CHERNER, I.B.

Cranioplasty in large osseous trepanation defect of the skull with organic glass. Voen.-med. zhur. no.6:82 Je '61. (MIRA 14:8)
(SKULL—SURGERY) (PLEXIGLAS—THERAPEUTIC USE)

KLAUSTING, Ye.A.; LEYKIN, I.M.; SABIYEV, M.P.; IMSHENETSKIY, V.I.; CHERNER, M.I.; Prinimali uchastiye: PIKULIN, S.A.; KONSTANTINOVA, T.A.; KOVAL', F.Ya.; KRYZHEPOL'SKAYA, S.P.; SHUL'GA, Ye.A.; NIKITIN, V.N.; DOROFEYEVA, A.N.

From practices of producing 19G steel at the Kommunarskiy Metallurgical Plant. Stal' 22 no.2:155-159 F '62. (MIRA 15:2)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii i Kommunarskiy metallurgicheskiy zavod.
(Kommunarskiy--Steel alloys--Metallurgy)
(Rolling (Metalwork))

TIMOFEYEV, D.I.; CHERNER, M.I.; SABIYEV, M.P.

Effect of defects in side and end edges of slabs on the quality of the sheet. Met. i gornorud. prom. no.3:36-37 My-Je '64. (MIRA 17:10)

KHOROSHILOV, N.M.; CHERNER, M.I.; LOKTIONOV, P.Ya.

Effect of the rolling scheme on plate steel quality. Stal' 24 no.6:524-527 Je '64. (MIRA 17:9)

1. Kommunarskiy metallurgicheskiy zavod.

SERGEYEV, Yu.V.; ANTONOVICH, V.I.; CHERNER, R.I.

Portal pressure in acute experimental lesion of the liver. Trudy Inst. kraev. med. AN Tadzh. SSR no.1:164-177 '62.
(MIRA 17:5)

NIKOLAYEV, V.A.; CHERNETA, A.P.; NEFEDOV, A.A.

Regularities of advance changing in grooves for the rolling of angles. Izv. vys. ucheb. zav.; chern. met. 6 no.4:83-87 '63. (MIRA 16:5)

1. Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz.
(Rolling (Metalwork))

NEFEDOV, A.A., kand.tekhn.nauk; CHERNETA, A.P., inzh.; DZIGVASHVILI, G.A., inzh.; ZASLAVSKIY, B.M., inzh.; KURDIANI, G.P., inzh.

Internal ruptures in low-carbon steel pipe billets. Stal' 23 no.5:441-442 My '63. (MIRA 16:5)

1. Dneprodzerzhinskiy metallurgicheskiy zavod-vtuz i Zakavkazskiy metallurgicheskiy zavod.
(Rolling (Metalwork)) (Steel ingots--Defects)

BESEDIN, P.T.; SOROKIN, A.A.; FILONOV, I.G.; KARPUNIN, A.M.; CHEPELEV, P.M.; SHCHERBINA, P.A.; AVDEYEV, M.G.; KUTSENKO, A.D.; TSELYUKO, V.I.; CHERNEVICH, Ye.M.; ORGIYAN, V.S.; CHERNETA, Z.A.

Improving the technology of the heat treatment of rails at the Dzerzhinskii Plant for the purpose of increasing their durability in tracks. Stal' 24 no.5:445-448 My '64. (MIRA 17:12)

1. Dneprovskiy metallurgicheskiy zavod im. Dzerzhinskogo i Ukrainskiy nauchno-issledovatel'skiy institut metallov.

KATS, M.E., inzh.; CHERNETENKO, B.N., inzh.

Experimental industrial production of two-layer ceramics. Stek.i ker. 22 no.10:30-33 O '65. (MIRA 18:12)

1. Kombinat stroitel'nykh materialov "Pobeda".

COUNTRY : USSR
CATEGORY : Cultivated Plants. Potatoes. Vegetables. Cucurbits.
ABS. JOUR. : Ref Zhur-Biologiya, No.1 , 1959, No. 1683
AUTHOR : Chernetchenko, V.S.
INST. : Ukrainian Sci.Res.Inst. of Vegetable Raising *
TITLE : On the Different Relationship of Watermelon and Muskmelon towards Fertilizers.
ORIG. PUB. : Naucha. tr. Ukr. n.-i. in-t ovoshchevodstva i kartofelya, 1957, 4, 45-52
ABSTRACT : A short literature survey on the effect of mineral and organic fertilizers on the productivity of watermelon and muskmelon, is presented. Recommendations on the composition of fertilizer is given. Bibliography. 27 Titles.

CARD: 1/1 * and Potatoes.

CHERNETENKO, V.N.; KATS, M.E.

What delays the adoption of the manufacture of cast finishing tiles. Stroi. mat. 11 no.5:3 My '65. (MIRA 18:9)

1. Direktor Leningradskogo kombinata stroitel'nykh materialov "Pobeda" (for Chernetenko). 2. Glavnyy inzhener Leningradskogo kombinata stroitel'nykh materialov "Pobeda" (for Kats).

DREVICH-SVIRIDYUK, L.S.; CHERNETS, A.N.

Shelterbelts. Put' i put.khoz. 4 no.3:44 Mr '60.
(MIRA 13:5)

1. Nachal'nik distantsii zashchitnykh lesonasazhdeniy, Brest (for Drevich-Sviridyuk). 2. Nachal'nik proizvodstvennogo uchastka zashchitnykh lesonasazhdeniy, stantsiya Spas-Demensk, Kalininskoy dorogi (for Chernets).
(Windbreaks, shelterbelts, etc.)

L 34800-65

ACCESSION NR: AP5005268

AUTHOR: Yeru, I. I.; Peskovatskiy, S.

TITLE: Spin lattice relaxation of Fe^{3+} ... atures

SOURCE: Fizika tverdogo tela, v. 7, n.

TOPIC TAGS: spin lattice relaxation, ... relaxation probability

ABSTRACT: The investigation was made ... perature interval 1.4--8K. Fe^{3+} ions ... they can yield the necessary data on th... sition probabilities, owing to the larg... was used with three crystals from diff... 1 to 10 kG. It is concluded from the ... ence of the relaxation on the field an... theories of spin-lattice relaxation. The

Card 1/2

L 3485-65

ACCESSION NR: AP5005268

the spin-lattice relaxation probabiliti... isting theories. In the case of andalu..., ... the lattice occurs essentially in the frequency band corresponding to the epr line, so that no other possible mechanisms of ... change pairs or pockets) apprently exist ... for supplying the crystals and engineer... ments." Orig. art. has: 2 figures and ...

ASSOCIATION: Institut radiofiziki i e... Radio Physics and Electronics, AN UkrSS...

SUBMITTED: 26May64 ENCL:

NR REF SOV: 005 OTHER:

S/181/62/004/003/015/045
B102/B104

24.6200
24.7900

AUTHORS: Peskovatskiy, S. A., and Chernets, A. N.

TITLE: Spin-lattice relaxation in gadolinium ethyl sulfate

PERIODICAL: Fizika tverdogo tela, v. 4, no. 3, 1962, 657-664

TEXT: In view of the contradictory results published up to now, the relaxation processes in gadolinium ethyl sulfate (ges) were studied in detail. From theoretical considerations it follows that the observed relaxation time will in all cases be greater than the real one by a factor $\beta = (1-x)/(1-xy)$; $x = \Delta n/\Delta n_o$, $y = n_f/n_{fo}$; $n_f = (\exp(h\nu/kT-1))^{-1}$; Δn is the difference of the spin level population density, Δn_o is the same for thermal equilibrium. An estimate shows that in ges with a Gd concentration of 0.5% and $x \to 0$, the frequency band width of the oscillators is between 70 and 100 Mc/sec, which is far from band overlapping. At 9000 Mc/sec the peculiarities of the spin-lattice relaxation of ges were studied experimentally. The measurements were made at helium temperature with pulse durations of 400-500 μsec and a maximum error of 5%. It was found that in general the relaxation curves were not exponential. The curves have

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Spin-lattice relaxation in ...

not one but two characteristic times T_1 = 0.65 and 4.5 msec, and can be approximated by

$$\Delta n = \Delta n_0 \left[1 - 0.5 \exp\left(-\frac{t}{0.65}\right) - 0.5 \exp\left(-\frac{t}{4.5}\right)\right].$$

A special study shows that heating of the lattice oscillators has virtually no effect on the relaxation rate. Engineer G. M. Blagyy and Technician Yu. G. Zvegintsev are thanked for help. There are 4 figures, 1 table, and 7 non-Soviet references. The four most recent references to English-language publications read as follows: N. Bloembergen. Phys. Rev. 109, 2209, 1958; K. P. Bowers, W. B. Mims. Phys. Rev. 115, 285, 1959; Quantum Electronics, Columbia University Press, New York, 1960; G. V. Marr, P. Swarup. Canad. Journ. of Physics, 38, 495, 1960.

ASSOCIATION: Institut radiofiziki i elektroniki AN USSR Khar'kov (Institute of Radiophysics and Electronics AS UkrSSR, Khar'kov)

SUBMITTED: October 27, 1961

36476
S/181/62/004/003/016/045
B117/B108

24.7900
24.6200

AUTHORS: Peskovatskiy, S. A., and Chernets, A. N.

TITLE: Dependence of the relaxation time in gadolinium ethyl sulfate on the concentration at helium temperatures

PERIODICAL: Fizika tverdogo tela, v. 4, no. 3, 1962, 665 - 667

TEXT: The authors studied the dependence of the paramagnetic relaxation time of gadolinium ions in lanthanum ethyl sulfate (les) on the concentration of gadolinium ethyl sulfate (ges) and cerium ethyl sulfate (ces) impurities at liquid-helium temperatures and a frequency of 9000 Mcps by the pulse method on crystals grown from solutions. In most cases, the relaxation curves showed a course diverging from the exponential law. This became particularly evident when the concentration increased, particularly in the middle of the spectral range. The curves showed a rapid decrease of saturation at the beginning which became slower toward the end. The rate of decrease of the fast components of the relaxation curves was independent of temperature which is indicative of cross relaxation. A change in the ges concentration from 0.5 to 0.25% slowed down these components which were

Card 1/3

Dependence of the relaxation ...

no longer observed at a concentration of 0.1%. The time of spin-lattice relaxation is inversely proportional to the power 2 + 0.5 of the overall ges and ces concentration. Cerium impurities (up to 0.2%) had a uniform effect on all the lines of the electron paramagnetic resonance spectrum if the difference between the resonant frequencies of the Gd and Ce lines did not exceed 300-400 Mcps. The results obtained have not confirmed the hypothesis of "exchange pockets" (Ref. 1, see below) explaining spin-lattice relaxation at low temperatures. Conclusions: In spite of their strongly different magnetic and relaxation properties, Gd^{3+} and Ce^{3+} ions have the same effect on the ~~relaxation rate~~. The ratio of the relaxation times of transitions $m \longleftrightarrow m + 1$ and $m \longleftrightarrow -(m+1)$ is only slightly influenced by changes in temperature which lead to a redistribution of the paramagnetic ions. This behavior is consistent with the assumption of lattice defects due to impurities taking a great part in relaxation. This assumption was treated theoretically by B. I. Kochelayev (DAN SSSR, 131, 1053, 1960). There are 2 figures, 2 tables, and 3 references: 2 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: Ref. 1: Quantum Electronics, Columbia University Press, Nwe York, 1960.

Card 2/3

S/181/62/004/003/016/045
B117/B108

Dependence of the relaxation ...

ASSOCIATION: Institut radiofiziki i elektroniki AN USSR, Khar'kov (Institute of Radiophysics and Electronics AS UkrSSR, Khar'kov)

SUBMITTED: October 27, 1961

Card 3/3

35095

S/185/62/007/001/003/014
D299/D302

24.7100 (1454,1153,1160)

AUTHORS: Pyeskovats'kyy, S.A., Chernets', A.N., Postohvard, H.I., Sheyina, T.H., and Oliynyk, I.N.

TITLE: Growing of lanthanum ethyl sulfate single crystals with gadolinium- and cerium ethyl sulfate impurities and some of their physical properties

PERIODICAL: Ukrayins'kyy fizychnyy zhurnal, v. 7, no. 1, 1962, 22 - 29

TEXT: The method of preparation, growing technique and measurement of the dielectrical constants of lanthanum ethyl-sulfate with gadolinium- and cerium ethyl-sulfate impurities, is described. These crystals are paramagnetic substances by means of which ultra-high frequencies can be amplified. The salts of the rare-earth elements of ethylsulfuric acid were prepared by mixing equivalent amounts of the rare-earth element sulfate and barium ethylsulfate in a solution. The single crystals were grown by gradually cooling the saturated solution, over a period of 10 - 12 days; the crystals were 15 - 20 mm.

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Growing of lanthanum ethyl sulfate ...

long and 12 - 15 mm thick. It is important to properly select the rate of temperature decrease, as at high rates an opaque solution is formed and the crystal becomes inhomogeneous. The shape of the crystals depends on the concentration of the solution; thus, some of the crystals were hexagonal prisms and (with higher gadolinium-ethyl-sulfate concentration) others were hexagonal double-pyramids. The crystals grown from pure solutions were stable in air and in a vacuum, during repeated cooling from room temperature to that of liquid helium, followed by heating to the original temperature. The dielectric constants (permittivity ε' and the tangens of the dielectric-loss angle $\text{tg}\,\delta = \varepsilon''/\varepsilon'$) were measured at a frequency f of 9000 Mc, over a temperature range of 290 - 4.2°K. In the literature, no such data were previously given. The method of measurement was based on the perturbation of the resonator through introducing small-size specimens into its high-frequency field. This permitted measuring at each temperature point the perturbed and unperturbed values of the natural frequency and Q-factor of the resonator by simply moving the specimen from the region with maximum field-strength to that where the field practically vanishes. The permittivity ε' va-

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ried from 3.4 (at 20°C) to 2.7 (at liquid-helium temperature); the measurement error did not exceed 3 %. The temperature-dependence curve of tg δ showed that tg δ decreases fairly rapidly with temperature, from $8 \cdot 10^{2}$ (at room temperature) to $1.5 - 2 \cdot 10^{-3}$ (at liquid-helium temperature). There are 5 figures and 9 references: 5 Soviet-bloc and 4 non-Soviet-bloc (including 1 translation). The references to the English-language publications read as follows: R.W. De Grass, E.O. Schulz-DuBois, H.E.D. Scovil, Bell Syst. Techn., J., 38, 305, 1959; J.R. Singer, Ph.D., "Masers", NewYork, London, 1959.

ASSOCIATION: Instytut radiofizyky ta elektroniky AN URSR (Institute of Radiophysics and Electronics of the AS UkrRSR), Kharkiv

SUBMITTED: March 14, 1961

33990
S/056/62/042/001/002/048
B125/B108

24,1800 (also 1063, 1147, 1482)

AUTHORS: Ganapol'skiy, Ye. M., Chernets, A. N.

TITLE: Excitation of hypersound in quartz

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 1, 1962, 12 - 15

TEXT: The coaxial resonator with inhomogeneous h.f. electric field (Fig.1) can simultaneously produce longitudinal and transverse hypersound waves of 10^{10} cps. The hypersound was excited in a helium cryostat at 4.2°K to reduce attenuation. The generator produced 0.8 μsec-pulses, the receiver had a sensitivity of $5 \cdot 10^{-13}$ watts, the transmission band was 6 Mcps. The longitudinal and transverse deformation components, resulting from the action of the v.h.f. electric field, produce one longitudinal and two coupled transverse waves which propagate in the x-direction of the quartz. The velocities of these waves agree aside from a measuring error of 5%, with the velocities calculated from the elastic constants for quartz. Liquid helium was supplied by the FTI AN USSR for which B. G. Lazarev,

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33990
S/056/62/042/001/002/048
B125/B108

Excitation of hypersound in quartz

Academician AS UkrSSR, is thanked. There are 3 figures and 5 references: 1 Soviet and 4 non-Soviet. The four references to English-language publications read as follows: E. H. Jakobsen. Phys. Rev. Lett., 2, 249, 1959; E. H. Jakobsen. Proceedings of the International Conference on Quantum Electronics, September, 1959. Columbia University Press, New York, 1960; H. E. Bömmel, K. Dransfeld. Phys. Rev., 117, 1245, 1960; F. E. Borgnis. Phys. Rev., 98, 1000, 1955.

ASSOCIATION: Institut radiofiziki i elektroniki Akademii nauk Ukrainskoy SSR (Institute of Radiophysics and Electronics of the Academy of Sciences Ukrainskaya SSR)

SUBMITTED: May 27, 1961

Fig. 1. Resonator.

Legend: (1) Cone, (2) thin diaphragm, (3) quartz, (4) metal screen, (5) waveguide, (6) coincident quarter-wave transformer, (7) connecting hole, (A,B) quartz surfaces.

33990
S/056/62/042/001/002/048
B125/B108

Excitation of hypersound in quartz.

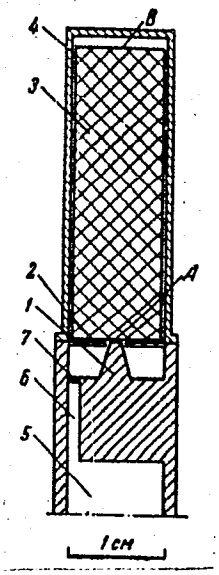

Fig. 1

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PESKOVATSKIY, S.A. [Pieskovats'kyi, S.A.]; CHERNETS, A.N. [Chernets', A.N.]; POSTOGVARD, G.I. [Postohvard, H.I.]; SHEINA, T.G. [Sheina, T.H.]; OLEYNIK, I.N. [Oliinyk, I.M.]

Growing lanthanum ethyl sulfate single crystals with gadolinium and cerium ethyl sulfate impurities and their physical properties. Ukr.fiz.zhur. 7 no.1:22-30 Ja '62. (MIRA 15:11)

1. Institut radiofiziki i elektroniki AN UkrSSR, Khar'kov.
(Crystals—Growth)
(Ethanol)

S/141/63/006/001/018/018
E192/E382

AUTHORS: Ganapol'skiy, Ye.M. and Chernets, A.N.

TITLE: A certain type of resonator for magnetic radiospectroscopy at UHF

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, v. 6, no. 1, 1963, 196 - 198

TEXT: The minimum observed value of the imaginary component of magnetic susceptibility of a paramagnetic sample situated in the resonator of a radiospectroscope is given by (J.G. Feher - Bell Syst. Techn.J., 36, 449, 1957):

$$\chi'' = \frac{1}{V_s \gamma_T} \left(\frac{kT\Delta\nu}{2P_o} \right)^{1/2} \qquad (1)$$

where $\gamma = 4\beta Q_o/(1+\beta)^2 V_{э\phi\phi}$ for a reflecting resonator,

$\gamma = 4\beta Q_o/\sqrt{2}(1+2\beta)^2 V_{э\phi\phi}$ for a transmission resonator,

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A certain type of ....

$V_{эфф} = H_o^{-1} \int_V H^2 dv$, where H is the magnetic field, β is the coupling parameter and Q_o is the quality factor of the resonator without load; the other symbols are: T - noise temperature, $\Delta\nu$ - operating bandwidth, P_o - power of the signal klystron, V_s - volume of the sample, V - volume of the resonator and $V_{эфф}$ - effective volume of the resonator.

Eq. (1) shows that the sensitivity of the spectroscope increases with increasing γ. Thus, the sensitivity can be increased by increasing Q_o. On the other hand, γ can be increased by concentrating the high-frequency magnetic field in a small volume. This can be done in coaxial or strip resonators but in such systems the effective volume is still comparatively large. This difficulty is overcome in the resonators represented in Fig. 1, where the electromagnetic field is concentrated in a narrow slot formed by the wide wall of a waveguide in a rectangular step inside it. Such a system behaves as a resonator and can be referred to as a "slot resonator". It can be in the form

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S/141/63/006/001/018/018
E192/E382

of a transmission resonator, as shown in Fig. 1b, or a reflection resonator as in Fig. 1a. The quality factor of such resonators is 100 to 300. This is expressed as $Q_o = h/\delta$, where h is the width of the slot and δ is the depth of the skin-effect layer. Since such resonators have a comparatively low Q_o, the frequencies of the signal and local oscillator klystrons do not have to be particularly stable. There are 2 figures and 1 table.

ASSOCIATION: Institut radiofiziki i elektroniki AN USSR (Institute of Radiophysics and Electronics of the AS UkrSSR)

SUBMITTED: May 19, 1962

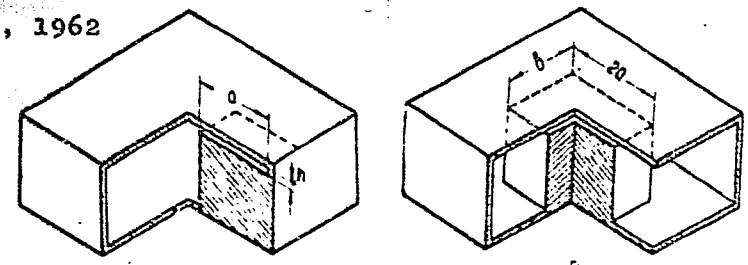

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Fig. 1: a) б)

PODGAYETSKIY, V.M.; CHERNETS, A.N.

Spectrophotometric study of the radiation energy distribution in IFK-2000 and IFK-2000 pulsed tubes. Opt. i spektr. 14 no.3:424-426 Mr '63. (MIRA 16:4)

(Electron tubes) (Spectrophotometry)

S/020/63/149/001/008/023
B102/B186

AUTHORS: Ganapol'skiy, Ye. M., Chernets, A. N.

TITLE: Hypersound excitation by slow electromagnetic waves

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 149, no. 1, 1963, 72 - 75

TEXT: Since the usual method of producing hypersound, based on the piezo-effect in thin quartz rods or bars placed in the electric field of a cavity resonator, has met with serious difficulties above $2.4 \cdot 10^{10}$ cps, mainly arising due to a reduction in dimensions and quality of the resonator, the hypersound excitation by slow electromagnetic surface waves is of great interest. It is very effective and makes it possible to reach higher frequencies ($> 10^{10}$ cps). The present paper gives a theoretical analysis of this method. A quartz single crystal is placed in the field (frequency ω, wave number h) so that the coordinate system coincides with the crystallographic directions (X,Y,Z) and x = 0 forms the surface plane at which the boundary conditions $\frac{\partial u_x}{\partial x} = \gamma_{111} E_x$; $\frac{\partial u_x}{\partial y} + \frac{\partial u_y}{\partial x} = 2\gamma_{221} E_y$; $\frac{\partial u_t}{\partial x} = 2\gamma_{231} E_y$ are assumed to hold. The kinetic equations are solved in first approximation

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Hypersound excitation by slow...

with respect to the small parameter $\mu = h/\kappa_1 = v_s^{(1)}/v_e$, the ratio of sonic velocity in the quartz to the propagation rate of the electromagnetic surface wave. The solution reads

$$u_x = u_{0x} P_1 + O(\mu) P_2 + O(\mu) P_3 + p_x P_4;$$
$$u_y = O(\mu) P_1 + \alpha u_{0y} P_2 + \beta u_{0z} P_3 + p_y P_4;$$
$$u_z = O(\mu) P_1 + \beta u_{0y} P_2 - \alpha u_{0z} P_3 + p_z P_4. \qquad (4), \text{ where}$$
$$P_i = e^{ik_i x + ihy - i\omega t}, \quad i = 1, 2, 3; \qquad P_4 = e^{-px + ihy - i\omega t},$$
$$\alpha^2 + \beta^2 = 1.$$

u_x, u_y, u_z are the projections of the deformation vector, λ_{iklm} is the tensor of the elastic moduli, $\beta_{1,ik}$; $\gamma_{1,ik}$ are the piezoelectric tensors ($\beta_{1,ik} = \gamma_{1,mn}\lambda_{mn,ik}$), ρ the density of the quartz; $p^2 = h^2 - k_o^2$, $k_o = c\omega$, c-velocity of light; $k_i = \omega/v_s^{(i)}$; $v_s^{(i)}$ is the sonic velocity along x;

$$\alpha^2 = (\lambda_{1313} - \rho v_s^{(3)2})^2 [\lambda_{2113}^2 + (\lambda_{3113} - \rho v_s^{(3)2})^2]^{-1}$$

The hypersonic wave amplitudes are obtained as

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Hypersound excitation by slow...

$$u_{0x} = \gamma_{111}\frac{E_{0x}}{k_1};\quad u_{0y} = \frac{2E_{0y}}{ik_2}\left(\frac{\alpha\gamma_{221}+\beta\gamma_{221}}{\alpha^2+\beta^2}\right);\quad u_{0z} = \frac{2E_{0y}}{ik_2}\left(\frac{\beta\gamma_{221}-\alpha\gamma_{221}}{\beta-\beta^2+\alpha^2}\right). \quad (6)$$

and the p-components are given by

$$p_x = \mu\frac{(\beta_{111}E_{0x}-i\beta_{211}E_{0y})}{\lambda_{1111}k_1};\quad p_y = \mu\frac{(\beta_{221}E_{0y}-i\beta_{122}E_{0x})}{\lambda_{1111}k_1};$$

$$p_z = \mu\frac{(\beta_{221}E_{0y}-i\beta_{122}E_{0x})}{\lambda_{1111}k_1}. \quad (7).$$

In the case of $\mu=0$ three types of pure sonic waves are excited: a longitudinal one ($v_s^{(1)}$), and two crossed transverse ones ($v_s^{(2)}$, $v_s^{(3)}$). The powers of these waves are

$$W_{s} = \frac{1}{2}\lambda_{1111}\gamma_{111}^2 E_{0x}^2 v_s^{(1)} S,$$

$$W_{t_1} = \frac{1}{2}E_{0y}^2\left(\frac{\alpha\gamma_{221}+\beta\gamma_{221}}{\alpha^2+\beta^2}\right)^2(\lambda_{1212}\alpha^2+\lambda_{1213}\alpha\beta+\lambda_{1213}\beta^2)\,v_s^{(2)}S, \quad (8),$$

$$W_{t_2} = \frac{1}{2}E_{0y}^2\left(\frac{\beta\gamma_{221}-\alpha\gamma_{221}}{\beta^2+\alpha^2}\right)^2(\lambda_{1212}\beta^2-\lambda_{1213}\alpha\beta+\lambda_{1213}\alpha^2)\,v_s^{(3)}S;$$

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where S is the cross-sectional area of the hypersonic ray. The power ratio between the longitudinal wave and the electromagnetic wave is

$\eta_n = w_n/w_e = \lambda_{1111}\gamma_{111}^2 \frac{\lambda_s l\omega^2}{\pi\beta_e^2 c^2}$ where λ_s is the hypersonic wave length, $\beta_e = v_e/c$, L is the length of the crystal along y. This method was used for exciting hypersonic waves in a quartz rod at 4.2°K. The frequency reached was $4\cdot10^{10}$ cps and the power ratio agreed with the theoretical one

$$W_n : W_{t_1} : W_{t_2} \approx 1 : \left(\frac{p}{h}\right)^2 : \left(\frac{p}{h}\right)^2 0{,}6 \qquad (8^a).$$

There are 2 figures.

ASSOCIATION: Institut radiofiziki i elektroniki Akademii nauk UkrSSR (Institute of Radiophysics and Electronics of the Academy of Sciences, UkrSSR)

PRESENTED: September 12, 1962, by N. N. Andreyev, Academician
SUBMITTED: September 12, 1962

ACCESSION NR: AP4032871 S/0051/64/016/004/0674/0676

AUTHOR: Podgayetskiy, V.M.; Chernets, A.N.; Korneyeva, O.G.

TITLE: Some characteristics of a ruby laser with two reflecting prisms

SOURCE: Optika i spektroskopiya, v. 16, no. 4, 1964, 674-676

TOPIC TAGS: laser, ruby laser, laser reflector, reflecting prism laser, laser emission polarization

ABSTRACT: Recently V. Bernstein, W. Kaph, and Shulman (Proc.IRE,50,1833,1962; Electronics, No. 9,14,1963) and M. Bertolotti, L. Musii, and D. Sette (Nuovo cimento, 26, 401, 1962) proposed the use of total internal reflection prisms as the reflectors in lasers and performed some preliminary experiments. However, the characteristics of such systems are still inadequately known. Accordingly, the present work was devoted to investigation of the performance of a ruby rod laser with two external trigonal glass prisms in the arrangement diagramed in Fig. 1 of the Enclosure. The ruby rod (about 0.05% Cr_2O_3) (3 in the figure) was 8.5 mm in diameter and 120 mm long; the angle between the geometric and optical axes of the rod was about 70°. The distance between the prisms (2)

Card 1/4

ACCESSION NR: AP4032871

was about one meter. The results as regards variation in the intensity ratio of the beams (indications of the intensity detecting photocells) as a function of the angle of the analyzer are shown in Fig. 2. The experimental data indicate that in the case of reflection from the side of the crystal (Fig. 2,a) the main part of the radiation has virtually plane polarization, whereas in the case of reflection from the side of the prism (Fig. 2,b) the polarization of the main part of the radiation is nearly circular. A possible explanation is suggested. The laser output varies with rotation of the ruby rod about its geometric axis. The investigated laser set-up with the pumping power 10 to 30% above threshold yielded a radiation line width of 0.1-0.2 cm-1 and a divergence angle of 10 to 30 min. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 07Jun63 ENCL: 02 SUB CODE: OP

NO REF SOV: 001 OTHER: 003

Card 2/4

ACCESSION NR: AP4032871

ENCLOSURE: 01

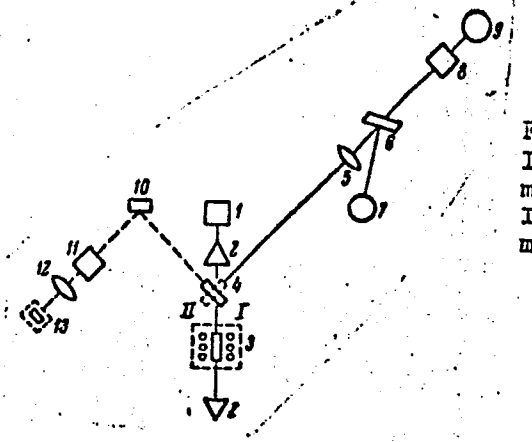


Fig. 1. Experimental laser set-up. I - Position of plate for measurements in the right arm of the system; II - position of plate for measurements in the left arm.

Card 3/4

ACCESSION NR: AP4032871

ENCLOSURE: 02

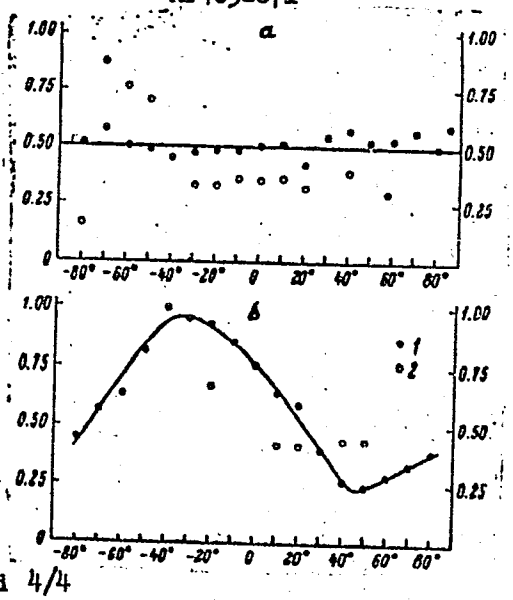


Fig. 2. Variation of the intensity ratio of the beams as a function of the analyzer angle:

a - plate (Fig.1) reflecting from the side of the prism; b - plate 4 reflecting from the side of the crystal; 1 - main part of the emission, 2 - part of the emission having a polarization different from that of the main part.

Card 4/4

GANAPOL'SKIY, Ye.M.; CHERNETS, A.N.

Resonance absorption of hypersound of frequency 10^{10} cps in ruby. Zhur. eksp. i teor. fiz. 47 no.5:1677-1682 N '64. (MIRA 18:2)

1. Institut radiofiziki i elektroniki AN UkrSSR.

YERU, I.I.; PESKOVATSKIY, S.A.; CHERNETS, A.N.

Spin-lattice relaxation of Fe^{3+} ions in natural andalusite at low temperatures. Fiz. tver. tela 7 no.2:363-366 F '65.

(MIRA 18:8)

1. Institut radiofiziki i elektroniki AN UkrSSR, Khar'kov.

L 15982-66 EEC(k)-2/EWA(h)/EWP(k)/EWT(l)/EWT(m)/FBD/T/EWP(e) SCTB/IJP(c)
ACC NR: AP6004415 WG/WH SOURCE CODE: UR/0051/66/020/001/0138/0142

AUTHOR: Podgayetskiy, V. M.; Korneyeva, O. G.; Chernets, A. N. 57

ORG: none B

TITLE: The angular distribution of the laser radiation energy 25,141

SOURCE: Optika i spektroskopiya, v. 20, no. 1, 1966, 138-142

TOPIC TAGS: angular distribution, ruby laser, laser energy, laser beam

ABSTRACT: The authors measured the angular distribution of the radiation energy in a ruby laser with several types of resonators with external reflectors (either two plane mirrors with 20% and 2% transmission or two 90° total-internal-reflection prisms with various orientations relative to the electric vector). A rose-ruby 16 crystal rod 45 mm long and 6 mm in diameter was used, the optical and geometric axes being at an 82° angle. The pumping was done by two IFK-2000 lamps, placed against the rod and the forced air was used for cooling. The setup used for the plane mirrors is shown in Fig. 1, and that used for the prisms was described by the authors elsewhere (Opt. i spektr. v. 16, 674, 1964). The angular distribution was measured by a standard photometric techniques. The widths of the directivity

Card 1/3 UDC: 621.375.9:535

2

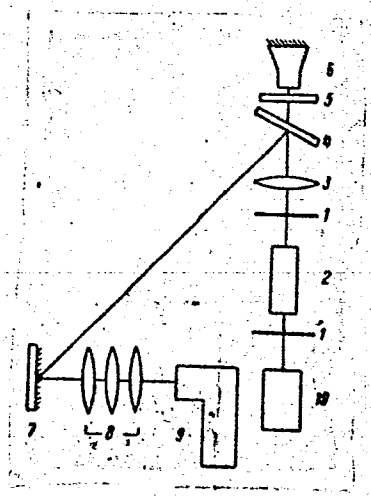


Fig. 1. Setup for the measurement of the directivity of laser radiation

1 - Reflector; 2 - ruby; 3 - lens; 4 - beam-splitting mirror; 5 - neutral filter; 6 - camera; 7 - opal glass; 8 - lens system; 9 - photo plate; 10 - bolometer.

L 15982-66
ACC NR: AP6004415

patterns at half-intensity level in the E and H planes varied very little with the type of resonator or with the operating mode of the laser (from 2.5 to 7 minutes of angle). A difference was observed, however, in the nature of the distribution of the intensity when mirrors and prisms were used as reflectors. When prisms with parallel right-angle edges are used, the photographs show an interference-fringe structure which depends on the laser operating mode. Orig. art. has: 4 figures, 4 formulas, and 1 table. [02]

SUB CODE: 20/ SUBM DATE: 21Oct64/ ORIG REF: 003/ OTH REF: 005/ ATD PRESS: 4202

Card 3/3

L 45570-66 EWT(l)/EWT(m)/EWP(k)/T/EWP(e)/EWP(w) IJP(c) EM/WH/WW

ACC NR: AP6031430 SOURCE CODE: UR/0056/66/051/002/0383/0393

AUTHOR: Ganapol'skiy, Ye. M.; Chernets, A. N. 30 B

ORG: Institute of Radiophysics and Electronics, Academy of Sciences Ukrainian SSR (Institut radofiziki i elektroniki Akademii nauk Ukrainskoy SSR)

TITLE: Hypersound absorption in quartz and ruby crystals

SOURCE: Zh eksper i teor fiz, v. 51, no. 2, 1966, 383-393

TOPIC TAGS: hypersound, hypersound absorption, quartz crystal, ruby crystal, hypersonic wave

ABSTRACT: The frequency-temperature dependences of absorption coefficients of a longitudinal and two transverse hypersonic waves directed along the binary x-axis of a quartz crystal have been measured at temperatures between 10 and 300K at a frequency of 10^9 cps and between 10 and 40K at frequencies of $9.4 \cdot 10^9$ and $4 \cdot 10^{10}$ cps. Absorption of a longitudinal hypersonic wave was measured along the trigonal Z-axis of quartz and ruby at frequencies of 10^9 and $9.4 \cdot 10^9$ cps. It was found that three-phonon scattering of longitudinal and transverse external hypersonic phonons on corresponding longitudinal and transverse thermal phonons, are responsible for hypersound absorption at low temperatures. This process can be used in explaining the fan-shaped frequency-temperature variation of the hypersound absorption coefficient. Orig. art. has: 10 formulas, 4 figures, and 1 table. [CS]

SUB CODE: 20/ SUBM DATE: 25Feb66/ ORIG REF: 004/ OTH REF: 014/ ATD PRESS: 5083

Card 1/1 hs

CHERNETS, S.N.

24(0); 5(4); 6(2) PHASE I BOOK EXPLOITATION SOV/2215

Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii imeni D.I. Mendeleyeva

Referaty nauchno-issledovatel'skikh rabot; sbornik No.2 (Scientific Research Abstracts; Collection of Articles, Nr 2) Moscow, Standartgiz, 1958. 139 p. 1,000 copies printed.

Additional Sponsoring Agency: USSR. Komitet standartov, mer i izmeritel'nykh priborov.

Ed.: S. V. Reshetina; Tech. Ed.: M. A. Kondrat'yeva.

PURPOSE: These reports are intended for scientists, researchers, and engineers engaged in developing standards, measures, and gages for the various industries.

COVERAGE: The volume contains 128 reports on standards of measurement and control. The reports were prepared by scientists of institutes of the Komitet standartov, mer i izmeritel'nykh priborov pri Sovete Ministrov SSSR (Commission on Standards, Measures, and Measuring Instruments under the USSR Council of Ministers). The participating institutes are: VNIIM - Vsesoyuznyy nauchno-issledovatel'skiy metrologii imeni D.I. Mendeleyeva (All-Union Scientific Research Institute of Metrology imeni D.I. Mendeleyev) in Leningrad; Sverdlovsk branch of this institute; VNIIK - Vsesoyuznyy nauchno-issledovatel'skiy institut Komiteta standartov, mer i izmeritel'nykh priborov (All-Union Scientific Research Institute of the Commission on Standards, Measures, and Measuring Instruments), created from MOIMIP, Moskovskiy gosudarstvennyy institut mer i izmeritel'nykh priborov (Moscow State Institute of Measures and Measuring Instruments) October 1, 1955; VNIIFTRI - Vsesoyuznyy nauchno-issledovatel'skiy institut fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy (All-Union Scientific Research Institute of Physicotechnical and Radio-engineering Measurements) in Moscow; KhOIMIP - Khar'kovskiy gosudarstvennyy institut mer i izmeritel'nykh priborov (Khar'kov State Institute of Measures and Measuring Instruments); and NOIMIP - Novosibirskiy gosudarstvennyy institut mer i izmeritel'nykh priborov (Novosibirsk State Institute of Measures and Measuring Instruments). No personalities are mentioned. There are no references.

Gorodetskiy, and A.S. Shneyderman (NIIvesprom). Studying the Reasons for Variations of Readings of Car Scales 26

Marks, L.A., and S.N. Chernets (KhOIMIP). Developing a Simplified Method for Checking Small Weights Used in Analysis 28

Malimov, P.A. (VNIIM Thermostatic Apparatus for Metrological Work in Fluid and Solid Density Measurements 29

Time and Frequency Measurements (Tovchigrechko, S.S., Editor, Candidate of Technical Sciences; Tkhorzhevskiy, O.A., Candidate of Technical Sciences)

Tovchigrechko, S.S. (VNIIM). Studying Astronomical Pendulum Clocks of the "Etalon" Plant and Reducing the Variations From Their Daily Rate to ± 0.003 Seconds 32

Soloviyeva, L.A. (VNIIM). Temperature Studies of Astronomical Pendulum Clocks of the AChS Type 33

Card 7/27

CHERNETSKAYA, A.M.

LITVINENKO, L.M.; POLYAKOV, V.P.; GREKOV, A.P.; CHERNETSKAYA, A.M.

Analysis of aminoantipyrine in testing aminopyrine production. Med.prom. 11 no.1:46-48 Ja '57. (MLRA 10:2)

1. Kafedra organicheskoy khimii Khar'kovskogo universiteta imeni A.M.Gor'kogo i TSentral'naya laboratoriya Khar'kovskogo khimiko-farmatsevticheskogo zavoda "Krasnaya zvezda"
(PYRAMIDONE) (ANTIPYRINE)

CHERNETSKAYA, A. M.

USSR / Analytical Chemistry. E-3
Analysis of Organic Substances.

Abs Jour: Ref. Zhur - Khimiya No. 2, 1958, 4358

Author : Litvinenko, L.M., Polakov, V.P., Grekov, A.P., Czernetskaya A.M.

Title : Analysis of the Chloranhydride of Acetylsalicylic Acid.

Orig Pub: Med. prom-st SSSR, 1957, No. 4, 42-43

Abstract: The method consists of the mixing of the chloranhydride of acetylsalicylic acid solution (1) in C_6H_6 with a benzene solution of $C_6H_5NH_2$; the amount of $C_6H_5NH_2$ exceeds by ~ 3 times (in a mol. ratio) that of (1). The excess of $C_6H_5NH_2$ is backtitrated potentiometrically with a solution of $NaNO_2$ using a Pt indicator electrode. The presence of the N-phenylamide of acetylsalicylic acid in the mix-

Card 1/2

Kharkov State U. im A. M. Gorkiy

CHERNETSKAYA, M.

Work of our geographical group. Geog. v shkole 21 no. 4:61 Jl-Ag '58. (MIRA 11:7)

1. Shkola No. 2 g. Rezenke.
(Geography--Study and teaching)

KORSHAKOVA, A.S.; CHERNETSKAYA, S.G.

Duration of excretion of dysentery bacteriophage in children in preventive administration of the phage. Zhur.mikrobiol.epid.i immun. no.2:70 F '54. (MLRA 7:3)

1. Iz Instituta epidemiologii i mikrobiologii im. Gamalei Akademii meditsinskikh nauk SSSR. (Dysentery) (Bacteriophage)

CHERNETSKAYA, Ye.

See the new. Sov.foto 17 no.5:28 My '57. (MLRA 10:7)
(Photography, Journalistic)

CHERNETSKAYA, Z. A.

"Mycoflora of the Forests of North Ossetia and Their Phytopathological Condition," Dnevnik Vsesoiuznogo S'ezda Botanikov, 1928, pp. 188-189. (B.P.I. Translation 2135)

SO: SIRA, SI 90-53, 15 December 1953

CHERNETSKAYA, Z. S.

"The Fungus Diplodia pinea (Desm.) Kicks as a Dangerous Parasite on Pine," Materialy po Mikologii i Fitopatologii, vol. 5, no. 2, 1926, pp. 24-23 464.9 R 92M

SO: SIRA, SI 90-53, 15 December 1953

CHERNETSKAYA, Z. S.

CHERNETSKAIA, Z. S. "Diseases of Maize," Nauchnye Trudy Gorskoi Zonal'noi Kukuruzno-Soevo-Kartofel'noi Opytnoi Stantsii, Seriia 1, no. 4, 1932, pp. 6-78. 106 G682.

SO: SIRA - SI - 90 - 53, 15 Dec. 1953.

CHERNETSKIY, A. I.

Name: CHERNETSKIY, A. I.

Dissertation: Main problems in the cultivation of buckwheat in northern steppe districts of the Ukraine east of the Dnieper

Degree: Cand Agr Sci

~~Defended at~~ Affiliation: Min Agriculture USSR, Belaya Tserkov' Agricultural Inst

Publication ~~Defense~~ Date, Place: 1956, Belaya Tserkov'

Source: Knizhnaya Letopis', No 2, 1957

CHERNETSKIY, A-V-

6

JOURNAL ARTICLE TRANSLATION

Transl. No. & Country	TRANSLATIONS ISSUED BY R.A.E.	Authors
490 U.S.S.R.	Impeded Discharge in a Magnetic Field for a Special Configuration of the Discharge Gap Zh. Tekh. Fiz., Vol 22, No. 12, pp 1954-1966, 1952	Z. M. Reikhrudel I. V. Vasileva A. V. Chernetskii E. M. Mikhnevich

PH

Source: Index Aeronauticus, Vol 11, No. 12, December, 1955, p 114

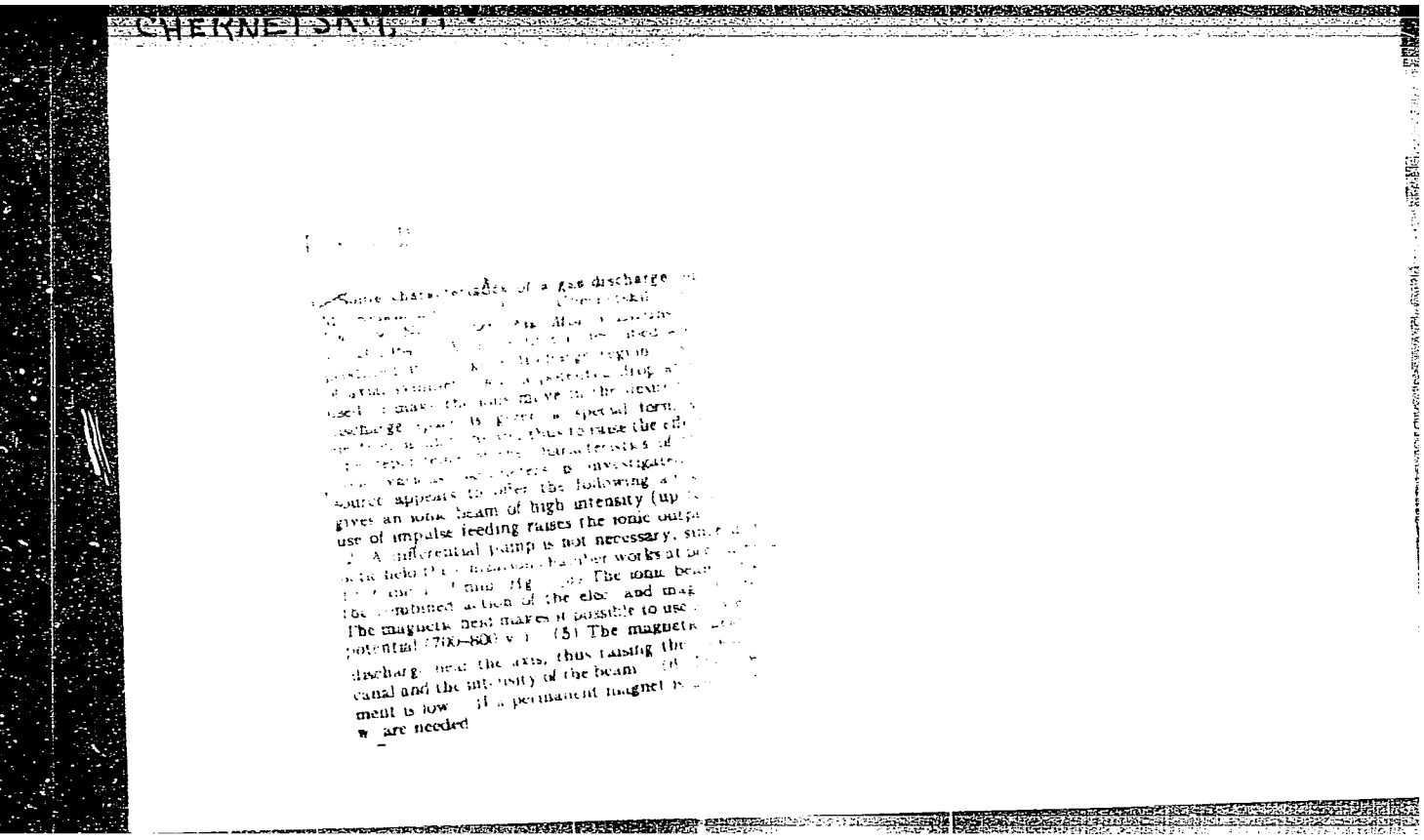
(3)

CHERNETSKIY, A.V.

REYKHRUDEL', E.M.; CHERNETSKIY, A.V.; MIKHNEVICH, V.V.; VASIL'YEVA, I.A.

Mechanism of discharge in a magnetic ionized manometer. Vest.Mosk.un. 8 no.8:87-100 Ag '53. (MLRA 6:11)

1. Fizicheskiy fakul'tet.
(Electric discharges through gases) (Manometer)



Some characteristics of a gas discharge

source appears to offer the following
gives an ionic beam of high intensity (up
use of impulse feeding raises the ionic outp
2. A differential pump is not necessary, sin
The ionic beam
The magnetic field makes it possible to use
potential (700–800 v). (5) The magnetic
discharge near the axis, thus raising the
canal and the intensity of the beam
ment is low. If a permanent magnet is
are needed

CHERNETSKIY, A. V.

USSR/Nuclear Physics - Ion sources FD-671

Card 1/1 : Pub. 129 - 6/25

Author : Reykhrudel', E. M.; and Chernetskiy, A. V.

Title : Certain characteristics of a gas discharge source of ions

Periodical : Vest. Mosk. un., Ser. fizikomat. i yest. nauk, Vol. 9, No 5, 47-54, May 1954

Abstract : The authors describe a gas-discharge ion source in which the ions are obtained from a low-pressure impeded glow discharge under the action of an axially symmetric electric field, and in which use is made of a gap having a particular shape that brings about electron oscillations and hence effective ionization of the gas. The ions are emitted through an aperture in the cathode and are already directional in the discharge. The characteristics of the ion current as a function of the various parameters and the role of the electron-optical system are investigated. Refer to A. Guthrie and W. Wakerling's "Characteristic of electrical discharges in magnetic fields," Nat. Nuclear Energy Ser., 5, 1949

Institution : Chair of Electron Optics

Submitted : July 11, 1952

Chernetskiy, A.V.

AUTHORS: Voznesenskiy, V.I., Korotkikh, N.V., Chernetskiy, A.V., Koporskiy A.S. 53-4-9/1o

TITLE: Recording Oscillographical Tubes for/Rapidly Occurring Processes (Ostsillograficheskiye trubki dlya zapisi bystroprotekayushchikh protsessov)

PERIODICAL: Uspekhi Fiz. Nauk, 1957, Vol. 62, Nr 4, pp. 497-522 (USSR)

ABSTRACT: The present survey comprises the last decade; it comprises the main methods of oscillographics of processes taking place rapidly and also some characteristic problems on rapidly acting electron-beam tubes (for instance for the production of a thin electron-beam post-acceleration, etc.). The survey is arranged as follows: 1: The methods of velocity oscillography. The deflecting systems, the limitations of the usual deflecting systems for high frequency. 2: The electron beam tubes with deflecting system in form of a line with two conductions. 3: The electron beam tubes for the investigation of phenomena taking place rapidly with high efficiency. 4: Microoscillographical tubes. 5: Tubes with a reflecting system for a travelling wave. 6: The investigation of the ultrashort electronic blobs. 7: The diameter of the spot. 8: The velocity of registration. 9: The dependence of brightness on current density and on the accelerated voltage. 1o: The constrast.

Card 1/2

Oscillographical Tubes for Recording Rapidly Occurring Processes 53-4-9/10

11: Photography. Summarized survey: Up to now the width of the band of the frequencies to be investigated was increased to 10000 megacycles. Tubes with such a band permit the investigation of processes of a duration of 10^{-9} sec. Most of the tubes have a good resolving power. The signal to be resolved must have at least 1 V. The registration velocity of 10^{10} cm/sec obtained for some tubes is in fact a realizable value for serial devices. Frequency distortions in deflecting systems, however, hitherto prevented the sufficiently accurate investigation of those transition processes the spectra of which exceeded 1000 megacycles. At present oscillographical tubes are needed by means of which transition processes of a duration of from 10^{-9} to 5.10^{-11} sec and with amplitudes of some tenths of a volt can be investigated. Accordingly, improvements of the frequency characteristic of the deviations and the resolving power of the oscillographic tubes has to be aimed at when developing new tubes. There are 19 figures, 3 tables and 55 references, 13 of which are Slavic.

AVAILABLE: Library of Congress

Card 2/2

CHERNETSKIY, A.V.

AUTHORS: Konorskiy, A. S., Chernetskiy, A. V., Korotkikh, N. V., Voznesenskiy, V. I. 53-4-6/11

TITLE: The Electronic Methods of the Production of Ultrashort Pulses (Elektronnyye metody generatsii sverkhkorotkikh impul'sov).

PERIODICAL: Uspekhi Fizicheskikh Nauk, 1957, Vol. 63, Nr 4, pp. 801-812 (USSR).

ABSTRACT: The present survey is arranged as follows: Introduction, the problems occurring in connection with the production of pulses by electronic methods (destruction of a "packet", excitation of the output device), the pulse generator of the klystron type, a tube with transversal deflection of the beam as generator for very short pulses, the combined generator, a pulse generator with magnetic deceleration; summary: The electron generators have a good future. Their main advantages are simplicity, stable operation, the possibility of producing very short pulses in a wide range of frequency. The fact that a present these devices are only rarely used may be explained by the novelty of the methods of electronic pulse production. They are still not known to a wide circle of specialists. Besides, the generators used at present are mostly of low efficiency and their applicability is limited. However, the development of the methods discussed here as well as of that

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The Electronic Methods of the Production of Ultrashort Pulses. 53-4-6/11

of methods still to come opens up new possibilities for pulse technics.
There are 7 figures, 1 table, and 9 references, 3 of which are Slavic.

AVAILABLE: Library of Congress.

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CHERNETSKIY, A.V., kand. fiz.-mat. nauk, red.; LOMIZE, L.G., inzh., red.; ANDREYENKO, Z.D., red.; VLASOVA, N.A., tekhn. red.

[Some problems of physical experimental technique in studying gas discharges] Nekotorye voprosy tekhniki fizicheskogo eksperimenta pri issledovanii gazovogo razriada; nauchno-tekhnicheskii sbornik. Moskva, Gosatomizdat. No.3. 1961. 120 p.
(MIRA 15:5)
(Electric discharges through gases)

42449

S/725/61/000/003/001/008

AUTHORS: Akhmatov, A.P., Zinov'yev, O.A., Chernetskiy, A.V.

TITLE: Some microwave methods for the measurement of electron concentrations in a plasma.

SOURCE: Nekotoryye voprosy tekhniki fizicheskogo eksperimenta pri issledovanii gazovogo razryada; nauchno-tekhnicheskiy sbornik, no.3. A.V. Chernetskiy & L.G.Lomize, eds. Moscow, Gosatomizdat, 1961, 3-30.

TEXT: This is a state-of-the-art report on the use of microwave methods for the measurement of various parameters (electron density, temperature, collision energy losses, etc.) of the plasma of a gaseous discharge without introducing additional electrons and, hence, perturbations into the plasma. The primary objective of this paper is the electron-concentration determination by means of (1) microwave transillumination, and (2) by interferometry. Macroscopic Maxwellian theory of electromagnetic waves in an ionized gas is expounded in conformity with Al'pert, Ya.L., Ginzburg, V.L., Feynberg, Ye.L. Rasprostraneniye radiovoln (Radiowave propagation). Moscow. Gostekhizdat, 1953. In the resulting equation for the propagation of a normally incident plane electromagnetic wave, the dependence of the global specific inductive-capacitance term on the properties of the plasma remains

Card 1/3

to be explored. This is expressed in terms of the ratio between the in-plasma wavelength and the free-space wavelength, n, and of the absorption index, γ. The effect of an external constant magnetic field on an ionized gas, which causes the electrons in the electric field of an electromagnetic wave to follow curvilinear trajectories under the influence of the Lorentz force, is investigated, and it is concluded that the specific inductive capacitance of an ionized gas is linearly dependent on the electron density both in the presence and in the absence of an external magnetic field. A summary description of the plasma-transillumination method is given with reference to writings by Dolgov-Savel'yev, G.G., ZhETF, v.38, no.2, 1960, 394, and Trans. 2d Internat'l Conf. on the Peaceful Uses of Atomic Energy, Soviet papers, 1. Nuclear Physics (in Russian). Moscow. Atomizdat, 1959, 85; Vvedenov, A.A., et al., Trans. Internat'l Conf. . . . , p. 143; Harding et al., ibid., foreign papers, 1. The physics of hot plasma and thermonuclear reactions, p. 652; also Lomize, L.G., Nekotoryye voprosy . . . , no.3, 1961, 31 (Abstract S/725/61/000/003/002/008). The method only ascertains whether the electron concentration is smaller (when the plasma is transparent to the wave emitted by the transillumination device) or greater (when the transluscence ceases because the refraction index and and the inductive capacitance go to zero) than the critical concentration, but does not indicate its absolute value. The Harding multiple-frequency method is not viewed as advantageous since the simultaneous use of several microwave

Card 2/3

generators appears to difficult an engineering task to be practicable. The history of the adaptation of methods previously used in optics to the determination of microwave-propagation characteristics by phase and amplitude comparison is briefly reviewed and major attention is focused on the microwave interferometer described by Wharton, C.B., & Slager, D.M., in IRE Trans. Nucl. Sci., v.NS-6, no.3, 1959, 20, and in J.Appl.Phys., v.31, no.2, 1960, 428. This system, which comprises a measuring and a reference channel, serves well with relatively weak discharges in a gas, but is increasingly affected by noise at greater discharge intensities. The device proposed by Dropkin, H.A., IRE Nat. Conv. Rec., v.6, no.1, 1958, 57, which employs a frequency shifter, is described and termed more noise-proof and more accurate. The inadequate time-resolving power of this device is said to be overcome by the employment of two super-HF generators as proposed by Thompson, M.C., & Vetter, M.J., Rev. Scient. Instrum., v.29, no.2, 1958, 148, which is described in detail, and operational procedures specified by Wharton, Howard, et al., in the Trans. 2d Internat'l Conf. etc., 1959, 675, are reported. There are 11 figures and 23 references (12 Soviet, 7 English-language, and 9 English-language papers in their Russian translation).

ASSOCIATION: None given.

Card 3/3

S/725/61/000/003/003/008

AUTHORS: Voznesenskiy, V.I., Chernetskiy, A.V., Serebriyskiy, I.N.

TITLE: The blurring of electron clusters due to Coulomb forces under the compensating effect of an initial velocity modulation.

SOURCE: Nekotoryye voprosy tekhniki fizicheskogo eksperimenta pri issledovanii gazovogo razryada; nauchno-tekhnicheskiy sbornik, no.3. A.V. Chernetskiy & L.G.Lomize, eds. Moscow, Gosatomizdat, 1961, 53-59.

TEXT: This theoretical analysis of the changes occurring in short freely-moving electron clusters - whether monochromatic or initially velocity-scattered - is of value in the generation of electron clusters for the creation of ultra-short (10^{-9} to 10^{-12} sec) pulse voltages with great iteration frequency, attaining hundreds of mcps, which is useful in the generation of electromagnetic waves, in accelerator design, etc. It is important to know how rapidly the electron clusters will blur under the effect of their own space charge and to try to find a method for their conservation over a relatively long distance. Short-wave generation by means of the Vavilov-Cherenkov effect and transient or bremsstrahlen radiation (for non-relativistic beams) can produce a noticeable effect only if this problem is overcome. The Coulomb-force-produced blurring of electron clusters was investigated by

Card 1/3

The blurring of electron clusters...

G.I. Zhileyko (ZhTF, v. 31, no. 4, 1961, 508) for spherically shaped clusters, and the repulsive forces were found to be exceedingly significant for small cluster sizes. The present study examines the blurring of cylindrically-shaped clusters; in this case the repulsive forces are found to be not overly great and are, in any event, finite even for infinitely small longitudinal cluster dimensions (for a given transverse size). The change of the spatial density of the cluster in the course of its motion is accounted for approximately. It is shown that the shape of a cluster may be regarded as invariable, so long as the longitudinal cluster dimension is considerably smaller than the transverse dimensions. For short cluster "durations" (ratios of the longitudinal dimension by its mean velocity), 10^{-11} to 10^{-12} sec, this requirement is satisfied (e.g., if $v = 5 \cdot 10^9$ cm/sec, the cluster length is $5 \cdot 10^{-2}$ to $5 \cdot 10^{-3}$ cm with a diameter of a few mm). The influence of the metallic or dielectric walls is disregarded. This is justified for most practical applications, namely, in linear accelerators, electronic ultra-short pulse generators, etc., where the tube diameter is fairly large. The calculation comprises the determination of the longitudinal size of a cluster as a function of the space-charge density (assumed to be uniformly distributed over the cluster), the time, and the magnitude of the initial velocity scatter; the radial spread is assumed to be counteracted by a magnetic field. Cylindrical coordinates are used, with the origin at the center of the cluster. The calculation (and graphic representation) of the timewise change of the longitudinal dimensions of the cluster shows that, when the initial relative velocity is

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nonzero, the cluster initially shrinks to a certain minimal length and then begins to blur out. This approximate calculation shows that a cylindrical cluster of practically very small dimensions is, in principle, achievable, since the repulsive force remains finite. A comparison of the cases in which the initial relative velocity is zero and nonzero, respectively, shows that an initial velocity modulation serves to lengthen the distance over which the cluster is conserved. There are 2 figures and 6 references, including 3 recent Soviet references (Koporskiy, A.S., et al., Usp. fiz. nauk, 1957, 801; Zhileyko, G.I., Cand. Diss., In-t Radioelektr., AN SSSR, 1959, and ZhTF, v.31, no.4, 1961, 508) and 3 earlier English-language references (Enslein, Rev. Sci. Instrum., v.25, 1954, 574; Hastid, D., Phis. (sic!) Soc., Proc., v.60, 1948, 340; and Grant, E., et al., J. Appl. Phys., v.25, 1954, 574).

ASSOCIATION: None given.

42455

S/725/61/000/003/007/008

AUTHOR: Chernetskiy, A.V.

TITLE: The high-voltage pulse regime of a Penning-type ion source.

SOURCE: Nekotoryye voprosy tekhniki fizicheskogo eksperimenta pri issledovanii gazovogo razryada; nauchno-tekhnicheskiy sbornik, no.3. A.V.Chernetskiy & L.G.Lomize, eds. Moscow. Gosatomizdat, 1961, 105-113.

TEXT: This is a state-of-the-art report, accompanied by experimental data, on recent improvements in the development of pulse-type ion sources which are of potential value in thermonuclear devices and accelerators. Among other essential requirements not as yet fulfilled is an impulse ion source of easy manufacture endowed with desirable operating characteristics. Much promise is seen in the high-voltage pulse-fed "Penning tube" (Penning, F., Physica, v.4, 1937, 1190) which was first tested by R.Keller (Helv.Phys.Acta, v.22, 1949, 70; v.23, 1950, 627). The maximum ion currents achieved were 22 ma. In 1952 the present author attained ion currents of 130 ma at a pressure of 10^{-5} torr (mm Hg) and 0.5 a at $9 \cdot 10^{-3}$ torr, with a pulse duration of a few (appx. 5) microsec and a repetition rate of 50 cps. The more recent experimental equipment of R.Meyerand and S.Brown (cf. Rev.Scient.Instrum., v.30, 1959, 2) is criticized as incapable of producing ion currents greater than 20 to 30 ma and of operating at pressures below $2 \cdot 10^{-3}$ torr.

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The author's 1952 equipment is described in detail, including the manufacture of the Penning tube (anode wire ring, two cathodes, all electrodes made of HF-degassed molybdenum, the tube itself of molybdenum glass oven-annealed at 400°C) and the accessories (an ion-beam focusing lens electrode, the external magnetic-field coil, and a pulse oscilloscope used for measurement. The physical phenomena occurring during the discharges within the Penning tube are described (cf. Reykhrudel', E.M., et al., ZhTF, v. 12, no. 12, 1952; Smirnitskaya, G.V., et al., ZhTF, v. 29, no. 2, 1959), including the ion-flow-augmenting effect of a pulling field and the beneficial effect of an external magnetic field. High-voltage pulse operation was performed without application of a pulling field, since the ions were being accelerated sufficiently by the cathode potential drop of the discharge. Ion-current vs. pressure graphs show a sharp current increase at higher pressures, but even at low pressures (10^{-4} to 10^{-5} torr) appreciable ion currents were attained with a tube voltage of 6 kv (magnetic field strength: 570 oe). The Penning tube, when operated in a high-voltage pulse regime, is regarded as one of the most effective, and yet simplest, ion sources. The reasons are as follows: (1) The high energy of the electrons and their effective confinement in the discharge space yields an intense ionization of the gas which is further enhanced by secondary processes, such as the formation of electrons in the space and the knocking-out of electrons from the cathode surface; (2) location of the most intense ionization near the cathodes facilitates beam formation;

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(3) high-anode-voltage operations yield adequate current flux at low pressure (10^{-4} to 10^{-5} torr) without differential pumping; (4) at higher pressures (10^{-3} to 10^{-2} torr) appreciable currents (up to 0.5 a) are achieved more easily and inexpensively than, for example, with arc sources; the construction of the Penning-tube device is practicable for any average laboratory; (5) the device is suitable for long-term stable operation; (6) according to the Meyerand-Brown paper the Penning pulse sources yield up to 50% more atomic ions. There are 8 figures and 8 references (3 Soviet and 5 English-language).

ASSOCIATION: None given.

ACCESSION NR: AT4025310 S/0000/63/000/000/0199/0211

AUTHORS: Kozlov, O. V.; Rodin, A. M.; Rusanov, V. D.; Skoblo, Yu. A.; Chernetskiy, A. V.

TITLE: Plasma diagnostics by atom and ion beams

SOURCE: Diagnostika plazmy* (Plasma diagnostics); sb. statey. Moscow, Gosatomizdat, 1963, 199-211

TOPIC TAGS: plasma interaction, discharge plasma, gas discharge, magnetic analysis, charge exchange, plasma research, ion beam, atom beam

ABSTRACT: Apparatus is described for the probing of a plasma of an oscillating discharge in gas by means of accelerated and focused ion beams or by means of charge-exchanged atom beams. Formulas are derived for the attenuation of ion beams in gases and are found to be in good agreement with experiments for the pairs $Ar^+ \rightarrow Ar$, $He^+ \rightarrow$

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→ He, $H^+ \rightarrow H_2$, $He^+ \rightarrow Ar$ and others. The discrepancy between the experimental and calculated data becomes appreciable at high pressures. The limiting pressure amounted to (2--3) x 10^{15} cm^{-2} for the pair $Ar^+ \rightarrow Ar$ with Ar^+ energy 10 keV and about 10^{16} cm^{-2} for the $H^+ \rightarrow H_2$ pair. Analogous results were obtained by measuring the broadening of the lines of the magnetic-analyzer spectrum. Measurements were also made of the dependence of the ion density on the discharge current. Apparatus was developed for the study of magnetosonic resonance and used to measure the attenuation of atomic argon beams in a hydrogen plasma, atomic helium beams in a helium plasma, and atomic argon beams in helium plasma. It is concluded that in spite of certain difficulties, the method of determining plasma parameters by means of beams of fast particles is worthy of serious attention, since it has undisputed advantages (practical elimination of contacts, locality of probing, wide range of measured quantities, and possibility of quantitative determination of the plasma composition). It is also concluded that atomic beams are

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ACCESSION NR: AT4025310

more suitable for the determination of characteristics of charged particles. The operating speed of measurements with particle beams can be made quite high, with a low resolution time. Orig. art. has: 7 figures and 6 formulas.

ASSOCIATION: None

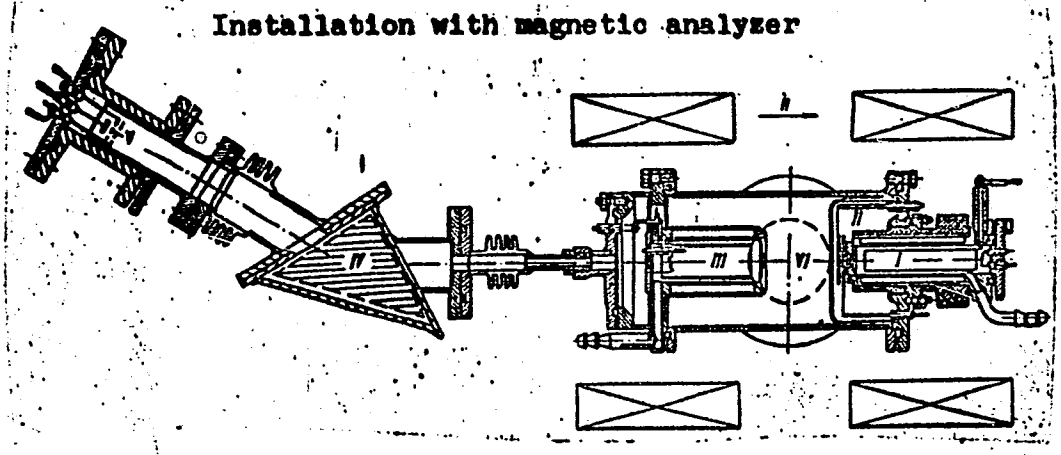
SUBMITTED: 19Oct63 DATE ACQ: 16Apr64 ENCL: 02

SUB CODE: ME NR REF SOV: 004 OTHER: 004

Card 3/5

ACCESSION NR: AT4025310 ENCLOSURE: 01

Installation with magnetic analyzer



I - source, II - focusing electrode system,
III - gas discharge chamber, IV - magnetic analyzer
V - collector, VI - vacuum pump unit

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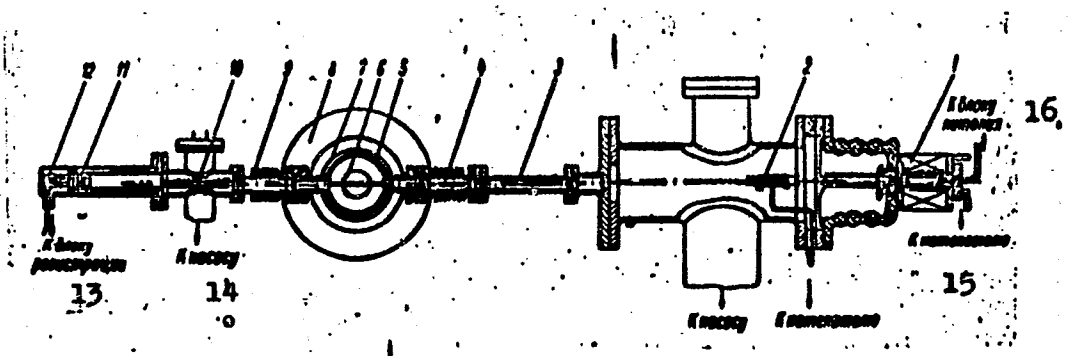
ACCESSSION NR: AT4025310 ENCLOSURE: 02



Sounding of a plasma with a high-frequency pulsed installation:

1 - ion source, 2 - charge exchange chamber, 3 - transition tube, 4 - bellows connection, 5 - gas discharge glass tube, 6 - plasma pinch, 7 - screen, 8 - magnetic core, 9 - bellows connection, 10 - deflecting plates, 11 - collector unit, 12 -cathode follower, 13 - to registration block, 14 - to pump, 15 - to leak valve, 16 - to supply block

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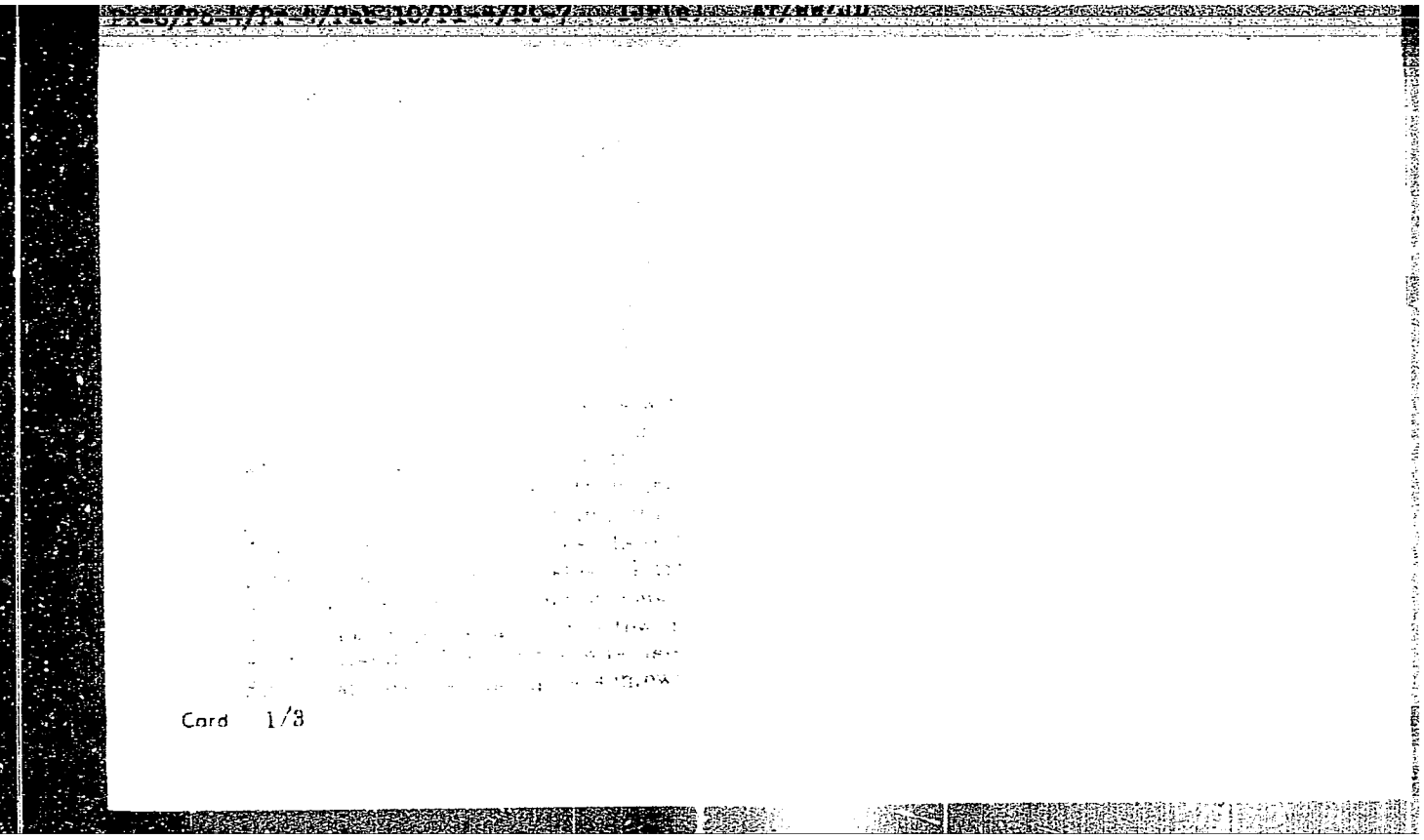

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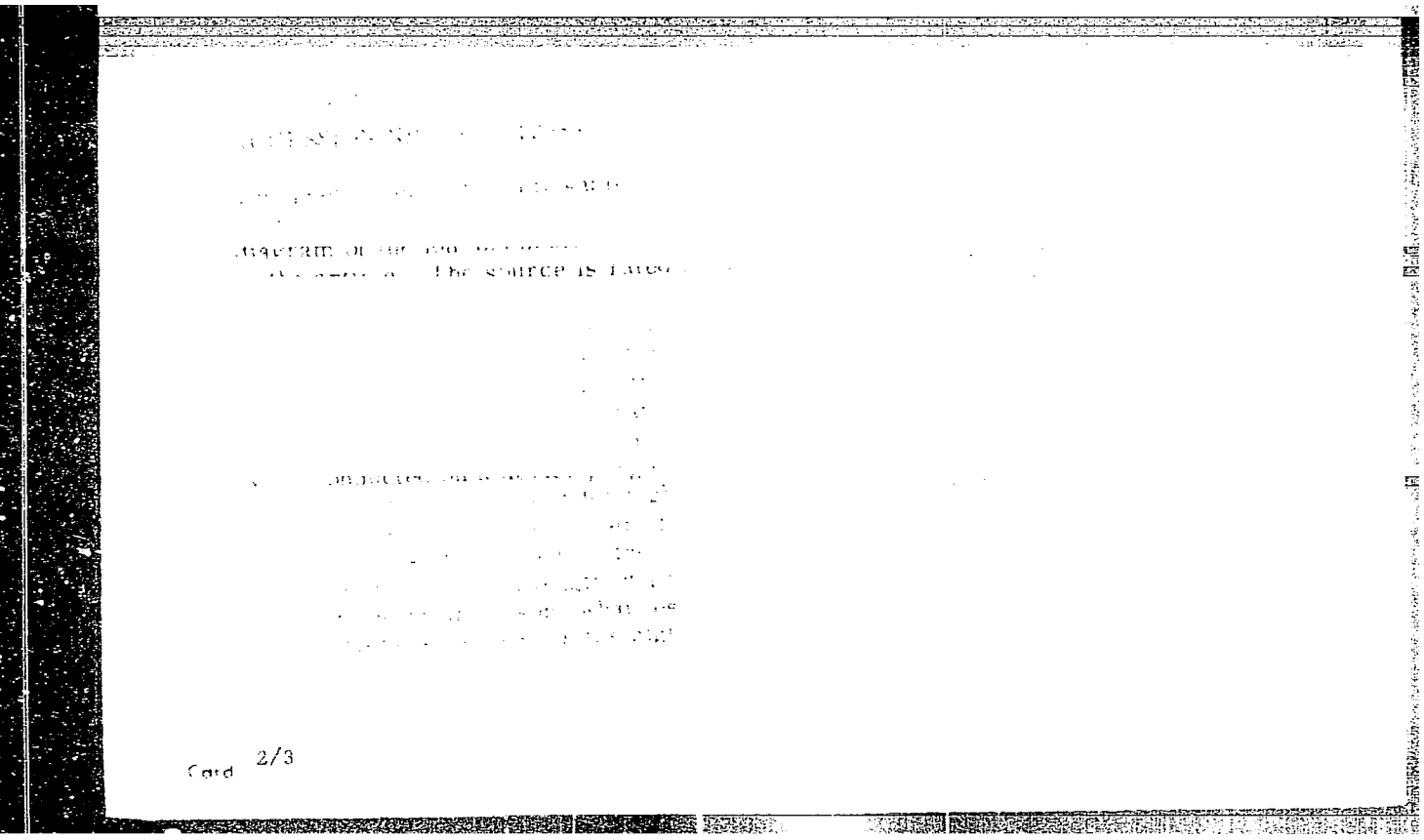
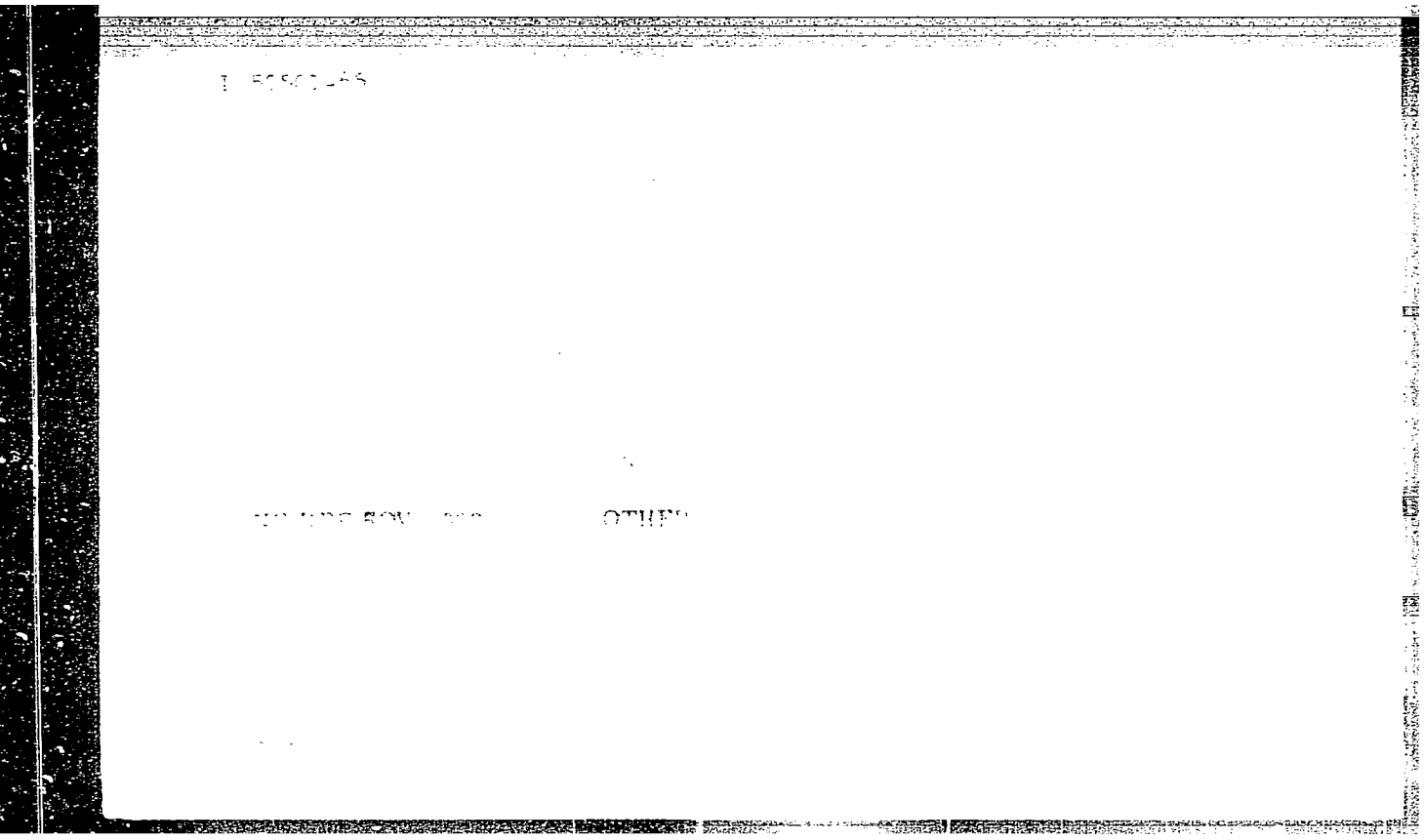


Card 2/3



L 22880-66 EWT(l)/EWT(m)/ETC(f)/EPF(n)-2/EWG(m)/EWA(h) IJP(c) JD/AT
ACC NR: AP6011913 SOURCE CODE: UR/0141/66/009/002/0287/0291

AUTHOR: Il'in, S. D., Petrusev, S. S., Chernetskiy, A. V.

ORG: Moscow Aviation Institute (Moskovskiy aviatsionnyy institut)

TITLE: Separating device for multifrequency SHF plasma probing

SOURCE: IVUZ. Radiofizika, v. 9, no. 2, 1966, 287-291

TOPIC TAGS: superhigh frequency, frequency selection, plasma probe

ABSTRACT: A power distribution system for simultaneous multifrequency plasma probing is described. It operates over a wide frequency range and is provided with sequential separation of the channels for each frequency. The system (shown in Fig. 1) consists of a single microwave track with frequency separator elements, each

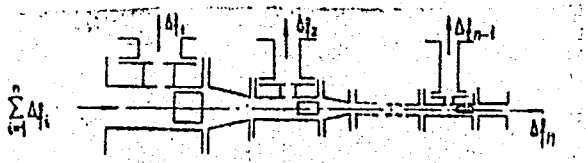


Fig. 1. Microwave signal separator

consisting of one Chebyshev bandpass filter and one high-pass filter. The filter arrangement is such that the lower frequency spectrum is separated and branched out

Card 1/2 UDC: 533.9.07

of the track as the signal progresses from element to element. Design formulas are given for calculating the necessary filter parameters of a sample system operating on

Table

Filter No.	n_{cr} el/cm^3	P_{out}/P_{in} calc	P_{out}/P_{in} measured	b_s calc	b_s measured
1	1 10	0,96	0,85	30	30
2	1,7 10	0,96	0,80	30	30
3	7 10	0,96	0,76	30	30

the 3-cm wavelength. A number of filters were designed for frequencies covering the range of critical plasma particle concentration from 10^{12} to 7×10^{13}/cm^3. The characteristics for three filters are shown in the accompanying table, where n_{er} is the critical electron concentration in plasma, P_{out}/P_{in} is the output to input power ratio for a filter whose passband is w_0 [illegible], plasma frequency), and b_s is the attenuation of a particular signal in one of two adjacent channels. Orig. art. has: 5 formulas and 5 figures. [BD]

SUB CODE: 09/ SUBM DATE: none/ REIG REF: 008/ OTH REF: 001/ ATD PRESS: 4230

Card 2/2

ACC NR: AP6004878 SOURCE CODE: UR/0057/66/036/001/0053/0057

AUTHOR: Il'in,S.D.; Likhachev,V.M.; Petrusev,S.S.; Chernetskiy,A.V.

ORG: none

TITLE: Location of moving plasma bursts from a coaxial injector

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 1, 1966, 53-57

TOPIC TAGS: plasma diagnostics, plasma velocity, Doppler shift, microwave, hydrogen plasma

ABSTRACT: The authors have employed a microwave Doppler shift radar technique to measure the velocities of hydrogen plasma bursts injected at velocities from 3.6×10^6 to 1.5×10^7 cm/sec into a 10 cm diameter 130 cm long glass drift tube by a conical plasma gun powered with a 6 kV 20 μF capacitor bank. The measurements were undertaken to explore the possibilities of the Doppler shift technique. For control purposes the velocities of the plasma bursts were also measured with two microwave transmission cutoff setups located at different positions along the drift tube. Microwaves in the 3 cm range were employed for both the cutoff and the Doppler shift measurements. In the Doppler shift measurements a single dielectric antenna, coupled with a 10 db directional coupler with a directionality of 25 db, was employed for both radiation and reception. In order to determine the influence of the fluctuations of the reflecting surface of the plasma burst on the frequency of the reflected signal, Doppler shift

UDC: 533.2

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ACC NR: AP6004878

measurements were made at several angles (up to 40°) to the line of flight. Good agreement was obtained among all the velocity measurements, and it is concluded that the Doppler shift technique can be used to measure the velocities of plasma bursts. With further development the method will provide other data, including the time variation of the velocity, the trajector, the direction of flight, and information concerning the internal structure of the plasma burst. The authors thank Professor M.S. Rabinovich and the staff of the laboratory for valuable discussions, and A.N.Pantyushin and G.I.Ochinnikov for assistance with the experiment. Orig. art. has: 1 formula, 5 figures and 1 table.

SUB CODE: 20/ SUBM DATE: 25Jan65/ ORIG REF: 002 OTH REF: 000

Card 2/2 dda

EWT(1) IJP(c) AT

ACC NR: AM6023687 Monograph 59 B+i UR/

Chernetskiy, Aleksandr Vasil'yevich; Zinov'yev, Oleg Anatol'yevich; Kozlov, Oleg Vasil'yevich

Apparatus and methods for plasma studies (Apparatura i metody plazmennykh issledovaniy) Moscow, Atomizdat, 65. 0363 p. illus., biblio. 3,190 copies printed.

TOPIC TAGS: plasma measurement, plasma radiation, plasma research, plasma diagnostics

PURPOSE AND COVERAGE: The techniques and equipment for investigating the basic parameters of a plasma, e.g., charged particle density, particle temperature, degree of ionization, etc, are considered. After a brief discussion of the properties of a plasma, superhigh frequency techniques and apparatus are described, including antenna, waveguide, and oscillator systems. Measurements of plasma radiation in the radio and submillimeter regions are discussed together with the instrumentation requirements. The final section of the book is devoted to corpuscular properties of a plasma: neutral and charged particle flux, pressure, and composition of the plasma. The use of tritium, atomic, and molecular beams for probing plasmas is discussed. The book concludes with two appendices; the first contains tables describing equipment used for plasma measurements, the second contains discharge and stripping cross section and energy tables.

TABLE OF CONTENTS [abridged]:

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ACC NR: AM6023687

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L 01999-67

ACC NR: AM6023687

SUB CODE: 20/ SUBM DATE: 25Nov65/ ORIG REF: 310/ OTH REF: 102

Card 3/3

CHERNETSKYY, F. [Chernets'kyi, F.]

Pulse of the sever-year plan. Znan. ta pratsia no.2:4-5 F. '62.
(MIRA 15:2)
(Kharkov--Turbines)

DEMIDYUK, P.; CHERNETSKIY, G.; NEYMS, A.

In the struggle for the title of enterprise, shop, brigade, and shock worker of communist labor. Muk.-elev. prom. 28 no.7:22-24 Jl '62. (MIRA 15:9)

1. Umanskaya realizatsionnaya baza Cherkasskoy oblasti (for Demidyuk, Chernetskiy). 2. Nizhnetagil'skiy mel'nichnyy Kombinat (for Neyms).

(Grain handling)

SIPITINER, Yu.B., inzh.; CHERNETSKIY, G.I., inzh.

Standardized parts of founding equipment. Stroi.i dor. mashinostr. 4 no.8:34-35 Ag '59. (MIRA 12:12)
(Foundry machinery and supplies)

CHERNETSKIY, G.I., inzh.; SIPITINER, Yu.B., inzh.

Combination die for bending clamps. Stroi.i dor.mashinostr. no.7:29-30 Jl '59. (MIRA 12:11)
(Dies(Metalworking))

CHERNETSKIY, I.G., inzh.; SIPITINER, Yu.B., inzh.

Universal device for gear milling designed at the "IAnvarskoe Vosstanie" Plant. Strci.i dor.mashinostr. 4 no.9:31-32 S '59. (MIRA 12:11)

(Gear-cutting machines)

CHERNETSKIY, G.I.; SIPITINER, Yu.B.

Lathe operator and innovator. Mashinostroitel' no.10:30-31 O '59. (MIRA 13:2)
(Turning--Technological innovations)

CHERNETSKIY, G.I.; SIPITINER, Yu.B.; SHVARTSBURD, M.P.

Readjustable universal pneumatic attachments. Mashinstroitel' no.8:27 Ag '60. (MIRA 13:9)
(Machine tools—Attachments)

SIPITINER, Yu.B., inzh.; CHERNETSKIY, G.I., inzh.

Devices for turners-innovators. Stroi. i dor. mashinostr. 5 no.4:36-37 Ap '60. (MIRA 13:9)
(Turning--Technological innovations)

S/193/60/000/009/009/013
A004/A001

AUTHORS: Sipitiner, Yu.B., Chernetskiy, G.I.

TITLE: The K-401 Diesel-Electric Crane

PERIODICAL: Byulleten' tekhniko-ekonomicheskoi informatsii, 1960, No. 9, pp. 43-45

TEXT: Based on the design of a team of designers of the OGK, the zavod (Plant) im. Yanvarskogo vosstaniya in 1959, manufactured a pilot model and prepared the serial production of the K-401 diesel-electric crane on pneumatic tires, possessing a lifting capacity of 40 tons. The power equipment of the crane consists of a 100-hp КДМ-100 (KDM-100) diesel engine and an a-c generator. The costs of the KDM-100 diesel engine are by 2.4 times lower than those of the 2Д -6 (2D-6) diesel engines used on the K-252 and K-501 cranes. A serial reducer of the РМ (RM) series is used for the drive of the main, bucket and jib winches. A new feature of this crane model is an additional jib of 10 m length which is mounted on the main jib of 25 m length. The jib projection is 14 m while the lifting height amounts to 30 m (at a lifting capacity of 5 tons). The author presents a description of the crane design and points out that the application

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The K-401 Diesel-Electric Crane

of an electric a-c drive, using standard big-series electric equipment, instead of a d-c drive, makes it possible to decrease the cost of electric equipment by 30%, to reduce the weight and overall dimensions of the electric equipment, to ensure the power supply of the electromotor from the 3-phase mains, to use the crane as a movable power station for the supply of the outdour mains and lighting network, to facilitate the replacement and repair of broken down electric equipment. Since the use of an a-c drive reduces the speed regulation range of the motors, a dynamic brake is provided for, which operates during the lowering of loads. The direct current necessary for the supply of two phases of the electromotor during the braking process is obtained from selenium rectifiers fed through a step-down transformer. The following technical data are given: longitudi- chassis base = 4,440 mm; height during transportation = 4,195 mm, maximum width of crane = 3,950 mm; radius described by the slewing part of crane = 4,250 mm, width of wheel track = 3,210 mm, wheel diameter = 1,220 mm; speeds: lift of maximum load = 5 m/min, load lift by auxiliary hook = 14 m/min, lift of loaded bucket = 28 m/min, turning of the slewing part = 0.5-1.5 rpm, travel = 6-14 km/hour; weight of additional 10 m jib = 450 kg, weight of crane with 15 m jib and hook = 49,500 kg. There is 1 figure.

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S/193/60/000/010/011/015
A004/A001

AUTHOR: Chernetskiy, G. I.

TITLE: The Pneumatic-Tyre K-124 Crane With Hydraulic Controls

PERIODICAL: Byulleten' tekhniko-ekonomicheskoy informatsii, 1960, No.10, pp. 41-42

TEXT: The Odesskiy zavod im. Yanvarskogo vosstaniya (Odessa Plant im. Yanvarskoye vosstaniye) has designed and manufactured a pilot model of the new self-propelled full revolving K-124 crane with a lifting capacity of 12 tons, which is hydraulically controlled. The crane is intended for loading and unloading operations, structural and mounting works and for the handling of loose material with the aid of a 1.5 m^3 grab bucket. For structural and mounting operations the boom length can be extended from 10 m to 18 and 22 m by insertion pieces of 8 and 4 m length. For the handling of large-sized loads the crane is fitted with a tandem, having an operational boom of 2.2 m. The crane mechanisms are driven by the СМД-7 (SMD-7) diesel engine of 55 hp and a three-gear transmission box. The use of the diesel engine lowers the fuel consumption by 9 kg per shift. All units of the cra crane are hydraulically controlled, except the brakes of the load and bucket winches. Control is effected with the aid of three handles and four pedals. The

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The Pneumatic-Tyre K-124 Crane With Hydraulic Controls

traveling mechanism of the crane is equipped with antifriction bearings mounted in the H-shaped lower frame with the aid of two barrels. In this way the ground clearance of the crane and its passability are increased. The loading characteristics of the crane are shown in the following table:

A Грузовая характеристика крана

B Груз, т: На дополнительных опорах	B Груз, т: без дополнительных опор	E Вылет, м	F Высота подъема крюка, м
1 Стрела длиной 10 м			
12,0	10,0	4,2	9,0
9,0	7,5	5,0	8,6
5,5	4,5	7,0	7,85
3,0	2,5	10,0	4,6
2 Стрела длиной 18 м (без гуська)			
5,5	5,0	6,0	16,5
4,0	3,0	8,0	16,0
2,0	1,5	12,0	14,0

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The Pneumatic-Tyre K-124 Crane With Hydraulic Controls

Table continued:

3 Стрела длиной 18 м (с гуськом)			
2,0	2,0	8—11	17
4 Стрела длиной 22 м (без гуська)			
3,5	3,0	7.0	20.1
1,5	1,2	12.0	19.0
0,7	0,5	17.0	15.0
0,4	0,3	20.0	11,5
5 Стрела длиной 22 м (с гуськом)			
1,5	1,5	9—11	21,2

A - loading characteristics of the crane; B - load in tons; C - with additional props; D - without additional props; E.- boom in m; F - lifting height of hook in m; 1 - boom of 10 m length; 2 - boom of 18 m length (without tandem); 3 - boom of 18 m length (with tandem); 4 - boom of 22 m length (without tandem); 5 - boom of 22 m length (with tandem).

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