L 23877-66

ACC NR: AP6009922

drawbar by an eccentric to change the cyclic feed of the pump during regulation without changing the speed conditions of the regulator.

SUB CODE: 13/ SUBM DATE: 13Apr62/ ORIG REF: 000/ OTH REF: 000

Card 3/3dda

(A) L 11652-66 EPA/EWT(l)/EWT(m)/EWP(t)/EPF(n)-2/T/ETC(m) WW/DJ

ACC NR: AP6002954 SOURCE CODE: UR/0286/65/000/024/0125/0125

INVENTOR: Bakharev, A. P.; Kislov, V. G.; Zhitnikov, Ye. S.; Miroshnichenko, V. G.; Labotorin, V. A.

ORG: none

TITLE: Fuel pump for internal combustion engines. Class 46, No. 177229 [announced by Noginsk Fuel Equipment Factory (Noginskiy zavod toplivnoy apparatury)

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 24, 1965, 125

TOPIC TAGS: fuel pump, internal combustion engine

ABSTRACT: The proposed fuel pump contains a cylindrical piston which moves inside a sleeve and which has radial ports emerging from the upper part of the control grooves. To increase the piston's angle of rotation in order to increase the control

Fig. 1. Fuel pump

1 - Piston; 2 - radial ports; 3 - control grooves.

Card 1/2 UDC: 621.43.038.5

L 11652-66

ACC NR: AP6002954 O

range, the grooves are made straight along a radius greater than the radius of the piston (see figure). Orig. art. has: 1 figure. [TN]

SUB CODE: 21/ SUBM DATE: 15Jan65/ ATD PRESS: 4175

Card 2/2

AL 11206-66 EPA/EWT(l)/EWT(m)/EWP(f)/EPF(n)-2/T/ETC(m) WW/DJ

ACC NR: AP6002955 SOURCE CODE: UR/0286/65/000/024/0125/0126

INVENTOR: Kislov, V. G.; Bakharev, A. P.; Belogradskiy, B. M.; Obvintsev, Ye. S.; Dolganov, M. S.; Koshman, E. I.

ORG: none

TITLE: Rotary fuel pump for internal combustion engines. Class 46, No. 177230

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 24, 1965, 125-126

TOPIC TAGS: fuel pump, internal combustion engine, engine fuel pump, mechanical power transmission device

ABSTRACT: The proposed rotary fuel pump contains a housing with a cam plate and a rotor with measuring and pressure pistons positioned opposite one another (see

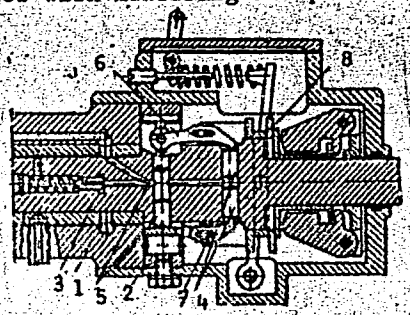


Fig. 1. Rotary fuel pump

1 - Housing; 2 - cam plate; 3 - rotor; 4 - measuring pistons; 5 - pressure pistons; 6 - double arm lever; 7 - axle; 8 - fuel-feed control clutch.

Card 1/2 UDC: 621.43.038.5

L 11206-66
ACC NR: AP6002955

figure). The pressure pistons interact with the cam plate. To simplify construction, the pressure pistons are coupled to the measuring pistons by double-arm levers whose movable axle is coupled to the fuel feed control clutch. Orig. art. has: 1 figure. [IN]

SUB CODE: 21/ SUBM DATE: 05Oct64/ ATD PRESS: 4174

Card 2/2

BAKHAREV, A.P., inzh.; KISLOV, V.G., inzh.; KARPOV, L.N., kand.tekhn.nauk; YAKUNIN, A.S., inzh.

The new UTN-5 small-size standard fuel pump. Trakt. i sel'khozmash. no.11:5-8 N '64. (MIRA 18:1)

1. Noginskiy zavod toplivnoy apparatury (for Kislov). 2. Tsentral'nyy nauchno-issledovatel'skiy i konstruktorskiy institut toplivnoy apparatury avtotraktornykh i statsionarnykh dvigateley (for Yakunin).

KISLOV, V.G.

Diesel engines should be provided with high-quality fuel systems. Trakt.i sel'khozmash. no.8:12-13 Ag '62. (MIRA 15:8)

1. Glavnyy konstruktor Noginskogo zavoda toplivnoy apparatury. (Diesel engines) (Tractors--Fuel systems)

L 4871-66 EWT(m)/EPF(c)/T DJ

ACC NR: AP5026563 SOURCE CODE: UR/0286/65/000/019/0126/0126

INVENTOR: Andrusenko, P. I.; Dolganov, K. Ye.; Kislov, V. G.; Koshman, E. I.; Filippov, V. V.; Shukshin, N. P.

ORG: none

TITLE: All-speed hydraulic governor. Class 60, No. 175396

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 19, 1965, 126

TOPIC TAGS: hydraulic rpm governor, internal combustion engine component, slide valve

ABSTRACT: An Author Certificate has been issued for an all-speed hydraulic rpm governor (see Fig. 1) for the internal-combustion engine covered in Author Certificate No. 147453. To prevent sticking of the actuator piston and the weighted slide valve, radial channels have been incorporated in the sensor housing and rotor, which periodically connect the internal cavity of the housing to a low-pressure cavity, thus pro-

Card 1/2 UDC: 621.43-552.8

0901 0 795

ACC NR: AP5026563

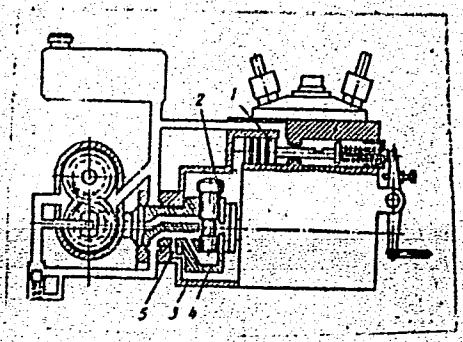


Fig. 1. All-speed hydraulic governor

1 - Actuator piston; 2 - weighted slide valve; 3 - housing; 4 - rotor; 5 - radial channels.

viding for oscillating motion of the piston and weighted slide valve. Orig. art. has: 1 figure.

[LB]

SUB CODE: PR, IE/ SUBM DATE: 04Mar64/ ATD PRESS: 4136

Card 2/2

AUTHOR: Kislov, V.I. 108-13-6-8/11

TITLE: The Bridge Circuit of Gas Voltage Stabilizers (Mostovaya skhema gazovogo stabilizatora napryazheniya)

PERIODICAL: Radiotekhnika, 1958, Vol 13, Nr 6, pp 72-74 (USSR)

ABSTRACT: In the stabilizer circuit described here, compensation of the additional voltage ΔU is realized. Therefore the voltage on the load, if the working scope of the characteristic is rectilinear, remains strictly constant, which means that the stabilization factor is infinite. First, the conditions for the constancy of voltage on the load are determined. For this purpose the equation (10) is derived. The explanation for the fact that the voltage on the load is independent of feed voltage is given. In this way the stabilization limits are determined. They can be evaluated by the relative deviation of the feed voltage from the mean value. Equation (12) serves this purpose. The degree of efficiency of the simple gas stabilizer can be determined according to the formula (16). The degree of efficiency determined according to (16) is not high; it amounts to about 30% and depends mainly on the amount of the ballast resistance. The degree of efficiency

Card 1/2

The Bridge Circuit of Gas Voltage Stabilizers 108-13-6-8/11

of the gas stabilizer described is determined according to formula (17). Though it is somewhat lower than that of a normal stabilizer, this difference is not great. In conclusion calculation of the stabilizer is demonstrated. There are 3 figures.

SUBMITTED: July 9, 1957 (initially) and November 26, 1957 (after revision)

1. Voltage stabilizers--Performance 2. Voltage stabilizers--Equipment 3. Electric bridges--Circuits 4. Mathematics

Card 2/2

MARKOV, Konstantin Konstantinovich; LAZUKOV, Grigoriy Ivanovich; NIKOLAYEV, Vladimir Aleksandrovich; KISLOV, V.L., red.

[Quaternary period; Glacial epoch - Quaternary period] Chetvertichnyi period; lednikovyi period - antropogenovyi period. Moskva, Izd-vo Mosk. univ. Vol.2. 1965. 434 p. (MIRA 18:10)

AVSYUK, G.A., prof., otv.red.; KISLOV, V.L., red.

[Collection of materials of the Enlarged Conference of the Group of Workers in Glaciology at the Soviet Interdepartmental Committee for the International Geophysical Year, May 20-24, 1958, Moscow] Sbornik materialov rasshirennogo soveshchaniia rabochei gruppy po gliatsiologii Sovetskogo Mezhduvedomstvennogo komiteta Mezhdunarodnogo Geofizicheskogo Goda, 20-24 maia 1958 g. v Moskve. Moskva, 1959. 165 p. (MIRA 13:4)

1. Russia (1923- U.S.S.R.) Mezhduvedomstvennyy komitet po provedeniyu Mezhdunarodnogo Geofizicheskogo Goda.
(Glaciological research--Congresses)

MARKOV, Konstantin Konstantinovich; LAZUKOV, Grigoriy Ivanovich; NIKOLAYEV, Vladimir Aleksandrovich; KISLOV, V.L., red.

[Quaternary period; glacial period-quaternary period] Chetvertichnyi period; lednikovyi period - antropogenovyi period. Moskva, Izd-vo Mosk. univ. Vol.1. 1965. 371 p. (MIRA 18:7)

MOSIN, M.I.; KATS, G.I.; SHEVYAKOV, L.D., akademik, red.; SHUKHARDIN, S.V., red.; AGOSHKOV, M.I., red.; BORISOV, S.F., red.; BYSTROV, N.M., red.; KISLOV, V.M., red.; KRAKHMALEV, M.K., red.; KUZNETSOV, N.A., red.; MAN'KOVSKIY, G.I., red.; MEL'NIKOV, N.V., red.; POLKOVNIKOV, A.A., red.; POPOV, K.S., red.; CHAYKIN, S.I., laureat Leninskoy premii, red.; GONCHAROVA, Ye.A., tekhn. red.

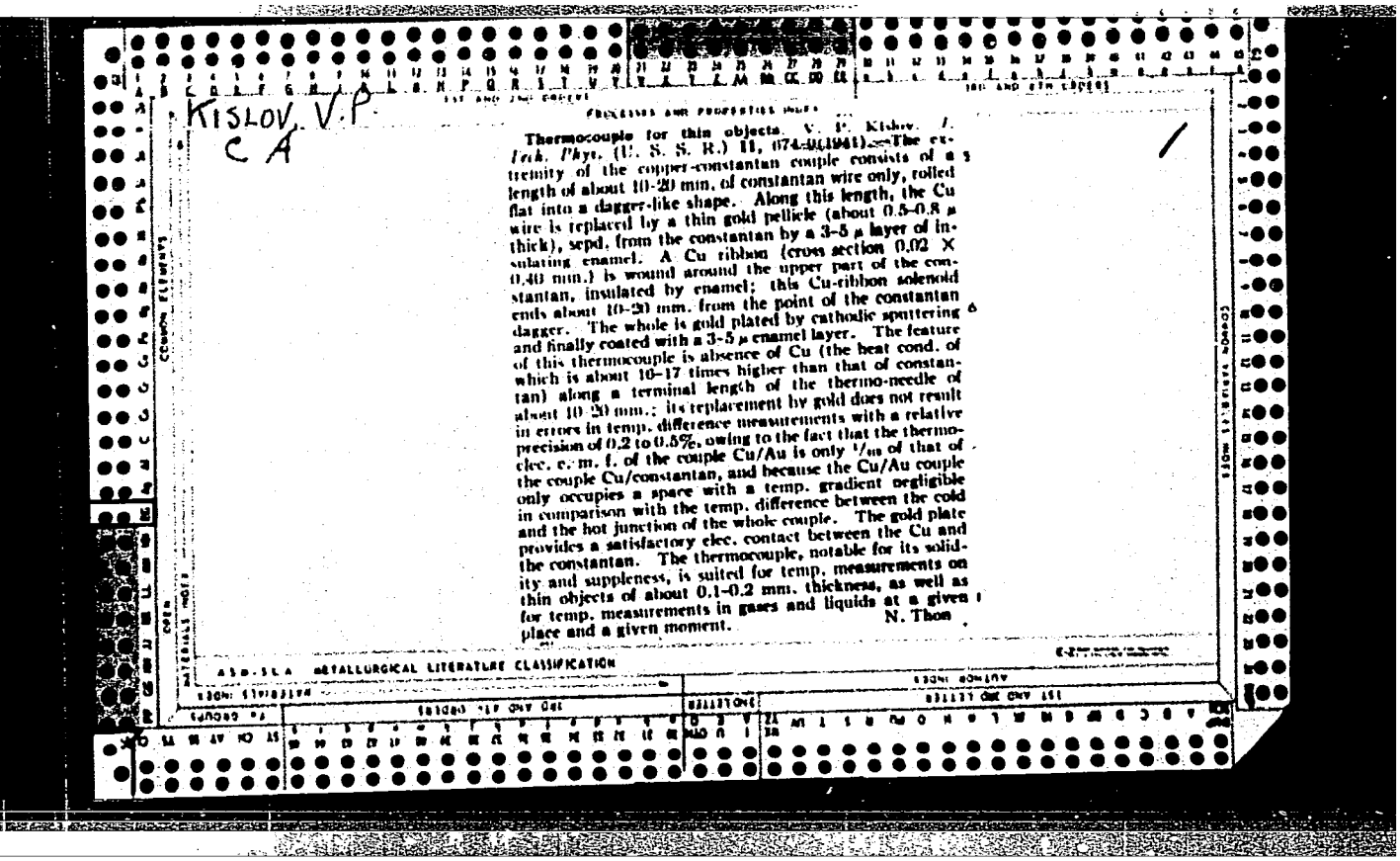
[Kursk Magnetic Anomaly; history of the discovery study, and commercial development of iron-ore deposits. Collection of documents and materials in two volumes, 1742-1960] Kurskaia magnitnaia anomaliia; istoriia otkrytiia, issledovanii i promyshlennogo osvoeniia zhelezorudnykh mestorozhdenii. Sbornik dokumentov i materialov v dvukh tomakh, 1742-1960. Belgorod, Belgorodskoe knizhnoe izd-vo. Vol.1. 1742-1926. 1961. 417 p. (MIRA 15:3)

(Kursk Magnetic Anomaly--Iron ores)
(Magnetic prospecting)

BASHKIN, N.Ya.; DMITRIYEVSKIY, V.S.; KISLOV, V.M.; CHURAKOV, A.I.

Using fluxed briquets in smelting steel in heavy duty open-hearth furnaces. Stal' 24 no.12:1081-1083 D '64.

(MIRA 18:2)



KISLOV, V.P.
CA

Thermocouple for thin objects. V. P. Kislov. *J. Tech. Phys.* (U. S. S. R.) 11, 674-9(1941).—The extremity of the copper-constantan couple consists of a length of about 10-20 mm. of constantan wire only, rolled flat into a dagger-like shape. Along this length, the Cu wire is replaced by a thin gold pellicle (about 0.5-0.8 μ thick), sepd. from the constantan by a 3-5 μ layer of insulating enamel. A Cu ribbon (cross section 0.02 × 0.40 mm.) is wound around the upper part of the constantan, insulated by enamel; this Cu-ribbon solenoid ends about 10-20 mm. from the point of the constantan dagger. The whole is gold plated by cathodic sputtering and finally coated with a 3-5 μ enamel layer. The feature of this thermocouple is absence of Cu (the heat cond. of which is about 10–17 times higher than that of constantan) along a terminal length of the thermo-needle of about 10-20 mm.; its replacement by gold does not result in errors in temp. difference measurements with a relative precision of 0.2 to 0.5%, owing to the fact that the thermo-elec. e. m. f. of the couple Cu/Au is only $^1/_{10}$ of that of the couple Cu/constantan, and because the Cu/Au couple only occupies a space with a temp. gradient negligible in comparison with the temp. difference between the cold and the hot junction of the whole couple. The gold plate provides a satisfactory elec. contact between the Cu and the constantan. The thermocouple, notable for its solidity and suppleness, is suited for temp. measurements on thin objects of about 0.1–0.2 mm. thickness, as well as for temp. measurements in gases and liquids at a given place and a given moment.

N. Thon

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

1. KISLOV, V. P.

2. USSR (600)

"Errors in Measurements of Air Temperature." Sbornik trudov po agronomicheskoy fizike (All-Union Academy of Agricultural Science imeni Lenin), Issue 4, 1948 (131-140)

9. Meteorologiya i Gidrologiya, No. 3, 1949.
[redacted] Report U-2551, 30 Oct 52.

KISLOV, V.V.

AUTHOR: Kislov, V.V. 6-58-4-7/18

TITLE: On the Improvement of the Practical Preparation of Students of Aerial Photogeodesy (Ob uluchshenii prakticheskoy podgotovki studentov-aerofotogeodezistov)

PERIODICAL: Geodeziya i Kartografiya, 1958, Nr 4, pp. 39-40 (USSR)

ABSTRACT: This problem was dealt with by the scientific-technical jubilee conference of the MIIGAiK (Moscow Institute of Geodetical Aerial Photography- and Cartographical Engineers) held in commemoration of the 40th anniversary of the October Revolution. Professor P.S.Zakatov and Professor G.V.Romanovskiy spoke about this subject in their lectures. It was repeatedly pointed out that the process of interpretation of aerial photographs does not come up to the standard of the other processes of topographical work connected with aerial photography. This can be explained by the insufficient preparation of specialists in this field. A short survey of this preparation is given, and ways and means of improving it are pointed out. During the first 2 years the students of the Faculty of Aerial Photography Measurement attended a course of geodesy lasting 8 weeks per annum. During the first year only one day is

Card 1/3

On the Improvement of the Practical Preparation of Students of Aerial Photogeodesy

6-58-4-7/18

devoted to the determination of scales of aerial photographs, whereas in the second year every student is granted 1 - 2 days for mapping out an aerial photograph plan of 1 : 25 000 covering an area of about 1 km^2, i.e. for relief-drawing and for interpretation. Though at the laboratory for Geomorphology students also take aerial photos during the second year, they are treated here merely as a sideline. The study of photogrammetry begins with the 4th semester, is continued during the 3. year, and ends with a practical course of instruction lasting two weeks. However, neither at the laboratory for photogrammetry, nor in the course of lectures is the problem of topographical interpretation dealt with even for one hour. Instruction for work in the open air is carried out within only one day. In the course of the study of stereophotogrammetry (in the 3. and 4. year) the students study problems connected with the topographical interpretation of aerial photographs during courses on cartography. Besides, students deal with these problems when studying "The Economic Use of Aerial Photography". The belated treatment of this subject provided by the syllabus will make itself felt now that, according to the new syllabus, the first instruction on practical topography is provided to be given already in the course of the 3. year. The bases of topographical

Card 2/3

evaluation must be taught already in connection with the teaching of photogrammetry. No changes of the syllabus are necessary for this purpose. The necessary time for topographical evaluation can easily be made available by a reduction of the time hitherto spent on the assembling of photo-schemes, the study of the assemblies of antiquated phototransformers, of the graphical transforming of perspective aerial photographs, etc.. In the course of photogrammetry lessons at least 2 papers must be written on the interpretation of aerial photographs in connection with the production of topographical maps of the scales of 1 : 10 000 and 1 : 25 000.

AVAILABLE: Library of Congress

1. Aerial photography--Study and teaching

Card 3/3

IZMAYLOV, Petr Ivanovich; KISLOV, Vladimir Vladimirovich; PAVLOV, Vitaliy Fedorovich; PETROV, Nikolay Aleksandrovich; TROITSKIY, Boris Vladimirovich; LEVCHUK, G.P., red.; VASIL'YEVA, V.I., red.izd-va; ROMANOVA, V.V., tekhn.red.

[Topography and aerial topographical surveying] Topografiia i aerofototopografiia. Moskva, Izd-vo geod.lit-ry, 1959. 471 p.
(Topographical surveying) (Aerial photogrammetry)

FEDOROV, Valentin Ivanovich, dotsent, kand.tekhn.nauk; GORINOV, A.V., prof., retsenzent; AVGEVICH, V.I., doktor geograf.nauk, retsenzent; KISLOV, V.V., red.; ZUBKOVA, M.S., red.izd-va; MAL'KOVA, M.V., tekhn.red.

[Aerial-photographic survey of highways] Aerofotoizyskaniia avtomobil'nykh dorog. Moskva, Nauchno-tekhn.izd-vo M-va avtomobil'nogo transp. i shosseinykh dorog RSFSR, 1959. 224 p. (MIRA 12:8)

1. Chlen-korrespondent Akademii nauk SSSR (for Gorinov). (Photography, Aerial) (Roads--Surveying)

SOV/154-59-2-19/22

3(4)

AUTHOR: Kislov, V. V., Docent, Candidate of Technical Sciences

TITLE: Photogrammetric Classes in the ČSR (Fotogrammetricheskiye kursy v Chekhoslovakii)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Geodeziya i aerofotos"yemka, 1959, Nr 2, pp 137-147 (USSR)

ABSTRACT: The "21st Zeiss-Course on Photogrammetry", organized by Carl Zeiss, Jena, took place at Prague from April 14 to May 12, 1958. Specialists in photogrammetry from the ČSR, Hungary, Bulgaria, the GDR and the USSR took part in tnese courses for international cooperation. The Soviet delegation consisted of the Scientific Chief Assistant of the TsNIIGAiK N. A. Sokolov, Engineer Ye. T. Zdobnikov, Engineer K. S. Sergeyev and the author of this paper. The courses were held in cooperation with the Central Administration for Geodesy and Cartography in the ČSR. Photogrammetric instruments by Messrs. Zeiss were shown, and lectures concerning their theory, design and operation were held. The theoretical and practical work was done at the Prague Technical Museum, which also housed the exhibition by Messrs. Zeiss. Some practical work was carried out at the Prague Tech-

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Photogrammetric Classes in the ČSR

SOV/154-59-2-19/22

nical University. Lectures and instructions were held in German and given by the following assistants of Messrs. Zeiss: I. Rost, Doctor-Engineer E. Wolf, Doctor-Engineer O. Hofmann, Diploma-Engineer O. Weibrecht, Diploma-Engineer Szangolies, Diploma-Engineer H. Schoeler, Engineer H. Staroszczik, and Engineer R. Schuman.- Almost every lecture contained some historical references and H. Schoeler lectured on the theme "Jena and Photogrammetry". The following persons gave their assistance to the courses: The Director of the Central Administration for Geodesy and Cartography in the ČSR Průša and his assistants Kovba, Štorkán, Skládal and many others.- Some of the instruments and appliances are described as follows: The stereoautograph 1318 (the lecture was given by O. Hofmann and the practical instructions were directed by Dipl.-Engineer K. Szangolies); the micro-rectifier; a ruler made of plexi-glass with marks for fixing of the points around which the model swivels in the horizontal plane during outside orientation; fixtures for the centering of reduced diapositives in cameras of the wide-angle multiplexes (UWW) - a simplified projector with a condenser. Zeiss recommends the use of pantographs in connection with the multiplexes, and to give the inclination-

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angles of the model not in degrees, but in pro mille, in order to simplify the calculations and some operations during the orientation. There are 8 figures and 4 references.

ASSOCIATION: Moskovskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii (Moscow Institute of Geodetic, Aerial Survey and Cartographic Engineers)

SUBMITTED: October 28, 1958

S/006/60/000/05/08/024
B007/B123

AUTHOR: Kislov, V. V., Candidate of Technical Sciences

TITLE: Experience Gained in Making Aerophotographic Plans With Contour Lines on the Photocartograph by F. V. Drobyshev

PERIODICAL: Geodeziya i kartografiya, 1960, No. 5, pp. 33-37

TEXT: Some methods are pointed out for making aerophotographic plans from aerophotographs which are rectified zone by zone. The Ural'skoye predpriyatiye "Sel'khozaeros"yemka" (Ural Enterprise "Sel'khozaeros"yemka") uses for that purpose the method of optical compilation of relief zones on FTB rectifiers (Ref. 1 on p. 33, footnote). At the Moskovskoye aerogeodezicheskoye predpriyatiye (Moscow Aerogeodetic Center) the mountain rectifier of the type GFT has been used for several years. Besides, G. P. Zhukov and Ye. I. Kalantarov developed a slit-rectifier (Ref. 2, footnote on p. 33). The rectifying principle used there is at present the most perfect one. In 1957-1958, Professor F. V. Drobyshev developed a new method of producing aerophotographic plans with contour lines on the FKD photocartograph. These plans are obtained from aerophotographs

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Experience Gained in Making Aerophotographic Plans With Contour Lines on the Photocartograph by F. V. Drobyshev

S/006/60/000/05/08/02A
B007/B123

(Ref., footnote on p. 34). In this paper, the above-mentioned test is described in detail and, based on the results obtained, the following statements are made: 1) The FKD can be used for the production of aerophotographic plans with contour lines of hilly or mountainous terrain, if the number of zones does not exceed 12-15. 2) The accuracy and the photographic quality of the aerophotographic plan are in agreement with specifications. If careful work is done the zone borderlines vanish. 3) The time needed for making aerophotographic plans on the FKD is shorter than that required by conventional methods. Thus, the consumption of photographic material is negligible. N. N. Veselovskiy's method for overprinting contour lines from an engraved celluloid is also mentioned. There are 1 figure, 2 tables, and 3 Soviet references.

Card 3/3

KISLOV, V.V., dotsent

Notes on field inspection of aerial photographs of village-type populated places. Trudy MIIGAIK no.49:51-54 '62. (MIRA 16:6)

1. Kafedra fotogrammetrii Moskovskogo instituta inzhenerov geodezii, aerofotos"yemki i kartografii.
(Aerial photogrammetry)

FEDOROV, Valentin Ivanovich; ANDREYEV, O.V., dots., retsenzent; LEVCHUK, G.P., dots., retsenzent; KISLOV, V.V., dots., red.

[Aerial geodesy and aerial surveying of highways] Aerogeodeziia i aeroizyskaniia avtomobil'nykh dorog. Moskva, Transport, 1964. 318 p. (MIRA 17:12)

KISLOV, V.V.; ZAITOV, I.R.; LOBANOV, A.N., doktor tekhn. nauk, retsenzent; LEVCHUK, G.P., kand. tekhn. nauk, dots., retsenzent; BORDYUKOV, M.P., kand. tekhn. nauk, dots. retsenzent; OVSYANNIKOV, R.I., kand. tekhn. nauk, dots., retsenzent; KOVYLOV, V.N., kand. tekhn. nauk, dots., retsenzent; BOBIR, N.Ya., doktor tekhn. nauk, prof., red.
[Practical work in photogrammetry] Praktikum po fotogrammetrii. Moskva, Nedra, 1965. 187 p.
(MIRA 18:6)

AUTHORS: Kislov, V. Ya., Sviridov, V. T., Chetkin, M. V.

TITLE: A Non-Slowed Wave in the System Consisting of a Coaxial Helix and a Centre Conductor (Nezamedlennaya volna v sisteme koaksial'no raspolozhennykh spirali i tsentral'nogo provodnika)

PERIODICAL: Radiotekhnika i elektronika, 1958, Vol 3, Nr 7, pp 964-966 (USSR)

ABSTRACT: The radius of the helix is a and its winding angle is ϕ. The radius of the centre conductor is c. It is assumed that the helix satisfies the usual boundary conditions, while the boundary conditions for the centre conductor are expressed by Eqs.(2) and (3), where μ_1 is the permeability of the centre rod, σ is its conductivity and ω is the angular frequency. By employing the above boundary conditions the dispersion equation of the system is in the form of Eq.(4), where I_o, ..., K_1 are the modified Bessel functions; k is the wave number, β is the propagation constant, and ε and μ are the permittivity and permeability of free space. If $\gamma a \ll 1$ and $\gamma c \ll 1$, Eq.(4) can be written as Eq.(5), which can further be simplified and written as Eq.(6). If the solution of Eq.(6) is in the form of Eq.(7), the perturbation χ is

A Non-Slowed Wave in the System Consisting of a Coaxial Helix and a Centre Conductor

expressed by Eq.(9). From Eq.(9) it is seen that ctg ϕ should be greater than 1 , which is normally fulfilled in a practical helix. From this it is concluded that in the helix-centre conductor system it is possible to obtain non-slowed waves having a low attenuation; this results in the appearance of a parasitic feedback between the input and the output of the tube. The paper contains 4 Soviet references.

SUBMITTED: January 17, 1958.

1. Electromagnetic waves--Mathematical analysis

KISLOV, V. Y.*, BOGDANOV, E. V., and CHERNOV, Z. S.

"Interaction of Electron Flow with Plasma,"

report presented by Chernov at the 9th Symposium on Millimeter Waves, 31 March - 2 April 1959, Brooklyn Polytech. Inst. New York.

Inst. for Radioelectricity and Electronics, USSR

Abst: The problem of interaction of a limited electron flow with plasma is considered. The add dispersion relationship is derived and conditions for an increase of microwave signal are analyzed. The main requirements on the system for producing effective interaction in a high frequency region of microwave bands are determined.

Experimental investigations of the system in which modulated electron flow interacts with gas discharge plasma are described. Frequency characteristics of the system and dependence of the microwave signal of electron density in plasma defined by a discharge current are given.

KISLOV, V.Ya.

Fifth congress on ultrahigh-frequency electronic apparatus. Vest. AN SSSR 34 no.1:69-72 Ja '65. (MIRA 18:2)

while variable components are proportional to $e^{i(\omega t - \gamma z)}$ the polarization potential will be expressed by

$$\frac{\partial^2 \Pi}{\partial r^2} + \frac{1}{r}\frac{\partial \Pi}{\partial r} + \frac{1}{r^2}\frac{\partial^2 \Pi}{\partial \theta^2} + T^2 \Pi = 0, \qquad (2)$$

WHERE

$$T^2 = (\gamma^2 - k^2)\left[\frac{\omega_p^2}{\omega^2} + \frac{\omega_{T_e}^2}{\omega^2\left(1 - \frac{\gamma}{\gamma_e}\right)^2} - 1\right], \qquad (3)$$

where γ is the wave number in medium, k is the wave number in vacuum, γ_e is the electron wave number; ω_{pe} is different from zero when $r < a$. Dividing the space into two areas, one of which ($0 \leq r \leq a$) contains the electron flux and plasma, while the other ($r \geq a$) contains only plasma, and joining the solutions

Card 2/13

9.3150,9.3240

77775
SOV/109-5-2-3/26

AUTHORS: Bogdanov, E. V., Kislov, V. Ya., Chernov, Z. S.

TITLE: Electron Flux Interaction with Plasma

PERIODICAL: Radiotekhneka i elektronika, 1960, Vol 5, Nr 2, pp 229-238 (USSR)

ABSTRACT: The interaction of a finite electron beam with plasma is analyzed and the dispersion equation is derived. A system is tested experimentally in which a modulated electron beam interacts with plasma of a gaseous discharge within a longitudinal magnetic field. Amplification was achieved up to 40 db within the range of 3 to 30 cm waves. (1) Interaction of a finite modulated electron flux with plasma. Existing theories concerning the interaction of an infinite flux with an infinite plasma being too abstract, the authors assume a cylindrical electron flux of diameter a piercing an infinite plasma in the direction of z-axis. Assuming further that current densities and electron velocities in the beam and in the plasma have only longitudinal components,

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at the boundary of the beam r = a, dispersion equations are obtained

$$Ta\frac{J_1(Ta)}{J_0(Ta)} = \tau a\frac{H_1^{(2)}(\zeta a)}{H_0^{(2)}(\zeta a)}. \quad (4)$$

WHERE

$$\tau^2 = (\gamma^2 - k^2)\left(\frac{\omega_p^2}{\omega^2} - 1\right). \quad (5)$$

IF $\tau^2 > 0$,

AND

$$Ta\frac{J_1(Ta)}{J_0(Ta)} = \tau_1 a\frac{K_1(\tau_1 a)}{K_0(\tau_1 a)}, \quad (6)$$

when $\tau_1^2 > 0$, where $\tau_1^2 = -\tau^2$, $H_0^{(2)}$ is Hanckel's function of the zero order and 2-nd kind, corresponding to a wave leaving the electron flux; K_0 is modified Bessel's function. The authors limit themselves to an

analysis of waves with phase velocity of near v_e. From Eqs. (4) and (6) they find the dependence of Ta on τa, permitting the derivation of the propagation constant and of its imaginary part. The amplification per unit length of system is expressed by a simple equation

$$G_e = 8{,}69\gamma_{pe}q \text{ db/m} \qquad (7a)$$

where $\gamma_{pe} = \omega_{pe}/v_e$ is the plasma wave number of the electron flux. At the boundary of the plasma (Z = 0) the variable component of the current density of the space charge waves in the stream is J(0) = 0, and the variable velocity v(0) is maximum. Two waves are generated in the system plasma -- electron stream; one is attenuated, the other is amplified. Therefore, the coefficient of amplification is

$$T^2 = (\gamma^2 - k^2)\left[\frac{\omega_{p_e}^2}{\omega^2\left(1-\frac{\gamma}{\gamma_e}\right)^2} - \frac{\omega_p^2}{\omega^2\left(1-\frac{\gamma^2 v_T^2}{\omega^2}\right)} - 1\right], \qquad (8)$$

$$\tau^2 = (\gamma^2 - k^2)\left[\frac{\omega_p^2}{\omega^2\left(1-\frac{\gamma^2 v_T^2}{\omega^2}\right)} - 1\right]. \qquad (9)$$

Consideration of thermal terms is very important in case of resonance (for large $\gamma_e a$). If $\gamma_e a \to \infty$, practically a plane condition is achieved when the dependence of Π on the radius disappears, and the dispersion equation takes on the shape $T^2 = 0$ (A. I. Akhiyezer, Ya. B. Faynberg, Zh E T F, 1957, 21, 1262). It is doubtful whether such a case can be achieved practically. Amplification of the usual types of TWT drops at shorter wavelengths in consequence of an increase of γa for the delay structure. In plasma the amplification increases with γa, and it is

$$G = (8{,}69\gamma_{ea}ql - 3)\,db \qquad (76)$$

where l is length of the interaction zone. A graphic representation of quantity q is given in Fig. 1. The method of calculating quantity $q(\gamma_e a, \omega_p/\omega)$ is explained in an appendix to this article. The most important relation is that of the amplification to ω_p^2/ω^2, or, if amplification at a given frequency is considered, the relation to n/n_o where n_o corresponds to plasma resonance for the given frequency. If $n < n_o$, there is no amplification. Beginning with $n = n_o$ the amplification rises abruptly, but it declines slowly with a further increase of n. A strict statistical analysis is given in Appendix 2. As a result of this analysis in Eqs. (4) and (6) thermal terms appear

Electron Flux Interaction with Plasma

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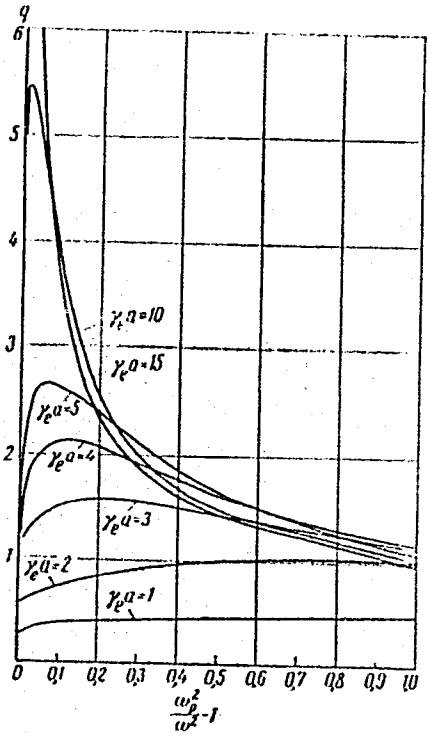

Card 7/13 Fig. 1.

possible to achieve a more effective interaction at higher frequencies and greater electron stream cross sections. Plasma concentrations must exceed the critical magnitude, which is calculated by Langmuir's formula. (2) Experimental study of electron beam interaction with plasma. This study was carried out using a device shown in Fig. 2.

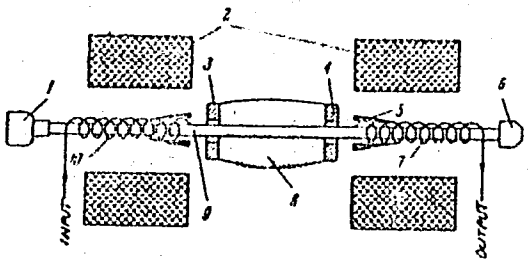

Fig. 2. Schematic Diagram of the experimental device: (1) electron gun; (2) magnet coils; (3) cathode; (4) anode; (5) absorber; (6) collector; (7) demodulating helix; (8) plasma; (9) electron beam (10) modulating helix.

The discharge gap consisted of an annular heated oxide coated cathode facing an annular anode. Between these electrodes a discharge in mercury vapors at a few micron pressure was ignited. The current could be varied between zero and a few amperes. The magnetic coils imposed a field in the discharge area like those used in plasma traps with magnetic stoppers. Amplification from 20 to 40 db was achieved at a discharge current of 100 to 200 ma and a beam current under 1 ma. Figure 3 shows the dependence of an increasing q on the square of plasma frequency $\omega_p^2/\omega^2 - 1$. Solid curves are calculated quantities, while the dashed line is experimental. Figure 4 shows a most important dependence indicating that the use of plasma for amplification of millimeter waves is possible. Along the ordinate axis the signal frequency in kilomegacycles is plotted, while the maximum amplification current density of the discharge is plotted on the abscissa. Figure 5 shows the pace of amplification depending on the current density of the discharge and different wave lengths

Electron Flux Interaction with Plasma

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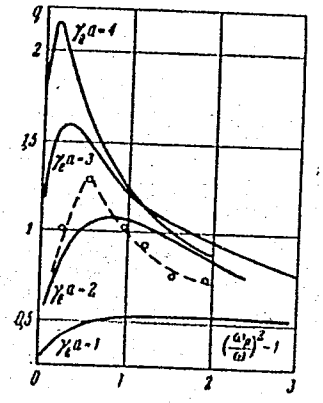

Card 10/13 Fig. 3.

Electron Flux Interaction with Plasma

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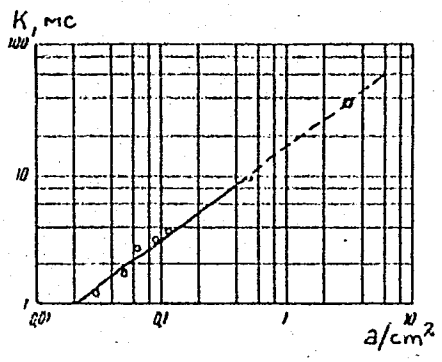

Card 11/13 Fig. 4.

which coincides with the theoretical predictions about critical frequencies (knees of curves). The article contains an appendix, where are given (1) Derivation of the dispersion equation, (2) an analysis of it, (3) calculation of thermal scattering. There are 7 figures; 9 references, 5 Soviet, 4 U.S. The U.S. references are D. Bohm, E. B. Gross, Phys. Rev., 1949, 75, 1851; M. A. Lampert, J. Appl. Phys., 1956, 27, 5; G. D. Boyd, L. M. Field, R. W. Gould, Phys. Rev., 1958, 109, 1393; C. K. Birdsell, J. R. Whinnery, J. Appl. Phys., 1953, 24, 314.

SUBMITTED: May 21, 1959

Electron Flux Interaction with Plasma

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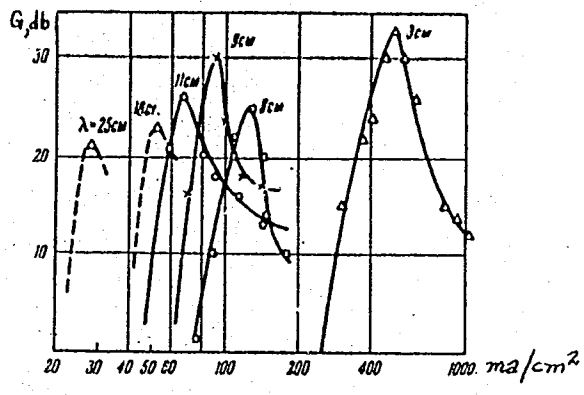
SOV/109-5-2-8/26



Card 13/13 Fig. 5.

S/109/60/005/012/016/035
E192/E382

9.4230

AUTHORS: Kislov, V.Ya. and Bogdanov, Ye.V.

TITLE: Interaction Between Slow Plasma Waves and an Electron Beam

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol. 5, No. 12, pp. 1974 - 1985

TEXT: The system considered consists of two regions; I and II . The internal region is in the form of a cylinder having a radius a and this is filled with a plasma through which passes a beam of electrons having the same radius. The external region is in the form of an infinite plasma having a concentration different from the concentration of the internal region. The magnetic field is directed along the axis of the system. The electron beam is focused by the magnetic field and has only longitudinal components of the alternating quantities, i.e. the electron velocity v_e and current density j_e ; these are assumed to be much smaller

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than the corresponding average quantities. It is assumed that all the alternating quantities vary sinusoidally and that the system of the field equations is in the form:

$$(\mathrm{rot}\,\vec{H})_i = i\omega\varepsilon_{ik}E_k + j_{ei}, \qquad (1)$$
$$\mathrm{rot}\,\vec{E} = -i\omega\mu_0\vec{H}.$$

On the other hand, the equations of continuity and motion give:

$$j_{ei} = \frac{\rho_0\eta E_z}{i\omega\left(1-\frac{\gamma}{\gamma_e}\right)^2}, \qquad (2)$$

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where ρ_o is the charge density,
γ_e is the electron wave number and
η is the ratio of the electron charge to its mass.

By introducing an active component in the tensor ε_{ik}, the equation system becomes homogeneous and can be written as:

$$(\text{rot } \vec{H})_i = i\omega\varepsilon_{ik}E_k \,, \qquad (3)$$

$$\text{rot } \vec{E} = -i\omega\mu_o\vec{H}$$

where the tensor components are in the form (Ref; 1)

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$$\varepsilon_{ik} = \varepsilon_0 \begin{pmatrix} \varepsilon_r & \varepsilon_\varphi & 0 \\ -\varepsilon_\varphi & \varepsilon_r & 0 \\ 0 & 0 & \varepsilon \end{pmatrix} = \varepsilon_0 \begin{pmatrix} 1-\frac{b}{1-\alpha^2}; & \frac{-ib\alpha}{1-\alpha^2}; & 0 \\ \frac{ib\alpha}{1-\alpha^2}; & 1-\frac{b}{1-\alpha^2}; & 0 \\ 0; & 0; & 1-b-\frac{b_e}{\left(1-\frac{\gamma}{\gamma_0}\right)^2} \end{pmatrix}, \qquad (4)$$

where:

$$b = \frac{\omega_p^2}{\omega^2}; \qquad b_e = \frac{\omega_{pe}^2}{\omega^2}; \qquad \alpha = \frac{\omega_H}{\omega}$$

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in which ω_p is the plasma frequency,

ω_{pe} is the plasma frequency of the electron beam,

ω_H is the cyclotron frequency of the electrons.

Angularly symmetrical solutions of Eqs. (3) are found and it is shown that the coupling between E- and H-waves is realised by means of ε_φ. For $\varepsilon_\varphi = 0$:

$$T_E^2 = \gamma^2 \frac{\varepsilon_z}{\varepsilon_r} - k_o^2 \varepsilon_z \qquad (14)$$

$$T_H^2 = \gamma^2 - k_o^2 \varepsilon_z$$

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The expression for determining T is in the form:

$$\underbrace{\left[T^2-\left(\gamma^2\frac{\varepsilon_z}{\varepsilon_r}-k_0^2\varepsilon_z\right)\right]}_{\text{E-волны — E-waves}}=-\gamma^2\frac{\varepsilon_z}{\varepsilon_r}\frac{\varepsilon_\varphi^2}{\varepsilon_\varphi^2+\varepsilon_r\underbrace{\left[\varepsilon_r+\frac{T^2-\gamma^2}{k_0^2}\right]}_{\text{H-волны — H-waves}}}. \qquad (15)$$

The criterion for the separation of the slow E- and H-waves is expressed by the inequality:

$$\frac{k_0^2}{\gamma^2}\frac{\omega_p^2}{\omega^2-\omega_H^2}\ll 1 \qquad (17)$$

By comparing the tangential components of the fields at the boundary $r = a$, it is possible to derive the scattering equation for the slow E-waves. This is in the form of:

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$$\frac{\varepsilon_{z1}}{\gamma a}\,\frac{I_1(\gamma a)}{I_0(\gamma a)} = -\frac{\varepsilon_{z2}}{\gamma a}\,\frac{K_1(\gamma a)}{K_0(\gamma a)} \qquad (18)\ .$$

The equation has two groups of solutions. The first group corresponds to the increasing space-charge density waves while the second group corresponds to the amplification of the slow travelling waves which can propagate in the system also in the absence of the electron beam. The first group of the solutions is investigated analytically and the results are shown in a figure. The problem was also studied experimentally by using the device illustrated in Fig. 2; the device consisted of: 1 - an electron gun; 2 - magnetic coils; 3 - cathode; 4 - anode; 5 - an attenuator; 6 - collector; 7 - high-frequency input; 8 - modulating helix; 9 - plasma; 10 - electron beam; 11 - demodulating helix and 12 - high-frequency output. The experimental results are shown in two

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figures. The second group of the solutions was also studied analytically and experimentally. The experimental tube is shown in Fig. 7; this consisted of: 1 - electron gun; 2 - discharge cathode; 3 - discharge anode; 4 - plasma; 5 - electron beam passing through plasma; 6 - helical matching devices; 7 - helical attenuator or absorber and 8 - collector. The calculated and experimental results are shown in four figures. It was found that the calculations were in good agreement with the experiments. The two solutions of the scattering equation correspond to two different interaction mechanisms. In the first case, the amplification of the space-charge waves is produced as a result of the deceleration of the electron bunches in the field of the induced charges. In the second mechanism, an interaction between the travelling wave and the electron beam is achieved. Two types of waves (surface and volume waves) can exist. The amplitude of the volume waves has a maximum on the axis

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of the system and this type of slow wave has no analogue in the normal slow-down structures. For both types of waves there exist regions with normal and anomalous scattering. There are 9 figures and 6 references: 1 non-Soviet and 5 Soviet.

SUBMITTED: January 8, 1960

Fig. 2:

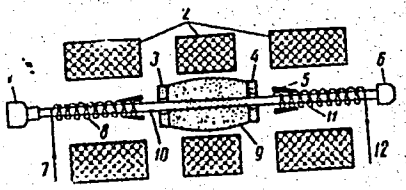

Рис. 2. Схематическое изображение экспериментального устройства:
1 — электронный прожектор; 2 — магнитные катушки; 3 — катод; 4 — анод; 5 — поглотитель; 6 — коллектор; 7 — ВЧ-вход; 8 — модулирующая спираль; 9 — плазма; 10 — поток электронов; 11 — демодулирующая спираль; 12 — ВЧ-выход

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Interaction Between Slow Plasma Waves and an Electron Beam

Fig. 7:

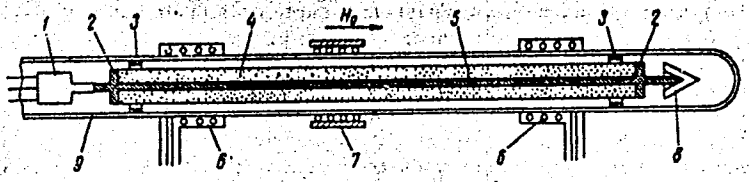

Рис. 7. Схематическое изображение экспериментального устройства для исследования взаимодействия потока электронов с бегущей плазменной волной:
1 — электронный прожектор; 2 — катод разряда; 3 — анод разряда; 4 — плазма; 5 — поток электронов, проникающий плазму; 6 — спиральные согласователи; 7 — спиральный поглотитель; 8 — коллектор

Card 10/10

BERNASHEVSKIY, G.A.; BOGDANOV, Ye.V.; KISLOV, V.Ya.; CHERNOV, Z.S., prof.; MASHAROVA, V.G., red.

[Plasma and electronic microwave amplifiers and generators] Plazmennye i elektronnye usiliteli i generatory SVCh. Moskva, Sovetskoe radio, 1965. 94 p. (MIRA 18:9)

ACC NR: AM6006280 Monograph UR/

Bernashevskiy, G. A.; Bogdanov, Ye. V.; Kislov, V. Ya.; Chernov, Z. S.

Plasma and electron amplifiers and superhigh frequency oscillators (Plazmennyye i elektronnyye usiliteli i generatory SVCh) Moscow, Izd-vo "Sovetskoye radio", 65. 0094 p. illus., biblio. 10,300 copies printed.

TOPIC TAGS: ionized plasma, electron plasma, microwave plasma, plasma electromagnetic wave, plasma beam interaction, plasma device, plasma electron oscillation, plasma waveguide, traveling wave tube, backward wave tube, superhigh frequency, SHF amplifier, SHF oscillator, electron beam

PURPOSE AND COVERAGE: Some new methods for amplification and generation of superhigh frequency (SHF) oscillations using electron-ion plasma penetrated by an electron beam and also using a rotating electron beam are considered. In contrast to the usual SHF devices, where the electron beam interacts with electromagnetic fields which are channeled by metallic structures, in plasma SHF devices plasma having a number of new properties is used as the medium channeling the electromagnetic oscillations. The physical principles in utilizing plasma for the generation and amplification of SHF oscillations and the interaction of plasma oscillations with an electron beam are considered in the first part of the book.

Card 1/3 UDC: 621.385.6

ACC NR: AM6006280

The basic properties of the interaction which can be used for constructing plasma amplifiers and oscillators are developed. The results of theoretical and experimental studies of plasma amplifiers and oscillators are presented. In the second part centrifugal-electrostatic focusing (CEF) of rotating electron beams is considered. New SHF amplifiers and oscillators, constructed on the basis of this focusing and having a number of advantages over other electron SHF devices, are also discussed. The stability of an electron beam when utilizing CEF is analyzed and the current limit is determined. Experimental studies of traveling-wave tubes (TWT) and backward-wave tubes (BWT) with central electrostatic focusing are described. The processes of high frequency bunching in a rotating electron beam are considered in linear and nonlinear approximations and it is shown that space-charge self-bunching of the electrons is possible. The book is intended for scientific workers and engineers working in the field of construction and study of electron SHF devices and for graduate and other advanced students of the corresponding specialties. [Abstracter's note: There are 95 references listed on pp. 55-58.]

TABLE OF CONTENTS:

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ACC NR: AM6006280

[Abstracter's note: There are 95 references listed on pp. 55-58.]

SUB CODE: 20, 09/ SUBM DATE: 08Jul65/ ORIG REF: 010/ OTH REF: 016

Card 3/3

BERGMAN, A.G.; KISLOVA, A.I.; POSYPAYKO, V.I.

Complex formation and metathesis in ternary systems of the sulfates, tungstates, and metaborates of lithium and potassium. Doklady Akad. Nauk S.S.S.R. 88, 815-18 '53. (MLRA 6:2)
(CA 47 no.22:12090 '53)

KISLOVA, A. I.

USSR

Reciprocal systems of an adiagonal-belt type. A. G. Bergman, A. I. Kklova, and M. L. Sholokhovich. *Doklady Akad. Nauk S.S.S.R.* 89, 1011-14 (1953); cf. Bergman and Bukhalova, *C.A.* 44, 10506f.—Adiagonal-belt eutectic-type systems are those in which lines connecting the representative points of the complexes on opposite sides of the square form a eutectic system, e.g. Li, K||SO_4, PO_4 and Li, K||SO_4, WO_4. Diagrams of these systems explain all reactions between components and complexes. Reaction of any pair of components results in complex formation, e.g. $3Li_2SO_4 + 2(KPO_3)_3 \rightarrow Li_2SO_4 \cdot K_2SO_4 + (LiPO_3)_3(KPO_3)_3$.

H. W. Ruckmann

KISLOVA, A. I.

USSR/Chemistry - Physical chemistry

Card 1/1 : Pub. 147 - 17/21

Authors : Bergman, A. G.; Kislova, A. I.; and Posypayko, V. I.

Title : About complex formation in a mutual tetra-system consisting of Li, K||Cl, SO_4, WO_4.

Periodical : Zhur. fiz. khim. 8, 1489-1496, Aug 1954

Abstract : In order to confirm the stability of complex $Li_2WO_4.K_2WO_4$ and $LiSO_4.K_2SO_4$ compounds in the composition of a mutual tetra Li, K||Cl, SO_4, WO_4 system, the authors investigated the "interior" of the composition prism of this system by means of three book-leaf type and five triangular cross sections. It was established that the liquidus surface of the system consists of six basic crystallization fields, two of which occupy areas of 10.0% and 21.8% and the remaining four - the fields of pure components. The internal structure of the investigated composition-prism of the tetra system, is described. Five references: 4-USSR and 1-German (1907-1953). Tables; diagrams.

Institution : The Agricultural Institute, Krasnodar

Submitted : February 2, 1954

USSR/ Chemistry Crystallization

Card : 1/1 Pub. 151 - 7/35

Authors : Bergman, A. G., Kislova, A. Y., and Korobka, E. I.

Title : Investigation of a ternary mutual adiagonal-zone type system composed of lithium and potassium sulfates and molybdates

Periodical : Zhur. ob. khim. 24, Ed. 7, 1127 - 1135, July 1954

Abstract : The crystallization surface of a ternary mutual adiagonal-zone type system composed of Li_2MoO_4 - Li_2SO_4 and K_2SO_4 - K_2MoO_4, was investigated by the visual polythermal method. It was found that the diagonal sections in the crystals are unstable and do not participate in the triangulation of the system. The reaction of formation of complexes, oriented on opposite sides of the square and its effect on the reaction of volumetric decomposition, are described. Two USSR and 1 German reference. Tables, graphs.

Institution : The Agricultural Institute, Kuban

Submitted : February 3, 1954

USSR/ Chemistry Double decomposition

Card : 1/1 Pub. 151 - 7/33

Authors : Bergman, A. G., Kislova, A. I., and Posypayko, V. I.

Title : Double decomposition in the absence of the solvent. Part 1.- Tetra system consisting of LiCl, Li_2SO_4, Li_2WO_4, KCl, K_2SO_4, K_2WO_4.

Periodical : Zhur. ob. khim. 24/8, 1304 - 1314, August 1954

Abstract : A tetra system consisting of Li, K || Cl, SO_4, WO_4 was investigated by visual thermal method to determine its double decomposition characteristics in the absence of the solvent. The liquidus and eutectics of the system was established at 348° and homeomorphous conversion of the Li_2Cl_2 branch was observed at 565°. The crystallization fields coincide in three mono-variant points, the compositions and temperatures of which are listed in one of the tables. Nine references: 8 USSR and 1 German (1907 - 1953). Graphs.

Institution : Agricultural Institute, Kuban

Submitted : February 17, 1954

Kislova, A. I.

USSR/Chemistry - Tetra-systems

Card 1/1 Pub. 151 - 5/37

Authors : Bergman, A. G.; Kislova, A. I.; and Posypayko, V. I.

Title : Double decomposition in the absence of the solvent. Part 2.- Tetra-system consisting of lithium and potassium chlorides, sulfates and tungstates

Periodical : Zhur. ob. khim. 24/10, 1722-1730, Oct 1954

Abstract : Five internal triangular sections in a composition-prism were investigated by a visual polythermal method to determine the dimensions of internal crystallization volumes and their disposition, tetrahedral form of the prism, composition and locations of tetra eutectic points of the system. The results obtained are described in detail. The dentritic form of crystallization of a tetra Li, K ‖ Cl, SO_4, WO, system was determined. Three USSR references (1936-1954). Tables; graphs; drawings.

Institution : The Agricultural Institute, Kuban

Submitted : February 17, 1954

Kisleva, A.I.

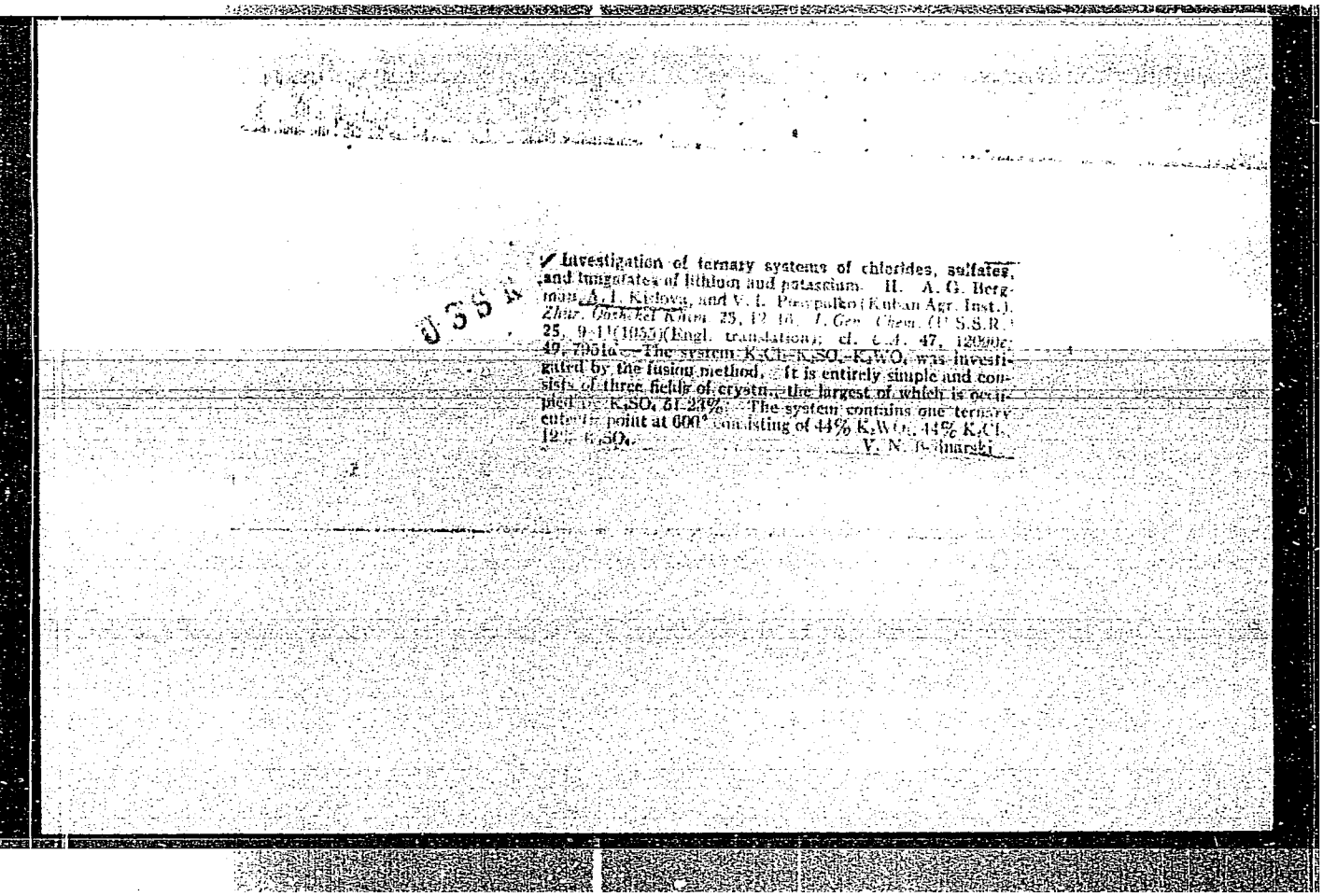
USSR.

Investigation of the ternary system of chlorides, sulfates, and tungstates of lithium and potassium. I. A. G. Bergman, A. I. Kisleva, and V. I. Posypaiko (Kuban Agr. Inst.) *Zhur. Obshchei Khim.* 24, 1035-40(1954); cf. *C.A.* 47, 12008*e*.—The ternary system Li || Cl, SO_4, WO_4, which is the upper base of the triangular prism of the quaternary system Li, K || Cl, SO_4, WO_4 (cf. *C.A.* 49, 7356*a*), was detd. by 7 internal cross sections: through Li_2WO_4 crossing the Li_2Cl_2-Li_2SO_4 side at 10, 40, 60, and 75 mol. % Li_2Cl_2; and through Li_2SO_4 and the Li_2Cl_2-Li_2WO_4 side at 65, 75, and 85 mol. % Li_2Cl_2. Isotherms were taken every 50°. The system exhibits a eutectic at 444° with 32% Li_2SO_4, 47% Li_2Cl_2, and 21% Li_2WO_4. The crystn. fields of α- and β-Li_2Cl_2 occupy 23.38 and 3.00% of the total area, that of α- and β-Li_2WO_4 8.81 and 41.61%, and that of α- and β-Li_2SO_4 4.01 and 18.90%. I. Bencowitz

KISLOVA, A. I.

7

Complex formation in a quaternary reciprocal system of chlorides, sulfates, and tungstates of lithium and potassium. A. G. Bergman, A. I. Kislova, and V. I. Posypaiko (Agr.-Ch. Inst., Krasnodar). *Zhur. Fiz. Khim.* 28, 1489–96(1954); cf. *C.A.* 49, 7356d.—The fusion curves for the system Li^+, $K^+||Cl^-$, SO_4^{--}, WO_4^{--} show that 2 complex compds. $Li_2WO_4.K_2WO_4$ and $Li_2SO_4.K_2SO_4$, are formed. The crystn. areas are analyzed in detail. J. Rovtar Leach



✓ Investigation of ternary systems of chlorides, sulfates, and tungstates of lithium and potassium. II. A. G. Bergman, A. I. Kirlova, and V. I. Pereplatko (Kuban Agr. Inst.). *Zhur. Obshchei Khim.* 25, 12-16. *J. Gen. Chem. U.S.S.R.* 25, 9-11 (1955) (Engl. translation); cf. *C.A.* 47, 12000e; 49, 7951a.—The system K_2Cl_2–K_2SO_4–K_2WO_4 was investigated by the fusing method. It is entirely simple and consists of three fields of crystn., the largest of which is occupied by K_2SO_4, 81.23%. The system contains one ternary eutectic point at 600° consisting of 44% K_2WO_4, 44% K_2Cl_2, 12% K_2SO_4.

V. N. Ipatieff

Kislova, A. I.

Ternary mutual system of sulfates and tungstates of lithium and potassium. A. G. Bergman and A. I. Kislova. *J. Gen. Chem. U.S.S.R.* 25, 827–32 (1955) (Engl. translation).—See *C.A.* 49, 15590a. B. M. R.

KISLOVA, A.I.

Ternary mutual system of sulfates and tungstates of lithium and potassium. A. G. Bergman and A. I. Kislova (State Univ., Rostov-on-Don). *Zhur. Obshchei Khim.* 25, 860-6(1955); cf. *C.A.* 49, 10034*e*.—Melting (crystn.) points of 2-, 3-, and 4-component mixts. of the four salts in varying proportions are represented by a photograph of a 3-dimensional diagram of compn. and a square contoured projection of this diagram; diagonal and other sections of the diagram are also given, with tables of section data. The two sections representing varying proportions of Li_2WO_4.K_2WO_4 to Li_2SO_4.K_2SO_4 and Li_2WO_4 to Li_2SO_4.K_2SO_4 are stable; all other sections are metastable. Reactions in the system tend toward the formation of Li_2SO_4.K_2SO_4 and Li_2WO_4.-K_2WO_4. The system has 4 nonvariant points of compn., whose temp., mole % Li_2WO_4, % K_2SO_4, % K_2WO_4, and % Li_2SO_4 are, resp.: 480°, 20, 20, —, 60; 484°, 30, —, 37.5, 32.5; 486°, 47, 37.5, 15.5, —; 526°, 42, 37.5, 20.5, 2. The first three are eutectics, and the fourth is a transition point. Malcolm M. Anderson

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(1)

Kislova, A. I.

4

Exchange decomposition in the absence of a solvent. Phase diagram of the system $Li^+-K^+-SO_4^{--}-BO_3^-$. A. G. Bergman, A. I. Kislova, and V. I. Posypaiko. *J. Gen. Chem. U.S.S.R.* 25, 1831–40(1955)(Engl. translation).—See *C.A.* 50, 9810h. B. M. R.

KISLOVA, A.I.

✓ 596

DOUBLE DECOMPOSITION IN ABSENCE OF A SOLVENT.
INTERSYSTEM OF LITHIUM AND POTASSIUM SUL-
CHATES AND METAL-BATES

[illegible]lova and V. I. [illegible]

[illegible] Chem.

A visual-polythermal method [illegible]
the liquidus diagram for the Li_2S [illegible]
triple interaction systems and [illegible]
$Li_2SO_4-Li_2(BO_2)_2$ and $K_2SO_4-K_2(BO_2)_2$ (R. V. J.

(2)

BERGMAN, A.G.; KISLOVA, A.I.; POSYPAYKO, V.I.

Exchange decompesition in absence of a solvent. Reciprocal system of potassium and lithium tungstates and metaborates. Zhur.ob.khim. 25 no.11:2044-2053 O '55. (MLRA 9:4)

1.Rostovskiy-na-Donu gosudarstvennyy universitet i Kubanskiy sel'skokhozyaystvennyy institut.
(Potassium salts) (Lithium salts)

KISLOVA, A.I.; POSYPAYKO, V.I.; BERGMAN, A.G.

Tungstate and sulfate exchange with the participation of alkali metal compounds of lithium and potassium in binary-system melts. Zhur.fiz. khim. 29 no.2:359-367 '55. (MLRA 8:7)

1. Kubanskiy sel'skokhozyaystvennyy institut, Krasnodar.
(Lithium salts) (Potassium salts) (Systems (Chemistry))

USSR/Thermodynamics. Thermochemistry. Equilibria. Physico-Chemical Analysis. Phase Transitions B-8

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26144

Author : V.I. Posypayko, A.I. Kislova, A.G. Berman
Title : Ternary Systems of Lithium Metaborates, Chlorides, Sulfates and Tungstates

Orig Pub : Zh. neorgan. khimii, 1956, 1, No 4, 806-819

Abstract : The ternary systems $LiBO_2$ (I) - LiCl (II) - Li_2SO_4 (III), I - II - Li_2WO_4 (IV) and I - II - IV were studied by the visual-polythermal method. The binary system I - II representing a simple eutectic system with the eutectic point at 572° and 19% of I was studied for the first time. Nine ternary interior cross-sections in the system I - II - III were studied, their graphs and tabulated data were shown. The crystallization area consists of four fields: of fields of components and of the compound $3Li_2SO_4 \cdot 2LiBO_2$. There are one ternary eutectic point (the composition is everywhere given in mol.%): 2.5% of I and 37.5% of II at 472°, and a transition point at 660° and 15% of I and 77.5% of III. The system I - III - IV is the upper base of the

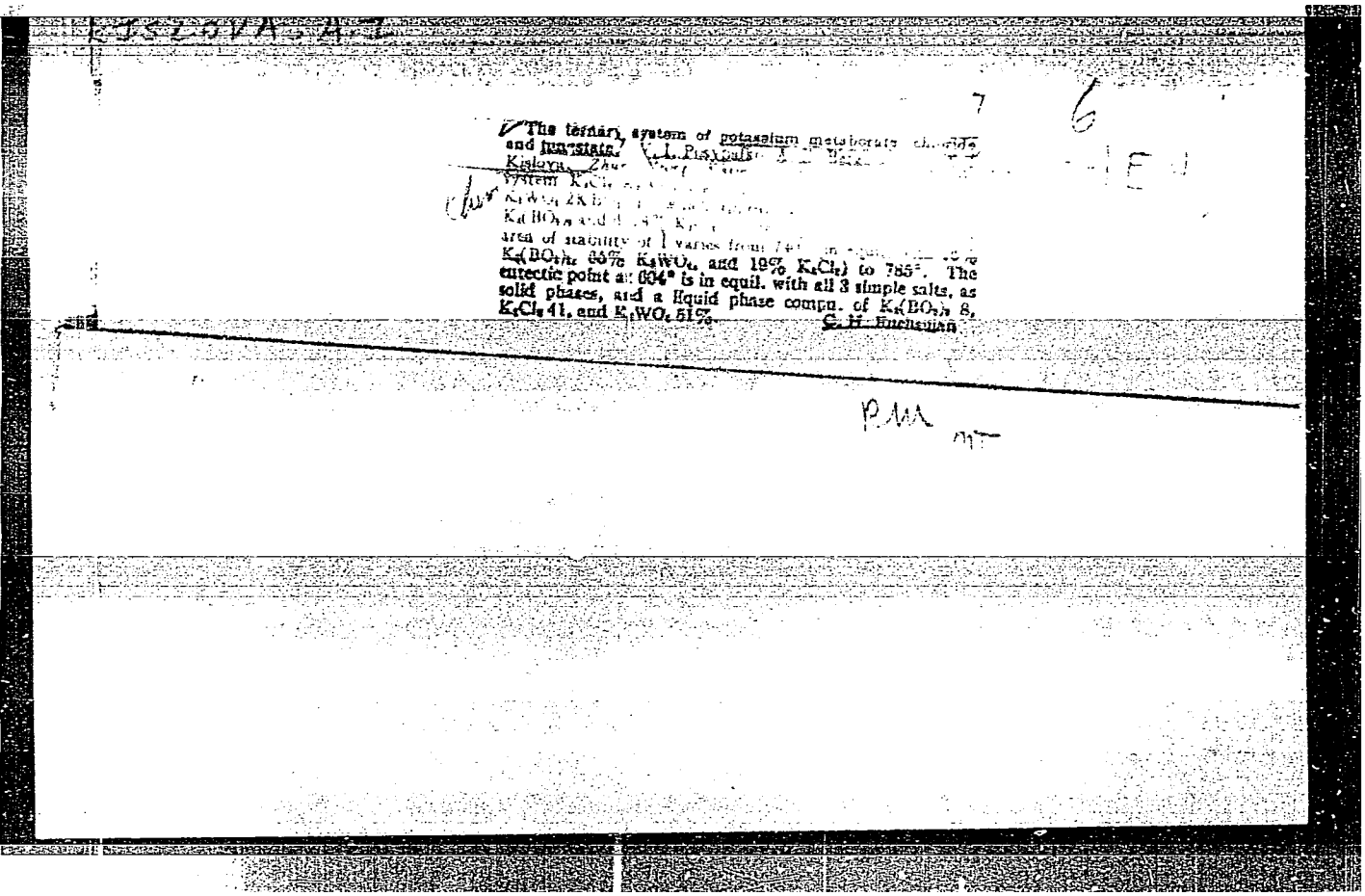
Card : 1/3

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26144

prism of the quaternary system Li, K // BO_2, WO_4 and SO_4. The binary systems I - III, I - IV and III - IV were studied for the first time. The compound of the composition $3Li_2WO_4 \cdot 2LiBO_2$ decomposing when being melted was discovered in the first system, as well as the transition of I from the α-form into the β- form at 815° and 87.5% of I. These are in the binary system I - III a congruently melting compound $3Li_2SO_4 \cdot 2LiBO_2$ (V) at 742° and eutectic points at 737° and 31% of I. There is an eutectic in the binary system III - IV at 596° and 68% of III. Ten cross-sections were studied in the system I - III - IV, the graphs and the fields of components and binary compounds were shown. There are one ternary point at 590° and 5% of I and 71% of III and two transition points: one at 650° and 10% of I and 70% of IV, and another at 604° and 12.5% of I, 15% of IV and 72.5% of III. The system I - II - IV is a triangle of the prism of the quaternary system Li, K // BO_2, Bl, WO_4. The binary system II - IV, having an eutectic at 490° and 41.5% of

Abs Jour : Ref Zhur - Khimiya, No 8, 1957, 26144

IV, was studied for the 1st time. Seven cross-sections were made in the system I - II - IV, the graphs, the tabulated data and the fields of crystallization of components and V were shown. There are a ternary eutectic point at 482° and 7% of I and 60% of II and a transition point at 650° and 20% of II and 10% of I. The projections of the diagrams of state of all the ternary systems on the composition triangle are shown.



The ternary system of potassium metaborate [illegible]
and [illegible]
Kislova, Zhur
System K_2O
$K_2BO_{2.5}$
$K_2BO_{2.5}$ and
area of stability of [illegible] varies from [illegible]
$K_2(BO_{2.5})_2$ 66% K_2WO_4, and 19% K_2Cl_2) to 785°. The eutectic point at 604° is in equil. with all 3 simple salts, as solid phases, and a liquid phase compn. of $K_2(BO_{2.5})_2$ 8, K_2Cl_2 41, and K_2WO_4 51%. C. H. Evenson

KISLOVA, A. I.

5
4E3d
4E4

Ternary system benzidine-phenol-naphthalene. A. G. Bergman, A. P. Arestenko, and A. I. Kislova (State Univ. Rostov-on-Don). *Zhur. Obshchei Khim.* 27, 870–6 (1957).

Binary systems are shown in phase diagrams: Benzidine-PhOH has a eutectic at 40° and ~15% benzidine and a complex $(C_6H_4NH_2)_2$.2PhOH with a 2nd eutectic at 113.5° and 22.5% PhOH. The benzidine $C_{10}H_8$ system has a eutectic at 77° and 10% benzidine. System PhOH $C_{10}H_8$ has a eutectic at 30° and 15% $C_{10}H_8$. Nine sections of the ternary system were examd. These are shown graphically. A definite max. appears at 141° by the complex $(C_6H_4NH_2)_2$.2PhOH, which occupies 75.33% of the area of the triangular representation of the compn. The eutectic transition in the ternary corresponds to 40% $C_{10}H_8$. With lowering of temp. the isotherms within the area occupied by the above complex acquire greater curvature directed toward the phase [illegible] of the triangulating section of the [illegible]

5(2) SOV/78-4-8-30/43

AUTHORS: Kislova, A. I., Bergman, A. G.

TITLE: The Fusibility in the System of Wolframates and Fluorides of Lithium and Potassium (Plavkost' v sisteme iz vol'framatov i ftoridov litiya i kaliya)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 8, pp 1893-1898 (USSR)

ABSTRACT: In the development of the chemistry of the melted salts the influence exercised by the dissolving agent on the durability of the complex compounds becomes more distinct. In the mutual system not only the stability of the complexes of binary side systems but also the heterogeneous complexes are influenced. The system mentioned in the title belongs to the irreversible mutual systems with two subordinated adiagonal cross sections. The congruently melting side compound $KF.K_2WO_3$ becomes incongruent within the system. The system Li, K ‖ F, WO_4 behaves in similar way as the system Li, K ‖ F, SO_4. The cross sections of the system are shown in diagrams (Figs 1-4) and the correspond-

Card 1/2

The Fusibility in the System of Wolframates and Fluorides of Lithium and Potassium

ing physical data are given in tables 1 and 2. Table 3 shows the composition of the equilibrium phases. There are 5 figures, 2 tables, and 6 Soviet references.

ASSOCIATION: Kubanskiy sel'skokhozyaystvennyy institut (Kuban' Institute of Agriculture)

SUBMITTED: April 29, 1958

KISLOVA, A.I.; BERGMAN, A.G.

Reciprocal system of lithium and potassium chlorides and tungstates.
Zhur. neorg. khim. 5 no.11:2499-2502 N '60. (MIRA 13:11)
(Lithium chloride) (Potassium chloride)
(Lithium tungstate) (Potassium tungstate)

KISLOVA, A.I.; BERGMAN, A.G.

Reciprocal system consisting of lithium and potassium chromates and tungstates. Zhur.neorg.khim. 6 no.9:2132-2135 S '61. (MIRA 14:9)

1. Kubanskiy sel'skokhozyaystvennyy institut.
(Systems (Chemistry)) (Alkali metal chromates)
(Alkali metal tungstates)

BOGATOVA, Ye.I.; KISLOVA, A.I.; BERGMAN, A.G.

Reciprocal system consisting of lithium and potassium pyrophosphates and molybdates. Zhur. neorg. khim. 9 no.11: 2623-2630 N '64 (MIRA 18:1)

ALEKSEYEV, B.N.; YENIKEYEV, G.Sh.; GLAGOLEV, A.V.; KISLOVA, A.M.; NORMAN, E.A.; LISOVSKIY, M.A.; BRATKOVSKOY, K.A.; SOROKIN, N.N., inzhener, redaktor; KHITROV, P.A., tekhnicheskiy redaktor

[Use of aerial photographs by railroad location parties] Ispol'zovanie aerofotosnimkov v polevykh trassirovochnykh partiiakh. Moskva, Gos. transp. zhel.-dor. izd-vo, 1955. 130 p. (MLRA 8:6)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo stroitel'stva i proyektirovaniya.
(Railroads--Location) (Photography, Aerial)

KISLOVA, F. F.

M. S. Malinovskii, and F. F. Kislova, The synthesis of fatty-aromatic ketones according to the Friedel-Crafts reaction. p. 1643

The method for obtaining ketones with the help of acids (according to Friedel and Crafts) is better than the chloro-anhydride and anhydride method, because the acids are cheaper, although the yield of ketones is somewhat lower.

Lab. of Organic Chem.
Gorkii State University
May 9, 1947

SO: Journal of General Chemistry (USSR) 28, (80) No. 9 (1948)

KISLOVA, G.D.

Bone tissue changes at pinning sites in the treatment of long bone fractures by skeletal traction. Ortop., travm. i protez. 18 no.5:49-53 S-O '57. (MIRA 12:9)

1. Iz rentgenologicheskogo (zav. - N.K.Simagina, nauchnyy rukovoditel' - prof.Ye.M.Abarbanel') i patologoanatomicheskogo (zav. - prof.Ye.Ya.Gertsenberg) otdeleniy klinicheskoy bol'nitsy No.6 g.Moskvy (glavnyy vrach - N.S.Shevyakov).
(FRACTURES)

31608
S/048/61/025/012/022/022
B125/B112

9,2300 (1160, 1164, 1385)

AUTHORS: Ivanov, R. D., Spivak, G. V., and Kislova, G. K.

TITLE: The properties of ferromagnetic films produced by cathode sputtering

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 25, no. 12, 1961, 1524-1525

TEXT: A method worked out by G. V. Spivak, I. G. Sirotenko, and R. D. Ivanov (Izv. AN SSSR. Ser. fiz., 25, 581 (1961) for the production of one-component and multicomponent ferromagnetic films of high quality by cathode sputtering was improved. The magnetization curves and the hysteresis loops of such films were studied and the most important loop parameters were determined by a magneto-optic method, suggested by G. S. Krinchik (Fizika tverdogo tela, 2, no. 8 (1960)) which uses the equatorial Kerr effect. Polarized light incident on the surface of the film through two windows in the discharge tube, was transmitted to a photoelectric cell by reflexion.. In case of static operation, the hysteresis loop was recorded by means of a bridge circuit with two selenium photoelectric

Card 1/2

The properties of ferromagnetic ...

cells of the type СФ-10 (SF-10) and with a galvanometer М21/2 (M21/2) without exposing the film to the atmosphere. During the formation of the ferromagnetic films their properties were checked constantly. All the films were sputtered to hot surfaces under approximately equal conditions (amperage of the discharge current 0.5-1 a, potential of the specimen with respect to the cathode 1.8-2.2 kv, krypton pressure in the tube $(4-2)\cdot10^{-3}$ mm Hg, current density in the specimen 1-3 ma cm^{-2}, generating field -44.2 oe, period of sputtering $\leq$ 2-5 minutes) and their magnetization was reversed in direction of weak magnetization. The film was then exposed to air and the change in the coercive force was studied. The coercive force which is rather small prior to oxidation increased notably at the beginning and more reluctantly in the further course of time. An analogous behavior of H_c can be observed also in other ferromagnetic films. Adequate measures should be taken to protect the film exposed to the atmosphere and the essential parts of the receiver should be made so as to permit recording of the whole magnetization process by oscilloscopes. There are 3 figures and 2 Soviet references.

ASSOCIATION: Fizicheskiy fakul'tet Moskovskogo gos. universiteta im. M. V. Lomonosova (Physics Department of the Moscow State University imeni M. V. Lomonosov)

Card 2/2

IVANOV, R.D.; SPIVAK, G.V.; KISLOVA, G.K.

Properties of ferromagnetic films obtained by cathode sputtering. Izv. AN SSSR. Ser. fiz. 25 no.12:1524-1525 D '61. (MIRA 14:12)

1. Fizicheskiy fakul'tet Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova.
(Sputtering (Physics))
(Magnetic materials)

L 22264-66 EWT(1)/T/FSS-2 IJP(c)

ACC NR: AR6005177 SOURCE CODE: UR/0058/65/000/009/A019/A019

SOURCE: Ref. zh. Fizika, Abs. 9A163

AUTHORS: Grenishin, S. G.; Kislovskiy, I. L.; Cherkasov, Yu. A.

TITLE: Electrophotographic method for the registration of spectra with electronic reading of the image

REF SOURCE: Tr. Komis. po spektroskopii. AN SSSR, t. 2, vyp. 1, 1964, 567-571

TOPIC TAGS: electrostatic printer, spectrographic camera, spectrographic analysis

TRANSLATION: A method is proposed for registering spectra on electrophotographic layers with subsequent reading of the electrostatic image of the spectrum on the layers by means of an electron beam. The read image is recorded with an automatic recorder or with an oscillograph. The method makes it possible to record rapidly spectra in the vacuum ultraviolet and other regions of the spectrum, and ensures prolonged storage of the record and averaging of the results; it can be used for quantitative measurement. The sensitivity of the method is comparable with the sensitivity of the photographic method, and the resolution reaches 50 mm^{-1}.

SUB CODE: 20

Card 1/1 mst

KISLOVA, I.N.

Bilateral cystic dilatation of the ethmoid labyrinth in an adolescent. Vest. oto-rin. 18 no.1:70-71 Ja-F '56. (MLRA 9:6)

1. Iz otdeleniya bolezney ukha, gorla i nosa (zav.-dotsent F.F. Malomush) detskoy bolInitsy imeni F.E. Dzerzhinskogo, Moskva.
(ETHMOID SINUS, dis.
mucocele, diag.)

ANDREYEV, V.; KISLOVA, K.

Stone book. Vokrug sveta no.12:47-48 D '55. (MLRA 9:4)
(Pagan--Pagodas)

KRIVENTSOV, V.I.; KISLOVA, L.V.; KOMISSAROVA, S.D.; KOROBKOVA, L.

Photometric method of determining pentabromacetone. Izv. AN Turk. SSR. Ser. fiz.-tekh., khim. i geol. nauk no.1:54-60 '65. (MIRA 18:7)

1. Institut khimii AN Turkmenskoy SSR.

YEGOROVA, L.V.; KISLOVA, N.S.; TIKHODEYEV, N.N.

Generalization on the results of a.c.corona loss measurements.
Izv. NIIPT no.8:259-287 '61. (MIRA 15:7)
(Corona (Electricity)--Measurement)
(Electric power distribution--Alternating current)

NIKOLAYEV, A.S.; KISLOVA, N.A.

Wholesale prices for substitute steels. Stal' 25 no.8:755-758 Ag '65. (MIRA 18:8)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii imeni I.P.Bardina.

E 8681-65

ACCESSION NR: AT4045611 S/0000/64/000/000/0130/0142

AUTHOR: Yegorova, L.V.(Senior research associate); Kislova, N.S. (Junior research associate); Tikhodeyev, N.N.(Candidate of technical sciences, head of laboratory for high tension techniques); Filippov, A.A.(Candidate of technical sciences, senior research associate)

TITLE: Results of corona loss measurements on the NIIPTexperimental line using various conductors

SOURCE: Dal'niye elektroperedachi 500 kv (Long-distance transmission of 500 kv. electric power); sbornik statey. Moscow, Izd-vo Energiya, 1964, 130-142

TOPIC TAGS: corona, corona loss, high voltage line, electric power transmission, power line, conductor selection, weather effect

ABSTRACT: The investigation of corona power losses for 330 and 400 - 500 kv transmission lines, which extended over many years, has now been completed and the investigations for a 750 kv line are continuing at NIIPT and VNIIE. This article presents the final results of these investigations in two sets of normalized coordinates:

$$\frac{P}{\varepsilon_1 U_0^2} = \theta_1\left(\frac{U}{U_0}\right); \qquad \frac{P_1}{n^2 r_0^2} = \theta_2\left(\frac{E}{E_0}\right). \qquad (1) \quad (2)$$

Card 1/4

L 8584-65
ACCESSION NR: AT4045611

where P is the corona power loss, n is the number of conductors, r_0 is the conductor radius, U is the line voltage and E is the field in kv/cm. The average data for all conductors under investigation is shown in Figures 1 and 2 of the Enclosure. Special purpose lines, unusually abnormal readings, and high altitude measurements were not considered in these computations. It is concluded that the accuracy of both methods is about the same, as shown by a brief variance analysis using Fisher's method which is included. Orig. art. has: 6 figures, 3 tables and 9 formulas.

ASSOCIATION: Laboratoriya tekhniki vy*sokikh napryazheniy NIIPT (Laboratory for High Tension Techniques, NIIPT)

SUBMITTED: 13Mar64 ENCL: 02 SUB CODE: EE

NO REF SOV: 011 OTHER: 010

Card 2/4