calculating ...

S/057/61/031/006/011/019
B116/3203

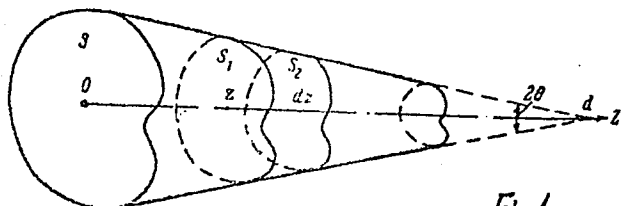


Fig.1

Card 6/6

ACCESSION NR: AR4023752

S/0274/64/000/001/A056/A057

SOURCE: RZh. Radiotekhnika i elektrosvyaz', Abs. 1A359

AUTHOR: Shubarin, Yu. V.; Dmitriyev, V. M.; Lyapunov, N. V.

TITLE: Radiation from the open end of a waveguide of complicated shape

CITED SOURCE: Uch. zap. Khar'kovsk. un-t, v. 132, 1962, Tr. radiofiz. fak., v. 7, 33-41

TOPIC TAGS: antenna, waveguide open end antenna, h shaped waveguide, cruciform waveguide, directivity pattern, matching with free space, Kirchhoff integral

TRANSLATION: Expressions are obtained for the directivity pattern of the open ends of an H-shaped or cruciform waveguide in the E and H planes. Unlike the known mirror-antenna radiators, made in the

Card 1/2

ACCESSION NR: AR4023752

form of a rectangular or round waveguide, the H-shaped and cruciform radiators ensure better matching with the free space and extend the possibility of obtaining a directivity pattern of desired shape. The Kirchhoff integral is used to calculate the field. The formulas obtained are used to calculate the directivity pattern. An Experimental investigation has shown that the measured diagrams are 20--40% narrower than the theoretical ones for all the radiators. The best matching with free space is afforded by the cruciform radiator. Bibliography, 3 titles. N. B.

DATE ACQ: 03Mar64

SUB CODE: GE, SP

ENCL: 00

Card 2/2

L 8595-65 EMT(d)/EMT(l)/ERG(b)-2/ENA(b) Pn-l/Pac-l/Pi-l/Pj-l ASD(a)-5/AFML/
AFETR/RAEM(a)/ESD(c)/ESD(gs)/ESD(t)/RAEM(t)

ACCESSION NR: AR4044065

S/0058/63/000/011/H023/H023

SOURCE: Ref. zh. Fizika, Abs. 11Zh182

B

AUTHOR: Dmitriyev, V. M.; Lyapunov, N. V.; Tereshchenko, A. I.

TITLE: Calculation of the natural frequencies of irregular cutoff resonators

25

CITED SOURCE: Uch. zap. Khar'kovsk. un-t, v. 132, 1962, Tr. Radiofiz. fak., v. 7, 71-74

TOPIC TAGS: resonator, cutoff resonator, waveguide, oscillation, frequency, calculation

TRANSLATION: Gives refined formulas for the natural frequencies of irregular cut-off resonators with E_{ans} and H_{ans} waves. The resonator is a segment of a waveguide, tapering gradually at one end. Excitation occurs through the iris at the wide end of the resonator. The problem is solved without taking into account attenuation in the walls of the resonator and the mutual influence of various types of oscillations. For the given type of oscillations the critical cross section is considered.

Card 1/2

L 8595-65

ACCESSION NR: AR4044065

equivalent to an ideally conducting wall. There is examined the case of a resonator whose generatrices intersect at one point (conical resonator). There are given the results of an experimental check of the derived formulas. The values of the natural frequencies calculated from these formulas are in good agreement with experimental data.

SUB CODE: EC

ENCL: 00

Card 2/2

ACCESSION NR: AR4023757

S/0274/64/000/001/A060/A060

SOURCE: RZh. Radiotekhnika i elektrosvyaz', Abs. 1A384

AUTHORS: Dmitriyev, V. M.; Lyapunov, N. V.; Tereshchenko, A. I.;
Chaban', A. Ya.

TITLE: Experimental investigation of electronic tuning of an ir-
regular cutoff resonator

CITED SOURCE: Uch. zap. Khar'kovsk. un-t, v. 132, 1962, Tr. Radio-
fiz. fak., v. 7, 75-77

TOPIC TAGS: cutoff resonator, cutoff cavity, irregular cutoff reso-
nator, resonator tuning range, electronic tuning

TRANSLATION: The dependence of the tuning of a rectangular cutoff
resonator on the electron beam current passing through the critical
section of the resonator was investigated experimentally. The reso-

Card 1/2

ACCESSION NR: AR4023757

nator dimensions were: $a = 26$ mm, $a_1 = 12$ mm, $d = 86$ mm, $b = 10$ mm, where a and a_1 -- lengths of the resonator broad wall, b -- length of the narrow wall, and d -- length of the resonator. The resonant wavelength for the H_{101} mode was 35.5 mm. A thin tungsten cathode 0.45 mm in diameter was placed in the critical section of the resonator, and the anode was the resonator itself, excited through a diaphragm. The emission current was varied by varying the filament current and the potential difference between the cathode and the resonator over a range at which there was no space charge. Experiments showed a linear connection between the relative tuning $\Delta\lambda/\lambda$ and the beam current I ; the tuning range was 2%. An irregular cutoff resonator by an electron beam has a tuning range several times that of an ordinary resonator. Bibliography, 3 titles. O. N.

DATE ACQ: 03Mar64

SUB CODE: GE, SD

ENCL: 00

Card 2/2

ACCESSION NR: AP4042529

S/0109/64/009/007/1313/1318

AUTHOR: Lyapunov, N. V.; Borodavko, Yu. M.; Zaytsev, A. Ye.

TITLE: Inductive diaphragms in ridge waveguides [Report at the 19th All-Union Conference of the Scientific and Technical Society of Radio Engineering and Electrocommunication, May, 1963]

SOURCE: Radiotekhnika i elektronika, v. 9, no. 7, 1964, 1313-1318

TOPIC TAGS: waveguide, ridge waveguide, single ridge waveguide, double ridge waveguide

ABSTRACT: The results of a theoretical and experimental study of inductive diaphragms in single- and double-ridge waveguides are reported. A formula for calculating the susceptance of an inductive diaphragm in an arbitrarily proportioned ridge waveguide is developed. The formula was experimentally verified with inductive diaphragms mounted in a single-ridge waveguide; . . .

Card 1/2

ACCESSION-NR: AP4042529

$\lambda/\lambda = 0.51$; voltage standing-wave ratio, 1.05. A discrepancy of about 20% is explained by the approximate nature of the calculations and by the inadequate diaphragms and flanges. Orig. art. has: 4 figures, 24 formulas, and 2 tables.

ASSOCIATION: Khar'kovskiy universitet (Khar'kov University)

SUBMITTED: 12Jul62

ENCL: 00

SUB CODE: EC

NO REF SOV: 005

OTHER: 002

Card 2/2

LYAPUNOV, N.V.; SHEIN, A.G.; TERESHCHENKO, A.I.

Calculation of nonuniformities in waveguides using the Lorentz
lemma. Izv. vys. ucheb. zav.; radiotekh. 8 no.1:11-17 Ja-F '65.
(MIRA 18:5)

LYAPUNOV, N.V.; DMITRIYEV, V.M.; SEDYKH, V.M.

Calculation of cutoff frequencies of H and Π waveguides. Radio-
tekh. i elektron. 11 no. 2:345-346 F '66 (MIRA 19:2)

1. Submitted June 2, 1965.

L 63204-65 EPA(s)-2/EWT(m)/EPF(c)/EPF(n)-2/EMQ(m)/EWP(j) WW/GG/RM

UR/0096/65/000/008/0083/0084
662.987.543.8

ACCESSION NR: AP5018875

AUTHORS: Rasskazov, D. S. (Candidate of technical sciences); Babikov, Yu. M. (Engineer); Belinskaya, N. T. (Engineer); Lyapunov, O. I. (Engineer)

TITLE: Change in thermophysical properties of monoisopropylidiphenyl under the influence of reactor radiation

31
30
B

SOURCE: Teploenergetika, no. 8, 1965, 83-84

TOPIC TAGS: thermophysical property, viscosity, polymer, irradiation exposure

ABSTRACT: The changes in viscosity and density of monoisopropylidiphenyl (M) under radiation were investigated in a temperature range of 20-280C and 0-10% polymer concentration. The irradiation process was carried out in the circulation loop of a commercial reactor in the 200-250C temperature range. The results show that for a given concentration the relative viscosity of (M) remains constant in a wide temperature range but increases if the concentration is raised. Up to 100C, this result agrees well with previous investigations. Two empirical expressions are proposed to correlate the data for a range in π (% mass concentration in solution) from 0 to 30%. These equations are:

$\eta_r/\eta_{prec} = (1 + 0.035\pi)$ $\rho_{prec} = \frac{65.6}{(1+60)\pi}$

Card 1/2

L 63204-65

ACCESSION NR: AF5018875

where η is given in Newtons-sec/m² and $f_n = f_{max} + 1,5\eta$,
 $f_{max} = 934 - 0,473f - 0,811 \cdot 10^{-7}f^2$.

Orig. art. has: 2 formulae, 2 figures, and 1 table.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Heat Power Institute)

SUBMITTED: 00

ENCL: 00

SUB CODE: MT,
GC

NO REF SOV: 006

OTHER: 005

dm
Card 2/2

LYAPUNOV, V.

News report from outer space in the twenty-first century. Nauka i
zhizn' 27 no.11:4-8,16 N '60. (MIRA 13:12)
(Interplanetary voyages)

BABKIN, N.N.; GREBENSHCHIKOV, L.S.; ZHALIN, N.I.; PROKHOROVA, T.I.;
LYAPUNOV, Yu.A.; LOBAZOV, P.A.

Overall dust removal from the atmosphere of the Berezovskiy
Mine. Gor. zhur. no.5:61-63 My '64. (MIRA 17:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy gornometallurgicheskiy
institut tsvetnykh metallov (for Babkin, Grebenschikov, Zhalin,
Prokhorova). 2. Berezovskiy rudnik, KazSSR (for Lyapunov,
Lobazov).

Lyapunov, Yuriy Ignat'yevich

L-APUNOV, Yu. I.

EPP

.R93404

Sportivnyye sooruzheniya Moskv
Buildings used for sport activities in
Moscow/ Moskva, "Moskovskiy Rabochiy"
1957.

103 p. illus.

GRISHCHENKO, A.Z.; FEDOTOVA, L.M.; LYAPUNOVA, A.I.

Automatic control of the heat conditions in the mass mercerization
of cellulose in a continuous action apparatus. Khim. volok. no.1:
12-15 '62. (MIRA 18:4)

1. Kiyevskiy institut avtomatiki Gosplana UkrSSR.

TARASENKO, A.V.; KHMELEVSKIY, I.N.; LYAPUNOVA, A.I.

Device for determining the completion of the reaction of sulfitization.
Khim. volok. no.1:18-20 '62. (MIRA 18:4)

1. Kiyevskiy institut avtomatiki Gosplana UkrSSR.

SOLOMATINA, O.G., dotsent; LYAPUNOVA, A.P., LEVINA, S.I.; KOGAN, N.M.

Differential approach to the diagnosis of mitral stenosis in children. Sov.med. 26 no.1:85-90 Ja '63. (MIRA 16:4)

1. Iz revmatologicheskoy kliniki (rukovoditel' - prof. R.L. Gamburg) kafedry pediatrii (zav. - deystvitel'nyy chlen AMN SSSR prof. G.N.Speranskiy) Tsentral'nogo instituta usovershenstvovaniya vrachey na baze detskoy klinicheskoy bol'nitsy No. 9 (glavnyy vrach A.N.Kudryashova).
(CHILDREN--DISEASES) (MITRAL VALVE--DISEASES)

LYAPUNOVA, G. M., CHERNYAK, B. I., CHERVINSKAYA, N. S., and KNYAGINICHEV, M. I.
(USSR)

"The Change in the Properties of Starch under the Influence of
Humidity and Temperature."

Report presented at the 5th International Biochemistry Congress,
Moscow, 10-16 Aug 1961

LYAPUNOVA, G. S.

34187. Lyapunova, G. S. Limfoterapiya legochnogo tuberkuleza u vzrosz'lykh v dispansernykh usloviyakh. Byulleten' In-ta tuberkuleza Akad. Med. nauk SSSR, 1949, No. 2, s.26-31.

SO: Knizhnaya Letopis' No. 6, 1955

ACC NR: AP7005465

SOURCE CODE: UR/0050/66/000/006/0031/0035

AUTHOR: Aniskina, N. A. (Candidate of geographical sciences); Lyapunova, I. B.

ORG: State Hydrological Institute (Gosudarstvennyy gidrologicheskiy institut)

TITLE: Experience in formulating a synoptic-statistical method for forecasting seasonal precipitation anomalies

SOURCE: Meteorologiya i gidrologiya, no. 6, 1966, 31-35

TOPIC TAGS: hydroelectric power plant, long range weather forecasting, atmospheric precipitation / Lake Lagoda

ABSTRACT: This article gives in great detail a possible approach to the solution of the problem of long-range forecasting of precipitation for the warm season of the year, using as an example the basin of the reservoir of the Volkhovskaya Hydroelectric Station. The study was facilitated by availability of data for the years 1887-1963. Much of the approach involves use of the W,C,E forms of atmospheric circulation defined by Vangengeym. Much of the paper is devoted to analysis of the correlation between these forms of circulation and the quantity of precipitation. The same circulation forms cause precipitation anomalies in adjacent regions as well. The same resultant precipitation is observed in the Lake Ladoga area, for example. The correlations derived

Card 1/2

UDC: 551.509.329
0926 2352

ACC NR: AP7005465

in this paper also are applicable to precipitation forecasts for that area. The importance of the paper is not the local application of the described correlation (circulation-precipitation) method, but the fact that it can be used for other regions and for other meteorological elements, especially mean monthly and mean seasonal air temperatures and certain hydrological characteristics, such as annual and semiannual runoff, dates of freezing and breaking up of rivers and lakes.

Orig. art. has: 3 figures. [JPRS: 38,677]

SUB CODE: 04, 10 / SUBM DATE: 28May65 / ORIG REF: 006

Card 2/2

S/601/62/000/014/010/012
1003/1203

AUTHORS: Krulikovskaya, M. P., Lysak, L. I., Lyapunova, K. A. and Rakhman, P. B.
TITLE: Variation in the crystalline structure and in the properties of EI-69 steel upon heat-treatment
SOURCE: Akademiya nauk Ukrayins'koyi RSR. Instytut metalofyzyky. Sbornik nauchnykh robot. no. 14. Kiev, 1962. Voprosy fiziki metallov i metallovedeniya, 111-115

TEXT: Data published in recent years on the changes taking place in the crystalline structure of steels and non-ferrous metals during phase transformations do not sufficiently clarify the nature of these changes and the role played by them in the process of the strengthening of metals. Therefore further investigation of this subject is of great importance. The mechanical properties of the above austenitic steel (0.45% C, 14.0% Ni, 14.0% Cr, 2.70% W, 0.60% Si, 0.70% Mn and 0.40% Mo) after quenching from 1180-1200°C are rather poor, however, after tempering at 600-750°C the hardness, yield strength and ultimate strength increase, while the plasticity and toughness decrease. This investigation shows that this is due to an increase in the amount of imperfections in the crystalline lattices and to a breaking up of the mosaic structure of the γ -phase. The softening of this steel as a result of tempering at temperatures higher than 750°C is accompanied by a decrease in the amount of imperfections in the crystalline lattice of the matrix, and a coarsening of the blocks of the mosaic structure of the γ -phase. There are 2 figures.

Card 1/1

3(8)

SOV/9-59-2-15/16

AUTHORS: Alekseyev, F., Kupalov-Yaropolk, I., and Lyapunova, N.

TITLE: A Formal Approach to Problems on the Efficiency of Geophysical Prospecting for Oil and Gas (Formal'nyy podkhod k voprosam effektivnosti geofizicheskikh rabot na neft' i gaz)

PERIODICAL: Geologiya nefti i gaza, 1959, Nr 2, pp 68-71 (USSR)

ABSTRACT: This is a critical review of a book by P.T. Kozlov named "The Development of Geophysical Prospecting Methods in USSR Oil Industry", published by the GOSINTI Publishing House in 1957.

Card 1/1

L 09152-67 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AP7002757

SOURCE CODE: UR/0364/66/002/008/0906/0913

BELASHCHENKO, D. K., MAGIDSON, I. A., BELASHCHENKO, G. I., And LYAPUNOVA, L. G.,
Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov)

43

"Migration Phenomena in Semiconducting Melts of Thallium Sulfides and Selenides

Moscow, Elektrokimiya, Vo 2, No 8, 1966, pp 906-913

ABSTRACT: In an experimental cell of the liquid semiconductor-neutral metallic electrode type, concentration and temperature dependence of the mean coefficient of diffusion of the solution and apparent effective charges of components in melts of the Tl-S and Tl-Se systems exhibiting semiconductor properties were investigated. A discussion of the results was based on the theory of polygenic solutions, the components of which can be in different states of aggregation. The contribution of the ionic and electron-vacancy components to total electroconductivity of the melts investigated was evaluated. It was found to depend on melt temperature and composition. A conclusion was drawn as to the features of the reaction in the melts of those compounds characterized by relatively high electroconductivity of an electronic nature and by a predominantly ionic bonding between solution molecules. Orig. art. has: 6 figures, 14 formulas and 6 tables. [JPRS: 38,139]

TOPIC TAGS: semiconducting material, semiconductor conductivity

SUB CODE: 20 / SUBM DATE: 12Ju165 / ORIG REF: 010 / OTH REF: 003

UDC 541.13:621.315.592

07.25 1631

GETSOVA, A.B.; LYAPUNOVA, N.A.; POLIKARPOV, G.G.; TIMOFEYEVA-RESOVSKAYA, Ye.A.

Accumulation of chemical elements from water solutions in fresh-water organisms: Report No.4: Accumulation of radioisotopes of eight different elements in mussel tissues. Nauch. dokl. vys. shkoly; biol. nauki no.4:82-88 '64. (MIRA 17:12)

1. Rekomendovana Institutom biologii Ural'skogo filiala AN SSSR.

LYAFUNOVA, N.A.

Lilac collection at the Botanical Garden of the Academy of
Sciences of the Ukrainian S.S.R. *Biul.Glav.bot.sada* no.35:
27-30 '59. (MIRA 13:2)

1. Botanicheskiy sad AN USSR.
(Kiev--Lilacs--Varieties)

LYAPUNOVA, N.A.

Genus Forsythia in the Central Botanical Garden of the Academy of
Sciences of the Ukrainian S.S.R. Biul. Glav. bot. sada no. 45:17-22
'62. (MIRA 16:2)

1. Tsentral'nyy respublikanskiy botanicheskiy sad AN
Ukrainskoy SSR, Kiyev.

(Kiev--Forsythia)

LYAPUNOVA, F.M.; BORISYUK, Yu.G. [Borysiuk, IŮ,H.]

Phytochemical investigation of Vinca minor L. growing in the Ukraine.
Report No. 2: Investigation of the alkaloid composition of Vinca
minor. Farmatsev. zhur. 16 no. 2:42-47 '61. (MIRA 14:4)

1. Kafedra farmakognozii Kharkivs'kogo farmatsevtichnogo institutu.
(UKRAINE—VINCA) (ALKALOIDS)

LYAPUNOVA, P.M.; BORISYUK, Yu.G. [Borysiuk, IU.H.]

Phytochemical analysis of Vinca minor growing in the Ukraine. Report
No.3: Analysis of the alkaloid content of Vinca minor. Farmatsev.
zhur. 16 no.3:48-51 '61. (MIRA 14:6)

1. Kafedra farmakologii Khar'kovskogo farmatsevticheskogo instituta.
(UKRAINE--VINCA)

LYAFUNOVA, R. G.

"Morskoy zveroboynnyy promysel aleutov v XVIII-XIX vv. (orudiya i sredstva okhoty). Po materialam kolleksiy Muzeya antropologii i etnografii AN SSSR."

& Ethnological

report submitted for 7th Intl Cong, Anthropological/Sciences, Moscow,
3-10 Aug 64.

LYAPUNOVA, YE. A.

S/020/61/141/003/016/021
3103/3110

AUTHORS: Brumberg, Ye. M., Meycel', M. N., Corresponding Member AS
USSR, Barskiy, I. Ya., Zolomin, A. V., and Lyapunova, Ye. A.

TITLE: Ultraviolet luminescence of cells in mitotic division

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 141, no. 3, 1961,
723 - 725

TEXT: Cells and tissues grown outside the organism were studied: (a) human: an inoculated fragment of amnion cells; (b) cultures of embryonic epithelium; (c) of fibroblasts; (d) animal: primary cultures of the kidneys of guinea pigs and monkeys. Single tissue cultures were grown on quartz glass and examined by ultraviolet-luminescence microscopy either living (in physiological salt solution) or after fixing by methanol. The methods had been described previously (Ye. M. Brumberg et al., Biofizika, 6, No. 1, 114 (1961); Ye. M. Brumberg et al. Tsitologiya, 2, 589 (1960); Ye. M. Brumberg, Zhurn. obshch. biol. 27, No. 6,

Card 1/4

Ultraviolet luminescence of cells in...

3/020/61/141/003/016/021
2103/2110

401 (1956)). Microphotographs showed that the cells undergoing mitosis differed from cells at rest in the following facts: The cells at rest weakly fluoresce; fluorescence increases already during the early prophase and reaches maximum intensity in the middle of the metaphase. Then, it slowly decreases; however, until complete separation of the daughter cells, it exceeds the fluorescence of the cells at rest undergoing interkinesis. The cell nucleus, unlike the total cytoplasm, does not fluoresce. Dark, not fluorescing chromosomes can be seen on the background of the cytoplasm. The absorption of shortwave ultraviolet rays (250-270 m μ) by the cells increases with rising intensity of fluorescence. Absorption and fluorescence patterns interrelated like a negative and a positive; in both images, however, the chromosomes remain dark. The fluorescence of cells at rest is not so constant as that of dividing cells. There are always individual groups of brightly fluorescing cells at rest. In most cases these are degenerating, perishing cells whose increasing fluorescence is not accompanied by increased ultraviolet absorption. Chromoscopic examination (Ye. M. Brumberg. DAN, 25, 473 (1939)) showed degenerating cells at rest and dividing cells are

Card 2/4

S/020/61/141/003/016/021
B103/B110

Ultraviolet luminescence of cells in ...

differently colored. Selective extraction of nucleotides, nucleic acids, and lipoids with perchloric acid in the cold and at 90°C, and with ribonuclease showed that the ultraviolet fluorescence of dividing cells is not due to the action of these extracted substances, except the bone marrow, the fluorescence of which rapidly decreases after extraction of nucleotides. The character of fluorescence cannot be changed by strong oxidizers and reducing agents (rongalite, potassium permanganate). 2% of urea somewhat increases the fluorescence of cells at rest. It is concluded that the intensity of fluorescence of cells undergoing mitosis is increased by high-molecular substances (most probably proteins containing cyclic amino acids) which are difficult to extract from the cell. This increase is possibly related to a reversible denaturation of protein in various physiological processes (muscular work). This might not be an absolutely formal analogy, since the occurrence of contractile proteins in the cell during mitosis had previously been proved. These proteins effect the mechanical work of chromosome separation and cell division. The muscles differ from other tissues in their particularly strong ultraviolet fluorescence. It is less probable that cell fluorescence during division should be increased by low-molecular substances

Card 3/4

Ultraviolet luminescence of cells in ...

S/020/61/141/003/016/021
B103/B110

which are produced in metabolic shifts or accumulated. This means that these shifts occur only in certain stages of mitosis (Refs. 8 and 9, see below), whereas an increase of fluorescence could be observed during all stages of division. Experiments will be continued. Ye. S. Zalmanzon is thanked for supplying the tissue cultures. There are 11 references: 7 Soviet and 4 non-Soviet. The three most recent references to English-language publications read as follows: Ref. 8: H. A. Went, Ann. N.Y. Acad. Sci., 90, Art. 2, 422 (1960); Ref. 9: D. Mazia, Sulfur in Proteins, R. Bensch et al. edit., N.Y., 1959; Ref. 10: J. Brachet, The Biochemistry of Development, London, 1960.

ASSOCIATION: Institut radiatsionnoy i fiziko-khimicheskoy biologii Akademii nauk SSSR (Institute of Radiation and Physico-chemical Biology of the Academy of Sciences USSR)
Institut tsitologii Akademii nauk SSSR (Institute of Cytology of the Academy of Sciences USSR)

SUBMITTED: August 28, 1961

Card 4/4

ZELENIN, A.V.; LYAPUNOVA, Ye.A.

Fluorescence microscopy of dividing cells. Dokl. AN SSSR 141
no.4:963-965 D '61. (MIRA 14:11)

1. Institut radiatsionnoy i fiziko-khimicheskoy biologii AN
SSSR. Predstavleno akademikom V.A. Engel'gardtom.
(Karyokinesis)
(Fluorescence microscopy)

VOROTNITSKAYA, N.Ye.; ZELENIN, A.V.; LYAPUNOVA, Ye.A.; MEYSEL', M.N.

Luminescent microscopic study of normal and tumoral cells
fluorochromated with acridine orange at different pH values.
Dokl. AN SSSR 152 no.3:724-726 S '63. (MIRA 16:12)

1. Institut radiatsionnoy i fiziko-khimicheskoy biologii AN SSSR.
2. Chlen-korrespondent AN SSSR (for Meysel').

*

ZELENNIN, A.V.; LYAPUNOVA, Ye.A.

Effect of acridine orange on the incorporation of S^{35} methionine
in the cells of tissue cultures. Dokl. AN SSSR 158 no.1:221-224
S-C '64 (MIRA 17:8)

1. Institut radiatsionnoy i fiziko-khimicheskoy biologii AN SSSR.
Predstavleno akademikom V.A. Engel'gardtom.