



electrons or holes to pass through the layer. Current flows in the layer so long

SECTION NUMBER: 11-11-11

RESULTS: WITHIN THE RANGE OF 1000 TO 10000 OHM-CM, THE RESISTANCE OF THE LAYER DECREASES WITH INCREASING TEMPERATURE. THE TESTS HAVE SHOWN THAT HOLE MOBILITY IS THE DOMINANT FACT IN THE CONDUCTION OF THE LAYER. THE CURRENT FLOWS IN THE LAYER SO LONG AS THE VOLTAGE IS APPLIED.

Physics, AN USSR)

L 1603-66 ENT(1)/EPA(w)-2/EWA(m)-2 IJP(c) AT

ACCESSION NR: AP5014562

UR/0181/65/007/006/1667/1672

AUTHORS: <sup>44.55</sup> Frankevich, Ye. L.; Balabanov, Ye. I <sup>55</sup>

TITLE: Investigation of the motion of carriers in organic substances <sup>44.55</sup> <sup>52B</sup>

SOURCE: Fizika tverdogo tela, v. 7, no. 6, 1965, 1667-1672

TOPIC TAGS: paraffin, organic conductor, electron bombardment, electric conductivity, carrier motion, recombination, depolarization, electron capture

ABSTRACT: The authors investigated the conductivity of thin films of paraffin <sup>44.55</sup> bombarded by pulses of electrons of energy 3 -- 8 keV. The paraffin layers were produced by sublimation on glass substrates coated beforehand with metal electrodes. The apparatus used for the bombardment was described by the authors earlier (FTT v. 7, 710, 1965). The pulse width was usually 4  $\mu$ sec, and the measuring circuit made it possible to measure directly the current pulse through the sample. The results showed that the amplitude of the conduction current pulses

L 1603-66

ACCESSION NR: AP5014562

3

registered when the paraffin is bombarded with a series of pulses, decreases in time, reaching a stationary value. The time necessary for the establishment of the stationary amplitude depends on the ionizing-pulse repetition frequency. The decrease in the conduction-pulse amplitude is due to polarization of the sample, brought about by dilution of the charges produced during ionization, by the external electric field. The frequency dependence of this time is determined by the depolarization of the sample during the interval between bombarding pulses. It is shown that the electrons produced upon ionization do not leave the effective radius of the Coulomb field of the positive ions. The capture of these electrons by the traps present in the paraffin competes with the return of the electrons to their own positive ion. Other topics discussed are the separation of the charges in the electric field, the depolarization due to the dark conductivity of the sample, the recombination of the carriers producing the polarization. Orig. art. has: 5 figures and 1 formula.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR Moscow (Institute of Chemical Physics, AN SSSR).

44.55  
Card 2/3

L 1603-66

ACCESSION NR: AP5014562

SUBMITTED: 23Nov64

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OTHER: 003

Cord

3/3 SP

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L 25467-66 EWP(j)/EWT(l)/EWT(m)/T/EWP(t) IJP(c) AT/RM/JD

ACC NR: AP6009673

SOURCE CODE: UR/0181/66/008/003/0855/0857

AUTHOR: Frankevich, Ye. L.; Balsbanov, Ye. I.

57  
B

ORG: Institute of Chemical Physics AN SSSR, Moscow (Institut khimicheskoy fiziki AN

... and under conditions when two electrodes were deposited on the cleavage plane of the single crystal (surface conductivity). The volume photoconductivity decreased if the illuminated electrode was at negative potential and increased if the potential was positive. A positive change of the surface conductivity was observed in relatively weak magnetic fields and a negative change in strong fields (stronger than about 700 oe). Both the positive and negative changes of the photoconductivity with increasing magnetic field tended to limiting values of the order of 1-4%. Neither the negative nor the positive effect can be completely ex-

Card 1/2



I 25467-66

ACC NR: AF6009673

plained within the framework of the usual theory of magnetic effects in semiconductors, although the anisotropy of the negative effect can be ascribed to peculiarities in the motion of holes in organic crystals, and the positive effect may similarly be connected with electron motion. Differences between single crystals and sublimated films are ascribed to lack of long-range order in the latter. Orig. art. has: 3 figures.

SUB CODE: 20/    SUBM DATE: 02Aug65/    ORIG REF: 001/    OTH REF: 001

Cord 2/2 C.C.

L 29341-66 EWP(1)/EWT(1)/EWT(m)/T IJP(c) AT/RM

ACC NR: AP6018583

SOURCE CODE: UR/0161/66/008/006/1970/1972

AUTHOR: Frankovich, Ye. L.; Balabanov, Ye. I.; Vselyubskaya, G. V.

56  
B

ORG: Institute of Chemical Physics, AN SSSR, Moscow (Institut khimicheskoy fiziki AN SSSR)

15

TITLE: Study of the effect of photoconductivity change in organic semiconductors in a magnetic field

SOURCE: Fizika tverdogo tela, v. 8, no. 6, 1966, 1970-1972

TOPIC TAGS: organic semiconductor, organic photoconductor, tetracene, magnetic field, photoconductivity

ABSTRACT: The nature of the effect of a magnetic field on the photocurrent, previously discovered by the authors, has been studied. A number of experiments were carried out to screen out various possible mechanisms for this effect. The material used was tetracene. The effect of the magnetic field on the dark current due to electron injection from an Al electrode, and on the photocurrent with or without the limitation imposed by a space charge was determined. It was shown that the magnetic field has no effect on charge-carrier motion. Other experiments showed that the magnetic field has no effect on the absorption of monochromatic light at 5500 Å. It was concluded that the magnetic field which changes photoconductivity affects states which are formed after light is absorbed but before free carriers are generated. Orig. art. has: 1 figure. (SM)

Cord 1/1 (SUB CODE: 20/ SUBM DATE: 13Jan66/ ORIG REF: 002/ ATD PRESS: 5009

S/080/62/035/009/004/014  
D204/D307AUTHORS: Devyatykh, G.G., Odnosevtsev, A.I., Umilin, V.A., and  
Balabanov, V.V.TITLE: The purification of sulfur from selenium by rectifica-  
tionPERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 9, 1962,  
1946 - 1949

TEXT: The authors rectified S containing a few percent of Se on a column 16 mm in dia., packed with glass rings (5 mm dia.) to heights of 30 (I) and 146 cm (II), under  $N_2$ , at pressures of 400 - 760 (I) and 760 - 1460 mm Hg (II). The separation factor of the column,  $F = \frac{N_R(1 - N_D)}{N_D(1 - N_R)}$  where  $N_R$  and  $N_D$  are the atom fractions of Se in the residue and distillate respectively) increased rapidly with pressure (for II, F was 113 and 1440 respectively at 760 and 1460 mm Hg) and rose slowly with diminishing rate of condensation. F was also considerably increased by increasing the height of packing in the column. Experiments with 146 cm of packing, at 760 and at 1350

Card 1/2

BILADANOV, Yefim Mikhaylovich

"The Physical Nature of Electrical Separation by Means of Corona Discharge,"  
Moscow University Bulletin No. 1, 1946; pp. 117-122.  
SO: W-70

BALABANOV, Ye. M.

"Coronal Discharge and Its Application to Electrofilters," by N. A. Kaptsov,  
Reviewed by Ye. M. Balabanov, Sov. Kniga, No.2, 1948

OLOFINSKIY, N.P.; RYVKIN, P.M.; BALABANOV, Ye.M.; PROTASEVICH, N.S.

Electrostatic separator. Patent U.S.S.R. 77,957 , Dec. 31, 1949.  
(CA 47 no.19:9830 '53)

BARBERANOV, Ye. F.

"Dispersive Systems in an Electric Field of the Corona Discharge."  
Dr Phys-Math Sci, (no inst given), Moscow, 1954. (RZhFiz, Feb 55)

SO: Sum. No 631, 26 Aug 55 - Survey of Scientific and Technical Dissertations  
Defended at USSR Higher Educational Institutions (18)

BALABANOV, Yefim Mikhaylovich, laureat Stalinskoy premii, kandidat  
fiziko-matematicheskikh nauk; KIPNIS, S.Ye., redaktor;  
ISLENT'YEVA, P.G., tekhnicheskii redaktor.

[Nuclear reactors; expansion of a shorthand report of a  
public lecture. Iadernye reaktory; dopolnennaya stenogramma  
publichnoi lektsii pročitannoi v Tsentral'nom lektorii  
Obshchestva v Moskva. Moskva, Izd-vo "Znanie," 1955. 39 p.  
(Vsesoyuznoe obshchestvo po rasprostraneniю politicheskikh  
i nauchnykh znaniy. Ser. 3, no.53) (MLRA 9:1)  
(Nuclear reactors)



BAIABANOV, Yg., kandidat fiziko-matematicheskikh nauk, laureat  
Stalinskoy premii.

Atomic energy and possibilities of its use in aviation.  
Grazhd. av. 12 no.4:30-32 Ap '55. (MLRA 8:9)  
(Atomic energy) (Aeronautics)

BAIARANOV, Yefim Mikhaylovich, doktor fiziko-matematicheskikh nauk; FEDCHENKO, V.  
redaktor; TERYUSHIN, M., tekhnicheskiiy redaktor

[A sun on earth; what atomic power is and how it serves man] Sclntse na  
Zemle; ohto takoe atomnaya energiya i kak ona sluzhit liudiam. [Moskva]  
Isd-vo TsK VIKSM "Molodaya gvardiya," 1956. 292 p. (MLRA 9:12)  
(Atomic power) 1956

LIVSHITS, Mikhail Naftol'yevich; BALABANOV, Ye.M., doktor fiziko-  
matematicheskikh nauk, nauchnyy redaktor; GEL'PERIN, N.B.,  
kandidat tekhnicheskikh nauk, nauchnyy redaktor; GIMPEN'SON,  
A.Z., redaktor; GLADKIKH, N.N., tekhnicheskiy redaktor

[Electric methods of painting, enameling and glazing] Elektricheskie  
metody okraski, emalirovaniia i glazurovaniia izdelii. Moskva, Gos.  
izd-vo lit-ry po stroit. materialam. 1956. 111 p. (MLBA 10:3)  
(Spray painting) (Enamel and enameling) (Glazing)

BALABANOV, Ye. N. and GOL'DANSKIY, V. I.

"Induced Thermonuclear Reactions," *Termoyadernyye Reaktsii*, Series III, No. 13, 14, pp. 44-51, 1956, Moscow.

Translation U-3,054,338

PHASE I BOOK EXPLOITATION 718

: Balabanov, Yefim Mikhaylovich, Dr. of Physical and Mathematical Sciences

Yadernyye reaktory (Nuclear Reactors) Moscow, Voen. izd-vo Min-va obor. SSSR, 1957. 210 p. (Series: Nauchno-populyarnaya biblioteka)

Ed.: Kader, Ya.M.; Consultants of Publishing House: Voskoboynik, D.I., Dr. of Technical Sciences and Mikhaylov, V.A., Engineer-Col., Docent, Candidate of Physical and Mathematical Sciences; Tech. Ed.: Volkova, V.Ye.

PURPOSE: This book is intended for professionals and general readers interested in nuclear reactors.

COVERAGE: The author deals with the principles and uses of nuclear reactors, presenting first an extensive amount of basic atomic theory in order to give layman readers a better understanding of the book. All data on nuclear reactions, atomic power plants, and engines was obtained from Soviet and foreign publications. The  
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Nuclear Reactors 718

book contains 93 drawings and 3 appendices, including a list of collateral reading. No personalities are mentioned. There are no references.

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SOV/58-59-4-7684

Translation from: Referativnyy Zhurnal Fizika, 1959, Nr 4, p 60 (USSR)

AUTHORS: Balabanov, Ye.M., Barit, I.Ya., Katsaurov, L.N., Frank, I.M., Shtranikh, I.V.TITLE: Yield and Effective Cross-Section <sup>A</sup> Measurements of  $D(t,n)He^4$  and  $D(d,p)T$  Reactions for a Thick Heavy-Ice TargetPERIODICAL: V sb.: Yadern. reaktsii na legkikh yadrakh. Moscow, Atomizdat, 1957, <sup>5</sup> pp 48 - 56

ABSTRACT: The authors measured the yield and effective cross sections of  $D(t,n)He^4$  and  $D(d,p)T$  reactions for heavy ice in the 50 - 200 Kev deuteron energy range. A  $D_2^+$  or  $HT^+$  beam from an ion-accelerating tube was sorted in accordance with the different masses of the particles by means of a magnet and a system of diaphragms. The reaction yield was determined from the number of alpha-particles or protons registered at an angle of  $90^\circ$  to the beam with the aid of proportional counters. For the  $D(t,n)He^4$  reaction a maximum was observed for 160 Kev tritons; the magnitude of the cross section at the maximum was equal to 4.34 barn. The yield and cross-section measurements of the  $D(d,p)T$  reactions were carried out by way of a check,

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65916

SOV/58-59-4-7664

Yield and Effective Cross-Section Measurements of  $D(t,n)He^4$  and  $D(d,p)T$  Reactions for a Thick Heavy-Ice Target

since reliable results for this reaction using a gas target have been published (Sanders et al, Phys. Rev., 1950, Vol 77, p 1754, McNeill, K.G., et al, Phys. Rev., 1951, Vol 81, p 602). The results of the measurements showed that for a significant part of the energy range the obtained cross sections were 10 - 20% less than those obtained using a gas target. The authors assume that this is due to an inaccuracy in the values utilized for the energy losses in  $D_2O$ , or to some other systematic errors .

V.I.Ch. ✓

Card 2/2

BALABANOV, Ye.M.; BARIT, I.Ya.; KATSAUROV, L.N.; FRANK, I.M.; SHFRANIKH, I.V.

Measurement of the effective cross section of the  $D(t,n)He^4$  reaction  
in the 40-730 Kev deuteron energy range. Atom. energ. suppl. no.5:57-  
70 '57. (MIRA 11:2)

(Nuclear reactions) (Deuterons)

BALABANOV, Yefim Mikhaylovich, kandidat fiziko-matematicheskikh nauk;  
GOL'DANSKIY, Vitaliy Iosifovich, professor, doktor fiziko-matematicheskikh nauk; KIPNIS, S.Ye., redaktor; FURMAN, O.V., tekhnicheskiiy redaktor

[Thermonuclear reactions] Termoiadernye reaktsii. Moskva, Izd-vo "Znanie," 1956. 60 p. (Vsesoiuznoe obshchestvo po rasprostraneniю politicheskikh i nauchnykh snanii. Ser. 3, no.s.43-44) (MLRA 9:11)  
(Nuclear reactions)

FAYNBOM, Iosif Borisovich, BALABANOV, Ye.M., doktor fiziko-matematicheskikh nauk, red., ISLAMKINA, T.F., red., BERLOV, A.P., tekhn. red.

[Ernest Rutherford, the man who looked inside the atom] Ernest Rutherford-chelovek, saglianyvshii v glub' atoma. Moskva, Izd-vo "Znanie," 1958. 45 p. (Vsesoiuznoe obshchestvo po rasprostraneniю politicheskikh i nauchnykh ssnii. Ser. 8, vyp. 2, no. 7).

(MIRA 11:10)

(Ernest, Rutherford, 1871-1937)

NAUMENKO, Ivan Arsenovich, kand.tekhn.nauk, dotsent, inzh.-polkovnik;  
BALABANOV, Ye.M., doktor fiziko-matemat.nauk, red.; KADNER,  
Ye.M., red.isd-va; GAVRILOVA, A.M., tekhn.red.

[Atomic power installations] Atomnye silovye ustanovki,  
Moskva, Voen.isd-vo M-va obr.SSSR, 1959. 187 p. (MIRA 12:7)  
(Nuclear engineering)

BALABANOV, Yefim Mikhaylovich, doktor fiziko-matemat.nauk; FAYNBOYM,  
I.B., red.; SAVCHENKO, Ye.V., tekhn.red.

[Physics of nuclear reactors] Fizika iadernykh reaktorov.  
Moskva, Izd-vo "Energie," 1960. 47 p. (MIRA 13:12)  
(Nuclear reactors)



85336

S/120/60/000/005/004/051  
E032/E514

16.2330

AUTHORS:

Balabanov, Ye. M. and Smirnov, Yu. S.

TITLE:

A Comparative Study of the Symmetric and the Usual  
Cascade Voltage Multiplier

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No.5, pp.23-27

TEXT: The present paper is concerned with the rectifier-capacitor type of voltage multiplier used in particle accelerators.<sup>19</sup> The usual Cockroft-Walton arrangement shown in Fig.1 is of limited application because of the voltage drop and voltage fluctuations at the output of the multiplier. The present authors have investigated the ordinary voltage multiplier and the symmetric voltage multiplier (Fig.2) described by Heilpern (Ref.2). The experiments were carried out on a small model of a 10-stage cascade generator using capacitors of 0.5  $\mu$ F ( $U = 2$  kV). Selenium rectifiers of type ABC-6-1000 (AVS-6-1000) were used. Each working rectifier consisted of two rectifiers connected in series. The characteristics of the usual and the symmetric generators were obtained as functions of the load current, the frequency of the supply voltage and the number of stages. The results obtained are reported to be in agreement with the theoretical calculations given by Novikovskiy

Card 1/2

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S/120/60/000/005/004/051  
E032/E514

**A Comparative Study of the Symmetric and the Usual Cascade Voltage Multiplier**

(Ref.3). It was found that by using the symmetric circuit the voltage fluctuations at the output can be reduced very considerably. Thus, for example, the voltage fluctuation in the case of a 9-stage multiplier plotted as a function of the load current is reduced by a factor of approximately 10 at load current of the order of 4 mA. When the fluctuation in the output voltage is plotted as a function of the number of stages, a reduction by a factor of the order of 10 is obtained for the symmetric case as compared with the ordinary case ( $n = 9$ ). If the supply frequency is increased up to about 1 kc/s, the fluctuation at the output of the symmetric multiplier can be reduced to a value of the order of a few hundredths of a percent at a load current of a few mA. There are 6 figures, 1 table and 3 references: 1 Soviet, 1 Swiss and 1 English.

ASSOCIATION: Fizicheskiy institut AN SSSR (Physics Institute, AS USSR)

SUBMITTED: September 4, 1959

Card 2/2

42000

26.235/  
21.2000

8/089/61/010/004/011/027  
B102/B212

AUTHORS: Balabanov, Ye. M., Vasil'yev, G. A.

TITLE: A traveling-wave cascade generator - a new source for high-voltage supply of accelerator tubes

PERIODICAL: Atomnaya energiya, v. 10, no. 4, 1961, 375-377

TEXT: Cascade generators which are well suited as a high-voltage source for ion and electron accelerators (cf. B. S. Novikovskiy, Atomnaya energiya, 4, vyp. 2, 175 (1958)) have the disadvantage of being very expensive and consuming too much energy in their capacitors ( $\sim 10^4$  joules). Since 1957 a traveling-wave cascade generator suggested by Vasil'yev (Pribory i tekhnika eksperimenta, no. 5, 75 (1959)) has been tested at the Fizicheskiy institut AN SSSR (Institute of Physics, AS USSR). The circuit (Fig. 1) acts as an LC-filter for the upper frequencies. The bridge rectifier in each stage acts as an additional active load which leads to a decrease of the equivalent factor of the coils. The cascade circuit acts analogously to a section of a long traveling-wave line. In order to have an equal load on all voltage rectifiers at a given current and in order to diminish the harmful power

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S/089/61/010/004/011/027  
B102/B212

A traveling-wave ...

leakage in the matching resistor R, the LC-filter has to be inhomogeneous. The characteristic resistance of the cascade has to increase, which is obtained by either increasing the inductance or by simultaneously increasing the inductance and decreasing the capacitance of the discharge capacitors. Such a circuit may have up to 1000 stages; nevertheless, the capacitance of the capacitors in each stage are not lower than in standard circuits. The dimensions of the induction coils for such a circuit have to be large. In order to keep the dimensions of the whole unit within reasons, the coils are made as flat, closely connected discs, each of which is inductively coupled with 10-20 stages. This design will also decrease the thermal losses in the coils. In a traveling-wave generator circuit, the total pulsation will not exceed that of a single stage in its order of magnitude. A considerable phase shift ( $100-150^\circ$ ) between the alternating voltages in neighboring stages brings about a compensation of the pulsation. The capacitance of a high-voltage electrode with respect to ground (several  $10 \mu\text{f}$ ) is here considerably higher than the output capacitance of a multiplier circuit ( $10 \mu\text{f}$ ). This also brings about a suppression of pulsations. With  $\sim 0.01\%$  this is within tolerable limits. In order to investigate the properties of this cascade generator, the authors have built a unit

Card 2/5

A traveling-wave ...

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B102/B212

(schematically shown in Fig. 3) with 50 stages (250 kv, 1.5 ma, 7-10 kc/sec). Each stage was 25 mm high. Ceramic capacitors of type KEKE-1 (KVB-1) with a rated capacitance of 68  $\mu\text{f}$  and selenium rectifiers of type ABC-7-3N (AVS-7-3P) have been used. The induction coils showed a quality factor of  $Q = 100-120$  at 8 kc/sec. Each stage of the filter column consisted of four parallel-connected capacitors of the type CO: (POV) with a total capacitance of 1500  $\mu\text{f}$ . The unit has been used successfully for the voltage supply of an accelerator tube. The following advantages of this circuit are emphasized: 1) the possibility of using the same compressed gas for insulation in the system and also as a dielectric in the capacitors; 2) low response time ( $\sim 10 \mu\text{sec}$ ); 3) elimination of excessively high alternating voltage of elevated frequency, and of corona discharges associated with it; 4) facilitation of work with semiconductor rectifiers; 5) the possibility of connecting the electrodes directly (without voltage divider) to the accelerator tubes. There are 3 figures and 2 Soviet-bloc references.

SUBMITTED: September 22, 1960

Card 3/5

BALABANOV, Yefim Mikhaylovich; CHUGASOV, A.A., red.; SOLOMONCHIK,  
R.L., tekhn. red.

[Thermonuclear reactions] Termoiadernye reaktsii. Moskva,  
Voenisdat, 1963. 84 p. (MIRA 16:9)  
(Controlled fusion)

BALABANOV, Yefim Mikhaylovich; FEDCHENKO, V., red.

[The sun on the earth; talks about the atom, its nucleus,  
and their energy] Soltse na Zemle; rasskazy ob atome,  
atomnom iadre i ikh energii. Izd.2., dop. Moskva, Mo-  
lodaia gvardiia, 1964. 278 p. (MIRA 17:6)

BALABANOV, Ye.M., doktor fis.-matem. nauk, prof. (Moskva)

Charge of particles in the electric field of a corona discharge  
with strong gas dust content. Elektrichestvo no.2:57-60 F '65.  
(MIRA 18:3)



BALABANOV, Ye.M.

Structural geology and geological history of the development of the  
Archoda-Don dislocations. Trudy MINKHIGP no.43:262-270 '63.  
(MIRA 17:4)

MANEVICH, V.L., kand. med. nauk; BALABANOV, Yu.V.

Mediastinoscopy as an objective method for the study of the  
anterior mediastinum. Trudy TSIU 66:67-73 '64. (MIRA 18:5)

KOROTSEHENKO, N.I.; BALABANOVA, A.A.

Vitamin composition of fodder yeasts. *Gidroliz. i legokhim.prom. 14*  
no.4:3-4 '61. (MIRA 14:5)

1. Nauchno-issledovatel'skiy institut gidroliznoy i sul'fitno-  
spirtovoy promyshlennosti.

(Yeast) (Vitamins)

DIKANSKAYA, E.M.; BALABANOVA, A.A.

Production of riboflavin by yeasts grown on pentoses. Sbor. trud.  
NIIGS 12:99-112 '64. (MIRA 18:3)

BALABANOVA, A. V., Hbr. Microbiology, Lab. State Balneological Inst. Feyfigorski

"On the Bactericidal Properties of the Tabuken-Mud," Mikrobiol., 13,  
No. 6, 1944.

BALABANOVA, K., zaveshdashch otdelenie; RIASKOV, S., starshi ordinator

Results of surgical therapy of separation of the retina during  
1952-1953. Khirurgiia, Sofia 7 no.6:341-346 1954.

1. Okrushna bolnitsa Racho Angelov, Sofia. Ochno otdelenie.  
Zaveshdashch otdelenieto K.Balabanova.  
(RETINAL DETACHMENT, surgery,  
results)

BALABANOVA, K.; CHAKOV, Kh.

Ocular trauma during 1951-53 according to data of the ophthalmologic department of the Dr. R. Angelov Regional Hospital in Sofia. Khirurgia, Sofia 8 no.1:46-51 1955.

1. Okrushna bolnitsa "D-r Racho Angelov" - Sofia. Gl lekar: Khr. Manchev. Otdelenie po ochni bolesti Zabeshdeshch otdelenieto: K.Balabanova.

(EYE, wounds and injuries,  
hosp. statist.)

(WOUNDS AND INJURIES,  
eye, hosp. statist.)

BALABANOVA, K.

Results and observations on surgical therapy of detachment of the retina. Khirurgia, Sofia 9 no.4:311-320 1956.

1. Okrushna bolnitsa Dr. Racho Angelov--Sofia Otdelenie sa ochni bolesti. Zav. otdel.: K. Balabanova.

(RETINAL DETACHMENT, surgery,  
(Bul))



BALABANOVA, K.

Combined surgical treatment of retinal detachment. Khirurgia,  
Sofia 9 no.7-8:654-661 1956.

1. Okrushna bolnitsa D-R R. Angelov"--Sofia. Gl. lekar:  
Khr. Manchev.  
(RETINAL DETACHMENT, surgery,  
(Bul))

BALABANOVA, K., doktor; CHAKOV, Kh., doktor

Data on refraction anomalies among young people attending school  
in Sofia District. Uch.zap. GNII glas.bol. no.7:197-200 '62.

(MIRA 16:5)

1. Iz glaznogo otdeleniya Sofiyskoy okrushnoy bol'nitsy, Narodnaya  
Respublika Bolgariya.

(SOFIA (DISTRICT)—EYE—DISEASES AND DEFECTS)

BALABANOVA, L. A.

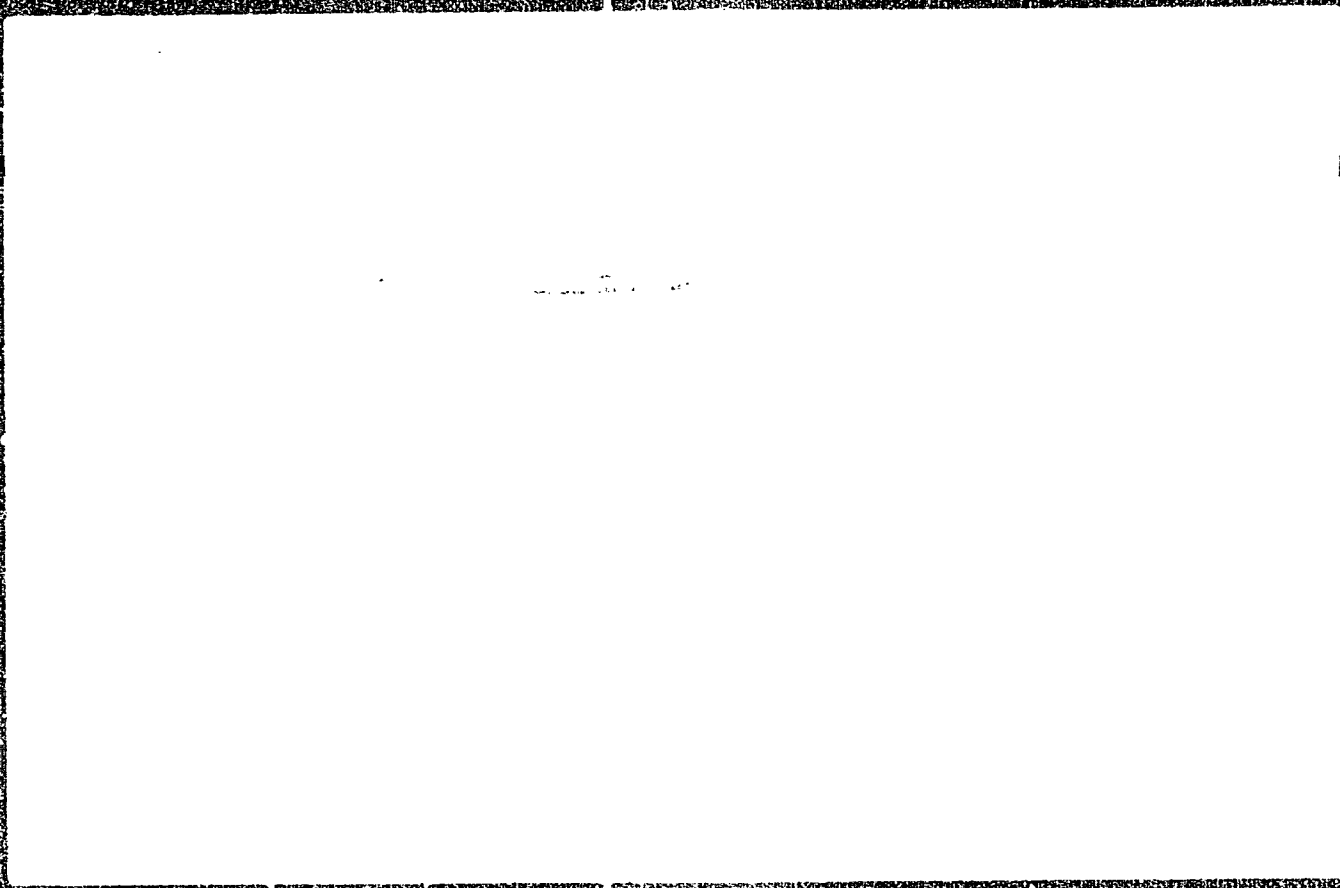
"A Comparative Study of the Physiological Processes of Agricultural Crops Subjected to Irrigated and Nonirrigated Cultivation as a Scientific Basis for the Development of Improved Agricultural Engineering of Irrigated Crops." Cand Biol Sci, Khar'kov Agricultural Inst, Khar'kov, 1953. (RZhBiol, No 6, Nov 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (11)

SO: Sum. No.521, 2 Jun 55

"APPROVED FOR RELEASE: 06/06/2000

CIA-RDP86-00513R000103130007-6



APPROVED FOR RELEASE: 06/06/2000

CIA-RDP86-00513R000103130007-6"

*Литература*

AUTHORS: Balabanova, L. A. and Bredov, M. N. 57-27-7-1/40

TITLE: Thermal Conversion of Germanium on Irradiation by an Electron Beam (Termicheskaya konversiya germaniya pri obluchenii elektronnym puchkom).

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1957, Vol. 27, Nr 7, pp. 1401-1407 (USSR)

ABSTRACT: Data are given of some experiments on the behavior of electric conductivity, the carrier-concentration and the life of non-equilibrium-carriers in thermal conversion caused by heating the sample by an electron beam in a vacuum. The vacuum conditions and the possibility to regulate the heating sufficiently elastically made it possible to obtain some data with regard to the kinetics of the process. The investigation of the resulting curves for the dependence of the concentration on the time of irradiation shows that the process has a relaxation-character. It is shown that the quantity of concentration in the case of saturation, i.e. the value of the equilibrium concentration, is not determined by the conditions in the experiment but by the initial properties of germanium. This general conclusion is confirmed

Card 1/2

Thermal Conversion of Germanium on Irradiation by an Electron Beam 57-27-7-1/40

by the control-tests given here. It may therefore be assumed that in the case under review the formation of thermal acceptors takes place like a certain spatial relaxation-process whose equilibrium state is at the end determined by the conditions existing in the sample already before the beginning of the process. It is assumed that these acceptors which are contained in the initial sample in a bound form are converted to a state of action only as a consequence of a heat-treatment. The evaluation of the activation-energy yields about 2,45 eV and the evaluation of the recombination-section of the unreal (minor?) carriers on the thermal acceptors about  $5 \cdot 10^{-17}$  qcm. There are 5 figures and 10 references, 3 of which are Slavic.

ASSOCIATION: Institute for Semiconductors AS USSR, Leningrad  
(Institut poluprovodnikov AN SSSR, Leningrad)

SUBMITTED: February 19, 1957

AVAILABLE: Library of Congress

Card 2/2 1. Germanium-Conductivity-Test results 2. Electron beams-Applications  
3. Germanium-Properties-Temperature factors

S/181/60/002/011/031/042  
B006/B060

AUTHORS: Ageyev, V. N., Balabanova, L. A., and Bredov, M. M.

TITLE: A Study of Plasmon Spectra

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 11, pp. 2899-2905

TEXT: The authors wanted to work out a method of determining the plasmon spectra, when assuming for energy values to be absolutely accurate on three points. In a previous paper (Ref. 7) they had described an electrostatic energy analyzer, which is specially suited for measuring the energy on plasmons. The simplest variant of this instrument (single-stage device with homogeneous field) was made use of here. The plasmon energy was determined in aluminum. Fig. 3 shows the spectrum, taken by oscilloscope, of the characteristic losses in aluminum. The plasmon energy was determined from the line distance; it lies with a probability of 0.9 at  $\hbar\omega = 15.18 \pm 0.06$  ev. The values found by other authors range between 14.7 and 15.8 ev (Refs. 10-19) and are compiled in a table. If the value  $\hbar\omega$  is theoretically calculated on the basis of the model of free electron gas in aluminum with  $a = 4.0496\text{A}$  and  $n_0 = 4/a^3$ , one obtains  $\hbar\omega = 15.78$  ev, Card 1/2



A Study of Plasmon Spectra

S/181/60/002/011/031/042  
B006/B060

whereas, if the oscillations of polarization of ion trunks are considered, one obtains 15.48 ev, which comes very close to the value determined experimentally. The mean free path of a 14.5-kev electron in Al for the production of a plasmon amounts to 200-650 A. A. Ya. Vyatskin is mentioned. There are 3 figures, 2 tables, and 19 references: 8 Soviet, 5 German, 4 US, 1 Japanese, 1 British, and 1 French. ✓

ASSOCIATION: Institut poluprovodnikov AN SSSR Leningrad (Institute of Semiconductors of the AS USSR, Leningrad)

SUBMITTED: July 19, 1960

Card 2/2



24,7700 (1035, 1043, 1385, 1144)

33347  
S/181/62/004/001/014/052  
B125/B104

AUTHORS: Balabanova, L. A., Bredov, M. M., and Kotov, B. A.

TITLE: Plasmon spectra in In and InSb

PERIODICAL: Fizika tverdogo tela, v. 4, no. 1, 1962, 86 - 89

TEXT: The characteristic energy loss spectra of electrons passing through free thin films of In and InSb were measured using a device and method described by V. M. Ageyev, L. A. Balabanova, and M. M. Bredov (FTT, 2, 11, 1960). The films were vacuum-deposited on rock-salt crystals which were then dissolved. When evaluating such spectra, it should be considered that the electrons can lose energy by successive excitation of one, two, or more plasma vibration quanta, or by pair collisions. If there is a group of valence electrons with sufficiently varying energy, or if the difference between the plasmon energy corresponding to the electron vibrations in this group and the energy characteristic of band-to-band transitions, it will be possible to observe the lines related to the excitation of collective vibrations. If the assumptions made above are correct, the energy losses of electrons due to the excitation of plasma vibrations

Card (1/1)

Plasmon spectra in In and InSb

33347  
S/181/62/004/001/014/052  
B125/B104

cause narrow lines in the energy spectrum of electrons that have traversed the film. These narrow lines correspond to multiples of  $\hbar\omega$ , where  $\omega^2 = 4\pi e^2 N/m$ ,  $N$  is the concentration of electrons involved in plasma vibrations. The lines that follow correspond to the excitation of one, two, three, and so on plasmons. The plasmon spectrum cannot be observed in practice when the plasmon energy lies in the spectral range corresponding to band-to-band transitions. However, if the lines  $n \hbar\omega$  ( $n = 2, 3, 4, \dots$ ) lie in this range, the plasmon spectrum will be observable. Practical observations will only reveal transitions between neighboring bands. Transitions from the valence band to higher bands cannot be observed in practice under real conditions. It is assumed that chiefly transitions from the band below the valence band to the latter and to the conduction band can be observed in practice provided the difference in energy between these two bands is not too large (10 - 20 eV). Curves recorded on InSb show no band-to-band transitions, but furnish two distinct lines corresponding to single and double excitation of a plasmon with the energy  $\hbar\omega = 12.65 \pm 0.25$  eV with the probability 0.95. The semiquantitative results of the measurements discussed here might show where investigations of the characteristic energy losses of electrons can be of interest for solid-state physics.

Card 2/13

Plasmon spectra in In and InSb

33347

S/181/62/004/001/014/051  
B125/B104

Plasma vibrations can also give information on the number of electrons involved in valence binding. There are 4 figures and 4 references: 2 Soviet and 2 non-Soviet. The reference to the English-language publication reads as follows: B. Gauthé. Phys. Rev., 114, 1265, 1959.

ASSOCIATION: Institut poluprovodnikov AN SSSR Leningrad (Institute of Semiconductors, AS USSR, Leningrad) X

SUBMITTED: July 11, 1961

Fig. 1. Characteristic energy losses in three different In samples. The curve x-x-x- is similar to that for InSb. Ordinate: relative intensity; abscissa: energy losses, ev.

Card 3/4<sub>3</sub>

[The text in this section is extremely faint and illegible due to heavy noise and low contrast. It appears to be a multi-paragraph document.]

investigated by a method described by the authors earlier (with V. S.

... 1969, 1960, with R. A. ... 1967)

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shells of the ionic cores. The positive shifts, being the result of

L 54/49-65 EWT(1)/EWA(j)/T/EWA(b)-2 BV/JK

4

ACCESSION NR: AP5014288

UR/0016/65/000/006/0043/0047  
616.981.49-022.39(471.23-2)

28  
24  
B

AUTHOR: Grebenchuk, A. I.; Bakulina, L. I.; Vaahchenok, G. I.; Somova, N. M.;  
Pun'ko, T. A.; Andreyeva, A. P.; Yudinova, P. V.; Bartasheva, V. A.; Balabonova,  
L. S.

TITLE: Salmonellosis in rodents in Leningrad

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 6, 1965, 43-47

TOPIC TAGS: salmonella, rodent carrier, disease control

ABSTRACT: Approximately 46,000 rodents were examined in a study of salmonellosis in rodents in Leningrad in 1960-1962. These included 36,000 grey rats, 850 black rats, 6100 house mice, and 2700 other murine rodents (9 species). The rodents were caught in various food establishments, apartments, etc. in the city and suburbs. 301 serological types of salmonella were isolated from this material; 151 were typed as Isschenko-Danich organisms; the remainder were distributed among 18 serological types from the B, C, D, E, and F groups. All but one of the latter were isolated from the organs of the grey rats and house mice, a matter of epidemiological in-

Card 1/2

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ACCESSION NR: AP5014288

terest because these rodents belong to synanthropic species. No salmonellas were isolated from rodents caught in open places such as gardens, parks, and cemeteries. Most of the types (32%) were isolated during warm weather, 14% in the fall. The commonest of the salmonellas isolated from the rodents were *S. enteritidis* (42%) and *B. typhisuis* (40%); *S. suspestifer*, *S. paratyphi C*, and others were rarer. The types of salmonellas (15) isolated from the rodents were also isolated from sick persons during the same period. The percentage of the various types isolated from man was about the same as in the rodents. Orig. art. has: 3 tables.

ASSOCIATION: Leningradskaya protivochumunna tseleznaya i gorodskaya nablyudatel'naya stantsiya (Leningrad Fore and Municipal Plans Observation Station); Leningradskaya sanitarno-epidemiologicheskaya stantsiya (Leningrad Sanitary-Epidemiological Station)

SUBMITTED: 26Feb64

ENCL: 00

SUB CODE: L8

NO REF SOV: 007

OTHER: 000

Card 2/2



BALABANOVA, G. M.

USSR/Chemistry - Cadmium Compounds

Apr 51

"Polarographic Investigation of Complexes of Cadmium With Certain Monovalent Anions," I. A. Korshunov, N. I. Malyugina, O. M. Balabanova, Sci Res Inst of Chem Gor'kiy State U

"Zhur Obshch Khim" Vol XXI, No. 4, pp 620-625

Studies reduction of Cd<sup>++</sup> ions on Hg drop electrode in solns contg alk halides, free Hal acids, NH<sub>3</sub> CNS at different concns. From displacement of Cd 1/2-wave potential, finds coordination no and "const of instability" of complex ions formed. Compn of complex depends on concn of salts or free acids. Their stability depends on chem compn and coordination no.

182T14

5 (3)

## AUTHORS:

Finkel'shteyn, A. I., Roginskaya, Ts. N., SOV/32-25-8-12/44  
Balabanova, P. M., Malachevskaya, F. L.,  
Fisher, A. M., Machin, G. P.

## TITLE:

Spectrophotometric Analysis Methods of Organic Compounds in  
Chemical Industry

## PERIODICAL:

Zavodskaya laboratoriya, 1959, Vol 25, Nr 8, pp 932 - 934  
(USSR)

## ABSTRACT:

The article contains descriptions of spectrophotometric analysis methods (SA) for the analysis of hexachlorane with simultaneous determination of the three  $\alpha$ -,  $\beta$ -, and  $\delta$ -isomers as well as for the determination of chlorobenzene in sewage water, the analysis of ameline and ammelide mixtures, the determination of cyclohexanol and cyclohexanone in cyclohexane, etc. As the spectra of the investigated substances do not differ very much from that of the basic substance a modified measuring scheme (Figure) of the photocolormeter was applied to make measuring at low optical densities easier. A copper-monoethanol amine-complex compound (Ref 1) serves as light filter; its maximum perviousness is at 1.25  $\mu$ . The used photoelement was FESS-U10, the spectrometers IKS-12 and SF-4. For the determination of chlorobenzene

Card 1/2

Spectrophotometric Analysis Methods of Organic Compounds SOV/32-25-8-12/44  
in Chemical Industry

in the waste water of the perchloro vinyl resin production the "method of heterochromatic extrapolation" (Ref 3) was applied. As examples of determination of two components they describe the determination of diethyl chloride and ethyl chloride in carbon tetrachloride (Table 1), the determination of cyclohexanol and cyclohexanone in cyclohexane and 2,4- and 2,6-toluylene diamine (Table 2). For the determination of anneline and annelide (Ref 5) according to a wave length (1250 m $\mu$ ) the acidity of the medium is changed instead of the wave-length. The determination of 3 components is shown in the determination of hexachlorane isomers (Table 3) and the determination of 4, 5, and 6 components at the analysis of 1,1- and 1,2-diethyl chlorides, 1,1,2-trichloroethane and 1,1-, 1,2-, and 1, 1,2, 2-tetrachloroethane in carbon tetrachloride, and they also investigated a mixture of p-, m-, and o-xylol and ethyl benzene (Table 4). There are 1 figure, 4 tables, and 5 Soviet references.

Card 2/2

KAGANOVICH, I.N.; Primalni uchastiye: BALABANOVA, R.A.; YEFREMOVA, D.A.

Effect of deformation conditions on the properties of titanium  
alloys with a mixed structure. TSvet. met. 37 no.9:81-84 S '64.  
(MIRA 18:7)

BAIABANOVA, T.L.; GALERKINA, S.G.; GRIBKOV, V.V.; DERVIZ, T.L.; KIRINA, T.I.;  
KRAVETS, V.S.; LIKER, V.A.; MESSEHNIKOV, M.S.; RABINOVICH, S.D.;  
UMOVA, L.A.

Mesozoic and Cenozoic facies of the western part of the  
West Siberian Plain. Trudy VNIIGRI no.140:183-227 '59.  
(MIRA 13:6)  
(West Siberian Plain--Geology, Stratigraphic)

BALABANOVA, T.F.

Size of the Khatyrykская series in central Yakutia.  
Trudy VNIGRI no.220. Geol. sbor. no.8:222-238 '63.  
(MIRA 17:3)

BALABANOVA, T.Ye.; LATMANIZOVA, L.V., prof., nauchnyy rukovoditel' raboty

Problem of waveless spatial effects. Uch. zap. Ped. inst. Gerts.  
239:77-83 '64. (MIRA 18:3)

1. Zaveduyushchaya kafedroy fiziologii i anatomii Leningradskogo gosudarstvennogo pedagogicheskogo instituta imeni Gertsena (for Latmanizova).

IVANOV, V.; MILENKOV, K.; TSOLOV, N.; ALEKSANDROVA, M.; TSANKOV, I.; MECHKUNOV, K.;  
KHAMANDZHIEV, K.; BALABANOVA, V.; KOSTOV, D.; KIS'OVA, A.

Results of the treatment of epilepsy using M. I. Karmanova's method.  
Suvrem. med., Sofia 9 no.7:49-56 1958.

1. Iz NIPI i Okruzhnite psikho-nevrologichni dispanseri vuv Vratsa,  
Ruse, Khaskovo i Stara Zagora.

(EPILEPSY, ther.

sodium bromide with calcium chloride & adenoside (Bul))

(BROMIDES, ther. use

sodium bromide in epilepsy, with calcium chloride & adenoside  
(Bul))

(ADONIS, ther. use,

epilepsy, with sodium bromide & calcium chloride (Bul))

(CHLORIDES, ther. use,

calcium chloride in epilepsy, with sodium bromide & adenoside  
(Bul))



DZALDETI, A. [Dzhaldeti, A.]; MOLDOVANSKA, P. [Moldovanska, P.]; BALABANOVA, W.  
[Balabanova, V.]

On the problem of puerperal psychoses. Folia med. (Plovdiv) 6  
no.3:183-185 '64

1. Hohes Medizinisches Institut "Iv.P.Pavlov" zu Plovdiv, Bul-  
garien, Lehrstuhl fuer Psychiatrie (Verstand: Prof. Dr.  
K. Tscholakov [K. Cholakov][deceased!]).

ROMANOV, V.P.; PETROVSKIY, I.N.; SEMOVA, A.G.; NIKOL'SKAYA, T.A.; SEMATKO,  
R.V.; KOSENKO, A.A.; BALABANOVA, V.I.; LIPARSKAYA, V.G.; KHARAT'YAN,  
M.A.; KOMPANETS, Ye.M.

Outbreak of Q fever in the Kazansk Province. Zhur.mikrobiol.epid. i  
imzun. 28 no.6:29-33 Je '57. (MIRA 10:19)

1. iz Rostovskogo instituta epidemiologii, mikrobiologii i gigeny,  
kafedry infeksionnykh bolezney Rostovskogo meditsinskogo instituta,  
Rostovskogo instituta Ministerstva zdravookhraneniya SSSR i Oblastnoy  
Ksmenskoy sanitarno-epidemiologicheskoy stantsii

(Q FEVER, epidemiology,  
in Russia (Rus))

SOV/49-59-2-11/25

**AUTHORS:** Balabanova, V. N., Bibilashvili, N. Sh., Kartsivadze, A. I., Kiryukhin, B. V. and Sulakvelidze, G. K.

**TITLE:** Experiments on the Stimulation of Cumulus Clouds in the Alazani Valley (Opyty po vozdeystviyu na kучevuyu oblachnost' v Alazanskoy doline)

**PERIODICAL:** Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1959, Nr 2, pp 262-275 (USSR)

**ABSTRACT:** The Alazani valley (Fig 1) is often affected by the hail from the cumulus cloud developing over the Caucasus Mountains. In an attempt to prevent the hail falling on the valley, experiments on affecting the hail formations by means of artificial stimulation were carried out in 1956 by the Institute of Applied Physics, Academy of Sciences, USSR, in conjunction with the Institute of Geophysics of the Georgian SSR and the Faculty of Physics of Leningrad University. A method of generating silver iodide smoke from ground level was used because seeding from aircraft proved to be too difficult in this mountainous area (the circle in Fig 1). The smoke was produced from red phosphorus which reached the cloud in 5 to 10 minutes. It was found that the best results were obtained where the ratio of silver iodide to phosphorus was 1:2. The amount of 2 kg of silver iodide gave a full crystallization of 1 km<sup>2</sup> of cloud

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SOV/49-59-2-11/25

**Experiments on the Stimulation of Cumulus Clouds in the Alazani Valley**

at the temperatures  $-5$  to  $-10^{\circ}\text{C}$ . The effect of sunlight in these circumstances was found to be negligible. The weather conditions were forecast the evening before the day of the experiments. The air lift was checked by means of the pilot balloons each time the smoke was produced. The formation of the nucleus in the cumulus cloud was followed on the radar screen and at the same time it was filmed. The height of the cloud was measured with theodolites. The results are presented in the form of a Table on pp 264 and 265. The data given are (from left to right): date, experiment number, place of experiment, amount of reagent in kg, time and height of the isotherms  $0^{\circ}$  and  $6^{\circ}\text{C}$ , time and height of cloud top, zone number and time of nuclei formation, remarks on visual observations. The remarks are as follows:

Experiment Nr 1 - precipitation at 15.30 hours from the cloud spot where smoke entered - then cloud dispersed;  
2 - cloud dispersed at 14.20 hours.  
3 - no results observed.  
4 - cloud subsided between 14 and 15 hours.

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SOV/49-59-2-11/25

## Experiments on the Stimulation of Cumulus Clouds in the Alazan1 Valley

- 5 - cloud breaking and dispersing, formation of crystalline forms.
- 6 - cloud dispersed during first 30 minutes.
- 7 - no results observed.
- 8 - first raindrops from the affected spot at 13.40 hours followed by hail and rain at 14 hours.
- 9 - first raindrops from the affected spot, rain started 17.20 hours.
- 10- cloud breaking at the affected spot.
- 11- hail at 10.20 hours.
- 12- weak rain at 13.45 hours, followed by cloud dispersing above place of experiment.
- 13- a weak precipitation at 11.35 to 11.40 becoming intensive at 12.25 from affected spot.

The locations of the cloud nucleus for various dates are shown in Figs 2, 5, 7, 9 and 10. The photographs of the smoke from some experiments are shown in Figs 3, 4, 6, 8 and 11. The following conclusions were made, based on the experiments:

- 1) The success in some cases suggests the possibility of rain stimulation by seeding the silver iodide into cloud

Card 3/5

composed of super-cooled drops at certain weather conditions.

SOV/49-59-2-11/25

Experiments on the Stimulation of Cumulus Clouds in the Alazan Valley

- 2) In order to ascertain the results, the analysis of the complex data of the physical conditions of the cloud (such as stratification of the atmosphere, the cloud energy, visual observation on cloud formation and precipitations, radar observation of nuclei, etc) should be made.
- 3) The characteristic feature of the formation of the artificial nuclei by means of smoke is their lower height (1.5 to 2 km) in comparison with the natural conditions.
- 4) As the smoking is not always practicable, some other methods of cloud stimulation should be investigated (from pilot balloons etc).
- 5) The vital moment of affecting the cloud is when it reaches the region of  $-5$  to  $-10^{\circ}\text{C}$ . However, because of the very high speed of hail formation (20 m/sec), that moment can be easily misjudged. Therefore, in order to prevent this, an investigation of a possibility of the air layer stimulation should be carried out.
- 6) The experiments on combustion with red phosphorus show that

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SOV/49-59-2-11/25

Experiments on the Stimulation of Cumulus Clouds in the Alazani Valley

a method of determination of the action of hygroscopic matter on a warm part of the cloud should be investigated.

7) It is important to obtain more data on the necessary amount of the active chemicals which can be applied for cloud stimulation. There are 11 figures, 1 table and 5 references; 1 of the references is Soviet and 4 are English.

ASSOCIATION: Akademiya nauk SSSR, Institut prikladnoy geofiziki  
(Academy of Sciences USSR, Institute of Applied Geophysics)

SUBMITTED: January 20, 1958.

Card 5/5

SOV/49-59-6-18/21

AUTHOR: Balabanova, V. N.

TITLE: ~~On an Effect of the Temperature of Super-Cooled Fog on Its Crystallization by Means of an Aerosol of Silver Iodide.~~

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1959, Nr 6, pp 924-929 (USSR)

ABSTRACT: The aerosol of silver iodide used in the experiments was obtained by pulverized AgI, being blown into a flame ( $t = 3000$  or  $1000^{\circ}\text{C}$ ) in a special container (Fig 1). The super-cooled fog was placed in the container with a density of  $5000$  drops/cm<sup>3</sup>. The fog measurements were made by means of an automatic (Fig 2) or hand (Fig 3) device. The results showed that the effect of temperature on the crystallization of the supercooled fog was significant in the range to  $-10^{\circ}\text{C}$ . Below that temperature, the effect could not be observed. It was established that the Van't Hoff explanation of the phenomena in this case is inapplicable. Some of the results of the experiment are illustrated in Tables 1-7. Table 1 shows the effect of supercooled temperature on the number of iron crystals. Table 2 shows the same effect on the number of silver iodide particles. Table 3 gives the effect of the products of combustion of the voltaic carbon arc on the crystallization. Table 4 shows the time effect on the crys-

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SOV/49-59-6-18/21

On an Effect of the Temperature of Super-Cooled Fog on Its Crystallization, by Means of an Aerosol of Silver Iodide

tallization. Table 5 gives the effect of temperature on the crystallization when the aerosol's temperature is 1000°C. Tables 6 and 7 show the effect of temperature on the rate of crystallization. There are 3 figures, 7 tables and 3 references, 2 of which are Soviet and 1 is Soviet translated from English.

ASSOCIATION: Akademiya nauk SSSR, Institut prikladnoy geofiziki  
(Academy of Sciences USSR, Institute of Applied Geophysics)

SUBMITTED: January 13, 1958.

Card 2/2

S/049/59/000/12/024/027

E131/E391

AUTHORS: Balabanova, V.N., Zhigalovskaya, T.N. and Maleyev, M.N.

TITLE: Effect of the Air Temperature on the Action of Silver Iodide Particles When Used as the Nucleus for Crystallization

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1959, Nr 12, pp 1889 - 1890 (USSR)

ABSTRACT: The purpose of this work was to clarify the relationship between the crystallization power of the particles of silver iodide and the temperature of the surrounding air. The experiments were carried out in a large container where the air temperature was varied from -10 to 100 °C. Particles of silver iodide were injected in the form of a mist. The action of the mist was determined in relation to the amount of ice crystals formed at the temperature of -10 °C. Table 1 gives the results obtained and shows the number of ice crystals (n) per 1 cm<sup>3</sup> produced after 1, 15 and 30 min at mist temperatures of 20 and 60 °C. It was found that the number of ice crystals decreased the longer the mist was kept in the container. The relationship between the number of ice crystals and the

Card1/2

S/049/59/000/12/024/027

E131/E391

Effect of the Air Temperature on the Action of Silver Iodide  
Particles When Used as the Nucleus for Crystallization

temperature was affected by the following two factors:

- 1) influence of the temperature on the action of the silver-iodide particles when used as the nucleus for crystallization;
- 2) influence of the temperature on the rate of deposition of silver iodide particles on the walls of the container during the various periods of the experiments (Tables 2 and 3).

There are 4 tables and 4 references. 1 of which is Soviet and 3 are English.

ASSOCIATION: Akademiya nauk SSSR Institut prikladnoy geofiziki  
(Ac.Sc.USSR, Institute of Applied Geophysics)

SUBMITTED: July 10, 1958

Card 2/2

ZHIGALOVSKAYA, T.N.; BALABANOVA, V.N.

Studying the dispersal of silver iodide smoke in a closed container. Izv.AN SSSR.Ser.geofiz. no.6:903-905 Je '60.  
(MIRA 13:6)

1. Akademiya nauk SSSR. Institut prikladnoy geofiziki.  
(Silver iodide) (Aerosols)

BALABANOVA, V.N.; MALBYEV, M.N.; ZHIGALOVSKAYA, T.N.

Rate of silver iodide particle disintegration brought about by  
thermal dispersion methods. Izv. AN SSSR, Ser. geofiz. no. 9:  
1413-1416 8 '60. (MIRA 13:9)

1. Akademiya nauk SSSR, Institut prikladnoy geofiziki.  
(Atmospheric nucleation) (Silver iodide)

BALABANOVA, V.N.

Crystallisation of supercooled clouds by silver iodide. Izv. AN  
SSSR. Ser.geofis. no.11:1658-1662 N'60. (MIRA 13:11)

1. AN SSSR, Institut prikladnoy geofiziki.  
(Weather control) (Silver iodide)

h117h  
S/169/62/000/009/093/120  
D228/D307

6.14.20  
AUTHORS: Balabanova, V. N. and Zhigalovskaya, T. N.

TITLE: Study of the dispersion of silver iodide aerosol

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 9, 1962, 73, abstract 9B449 (In collection: Issled. Oblakov, osadkov i grozovogo elektrichestva, M., AN SSSR, 1961, 36-37)

TEXT: A report is given of the results of measuring the size of silver iodide aerosol particles, formed on thermal dispersion. Silver iodide powder was dispersed in an electric arc. The tests were carried out in thermal pressure chambers with a volume of 14 m<sup>3</sup>. Curves of the counted aerosol particle distribution were obtained; in their form they are close to normal logarithmic curves, with a maximum in the diameter region of about 0.11  $\mu$ . [Abstracter's note: Complete translation.]

Card 1/1

BALABANOVA, V.N.

Determining the water content of clouds by the filtration method.  
Izv. AN SSSR. Ser. geofis. no.1:157-159 Ja '61. (MIRA 14:1)

1. Akademiya nauk SSSR, Institut prikladnoy geofiziki.  
(Clouds)



BALABANOVA, V.N.

Determining the liquid-water content of clouds by filtration.  
Trudy Vysokogor. geofiz. inst. AN SSSR 2:83-86 '61. (MIRA 14:12)  
(Cloud physics)

BALABANOVA, V.N.; ZHIGALOVSKAYA, T.N.

Production of stable fogs under laboratory conditions. Trudy  
Vysokogor. geofiz. inst. AN SSSR 2:93-98 '61. (MIRA 14:12)  
(Aerosols)

S/124/62/000/007/017/027  
D234/D308

AUTHORS: Balabanova, V. N. and Vyadrov, G. I.

TITLE: Methods of introducing reagents into clouds

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 7, 1962, 103, abstract 7B690 (V sb. Fiz. oblakov i osadkov., v.2 (5), M., AN SSSR, 1961, 175-179)

TEXT: The authors consider various methods of introducing silver iodide into supercooled liquid drop clouds with the purpose of artificial nucleation of droplets. Natural convective streams, balloons and aircraft are recommended for this purpose. In the first case the sublimation of silver iodide was effected by means of aircraft heating lamps using mixtures of silver iodide with red phosphorous or with gunpowder as the active material. Balloons carried nitrocellulose film coated with silver iodide, which were lifted to the required height on a smouldering cord. Specially designed smoke boxes were ejected from aircraft. [Abstracter's note: Complete translation.]

Card 1/1

BALABANOVA, V.N.; VYADROV, G.I.

Methods of seeding clouds with reagents to promote their modification.  
Izv.AN SSSR,Ser.geofis. no.6:951-952 Je '61. (MIRA 14:5)

1. Akademiya nauk SSSR, Institut prikladnoy geofiziki.  
(Rain making) (Silver iodide)

BALABANOVA, V.N.; ZHIGALOVSKAYA, T.N.

Dispersiveness of the silver iodide aerosol. Izv. AN SSSR.  
Ser. geofiz. no.3:443-446 Mr '62. (MIRA 15:2)

1. AN SSSR, Institut prikladnoy geofiziki.  
(Silver iodide)  
(Aerosols)

BALABANOVA, V.M.; ZHIGALOVSKAYA, T.N.

Crystallization of water superfrozen by silver iodide. Inv. AN  
SSSR. Ser.geofiz. no.10:1459-1455 0 '62. (MIRA 16:2)  
(Silver iodide) (Weather control)

BALABANOVA, V.N.

Capacity of some matter to crystallize super-cooled fog. Inv.  
AN SSSR. Ser. geofis. no.6:978-984, Je '63. (MIRA 16:7)  
(Crystallization) (Fog)

TURKEL'TAUB, N.M.; PALAMARCHUK, N.A.; SHENYATENKOVA, V.T.; SYAVTSILLO, S.V.;  
Prinimali uohastiy: NECHAYEVA, L.A.; KHVOSHCHEVSKAYA, A.A.;  
BALABANOVA, Ye.N.

Chromatographic analysis of organosilicon compounds. Plast.massy  
no.4:51-56 '61. (MIRA 14:4)

(Silicon organic compounds)  
(Chromatographic analysis)



ACCESSION NR: AP4037280

S/0190/64/006/005/0832/0837

AUTHOR: Berlin, A. A.; Cherkashina, L. G.; Frankevich, Ye. L.;  
Balabanov, Ye. M.; Aseyev, Yu. G.

TITLE: Polymers with a conjugated system. I. Synthesis and  
investigation of the electrophysical properties of polymeric  
phthalocyanines

SOURCE: Vy\*sokomolekulyarny\*ya soedineniya, v. 6, no. 3, 1964,  
832-837

TOPIC TAGS: organic semiconductor, semiconductor polymer, phthalo-  
cyanine polymer

ABSTRACT: The effect of oxygen-containing groups and the effect  
of branching on the electrical properties of phthalocyanine polymers  
have been studied. This was considered of interest because previously  
prepared phthalocyanines based on aromatic tetracarboxylic acids

Card 1/2

ACCESSION NR: AP4037280

showed semiconducting and catalytic properties. The polymers in this study were synthesized by reacting 1,2,4,5-tetracyanobenzene (TCB) or TCB and phthalonitrile (PN) with copper powder or  $\text{Cu}_2\text{Cl}_2$  in the presence of urea at 300C. PN was added to control both the degree of branching and the content of nitrile end groups, which were subsequently converted to oxygen-containing groups by hydrolysis with  $\text{H}_2\text{SO}_4$ . The electrical conductivity at 300K for the TCB polymers was  $10^{-5}$  to  $10^{-2}$   $\text{ohm}^{-1} \text{cm}^{-1}$  and the activation energy was 6—2 kcal/mol. These figures for phthalocyanine polymers prepared earlier from pyromelic acid were  $10^{-4}$   $\text{ohm}^{-1} \text{cm}^{-1}$  and 4.2 kcal/mol. For the polymers from TCB and PN which contain oxygen groups, the conductivity was  $10^{-5}$   $\text{ohm}^{-1} \text{cm}^{-1}$  and  $10^{-2.6}$   $\text{ohm}^{-1} \text{cm}^{-1}$  for reprecipitated and nonreprecipitated samples, respectively. The thermal stability of the phthalocyanine polymers with oxygen-containing groups was higher than that of the nitrile-group-containing analogs (300—350 C versus 250 C). This research was done at the Institute of Chemical Physics, Academy of Sciences USSR. Orig. art. has: 3 figures, 2 tables, and 2 formulas.

Card 2/3

ACCESSION NR: AP4037280

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of  
Chemical Physics, AN SSSR)

SUBMITTED: 03Jun63

DATE ACQ: 09Jun64

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NO REF SOV: 004

OTHER: 003

Card 3/3

Effect of solutions of different salinity on fish larvae  
Z. M. Balabanova Doklady Akad. Nauk S.S.R. 95  
888 (1954) - Larvae of rypus are affected by salinity  
which ranges from 0.97 to 2.3‰ in lakes in Ural. Newly hatched larvae were tested in 10 solns. which varied from 0.4 to 3.0‰ NaCl and pH 7.0 to 9.4. Best soln. was fresh water with pH close to 7.0. Some solns. a small amt. of soda caused discoloration of larvae on the first day, increasing to total mortality on the third day. Solns. of high NaCl content and low in alkali caused misshapen larvae in several days, abnormal posture in swimming and convulsions. Solns. of higher salinity (0.4 NaCl, 2.4 NaHCO<sub>3</sub>) in fresh water caused discoloration and death of larvae within 24 hrs. but almost all larvae survived when exposed to a high content of NaHCO<sub>3</sub> in fresh water.