GAMALEYA, A.N.; GYURDZHIAN, A.A.; ZHGUN, A.A.; SIMONOV, P.V.

Treatment of acute radiation sickness in dogs with drip transfusion of blood [with summary in English]. Med.rad. 2 no.6:56-61 N-D '57. (MIRA 11:2)

1. Iz otdeleniya luchevoy terapii (nach. A.N.Gamaleya) i eksperimental'noy laboratorii (i.o.nzch. - kandidat meditsinskikh nauk A.A.Gyurdzhian) Glavnogo voyennogo gospitalya imeni akad. N.N.Burdenko Ministerstva oborony SSSR.

(ROENTGEN RAYS, eff.
total body irradiation, eff. of drip blood transfusion on survival of dogs)
(BLOOD TRANSFUSION, exper.
eff. on suvival of dogs after total body x-irradiation)

GAMALEYA, A.N.; POLENKO, V.K.; SIMONOV, P.V.

Changes in the blood system in acute radiation sickness [with summary in English]. Vest.rent. i rad. 32 no.4:17-23 Jl-Ag '57. (MIRA 10:11)

1. Iz Glavnogo voyennogo gospitalya imeni akad. N.N.Burdenko (nach. - I.N.Kurgannikov)

(ROENTGEN RAYS, eff.
on hemopoietic system in dogs)
(HEMOPOIETIC SYSTEM, eff. of radiations on
x-rays in dogs)

SIMONOV, P.V.

Strengthening the inhibition of the central nervous system with caffein as a typical stimulating substance. Trudy Fiziol.lab.AN SSSR 1:96-164 '59. (MIRA 12:8)
(CAFFEINE) (INHIBITION)

GAMALEYA, A.N.; GYURDZHIAN, A.A.; KOSHKIN, A.F.; NEKRASOV, V.P.; SIMONOV, P.V.

Characteristics of the postoperative period in acute radiation sickness in dogs. Med. rad. 4 no.4:64-70 Ap '59. (MIRA 12:7)

1. Iz otdeleniya luchevoy terapii (nach. A.N. Gamaleya) i eksperimental'noy laboratorii (nach. - kandidat med. nauk A.A. Gyurdzhian) Glavnogo voyennogo gospitalya imeni akad. N.N. Burdenko.

(ROENTGEN RAYS, effects,
on postop. course in exper. surg. in dogs (Rus))
(SURGERY, OPERATIVE
eff. of x-rays on postop. course in exper. surg. in dogs (Rus))

SIMONOV, P.V.

Features of leukocytic reactions to the administration of sodium nucleate in radiation sickness in animals. Med.rad. 4 no.12:80 D '59. (MIRA 13:5)

1. Iz kafedry normal'noy fiziologii (prof. I.T. Kurtsin) voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova.
(RADIATION INJURY exper.)
(LEUKOCYTE radiation eff.)
(SODIUM pharmacol.)
(NUCLEIC ACIDS pharmacol.)

SIMONOV, P.V.

Inversion of unconditioned leucocytic reactions in experimental neurosis in intact and decerebrated rabbits. Fiziol.zhur. 45 no.12:1438-1445 D '59. (MIRA 13:4)

1. From the Department of Physiology, S.M. Kirov Military Medical Academy, Leningrad.
(DECEREBRATE STATE experimental)
(NEUROSES experimental)
(RADIATION EFFECTS experimental)
(LEUCOCYTE COUNT)

SIMONOV, P.V. (Moskva)

On the nature of subcortical neurosis. Biul.eksp.biol.i med. 48
no.9:42-46 S '59. (MIRA 13:1)

1. Predstavlena deystvitel'nym chlenom AMN SSSR P.K. Anokhinym.
(BRAIN physiol.)
(NEUROSIS exper.)

SIMONOV, P. V., Doc Med Sci, "Three phases in organism reactions to increasing stimulus." Moscow, 1961. (Second Moscow State Med Inst im N. I. Pirogov). (KL, 3-61, 229).

SIMONOV, P.V.

Effect of X-irradiation on the duration of so-called animal hypnosis in intact animals and after the removal of cerebral hemispheres. Zhur. vys. nerv. deiat. 11 no.1:169-170 Ja-F '61. (MIRA 14:5)

1. Burdenko Chief Military Hospital, U.S.S.R. Ministry of Defense.
(BRAIN) (CATAPLEXY) (X RAYS--PHYSIOLOGICAL EFFECT)

SIMONOV, P.V., kand.med.nauk, starshiy nauchnyy sotrudnik

Records of human brain. Nauka i zhizn' 28 no.8:22-29 Ag '61. (MIRA 14:8)

1. Institut vysshey nervnoy deyatel'nosti i neyrofiziologii AN SSSR.

(BRAIN)

ASRATYAN, Ezras Asratovich; SIMONOV, Pavel Vasil'yevich; YASHKOVA, N.V., red.izd-va; KASHINA, P.S., tekhn. red.

[Reliability of the brain] Nadezhnost' mozga. Moskva, Izd-vo Akad. nauk SSSR, 1962. 133 p. (MIRA 16:7)
(BRAIN)

SIMONOV, Pavel Vasil'yevich; ASRATYAN, E.A., otv. red.; GONCHAROVA, L.S., red. izd-va; MAKOGONOVA, I.A., tekhn. red.; GOLUB', S.P., tekhn. red.

[K.S.Stanislavskii's method and the physiology of the emotions] Metod K.S.Stanislavskogo i fiziologiia emotsii. Moskva, Izd-vo Akad. nauk SSSR, 1962. 137 p. (MIRA 15:12)

1. Chlen-korrespondent Akademii nauk SSSR (for Asratyan).
(EMOTIONS) (PSYCHOLOGY, PHYSIOLOGICAL)
(STANISLAVSKII, KONSTANTIN SERGEEVICH, 1863-1938)

SIMONOV, Pavel Vasil'yevich; ASRATYAN, E.A., otv. red.; GONCHAROVA, L.S., red. izd-va; GOLUB', S.P., tekhn. red.; LAUT, V.G., tekhn. red.

[Three phases in the reactions of an organism to an increasing stimulus] Tri fazy v reaktsiiakh organizma na vozrastaiushchii stimul. Moskva, Izd-vo Akad. nauk SSSR, 1962. 242 p. (MIRA 15:5)

1. Chlen-korrespondent Akademii nauk SSSR (for Asratyan).
(NERVOUS SYSTEM) (INHIBITION)

SIMONOV, P.V.

"Three phases of reaction of organism to increasing stimulus."

Report submitted, but not presented at the 22nd International Congress of Physiological Sciences, Leiden, the Netherlands 10-17 Sep 1962

S/004/62/000/005/001/001
D408/D301

AUTHOR: Asratyan, E.A., Corresponding Member, AS USSR, and Simonov, P.V., Doctor of Medical Sciences

TITLE: The reliability of the brain

PERIODICAL: Znaniye-sila, no. 5, 1962, 17-20

TEXT: The article gives a general outline of how the central nervous system operates, explaining neural excitation and inhibition, the value of protective inhibition and the mechanisms via which the nervous system compensates for damage or dystrophy of some particular section. Four such mechanisms, responsible for the reliability of the nervous system, are distinguished. 1) Protective inhibition which ensues during excessive stimulation of the body to give the nerve cells a chance to restore their viability. 2) Reserve neural paths and reserve nerve centers which, though normally highly specialized, can adapt to assume the control functions of other damaged paths and nerve centers. 3) Multiple duplica-

Card 1/2

The reliability of the brain

S/004/62/000/005/001/001
D408/D301

tion of brain structures, all of which can control the same body function to a varying degree. This gives relative stability of the lower mechanisms and at the same time subordinates them strictly to the higher brain centers. 4) The use of new, temporary connections between nerve centers in the cerebral cortex to restore impaired body functions. The authors illustrate these mechanisms with references to experiments on dogs. There are 6 figures.

Card 2/2

MANUKYAN, V.R.; SIMONOV, P.V. (Moskva)

Nature of central inhibition in mechanical trauma. Pat. fiziol. i eksp. terap. 6 no.1:43-49 Ja-F '62. (MIRA 15:3)

1. Iz Glavnogo voyennogo gospitalya imeni N.N. Burdenko.
(NERVOUS SYSTEM) (TRAUMATISM)

SIMONOV, P.V.; SHLYKHENKOVA, O.V. (Moskva)

Changes in the leukocyte reaction in radiation sickness in decorticated animals. Pat. fiziol. i eksp. terap. 6 no.3:65-67 My-Je '62 (MIRA 17:2)

1. Iz Glavnogo voyennogo gospitalya imeni akademika N.N. Burdenko.

SIMONOV, P.V., kand.med.nauk

Secrets of health. Zdorov'e 8 no.2:11-12 F '62. (MIRA 15:4)
(HYGIENE)

SIMONOV, P.V.

Mechanism of the extinction of conditioned reflexes. Zhur. vys. nerv. deiat. 12 no.2:248-256 Mr-Ap '62. (MIRA 17:12)

1. Institut vysshey nervnoy deyatel'nosti i neyrofiziologii AN SSSR, Moscow.

MISHEL', E.; PCHELINTSEVA, M. [translator]; SIMONOV, P.V.

Doctor Delgado's experiments. Nauka i zhizn' 29 no.4:84-87 Ap '62. (MIRA 15:7)

(BRAIN--RESEARCH)

SIMONOV, P.V.

Effect of decortication of the cerebrum on the radioreactivity and radioresistance of the body. Biul.eksp.biol.i med. 54 no.7:33-37 Jl '62. (MIRA 15:11)

1. Iz eksperimental'noy laboratorii i patologoanatomicheskogo otdeleniya Glavnogo voyennogo gospitalya imeni N.N.Burdenko, Moskva. Predstavlena deystvitel'nym chlenom AMN SSSR A.V. Lebedinskim.
(CEREBRAL CORTEX--SURGERY)(RADIATION--PHYSIOLOGICAL EFFECTS)

SIMONOV, P.V., doktor meditsinskikh nauk

Algebra of harmony. Nauka i zhizn' 30 no.3:97-99 Mr '63.
(MIRA 16:5)

(Subconsciousness)
(Stanislavskii, Konstantin Sergeevich, 1863-1938)

ACCESSION NR: AP4031817 S/0247/64/014/002/0204/0210

AUTHOR: Simonov, P. V.; Valuyeva, M. N.; Yershov, P. M.

TITLE: Certain characteristics of voluntary and involuntary emotional reactions of man

SOURCE: Zhurnal vy*sshey nervnoy deyatel'nosti, v. 14, no. 2, 1964, 204-210

TOPIC TAGS: voluntary emotional reaction, involuntary emotional reaction, EEG shift, EKG shift, skin galvanic reflex shift, pain stimulus, activating mechanism, inhibitory mechanism, sympathetic nervous system, parasympathetic nervous system

ABSTRACT: The voluntary and involuntary reactions of 21 drama students were investigated in two experimental series. In the first series the subject was asked to anticipate a painful stimulus at a given moment, and in the second series the subject was asked to reproduce mentally a very painful situation knowing for certain that no pain stimulus would follow. During the experiment the subject was seated in a dark chamber with eyes closed and was required to remain

Card 1/3

ACCESSION NR: AP4031817

absolutely motionless. After the subject adapted to darkness, normal EEG, EKG, and skin galvanic reflexes were recorded. Then reactions were recorded for the 20 sec period when the subject was asked to anticipate a pain stimulus at a given moment and for the following 20 sec period when the subject was asked to reproduce mentally a very painful situation. Findings show that voluntarily evoked emotions, especially by those well trained in Stanislavskiy methods, produce more significant EEG, EKG, and skin galvanic reflex shifts than the anticipation of a real pain stimulus. Investigation of the complex interaction of activating and inhibiting mechanisms, based on an automatic frequency analysis of EEG and recorded vegetative functions, indicates that effects of a sympathetic nature lead to an increase of EEG fast waves and effects of a parasympathetic nature lead to an intensification of EEG slow waves. Shifts related to actual fear are probably less pronounced because of inhibitory effects including those of a parasympathetic nature. Orig. art. has: 3 figs.

ASSOCIATION: Institut vy#sshey nervnoy deyatel'nosti i neyrofiziologii akademii nauk SSSR (Institute of Higher Nervous Activity and Neurophysiology, Academy of Sciences USSR)

ACCESSION NR: AP4031817

SUBMITTED: 21Mar63 ENCL: 00 SUB CODE: LS

NR REF SOV: 004 OTHER: 008

Card 3/3

SIMONOV, P.V., doktor med. nauk

Congress of the I.P. Pavlov All-Union Physiological Society.
Vest. AN SSSR 35 no.2:115-118 F '65.
(MIRA 18:3)

ASRATYAN, E.A.; SIMONOV, P.V.

Some research results of Soviet neurophysiologists. Usp. sovr. biol. 60 no.1:137-146 Jl-Ag '65. (MIRA 18:8)

SIMONOV, P.V.; VARIYEVA, M.N.; YERSHOV, P.M.

Voluntary regulation of the galvanic skin response. Vop. psikhol. 10 no.6:45-50 N-D '64. (MIRA 18:2)

1. Institut vysshey nervnoy deyatel'nosti i neyrofiziologii AN SSSR, Moskva.

ASRATYAN, E.A., prof., otv. red.; LIVANOV, M.N., red.; [illegible], red.; SIMONOV, P.V., red.; MESHCHERSKIY, A.M., red.; POPOVA, Ye.I., red.

[Brain reflexes; transactions] Refleksy golovnogo mozga; trudy. Moskva, Nauka, 1965. 646 p. (MIRA 19:1)

1. Mezhdunarodnaya konferentsiya, posvyashchennaya 100-letiyu vykhoda v svet odnoimennogo truda I.M.Sechenova. 2. Chlen-korrespondent AN SSSR (for Asratyan).

ACC NR: AT6009445 SOURCE CODE: UR/0000/65/000/000/0077/0084

AUTHOR: Simonov, P. V.; Temnikov, F. Ye.

ORG: none

TITLE: Adaptive bioelectronic systems of perception, training and control

SOURCE: AN SSSR. Nauchnyy sovet po kompleksnoy probleme Kibernetika. Bionika (Bionics). Moscow, Izd-vo Nauka, 1965, 77-84

TOPIC TAGS: bionics, adaptive control, adaptive pattern recognition

ABSTRACT: The authors study adaptive bioelectronic systems of perception, training and control. One of the first attempts to study involuntary changes in the electric activity of the brain resulted in the design of automatic narcosis apparatus. Trigger stimulation was developed for the diagnosis of brain damage and mental illness. The behavior of a system based on the cutaneo galvanic reflex is studied. Data obtained in the study of the cutaneo galvanic response can also be applied to the analysis of the electrical activity displacements of the brain. A signal with a significant content value evokes a strong cutaneo galvanic reflex in a subject. I. S. Ivanov and V. Portnik developed a system in which the change of transparencies in a projector was automatically controlled by the onset and duration of the cutaneo galvanic reaction. The problem of arbitrary bioelectric control is considered. The primary problem which has to be solved for these systems is that adaptive characteristics must be studied.

Card 1/2

ACC NR: AT6009445

Present automatic analysis methods of bioelectric processes with respect to their statistical characteristics can be used to solve this problem. The possible fields of application for adaptive bioelectric systems are discussed. Orig. art. has: 6 figures.

SUB CODE: 05, 06 / SUBM DATE: 26Oct65 / ORIG REF: 003 / OTH REF: 003

Card 2/2

SIMONOV, P.V.

Semantic conditioned reflex; on the physiology of images.
Zhur. vys. nerv. deiat. 15 no.6:1123-1125 N-D '65.
(MIRA 19:1)

1. Institut vysshey nervnoy deyatel'nosti i neyrofiziologii AN SSSR. Submitted June 12, 1965.

ACC NR: [illegible] SOURCE CODE: UR/0247/66/016/006/0974/0983

AUTHOR: Popov, V.A.; Simonov, P.V.; Tishchenko, A.G.; Frolov, M.V.; Khachatur'yants, L.S.

ORG: none

TITLE: Analysis of the intonational characteristics of speech as an index of emotional state in humans under spaceflight conditions

SOURCE: Zhurnal vysshey nervnoy deyatel'nosti, v. 16, no. 6, 1966, 974-983

TOPIC TAGS: manned space flight biotelemetry, bioastronautics, psychologic stress, speech analysis, emotional tension, emotion, space psychology, human engineering, speech spectrum

ABSTRACT: A method is described for analyzing the spectral characteristics of speech (frequency, intensity of articulatory components) which can serve as a reliable index of emotional state. Increased emotional tension is accompanied by increases in articulatory frequency F and signal intensity A, i.e., by an increase in the moment of articulation $M_F = A \cdot F$. Monitoring of sympathetic indices (pulse, respiration, etc.) concurrently with the parameter M_F provides a more reliable evaluation of operator state and permits differentiation of physical from emotional tension. Human

Card 1/3 UDC: 612.821

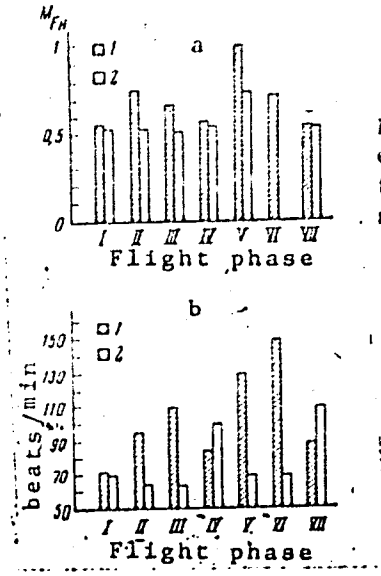

Fig. 1. Comparison of indices of emotional state (speech characteristic and pulse rate) of Leonov during spaceflight and preflight rehearsal

ACC NR: AP7002683

emotions modeled by Stanislawski-method actors were used to check the speech intonation analysis method. Considerable changes in the actors' heart rhythms during these tests attest to the presence of genuine emotion. The method described was used for actual determination of A. A. Leonov's emotional state during his EVA on the Voskhod-2 flight. The cosmonaut's physical strain was successfully differentiated from emotional tension. A graph is given comparing results obtained for a) the speech characteristic M_F, and b) pulse rate at various stages of 1) actual flight, and 2) thermal pressure chamber rehearsals. Computer analysis will permit more exact correlation of the spectral characteristics of speech sounds with various degrees of positive and negative emotions.

SUB CODE: 06, 05/ SUBM DATE: 14Jun66/ ORIG REF: 007/ OTH REF: 004
ATD PRESS: 5113

Card 3/3

MIKHAILOVA, Ek. (Sofiia); SIMONOV, R. (Moskva)

Beginning of the Bulgarian mathematical terminology.
Mat i fiz Bulg 7 no. 1: 45-54 Ja-F '64.

SIMONOV,R.A. (Moscow)

T.F.Osipovskii's efforts to combat mysticism in mathematics. Mat. v shkole no.5:11-14 S-O '55. (MLRA 8:11)
(Osipovskii, Timofei Fedorovich, 1765-1832)

SIMONOV, R. A. [Simonov, Rem Aleksandrovich] (Moskva)

Cipher codes and mathematical education of the Slavs in the 14th to 17th centuries. Fiz mat spisanie BAN 6 no. 3: 199-206 '63.

SIMONOV, S. (g.Petrozavodsk); FIRSOVA, O., inzh.-konstruktor; MASLOV, V.; VARSHAVSKIY, A. (g.Odessa); PETRYANOV, V.

Readers report, advise, suggest. Zhil.-kom. khoz. 12 no.1:15 Ja '62. (MIRA 15:6)

1. Predsedatel' domovogo komiteta domoupravleniya No.13 Sovetskogo rayona, g. Gor'kiy (for Petryanov).
(Municipal services)

L 55237-65 EEO-2/FSS-2/EWT(1)/EWA(d)/EWA/EED-2/FCS(k)
ACCESSION NR: AP5015558 UR/0286/65/000/008/0110/0110

AUTHORS: Simonov, S. G.; Simonov, V. V.; Simonova, L. S.

TITLE: An impact-triggering mechanism of an automatic weapon. Class 72, No. 170340

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 8, 1965, 110

TOPIC TAGS: automatic weapon, firing mechanism, weapon component

ABSTRACT: This Author Certificate presents an impact-triggering mechanism of an automatic weapon, consisting of a firing pin, firing pin spring, two sears, a trigger hook with a slot and a spring, and a trigger lever with a projection (see Fig. 1 on the Enclosure). To eliminate the inertial blows of the firing pin against the primer cap of a cartridge during the passage of the breechblock to its extreme forward position after firing or during the loading of the following cartridge into the breech chamber, the fire control lever is made in the shape of a bent plate held by a pin to the trigger hook. Orig. art. has: 1 figure.

ASSOCIATION: none

SUBMITTED: 26Dec63 ENCL: 01 SUB CODE: WA

NO REF SOV: 000 OTHER: 000

Card 1/2

L 55237-65
ACCESSION NR: AP5015558

ENCLOSURE: 01

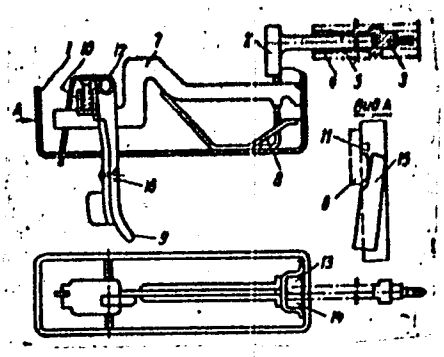

Fig. 1. 1- receiver; 2- firing pin; 3- hammer; 4- firing pin cover; 5- firing pin spring; 6- trigger lever; 7- trigger lever protrusion; 8- strip spring; 9- trigger hook; 10- spiral spring; 11- trigger hook slot; 12- trigger hook pin; 13- sear; 14- automatic sear; 15- fire control lever; 16- fire control lever pin

Card 2/2

Trade-Unions

Fulfill every point of the reports and election conference. V pom. profaktivu, No. 3, 1952.

Monthly List of Russian Accessions, Library of Congress, March 1952. Unclassified.

SIMONOV, S.N.

25090 SIMONOV, S.N. Opredeleniye Tipov Krasnogo Klevera Po Biologicheskomu Sostavu Populyatsiy Na Pervom Godu Zhizni. V Sb: Voprosy Kormodobyvaniya. Vyp.2.M.,1949,S.111-13.

SO: Letopis',No.33, 1949

USSR / Cultivated Plants. Fodder Crops. M-5

Abs Jour : Ref Zhur - Biologiya, No 13, 1958, No. 58624

Author : Simonov, S. N.
Inst : All-Union Scientific-Research Institute of Fodder
Title : Means of Solving the Problem of Early Green Fodders in the Non-Chernozem Belt

Orig Pub : Zhivotnovodstvo, 1957, No 4, 21-27

Abstract : The results of a comparative study of winter rye (standard), smooth brome grass, canary grass, orchard grass and eastern goat's rue, as early fodder crops, which took place at the central experimental base of the All-Union Scientific-Research Institute of Fodder (Moscow Oblast') over a period of 8 years, are given in this paper. It is shown that the above named crops have good potential for cultivation in the non-chernozem belt. -- B. T. Konik

Card 1/1

SIMONOV, S.M.

Spring forage plants of the non-Chernozem region. Trudy Bot. inst.Ser.6 no.7:212-214 '59. (MIRA 13:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut kormov im.V.R.Vil'yamsa, Lugovaya.
(Forage plants)

SIMONOV, Sergey Nikolayevich; SLUCHEVSKAYA, L., red.; YAKOVLEVA, Ye., tekhn.red.

[Early green forage] Rannie zelenye korma. Moskva, Mosk. rabochii, 1960. 75 p. (MIRA 13:11)
(Forage plants)

Elastic scattering of 95 MeV neutrons by protons and neutrons (II/43)

CERN-Symposium on High Energy Accelerators and Pion Physics.

Geneva, 11-23 June 56
H. Brandt #5.

SIMONOV, V.

USSR/Chemistry

Card : 1/1

Authors : Simonov, V.

Title : Comments on the exceptions to the Shchukarev-Mattaukh Law

Periodical : Zhur. Ob. Khim., 24, Ed. 6, 925 - 926, June 1954

Abstract : Comments are presented on the exceptions of the Shchukarev-Mattaukh rule according to which In^{113}, Sn^{115} and Te^{123} isotopes should have some kind of radioactivity with exception of β^--activity. The reason why these isotopes, being of small isotope percentage content, should belong to unstable isotopes, is explained. Also the nuclei belong to energetically unstable nuclear groups. The legality of the exceptions of the Shchukarev-Mattaukh law is questioned because the mentioned isotopes should be fully radioactive. Diagram showing the physical structure of the nuclei is included. Five references. Graph.

Institution : State Pedagofical Institute, Voronezh, USSR

Submitted : June 18, 1952

SIMONOV, V., master sporta

Special cases in glider towing during flight. Kryl.rod. 11 no.4: 17-19 Ap '60. (MIRA 13:6)
(Gliding and soaring)

SIMONOV, V., master sporta

Mechanized glider take-off. Kryl.rod. 11 no.8:26-27 Ag '60.
(MIRA 13:8)

(Gliding and soaring)

ABRAMOV, B., sud'ya respublikanskoy kategorii; SIMONOV, V., master sporta, g. Leningrad; MARCHENKO, A.; KRASNOGOLOVYY, V. (g. Riga); BROKTSITTER, G. (Karagandinskaya obl.)

Create, invent, test. Kryl. rod.11 no.12:28-29 D '60. (MIRA 14:3)

1. Rukovoditel' aviamodel'nogo kruzhka stantsii yunykh tekhnikov g. Kishinev (for Marchenko).

(Airplanes)

MAKAROV, V.; SIMONOV, V.; VASIL'YEV, A.A., red.; KOROLEV, A.V., tekhn. red.

[Mechanized take off of gliders] Mekhanizirovannyi vzlet planera. Izd.2., perer. i dop. Moskva, Izd-vo DOSAAF, 1961. 181 p. (MIRA 15:4)

(Gliding and soaring)

SIMONOV, V., master sporta

Features of piloting the A-15 . Kryl.rod. 12 no.7:24-25 Jl '61.
(Airplanes--Piloting)

SIMONOV, V., master sporta

Piloting the A-15 glider. Kryl.rod. 12 no.8:12-13 Ag '61.
(MIRA 14:8)

(Gliding and soaring)

AUTHOR: YELINSON, M.I., YASNOPOL'SKAYA, A.A. 109-5-21/22

TITLE: Interdepartmental Seminar for Cathode Electronics. (Mezhduvedomstvennyy seminar po katodnoy elektronike, Russian)

PERIODICAL: Radiotekhnika i Elektronika, 1957, Vol 2, Nr 5, pp 666-668 (U.S.S.R.)

ABSTRACT: At the 4. meeting held on the 4.3.1957 lectures were delivered on the autoelectron emission.

1.) M.I.YELINSON showed that the present conceptions concerning the molter effect process are not able to explain all known experimental facts. The lecturer suggested a new point of view (explained in detail in Radiotekhnika i Elektronika, 1957, Vol 2, Nr 1, p 75), which is based on an assumed essential heterogeneous potential distribution within the dielectric plate.

2.) V.N.SHREDNIK dealt with measurements carried out concerning the zirconium work function in tungsten.

3.) A.S.SOBOLEVA spoke about the investigation of autoelectron emission in dependence on hydrogen pressure in a device consisting of a flat anode and a conical or semispherical cathode.

4.) V.A.SIMONOV investigated the discharge process in the vacuum in the presence of a subignition spark.

Card 1/2

Interdepartmental Seminar for Cathode Electronics.

5.) I.N.SLIVKOV described the investigation of breakdown in the vacuum in the case of flat and spherical steel electrodes.
6.) A.I.KLIMIN reported on the investigations in the electron projector.
7.) G.A.BOGDANOVSKIY spoke about the measuring of resistance on a tungsten contact when opening the electrodes.

ASSOCIATION: Not given
PRESENTED BY:
SUBMITTED: 25.3.1956
AVAILABLE: Library of Congress

Card 2/2

SIMONOV, V.A.; KUTUKOV, G.P.

Electric circuit for high-speed framing photography of pulse discharges by means of electron optical image converters. Usp.nauch. fot. 6:90 '59. (MIRA 13:6)
(Electron optics) (Photography, High speed)

Simonov, V.A.

66702

24,2120

SOV/109-4-8-22/35

AUTHORS: Granovskiy, V.L., Luk'yanov, S.Yu., Spivak, G.V. and Sirotenko, I.G.

TITLE: Report on the Second All-Union Conference on Gas Electronics

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 8, pp 1339 - 1358 (USSR)

ABSTRACT: The conference was organised by the Ac.Sc.USSR, the Ministry of Higher Education and Moscow State University.

T.B. Fogel'son - "Methods of Reducing the Energy Lost in the Formation of a Breakdown".
L.I. Pivovar and V.I. Gordiyenko - "Microdischarges and pre-breakdown Currents Between Metal Electrodes in High Vacuum".
V.A. Simonov and G.P. Katukov - "Investigation of the Processes of Initiation and Development of a High-voltage Discharge in Vacuum".
E.M. Reykhrudel and G.V. Smirnitskaya - "The Characteristics of Ignition in High-vacuum in Magnetic Fields".
L.V. Tarasova et al. dealt with the transfer of the electrode material during the pre-breakdown stage in vacuum.
M.B. Rozanov et al. - "The Motion of Micro-particles of Substances During Electric Breakdown in Vacuum".
The third section dealt with the problems of electric sparks, corona and their practical applications. It was presided over by I.S. Stekol'nikov. The following papers were read:
V.I. Levitov et al. - "Probe Investigation of the a.c. Corona Fields".
G.N. Aleksandrov - "Elementary Processes in the Ionisation Zone of Corona-type Conductors at Atmospheric Pressures".
V.A. Burmakin - "Appearance of a Corona Discharge in Hydrogen and Nitrogen"
P.N. Chistyakov et al. - "Some Properties of the Corona Discharge in Hydrogen in/Coaxial, Cylindrical System".
A.S. Sobolava and B.N. Klyarfel'd - "Appearance of Discharge Phenomena Between a Point and a Plane at Gas Pressures of 10^{-5} - 1.0 mm Hg".
Ya.Yu. Reynet et al. - "Methods of Unipolar Ionisation of Air By Means of Aero-ionisers (see p 1335 of the journal).
M.P. Vanyukov et al. - "Time Spectra of the Radiation of a Spark Discharge in Inert Gases" (see p 1284 of the journal).
M.P. Vanyukov and A.A. Mak - "Production of High Temperatures by Means of Spark Discharges".
V.A. Peretyagin - "Influence of the Magnetic Field of the Electric Discharge on the Dividing Surface of Two Media".
I.S. Stekol'nikov - "New Data From the Study of Long Sparks".
M.I. Syanyev - "Properties of the Breakdown of Compressed Air in a Comparatively Uniform Field in the Presence of Localised Non-uniformities".
A.A. Vorob'yev et al. - "Pulse and Oscillographic Techniques for the Measurement of the Discharge Lags in Dielectrics" (see p 1257 of the journal).
A paper by B.N. Zolotykh dealt with the problem of the basic theory of the electric erosion (see p 1330 of the journal).
The fourth section was presided over by S.Yu. Luk'yanov and was concerned with the non-stationary and low-frequency discharges. The following papers were read:
I.G. Nekrashevich and A.A. Labuda - "The Nature of the Current Interruption During the Electric Explosion of a Metal Wire".
V.A. Simonov - "Propagation of Plasma From Local Pulse Sources".
G.G. Timofeyev et al. - "Observation of an Electro-dynamically Compressed Arc By Means of an Electron-optical Converter".
M.S. Ioffe and Ye.Ye. Yushmanov - "Investigation of the Radial Electric Field in an Ion Magnetron".
V.A. Belyayev and M.K. Romanovskiy - "Experiments with an Electron Model of a System with Magnetic Samples".
A.M. Andrianov et al. "Distribution of Magnetic and Electric Fields in Powerful Pulse Discharges".
G.N. Harding (England) - "Spectroscopic Determination of the Plasma Temperature in the "Zeta" Equipment" (see p 1326 of the journal).
The paper by Harding aroused a [illegible] of interest and Academician L.A. Artsimovich [illegible] the opinion that the electrons and ion te[illegible] the "Zeta" should be of the same order; inste[illegible] to Harding, the electron temperature [illegible] an [illegible] of the ions.

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24.2120 66702

SOV/109-4-8-22/35

AUTHORS: Granovskiy, V.L., Luk'yanov, S.Yu., Spivak, G.V. and Sirotenko, I.G.

TITLE: Report on the Second All-Union Conference on Gas Electronics

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 8, pp 1339 - 1358 (USSR)

I.M. Podgornyy and N.G. Koval'skiy - "New Data on X-ray Radiation During Pulse Discharges"

V.A. Khrabrov and M.M. Sulkovskaya dealt with the investigation of the neutron radiation in powerful gas discharges in chambers with conducting walls.

N.A. Borzunov et al. - "Investigation of the Gas Discharge in a Conical Chamber".

S.M. Osovets et al. - "A Turn of Plasma in Transverse Magnetic Field".

I.G. Kesayev "Data on the Division of a Cathode Spot on Mercury in a Low-pressure Arc" (see p 1289 of the journal).

A.E. Robson (England) - "A New Theory of the Cathode Spot" (see p 1295 of the journal).

L.N. Dreugova - "Positive Column in a Hydrogen Discharge With Stationary and Pulse Loads".

I.G. Nekrashevich and A.A. Labud - "Current Distribution on the Surface of Electrodes in Electric Pulse Discharges".

Card9/14 L.S. Eyg. - "Some Properties of Gas Discharges in Low-voltage in Halogen Counters".

G.I. Glotova and V.L. Granovskiy - "Comparison of the Initial De-ionisation in the Isotopes of Hydrogen (H and D)".

L.A. Akol'zina communicated some results on the pre-breakdown current pulses at low pressures.

M.Ya. Vasil'yeva and A.A. Zaytsev - "Charge-density oscillation Waves in Cylindrical Plasma".

L. Pekárek of Czechoslovakia communicated some information on the wave-like phenomena in gas-discharge plasma.

D.G. Brezhnev dealt with the problem of the determination of the energy of fast ions in pulse discharges.

B.B. Kadomtsev - "Convection Instability of a Plasma String".

S.I. Braginskiy and V.D. Shafranov - "Theory of a High-temperature Plasma String".

The fifth section was presided over by N.A. Kaptsov and dealt with high-frequency currents in gases. The following papers were read:

V.Ye. Golant - "Formation of Ultra-high Frequency Pulse Discharges in Inert Gases".

Card10/14 G.I. Pateyuk - "Influence of the Boundary Conditions on the Formation and Maintenance of High-frequency Discharges".

P.S. Bulkin et al. - "Investigation of a Self-maintained Ultra-high Frequency Pulse Discharge and the Process of its Development".

G.M. Zastenker and G.S. Solntsev - "Some Results of the Investigation of the Formation of Low-pressure High-frequency Discharges".

G. Margenau (USA) - "Conductivity of Weakly Ionised Plasma".

A.A. Kuzovnikov - "The Conditions of Transition From High-frequency Corona Discharge at Atmospheric Pressures".

V.Ye. Golant - "The relationship Between the Characteristics of the Ultra-high Frequency Current and the Direct Current in Gas Discharges".

B.B. Lagov'yer analysed the conductivity of the disintegrating plasma in the window of a resonance discharge tube.

S.M. Levitskiy and I.P. Shashurin dealt with the

Card11/14 applicability of the probe method to high-frequency discharges (see p 1358 of the journal).

The paper by V. Ye. Mitsuk et al. was devoted to the investigation of the ultra-high frequency plasma by means of the Stark effect.

G.S. Solntsev et al. dealt with the problem of electric fields in a high-frequency discharge at low pressures.

Ye. Badarau of Rumania read a paper entitled "High-frequency Discharges in Methane".

The work of the sixth section was devoted to the problems of plasma and its radiation; the section was presided over by V.A. Fabrikant. The following papers were read:

Yu.M. Kagan - "New in the Probe Methods of Plasma Investigation"

V.I. Drozdov - "Oscillographic Measurements in Plasma".

V.A. Simonov and A.G. Mileshkin - "Investigation of the Movement of Plasma by Means of a Mass Spectrometer of the Transit Time".

A.V. Rubchinskiy "Application of the Oscillations ... a ... [illegible]

Z/037/62/000/005-6/038/049
E140/E520

344200

AUTHORS: Simonov, V.A. and Mileshkin, A.G.

TITLE: Method and apparatus of a pulsed mass spectrometer for studying fast phenomena in low-pressure gases and non-stationary plasma

PERIODICAL: Ceskoslovensky casopis pro fysiku, no.5-6, 1962, 653-665

TEXT: The transit time mass-spectrometer described by W. C. Wiley and McLaren (Rev.Sci. Instr. 26, 1955, 1150) is not suitable for observing rapid reactions. The paper describes the design and characteristics of a chronotron (transit-time pulsed mass-spectrometer), intended for the analysis of neutral gas in a pressure range of 1×10^{-10} to 10 mm Hg, for the analysis of ions in a non-stationary plasma with a concentration of 1×10^{6} to 1×10^{16} cm^{-3} and for the analysis of ions in a strong magnetic field. The duration of the processes studied may be from 1×10^{-7} sec up to continuous operation. The extent to which the method can be used is shown on examples of the analysis of currents of molecules desorbed from the surfaces of solids, a study of the mechanism of sorption and catalytic reactions on

Card 1/2

Method and apparatus of a ... Z/037/62/000/005-6/038/049
E140/E520

renewed surfaces using stable isotopes, a study of the interaction of hydrogen plasma with the walls of vacuum systems, a study of the laws of the plasma in pulsed discharges and when studying the passage of atomic bonds through highly ionized plasma. There are 12 figures.

ASSOCIATION: Výzkumny ústav pro vakuovou elektroniku Rady ministrů SSSR, Moskva
(Research Institute for Vacuum Electronics of the Council of Ministers of the USSR, Moscow)

Card 2/2

ACC NR: AP6033419 SOURCE CODE: UR/0057/66/036/010/1831/1841

AUTHOR: Gorbunov,Ye.P.; Kotel'nikov,Yu.N.; Kutukov,G.P.; Simonov,V.A.

ORG: none

TITLE: Investigation of the material balance between the plasma filament and the gaseous shell in the Tokamak-3 toroidal machine

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 10, 1966, 1831-1841

TOPIC TAGS: hydrogen plasma, plasma confinement, gas pressure, ionization gage, gas absorption, ion lifetime

ABSTRACT: The authors have employed specially designed ionization gages to record the pressure of the neutral gas surrounding the plasma filament during operation of the Tokamak-3 machine, and with the aid of the data thus obtained they discuss the exchange of material between the plasma, the surrounding gas, and the stainless steel linear of the toroidal discharge chamber. The electron beam of the ionization gage was modulated to make it possible to distinguish the ionization gage signal against the noise background from the main discharge. Each instrument consisted of two identical ionization gages in a single envelope; one gage of the pair was usually operated with a cold cathode and its signal was subtracted from that of the normally operated gage to reduce the noise background. Entrance of charged particles into the ionization gage was prevented by an electrostatic trap. Data were recorded under

UDC: 533.9

Card 1/2

ACC NR: AP6033419

different operating conditions: the duration of the discharge was 12 or 20 millisec; the magnetic field strength ranged from 12 to 25 kOe; the initial hydrogen pressure varied from 6×10^{-5} to 4×10^{-4} torr; and the linear temperature was varied between 20 and 500° C. Some of the data are presented graphically and are discussed. With the aid of the material balance equation, a technique is developed for deriving the lifetime of an ion in the plasma from the gas pressure measurements, the usual measurements of plasma density and radius of the plasma filament, and the known or assumed cross sections for charge exchange and ionization of atoms and molecules in the plasma. The ion lifetime was found to increase with increasing magnetic field strength and to be very sensitive to other characteristics of the plasma. Investigation of these relationships is being continued. The ion lifetime was found to be somewhat less than the duration of plasma confinement under all the investigated conditions, and the plasma density was found to be about equally determined by the ion lifetime and the lifetime of an absorbed atom on the linear. Orig. art. has: 3 formulas and 10 figures.

SUB CODE: 20 SUBM DATE: 15Nov65 ORIG. REF: 010 OTH REF: 007

Card 2/2

KAGANOVICH, Vladimir Yefimovich; OLEYNIK, Nikolay Georgiyevich; SIMONOV, Vladimir Andreyevich; PETROV, I.F., red.; SHATOKHIN, V.I., tekhn. red.

[Transportation of Omsk Province] Transport Omskoi oblasti. Omsk, Omskoe knizhnoe izd-vo, 1961. 45 p. (MIRA 15:8)
(Omsk Province--Transportation)

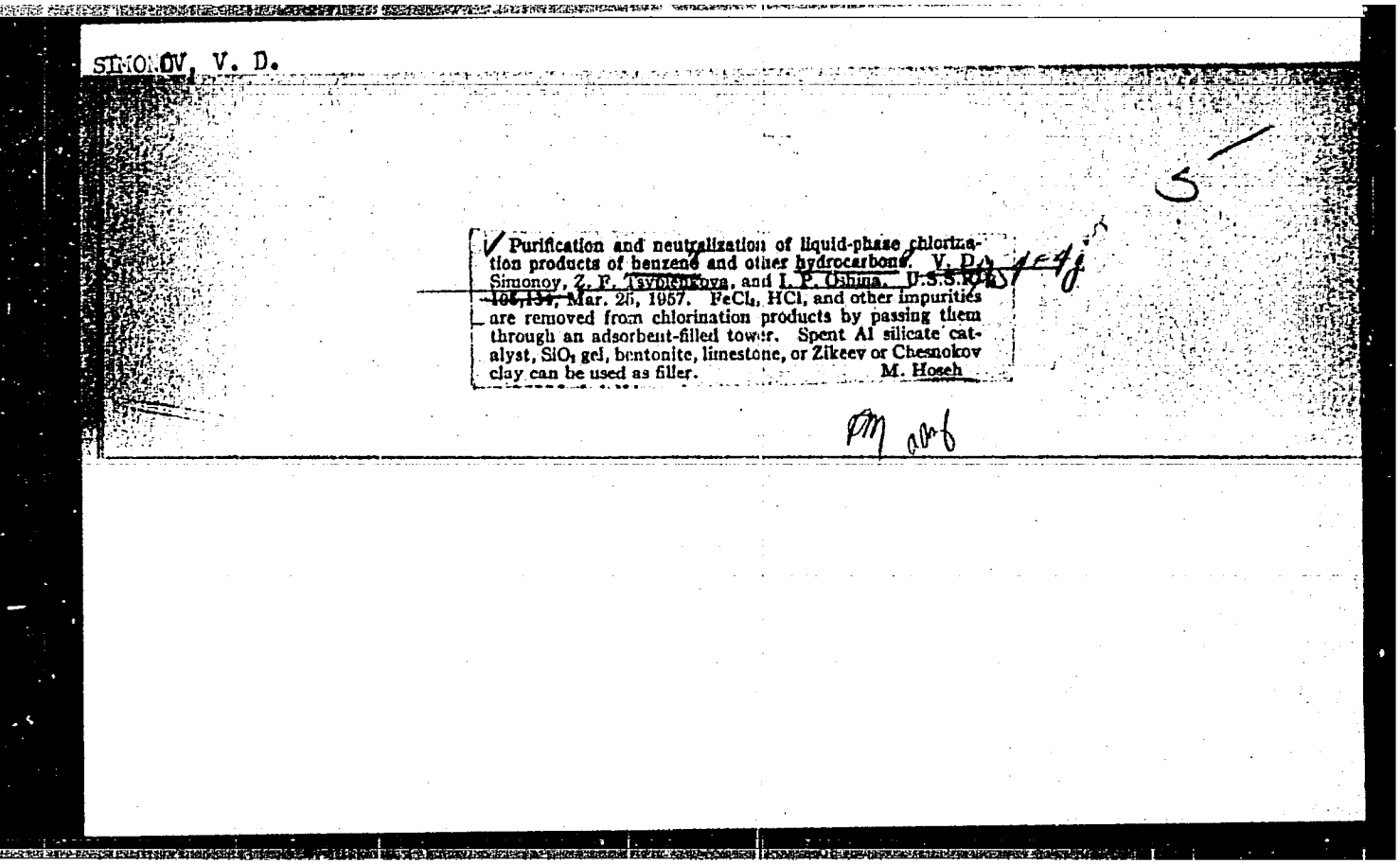
S...OV, V. A.

"Biological and Economic Appraisal of Fodder Protein From Castor Plant Oil Cake in Experiments on the Raising of Young Pigs." Cand Biol Sci, All-Union Sci-Res Inst of Animal Husbandry, Moscow, 1954. (RZhBiol, No 1, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (13)
SO: Sum. No. 598, 29 Jul 5

BOBROVA, L.A., [illegible]
red., SIN[illegible]

[Molecular sieves [illegible] abstracts of lectures to aid [illegible]. Molekuliarnye sita - novye promyshlennye [illegible] v pomoshch' uchiteliam khi[illegible] usovershenstvova-nia uchite[illegible] (MIRA 18.11)



SIMONOV, V. D.

Purification and neutralization of liquid-phase chlorination products of benzene and other hydrocarbons. V. D. Simonov, Z. F. Tsvetkurova, and I. P. Oshina. U.S.S.R. 106,134, Mar. 25, 1957. FeCl$_3$, HCl, and other impurities are removed from chlorination products by passing them through an adsorbent-filled tower. Spent Al silicate catalyst, SiO$_2$ gel, bentonite, limestone, or Zikeev or Chesnokov clay can be used as filler. M. Hoseh

SIMONOV, V.F.; PORUCHIKOV, Yu.P., kand.tekhn.nauk, red.; GEKTINA, R.F., inzh., red.; KUTENKOVA, G.M., tekhn.red.

[Mechanization and automatic control for the preparation of molding materials] Mekhanizatsiia i avtomatizatsiia prigotovleniia formovochnykh materialov. Sverdlovsk, TSentr.biuro tekhn. informatsii, 1959. 34 p. (MIRA 14:4)

1. Russia (1917- R.S.F.S.R.) Sverdlovskiy ekonomicheskiy administrativnyy rayon. Sovet narodnogo khozyaystva.
(Foundries--Equipment and supplies)
(Automatic control)

ACC NR: AP6035677 (A, N) SOURCE CODE: UR/0413/66/000/019/0026/0026

INVENTOR: Simonov, V. D.; Shakirova, A. M.; Savin, V. P.; Zvereva, V. V.; Romanovich, V. I.; Naumkin, P. V.

ORG: none

TITLE: Preparation of thiolcarbamates. Class 12, No. 186437 [announced by Ufa Branch of the All-Union Scientific Research Institute of Chemicals for Plant Protection (Ufimskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta khimicheskikh sredstv zashchity rasteniy)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 19, 1966, 26

TOPIC TAGS: thiolcarbamate, carbamic acid, organic salt, alkyl halide, halide

ABSTRACT: In the proposed method for preparing thiolcarbamates of the general formula

$$\begin{matrix} R'' \\ R''' \end{matrix}\!\!>\!NCOSR',$$

(where R', R", and R"' are saturated alkyls) by the reaction of salts of thiocarbamic acid with alkyl halides on heating, saturated alkyl halides are used as the alkylation reagents and the process is conducted—

Card 1/2 UDC: 547.496.1.07

ACC NR: AP6035677

at 100—130°C, 5—10 atm in an inert solvent, e.g., petroleum ether. [W.A. 50]

SUB CODE: 07/ SUBM DATE: 09Nov65

Card 2/2

USMANOV, Yu.A., zasl. deyatel' nauki Bashkirskoy ASSR, otv. za vypusk; KHRIZMAN, I.A., glav. red.; KOBYAKOV, I.A., red.; ABDUL'MENEV, M.I., red.; DYMENT, O.N., red.; IMAYEV, M.G., red., MOSKOVICH, S.M., red.; ROZHDESTVENSKIY, V.I., red.; SERGEYEV, L.I., red.; SIMONOV, V.D., red.

[Chemicalization of agriculture in Bashkiria]Khimizatsiia sel'skogo khoziaistva Bashkirii; trudy konferentsii. Ufa, Bashkirskoe respublikanskoe pravlenie Vses. khim. ob-va im. D.I.Mendeleeva. No.1. 1959. 117 p. (MIRA 16:1)

1. Respublikanskaya konferentsiya po voprosam khimizatsii sel'skogo khozyaystva BASSR
(Bashkiria--Agricultural chemistry)

. 18(5) PHASE I BOOK EXPLOITATION SOV/2048

Sverdlovsk. Ural'skiy politekhnicheskiy institut imeni S.M. Kirova

Teoriya i praktika litaynogo proizvodstva (Theory and Practice in the Foundry Industry) Moscow, Mashgiz, 1959. 231 p. and 32 p. (Series: Its: [Sbornik] vyp. 89) Errata slip inserted. 5,000 copies printed.

Ed.: A.A. Gorshkov, Corresponding Member, USSR Academy of Sciences; Doctor of Technical Sciences, Professor; Tech. Ed.: N.A. Dugina; Exec. Ed. (Ural-Siberian Division, Mashgiz): A.V. Kaletina, Engineer.

PURPOSE: This book is intended for engineering and scientific workers of institutes and machine-building plants, as well as for students of advanced courses at vuzs.

COVERAGE: This collection consists of articles dealing with practical problems in foundry processes. The articles review the achievements of Ural foundry workers in the past 40 years and present aspects of a current study on the casting of nodular cast iron, its properties and casting methods. A description is given of artistic and architectural casting. Consideration is given to the problem of combatting gases in steel and aluminum. The structure of cast steel is discussed. A recent investigation of vacuum casting including its characteristic properties and new applications is also presented. There are 32 pages of photographs illustrations at the end of the book. No personalities are mentioned. References follow each article.

TABLE OF CONTENTS:

SIMONOV, V.F.

Design and operation of sump tanks of hydraulic units for the cleaning of castings. Lit.proizv. no.10:16-18 O '64.
(MIRA 18:4)

SIMONOV, V.G.; SIMONOV, K.S.; BIKCHENMAY, M.A., redaktor; KHITROV, P.A., tekhnicheskiy redaktor.

[Manual for railroad dispatch and yard clerks] Rukovodstvo tekhnicheskomu kontorshchiku i spisshiku vagonov. Moskva, Gos.transp. zhel-dor. izd-vo, 1952. 131 p. (MLRA 7:11)

1. Russia (1923- U.S.S.R.) Ministerstvo putey soobshcheniya. (Railroads--Train dispatching)

SIMONOV, V. G.

SIMONOV, V. G.: "The experimental principles of the alpha-neutron structure of even-even nuclei and homologous groups of nuclei." Gomel' State Pedagogical Inst imeni V. P. Chkalov. Gomel', 1956. (Disserattion for the Degree of Candidate in Physico-mathematical in Sciences).

SO: Knizhaya letopis', No 23, 1956

SIMONOV, Vyacheslav Grigor'yevich; NAYDOVICH, A.N., red.; BELEN'KAYA, I.Ye., tekhn. red.

[Quantitative and qualitative transformations in microphysical processes] Kolichestvennye i kachestvennye prevrashcheniia v mikrofizicheskikh protsessakh. Minsk, Izd-vo Belgosuniversiteta im. V.I.Lenina, 1961. 20 p. (MIRA 15:1)
(Quantum theory)

SIMONOV, Vyacheslav Grigor'yevich; SMIRNOVA, K.M., red.; DUBOVIK, A.P., tekhn. red.

[Matter and the electromagnetic field] Veshchestvo i elektromagnitnoe pole. Minsk, Izd-vo MVSS i PO BSSR, 1962. 126 p. (MIRA 17:3)

MAKAREVICH, Vitaliy Sergeyevich; VEPRIK, Gennadiy Nikolayevich; GERASIMOV, Vasiliy Petrovich; SIMONOV, Veniamin Georgiyevich; GORODETSKOV, A.P., inzh., retsenzent; LYUTTSAU, A.G., inzh., retsenzent; ZUBLEVSKIY, S.M., inzh., red.; USENKO, L.A., tekhn. red.

[Detection and elimination of faults in VL22^{22} electric locomotives] Obnaruzhenie i ustranenie neispravnostei na elektrovozakh VL22^{M}. Moskva, Transzheldorizdat, 1962. 127 p. (MIRA 15:11)
(Electric locomotives--Maintenance and repair)

SIDOROV, Vyacheslav Grigor'yevich SHEDYUKOVA, S.I., red.

[Special theory of relativity and the electromagnetic
field] Spetsial'naia teoriia otnositel'nosti i elektro-
magnitnoe pole. Minsk, Vysshaia shkola, 1965. 181 p.
(MIRA 18:9)

APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R001550710018-3"

SIMONOV, V. I.: Master Phys-Math Sci (diss) -- "The crystalline structures of amblygonite and beidoserite". Moscow, 1958. Published by the Acad Sci USSR. 17 pp (Acad Sci USSR, Inst of Crystallography), 160 copies (KL, No 1, 1959, 117)

SOV/70-3-4-5/26

AUTHORS: Simonov, V,I. and Belov, N.V.

TITLE: A Determination of the Structure of Ambligonite by the Method of Minimalisation (Opredeleniye struktury ambligonita metodom minimalizatsii)

PERIODICAL: Kristallografiya, 1958, Vol 3, Nr 4, pp 428-437 (USSR)

ABSTRACT: A full determination of the structure of crystals of $LiAlPO_4F$ has been made by a superposition process. The resolving power of the function used has been estimated and the crystal-chemical properties of lithium have been elucidated. The triclinic cell of a natural specimen with small sodium content was found to have the dimensions $a = 5.06$, $b = 5.16$, $c = 7.08$ A; $\alpha = 109^{\circ}52'$, $\beta = 107^{\circ}30'$, $\gamma = 97^{\circ}54'$. Previous authors have chosen different axes but their measurements agree with the above. Three Weissenberg photographs were taken of equatorial layer lines with Mo radiation and intensities were estimated visually, 218 0kl, 190 h0l and 167 hk0 reflections were recorded. The statistics of the h0l zone showed it to be centred and implied that the space group was $P\bar{1} = C_i^1$. $Z = 2$. The Patterson projections $p(x,z)$

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A Determination of the Structure of Ambligonite by the Method of Minimalisation

and $p(y,z)$ were calculated. If $\underline{r}_o$ represents a Patterson peak with a radius vector $\underline{r}_o$, then several superposition functions are available, in particular:

$$\Sigma = P(\underline{r} - 1/2\ \underline{r}_o) + P(\underline{r} + 1/2\ \underline{r}_o)$$

$$\Pi = P(\underline{r} - 1/2\ \underline{r}_o).P(\underline{r} + 1/2\underline{r}_o)$$

$$M = \min.\left\{P(\underline{r} - 1/2\ \underline{r}_o),\ P(\underline{r} + 1/2\ \underline{r}_o)\right\}$$

$$I = \Sigma - \left|P(\underline{r} - 1/2\ \underline{r}_o) - P(\underline{r} + 1/2\ \underline{r}_o)\right|$$

and $M = 1/2\ I$.

The P-Al and P-P peaks were identifiable in the Patterson projections and, as the M function was shown to be the most powerful, it was calculated for the x,z and y,z projections with the vectors P-P and Al-Al and enabled oxygen positions to be found. The corresponding

A Determination of the Structure of Ambligonite by the Method of Minimalisation

structure factors were calculated and electron density projections constructed with very satisfactory agreement. It was concluded that the Li atoms were distributed statistically between two positions, final R values (incl. zero reflections) of about 15% being obtained. The final co-ordinates were: (x,y,z) Al_I (0,0,0); Al_{II} (0.50, 0.50, 0.50); P (0.565, 0.883, 0.238); O_I (0.646, 0.680, 0.3485); O_{II} (0.659, 0.194, 0.402); O_{III} (0.724, 0.836, 0.0805); O_{IV} (0.234, 0.795, 0.1115); (F,OH) (0.143, 0.319, 0.267); 1/2 Li_I (0.92, 0.575, 0.18); 1/2 Li_{II} (0.995, 0.65, 0.25). The accuracy is estimated at P $\pm$ 0.002 A, O $\pm$ 0.005 A, 1/2 Li $\pm$ 0.05 A. Diagrams are given of the ways in which the P tetrahedra and the Al octahedra link up and a calculation of the way in which

SOV/70-3-4-5/26

A Determination of the Structure of Ambligonite by the Method of Minimalisation

Pauling's rules are satisfied is made. For the O atoms the balance is satisfactory but for the (F,OH) ions there is a discrepancy of 20% in the bond strength calculations. There are 5 figures, 3 tables and 21 references, 8 of which are Soviet, 13 English.

ASSOCIATION: Institut kristallografii AN SSSR (Institute of Crystallography of the Ac.Sc.USSR)

SUBMITTED: May 12, 1958

Card 4/4

SEMENOV, Ye.I.; KAZAKOVA, M.Ye.; SIMONOV, V.I.

"Seidozerite'" a new zircon mineral and other minerals of the woehlerite group in alkali pegmatites. Zap. Vses. min. ob-va 87 no.5:590-597 '58. (MIRA 12:1)

(Zircon) (Woehlerite)

20-119-2-46/60

AUTHORS: Simonov, V. I., Belov, N. V., Member, Academy of Sciences, USSR

TITLE: The Crystalline Structure of Amblygonite (Kristallicheskaya struktura ambligonita)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol 119, Nr 2, pp 354 - 356 (USSR)

ABSTRACT: Initially the amblygonite $LiAlPO_4(F,OH)$ is charcterized in detail (Reference 2). The amplitude statistics F_{hol} have confirmed the presence of a center of symmetry in the amblygonite. Paterson's projections p(x, z) and p(y,z) made the regularities of the centrosymmetric crystals be seen (Reference 4) which made possible the elimination of the vector-branches, which correspond to the distances between the atoms; the latter are connected to the center of symmetry. Moreover the minimizing (References 5,6) could be carried out according to the projections. The approximated values of the coordinates of all

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The Crystalline Structure of Amblygonite

atoms apart from Li could be determined from $M_4(x,z)$ and $M_2(y,z)$ (Reference 7). The precision of the structure was carried out according to the projections of the electron density $\sigma(x,y)$, $\sigma(z,z)$, $\sigma(y,z)$ without taking Li into consideration. The precision process was continued according to the latter with the same signs according to which the latter projections were built up, until the converted signs of all amplitudes F_{hol} and F_{okl} (for $F_{exp} \neq 0$) harmonized. In order to determine the position of Li, the difference synthesis $\sigma_\Delta(x,z)$ (figure 1) was calculated under elimination of the contribution (vklad) of all atoms apart from Li. The geometrical analysis of the structure has shown the peaks 1 and 2 (figure 1) are corresponding to the "centers" of 1 irregular polyhedra with common facet (figure 2). It can be assumed that Li with a weight of 1/2 has statistically positions in the amblygonite which are 0,5 Å apart from each other. This

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conclusion has been confirmed by the calculated coefficients of the authencity R for different possible positions of Li. The assumed coordinates of the base atoms of the amblygonite - 2 kinds of Al without parameter (in centers of symmetry) and 7 other atoms in common positions with 24 parameters (li has statistically 2 positions) - are collated in table 1. The common anions (F, OH) unite the Al-octahedra in chains which extend parallel to the line b_1. The bands of the alternating P- tetrahedra and Li-polyhedra extend in the same direction. The tetrahedron-octahedron-bands are combined in lattices which are at right angles to the direction c_1. Figure 3 shows the projection of a lattice with Al and P, but instead of Li-polyhedra positions are given which are taken by Li with a probability of 1/2. Moreover interatomic distances in the amblygonite are given. The assumption of a structural relationship between amblygonite and herderite (Reference 9) is not confirmed, as in the structure of the amblygonite, lattices exclusively consisting of tetrahedra or octahedra are lacking. There is, however, a similarity of the chains in the amblygonite with those in sphene $CaTiSiO_5$. There are 3 figures,

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1 table and 11 references, 5 of which are Soviet.

SUBMITTED: December 30, 1957

Card 4/4

AUTHOR: Simonov, V. I., Belov, N. V., Member, Academy of Sciences, [illegible]

TITLE: The Crystal Structure of Seidhozerite (Kristallicheskaya struktura seydozerita)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 4, pp 475-476 (USSR)

ABSTRACT: On the basis of an analysis M. Ye. Kazakova gave the formula $Na_2(Mn_{0,50}, Ti_{0,75}, Zr_{0,75})Si_2O_8(F,OH)$ for zirconium titanium silicate (24% ZrO_2, 14% TiO_2) found by Ye. I. Semenov called seidhozerite. According to optical and roentgen goniometry the mineral is monoclinic and has the cell parameters a = 9,43, b = 7,10, c = 18,50 Å, and β - 102°43'. The allegation that seidhozerite is holohedral was confirmed by the amplitude statistics $/F_{h0l}/$: by means of this statistics a clear (according to Ref 2) centrosymmetric distribution could be observed. According to the specific weight d = 3,47 the problem arose as to the realization of the structure with 3 Ti- and 3 Zr-atoms per cell in the P2/c group in which only 2- and 4-fold positions

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are possible. It was not possible to draw reliable conclusions on the structure by means of the superposition method. The main results were obtained from the projection p(x,z). A regularity in the position of the peaks could be observed from this projection which was recently found by the authors for amblygonite (Ref 4). It once played an important part in the determination of the epidote structure (Ref 5). In seidhozerite 2 atoms with approximately equal atomic numbers must be placed in centers of symmetry translationally not identical which are at a distance of a/2 from each other. A further analysis of projection under consideration of the regularities of the syntheses of Patterson (given in Ref 6) made possible the observation of two other heavy atoms. The relative position of the 4 atoms observed was used for the superposition of the Patterson projection and for the construction of $M_6(x,z)$. The latter furnished the first surface model of the structure. This was Patterson determined more precisely by the computation of the signs and by the computation of the projections $\varrho(x,z)$. After having returned to projection (y,z) the authors determined the sign of F_{0k1} by means of the direct (statistic) method (Refs 7,8). Then $\varrho(y,z)$ was construct-

ed. A precise projection $\sigma(x,z)$ made possible the determination of the grain ratio from $\sigma(y,z)$, and the determination of the latter by means of the normal method. The assumed coordinates of the 17 base atoms (43 parameters) are given on table 1. Seidhozerite proved to be a diorthosilicate inspite of its orthosilicate empirical molecular formula. The 8th O-atom contained in the chemical formula is not a component of the silicon oxygen radical. The crystallochemical formula of seidhozerite must be set up as follows: $Na_4MnTi(Zr_{1,5}, Ti_{0,5})O_2(F,OH)[Si_2O_7]_2$. There are 2 figures, 1 table, and 11 references, 9 of which are Soviet.

SUBMITTED: July 31, 1958

[redacted] V, V.I.

"The Crystal Structure of Seidoserite ?

A report presented at the Symposium of the International Union of Crystallography Lenningrad 21-27 May 1959

SO;B 3.135,471 28 July 1959

SOV/70-4-2-4/36

AUTHORS: Simonov, V.I. and Belov, N.V.

TITLE: The Determination of the Crystal Structure of Seydozerite (Opredeleniye struktury seydozerita)

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 2, pp 163-175 (USSR)

ABSTRACT: Seydozerite from the Seydozero area has the formula $Na_2(Mn_{0.5}Ti_{0.75}Zr_{0.75})Si_2O_8(F,OH)$ as described in the work of Semenov, Kazakova and the author (Ref 1). It is monoclinic with the space group $C_s^2 = Pc$ or $C_{2h}^4 = P2/c$ and the cell dimensions $a = 5.53 \pm 0.2$ Å [sic] $b = 7.10 \pm 0.03$ Å, $c = 18.30 \pm 0.10$ Å and $\beta = 102^{\circ}43' \pm 1'$. β was found by optical goniometry. Possible centro-symmetry is indicated by the morphology, by the absence of piezo-electricity and by the statistics of the hol intensities. The Patterson functions (projections) confirmed this and the holohedric group P2/c was assumed. $d_{obs} = 3.47$ gives $Z = 3.87 \simeq 4$ formulae units per cell.

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378 non-zero reflexions in the hol zone and 331 in the okl zone were used in the analysis. The absorption for $\lambda = 0.71$ Å was 35 cm^{-1} and the cross-sections of the crystals used were 0.15 x 0.20 mm (hol) and 0.3 x 0.5 mm okl. This leads to errors in $|F|$ of up to 10% and 15%, respectively. $P(y,z)$ and $P(x,z)$ were calculated and are reproduced. The heavy Zr-Zr peaks could be identified and used for superposition methods in the (x,z) projection. Statistical sign-determination methods were found very suitable for the $F(okl)$ reflexions as the space group $P2/c$ is appropriate. For these reflexions those with $l = 2n$ have:

$F(okl) = F(o\bar{k}l) = F(ok\bar{l}) = F(o\bar{k}\bar{l})$ and those with $l = 2n + 1$ have $F(okl) = -F(o\bar{k}l) = -F(ok\bar{l}) = F(o\bar{k}\bar{l})$.

70 reflexions with the greatest unitary structure amplitudes were taken as "bankers". The signs were considered found if ≥ 3 pairs gave the same sign. 264 out of 331 signs were thus allotted. The Fourier projection was then calculated. It showed a systematic,

over-regular atomic arrangement which made superposition methods invalid and caused the statistical method to give ~ 25% of incorrect signs. Crystallochemical and mineralogical considerations concerning the isomorpous replacement had to be used in assigning the atomic positions (see Table 1, p 168). The accuracy of the atomic positions estimated by Vaynshteyn's method was Zr ± 0.001, Mn ± 0.002, Ti ± 0.003; Si ± 0.004; Na ± 0.005; O ± 0.009 Å. All x-coordinates come from $\rho(x,z)$ where there are no non-overlapping maxima. F_{hol} and F_{okl} were calculated from the coordinates and compared with the experimental values, giving reliability factors of 17.2 and 22.5% for hol and okl reflexions ($F_{exp} \neq 0$ up to $\sin\vartheta/\lambda \leq 1.30$ and $F_{exp} \neq 0$ up to $\sin\vartheta/\lambda \leq 0.66$), respectively. Without counting $F_{exp} = 0$ reflexions, the values were 16.6 and 20.7%. Counting up the bond strength balance according to Pauling's second rule, there are some deviations of 25%.

The Determination of the Crystal Structure of Seydozerite

The formula can be written structurally as $Na_4MnTi(Zr_{1.5}Ti_{0.5})O_2(F,OH)_2[Si_2O_7]_2$ with $Z = 2$. There are endless sheets of octahedra threaded on the twofold azis. Atoms of Mn(Mg), Ti and Na alternate in these octahedra. Zr and Na octahedra alternate in double bands along the b axis. The silicate groups are Si_2O_7 double tetrahedra parallel to b. Cuspidine and tilleyite have similar bonds between diorthogroups and Ca-octahedra. The bond distances are tabulated and analysed. The 001 cleavage is parallel to the sheets of octahedra. Optical measurements gave $2V = +68^o$. $n_g = 1.830$, $n_m = 1.758$ and $n_p = 1.725$. n_g coincides with a and n_p with b and this is consistent with the structure, the Mn octahedra accounting for most of the refractivity.

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The Determination of the Crystal Structure of Seydozerite

There are 6 figures, 3 tables and 21 references, 15 of which are Soviet, 2 international, 3 English and 1 German

ASSOCIATION: Institut kristallografii AN SSSR (Institute of Crystallography of the Ac.Sc.USSR)

SUBMITTED: January 21, 1959

Card 5/5

AUTHOR: Simonov, V.I. SOV/70-4-3-5/32

TITLE: Superposition Methods of Solving Crystal Structures

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 3, pp 302-311 (USSR)

ABSTRACT: A review article. The various techniques used and suggested for solving crystal structures from their Patterson functions are listed, those depending on superimposing the Patterson function on itself after certain displacements receiving particular attention. Both foreign and Soviet work is discussed. The principal Soviet contributions have been by Butuzov; Sanadze and Zhdanov, Kitaygorodskiy; Vaynshteyn; Mamedov and Belov. Examples of structures solved principally by superposition are listed:

C_sI_4 (20 atoms/cell; $P2_1/a$)

Cs_2CoCl_4 (28 atoms/cell; Pnam)

$Cu_2Mg_2(CO_3)(OH)_6 \cdot 2H_2O$ (23 parameters; C2/c)

Fe-carpholite

$CaHPO_4$ (z = 4; $P\bar{1}$)

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